ABSTRACTS OF THE 59TH ANNUAL MEETING

April 20-24, 1994 • Disneyland Hotel • Anaheim, California
SOCIETY FOR AMERICAN ARCHAEOLOGY

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of the
59th Annual Meeting
April 20–24, 1994
Disneyland Hotel—Anaheim, California USA
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SYMPOSIUM, FORUM, AND WORKSHOP ABSTRACTS


Frank McManamon, Departmental Consulting Archaeologist for the National Park Service will make a brief statement concerning the implementation of Native American Graves Protection and Repatriation Act and its draft regulations. The remainder of the session is devoted to NAGPRA-related questions and discussion from the audience. This forum will clarify the effects of NAGPRA on current and future excavation procedures and on the disposition of human remains, funerary objects, and other items that are in existing museum collections or result from ongoing work. It is directed to all archaeologists, especially individuals involved in the implementation of NAGPRA, archaeologists involved in excavations subject to NAGPRA, and those concerned with research collections.


An anthropological tenant, derived from the nineteenth century formulation of the discipline, asserts a bidirectional interaction between biology and behavior. In archaeology the use—and also misuse—of this assumption is well documented and supposed biological discontinuities have been equated with and served to buttress cultural distinctions. In recent years both DNA analyses as well as archaeological and paleontological finds from Europe, Africa, and the Near East have caused both archaeologists and biologists to re-examine such assumptions. This symposium uses data derived from different time periods and regions of the world to examine how, in an extended time frame, biology and behavior interact.


(American Society for Conservation Archaeology)

Recognizing the 20th anniversary of the passing of the Moss-Bennett bill and founding of the American Society for Conservation Archaeology in 1974, we seek a broad and deep look at the ideal future for U.S. and world archaeology. North American archaeology has been transformed since 1974 shifting from an "esoteric enclave" of higher education to broad involvement in the economic, cultural, and political life of our nations. Our environment is dynamic, with complexity and change increasing at a quantum pace. This program initiates conversations on the long-term best interests of American archaeology from a holistic perspective.


Eastern Anatolia is geographically and culturally integral to any consideration of the dynamics of cultural change in southwestern Asia. However, until recently, only minimal data from early settled village communities have been available from this critical region. Recent surveys and excavations in eastern Anatolia are beginning to fill this gap in our data. In so doing, they will likely force revision of existing models concerning the origins of settled village life in southwestern Asia. The papers in this session examine the impact of the new Anatolian data on our understanding of the origins of sedentism and domestication.


Recently initiated investigations at the major center of Naranjal and associated sites in the extensive freshwater wetland zones of northwestern Quintana Roo provide new perspectives on the prehistory of the northern Maya lowlands. Settlement survey and reconnaissance documentation of land and water resources of this unique wetland zone: Comparative studies of monumental architectural styles and of ancient road systems provide evidence for local and regional interaction. Multiple lines of evidence suggest widespread interaction across the northern peninsula, linking the eastern region of Naranjal with developments in such Early Classic centers as Ake and Izamal.


The colonization strategies employed during settlement and subsequent diversification of island societies are key issues in Oceanic archaeology. Since isolation is a fundamental condition fostering divergence, understanding how relative extremes of isolation have influenced the evolution of human diversity in the Pacific becomes an important problem that must be examined for each island sequence. This symposium presents case studies from throughout Oceania that identify primarily exotic fine-grained basalt and volcanic glass artifacts by geochemical techniques, a pursuit only recently applied on a regional scale. Theoretical issues are addressed for explaining the role of continued interisland interaction in sociopolitical change.


Three seasons of survey and excavation at Xaltocan, Mexico, have defined the resources available to the occupants of the site, A.D. 800-1500. This fieldwork has also yielded evidence that resource utilization was
The Sociopolitical Organization of Hunter-Gatherers

shaped by the changing socio-political relationships between Xaltocan and other communities. Relationships such as exchange, alliance, domination of other settlements and subordination to outside rulers affected both extractive industries such as agriculture and fish processing and craft industries such as pottery manufacture and obsidian working. Thus, social relations mediate between humans and their environment to produce what might be seen as gains in systemic efficiency or exploitation of large segments of the population.

Symposium: THE SOCIOPOLITICAL ORGANIZATION OF HUNTER-GATHERERS IN CALIFORNIA: A CONSIDERATION OF NATIVE AND EUROPEAN ENCOUNTER

This symposium examines the sociopolitical organizations of native peoples who were responding to the colonial practices of Spanish missionaries, Russian fur traders, and Euro-American ranchers in California. Symposium papers consider how native politics underwent change using archaeological, ethnohistorical, and ethnographic sources. Observations are made on the spatial distribution, hierarchical elaboration, and population of native societies in northern, central, and southern California. Some participants also address the relevance of using ethnographic models to understand the sociopolitical organizations of prehistoric and protohistoric hunter-gatherer societies in California.

Symposium: THE SOCIAL AND POLITICAL CONTEXTS OF CRAFT TECHNOLOGY

The papers in this symposium explore the dynamic interaction between social and political milieux and craft technology. In our papers, we consider technology beyond the scope of environmental and economic adaptation. Themes include the ideological contexts of technological innovation and elaboration; technology as it intersects with household, community, state, gender, and class; conditions facilitating control of technology for political and social ends; and the social and political settings which support particular technologies and the characteristics such as labor intensity and standardization—there impart to finished goods.

Sponsored Forum: DARE TO DOMINATE A DOMINERING DISSERTATION (SAA Student Affairs Committee)

The SAA Student Committee presents a sponsored forum on the dissertation process. There will be short (5 minute) presentations by the speakers followed by a question and answer session. Topics will include resources available to graduate students, the SAA dissertation prize, dealing with committees, publication options, motivation, etc. All participants are also asked to think about issues of age, gender, race, sexual orientation, etc.—relevance to the dissertation process.

Symposium: BEYOND STATE COLLAPSE: CASE STUDIES IN THE AMERICAS

The aftermath of state collapse is an issue that lies at the heart of understanding cultural evolution in the Americas. Each of the papers in the symposium examines the issue of state collapse and subsequent cultural adaptation from the standpoint that the process, in and of itself, is nearly always incomplete, and that a matter of what content is included. Each of the case studies presents the data for a given region, and an evaluation of the processes (historical, social, and cultural) that were underway in the restructuring of society just centuries before the Spanish arrival.

Symposium: LITHIC RAW MATERIAL ECONOMY IN LATE GLACIAL AND EARLY POSTGLACIAL WESTERN EUROPE

Regional patterns in the use of lithic raw materials from different sources provide information on hunter-gatherer mobility, territorial organization, and exchange. New theoretical perspectives on technological systems call for a critical examination of arguments linking patterns in raw material use with aspects of hunter-gatherer behavior. This session brings together scholars working in different regions of western Europe to present comparative data and evaluate theoretical approaches to lithic raw material economy among Late Glacial and Early Postglacial hunter-gatherers. Case studies focus on the scheduling and organization of raw material procurement for tool production. Discussions should provide insight into common processes as well as regional diversity in Late Glacial and Early Postglacial Europe.

Symposium: THE ARCHAEOLOGY OF WEST POINT, SEATTLE, WASHINGTON: 4,500 YEARS OF LAND USE IN SOUTHERN PUGET SOUND

The West Point archaeological site is within the boundaries of a sewage treatment plant in Seattle's Discovery Park. Shell middens and other cultural deposits were discovered initially in February, 1992 during construction of new treatment facilities. Over 60 radiocarbon dates from almost 2 years of field work document land use beginning ca. 4500 B.P. and continuing to 2000 B.P. This project overview provides background for summaries of land use chronology, subsistence patterns, and lithic organization. Research results are compared to ethnographic and archaeological data from southern Puget Sound to broaden interpretations.

Workshop: EXHIBIT DEVELOPMENT FOR ARCHAEOLOGISTS—A WORKSHOP ON EVALUATION, DESIGN, AND INSTALLATION (SAA Public Education Committee)

This three session workshop will focus on tailoring exhibits to a specific audience or the general public. Each session is independent of the others and may be attended individually. Session I is Evaluation: Front End, Formative and Field Testing. Session II is Aesthetics and Mechanics of Signage and Installation. Session III is Participatory Exhibits.

Symposium: BIOARCHAEOLOGY OF THE CHINCHORRO PEOPLE

Although a nonranked society, the Chinchorro Culture from South America practiced sophisticated techniques of artificial mummification beginning 8,000 years ago. The complexity of Chinchorr e's socio-religious development is intriguing and has not been systematically addressed. An interdisciplinary group of archaeologists, paleopathologists and physical anthropologists will present their findings on settlement patterns, social organization, mummification techniques, health, and diet. This will be the first symposium dedicated to Chinchorro mortuary complexity.

Symposium: SURFACE ARCHAEOLOGICAL DATA AND THEIR INFERENCEAL POTENTIAL

Until the 1970's, surface archaeological data generally were considered, with a few notable exceptions, substantively inferior to excavation data. Since the 1970's, surface archaeological data have been used principally, but not exclusively, to characterize aspects of the regional archaeological record and to guide the location of excavation units. Participants in this symposium demonstrate that the inferential potential of the archaeological record can be expanded considerably—contributing to the development of theory and method as well as to models of prehistory—when surface data are considered essential, unbiased elements of archaeological research.

Symposium: THE DYNAMICS OF CULTURAL DEVELOPMENT IN EASTERN ANATOLIA: INTER-REGIONAL RELATIONS AND SECONDARY STATE FORMATION

Eastern Anatolia is geographically and culturally integral to any consideration of the dynamics of culture change in south-western Asia. However, until recently, only minimal data relating to inter-regional exchange and secondary state formation have been available from this critical region. Recent and current surveys and excavations in eastern Anatolia are beginning to fill this gap in our data. The papers in this session examine the impact of the new Anatolian data on our understanding of inter-regional exchange and secondary state development in southwestern Asia during the 4th-1st millennia B.C.

Sponsored Symposium: METHOD AND THEORY IN PHYTOLITH ANALYSIS (Society for Phytolith Research)

While phytolith analysis has become a standard tool in archaeology, identification and interpretation remain challenging. We begin this interdisciplinary session with advanced methods in microscopes illustrated with a videotape of 3-D images of phytoliths and statistics. We then discuss the identification of crops, of plant ecotypes, and of human impacts on the landscape; the formation of environmental and cultural deposits, including residues on stone tools and pottery and the remains of fibers; and the combination of phytoliths with other paleoethnobotanical data. The final paper summarizes issues raised by previous ones and encourages thorough reporting for continued growth of the field.

Symposium: ASSESSING THE IMPLICATIONS OF PLATFORM MOUNDS FROM THE PERSPECTIVE OF SEVEN CASE STUDIES

The recent dramatic increase in knowledge of South-western platform mounds has given researchers a greater appreciation for differences in mound function. This symposium presents a series of case studies where the functional assessment of a platform mound also is a study of complexity that entails measurement of changes in social organization. Questions of the existence of elites or complexity without elites are addressed through an evaluation of evidence for (1) differentiation of occupants of platform mounds and (2) indications of integration through orchestrated consumption and storage activity for each case study.

Symposium: EVOLUTIONARY THEORY IN ANGLO-AMERICAN ARCHAEOLOGY

This symposium focuses on the archaeological application of concepts drawn from macroevolutionary theory, and reflects a renewed interest among archaeologists in general theory of culture change. We suggest that Anglo-American archaeology has long operated under a general theory of culture change that is broadly analogous to Neo-Darwinian evolutionary theory. This paradigm is seldom made explicit, however, because of the in-depth understanding of biological evolutionary movement on the part of many archaeologists. The papers presented range from the broad conceptual to substantive, and encompass a considerable geographic and temporal span.

Sponsored Forum: PROTECTING THE ARCHAEOLOGICAL RESOURCES OF THE HEMISPHERE (SAA Task Force on Latin America and National Park Service)

This forum brings together diverse perspectives on archaeological resource protection from different countries throughout North and South America. Participants will briefly discuss the views developed from their own experiences of the major threats to archaeological resources, of the public perceptions of the value of archaeological resources, of the legal recourse for protection, and of the particular successes and
failures of efforts to protect archaeological resources. Presentations will be followed by discussion including the participants and the audience.


Focused on the Maya lowlands, this symposium features recent work by American and Mexican archaeologists that integrates new data into the macroscale framework of World Systems Theory. The emic focus of this session is the changing panorama of the Mesoamerican world from the decline of Teotihuacan through the early Colonial period. Investigations at the pan-Mesoamerican scale are an important step for research in the Maya lowlands, since they broaden our understanding beyond the traditional site-specific focus that has long predominated in the area, and add a new perspective that compliments the recent trend towards regional studies.


Recent research in Lower Central America indicates greater socio-political complexity for some regions in the region. Building on this foundation of earlier work, this symposium reconsiders the social, economic, settlement patterns, and long-distance exchange that include new theoretical and methodological approaches for many areas of the region have contributed to these new views. This symposium will highlight such research. Special attention will be given to the Rivas Site, Costa Rica, where the discovery of monumental architecture and evidence for extensive long-distance exchange exemplifies general trends in the greater region.

[33] Symposium: THE SOCIO-ECONOMIC DIMENSIONS OF PROCESSING IMPLEMENTS AND GROUND TOOLS: A SYMPOSIUM IN HONOR OF RICHARD B. WOODBURY

Richard B. Woodbury is a pioneer in the archaeological interpretation of "ground stone" tools of the prehistoric Southwest. Building on this foundation of earlier work, this symposium reconsiders ground stone analysis from description to explanation. Except for agricultural dependence, ground stone assemblages have long been overlooked as indicators of wide-scale socio-economic patterns. Recent work demonstrates that these artifacts may be used to make broader inferences about regional dynamics, including social organization, religion, and the organization of technology. By including several temporal, geographical, and cultural settings, these papers demonstrate the possibilities for archaeological interpretation based on the importance of these tools in the culture within which they functioned.

[34] Symposium: PREHISTORY'S CHILDREN AND CHILDREN'S PREHISTORIES

Children are generally neglected in the archaeological literature, yet they are significant producers and consumers of prehistory. This symposium addresses the roles of children as either agents or audiences. Some papers consider the ways in which children of the past can be made visible in the archaeological record. Other contributions examine non-archaeological realms (e.g., fiction, primate research) as vehicles for imagining the roles of children in the past. Finally, some papers deal with children as consumers of prehistory by discussing how the past is presented to children in different media.

[38] Sponsored Forum: PRINCIPLES OF ARCHAEOLOGICAL ETHICS (SAA Committee on Ethics in Archaeology)

The Ethics of Archaeology Committee was formed in 1991 to review and update the ethics policy of the Society for American Archaeology. The Committee is dedicated to a process of open discussion that will encourage wide participation. To facilitate discussion and policy development, the Committee obtained grants from the National Park Service and the National Science Foundation to sponsor a workshop at the Cultural Resource Management Policy Institute, University of Nevada-Reno. Eighteen participants representing a wide range of different backgrounds and viewpoints, attended the three-day event in November, 1993. During highly productive discussions, the participants developed a series of principles identifying the stewardship responsibilities of archaeologists. These principles are described in position papers. The session will include comments from five discussants, and invite questions/comments from the membership.

[39] Plenary Symposium: THE ARCHAEOLOGY OF GLOBAL CHANGE

For decades, archaeologists have devoted considerable effort to exploring the nature of human interaction with diverse environments. Yet, most archaeologists have neglected to consider their work within the context of contemporary concerns about deterioration of the global environment. This has contributed to poor interdisciplinary communication and a tendency to minimize the relevance of long-term human impact on the environment in the broader arena of biodiversity studies. In the plenary symposium participants consider the human role in ecosystem change in different regions and the position archaeologists should play in the scientific agendas relating to biodiversity and global change.

[40] Symposium: VISUALIZATION IN ARCHAEOLOGY: THE ROLE OF IMAGERY IN INTERPRETING PAST LIFESTYLES

In recent years there has been an explosion of interest in the different ways in which archaeological knowledge is produced and communicated. One area that has been relatively neglected is the way in which archaeologists use visual images to present their ideas and arguments. This session will bring together a range of approaches that examine how our discipline has utilized visual forms of communication. The subjects being addressed include human evolution, the iconography of indigenous peoples and how that has shaped archaeological illustrations and interpretations, paleolithic archaeology and the archaeology of architecture.

[41] Symposium: PREHISTORIC UNDERWATER ARCHAEOLOGICAL RESOURCES OF THE NORTH AMERICAN CONTINENTAL SHELF AND NEAR-COASTAL WATERWAYS

Archaeological sites on the continental shelf of North America are critical to better understanding late Pleistocene and early Holocene populations. Without better representation of currently inundated coastal sites dating to these periods, important questions such as the distribution of Pleistocene and early Holocene peoples, use of marine resources by coastal groups, and changes in coastal resource-related technologies will remain unanswered. This symposium brings together site information on inundated land sites from coastal sites from Florida, British Columbia, and Alaska, with a review of current sea level data and presentations on processes that contribute to the formation of currently inundated sites. Proposals will be made for increasing communication within the limited number of prehistoric underwater archaeologists on a world-wide scale to improve information sharing, awareness of common problems, and potential avenues of research.

[42] Symposium: ANTHROPOLOGICAL INTERPRETATIONS FROM ARCHAEOLOGICAL CERAMIC STUDIES: CASE STUDIES IN PREHISTORIC SOCIAL ORGANIZATION IN THE AMERICAN SOUTHWEST

Even though ceramic analysis has been de rigueur in the American Southwest for decades, many studies are now going well beyond the level of classification or provenience determination. Several ongoing projects have made significant interpretive steps by examining issues of prehistoric social organization using ceramic evidence. Case studies from central Arizona and the Colorado Plateau are presented that focus on prehistoric social organization and changing population movements during times of population expansion and aggregation (A.D. 1100-1400). This group of studies has achieved these results because each has established a substantial database and has integrated data from a suite of complementary research methods.


This symposium will explore the diversity of human responses to the environmental changes between 13-8 ka B.P., that constituted the Pleistocene-Holocene transition, particularly regarding subsistence strategies. Hominids in Africa, Near East and Europe had adapted to glacial/interglacial transitions before the Oxygen Isotope Stage 2-1 boundary, but never before had they been: 1) of modern anatomy; 2) living in the complete range of biotope, at relatively high population level; and 3) endowed with complex technologies. Sweeping fluctuations in the physical landscape and in food resources led to a wide variety of human reactions. These will be compared on a continental scale, to try to understand causes and consequences, including the variable rates and times at which food production was adopted in different regions.

[46] Invited Symposium: PREHISTORIC HUMAN IMPACTS ON THE ENVIRONMENT: A GLOBAL PERSPECTIVE

Human impacts at different levels of technological and societal development in prehistory had substantial impacts on their environments resulting in deforestation, loss of habitat, resource depletion, extinctions of flora and fauna, and adaptional responses to these anthropogenic environmental changes. By contrast, conservationists and ecological scientists often consider the "natural environment" as pristine prior to modern degradation and ignore these past impacts. Three issues from various regions of the world are examined by interdisciplinary researchers. The four papers in this symposium: 1) short-term effects and long-term consequences of human induced prehistoric impacts on the environment; 2) patterns that can be evaluated from one region to another; and 3) lessons from the past that can be applied to the present and future.

[47] Symposium: TOWARDS VILLAGE LIFE: AFFLUENT FORAGERS

The most significant transition in the history of human culture was the shift from mobile settlements to sedentary villages. This transition is often seen among hunters-gatherers in the development of complex political forms and it is accompanied by a shift from kin-based settlements to multi-kin group amalgamations and coalitions. It further witnesses economic shifts such as the intensification of fishing and sea mammal hunting on the coasts of North America, Peru, and Northern Europe or the intensification of gathering as seen in the western Great Basin and the Near East. Through an intercontinental and interdisciplinatory focus,
this symposium seeks an understanding of the social, political, demographic, and environmental conditions under which sedentary hunter-gatherer villages arose.

[49] Symposium: ALBERT SPAULDING AND THE CONTINUATION OF ARCHAEOLOGICAL SCIENCE

This symposium brings together a group of archaeologists who have been directly or indirectly influenced by the late Albert Spaulding. The symposium is not intended to be a retrospective of Spaulding's work. Rather, it is intended to reflect the ways in which Albert Spaulding's multifaceted writings and ideas continue to influence current research practices, both theoretical and methodological. The current research of a number of archaeologists will be used to highlight the ways in which Spaulding's notion of archaeological science continues to shape our discipline.

[52] Sponsored Symposium: MAKING THE GRADE, EVALUATING ARCHAEOLOGY EDUCATION PROGRAMS (SAA Public Education Committee)

Twenty years ago there were only a handful of programs in North America which were attempting to educate the public about archaeology. Today, programs exist or are being developed in almost every state and province to educate both students and teachers about archaeological resources and their stewardship. Archaeologists and educators are beginning to recognize archaeology as a valuable tool for teaching in many disciplines and learning situations. Evaluation of these programs is critical to their improvement as well as to the development of new ones. In this symposium, we will describe some existing programs and their evaluation mechanisms, and share what has been learned about what works and what doesn't in a variety of educational settings.

[53] Workshop: ARCHAEOLOGY FOR EDUCATORS, PART I (SAA Public Education Committee)

Archaeology education has become an important part of the archaeological profession. This 10-hour workshop for all educators including teachers, museum docents, and outdoor program leaders, is a showcase of existing archaeology education programs. Participants discover the science of archaeology through hands-on activities. They are then equipped to teach archaeological concepts to both children and adults in a variety of settings. Exercises in values identification and clarification surrounding the issues of archaeological conservation and an overview of local resources complete workshop instruction. Although the workshop is designed for educators, archaeologists are invited to attend.

[54] Fryxell Symposium: BONE CHEMISTRY AND HUMAN DIET—RECENT ADVANCES, RECENT RETREATS

Spanning the disciplines biochemistry, geochemistry, physiology, and anthropology, the study of chemical signatures in living and fossil tissues has revolutionized the study of past human diets. The field of archaeological isotope paleoanthropology has matured. Papers in the symposium explore the wide range of stable isotope and trace element studies in practice today and illustrate the broad geographical range of applications.


This symposium brings together a diverse group of scholars to consider the role of ideology in complex societies of prehispanic Oaxaca, from the Formative to the Postclassic. The papers describe aspects of prehispanic ideology and examine the role of ideology in the legitimation of power and strategies of rulership. The goal of the symposium is to encourage a dialogue amongst scholars working in archaeology, art history, ethnohistory, ethnography, and epigraphy. The symposium promises to achieve both a synthesis of current research as well as a discussion of theoretical implications, data limitations, and future directions.


This symposium explores the diversity of human responses to environmental changes at the end of the Last Glacial in East Asia, Australia, and the Americas. Between 13,000 and 8,000 years ago, human adaptations in these regions were diverse and dynamic. In areas as diverse as Tasmania, Thailand, Japan, Siberia, the Plains, and Patagonia, humans had to adjust to major changes in climate, landforms, plant communities, and resources. Our papers provide regional syntheses of these adaptive patterns and discuss future research directions on the dramatic environmental and cultural changes that took place at the Pleistocene-Holocene transition.

[57] Symposium: RECENT ADVANCES IN THE ARCHAEOLOGY OF BAJA CALIFORNIA

This symposium presents the results of the most recent archaeological fieldwork carried out on the peninsula of Baja California. Archaeologically, Baja California remains one of the least studied regions in North America. This is unfortunate in that its geographic isolation resulted in several unique cultural developments among the prehistoric groups that inhabited the peninsula. It thus provides a fascinating case for addressing the effects of cultural isolation. The symposium presents papers by archaeologists representing the latest radiocarbon dates for the peninsula on many aspects of Baja prehistory including reports on the special project of the Instituto Nacional de Antropologia e Historia in the Sierra de San Francisco, the largest ever undertaken in Baja California.

[58] Symposium: BIG CHANGE IN BIG SITES ON THE BIG RIVER: REGIONAL VARIABILITY IN CLASSIC AND PROTOHISTORIC SITES OF THE NORTHERN RIO GRANDE, NEW MEXICO

The Classic (A.D. 1325-1600) and Protohistoric (A.D. 1450-1700) periods of the Northern Rio Grande archaeological sequence in New Mexico are characterized by extensive site complexes and distinctive ceramic assemblages. Papers in this symposium present results of recent research examining variability in site use, economic strategies, and demography. Alternative models examining intra-site settlement patterns, site dating criteria, resource exploitation and regional integration more beyond typological categorization and ethnohistoric analogues that have been used to explain the economy, demographic change and the structure of late prehistoric and protohistoric society.

[59] Symposium: AGRICULTURE AND THE FORMATION OF SEDENTARY COMMUNITIES

The role of agriculture in the formation of sedentary communities has been postulated for some time. Sedentism in an agricultural economy requires certain facilities and behaviors oriented toward harvesting seasonally distributed, storable foods. These structural and economic shifts are often accompanied by a number of significant human behavioral changes including hereditary social inequality, social stratification, craft specialization, storage, ceramic production, irrigation, and warfare. It is also seen as a deleterious transition because of increases in population size, demographic change, increased evidence for infectious disease, increased levels of violent conflict, and a decrease in the quality of the diet. This transition from mobile foragers to sedentary farmers is documented in a number of areas including Asia, southern Europe, the mid-latitudes North America, the lowlands of Central and South America, and the highlands of Mexico and the Andes.


This session examines the archaeology of a series of institutions which define the modern capitalist state. European colonial and post-colonial institutions such as prisons, factories, and plantation structures, and the local state authority through the surveillance of individuals. Such institutions produced, circulated, policed, and reproduced social behaviors which maintained state power relations. Each paper will demonstrate how apparently dissimilar institutions and mechanisms create and reproduce capitalist state societies.

[64] Symposium: THE ARCHAEOLOGY OF MIGRATION IN EARLY EUROPE

Recently many archaeologists have attempted to explain change in terms of internal societal dynamics rather than through movements of peoples. Papers in this symposium examine cases in European archaeology in which migration has played an important role in cultural change. Examples from early historical contexts can contribute toward the development of method and theory in the archaeological study of migration.

[65] Symposium: MICKEY MOUSE ARCHAEOLOGY: MICE, RATS, AND OTHER RODENTS

Honoring the venue of the 1994 SAA Annual Meeting, this symposium deals with a growing problem in American archaeology: rodents. These small mammals are an under-considered but nearly ubiquitous feature of the zooarchaeological record. The papers in this symposium consider various aspects of rodent research, from ethnography and ethnohistory to quantitative zooarchaeology.

[66] Symposium: PALEOINDIAN AND ARCHAIQUA ADAPTATION IN TRANSITIONAL ENVIRONMENTS

Paleoindian and Archaic period occupations of the western plains and Rocky Mountain region of Colorado and Wyoming encompass a variety of subsistence and social adaptations at the juncture of two major environmental zones. This symposium will investigate and synthesize current studies in this area to better understand the relationship between peoples in these areas and their social and ecological environment. Of special interest is resource procurement, mobility across and within physiographic zones, and local adaptation to high altitude and transitional environments.

[67] Symposium: ARCHAEOLOGICAL APPROACHES TO THE BUILT ENVIRONMENT

Archaeologists have excavated and mapped thousands of buildings and built spaces, yet only use a handful of methods for analyzing the culturally constructed built environment. This is a major analytical oversight with significant theoretical implications for understanding past societies. This symposium brings together archaeologists and architects who are developing new approaches to the built environment, including phenomenological and structuralist approaches, the ethic of spatial relations, and applications of
computer imaging and virtual reality. The archaeological case studies are global in scope: the Mediterranean, Nile Valley, Madagascar, Andean South America, Central Mexico, and lowland Mesoamerica. This symposium represents an important step in advancing archaeological research in the built environment.

[68] Sponsored Symposium: ZiNJ Kids and Archaeology: Perspectives of a Young Generation (ZiNJ Magazine and SAA Public Education Committee)

Kids all over the world are interested in prehistory; numerous science fair projects, reports, class projects, and much personal time are devoted to archaeological topics, yet professional archaeologists are often unaware of that interest and, especially, are often unaware of the potential allies we have in the classrooms of America. In this symposium kids present the results of their experiments, research, thinking, and feelings about archaeology. Each presenter has worked with an adult, professional mentor, to produce a quality presentation. This symposium demonstrates that outreach to kids is an effective means to bring messages about protection and preservation of cultural resources to the general public, that kids are great spokespersons for heritage resources, that kids can be effective in educating adults, and that youthful enthusiasm is contagious.


Multidisciplinary research involving scholars from Ukraine, Russia, and the United States has provided valuable new insights into Late Pleistocene adaptations on the East European Plain and has also yielded pertinent data on the macro- and micro-environments in which these adaptations occurred. Using a highly synthesis battery of data recovery, data processing, and analytical methods and techniques, issues of Late Pleistocene site formation and emplacement processes, site use, subsistence, and seasonality are explored at Mezhirich, located at the junction of the Ros and Rosava rivers in south-central Ukraine.

[70] Symposium: A Rocky Past: Interdisciplinary Paleoenvironmental Research

From the beginning, Paleoenvironmental research has been an interdisciplinary endeavor. The combined efforts of archaeology and geology, especially paleoecology and sedimentology, were crucial to early investigators in demonstrating the origins and antiquity of Paleoenvironmental cultural deposits. More recently, Paleoenvironmental specialists have employed additional techniques and concepts from equally scientific disciplines including chemistry, ecology, geomorphology, geosciences, physics, and zoology. The papers in this symposium exemplify the growth and necessity of interdisciplinary Paleoenvironmental research.

[71] Symposium: Recent Research in Southern Nevada

This symposium emphasizes recent archaeological research on the prehistoric and historic of southern Nevada, a region which encompasses the periphery of the Southwest, the Mojave Desert, and the Great Basin. The diversity of the papers reflects the complexity of the research issues in the region. They focus on prehistoric climate reconstruction, chronology, water resources, infrastructure of hunter-gatherer sites, geoarcheological analysis, historic site interpretations, and recent historic structures in an archaeological context. Together these papers represent the state of current research on important themes in western United States archaeology.

[72] Symposium: Between Horizons: Social Reconfigurations and Political Strategies in the Early Intermediate Period of Peru

Striking social structure, economic, political, and ideological organization, and settlement and burial patterns occurred in the Central Andes at the close of the Early Horizon with the demise of the integrative networks fostered by the Chavin cult, and again at the end of the Early Intermediate Period as Andean societies entered into significant interaction around the new, more politically based integration of the Wari Empire. We examine the critical events and processes of deconstruction and reconfiguration at the beginning and end of the Early Intermediate Period from the perspective of the north coast and adjacent highlands with comparative insights provided by discussants for other core regions of the Central Andes.

[73] Symposium: Islands as Laboratories: Archaeological Research in Comparative Perspective

In this symposium researchers examine the utility of the biogeographic concept of "islands as laboratories." Islands have served as convenient units for biologists and anthropologists to address questions of evolutionary change because they vary in size, ecological complexity, human and environmental history, and degree of relative isolation. Recent island research has stressed two related issues. Paleoenvironmental analyses demonstrate the fragility of island environments with natural and human-induced change, and it has also shown that islands are not "closed systems" but vary significantly in inter-island and island-mainland interaction (human and biotic). We show that island laboratories offer insights for research problems worldwide.

[80] Symposium: The HOHOKAM Classic to Post-Classic Transition: Cultural Continuity or Dislocation?

Across the American Southwest during the late A.D. 1300s, populations decline and many regions are apparently abandoned. In the Hohokam Region, accumulating evidence indicates the presence of low density populations after about A.D. 1350. Papers presented here focus on the causes of this population decrease, as well as differences and similarities between Classic and Post-Classic period cultural adaptations. To what extent are Post-Classic populations comparable to the Classic period? The problem of determining the degree of cultural continuity and/or change is addressed from site-specific perspectives and through analysis of specific classes of material culture.

[81] Symposium: It's A Small World After All: The Study of Communities and their Organization

The focus of this symposium is on communities and their organization. All human societies occupy communities. Depending on such factors as sociocultural complexity, subsistence, social organization, and intergroup relations communities range from relatively self-sufficient entities to elements or modules linked into highly integrated networks of other communities. Further, the internal organization of communities reflects an additional set of factors and constraints associated with kinship relations, activity organization, wealth and status, ideology, and cosmology and ritual. Sorting out these factors, at the local and regional scales, is a major methodological challenge. Linking the factors to community structure, organization, and change is the theoretical challenge. In this session, scholars investigate community organization from a variety of theoretical perspectives, methodological approaches, and regional contexts.

[82] Symposium: Investigating the Mysteries of Time with Archaeology (SAA Public Education Committee)

This three hour program offers a lecture series and exhibits/posters oriented to the general public in the Los Angeles vicinity. The lecture series includes a session chair, two featured speakers, a representative of the SAA, and a speaker from the Society for California Archaeology. The latter speaker briefly discusses opportunities in that state for the interested public to get involved in archaeology. The two featured speakers address in a popular fashion the wide range of scientific techniques that archaeologists use to reveal the ancient past. The lecture series concludes with a wide range of archaeology exhibits/posters representing archaeological organizations from California and nationwide and provide information on current archaeological activities as well as programs available to the public.

[83] Symposium: Prehistoric Environments and Land Use Along a 1670 km Transect in the Western United States

A five-year program of archaeological surveys, testing, data-recovery excavations, and monitoring of construction along the route of a natural gas pipeline in Idaho, Washington, Oregon, and California has been completed. Paleoenvironmental research and archaeological investigations at more than 400 prehistoric and historic sites along the 1670-km transect have yielded substantial information on latitudinal and diachronic variability in land use, settlement, resource procurement, subsistence, and exchange systems over a span of 10,000 years. The papers in this symposium examine the Project's major research goals, methods, and findings, not only as they relate to testing archaeological models and hypotheses but also in terms of designing future studies of land use along extensive transects.

[84] Symposium: Projectile Technologies: Archaeological, Experimental, and Ethnoarchaeological Perspectives

Contributions to this symposium address questions concerning the design, manufacture, and use of projectile technologies, as well as environmental and cultural influences on weapon selection and projectile design. Paradigmatic issues of exploring projectile technologies and hunting techniques are considered. The temporal coverage of the symposium extends from the Middle Paleolithic through the present; geographic scope spans the Old World and the New World. Results of archaeological, experimental, and ethnoarchaeological research involving spears, atlatl, bows, and arrows are presented.

[85] Symposium: The Development of Social Power in Nonstate Societies: Examples from the American Southwest and the South-Central Andes

The methodological and theoretical issues involved in the reconstruction and explanation of the development of social complexity in nonstate societies have generated considerable debate. Using case studies from the South Central Andes and the North American Southwest, this symposium will address the archaeological measurement and the explanation of a central aspect of complexity, i.e., social power, from a number of theoretical vantage points. These two regions were chosen because they developed significant levels of social complexity without becoming states, were frontiers of states during long periods of their histories, and were occupied by groups of similar demographic and territorial scales of integration.
[86] Symposium: RECENT RESEARCH ALONG THE LOWER COLORADO RIVER

The archaeology of the lower Colorado River region has not been studied as intensively as other regions of the American Southwest. Several recent surveys sponsored by the Bureau of Reclamation and undertaken by Statistical Research Inc. have provided opportunities for systematic study and have significantly increased our knowledge of the region. This symposium focuses on the results of these surveys, treating themes such as ceramic chronology, milling implement technology, ceremonial behavior, and federal land management concerns. In addition to the archaeological research, the significance of the cultural resources is presented from a Native American perspective.

[87] Symposium: THE COLINA PRECERAMIC: NEW VIEWS ON LOWLAND MAYA ORIGINS

Excavations at the site of Colina in northern Belize have produced new data on human occupation prior to the Maya early Middle Preclassic. Presently, the early Middle Preceramic represents the first evidence (ca. 800-1000 B.C.) of Maya culture in the Belize lowlands. However, our research, along with investigations in adjacent Cobweb Swamp, provide evidence of human activities between 1100-1300 B.C. and earlier. Pottery is absent, but there are distinctive stone tools, along with agriculture and landscape modification. This symposium examines these new data, with input from archaeology, geoarchaeology, palynology, and replicative and wear pattern studies.

[88] Symposium: EXPANDING THE PAOEIOINDIAN UNIVERSE: NEW DATA FROM EASTERN NORTH AMERICA

This symposium presents the results of recent site surveys and excavations conducted in the lower Great Lakes region. These investigations provide exciting new data on subsistence, land use, and raw material procurement strategies. These data were examined from a variety of site types including habitation, quarries and workshops, and large game kills. Cross-cultural comparisons are made between western and eastern artifact assemblages and their significance in the interpretation of Paleoindian economies.

[90] Symposium: GREAT BASIN BIOTAECNOLOGY: DESERT WETLAND ADAPTATIONS

Although there has been a long history of archaeological research in the Great Basin, few human remains have been documented. The recent recovery of three large skeletal series from the northern (Malheur Lake, Oregon), western (Stillwater Marsh, Nevada), and eastern (Great Salt Lake, Utah) Great Basin, permits for the first time a biocultural assessment of prehistoric peoples from these regions. Papers included in this symposium provide an archaeological background to each of the regions and utilize skeletal data to address the genetic history, diet, health, and activity patterns practiced by human populations in this area of the Desert West.

[92] Symposium: THE LITTORAL TRUTH: RECENT ADVANCES IN METHOD AND THEORY IN NORTH AMERICAN COASTAL SITES RESEARCH

Scholars from the Atlantic, Pacific and Gulf coasts have been assembled in this symposium to present innovative approaches to methodological and theoretical problems common to the study of prehistory on all coasts. Among the topics included: methods to identify and interpret discrete depositions within complex shell middens; determining seasonality through analysis of multiple species of fauna and shellfish, and stable oxygen isotope ratios in clams; new applications of geology and geomorphology to questions of emerging settlement systems, sea level rise, estuarine ecological modeling and human adaptations; radiocarbon dating as a creative survey tool; theoretical implications of early Holocene use of the coastal zone; and a new emphasis on coastal sites research in developing broad theory concerning human adaptation and culture change.

[93] Symposium: ARCHAEOLOGY AS A COLONIAL ENDEAVOR

In much of the world the archaeology has been and remains a colonial endeavor. This colonialism manifests itself in archaeologists studying the past of conquered peoples and in core states a loss of people struggling for control of indigenous peoples. It is clear that the practice of archaeology is strongly influenced by the archaeology of peripheral states. In these contexts the past often becomes an embodiment of struggle between colonialist and nationalistic interests. The papers in this session examine the practice of archaeology in such contexts. They ask how does the competition between different interests shape this practice and how do they influence the interpretations that archaeologists make about the past?

Invited Forum: NATIVE AMERICANS, ARCHAEOLOGISTS, AND SACRED PLACES

Throughout the United States the protection of sacred places is a prominent issue for Native American people. This concern affects archaeologists in two ways. First, many locations that we view as archaeological sites are sacred places for Native Americans and our interests in doing research may put us in conflict with Indian people. Second, within most federal and state land management agencies compliance with the American Indian Religious Freedom Act has been delegated to archaeologists. This session will discuss the concerns that archaeologists hear from Native American elders and tribal leaders what Native American concerns are about sacred places.
**PAPER AND POSTER ABSTRACTS**

**Abad, C. Kekaumani (Hawai‘i-Mauna)**

**[100] THE EVOLUTIONARY IMPLICATIONS OF HAWAIIAN MONUMENTAL ARCHITECTURE SERIATIONS**

Seriations of a class of Hawaiian monumental architecture (heiau) are shown to provide a useful data base for investigating the evolution of sociopolitical complexity in Polynesia. The results of seriations performed on heiau of Maui Island indicate that leeward and windward temporal patterns differ. Possible interpretations for this divergence are explored and evaluated. Included among these is that the leeward and windward regions may have developed as separate political entities in competition with one another.

**Abbott, D. (see Burton, J.)** [42]

**Abbott, David (Arizona State)**

**[80] SOCIAL CHANGE AT PUEBLO GRANDE DURING THE CIVANO/POLOVRÓN TRANSITION**

This paper examines the decline in social complexity that occurred from the Cibano to the Polvorón phase at Pueblo Grande, perhaps the largest Hopiokam village in the Phoenix area. During the Civano phase, there were differences between residential groups as indicated by their differential participation in social networks and access to ceramics produced by specialists. By the Polvorón phase, the social network encompassed a substantially larger geographical area than previously, but with notable social differentials. The implications for the current conception of the Polvorón phase, the Hopiokam abandonment of the Phoenix area, and the process of social decline in general are discussed.

**Adams, Brian (Illinois-Urbana/Champaign)**

**[91] LITHIC RAW MATERIAL UTILIZATION AND THE TRANSITION FROM MIDDLE TO UPPER PALEOLITHIC IN NORTHEAST HUNGARY**

The Bükk Mountains of northeast Hungary have produced several Middle and Early Upper Paleolithic assemblages. Several 'transitional' assemblages have also been found here, now known as 'Szeletian'. The close proximity of several sites dating to the Middle, 'transitional' and Early Upper Paleolithic in the geographically well-defined region of the Bükk Mountains permits a detailed investigation of human behavioral changes at this time. Results of recent analyses of lithic raw material acquisition and use during these periods are presented.

**Adams, E. Charles (Arizona State Museum) and William H. Walker (Arizona)**

**[92] THE OVERLAND POWER IN THE PUEBLO SOUTHWEST**

Research in the U.S. Pueblo Southwest has identified ritual structures associated with settlements covering the last 1500 years. These ritual or 'integrative' structures fluctuated in size, frequency, and formalism in conjunction with changes in settlement size and complexity. Such elaboration of ritual structures suggests that ritual formed the basis of social power in the Southwest and that understanding the elaboration and formalization of ritual structures and associated ritual behavior may offer insights into changing power relations in the U.S. Pueblo Southwest.

**Adams, Jenny L. (Arizona)** [Discussant 33]

**Adams, Karen R. (Crown Canyon Archaeological Center), Joe D. Stewart (Lakehead), and Christopher D. Pierce (Cronk Canyon Archaeological Center)**

**[19] DETERMINING THE TAXONOMIC IDENTITY OF TREES AND SHRUBS PRESENT IN PREHISTORIC HEARTH ASH VIA ICP-AES ANALYSIS**

Multi-element profiles obtained on modern tissue samples of potential prehistoric hearth fuels, and on archaeological samples of ash, charred wood and sediment from southwestern Colorado using ICP-AES (Inductively Coupled Plasma Atomic Emission Spectrometry) indicate the potential for identifying fuel taxa from char and ash. In this poster session, we present the results of our pilot study and evaluate sources of error and variation including intra-taxon variability, inter-taxon similarity, post-depositional alteration, and multi-taxon mixture problems.

**Adams, R. (see Murphy, L.)** [38]

**Addison, David (Hawaii‘i-Maanoa)**

**[100] PREHISTORIC MARQUESAN AGRICULTURE: INTERRELATIONSHIPS BETWEEN ENVIRONMENTAL VARIABLES, AGRICULTURAL PRODUCTION AND STORAGE TECHNIQUES, AND THE EVOLUTION OF SOCIAL COMPLEXITY**

Contact period Marquesan society differed in significant ways from other Polynesian societies. The land tenure system was highly privatized; territoriality and aggression were pervasive; storage of fermented breadfruit (Artocarpus altilis) paste was an integral part of the subsistence system; prestige competition

through feasting and megalithic dance-platform construction required the expenditure of considerable resources; and chiefly power had largely been usurped by champion warriors and inspirational priests. The Marquesan environment is temporally highly variable. Prolonged droughts are common, unpredictable events. Interrelationships between this environment, the Marquesan agricultural production strategy, and the evolution of Marquesan society are explored.

**Addyman, Peter V. (York Archaeological Trust)**


1994 marks the 50th anniversary of the Council for British Archaeology. Many of the concerns of the Council's founding fathers foreshadowed developments in British Archaeology 1944-94.

This paper reviews current concerns in British archaeology and looks at processes now in progress. It uses these as predictors of the shape and role of archaeology in Britain in A.D. 2044 when the Council will reach its centenary. Both the present state of British archaeology and its likely future provide interesting contrasts with U.S. archaeology.

**Adler, M. (see Kilsbeck, J.)** [58]

**Adler, Michael (Southern Methodist University)**

**[59] VILLAGE FORMATION AND COMMUNITY ORGANIZATION AMONG THE ANASAZI OF THE AMERICAN SOUTHWEST**

Archaeologically, village formation results from the relocation of smaller, previously dispersed residential units into a larger, spatially defined settlement. Community organization is the modern interpretation of the social relationships that integrated and differentiated multiple prehistoric residential units. While community organization does not necessitate spatial aggeration of residential units, it does require the aggregation of shared rights and responsibilities among a defined group of people. This paper assesses archaeological models of the epicoric creation and disintegration of villages in selected areas of the northern Southwest between A.D. 800-1400. Models of village formation are assessed both for their "fit" to the data and their utility for understanding prehistoric community organization.

**Adasazio, J. (see Soffer, O.)** [69]

**Adasazio, J.M. (Mercyhurst College), Olga Soffer (Illinois), D.C. Dirkmmaat (Mercyhurst College), C.L. Pedier (Mercyhurst College), and R. Bryce (Mercyhurst College)**

**[69] PITS AND MIDDENS AT MEZHIRICH: THE THIRD INSTALLMENT**

Mezhirich is the first Upper Paleolithic site in the former Soviet Union to have been subjected to intensive flotation studies. Previous papers on the application of this technique have explored basic issues of preservation and differential recovery (1991) and have attempted to discern and define the character and composition of pit and midden fills at the site (1992). This paper presents the results of the 1993/1994 flotation studies and focuses on the micro-vegetal remains from the site, in terms of subsistence, seasonality, and paleoenvironment. The differential recovery of vegetal remains from pits and middens is explained in terms of bioturbation and/or human selectivity.

**Afonso, J. (see McCutcheon, P.)** [19]

**Adler, Stanley (Northern Arizona University), Matthew J. Roed (Washington State), Jerry D. Williams (Northern Arizona University), and Lisa K. Shifrin (Northern Arizona University)**

**[97] FOLSOM AND OTHER PALEOINDIAN CULTURAL ORGANIZATION AT THE KNIFE RIVER FLINT QUARRY AREA, NORTH DAKOTA**

Abundant new information about early Paleoindian cultural organization is available from two linked study sites at Lake Ilo within the Knife River flint (KRF) quarry area, North Dakota. Gosden-like points associated with quartz and quartzite remain confirm occupations predating Folsom. Main components consist of spatially segregated deposits of Folsom lithic workshop and camp debris. Reduction sequence data for nearly a century of local, non-industrial production rate data for KRKF support models favoring mobility over exchange in Folsom settlement dynamics. Folsom lithic production rate and reduction trajectory data contrast strongly with those for the Plano complex from the same region.

**Aikins, C. M. (see Klaazawa, T.J.)** [56]

**Aimers, Jim J. (Tulane)**

**[60] A REVISED INTERPRETATION OF THE MAYA E-GROUP**

Maya E-groups are monumental architectural assemblages considered since the 1920s to have been used for solar observations of the solstices and equinoxes. However, morphological variability in the assemblages, solar observations at several sites, examination of associated artifact assemblages, and the nature of the burial remains do not support the observatory hypothesis. The evidence suggests that rather than timekeepers
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from excavated sites in Syria. However, new excavations and surveys at Titris Höyük, in southeastern Turkey, are beginning to produce a coherent corpus of regional data that both complements and contradicts with the Syrian data.

Allen, Jane (Bishop Museum)


Sociopolitical organization in Hawai'i reached the state level of complexity well before Contact in A.D. 1778. The Hawaiian state was agriculturally based, and developed largely out of structures used traditionally to coordinate resources across a heterogeneous and easily-damaged landscape. New evidence suggests that these structures were effective, controlling agricultural production, water distribution, and soil erosion, by A.D. 1400.

Allen, Jim (La Trobe University)

[56] GREATER AUSTRALIA AT THE PLEISTOCENE-HOLOCENE TRANSITION

While few changes are recognized in the archaeological sequences which span the period 13-8 ka B.P. on the Australian continent itself, the marine transgression which accompanied the Pleistocene-Holocene transition divided the single Pleistocene continent into Australia, New Guinea, and Tasmania. In New Guinea, this separation saw the appearance of horticulturalists. In Tasmania, humans colonized its peripheral uplands by 55 ka B.P. and maintained their use through the Last Glacial Maximum. About 12 ka B.P., however, all of these sites were abandoned and the southwest region remained unoccupied for all of the Holocene. This paper contrasts these extremely different responses.

Allen, Mark W. (California-Los Angeles)

[56] PA AND POWER: CHIEFDOMS AND HILLFORTS IN HAWKE'S BAY, NEW ZEALAND

This poster presents recent research on the formation of Maori chieftects. Prehistoric polities in Hawke’s Bay, New Zealand are identified by traditional history as well as archaeological analysis on hillforts (pa). It is demonstrated that by 450 B.P. potential horticultural land and other economic resources were limited. The resultant need to organize and finance the protection of scarce resources, stored food supplies, and populations were key processes in the formation of polities. It afforded leaders the opportunity to achieve increased power and authority as the ability of chiefs to mobilize capital, labor, and social networks were critical for effective pa construction.

Allen, Melinda (Bishop Museum) and Kevin Johnson (Bishop Museum)

[56] PATTERNS OF INTERACTION IN THE SOUTHERN COOK ISLANDS

Recent studies of the Southern Cook Islands indicate that despite significant inter-island distances, communication was maintained between island communities over roughly a five hundred year period (A.D. 1000 to 1500). Subsequently, interaction became less frequent and certain exotic materials are no longer widely distributed. This paper considers the extent, direction, and timing of this prehistoric interaction based on the distribution of two raw materials, pearl-shell (Pinctada margaritifera) and lime-grind basalt. Conditions fostering early interaction and subsequent changes in the frequency of interaction are also explored.

Allston, M. (see Anglerbeida, A.)

Allston, Marvin J. (Medical College of Virginia)

[22] PROBLEMS RELATED TO PREGNANCY AND PARTURITION IN EARLY INHABITANTS OF PERU AND CHILE

This is a review of our findings related to pregnancy in early female inhabitants of the Arica, Chile area. The unusual conditions of preservation enable us to visualize their problems directly and identify individuals pregnant or recently delivered at the time of death. Chemical analysis of their bones suggests that a rib femur iron ratio would be useful to identify similar conditions in females from random skeletal material with no soft tissue.

Altschul, Jeffrey (Statistical Research) and Joseph A. Ezzo (Statistical Research)

[86] THE EXPRESSION OF CEREMONIAL SPACE ALONG THE LOWER COLORADO RIVER

Although Pilot Knob has been described as a site of the kersuk, or mourning ceremony, no attempt has been made to correlate the archaeological record with the ceremony. In this study we seek to determine the ceremonial nature of Pilot Knob, Ripley, and Senator Wash through the integration of ethnographic and archaeological data. Material correlates of the kersuk, such as anthropomorphomorphic iconography, symbols of sacred places, circular features, and rock art panels, arranged in particular spatial associations, are evident at Pilot Knob and Ripley. Senator Wash was a locus of ceremonial activity, but on a smaller, more localized scale.
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Ambrose, Butler, Hanson, Hunter-Anderson, & Krueger

Ambrose, Stanley H. (Illinois), Brian M. Butler (Southern Illinois University-Carbondale), Douglas B. Hanson (Forsey Dental Institute-Boston), Rosalind L. Hunter-Anderson (Micronesian Archaeological Research Services-Guam), and Harold W. Krueger (Geobron Laboratories-London)

[54] STABLE ISOTOPIC ANALYSIS OF HUMAN DIET VARIATION IN MICRONESIA

Proportions of marine versus terrestrial resources in prehistoric human diets on Rota, Guam, and Saipan islands have been estimated with stable isotopes of carbon and nitrogen in bone collagen and carbon in apatite. On Rota, marine food consumption ranged from 25% to 55%; on Guam and Saipan, from 30-45% and 25-30%, respectively. Apatite carbon isotopes of Saipan humans suggest significant reliance on C₃ plants, but none are known to be prehistoric staples. Low nitrogen isotope ratios confirm their predominately terrestrial plant diet. Local food resources are being analyzed to identify isotopically enriched plants.

Ames, Kenneth M. (Portland State)

[47] THE EVOLUTIONARY SCALE OF HUNTER-GATHERER SEDENTISM

Sedentism is widely regarded as one of the water-shed events in human history. Current explanations for its evolution among hunter-gatherers focus on the ecological costs and benefits of sedentism for local groups and not societies. While this approach may explain instances of short-term local sedentism, it cannot completely explain permanent shifts to sedentary settlement patterns. A successful shift in residential patterns to long-term sedentism (at least several generations) may require that the change occur over a large region, among a large number of socially interacting people. This hypothesis accounts for the spatial scale of sedentism in Northwest North America.

Amick, Daniel (Desert Research Institute)

[97] FOLSOM DIET BREADTH AND LAND USE IN THE AMERICAN SOUTHWEST

Site survey and private artifact data are used to evaluate patterns of Folsom subsistence and settlement in the American Southwest. Faunal assemblages suggest many nonbison species are taken in inverse proportion to body size. Also the important role of camels requires greater attention. Site locations generally correspond with edible plant richness while isolated points are associated with faunal richness. Patterns of stone tool distribution imply large regional hunting territories. These data also limited connections between the Basin and Range and Southern Plains. Regional contrasts of residential and logistical land use are indicated by variation in the weaponry assemblages.

Amorosi, Thomas (Hunter College-CUNY), Jon Sadler (Durham), Jim Woollert (CUNY Grad Center), and Jon H. Ingimundarson (School of American Research-Santa Fe)

[79] THE SCANDINAVIAN NORTH ATLANTIC COLONIES

Beginning ca. A.D. 800, Scandinavian maritime agriculturalists colonized the offshore islands of the North Atlantic. By A.D. 1000, an initially uniform culture and economy extended from Norway to Newfoundland. By 1500, the Scandinavian North Atlantic developed into a diverse set of island societies. Vanish fell within a generation, Greenland's Norse population died out after 500 years, Iceland suffered major population loss while communities in the eastern North Atlantic experienced economic expansion. Local and regional politics, different island environments, distance from core markets, and Norse environmental impact all played roles in these different outcomes.

Amundson, R.G. (see Jabre, H.) [25]

Anderson, David (National Park Service) [Discusant 88]

Anderson, T. (see Storck, P.) [74]

Amschutz, Kurt F. (Michigan)

[58] FLOODS, FROSTS, HOT ROCKS, AND SYSTEMS OF WATER MANAGEMENT: RECONSIDERING CLASSIC PERIOD ANASAZI AGRICULTURAL PRACTICES AT THE NORTHERN RIO GRANDE

Archaeologists have traditionally suggested that the aggregated Puebloan Indian populations living in the northern Rio Grande during the Classic period necessarily supported themselves through large-scale canal irrigation. As investigators began to formally recognize the widespread distribution of cobble-bordered and gravel-nushed fields, they reasoned that these facilities constituted a crucial technological strategy for coping with periodic drought and unpredictable frost. Recent research indicates Anasazi farmers made their livelihood through the extensive modification of the natural landscape and the use of diverse planting practices. Where ecologically feasible, these efforts formed coherent systems of water management for agricultural production in cool, high desert settings.

Anslinger, C. (see Stafford, R.) [97]

Anthony, David W. (Hartwick College)

[64] PREHISTORIC MIGRATION AS SOCIAL PROCESS: MATERIAL AND SOCIAL CONSTRAINTS

Migration has for too long been demonized and mystified in archaeology. It has been demonized as a weak simplification taken seriously only by normative culture historians—an accusation that is manifestly untrue among contemporary economists and demographers; and it has been mystified as a chaotic and unpredictable activity—whereas it is in fact one of the more regular and rule-bound human behaviors. A brief review of materialist economic and demographic migration models is followed by a consideration of social and ideological constraints on migration. Some recent archaeological applications of migration models indicate directions that might be successfully pursued.

Anuskiewicz, Richard J. (Minerals Management Service), Phillip R. Grolle (Ecology and Environments), James S. Dunbar (Bureau of Archaeological Research, Florida Department of State), and Joseph F. Donoghue (Florida State)

[43] EVIDENCE OF PREHISTORIC MAN ON THE NORTH AMERICAN CONTINENTAL SHELF FROM A SINKHOLE LOCATED 32 KM OFFSHORE IN 12 M SEAWATER

This paper will discuss a cooperative research effort between the State, Federal agencies which researched and found evidence of prehistoric activity at a submerged sinkhole 32 km offshore. This drowned karst feature is located in Apalachicola Bay, Florida, in the Gulf of Mexico, about 32 km (21 mi) offshore in 12 m of water. Evidence presented will focus on analysis of Carbon dates from organic samples, and recovered lithic debitage collected at the site.

Arnold, Dean (Wheaton College)

[71] CERAMIC THEORY AND MOULDED-CERAMIC PRODUCTION: IMPLICATIONS FOR CRAFT ORGANIZATION

Ceramic production using vertical half-molding is sometimes regarded as the result of an evolved, efficient technique to create uniform product. Ethnoarchaeological observations from Ticiel, Yucatan, Mexico, also suggest that a molding technology requires little skill, and more space and capital than traditional technologies and is paste, shape, and size dependent. Molding results from increased demand for ceramic products in which increased tools and space replace traditional knowledge and skill and a decreased amount of labor. The implications of these observations for the evolution and identification of craft organization in antiquity are briefly explored.

Arsenian, G. (see Bray, T.) [19]

Arosio, B. (see Casman, V.) [22]

Arosio, Bernardo (Nevada-Las Vegas)

[22] CHINCHORRO BLACK PERIOD: SERIATION AND SOCIAL COMPLEXITY

The seriation of the Chinchorro mummies reveals several kinds of artificial mummification techniques which changed through time. This paper will concentrate on one of them, the Black Mummies. Of all the Chinchorro mummies with artificial mummification, the Black Mummies were the most complex and the oldest, dating from 5,000 B.C. to 3,000 B.C. This "black" practice appears to have been concentrated around the present city of Arica, from where it spread south about 200 km.

Arsenault, Daniel (Laval University)

[19] "THE SACRED FEMALE WEAVER" IN A MOCH CANONICAL CONTEXT: A REAPPRAISAL OF SOME IMAGES OF HUMAN SACRIFICE IN MOCHI ICONOGRAPHY

A comparison between recent archaeological findings (from Sipán and San José de Moro) and images of a Moche sacrificial ritual has allowed some scholars (Donnan and Castillo 1992) to show that individuals could have personified some major figures (A, B and C) of this sacrificial iconography. This paper aims to show that some burial remains found at Huaca de la Cruz (Strong and Evans 1992) could also be related to these images. In particular, a woman, buried with weaving tools, could have typified one of the two figures E, collectors of the sacred blood. This interpretation will help to better understand gender relationships in a Moche sacrificial context.

Ashmore, W. (see Leventhal, R.) [60]

Assaw, Shankar (Hawaii)

[100] SOCIAL COMPLEXITY AND TONGAN MARITIME EXPANSION

In this paper we outline an evolutionary model for the origins of socio-political hierarchy and maritime expansion in the Tongan Islands from the twelfth century A.D. Drawing on ethnohistorical and archaeological evidence we examine the role of both within and between group resource competition. Changes in population density, territoriality, military balance, and opportunities with migration play significant parts in an environment of variable activity.

Athens, J. Stephen (International Archaeological)

[94] LANDSCAPE ARCHAEOLOGY ON A MICRONESIAN HIGH ISLAND: PREHISTORIC SETTLEMENT AND AGRICULTURE IN KOSRAE

A landscape archaeology orientation to field and laboratory investigations has provided a wealth of new information concerning initial settlement and the development of agriculture on Kosrae, a small high
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Island of central Micronesia. Investigations emphasized the development of coastal landforms and included excavations in non-site locations, volumetric control of midden recovery and fine-screening, quantification of charcoal in sediments, wetland sediment coring, pollen and charcoal particle analyses, and wood species identification of charcoal. Although more often associated with continental areas, the Kosrae case shows that landscape ecology can be an especially productive approach for small tropical Pacific islands.

Aufderheide, Arthur C. (Minnesota) and Marvin J. Allison (Medical College of Virginia)

[22] BIOANTHROPOLOGICAL STUDIES OF SPONTANEOUSLY MUMMIFIED BODIES OF A LATE PHASE CHINCHORRO SITE (MORRO 1-6) IN NORTHERN CHILE

Reconstruction of health, subsistence strategies and cultural features of a northern Chile maritime, Archaic period population (the Chinchorros) was carried out by examination of 69 spontaneously mummified bodies from the Morro 1-6 site near Arica, Chile. Biocultural studies included chemical dietary reconstruction, radiocarbon dating of coca in mummy hair, coprolite analysis and anatomical studies.

Awe, J. (see Healy, P.J.) [44]

Ayers, William S. (Oregon) and Gales, Gordon G. (Oregon)

[6] GEOCHEMICAL CHARACTERIZATION OF LITHIC MATERIALS IN MICRONESIA

A review of lithic material distributions from archaeological contexts in Micronesia shows significant evidence of long distance movement of stone raw materials and finished products. However, the lack of systematic geochemical characterization limits detail regarding provenance, given the far reaching inter-island contacts known historically it should be possible to identify archaeological site materials in stone artifacts, even in atolls, with further study. The restricted range of stone material as a component of the technology suggests that in some areas ceramics may provide a more useful indicator of trade linkages. Specific evidence from the Pohnpei area is discussed.

Ayresworth, Great R. (Tulane)

[60] RECONSIDERING CHULTUN IN THE SOUTHERN MAYA LOWLANDS

Chultuns are small chambers excavated into limestone bedrock by the ancient Maya. This review and critique of past chultun research along with recent archaeological findings in Belize form the basis of a reconsideration of chultun function, form, and distribution in the Southern Maya Lowlands. Discussion includes a consideration of variance in chultun morphology, size and macroscopic distribution pattern, and linguistic evidence. In particular, the debate over food storage and the distinction between primary and secondary chultun functions is evaluated and questioned.

Baenziger, Marsba S. (Missouri), Tom Dillibay (Kentucky)

[25] METHODS FOR IDENTIFYING OPAL PHYTOLITHS: MONTE VERDE, A CASE STUDY OF PANICOID

Methods for determining phytoliths in the warm-season photosynthetic pathway are discussed. Both warm-season and cool-season panicoids are analyzed using macroscopic and comparative material. Preliminary findings indicate that Panicoid phytoliths differ from those of other grasses and and this difference is useful for distinguishing between Panicoid and non-Panicoid habitats. The potential for using this information to infer seasonal and paleoclimatic conditions is considered.

Ball, Terry B. (Brigham Young University), Michael D. Standing (Brigham Young University), and Wilford M. Hess (Brigham Young University)

[25] 3-D MICROSCOPY AND IMAGE ANALYSIS OF PHYTOLITHS

Study of phytolith three-dimensional structure may lead to improved phytolith systematics. In this study the potential of using confocal microscopy and computer-assisted image processing to create and manipulate 3-D images of individual phytoliths was evaluated. Optical serial sections of fluorescent stained maize phytoliths were made using a laser confocal microscope. The sections were reconstructed into 3-D images of the phytoliths using computer-assisted surface rendering algorithms. The 3-D images were manipulated to view and measure the phytoliths in all possible orientations. This procedure appears to have excellent potential for the study of phytolith 3-D topology and morphometrics.

Bamforth, Douglas B. (Colorado-Boulder)

[66] THE WINDY RIDGE QUARTZITE QUARRY: HUNTER-GATHERER MINING ON THE CONTINENTAL DIVIDE

Windy Ridge is a quarrying site south of Steamboat Springs in the Colorado Rocky Mountains which was exploited at least from the Late Paleoluidan through Late Prehistoric periods. Intensive survey located 182 "quarry pits" on the site, but excavation of one "pit" revealed a network of trenches cut at least five feet down through solid rock. Despite the enormous labor investment evident at the site, Windy Ridge quartzite is not widely distributed in Colorado. These data illuminate aboriginal adaptations in the Colorado

Bar-Yosef, Ofer

Mountains and imply that hunter-gatherer lithic procurement can be far more labor-intensive than many archaeologists have thought.

Bamforth, Douglas B. (Colorado-Boulder) [Discusant 49]

Bangs, Eric W. (Larson Anthropological/Archaeological Services) and Dennis E. Leachb (Larson Anthropological/Archaeological Services)

[18] SPATIAL AND TEMPORAL ORGANIZATION OF LITHIC MANUFACTURING AND TOOL USE AT WEST POINT

Analysis of lithic debitage and tool spatial organization provides a clue to long-term land use patterns and activity area placement at West Point. Debitage is classified by lithic material type and place in a core reduction sequence while tools are coded using a paradigmatic classification based on pattern and distribution of use-wear attributes. Analysis of lithic patterns by component demonstrates some change in tool manufacturing technique and types of lithic material exploited through time. Non-local lithic material, projectile point styles, and decorative artifacts demonstrate linkages with British Columbia, the Columbia Plateau, and southern Oregon.

Banks, William (Kansas)

[105] PREHISTORIC ACTIVITIES AND LITHICS OF FARRA CANYON: THE ARCHAEOLOGY OF A SMALL CATCHMENT BASIN

Farra canyon is a small catchment basin in Blaine County, Oklahoma. This canyon has experienced dramatic Holocene erosion, especially in the last two decades, which has uncovered lithic materials from the Paleolithic period through the Late Prehistoric. A wide range of material types are present in the assemblage. By analyzing, lithic artifacts and material types, conclusions on changes in the occupational pattern and utilization of the canyon are provided. Because both the canyon and the assemblage are so diverse, activities pertain to the catchment as a whole.

Barbour, Warren T. D. (SUNY-Buffalo)

[54] CHILDHOOD'S LEGACY: THE INHERITORS OF URBAN CIVILIZATION

Children have been a neglected area in archaeology of ancient civilizations. While appearing in burials and sacrifices, children are mostly hidden from the archaeological record by their passage into adulthood and the urban world of art, architecture and artifacts that express a broader horizon. As an example of weaving children into the fabric of early urban society I have taken a new look at ceramic figurines from ancient Teotihuacan, Mexico that were most likely toys. As such they are not superfluous but important clues to the world and role of children who became the farmers, craftspeople, soldiers, bureaucrats, priests, and rulers.

Barnett, P. (see Storch, P.) [74]

Bartow, C. Michael (Arizona State) and Geoffrey A. Clark (Arizona State)

[27] SYMPOSIUM INTRODUCTION: EVOLUTIONARY THEORY IN ANGLO/AMERICAN ARCHAEOLOGY

The widely perceived lack of general theory has long been seen as a shortcoming of archaeology, and more generally of anthropology. We suggest, however, that Anglo-American archaeology has operated for several decades under a general theory of culture change that is broadly analogous to biases and operation in Neo-Darwinian evolutionary theory. This paradigm is seldom made explicit, partly because of the history of the discipline and partly because of the lack of in-depth understanding of biological evolution by many archaeologists. As exemplified here, evolutionary theory can provide a unifying conceptual framework, diverse archaeological programs and further the explanation of long-term social process questions.

Bartram, Jr., Lawrence E. (South Carolina)

[84] A COMPARISON OF KUA (BOTSWANA) AND HADZA (TANZANIA) BOW AND ARROW HUNTING

Bow and arrow hunting among two groups of contemporary African foragers, the Kua of the east-central Kalahari in Botswana and the Hadza of northern Tanzania, is compared. Bow and arrow hunting is an enclaved area of anthropological research. We examine both groups. This paper describes the technological, organisational and environmental factors that influence the design, manufacture, and use of bow hunting equipment by each group. Differences and contrasts between the two in terms of these factors are explored. Habitat type and complexity are identified as key elements conditioning equipment design, use and hunting style.

Bar-Yosef, O. (see Belfer-Cohen, A.) [47]

Bar-Yosef, O. (see Stiner, M.) [19]

Bar-Yosef, Ofer (Harvard University)

[45] THE IMPACT OF LATE PLEISTOCENE-EARLY HOLOCENE CLIMATIC CHANGES IN SOUTHWESTERN ASIA

The climatic fluctuations during the terminal Pleistocene and Early Holocene in the Near East are recorded in deep sea cores in the Eastern Mediterranean, pollen cores in lakes and geomorphic modifications. The
Baryshnikov, G.

Trends toward increasing temperatures and precipitation affected first the lowlands and the southern parts of the region. Their impact on human groups was filtered through the dynamic or conservative social mechanisms that characterize hunter-gatherers and early farmers. The shifts to sedentism, incipient cultivation and animal husbandry, though not appearing simultaneously, are interpreted as the results of processes that were initiated as socio-economic reactions to environmental changes.

Baryshnikov, G. (see Hoffecker, J.) [94]

Barnes, M. (see Fleming, D.) [15]

Barnes, M. (see Sheets, P.) [48]

Bayham, Frank (California State-Chico) and Jack Broughton (Washington)

[55] BODENT AND LAGOMORPH REMAINS AS INDICATORS OF RESOURCE STRESS: AN EXAMPLE FROM THE PITHOUSE PERIOD IN WEST TEXAS

The importance of rodent and lagomorph utilization to prehistoric subsistence in the desert Southwest has been well-documented. Yet, energetic return rates for these taxa can be quite low decreasing their rank as preferred food items. Additionally, intense and continuing use of these prey items can alter the age profile of the exploited population. We use these relationships and some exploitative correlates to identify an extreme case of resource stress occurring during the late Pithouse Period in the Hueco Bolson region of west Texas.

Bayman, J. (see Fish, P.) [26]

Bayman, James (Arizona State)

[23] THE ROLE OF SITE SURFACE DATA IN INTERPRETING A HOHIKAM PLATFORM MOUND COMMUNITY CENTER

This paper evaluates the utility of surface archaeological data and the substantive contributions that such data have made to a long-term research program in the northern Tucson Basin in Arizona. Patterning in surface data provide a framework for defining regional land-use, multi-site community organization, and intra-site spatial structure in the prehistoric Sonoran Desert. Surface archaeological data are also useful for interpreting political economy and organization of craft production at these multiple scales. The inferential potential of surface artifact distributions at a Classic period platform mound community center is explored and illustrated.

Beauchamp, Renee (Tennessee)

[78] AGING WHITE-TAILED DEER IN NORTH AMERICA: INVESTIGATIONS OF THE DENTAL CROWN HEIGHT MEASUREMENT TECHNIQUE

This study of aging techniques for high-crowned ungulates determined that dental crown height measurements were the most accurate, non-destructive technique. Dental crown height measures were derived from a population of known-age white-tailed deer. The measurements were applied to an archaeological white-tailed deer population from the Hayes site in Middle Tennessee. Mortality profiles for the archaeological specimens were established and used to determine prehistoric hunting practices at Hayes.

Beauchy, M. (see Murphy, L.) [38]

Beaudry-Corbett, Marilyn P. (California-Los Angeles) and John S. Henderson (Cornell)

[71] REGIONAL APPROACH TO POTTERY CLASSIFICATION AND ANALYSES: A HONDURAN CASE

Recent comparative analysis and other collaborative work have resulted in the identification of regional patterns of variability in ceramic shape and decoration. Ceramic systems are useful for summarizing these patterns and their spatial and temporal distributions. This paper reviews some of the specific classificatory advances made through this cooperative research. Identities potentially productive directions for future research, and considers the methodological and theoretical implications of approaching ceramics at a regional level.

Beck, Charlotte (Hamiton College) and George Jones (Hamilton College)

[96] DIFFUSION AND TYPOLOGICAL VARIATION

Almost nowhere have assessments of projectile point typology been taken further than in the Great Basin. But archaeologists have continually experienced inconsistencies in chronological inferences derived from the Great Basin projectile point typology. These inconsistencies have stimulated numerous debates concerning chronological positions of particular types in different parts of the Basin. Some of this confusion may be attributed to differential diffusion of attributes across space—that is, lag time or recombination of attributes in different areas. Here we examine the histories of different attributes and combination techniques to assess the effects of their differential diffusion on typological variation in the archaeological record.

Bennett-Rogers, Ann, John Fagan, and Anthony Farquè

Beck, Colleen M. (Desert Research Institute)

[75] THE NT'S CAVE SITE

In 1992, an undisturbed cave site was discovered on the Nevada Test Site in southern Nevada. The artifacts indicate that this cave was last occupied by Native Americans no more than 100 years ago. This paper discusses possible interpretations of the distribution of the cultural materials and presents the procedures developed for the management of the site.

Beekman, Christopher (Vanderbilt University)


During the Mesoamerican Classic Period, the Sierra La Primavera in west-central Jalisco is hypothesized to have been a cultural and/or political boundary between the Teuchtitan Tradition of west Mexico and polity(ies) closely allied with central Mexican groups, especially Teotihuacan. Ongoing research, drawing on settlement and artifact distributions, now allows us to make preliminary conclusions about the reality of the boundary, its nature, and the structural complexity of the politics on either side of it.

Begay, Richard (Navajo Nation) [Forum Participant 95]

Belfer-Cohen, Anna (Hebrew University) and Ofer Bar-Yosef (Harvard University)

[47] TOWARDS VILLAGE LIFE IN THE NATIFA

The combined effects of climatic shifts and changing socio-economic strategies resulted in the emergence of small sedentary hamlets during the Natufian period in the southern and central Levant. However, the full-fledged villages, with public sacred facilities are archaeologically evidenced only since the Early Neolithic and have developed rapidly during the 10th and the 9th millennia B.P. (uncalibrated). With the diffusion of agricultural techniques and herding into Anatolia and the Zagros mountains, large villages with elaborate exchange networks, mixed economy and hierarchical social structure emerged, while groups of hunter-gatherers continued to survive in their immediate vicinity for another two millennia.

Bell, Ellen (Pennsylvania) and Patricia Urban (Kenyon College)

[19] CONSTRUCTING AN IMAGE: FIGURINE, WHISTLE, AND OCARINA MANUFACTURE IN THE NACO VALLEY, NW HONDURAS, AND ITS POLITICAL IMPLICATIONS

Ceramic figurines, whistles, and ocarinas (FWO) are commonly found throughout Late Classic period (A.D. 600-950) southern Mesoamerica. Relatively little is known about FWO manufacturing processes, however. This gap frustrates reconstructions of ancient political economies as skill and material requirements cannot be specified. Research in the Naco valley, NW Honduras, has yielded a wealth of material of Late Classic age relevant to this topic (2,573 FWO fragments and 74 ceramic molds). This poster session outlines the production steps by which Naco figurines, whistles, and ocarinas were fashioned and their role(s) within the Late Classic political economy.

Benallie, Larry (Navajo Nation Archaeology Department) and Anthony L. Klesert (Navajo Nation Archaeology Department)

[93] NATIVE AMERICANS AS PROFESSIONAL COLLEAGUES

A sure sign of the continued colonialistic nature of American archaeology is the percentage of Native Americans involved as professionals. There are many reasons for the dearth of native colleagues, but these must be surmounted if the profession is to transcend its past and flourish. The profession must recruit from the ranks of those who study, and must be willing to broaden its definitions of normal science in the process. The experiences of a number of tribal and university programs are offered as models for the profession, as it begins to accept its responsibility for this effort.

Benfer, R. (see Pearsall, D.) [25]

Bennett, S. (see Hanson, C.) [76]

Bennett-Rogers, Ann (US Forest Service, Willamette National Forest), John Fagan

(archaeological Investigations Northwest, and Anthony Farquè (US Forest Service, Willamette National Forest)

[55] FROM QUARRY TO CACHE—OBSIDIAN PROCUREMENT IN THE CENTRAL CASCADES OF OREGON

The discovery of a biface cache consisting of numerous whole and fragmentary pieces precipitated a study of obsidian procurement and transport. The cache recovered from the western slopes of the Cascade Mountains in the Santiam River drainage was sourced to Obsidian Cliffs. Individual comparable biface artifacts have been recovered from archaeological sites in the area. This paper will describe the cache site and a study of the quarry site in relationship to a known trail system.
[36] ADDITIONS TO THE TUXCACUECO CERAMIC COMPLEX IN SOUTHERN JALISCO

Isabel Kelly's work in southern Jalisco characterized a highly polished and incised red ware ceramic complex that she attributed to the latter half of the first millennium B.C. Test excavations in a small site in the El Grullo valley of southwestern Jalisco uncovered additions to this ceramic complex including resist painted and iridescent forms. An apparently earlier though associated ceramic complex was also encountered. This ceramic complex is characterized by polychrome—purple, orange and white on red—decoration on jars, ollas and plates where incision is absent. Figurines associated with this polychrome complex exhibit forms similar to those of the Tuxcacueco complex but also include hollow forms that are finished in red and white or fugitive red paint.

[Berg, Karen Laitner (see Benz, B.F.)] [36]

Berg, Caryn (SWCA, Inc.)

[72] MICROWEAR ANALYSIS AND THE INFORMAL TOOL KIT AT ELDEN PUEBLO

The purpose of this study was to examine the informal tool kit from Elden Pueblo using high power microwear analysis. The primary objective was to determine tool use in relation to subsistence activities at the pueblo. Key findings indicate that the informal tools at Elden Pueblo were primarily used in a way that represents a hunting and gathering lifestyle in addition to agriculture. It has also been determined that high power microwear analysis is successful for determining use of informal tools and should be more often to assemblages in the Southwest.

[Bergman, Christopher (Northern Kentucky University)]

[84] SINWE REINFORCED AND COMPOSITE BOWS: TECHNOLOGY, FUNCTION, AND SOCIAL IMPLICATIONS

Sinew reinforcement or "hacking" of a bow involves applying high tensile strength sinew to the weapon's outside curve. Thus applied, sinew allows for a shorter bow length without an increased risk of breakage. A shortened bow provides greater maneuverability, particularly on horseback. However, bows of this type were not always manufactured by people using equid transport. From a historical perspective, composite bows represent a further development trend in which materials of different properties are combined, producing a mechanically efficient weapon. Generally speaking, the complicated nature of composite bow production usually implies the presence of specialized craftspeople within a society.

[Bernstein, David J. (SUNY-Stony Brook), Robert M. Cerrato (SUNY-Stony Brook), and Heather V.E. Wallace (SUNY-Stony Brook)]

[92] LATE WOODLAND USE OF COASTAL RESOURCES AT MOUNT SINAI HARBOR, LONG ISLAND, NEW YORK

Seasonality, taphonomic, and faunal data are used to examine the use of coastal resources at Mount Sinai Harbor on the north shore of Long Island. Seasonal growth studies of multiple species of shellfish are employed to reconstruct the occupational history at one intensively excavated site (van der Kolk). Results suggest a very short occupation and provide interesting methodological data useful in the analysis of similar sites. Faunal and taphonomic information afforded insights into both the structure of the van der Kolk site and the use of vertebrate species by the late prehistoric inhabitants on Long Island's north shore.

Bettiniger, R. (see Eerkens, J.) [27]

Bettiniger, Robert L. (California-Davis) [Discussant 90]

Bettiniger, Robert L. (California-Davis)

[47] THE EMERGENCE OF SEDETISM IN THE INYO-MONO REGION, EASTERN CALIFORNIA

At the time of Euroamerican contact, the Inyo-Mono region of eastern California was more densely and permanently settled than any other part of the Great Basin. Archaeological data suggest this reflects long-term competition for scarce resources in a productive but crowded environment. Competition is expressed initially in the formation of a well-defined seasonal round between 3500 and 1400 B.P., prior to which annual peregrinations were erratic. Subsequent responses to competition include sharply diminished annual movement culminating in the appearance of permanent villages and more intensive use of resources naturally available in bulk (e.g., pine nuts and ricegrass) and marginal resource patches (e.g., alpine environments).

Bey, George (Millsaps College), Craig Hanson (Tuana), and Jennifer Sandlin (New Mexico)

[60] EXCAVATIONS IN THE SACRIFICIOS GROUP, LATE CLASSIC LIFE IN EK BALAM

The Sacrificios Group consists of a number of structures loosely centered around a central plaza just outside the walled ceremonial center of Ek Balam. The results of excavations carried out in this area during the 1989 and 1992 field sessions are presented. These excavations, which tested six structures as well as the plaza and off-plaza areas, produced data used in a preliminary reconstruction of Late Classic Maya life within this group. Questions approached through interpretation of the data include "what was the nature and duration of the occupation?", "how were the various structures and intervening spaces used?", and "what was the Sacrificios Group?"

Bichro, Nuno (Drew University)

[16] LITHIC RAW MATERIAL ECONOMY AND HUNTER-GATHERER MOBILITY IN THE LATE GLACIAL AND EARLY POSTGLACIAL PORTUGUESE PREHISTORY

The Portuguese Fossil Upper Paleolithic and Epipaleolithic were marked by knowledge of the landscape that guided seasonal movements of the population. These followed inland-coastal routes, possibly between the Atlantic coast and inland river valleys. Although the data are still limited, they suggest that these routes targeted certain points on the landscape such as regional sources of lithic raw materials. Chert, quartz, and quartzite, the desired resources, were characterized by different reduction strategies. Apparently, the diversity in reduction sequences in and raw materials promoted the mobility of these hunter-gatherer groups.

Bilman, Brian (California-Santa Barbara)

[77] POLITICAL INTEGRATION AND DISINTEGRATION DURING THE EARLY INTERMEDIATE PERIOD IN THE MOCHE VALLEY, PERU

The Early Intermediate Period in the Moche Valley begins with the formation of the Moche state and ends with the decline of this polity. Although perhaps the first multi-valley state to have evolved in the Andes, the origin and demise of this polity is poorly understood. This paper presents the results of a settlement pattern study of the Moche Valley. Analysis indicates that intrusions of highland groups into the middle valley played a crucial role in the formation of the Moche state. Although the decline of this polity remains an enigma, analysis indicates that the collapse occurred during a period of intense warfare.

Blouing, Jeanne Day (California-Riverside)

[61] BIPOLAR FlAKED-STONE REDUCTION IN PREHISTORIC AND PROTOHISTORIC SOUTHERN CALIFORNIA

There are many statements in the anthropological literature regarding the use of bipolar reduction by hunters and gathers. After examining more than fifty prehistoric and protohistoric flaked-stone assemblages from southern California, several conclusions regarding the identification of bipolardebitage and the role of bipolar reduction in hunter and gatherer manufacturing behavior became apparent. Replicate experiments and replicated debitage were instrumental to the analysis. Several of the long-standing conclusions in the literature regarding bipolar reduction are questioned.

Blumee, Robert (Soil Systems Inc.)

[72] PUEBLO II OCCUPATION, SITE STRUCTURE, AND ARCHITECTURAL VARIABILITY ON THE UTE MOUNTAIN UTE RESERVATION, SOUTHWESTERN COLORADO

The Ute Mountain Ute Tribe is developing 7634 acres in southwestern Colorado. Twenty-four Pueblo II sites are located in the project area, nine of which will be impacted by development. Data recovery has been completed on six sites and testing at three sites. Tree ring dates from four sites indicate an A.D. 1030-1050 occupation and the remaining sites date from A.D. 1050-1150. Artifacts assemblages are similar in terms of the ceramic and lithic artifact structure and architectural styles. This paper discusses this variability and makes regional comparisons.

Blezosco, Martin (California-Los Angeles)

[28] SOCIOECONOMIC DIFFERENTIATION IN MAIZE-GRINDING AT TEOTHIACAN

Measuring the significance of utilitarian crop products to the growth of complex societies is difficult because few kinds of craft goods provide adequate information about contexts of production, exchange, and use. In Mesoamerica, the study of long-ignored maize-grinding tools can help fill this void. Data describing tool form and stone material properties can indicate differences in methods of food preparation, in the accessibility of various subsistence resources, and in the means by which households obtained grinding equipment. At Teotihuacan, such data help characterize the nature of low-to-middle status socioeconomic differentiation.

Black, Andre (SUNY-Binghamton)

[84] SOCIAL ASPECTS OF FAUNAL EXPLOITATION: AN EXAMPLE FROM CENTRAL GHANA

Zooarchaeologists have explored many factors that influence people's use of animals, such as herd management, hunting technology, and resource abundance. Yet few studies have taken into account the enormous influence of social structure on economic decision making. Using ethnographic and archaeological data from the Bandu Traditional Area of Ghana, this paper explores how social structure and cosmology influence mean consumption in one rural community, and how much non-functional decision making creates a discrepancy between the perceived living assemblage, and the archaeological one.
Boucher, Sylviane

as interpreted as a political strategy to fabricate mythic histories through co-option of older monuments, and so legitimate new social orders with appeals to sacred authority.

Body, P. (see Julien, M.) [16]

Bolen, Kathleen M. (California-Berkeley)

[34] CHANGING PERSPECTIVES: SOCIETAL CONSTRUCTION THROUGH CHILDREN

This paper explores children as producers of prehistory, and the role of children as agents in past societies. Drawing from the contributions of engaging past societies, our perspectives broaden further if we consider children. Children are the conduit for social reproduction of groups, and they contribute to the continuity or change interpreted in material culture. Relying on Linehandkerkeramik settlement sites which represent colonization and implantation of the earliest villages in western Europe, this paper seeks to make the past visible from the perspective of children and thus better understand the construction of these past societies.

Bonnage-Freund, Mary T. (Pennsylvania State)

[30] THE ETOWAH SITE (9BR1): A PALEOETHNOBOTANICAL ANALYSIS OF WILBANKS PHASE CORN-COB FEATURES

This paper analyses a site in the Etowah region and demonstrates that corn cob features are present, and that the area has been occupied by the Paleo-Indians. This analysis suggests that the site was used for the production of corn and other crops. This analysis suggests that the site was used for the production of corn and other crops.

Boone, James L. (New Mexico) [Discussant 100]

[56] THE PLEISTOCENE-HOLOCENE TRANSITION IN SOUTHERN SOUTH AMERICA

By the end of the Pleistocene human populations were widely distributed in the Southern Cone, although demography was probably very low. The Transition period is characterized by environmental instability, that included expansion of glaciers, explosive volcanic activity, and the opening of water barriers (i.e., Magellan Strait, Beagle Channel). Under those conditions populations were probably isolated enough to develop different histories, whose trajectories are traced for the period 13,8 ka B.P. using archaeological data from three regions.

Bootsack, Todd W. (Pueblo Grande Museum) and Christian E. Downum (Northern Arizona)

[25] PUEBLO GRANDE: A CASE STUDY IN HOHOKAM SOCIO-POLITICAL ORGANIZATION

This paper examines the origins, growth, function, and abandonment of the Pueblo Grande platform mound and its surrounding community. Drawing on a four-year archival analysis of past excavation records, we provide architectural and artifactual details that document important changes in the mound's function from Soho to Cibano phases, and again from Cibano to Polvorton phases. Inferred activities on the mound top and in its surrounding compound are used to assess competing models of Hohokam socio-political organization, particularly as these relate to Classic period phase transitions and collapse.

Boucher, Sylviane (Instituto Nacional de Antropología e Historia, Centro Regional de Yucatán)

[29] THE IMPLICATIONS OF ELITE CERAMICS: CORRESPONDENCES BETWEEN CHICHÉN ITZA AND TULA

The wealth of imported luxury ceramics has been discovered at Chichén Itza, and the use of these ceramics, and the importance of these luxury ceramics, has been studied. This paper examines the role of imported luxury ceramics and homologous, locally produced ceramics in establishing symbolic correspondences among Chichén Itza and Tula.
politically independent entities across Mesoamerica. Examination of new ceramic data from recent CRY-
INAH field seasons at Chicén, compared with recently published information on Tula ceramics, presents
fresh empirical evidence on post-regional interaction.

Boyle, Frederick (California-Santa Barbara)
[48] NEW CHRONOLOGICAL EVIDENCE FOR THE ARCHAEOLOGY OF THE PACIFIC COAST OF
GUATEMALA
The juxtaposition of radiocarbon and archaeomagnetic dates with a large obsidian hydration sample from
stratigraphic contexts has clarified key chronological periods within the Los Chatos-Manantial nuclear zone
of the Guatemala lower coast. These new dates have produced the first clear evidence for a distinctive
Middle Classic ceramic phase. Ramifications of these new data are discussed specifically in connection
with the regional state evolutionary developments, problems associated with the Tzotzilacano chronology, and
the relation of the Los Chatos-Manantial polity with the Cotzumalguapa complex to the north.

Bowen, Jonathan (Ohio Historical Society)
[35] NOTCHED BUTTERFLY BANNERSTONE DISTRIBUTIONS
Notched Butterfly Bannerstones of banded slate were used as atlatl components about 2000 B.C. They
are distributed throughout a 150,000 square km area centered in northwestern Ohio. Ninety per cent
of the preforms have been recovered from four production centers, which are located 70 km apart in the
midst of this area. None of these production centers is located near a concentration of the raw material.
Although attached to atlatls, Notched Butterfly Bannerstones served primarily as symbols.

Boyd, Caroline E. (Texas A&M University) and J. Phil Dering
[103] MEDICINAL AND HALLUCINOGENIC PLANTS IDENTIFIED IN THE SEDIMENTS AND
PICTOGRAPHICS OF THE LOWER PECOS, TEXAS ARCHAIC
Medicinal and hallucinogenic plants excavated from rockshelters in the Lower Pecos Region of southwest
Texas are associated in the Pecos River Style rock art. These plants were recorded from many gathered
contexts, indicating their utilization by the Lower Pecos people. A review of the ethnographic
and ethnomedical literature provides an explanation for the presence of these plants in the
archaeological record. By providing contextual clues to the use hallucinogenic and medical plants, the
piroglyphs are demonstrated to be a vital part of the archaeological record, a window into the socio-
cultural system of Archaic hunters and gatherers.

Bruce, C. Loring (Michigan) [Discussion 27]
Bradford, Katherine (California State University, Northridge)
[19] ECOLOGICAL SUCCESSION IN KELP FOREST COMMUNITIES AND IMPLICATIONS FOR
INTERPRETING THE ARCHAELOGICAL RECORD
The impact of Holocene sea temperature fluctuation on prehistoric subsistence is the subject of much
debate. These shifts affected kelp forest communities on which many prehistoric coastal populations were
dependent for a portion of their food resources. Recent biological studies have documented the effects of
climatic shifts due to El Nitro-Southern Oscillation (ENSO) events. A computer simulation model, based on
recent data, aids in illustrating changes that may have occurred as a result of ENSO and other conditions.

Bradley, Bruce (Crow Canyon Archaeological Center)
[89] PITCHERS TO MUGS: CHACOAN REVIVAL AND THE DEMISE OF THE MESA VERDE
TRADITION
By the end of the thirteenth century, the Mesa Verde region of the American Southwest was permanently
depopulated by ancestral Puebloan peoples. The mid 1200s was a time of dramatic change in settlement
pattern, social organization, and control of natural resources. Evidence is presented that these changes are
associated with a revitalization movement based on aspects of the defunct Chacoan system. The relationship
of this revitalization movement to concurrent cultural changes to the south and its role in the ultimate
abandonment of the region are also discussed.

Brady, James (Dumbarton Oaks)
[44] SETTLEMENT, ARCHITECTURE, AND IDEOLOGY IN THE PETEXBATUN REGION,
GUATEMALA
The location and configuration of settlements are matters of first importance in any group's cultural
geography. There is abundant evidence that caves were considered to be so sacred by the Maya that they
were frequently incorporated into the structure of sites. The Petexbatun Regional Cave Survey has discovered
a pronounced pattern of constructing architecture in relation to caves which suggests that caves may have
influenced the choice of site location and structured the layout of architecture. Enough examples exist to
raise the possibility that caves may have been considered an essential feature for validating site location.

Broughton, J. (Smithsonian Institution)
[19] COMPLEX ISSUES IN THE DETERMINATION OF THE CULTURAL AFFILIATION OF HUMAN
REMAINS
A recent repatriation involving the Warm Springs Tribes and the Smithsonian Institution illustrates the
difficulty of determining cultural affiliations of human remains in museums. The remains were recovered
from burial islands near the Dalles, Oregon, a convergence point for coastal, plateau, and basin cultures.
Though logistical groups traditionally engaged in cranial reshaping, the trait did not prove culturally diagnostic
given that it also marked intra-group status. Within a context of multi-ethnic use areas, stratified societies,
and mixed, multi-burials, precise cultural identifications proved impossible, even for historic period remains.
This case highlights the necessity of engaging all potentially affiliated tribes in discussions about the
disposition of specific remains.

Broughton, Sheila C. (Massachusetts-Amherst), Blyde E. Roessler (Massachusetts-Amherst),
and H. Martin Wobst (Massachusetts-Amherst)
[34] PREHISTORY'S CHILDREN AND CHILDREN'S PREHISTORIES
Why is it that children's lives in the past have been underrepresented by archaeology and anthropologists?
What messages do contemporary children receive about prehistory and prehistory's children? This paper
introduces an overview of how children, both as consumers and producers of material culture in the past
have been and might be researched by archaeologists. It questions some of the perceived and assumed
barriers to an organized inclusion of children in legitimate research agendas. We also examine some of the
ways in which children learn about prehistory and the extent to which children are present in these
reconstructions of the past.

Brenton, B. (see Levine, M.) [87]
Brettenmiller, Cory (Soil Systems, Inc.), Michael S. Foster (Soil Systems, Inc.), and Christine K.
Robinson (Soil Systems, Inc.)
[7] HOHOKAM REGIONAL EXCHANGE DURING THE CLASSIC PERIOD AS VIEWED FROM
PUERCO GRANDE
Sixteen months of excavation at the large Hoheokam site of Pueblo Grande in the Phoenix Basin in central
Arizona has resulted in recovery of information that broadens current knowledge of Hoheokam regional
exchange during the Classic period. New information on obsidian, intrusive ceramics, lithic raw material,
and shells indicates that some procurement networks were more extensive and well developed than others
appear to have become more restricted. The data are summarized and existing models and interpreta-
tions of Classic period Hoheokam regional economies are evaluated as is the distribution of such items
among households in the project area.

Breton, R. (see Shafer, H.) [87]
Breitwisch, Robbie L. (Texas A&M University) and Harry J. Shafer (Texas A&M University)
[87] GENERATIONAL CYCLES AND RATES OF CHANGE IN MIMBRES BLACK-ON-WHITE POTTERY
Stylized changes within Mimbres Black-on-white Styles I, II, and III are evident in seriations of ceramic
vessels from the NAN RUN, middle Mimbres Valley, Grant County, New Mexico. The rates of change are
dated using both stratigraphic and chronometric measures. An examination of these rates of change reveals
a regularity that is thought to be related to generational cycles. These generational cycles are equated to
Bednar's "analytical individual" (1977:44).

Brisbin, J. (see Blumens, E.) [19]
Brose, David (Royal Ontario Museum)
[88] EXCAVATIONS AT 35ME275, A DATED IN SITU CLOVIS SITE IN NORTHEAST OHIO
The initial human occupation of post-glacial northern Ohio occurred on soils washed from kame terraces
between 13,100 and 11,700 B.P. (6 dates). Domestic activities between 11,060 and 10,800 B.P. (3 dates)
are represented by four discrete 150 m² square zones of post-holes, hearths and pits of several forms,
containing Clovis/Gaync points and a large assemblage of other worn and curated Paleoindian tools and
debris. Of which 60% are of exotic chert and flint. The site is sealed by 9,230±80 B.P. (1 date) colluvial
sediments from an Early Archaic occupation. Ancillary paleo-environmental data and cautious demographic
speculations are offered.

Broughton, J. (see Bayham, F.) [65]
Broughton, Jack

[61] AN EVOLUTIONARY ANALYSIS OF LATE HOLOCENE MAMMAL EXPLOITATION AROUND SAN FRANCISCO BAY, CALIFORNIA

Late Holocene archaeological mammal faunas from the San Francisco Bay shoreline document dramatic linear declines through time in the abundance of artiodactyls relative to sea otters. Causes for this change are evaluated through analyses of paleoenvironmental and other data from geological and archaeological sources. The changes in mammal exploitation do not correlate with changes in the estuarine and terrestrial environments. Extant data suggest that the patterning in mammal exploitation may be related to over-harvesting of artiodactyl prey. Preliminary results from analyses of the demographic structure of the artiodactyl prey provide a test for this hypothesis.

Brown, David D. (Texas El Paso)

[15] TOWN PLANNING IN INKA PROVINCIAL ADMINISTRATION AT PUMPU, CENTRAL PERUVIAN HIGHLANDS

Investigations at the site of Pumpu in the Department of Pasco, Peru, have yielded new information concerning the organization and utilization of space in Inka provincial capitals. Similar in many ways to the nearby administrative center at Huanuco Pampa, Pumpu is nonetheless distinctive in certain aspects. Excavations indicate that a large portion of the site may be devoted to workshops. Additionally, stratigraphic separation of Inka components at the site suggest a series of changes through time, perhaps related to historical changes in the Inka Empire itself.

Brown, J. (see Murphy, L.) [58]

Brown, J. (see Rogers, A.) [55]

Brown, James A. (Northwestern University)

[96] TYPOLOGY FOR THE 90s—WHAT HAVE WE LEARNED?

Although typology will always have a central role in the practice of archaeology, a legitimate question to pose is whether the practice of typology has changed in response to a broadening of the discipline's goals and purposes that we have seen in the last decade. Many of the expectations that we have of typology have not changed at all that much from the time of Montelius. But certain strengths and weaknesses of various approaches have emerged that offer useful guides to future practice. Such advances have come mainly through a clarification of ends as archaeology has emerged as a discipline with an agenda of its own.

Bruce, Margaret (Texas A&M University) and Michelle Woodward (Texas A&M University)

[10] PRELIMINARY RESULTS OF SURFACE SURVEYS, DEPARTMENT OF SOLOLA, SOUTHERN MAYA HIGHLANDS, GUATEMALA

This report outlines preliminary findings of systematic extensive and intensive surface surveys, surface collections and data analyses of cultural features of terrestrial surfaces of the high plateau and lake shore portion of the northern end of the basin of Lake Atitlan in the southern Maya Highlands. A rather sparse record of previous archaeological work at this location has caused a basic outline of cultural development to be unknown. The research strategy is explained which was developed to determine the nature and sequence of Preclassic to colonial events in the area long characterized as a "frontier" between not only Maya and pre-Maya peoples, but also Quiche, Cakchiquel, and Tunuztul speaking Maya.

Brugger, L. (see Zimmerman, L.) [93]

Brunsfiel, Elizabeth M. (Albion College)

[8] INTRODUCTION

Three seasons of survey and excavation at Xalocolan, Mexico, have defined the resources available to the occupants of the site and the changing patterns of resource utilization, A.D. 800-1500. This paper reviews the problems that guided research at Xalocolan, describes fieldwork at the site, and discusses the C-14 dates obtained for a number of phases of prehispanic occupation.

Brunswig, Jr., Robert H. (Northern Colorado)

[66] TERMINAL PALEOINDIAN AND EARLY ARCHAIC CULTURE DYNAMICS AND PROCESS OF NORTHEASTERN COLORADO'S HIGH PLAINS AND ROCKY MOUNTAINS

One model of Early Archaic culture dynamics in the Western High Plains suggests that hot, arid Alithermal conditions effectively isolated regional populations in mountain and foothill "refugia." Later "re-occupation" of plains environments only occurred with amelioration of harsh Alithermal conditions after 4500 B.P. University of Northern Colorado research data suggest that a "hybridized" Terminal Paleoindian/Early Archaic cultural complex population may have exploited plains areas more than a hundred kilometers east of northeastern Colorado's foothills through much, if not all, of the Alithermal. Other evidence suggests that increasingly intensive plains exploitation began more than a thousand years prior to the end of Alithermal conditions, between 6000 and 5500 B.P.

Burney, David A.

[88] THE MARTINS CREEK MASTODON: A PALEOINDIAN BUTCHERY SITE IN HOLMES COUNTY, OHIO

A mastodon was discovered in 1938 by a farmer cutting a shallow drainage ditch. Eight teeth and a thigh bone were recovered. Further excavation was not attempted. In the summer of 1993 undisturbed portions of the site were excavated by students from the University of Akron. Bones of the disarticulated skeleton were scattered over an area of 50 square meters. Among the bones were six medium-size flint flakes and two crude flint tools.

Bryson, R. (see Bryson, R.C.) [85]

Bryson, Robert U. (INFOTECH Research) and Reid A. Bryson (Wisconsin-Madison)

[85] A COMPARISON OF CULTURAL EVIDENCE AND SIMULATED HOLOCENE CLIMATES OF THE PACIFIC NORTHWEST

Hunter-gatherer land-use strategies represent the articulation of a cultural system with an ecosystem. The resource base upon which a particular strategy depends is strongly influenced by changes in local climate through time and across geographic space. Local paleoclimates were simulated using a hierarchical macrophysical model (extended to account for local topography) relying on calculated glacial area, insolation, and modulation of insolation. The archaeological record for several well-documented sites is compared with simulations of the local climate.

Buck, Paul E. (Desert Research Institute) and Anne D. Barton (Desert Research Institute)

[75] A PRELIMINARY REPORT ON THE RESULTS OF THE 1965-66 FIELD SEASON AT PINTWATER CAVE IN SOUTHERN NEVADA

Pintwater Cave, a large cave 50 miles northwest of Las Vegas containing dry stratified deposits and abundant organic artifacts, was tested in 1965-66 by archaeologists from the Nevada State Museum and UCLA. A collection of approximately 2000 artifacts was made which has just been inventoried and analyzed. The archaeological materials and radiocarbon dates ranging from 9200-3200 B.C. Points from the cave include Finto, Elko, and Gypsum Cave varieties, some evidently reworked while still hafted. More than 100 arrow and dart shaft fragments were recovered, some with decoration, fletching, or remnant stone points. The collection also includes pockmark midden samples and faunal remains.

Buckland, P. (see McGovern, T.) [46]

Bulker, Jane (Chicago) [Discussion 106]

Bullock, Peter (Museum of New Mexico)

[19] IS OLD ALWAYS HISTORY? THE GLENOCEC INCINERATOR SITE

Early 20th century industrial sites present unique archaeological problems. The sites are old enough to be considered historic, but young enough to be perceived as recent. The sites are readily demolished and their related documents are readily discarded. These sites fit the 50 year rule, but are they actually worth an excavation? Is documentation enough? Should historic preservation laws be strictly applied to these sites? One 20th century industrial site, the Glenocec Village Incinerator located near Chicago, Illinois, is examined. Problems are described and solutions shared. Official cooperation and persistence in uncovering new sources of documentation are considered top priorities.

Burger, R. (see Glascock, M.) [19]

Burger, Richard (Yale University)

[15] INITIAL PERIOD COPPER METALLURGY ON THE CENTRAL COAST OF PERU

Recent excavations at the Initial Period site of Mina Perdida in the Lurin Valley have yielded evidence of small fragments of thin copper sheet dating to approximately 110 B.C. These fragments constitute the oldest known case of copper working in Peru. Preliminary SEM analyses suggest that the metal is probably native copper and studies of the specimen's microstructure indicate that the cut and hammered metal foil was annealed. The antiquity and archaeological context of this find have interesting implications for modeling the early development of metallurgy in the Central Andes.

Burgess, R. (see Hoffmeyer, J.) [94]

Burney, David A. (Fordham University)

[79] THE CONSEQUENCES OF HUMAN ARRIVAL IN MADAGASCAR, PUERTO RICO, AND THE HAWAIIAN ISLANDS

Inter-island paleoecological comparisons have provided useful information concerning the role of human vs. background-level disturbance in tropical ecosystems. Although prehumen vegetation changes and disturbance regimes are well-documented, major ecological changes have occurred since human arrival in Madagascar, Puerto Rico, and the Hawaiian Islands. Instructive inter-island differences have been detected in the
Burton, James (Wisconsin) [54] BARIUM AND STRONTIUM
Bone levels of barium and strontium reflect dietary Ba/ Ca and Se/Ca ratios. Barium levels reflect the dietary ratio of marine to terrestrial resources, and both elements exhibit trophic level effects. However, isotropic variation, environmental effects, post-depositional contamination, and other factors also significantly affect bone levels of these elements. Barium and strontium data cannot be correlated with diet without an assessment of these effects. Barium and strontium have problematic potential, but this is not the case for other elements. The archaeological literature notwithstanding, use of other elemental abundances as paleodietary indicators should not be attempted.

Burton, J. (see Simon, A.) [42]

Burton, James H. (Wisconsin-Madison), Arleyn W. Simon (Arizona State), and David R. Abbott (Arizona State)
[42] INTERREGIONAL CONNECTIONS IN THE DEVELOPMENT AND DISTRIBUTION OF SALADO POLYCHROMES IN CENTRAL ARIZONA
Gila polychromes are associated with Salado sites across much of the Southwest, but the distribution of these decorated vessels is variable. Although multiple production centers are recognized for these vessels, their roles in the interregional social networks are still open to interpretation. Recent detailed compositional studies provide a backdrop of locally produced wares against which the characterization of Gila Polychromes can be compared. Data from several adjacent study regions are used to assess the distribution and developments of Pinto, Gila, and Tonto Polychrome. The domestic and special social roles of these decorated vessels as part of an interregional network of exchange and communication are examined.

Butler, B. (see Ambrose, S.J.) [54]

Butler, Brian M. (Southern Illinois)
[94] PALEOEENVIRONMENT, EARLY SETTLEMENT, AND THE ARCHAEOLOGICAL RECORD OF THE MARIANA ISLANDS
Archaeologists in Micronesia have begun to move beyond time-space systematics and site description to look at paleoenvironments and the complex relationships of those environments to human settlement in these islands. Recent work on the west coast of Saipan provides examples of the complexities of the archaeological record of early settlement in the Mariana islands from 3500-3000 B.P. This work documents significant changes in coastal land form and environments since initial human settlement and makes clear that the record of the earliest occupations on the island has been greatly impacted by shoreline changes.

Butler, Virginia (Colorado) and James C. Chatters (North American Paleosciences)
[17] ON THE IMPORTANCE OF BONE DENSITY IN STRUCTURING PREHISTORIC SALMON BONE ASSEMBLAGES (1993 Winning Poster, Professional/Non-student Category)
Archaeologists working in the Pacific Northwest often suggest the low frequency of salmon cranial elements and abundance of vertebrae in prehistoric deposits reflects the cultural use of stored fish. While empirical documentation of salmon storage is certainly important, analyses must consider the role of bone density in accounting for body part frequencies. Bone densities of representative cranial and postcranial elements from ten chinook salmon (Oncorhynchus tshawytscha) skeletons were measured using X-ray absorptiometry. The role of bone density in structuring prehistoric salmon assemblages is explored through comparisons of density measures with element survivals obtained from several coastal and inland sites.

Butler, Virginia L. (Colorado) and Christopher F. Waythomas (U.S. Geological Survey)
[97] RECENT FIELD INVESTIGATIONS AT THE DALLES ROADCUT, COLUMBIA RIVER, OREGON
Originally excavated in the 1950s, the 7950-7600 year old salmon remains from The Dalles Roadcut site have provided the most compelling evidence for early Holocene fishing in the Pacific Northwest. Questions about the cultural origins of the fish remains motivated further field investigations, May-June 1993. Sedimentological attributes (deposit shape, particle size and shape) indicate ancient processes largely are responsible for the sediments encasing the fish remains in the upper layers. Implications of these findings to the question of fish bone origin are explored.

Butter, Karl W. (Texas-Austin)
Recent limnological work in Central Mexico shows that indigenous land use provoked episodes of soil erosion as early as 1900 B.C., and that soil destruction peaked during the 4 centuries prior to the Spanish Conquest. Erosion did not increase during the first 250 years of the Colonial era. This corroborates massive archival evidence that initial Colonial land use did not lead to ecological deterioration. We must now move from presupposition to empirical monitoring of long-term, land use histories. Latin Americans have casually oversimplified, even misrepresented the role of traditional agropastoral systems of Old World origin in the New, introducing false assumptions into archaeological models. To the contrary, some 3 dozen long-term palynological records from around the Mediterranean Basin demonstrate that traditional agropastoral land use across 8 millennia has generally been conservative and ecologically adaptive, with managed grazing, by means of controlled use of fire, since 4000 B.C. Ecosystems are the product of millennia of co-evolution between the environment and human activities. The complexity of ecological issues facing society today demands expanded inter-disciplinary interaction. Archaeologists are uniquely equipped to document and model long-term land and land-use histories.

Bayce, R. (see Adovasio, J.) [69]

Bayce, R. (see Velichko, A.) [69]

Byland, Bruce (Lehman College & Graduate Center, CUNY)
[55] IDEOLOGY AND THE INTERREGIONAL DEFINITION OF POWER IN POSTCLASSIC OAXACA
The leaders of ancient Oaxacan polities were able to manipulate a complex ideological landscape to suit their changing political motives. The compartmentalization of supernatural power among the independent states of Postclassic Oaxaca made possible the justification of war as well as the building of enduring peace. This paper will examine some iconographic evidence for religious compartmentalization as well as the ideological basis for the definition of political relationships between polities of the Mixteca Alta and the Valley of Oaxaca in the Postclassic.

Byram, R. Scott (Oregon) and Mark Tveksy (Oregon)
[35] WOOD STAKE FISHING WEIR SITES ON THE OREGON COAST
Ethnographic literature indicates salmon fishing was a key subsistence practice among southern Northwest Coast cultures, but to date there have been few archaeological correlates to this activity. Recent archaeological surveys of estuaries on the Oregon coast have located 15 wet sites containing remains of fishing weirs. These sites are providing substantial data regarding subsistence and technology on the Oregon coast. The fishing weirs are located on intertidal mud flats along the shores of estuaries. These features consist of linear arrangements of vertical wooden stakes which are often accompanied by horizontal wooden elements, and in some cases, stone net sinks and woven lattice of wood and cedar bark cordage. Limited radiocarbon dating of these features indicates they were used during late prehistoric and early historic times. Three basic weir configurations have been defined, and these are considered in terms of functional weir types described in the ethnographic literature of the region.

Byrd, B. (see Collins, R.) [88]

Cabrera, Oralia (Escuela Nacional de Antropologia)
[30] LAPIDARY ARTIFACT PRODUCTION AT TEOTIHUACAN
Recent excavations at the Pyramid of the Feathered Serpent, Teotihuacan, have exposed a large number of sacrificial burials, most associated with elaborate offerings. An analysis of lapidary techniques employed in the production of obsidian, jadeite, serpentine, and other precious and non-local stone, as well as their form and stylistic attributes, is currently underway. A comparison of these offerings with similar objects produced by specialists working in other media (primarily obsidian and ceramics) is providing new insights into the nature of craft production at Teotihuacan.

Cachora, Lorey (Quechan Indian Tribe)
[86] LEGENDS OF THE YUMA-SPEAKING PEOPLES: LOWER COLORADO RIVER BETWEEN CALIFORNIA AND ARIZONA
Principal legends of the Quechan and Mojave peoples, such as the creation epic and the great migrations, are associated with known localities along the lower Colorado River and neighboring deserts. Prominent in all legends is the place of the Creation beginning at Spirit Mountain, or Aviikame, located north and west of Laughing, Nevada. Reference is made to many sites where archaeological remains are present. This discussion exemplifies the need for integrating ethnology and the archaeological record in the reconstruction of past human adaptations in this region.

Cameron, Judi (Arizona State)
[98] DIFFERENCES IN FAUNAL UTILIZATION AT LARGE AND SMALL HABITATION SITES IN THE TONTO BASIN, ARIZONA
Shifts in population from small dispersed communities to larger aggregated settlements have been documented throughout the North American Southwest. These shifts affected social and economic organization, including subsistence strategies. Analyses of faunal remains from large and small habitation sites in the Tonto
Camilli, E.

Basin of Arizona show that faunal utilization in general, and artiodactyl use in particular, is greater at the larger settlements. This implies a shift in procurement strategies as the primary habitat for artiodactyls is in the uplands surrounding the basin. Economic, social, and ceremonial explanations for increased faunal use at larger settlements are addressed in this paper.

Camilli, E. (see Cassell, M.) [35]

Canaday, T. (see Price, B.) [83]

Conea, Isabella (University di Roma)


Recent research in the Tigran plain, at the southeastern fringes of the Taurus, has provided new data on the ancient settlement pattern and cultural continuity of the region. Test excavations were made seeking occupations that continued the cultural sequence of Cayonu. A continuation during the 6th millennium B.C. is seen in a stratified contiguous site which shows links with the Levantine contemporary ceramic cultures. A parallel sequence of early ceramic cultures at Mersin, south of the Taurus, is now being re-examined. It shows features better related to central Anatolia and may provide a more articulated perspective of these early periods.

Cannon, Kenneth P. (Midwest Archaeological Center-National Park Service) and Richard E. Hughes (Geochronological Research Laboratory)

[165] EMERGING PATTERNS OF OBISIAN UTILIZATION IN YELLOWSTONE NATIONAL PARK

Although obsidian characterization studies have been prosecuted in the Yellowstone vicinity for nearly three decades the results, based on relatively small samples, indicated that only local sources were used. Recent studies have increased the sample size and support a new view of past obsidian exploitation. Contrary to previous work, our studies identified utilization of at least seven chemically distinct geologic sources (some over 280 km from Yellowstone), the use of which varied in frequency over the past 10,000 years. We discuss the patterning in these obsidian data insofar as they bear on models of regional settlement and lithic resource utilization.

Carlyle, S. (see O'Rourke, D.) [90]

Carpenter, John (Arizona)


Explaining the material and ideological components of Mesoamerican origin found within northern Mexico and the American Southwest has long been the source of archaeological intrigue and theoretical speculation. A significant aspect of many of these models is concerned with bridging what is often characterized as an intervening cultural “neitherworld.” Linguistic, ethnographic and archaeological data from Sinaloa and Sonora suggest that prehispanic Cahitan-speaking peoples occupied both a spatially and culturally intermediate position, and provided a continuous link between Mesoamerica/West Mexico and the international border.

Carr, Christopher (Arizona State)

[51] A Crosscultural Survey of the Ideational and Social Determinants of Mortuary Practices

A Human Relations Area Files survey of ideational, social organizational and other determinants of mortuary practices was made for 51 societies, world-wide. Specific mortuary variables that are most useful for reconstructing specific aspects of ideology and specific dimensions of social organization are identified. Ideational factors were observed as frequently as social factors to determine mortuary practices, generally, but shift in balance with social complexity. Common hypotheses in mortuary archaeology for reconstructing social organization are tested. Strong support is found for Hertz’s hypothesis, that some mortuary practices are social attempts to manipulate the state of the soul of the deceased.

Carr, Kurt (Pennsylvania Historical and Museum Commission), C.L. Pedler (Mercyhurst College), and D.C. Dirkaaat (Mercyhurst College)

[60] MATERIAL CULTURE STUDIES AT MEZHRICH

The material culture of the late Upper Pleistocene inhabitants of Mezhirich was rich in sheer numbers of items, diverse in exploited raw materials, and quite distinctive both in terms of products as well as manufacturing processes. This contribution explores the lithic technology of the site in terms of reduction strategies, tool categories, lithic procurement, and tool-use. The use of non-local exotic (i.e., amber and “gagat”) and the manufacture of non-durable and rarely recovered items (e.g., cordage) are also discussed.

Carroll, Mary S. (CAP Repository) and Dale E. Gerken

[63] INFORMATION MANAGEMENT IN ARCHAEOLOGY: A BROTHER PERSPECTIVE

Computization of databases utilized in archaeological field projects and repositories is common-place today. The design of field and lab databases can have long-term effects at the repository, both positive and negative. The system used by the Central Arizona Project Repository will be discussed in terms of the integration of the information needs of archaeological projects with those of archaeological repositories. Some of the issues to be addressed in this paper include planning and design of computerized systems, data standardization, data redundancy, long-term usability of data, and field/lab approaches to computerization versus repository approaches to computerization.

Carter, Brittenum (Florida Museum of Natural History)

[35] THE EARLIEST HOLOCENE RECORD ON THE PAGE/LADSON SITE (88ES591), AUCHILL RIVER, FLORIDA

The Bolen age strata of the Auclla River, Florida, yield a rich variety of cultural and non-cultural organic and inorganic remains. Ongoing work at the Page/Ladson site (88ES591) has yielded an inundated occupation layer radiocarbon dated to circa 10,000 B.P. The Bolen period stratum is characterized by a highly compacted, organic soil that has chert, bone, and wooden artifacts perched on its upper surface. Wooden stakes for canoe floors are common. The presence of charcoal, grey tufa concretions, and strata with charred ends suggests an occupation site. A site plan and an analysis of recovered artifacts will be presented.

Cassell, Mark S. (SUNY-Binghamton) Albert A. DeKin, Jr. (SUNY-Binghamton), Eileen Camilli, and Janet Kerley

[35] THE EXXON VALDEZ OIL SPILL ARCHAEOLOGICAL DAMAGE ASSESSMENT PROJECT

In 1991, Binghamton University was contracted by the USDA-Forest Service to conduct investigations into potential physical and chemical injuries to cultural resources which were attributable to the 1989 Exxon Valdez oil spill and subsequent cleanup efforts in the Gulf of Alaska. The research found no evidence directly linking the oil spill with identified injuries to archaeological resources at the locations examined by the project. Nonetheless, the injury data gathered was invaluable for better understanding recognized natural disturbances (e. g., erosion); previously unrecognized sources of human disturbances (e.g., petroleum hydrocarbons from waterfowl); and ongoing, long-term human land use at specific resource-rich locales.

Cassman, Vicki (Arizona State) and Bernardo Arriaza (Nevada-Las Vegas)

[22] TOWARD A DEFINITION OF CHINCORRO

The Chincorro culture is relatively unknown to most anthropologists and archaeologists despite the early dates, and their unique complex artificial mummification practices. The partially is due to the sporadic nature of past studies and the publication of findings and commentary in lesser known, or local South American journals. International interest in the Chincorro problem has increased substantially in the last year as scholars from various disciplines have begun to piece together the role of the Chincorro in Andean Prehistory.

Castillo, Luis Jaime (California-Los Angeles)

[77] THE MOCHICA STATES OF NORTHERN PERU: SOCIO-POLITICAL STRUCTURES AND POWER STRATEGIES

The Moche of northern Peru did not constitute a single, unified political structure, but a number of independent entities that followed different developmental sequences. In this paper I examine the social and political structures of the different Moche states during the transition between the Early Intermediate and the Middle Horizon Periods. Two aspects that will be central to my discussion are the emphasis given by Moche elites in their power strategy to the ideological realm, and to exchange contacts with the Wari derived societies of the central coast. I will argue that these two aspects contributed both to the demise of the Moche, and to the origin of societies that follow in the north coast.

Cerrato, R. (see Bernstein, D.) [92]

Chadwich, Tara

[93] ARCHAEOLOGY: JUST ANOTHER FORM OF COLONIALISM? A LOOK AT ARCHAEOLOGY IN BELIZE

This paper will address the topic of archaeology as a force of colonialism in the country of Belize, where excavations are directed primarily by foreigners from Canada, England, or the "States." Archaeologists digging up other peoples' cultural remains must consider the effects of their presence in the modern community. We also need to continually re-examine the benefits of archaeological investigation and weigh these against the costs that our work incurs.

Chambers, Karen (Pennsylvania State) and James R. Purdue (Illinois State Museum)

[35] GENETICS OF PAST POPULATIONS: THE ANALYSIS OF mtDNA FROM ARCHAEOLOGICAL BISON

Bison herd size and distribution from the late Pleistocene throughout the Holocene are considered critical factors in interpretations of early human subsistence strategies in the New World. We extracted DNA from
both extant bison and from bison skeletal remains from bone bed sites of varying ages including Glenrock in Wyoming, Big Bone Lick in Kentucky and Hudson-Meng in Nebraska. Variation within the hypervariable D-loop region of the mitochondrial genome is examined for evidence of population depletion or expansion.

Charkoff, Joseph (Michigan State)


Carrying capacity, in terms of population size, density and organizational complexity, is affected by flows of matter and energy between systems as well as circulation within systems. For the Sierra Miwok, participation in regional exchange allowed them to out populate and competitively displace their Proto-Yurok predecessors while achieving degrees of sociopolitical complexity that peaked by A.D. 1700. Later colonization of the coast by Spain eliminated some key Miwok exchange partners as well as their monetary system, producing declines in complexity and density to ethnographically known levels.

Chase, Diane (Central Florida)

[106] SOUTHERN LOWLAND MAYA ARCHAEOLOGY AND HUMAN SKELETAL REMAINS: INTERPRETATIONS FROM CARACOL (BELIZE), TAYASAL (GUATEMALA), AND SANTA RITA COROZAL (BELIZE)

Studied in the regions of Caracol, Santa Rita Corozal, and Tayasal permit the construction of separate paleodemographic reconstructions. These samples, when placed within their archaeological context, allow diachronic comparison of the prehistoric Maya in three different locations— Inland, coastal, and lacustrine. The paper has three goals. First, it compares and contrasts paleodemographic patterns in different parts of the Southern lowlands. Second, it examines the relationships between burial recovery and settlement pattern population density estimates. And third, it looks at the clustering of paleopathological traits and skeletal modifications in terms of their archaeological interpretation, particularly with regard to status and/or genetic relationships.

Chatters, J. C. (see Butler, V.) [17]

Chewnam, David (Belize Valley Archaeological Reconnaissance Project)

[76] ANCIENT ROADWAYS, ELITE RITUAL AND SETTLEMENT PATTERNS OF THE MAYA: RECENT EVIDENCE FROM CAHAL PECH, CAYO, BELIZE

Recent investigations within the periphery of Cahal Pech, Cayo, Belize have demonstrated Classic Period ties between specialized ceremonial/architectural groupings and sociopolitical power as manifest in warfare and elite ritual. Evidence includes two elaborate vaulted tombs (ca. 600 A.D.) within a pyramidal structure at the terminus of a causeway, or sache. Tomb contents include an elite burial with iconographic evidence of warfare and a “stela tomb” containing a carved monument as the primary interment.

Chidio, S. Terry (Smithsonian Institution)

[12] HAMMERING OUT THE SOCIO-POLITICAL DYNAMICS OF IRON-WORKING IN CENTRAL AFRICA

The relationships between the production of iron and the social, political, and religious contexts in which it has developed over the last 1500 years in Central Africa are intimate and complex. This paper examines these intricate relationships among the Luba peoples and their predecessors in southeastern Zaire by focusing on the use and meaning of the anvil. This object is the most important tool for iron forging and a key symbol of the political authority and spiritual power that affects all aspects of Luba social life.

Chilton, Elizabeth S. (Massachusetts-Amherst)

[96] CONFRONTING COMPLEXITY: MATERIAL CULTURE IN HISTORICAL CONTEXT

By imposing order on the infinitely complex material world, archaeologists facilitate communication between professionals and gain a sense of control over the past. However, the rigid utilization of nominal variables, or types, can mask complexity and historical processes. In New England, Late Woodland cultures (1000-1500 AD) are poorly understood, the typological approach seriously limits understanding of both artifact and cultural variability. An attribute analysis, utilizing continuous variables and category grading, offers a more dynamic alternative. In this study, an attribute analysis on ceramics from the Middle Connecticut River Valley provides a way to confront multiformity, and allows for a more active history of Native peoples.

Chimonas, Susan (Michigan)

[8] THE EXCITEMENT HISTORY OF PREHISPANIC XALTOCAN, MEXICO

Intensive surface collection at Xalocan, Mexico, provides a strong base for the reconstruction of the site’s occupational history. Changes in ceramic frequency distributions from Early to Late Aztec times indicate changes in Xalocan’s population size and internal organization as the town came under the control of the Aztec state. This information, in turn, provides a basis for understanding the political, social, and economic consequences of Aztec political unification upon this previously autonomous settlement in the northern Basin of Mexico.

Chippendale, Christopher (Cambridge University) and David Pendergast (Royal Ontario Museum)

[58] ETHICS, KNOWLEDGE AND PUBLICATION

The Society's working groups has taken its view on ethics from the premise that the archaeological record is a common good held in public trust. The same goes for the written and unwritten knowledge that researchers develop from those physical materials, which again should be in the public domain. The special cases are addressed where the public trust requires knowledge to be kept hidden (e.g., locations of sites at risk if their whereabouts is known). The special conditions are also addressed when private interests, of the researcher or another, may for a time reserve knowledge from the public domain.

Cingino, M. (see Hayward, M.) [102]

Cielek-Torrelio, Richard (Statistical Research, Inc.) and Stephanie M. Whittlesey (Statistical Research, Inc.)

[77] THE DEVELOPMENT OF FORMATIVE CULTURE IN SOUTHERN ARIZONA

Previously accepted views posit that the Hohokam, early Mesoamerican migrants, were the source of village life in this region. Within the last decade, however, the discovery of a series of sites dating to the first centuries A.D. and a recent shortening of the Hohokam chronology reveal that sedentary, agricultural, and ceramic-producing villages predated the appearance of the distinctive Hohokam culture. Comparison of early subsistence patterns, architecture, and additional aspects of material culture with other regions of the Southwest suggest the existence of an early pan-Southwestern culture. This conception raises questions about the evolution of later Formative cultures in the Southwest.

Clark, G. (see Burton, C.) [27]

Clark, Geoffrey A. (Arizona State)

[2] CONCEPTUAL ISSUES BEARING ON MODERN HUMAN ORIGINS IN THE LEVANT AND WESTERN ASIA

Controversy surrounding the biological and cultural origins of modern humans in the Levant and western Asia illustrates the effects of paradigm bias in our efforts to make sense of the human past. The debate is re-examined by focusing on conceptual issues in evolutionary biology. It is argued that, until paleoanthropologists confront the inferential bases for their knowledge claims, there is no prospect of resolving any significant question in human origins research.

Clark, J. (see Blasbe, M.) [59]

Clark, J. (see Craig, D.) [26]

Clark, J. (see Jabren, H.) [25]

Clark, Jeffrey (North Dakota State) and Elizabeth Wright (School of the Arts Institute-Chicago)

[61] INTERACTIONS WITHIN AND BEYOND THE SAMOAN ARCHIPELAGO: EVIDENCE FROM BASALT AND VOLCANIC GLASS GEOCHEMISTRY

The islands of Samoa are critically important for understanding the prehistory of the Central Pacific. It has long been known that pre-historic Samoans had long-term socioeconomic interactions with the inhabitants of Tonga and Fiji. Only recently, however, have studies of basalt and volcanic glass geochemistry begun to reveal the antiquity, nature, and extent of these interactions. This paper summarizes the prehistoric interactions within the Samoan group and between Samoa and other archipelagoes, as revealed through geochemical studies. Special attention is given to the role of Tutuila, in American Samoa, as a source for basalt and volcanic glass.

Clark, John (Brigham Young University) and Rob Fergus (Brigham Young University)

[81] EARLY FORMATIVE COMMUNITIES AT PASO DE LA AMADA, CHIAPAS, MEXICO

A stratified community in non-stressed environments suggests a range of criteria for identifying the function(s) of special buildings, thereby providing a key for interpreting ancient community organization. These criteria are used to evaluate especially large structures at the Early Formative community of Paso de la Amada, Chiapas, Mexico, and to determine probable community organization at different periods of time. Diachronic analysis demonstrates increasing integration through time.

Clark, Mary (Southern Methodist University)

[73] PRELIMINARY INVESTIGATIONS OF LATE STONE AGE AND METALLURGIC SITES ALONG THE SEDGEMAN PALAEOCURRENTS IN SENEGAL AND MALLI

Sub-Saharan palaeocurrents served as important corridors for movement between the Senegal and Niger River valleys during historic times. Of interest is their role in Late Stone Age (LSA) adaptations—specifically,
whether they served as periodic migratory routes for LSA populations shifting north and south in response to climatic oscillations during the 2nd millennium B.C., or as continuously occupied landscapes reflecting an ongoing influx of populations central to state formation in the middle and late 1st millennium A.D. A survey was conducted along the unexplored paleochannels to ascertain the nature and distribution of LSA and Metalurgic sites allowing for a preliminary test of ideas concerning their role in LSA adaptations.

Clarkson, Persis (Winnipeg) [Discussion: 86]

Close, Angela E. (Southern Methodist University)

[45] ARCHAEOLOGY OF THE PLEISTOCENE-HOLOCENE TRANSITION IN NORTHEASTERN AFRICA

At the end of the Pleistocene, the Nile ceased aggrading and downcut into a deep channel. The reduction in the floodplain disrupted earlier, broad-based subsistence patterns, which focused upon wetland plants (especially tubers) and seasonal fish harvests. Early Holocene Nilotics sites are much smaller and rarer than those of the Late Pleistocene. Simultaneously, the monsoons-belt moved northward and, after some time-lag, the Sahara was colonized by gatherer-hunters, herding cattle as a dietary falsafe and supplement (milk). By 8000 B.P., Saharan groups were intensively collecting a wide range of Sahelian plants, including sorghum and millets later domesticated in Africa.

Cobos, Rafael (Tulane University)

[29] CHICHÉN ITZA AND SOUTHEASTERN MESOAMERICA BETWEEN A.D. 900-1200: A VIEW FROM EL SALVADOR

A review of non-local archaeological materials found at Chichén Itzá is presented before considering the contacts that Chichén had with Southeastern Mesoamerica during the Terminal Classic period. The region of El Salvador is seen as an intermediate point between Central America and the Maya Lowlands.

Cogswell, James (Missouri University Research Reactor), Michael J. O'Brien (Missouri), Robert C. Mainfort, Jr. (Memphis State), Hector Neff (Missouri), and Michael D. Glasscock (Missouri)

[78] NEUTRON-ACTIVATION ANALYSIS OF CAMPBELL APPLIED POTTERY FROM SOUTHEASTERN MISSOURI AND WESTERN TENNESSEE: IMPLICATIONS FOR LATE MISSISSIPPIAN INTER-SITE RELATIONS

Campbell applied pottery is a late Mississippian-period marker type for archaeological sites in southeastern Missouri. Recent discoveries of this type in western Tennessee have raised the question of whether production centers of Campbell applied were geographically limited or were dispersed across the central Mississippi River valley area. Stylistic and metrical analyses to date have not produced a single datable four-language classification of styles, despite the fact that neutron-activation analysis conducted at the Missouri University Research Reactor will provide evidence on the nature of pottery-related contact among these sites.

Coman, Nancy (Iowa State)

[20] WORKED BONE IN THE LEVANTINE UPPER PALEOLITHIC: RARE EXAMPLES FROM THE WADI HASA, JORDAN

Although worked bone is common and typical of the material culture of the European Upper Paleolithic, it is extremely rare in Upper Paleolithic sites in the Levant. Four examples of worked bone were recovered from the late Ahmarian component of site WBS 618 in the Wadi Hasa, west-central Jordan, dated at 20,300 B.P. Two of the analyses based on neutron-activation analysis conducted at the Missouri University Research Reactor will provide evidence on the nature of pottery-related contact among these sites.

Conley, Roger (Peeler Museum)

[61] ANIMAL RESOURCES, EMERGENT COMPLEXITY, AND THE ARCHAEOLOGICAL RECORD

This paper is an exploration of changing patterns of animal procurement, processing and distribution in a prehistoric hunting and fishing society at the emergence of complexity on Santa Cruz Island, California. The importance of fish increased while the importance of shellfish and marine mammals decreased through time. Exchange in seal meat, sea otter hides, deer bone, and dogs increased through time. The density of animal procurement artifacts decreased while the density of craft production debris increased implying an inverse relationship between craft activities and animal procurement.

Conlay, Joan Brenner (U of A)

[90] THE GREAT SALT LAKE WETLANDS: A STUDY IN PREHISTORIC DIET

Great Basin archaeologists have long debated the role of corn agriculture in prehistoric economies. The importance of corn in eastern Basin wetlands habitats has been of particular interest. Although traditional approaches to dietary reconstruction have been unable to resolve this issue, stable carbon isotope analysis of human bone collagen is ideally suited to assessing the role of corn versus native resources. Here I report results from a stable isotope study of Great Salt Lake Wetlands burials. Data obtained suggest that both the importance and timing of corn agriculture in the study area may have been incorrectly estimated and warrant further study.

Conlay, Joan Brenner and Thomas W. Stafford, Jr. (Colorado-Boulder)

[54] AMINO ACID STABLE ISOTOPES AND ANCIENT DIET: A PRELIMINARY REPORT

Despite wide use of stable carbon isotope analysis of total bone collagen, its utility is limited to distinguishing between two broad categories of resources, those that employ a C3 versus a C4 photosynthetic pathway. The dietary contribution of resources using the same photosynthetic pathway cannot be determined with conventional procedures. Recent research indicates that molecular level isotope analysis holds promise for identifying and quantifying consumption of resources with common photosynthetic regimes. Here we report preliminary results from stable isotope analysis of selected amino acids isolated from human skeletal remains. We also assess the potential of this procedure for furthering our understanding of prehistoric subsistence practices.

Conkey, Margaret (California-Berkeley) [Forum Participant: 13]

Conkey, Margaret (California-Berkeley)

[40] BEYOND DECONSTRUCTION: WHAT DO WE WANT OUR VISUAL IMAGERY?

While the study of the visual language of archaeology is quite new, the work so far has revealed that much imagery embodies a variety of social, political, and historical positions and biases that are deeply problematic. The deconstructions of our visual discourse have not been simplistic but the inevitable question arises as to what the alternatives are and how we effect them, especially without merely reproducing our own contemporary positions. This paper explores the alternatives for the visual language and reconstructions that center on the doubly visual topic of Paleolithic art.

Conkey, Margaret (California-Berkeley)

[2] COMING TO TERMS WITH SYMBOLISM: RE-VISIONING LATE PLEISTOCENE ARCHAEOLOGY

Paleo-archaeology is to be concerned with the evolution of human symbolic behavior but the precise terms and concepts employed are not often dealt with explicitly. We are now able to review critically not just the terms we use but the kinds of analyses and interpretations that such terms imply. As well, there are now interesting new ideas about the “timing” of the appearances of anatomically-modern humans in different parts of the globe as well as about the evidence(s) for visual culture (“art”), which implies that a certain re-visioning of late Pleistocene times is at hand.

Conolly, Robert P. (Illinois-Urbana) and Sue Ellen Koszarek (Gray and Pape, Inc.)

[23] MIDDLE WOODLAND EARTHWORKS: ECONOMICS, TECHNOLOGY AND SETTLEMENTS: EVIDENCE FROM SURFACE COLLECTIONS

Surface collections of lithic artifacts from the periphery of the Fort Ancient Site, a Middle Woodland (200 B.C.—A.D. 400) hilltop enclosure in Warren County, Ohio, demonstrate the inferential potential of surface archaeological data. The results of research from a 20 hectare area provide evidence for the existence of discrete prehistoric activities, including areas of habitation, lithic reduction, and ritual or specialized activity. In addition, inferences related to economic organization, technology, and raw material exploitation are advanced. The validity of conclusions drawn from the surface collections is assessed and compared to those based on material excavated from Fort Ancient itself.

Conte, E. [see Rolett, B.] [6]

Conte, P. (see Sweeney, M.) [100]

Conyers, Lawrence (Colorado-Boulder)

[32] GEOARCHAEOLOGICAL INVESTIGATIONS OF THE RIVAS SITE, COSTA RICA

Mounded earthworks in the Rivas Site consist of large stone circles, semi-circles and causeways constructed from boulders and cobbles originally deposited as debris flow units within Holocene-age terrace fills deposits. Remnant ridge and swale topography preserved on the upper surface of the terrace deposits
was highly modified during construction. Two buried soil horizons 15-25 cm thick at the site are associated with two distinct periods of habitation. The earliest soil contains scattered ceramics but is not associated with stone architecture. The upper soil unit contains abundant ceramics associated with the monumental architecture. This upper soil unit is bifurcated within some stone circles by a distinctive reddish-orange anthropogenic fill deposit.

Cook, D. (see Havell, I.) [106]


Foucault's "archaeology" of surveillance is vital to the sociology and historical archaeology of institutions, including industrial enterprises. At first glance, surveillance appears as a class-based system of control. But if the frame of analysis is shifted, surveillance is visible among the coping strategies of all classes. Foucault's explication of discourse is also relevant. Historical and industrial archaeology may profit from treating material culture as an active element in social discourse, rather than as an end in itself, or as an encrustation of ideology. The intersection of surveillance and discourse is a fertile area of archaeological study, as examples illustrate.

Cook, Patricia (Arizona) [10] LOWER LEVEL ELITE SPECIALIZATION AT CHAI HIX

Recent excavations in a Terminal Classic Postclassic residence group at Chai Hix, Belize, indicate specific specialization in shell manufacture. The location of the Platform 25 group on the periphery of the main platform, which is dominated by the site's ceremonial center raises questions regarding the nature of elite specialization and the controversy over the existence of attached specialists. This paper will summarize preliminary excavation data, as well as discuss the presence and function of what are herein termed "lower level elites".

Cook, Richard G. (Smithsonian Tropical Research Institute) [Discussant 32]

Cooper, Doreen (National Park Service) [70] INTERPRETING ARCHAEOLOGY IN THE KLONDIKE

Klondike Gold Rush National Historic Park is restoring the Moore House, the first Euro-American settlement in Skagway, as an interpretive center for the 1997 Klondike centennial. The planning process for the exhibits is well underway. Because this was the site of previously-published archaeological fieldwork, received additional fieldwork in 1993 and will be mitigated in 1994, results from archaeological testing are included in the public interpretation of this site. This paper discusses the opportunities, as well as the trials and tribulations, of including archaeology as part of the interpretation of this site for the thousands of visitors to the Park each year.

Cooper, Laurel M. (Arizona) [56] SPATIAL SYNTAX OF CHACOAN "GREAT HOUSES"

Pueblo de Arroyo, Aztec Ruins, and other Chacoan sites are analyzed with the spatial syntax model well developed by Hillier to examine the interactive relationships between space and society. Buildings channel human activity, and they serve to facilitate encounter and privacy in varying proportions. Access graphs, derived from floor plans and site maps, can be used in cross-temporal and cross-geographical comparisons. Together with previous work on the pitouse-pueblo transitions, Chetro Ketl, and Pueblo Alto, the poster considers whether "great houses" in and outside of Chaco Canyon have spatial as well as stylistic similarities.

Corbett, Debra (U.S. Fish and Wildlife Service), Douglas Siegel-Causey (Nebraska), and Christine LeFevre (French National Museum of Natural History-Pари)

[79] THE WESTERN AEOLIANS: REEVALUATING THE ISOLATION HYPOTHESES

Most American researchers view the Aleutian Islands as a cul-de-sac or appendix. After the ancestors of the modern indigenous inhabitants left this remote region of the Aleutian chain, they became isolated from outside influences, though some are admitted from the east, and the culture developed in isolation. This view holds that the western islands were even more isolated and lacked influences from even the eastern Aleutians. This paper examines the archaeological and historical evidence for inter-island contacts and western Aleutian isolation. Recent excavations on Bulldir Island in the western Aleutians provide an excellent case for addressing questions of isolation and culture contact. Though preliminary, our evidence suggests that people from different island groups were in regular, though not constant contact with each other.

Corcoran, M. (see Nichols, P.) [35]

Cordell, Linda S. (Colorado) [Discussant 58]

Craig, Douglas B. and Jeffery J. Clark [39]

Cordy, Ross (Hawaii State Historic Preservation Division) [100] HAWAIIAN SETTLEMENT PATTERNS IN TIMES OF CHANGING SOCIAL COMPLEXITY, 1770S-1820S: IMPLICATIONS FOR PREHISTORY

The pinnacle of hierarchical social complexity in Polynesia developed prehistorically in Hawaii and Tonga. In Hawaii, general models suggest the nature and trends of the organizational changes, dimensions (population growth, agricultural intensification and expansion) which covered in some fashion with those changes, and proposed causal sequences. However, without more accurate dating, it is difficult to evaluate the diachronic, and thus causal, relations among the dimensions. This paper looks at major changes in complexity which occurred at or just after European contact in Hawaii and associated settlement patterns—a case with chronological control—to see what ramifications exist for prehistoric archaeological research.

Cordy-Collins, Alana (San Diego) [77] AN EXAMINATION OF THE LAMBAYEQUE CULTURAL TRADITION FROM THE VANTAGE OF SAN JOSÉ DE MORO

The Lambayeque culture (Sican) of the Peruvian northcoast has its temporal beginnings at the end of the Middle Horizon. Traditionally, Lambayeque has been viewed either as a "country cousin" of the powerful LP Kingdom of Chimor, or as a cultural phenomenon primarily restricted to the valley of the same name. However, the 1991-1992 excavation seasons at San José de Moro (Jequiartequepe Valley) suggest another interpretation: that Lambayeque is both a direct development of the older Moche culture, and— with specific exceptions—a continuation of that cultural tradition. Focus here is on continuities and discontinuities with the Moche culture.

Corvalles U., Francisco (National Museum of Costa Rica) [32] CURRE: ESTABLISHMENT AND DEVELOPMENT OF AN AGRICULTURAL COMMUNITY IN SOUTHERN COSTA RICA

Stratigraphic excavations at the Curre site provided data for the determination of a three-phase occupation sequence from 1500 B.C. to 1500 A.D. The recovered ceramics (including the oldest known for the region), lithics, and organic remains indicate the appearance of a small farming community, circa 1500 B.C., that grew approximately 500 years later to become an important religious center, with emphasis on maize cultivation, during the Late Period (A.D. 800-1500). Curre thus provides rare and important information on long term developmental processes as seen at a single site in Lower Central America.

Costin, Cathy (California State-Northridge) [12] WEAVING TECHNOLOGY IN THE DOMESTIC AND POLITICAL ECONOMIES

Using cross-cultural data, this paper discusses the extent to which domestic skills were translated into politically valued production in several state societies, and the implications of this relative ability for type of participation in the political economy. I evaluate alternative technical means for distinguishing between domestic and wealth items, specifically analyzing intensification of labor using "domestic" technology as compared with the introduction of new, elaborate, and/or restricted technologies to produce valuables.

Cougill, George L. (Arizona State) [Discussant 96] Cougill, George L. (Arizona State) [40] HOW MUCH IS ENOUGH: EMPIRICAL BASES AND OTHER WAYS OF COPING WITH FEW OR SMALL SURFACE COLLECTIONS

The Teotihuacan Mapping Project obtained about a million objects in 5000 surface collections. This abundance makes possible some robust statistical conclusions, some of which are presented as secure knowledge about associations among ceramic categories in the ancient city. The main topic, however, is investigation of effects of using fewer and/or smaller collections. How numerous and how large must collections be to achieve satisfactory accuracy, and how much does a simple kind of Empirical Bayes estimation help to offset small collection sizes? Results are useful for researchers who must deal with fewer and/or smaller collections than at Teotihuacan.

Craig, Douglas B. (Northland Research, Inc.) and Jeffery J. Clark (Center for Desert Archaeology) [26] THE MEDIATOR POINT PLATFORM MOUND COMPLEX: FUNCTIONAL AND SOCIAL CONSIDERATIONS

Located in the Tomo Basin of central Arizona, the Mediker Point platform mound complex is believed to have served a largely ceremonial, integrative function. The mound complex is surrounded by 12 residential compounds containing a total of about 45 rooms. It is estimated that a maximum of 100-150 people lived at the site between A.D. 1280 and 1300 when the platform mound complex was built. Although there is some evidence for social differentiation among the site’s inhabitants, it is considered minimal at best. The implications of this are discussed, and a preliminary model of social organization at the site is presented.
to show that surface data reflect the same pattern revealed by excavation and that a representative regional sample of settlement debris is sufficient for testing hypotheses of settlement pattern change can be acquired through survey of plowzone surfaces.

D’Andrea, A. Catherine (Simon Fraser)
[94] LATER JOMON PLANT HUSBANDRY IN NORTHEASTERN JAPAN
Recent arachnobotanical data from northeastern Japan demonstrate the presence of fritail millet and buckwheat by 2000 B.C. and rice by 787 B.C. Direct evidence of the nature of husbandry activities associated with these domesticates is not yet available, although research is progressing on this problem. This paper outlines the research and presents a model describing the prehistoric cultivation of these species based on ecological and historical data on farming practices in northeastern Asia.

Danforth, Marie (Southern Mississippi)
[106] CHILDHOOD HEALTH PATTERNS IN THE LATE CLASSIC MAYA: EVIDENCE FROM ENAMEL MICRODEFECTS
Childhood health patterns were investigated using patterns of enamel microdefect formation in mandibular canines from 95 individuals from three Late Classic Maya populations (Bantun Ramie, Seibal, Tikal). Wilson bands, striæ of Retzius, and linear enamel hypoplasias, all non-specific growth arrest indicators, showed few differences in frequencies and ages-at-formation in comparisons between the sexes, between juveniles and adults, and among the three Late Classic Maya, however, experienced significantly more growth disruption between ages four and five compared to Colonial Maya. These findings, especially the apparent homogeneity in health patterns, are discussed in light of the Collapse.

Dassovich, Steve J. (Florida State)
[41] THE EFFECTS OF SEA LEVEL TRANSGRESSION AND STORM DAMAGE ON COASTAL SITE INTEGRITY: COASTAL DIXIE COUNTY, FLORIDA, AS AN EXAMPLE
The impact of transgressive sea on site integrity is largely undefined. While damage caused by normal tidal flow and wave action can be measured under average weather conditions, damage caused by catastrophic events is more difficult to measure. In February, 1993, the "Storm of the Century" struck the gulf coast of Florida, interrupting archaeological and geological work on Bird Island (BRD52). Florida. Sustained 160 kph winds and sea surge caused dramatic destruction on the site. The strata of nearby sites on coastal islands will be evaluated for storm damage. The role of storms in redistributing inundated sites will be discussed.

Davies, S. (see Rowe, M.) [105]
Day, D. (see Prentiss, W.) [105]
Deagan, K. (see Hoffman, K.) [101]
defrance, Susan D. (Florida Museum of Natural History)
[65] UNINVITED GUESTS: OLD WORLD RODENTS ON SPANISH COLONIAL SITES
Spanish importations of plants and animals to New World settlements included many unintentional species. Two opportunistic species that accompanied Spaniards were Old World rats, both black (Rattus rattus) and brown (Rattus norvegicus) varieties. Introduced rats thrive in areas of Spanish settlement. Rattus remains in archaeological contexts provides temporal indicators of early Spanish settlement and indicates a potential disease vector. This paper reviews the occurrence of rats in Spanish colonial archaeological contexts from sites in Florida, the Caribbean, and Peru and discusses how these remain may have helped to date sites and provide insights on the destructive nature of unintentional animal imports.

Debl, Richard [Discussion 14]
Deblin, A. (see Cassell, M.) [55]
Delle, J. (see Mullins, P.) [62]
Demarest, Arthur A. and Juan Antonio Valdes

Demarest, Arthur A. (Vanderbilt) and Juan Antonio Valdes (Universidad de San Carlos)

[76] WARFARE AND THE COLLAPSE OF CLASSIC MAYA CIVILIZATION

This paper presents the preliminary conclusions of the Peterbnun Regional Archaeological Project. For six years, this multi-disciplinary project has explored architecture, monuments, domestic areas, settlement patterns, ecology, nutrition, exchange systems, and fortifications of the Peten region, Guatemala. Project discoveries demonstrate that in the eighth century Peten political systems disintegrated in endemic warfare. Models are proposed for underlying causes of this warfare. We examine the implications of these findings for general theories of the collapse of Classic Maya civilization.

Dendy, J. (see Reishard, K.) [22]

Dent, Richard J. (American University) and Harry Schneckel (American University)

[19] DEVELOPING AN INTEGRATED ARCHAEOLOGICAL INFORMATION SYSTEM: THE AMERICAN UNIVERSITY EXPERIMENT

This poster display documents a computer-based archaeological information system developed at American University. Our goal in creating the system is to support both field and laboratory operations. The resulting system is built around a TOPCON GTS-3B total station as well as an IBM PS/2 microcomputer. Imaging hardware consists of a TARGA + board and JVC color video camera. System software also operates within a WINDOWS environment. System operation is illustrated using data from the Shawnee Minishik Paleolithic site.

Dering, J. (see Boyd, C.) [103]

Dering, Phil (Texas A&M University)

[98] SAGUARO AS A FACTOR IN THE DISTRIBUTION OF CLASSIC PERIOD SALADO SITES IN THE TONTO BASIN, ARIZONA

This paper presents an assessment of the productive potential of saguaro in the Tonto Basin. Saguaro is chosen due to its importance within the belief/subsistence systems of the Sonoran Desert people. Because the Tonto Basin is in a transition zone at the edge of the Sonoran Desert, saguaro is distributed unevenly in favorable microhabitats in the uplands. Using field observations and a GIS database, areas of high productive potential within the basin are identified and mapped in relation to Classic period Salado sites. Conclusions are drawn regarding the role of saguaro as an upland resource in the Tonto Basin.

Derr, J. (see Rowe, M.) [103]

Dewar, Robert (Connecticut)

[79] DOES IT MATTER THAT MADAGASCAR IS AN ISLAND?

Madagascar is a very large island in the Indian Ocean. Two kinds of questions are posed: (1) What consequences for its prehistory result from its insularity? Does it share specific: similarities with other islands that are reflected archaologically? Alternatively, does its great size reduce the importance of being an island? (2) Have prehistorians approached the study of Madagascar's past in any special way because it is an island? In other words, are there implicit biases in "island archaeology?"

Diehl, Michael W. (University at Buffalo and Santa Fe Institute)

[99] SELF-AGGRAVIZERS AMONG MOMOGOLLON LATE PITHOUSE PERIOD VILLAGERS?

Recent diachronic comparisons of southwestern North American pithouse dwellers suggest that the appearance of self-aggravizing or "entrepreneurial" individuals may have occurred by A.D. 1000. Their appearance may be a consequence of the relaxation of social restrictions on prestige competition, that may have resulted from changes in their subsistence economy.

Dietler, Michael (Yale) and Ingrid Herich (California-Berkeley)

[51] IT'S ABOUT TIME: AN ETHNOARCHAEOLOGICAL PERSPECTIVE ON THE CONCEPTUALIZATION OF TEMPORALITY AND HISTORY IN ANCIENT SOCIETIES

An ethnarchaeological perspective is offered on the evolving theoretical discussion about differences in the ways in which time is conceptualized by archaeologists and the subjects of archaeological research in ancient societies. The reckoning and representation of time, biography, and history in a rural African society (the Luo of Kenya) are examined and ramifications for archaeological interpretation are explored. Luo time-reckoning is shown to be a relational process in which cyclical and linear conceptions of time are articulated to discern sequence and duration and to order personal experience and history in a temporal framework; and temporality is shown to be a pervasive feature of representations of social relations and identity.

Dillehay, T. (see Baenziger, M.) [25]

Dirkmaat, D. (see Adovasio, J.) [69]

Dirkmaat, D., (see Carr, K.) [69]

Disbirt, Joseph (Pueblo of Zuni) [Forum Participant '95]

Dobres, Marcia-Anne (California-Berkeley)


Following from structuralist principles, the tangible remains of prehistoric material production can be studied to infer dynamic processes of social reproduction. At the microscale, production activities constitute arenas within which social identities can provide guidelines for material conduct. One universal dynamic process central to technological praxis, regardless of its particular historical configuration, is gender. Adapting principles from practice and gender theory this paper considers tentative models for the social organization of osséous technology during the late Magdaleni in the Midi-Pyrénées, summarizing findings of the first comparative and regionally-focused technical analysis conducted in the Ariège and Haute-Garonne.

Doele, William H. (Center for Desert Archaeology) and Henry Wallace (Center for Desert Archaeology)


Although platform mounds occur throughout much of central and southern Arizona, the concentration of platform mounds in the Phoenix Basin has historically been the focus of most research. Recent large-scale excavations and intensive survey in the Tonto Basin, Tucson Basin, eastern Papagueria, and the lower San Pedro valley now provide a dataset for regional comparison with the existing Phoenix Basin data. In this paper we examine variation in time of construction and use, construction methods, site structure, demographic scale, and regional interaction. The implications of these data for regional social development models are outlined.

Dolukhanov, Pavel (Newcastle)

[45] THE PLEISTOCENE/HOLOCENE TRANSITION IN NORTHERN-EASTERN EUROPE: ENVIRONMENTAL CHANGE AND SOCIAL ADAPTATION

Three consecutive waves may be distinguished in the initial settlement of the North-East European plains: 1) 15,500-12,000 B.P.; 2) 12,000-11,000 B.P.; 3) 11,000-10,000 B.P. The first two occurred during the Allèred-Bolling, the last one during the Younger Dryas. All three waves resulted from the overflow of the surplus population in the Palaeolithic core areas: 1) The Atlantic (Western) Europe; 2) The perpendicular Eastern-Central Europe. The subsequent socio-economic development in the North-Eastern Europe proceeded as a gradual adaptation to the increasingly forested environment of Early Holocene.

Donoghue, J. (see Amushwesia, R.) [41]

Donoghue, J. (see Faught, M.) [41]

Doran, James (Essex)

[99] THE EOS PROJECT: INTEGRATING TWO MODELS OF PALEOLITHIC SOCIAL CHANGE

The EOS model and testbed now to be reported addresses two key questions prompted by our earlier work. How can social hierarchies come into being without individual resource acquisition tasks of parallel complexity? How do these competing views of Upper Paleolithic social change (Mellars' emphasizing the growth of decision hierarchies vs. Gamble's emphasizing the intensification of alliance negotiation) be incorporated into a unified framework? These questions require a deep consideration of the relationship between ethnographically-grounded social models, and the characteristics of the resource environment.

Dorn, R. (see Lincoln, T.) [50]

Dorn, Ronald L. (Arizona State), David S. Whitley (California-Los Angeles), and Joseph M. Simon (W and S Consultants)

[103] ROCK ART AND PRE-CLOVIS COLONIZATION OF THE AMERICAS

Geomorphological research demonstrates that a major change in erosion and deposition, thus site preservation, occurred at the Pleistocene-Holocene interface. The sudden appearance of Clovis sites correlates with the change, instead of favorable preservation conditions, instead of looking for elusive, preserved and stratified Pre-Clovis sites, our research focuses on exposed rock art on stable cliff faces. We obtained chronometric Pre-Clovis ages on six petroglyphs, using AMS 14C and carbon-ratio dating, corroborated by replicate and correlative dating, thus supporting the Pre-Clovis hypothesis. Second, we also consider the Clovis-first hypothesis, showing that it cannot be reconciled with its own Paleoindian data.

Douglas, John E. (Montana)


Interaction between the late prehistoric settlement of Paquime (Casas Grandes) and the surrounding region has been examined mainly in Chihuahua and New Mexico. In Sonora and Arizona, the eastern portion
Ehrenreich, Robert M.

[42] POST-CHACOAN COMMUNITY DYNAMICS AS REVEALED BY HOUSEHOLD INTERACTION.

How do we get from sherds to social organization? One technique for revealing social relationships is the analysis of localized exchange. With this idea in mind, I examine ceramic compositional data from several post-Chacoan (A.D. 1175-1275) roomblocks in west-central New Mexico. Analysis reveals information about the scale of ceramic production, localized exchange, the spatial extent of community, and the role of community centers. This is used to bridge the gap between ceramics and behavior, and I conclude with a discussion of community dynamics in light of these results.

Douglass, Amy A.

[26] MOVING POTS OVER LONG DISTANCES: PRIVILEGE OR NECESSITY?

Long-distance exchange is regarded as a key factor in the sociopolitical development of the prehistoric plateau Southwest. Yet many questions remain concerning the structure of regional exchange systems and the role of exchange in culture change. This paper documents the production-distribution system of Little Colorado White Ware as a case study of a long-distance exchange system. Compositional analyses and a distance decay study are employed in order to document the production-distribution system of this ware. The results demonstrate that regional distribution patterns have been cited as evidence for prestige exchange can result from other types of exchange systems.

Downum, C. (see Bostwick, T.)

[26] Downum, Christian (Northern Arizona University)

[23] THE RELIABILITY OF SURFACE ARTIFACT ASSEMBLAGES AS PREDICTORS OF SUBSURFACE REMAINS: A CASE STUDY FROM SOUTHERN ARIZONA

This paper attempts a direct test of the reliability of surface artifact data by comparing artifact assemblages obtained through controlled surface collections with assemblages subsequently recovered from the same site through excavation. The sample of sites used in this comparison comprises a variety of Hohokam limited activity and habitation sites in southern Arizona. General conclusions are presented about the reliability of surface artifact data, especially with respect to how well surface data can be used to model subsurface ratios of major artifact categories, and how well such data can predict the type and location of subsurface features.

Doyel, David E. [Estrella Cultural Research]

[80] Doyel, David E. (Estrella Cultural Research)

[74] PRODUCTION AND EXCHANGE OF OBSIDIAN ARTIFACTS FROM THE GATLIN SITE, SOUTHERN ARIZONA

Analysis of obsidian artifacts from the Gatlin Site (Arizona 2:2:1) using X-ray fluorescence (EDRF) determined that most are from the nearby Suaceda source. While 15 percent of the total sample (n=75) is made of non-local obsidian, 27 percent of the projectile points are of non-local materials, suggesting trade in finished points. Mobilization of resources through exchange may be indicated.

Drake, D. (see Hill, M.E.)

[74] Drayer, F. (see Walker, P.)

Droit, Robert P. (Ogden Environmental and Energy Services)

[14] SITIO MURCIELAGO: A LATE PERIOD AGRICULTURAL VILLAGE IN SOUTHERN COSTA RICA

The focus of discussion is Sitio Murcielago, an interior valley habitation site located along the Tárrega River in southern Costa Rica. In the 1980s, intensive investigations conducted here resulted in mapping the complex, dating the site, and analyzing its internal features. The village was a late period domestic center associated with several cemeteries sites, residential compounds containing large diameter house foundations, and an extensive area of alluvial farmland. Murcielago appears to represent a typical agricultural community that developed during this time in the interior valley zone of the Tárrega River Basin. The discussion about this late period village center on its overall size, internal complexity, and regional importance within the mult-village network that developed in the Diquis Region during the Chiriqui Phase (A.D. 1000-1500).

Drollinger, H. (see Jones, R.)

DuBrotton, A. (see Buch, P.)

Dubroksky, Gertrude W. (Princeton)

[37] A SMALL WORLD: A COMMUNITY OF JEWISH FARMERS

It is on the community level that it is possible to investigate the social, economic, political, cultural, and even the religious acculturation of the Jewish immigrant. Early Jewish immigrants from Europe who settled on farms in Farmingdale, New Jersey, knew little about farming and less about the life-style and language of their neighbors. The settlers created new social institutions to live viable Jewish and economic lives. Their organizations and self-help networks were modeled after those in the small villages they had left behind. Ideology shifted from religion to social reform, which ultimately created conflict between the community members. This intra- community conflict produced a dynamic tension among the farmers, resulting in a vibrant creative community.

Duff, Andrew L. (Arizona State)

[42] SITIO MURCIELAGO: A LATE PERIOD AGRICULTURAL VILLAGE IN SOUTHERN COSTA RICA

The discussion about this late period village center on its overall size, internal complexity, and regional importance within the mult-village network that developed in the Diquis Region during the Chiriqui Phase (A.D. 1000-1500).

Dugmore, A. (see McGovern, T.)

Dunbar, J. (see Anuskinovsky, R.)

Dunbar, James S. (Bureau of Archaeological Research)

[41] THE STRATEGIES OF SUBMERGED LATE PLEISTOCENE SITES FROM THE UPPER SUWANEE RIVER TO APALACHEE BAY

This paper will identify and discuss the major stratigraphic regimes known to contain Clovis and Suwannee age Paleo Indian artifacts in wetland and submerged environments. Clovis and Suwannee point Paleo Indian sites are concentrated in north and central Florida from the Ocala Ridge in the central peninsular westward to the Gulf coast near Tampa and Apalachee Bays. Because inland water tables and sea level rose with the retreat of the last Wisconsin ice sheet, many Paleo Indian sites are now located in wetland or submerged environments. Research on submerged sites such as the Page/Ladson (8je591) in the Auclilla River has revealed deep and complex stratigraphic sequence rich in preserved organic material.

Dunnell, Robert C. (Washington)

Dunnell, Robert C. (Washington)

Dunnell, Robert C. (Washington)

Dunnell, Robert C. (Washington)

[49] THE IMPACT OF "STATISTICAL TECHNIQUES FOR THE DISCOVERY OF ARTIFACT TYPES" ON ARCHAEOLOGY

Albert Spaulding's influence on contemporary archaeology is quite substantial. Much of that influence can be traced to his seminal paper "Statistical Techniques for the Discovery of Artifact Types," published in 1955. This paper examines the specific impacts, both intended and unintended, of that paper on the nascent New Archaeology of the 1960s and beyond.

Earle, Timothy K. (California-Los Angeles)

Easton, Norman Alexander (Yukon College and Northern Research Institute)


This paper will present the development and application of locating, excavating, and analyzing prehistoric archaeological remains recovered from submarine sediments dating to circa 7000 years ago in Montague Harbour, British Columbia. Excavation in a tidal and subtidal environment will be discussed, along with the potential for further work along the coast of British Columbia.

Ebert, J. (see Cassell, M.)

Edwards, S. (see Windsloe, D.)

Eerkens, James (California-Santa Barbara) and Robert L. Bettinger (California-Davis)

[27] VARIATION IN GREAT BASIN PROJECTILE POINTS

The neo-Darwinist program cannot succeed in archaeology without detailed empirical studies. We cannot understand how selection acts on material culture, for example, until we first understand the source and nature of the empirical variation in material culture on which it acts, which is poorly studied. Statistical analysis of several thousand Great Basin projectile points demonstrates that 80% of the variation in linear attributes is determined by the mean of the attribute, which implies production guided by relative, not absolute, error tolerances. Variability substantially greater or less than this suggests corresponding variations in group or individual production goals.

Ehrenreich, Robert M. (National Research Council)

[12] CRAFT SPECIALIZATION WITHIN A HETERARCHICAL SOCIAL STRUCTURE: A METALLURGICAL PERSPECTIVE

The sociopolitical structure of a society affects the level of craft specialization that can be realized. A societal means of controlling resources or technologies is required if high levels of craft specialization are
to be achieved. This presentation will examine the societal structure of central-southern Britain during the Middle and Late Iron Ages (550-10 B.C.) and discuss how the hierarchical structure of that period affected the level of craft specialization attained. The ironworking community of this period will be used as an example.

Elera, Carlos (Calgary) [77] THE CUPISNISQUE CULTURAL COMPLEX AND ITS ROLE IN THE ORIGIN OF MOCHE, NORTH COAST OF PERU

In the published Andean archaeological literature, the origin and coalescence of Moche (culture, society, state) is almost unknown. Many scholars have thought that “Chavin” was the initial antecedent of Moche. However, the archaeological record (including data from my recent fieldwork) indicates that the Cupisnique Cultural Complex, in its late phase and with its religious ideology, played a crucial role in the origin of Moche and it must be understood.

Ellis, Ricardo J. (Boston University) [Discusant 39]

Ellis, Ricardo J. (Boston University) [80] CONTRACT DILEMMAS IN PUBLIC ARCHAEOLOGY

Despite the fact that archaeology by contract predominates in public archaeology, there has been surprisingly little discussion of contractual issues within the discipline. This paper highlights several important contract dilemmas that are increasingly challenging the practice of public archaeology, including the issues of ownership and use of cultural materials; and publication restrictions. It is argued that many of the contractual conditions that are imposed upon archaeologists violate basic principles of public archaeology, especially the concepts of public interest and public rights to information. Coping with these dilemmas poses an ethical and professional challenge to archaeologists working in a competitive business environment.

Eling, H. (see Turpin, S.) [103]

Ellis, Christopher J. (Western Ontario)

[84] FACTORS GOVERNING THE USE OF STONE PROJECTILE TIPS: THE ETHNOGRAPHIC DATA

Stone projectile points have figured prominently in stylistic, technological, and functional archaeological analyses. Yet, the basic question of why points on stone as opposed to other materials should be employed at all is rarely addressed. I report here on a pilot survey of world-wide ethnographic and ethnohistorical literature designed to generate answers to this question. Major factors isolated as important to stone tip use or non-use include: the size of the game; the “danger” of the game to the hunter; use of poisons, whether the projectile is “thrust” or “thrown” at the prey, and climatic considerations.

Ellwood, B. (see Harrold, F.J.) [9]

Ellwood, Brooks B. (Texas-Arlington), Francis B. Harrold (Texas-Arlington), and Karl M. Petrosino (Texas-Arlington) [70] MAGNETIC SUSCEPTIBILITY AND ITS ANISOTROPY AS A TOOL FOR DETERMINING INTRA-SITE CORRELATIONS AND SITE EVOLUTION: AN EXAMPLE FROM KONISPOEL CAYE, SW ALBANIA

Magnetic susceptibility, an indicator of iron mineral concentration, was measured for 585 samples from Konispol Caye, SW Albania. Comparisons between magnetic susceptibility profiles from three excavations within the cave show distinctive patterns which allow direct correlation between excavations. This data provide a quick and inexpensive means for investigators to correlate between and within sites, without resorting to other more time consuming and expensive methods. Anisotropy of magnetic susceptibility data, measured for 208 of these samples, provide information on tectonic and stratigraphic changes which have affected the site during occupation from the Late Paleolithic to Late Neolithic time.

Elson, Mark (Center for Desert Archaeology)

[26] THE PYRAMID POINT PLATFORM MOUND: INTEGRATION IN THE TONTI BASIN

The Pyramid Point platform mound is one of the smallest mounds in the greater Southwest, measuring less than 75 square meters. It may have functioned as a type of signal tower to convey information to integrate separate subsytems in the surrounding settlement system. Unlike some of the larger platform mounds, which appear to have been restricted areas and areas for immediate public viewing, the Pyramid Point mound appears to have been designed for viewing from a distance. It is clearly visible from the tops of five other platform mounds. Furthermore, data are presented that suggest that the mound was more of a locus for ceremonial activities than actual habitation.

Erikson, B. (see Juel Jensen, H.) [16]

Eriksson, Berit Valentin (Aarhus)

[45] RESOURCE MANAGEMENT, SUBSISTENCE STRATEGIES AND ADAPTIVITY IN LATE PLEISTOCENE-EARLY HOLOCENE NORTHWESTERN EUROPE

Late Pleistocene hunters of northwestern Europe had the choice of a variety of game animals. Especially reindeer, horse and elk dominated the menu. The paper first examines the varying importance/ dominance throughout time of these species and assesses our possibilities of making inferences from hunting strategies to socio-economic structures (social group size, mobility, etc.). In the early Holocene game resources generally becomes more widespread and less diversified… or do they? The second part of the paper re-examines the data from northwestern Europe and discusses how Late Pleistocene-Early Holocene hunters adapted to the changing environment.

Erkelen, Conrad (International Archaeological Research Institute)

[19] LOW ALTITUDE AERIAL PHOTOGRAPHY OF ROCKET LAUNCHED CAMERAS

Aerial photography is a remote sensing technique with both advantages and applications that are well understood. Although interpretation of the results is uncomplicated, the cost is often prohibitive for small-scale research projects. Both rocket and air launched camera systems exist for decades and has included the use of rockets equipped with cameras as part of the ongoing experimentation of enthusiasts. The availability, low cost, and general reliability of these rocket launched cameras has application for archaeologists seeking an affordable means of photographing their archaeological sites. The technique is outlined and examples from recent research in the Hawaiian Islands are displayed.

Erlandson, J. (see Moss, M.) [92]

Erlandson, Jon M. (Oregon) and Madonna L. Moss (Oregon) [56] CULTURES AND ENVIRONMENTS OF THE PACIFIC COAST BETWEEN ABOUT 11,500 AND 8,000 YEARS AGO

Between 11,000 and 8,000 years ago, maritime peoples were in the early stages of settling the diverse coastal landscapes from southeast Alaska to Baja California. Relatively early evidence for coastal adaptations has been found in the vast region, with coastal sites now dating between about 10,000 and 11,500 ecybp in the northern and southern areas. In this paper, we examine environmental changes, subsistence patterns, and technological developments for this period, discuss different models for the origin of these early maritime peoples, and consider some explanations for the dearth of early sites along the coastlines of northern California, Oregon, and Washington.

Esan, Ufuk (Istanbul University)

[24] THE PROVINCIAL UBAID CULTURE OF DEĞIRMENTEPE (MALATYA, EASTERN TURKEY)

The mound of Değmentepe was located on the south bank of the Euphrates in Malatya Province of eastern Turkey. In 1986 it was inundated by the lake behind the Karakaya dam. Layers 6-11 represent an Ubaic II culture of provincial character. The settlement pattern, mud-brick architecture, painted and unpainted Ubaic-type pottery, other finds, together with the stamp-seals and clay sealings in layer 7. indicate that a proto-urban, complex society inhabited Değmentepe during the late fifth and early fourth millennia BC. The economy of this society was mostly based on mixed farming and long distance exchange of trade goods.

Espejo, Claudia (Instituto Nacional de Antropología e Historia)

[8] DOMESTIC STRUCTURES AT XALTOCAN, MEXICO

Excavations at Xaltocan, Mexico, exposed the corner of a house with walls made of sand-clay bricks on a kind of “cobble-clay” floor. This type of domestic structure was associated with other features such as pottery decorative motifs, which could help to distinguish regional differences in the Valley of Mexico during postclassic times.

Ezio, J. (see Altschul, J.) [86]

Ezio, Joseph (Statistical Research, Inc.)

[54] ZINC AS A PALEODIETARY INDICATOR: TWO DECADES OF UNSCIENTIFIC REASONING IN ARCHAEOLOGICAL BONE CHEMISTRY ANALYSIS

The use of the concentrations of zinc in archaeological bone as an indicator of past diets has become almost universally accepted in archaeological analysis, despite the fact that there is no physiological or biochemical basis for such usage. Many claims regarding zinc—such as trophic-level effects and the relationship between dietary zinc intakes and bone zinc levels—represent either a misuse of or a disregard for basic nutritional, physiological, and bone chemistry data. Until a sound physiological basis for such claims is established, the use of zinc as a paleodietary indicator is unscientific and invalid.

Fagan, J. (see Bennett-Rogers, A.) [35]

Falconer, Steven E. (Arizona State) and Patricia L. Fall (Arizona State)

[46] POPULATION GROWTH, AGRICULTURAL INTENSIFICATION, AND THEIR ENVIRONMENTAL IMPACTS AROUND THE EASTERN MEDITERRANEAN

Between 7000-6000 BC, localized environmental degradation in Southwest Asia. However, regional impacts, especially widespread deforestation, resulted from population growth and agricultural intensification beginning in the fourth millennium B.C. We combine palynological and settlement data to
Fall, P. (see Falconer, S.) [46]

Farquhar, A. (see Bennett-Rogers, A.) [35]

 Fitzhugh, Ben (Michigan)
[97] ISLANDS IN THE MIDDLE: DYNAMIC INTERACTIONS IN THE NORTH PACIFIC

For decades, scholars have maintained that the northern Gulf of Alaska is segmented into relatively barrier islands whose evolution has largely resulted from isolation punctuated by periods of cultural replacement. It is becoming increasingly clear that a more complex set of models are needed to explain the sequence of cultural developments in Southwest Alaska. This paper examines the complex
interplay between geographic distance (relative isolation) and social interaction in the evolution of relatively complex hunter-gatherer-fisher societies.

Fitzhugh, William W. (Smithsonian Institution)

[79] THE DORSET THULE TRANSITION: TAKE 2

The Eastern Arctic was not free of glacial ice and available for human occupation until ca. 4500 years ago. In the succeeding period, a succession of cultures appeared, each demonstrating greater efficiency in adapting to rigorous (and changing) environmental and climatic conditions. Using the Dorset-Thule transition as a case study, this paper considers whether the culture history of the North American Arctic behaves like an (island) "cycle" system in terms of biogeographic and evolutionary models. Are these models of any use in describing or understanding Arctic cultures, or are they simply distractions?

Flemming, Daelid (Columbia University) and Monica Barnes (Cornell)

[15] ARE THE PUQUISOS OF NAZCA PREHISTORIC?

At the 1993 SAA meeting "definitive proof" of first millennium A.D. dates for Nazca puquisos was announced. Evidence is two AMS dates of component stones. Basic principles of stratigraphy are ignored. In accepting prehistoric dates we must disregard identical medieval works in Spain's Andes Valley. Although Spanish engineers built similar water systems in Spain, the Canary and Bajaic Islands, Mexico, and the Aztecs, we are asked to believe that they did not build, or recognize those Nazcas. We suggest the puquisos may include reused dressed masonry, and propose lines of research to resolve the dating question.

Flemming, Nicholas (Institute of Ocean Sciences)

[41] PREHISTORIC SUBMARINE ARCHAEOLOGY: WHAT IS THE REAL RATE OF PROGRESS?

Prehistoric submarine archaeology is a minority interest with important goals. The community of interested researchers is below the critical mass for steady intellectual growth in any one country, and is small globally. OCS surveys and academic projects tend to be structured around predictive modelling and acoustic technology. New sites are gradually added to the inventory by repeated surveys by divers, or by further chance finds. The progress in excavating prehistoric submarine sites and artifacts is slow but very encouraging, with lithic artifacts found as deep as 145m below present sea level in a core taken tens of kilometers offshore. Submarine prehistoric sites are known world wide. Proposals are made for improving communications, news, highlighting objectives, and project support.

Fletcher, Laraine (Adelphi University) and Silvia Salgado (SUNY-Albany)

[32] MACROREGIONAL RELATIONS BETWEEN NICARAGUA AND THE SOUTHERN PERIPHERY OF MESOAMERICA, 300-800 A.D.

Data from recent research projects in northcentral and southern Pacific Nicaragua suggest that these regions were engaged in strong interaction with regions of Honduras and El Salvador, especially central Honduras and eastern El Salvador, between A.D. 500-800. The paper explores the impact that this interaction had in the emergence of complex societies in Nicaragua and how these societies were part of a macroregional system that could be characterized as a periphery to the Mesoamerican world-system.

Floss, Harald (Universität Köln)

[16] CLIMATE AND RAW MATERIAL BEHAVIOR: A CASE STUDY FROM LATE PLEISTOCENE HUNTER-GATHERERS OF THE MIDDLE RHINE AREA OF GERMANY

In a project continuing over the last five years, lithic raw materials from 46 Paleolithic sites in the Middle Rhine area of Germany dating from lower to final Pleistocene have been analyzed. The first evidence for longer distance transport of exogeneous materials is in the Middle Paleolithic. During the Upper Paleolithic there is a constant increase of exogeneous materials with its climax in the Magdalenian. As primary factors determining raw material procurement strategies we consider climate conditions, paleoenvironment and hunter-gatherer mobility. This is illustrated by a comparison of raw material procurement of Magdalenian and the following Azilian industries.

Fogel, Hiedy

[15] GALLINAZO SETTLEMENT PATTERNS: SOME POSSIBLE SOCIAL AND POLITICAL IMPLICATIONS

Gallinazo cultural materials date to ca. 100 B.C.-200 A.D., and are found in the Cosna, Nepona, Chao, Viru, Moche, Chinchao, and Quequepeque Valleys. This paper will examine the social and political implications, types and distribution of Gallinazo settlements in the Viru, Santa, and Moche Valleys. The hypothesis that will be examined is that the patterns of settlement indicate that the Gallinazo polity was a well organized and centralized early state with an urban capital at the Gallinazo Group site in the Viru Valley.

Foradas, James (Ohio State)

[19] NORMATIVE MINERAL COMPOSITION AS A MEANS OF DISTINGUISHING BETWEEN MIDWESTERN CHERTS (FLINTS) USED BY SCIOTO HOPEWELL

Over three hundred samples of chert (flint) from outcrops associated with prehistoric quarries in the chert-bearing Burlington, Upper Mecker, Zaleski, Vanport, Brush Creek, and other formations, were analyzed using ICP and other methods. Concentrations of nine common elements in the cherts were converted to quantities of "Normative" minerals known to be in the cherts as a result of their geology. Variations in normative mineral compositions proved useful in differentiating Scioto Hopewell chert artifacts. The method and results of minimally destructive artifact tests will be discussed.

Ford, A. (see Olson, K.) [12]

Ford, Anabel (California-Santa Barbara)

[81] INTEGRATION AMONG COMMUNITIES, CENTERS, AND REGIONS: ORGANIZATION OF THE MAYA OF THE BELIZE RIVER AREA

Complex societies depended on an hierarchical structure to organize and integrate constituent populations and mobilize resources. Hierarchies are manifest in the arrangement of individual settlements, the variability within local communities, and the composition of regional centers. For early civilizations, agriculture was a fundamental component of the economy. Archaeological examples of complex societies provide an excellent testing ground for identifying the household, community, and regional mechanisms of organization and integration because, ultimately, wealth in these societies must be tied to the production potential of land and control of labor. This presentation examines the complex hierarchical relations of the ancient Maya.

Ford, Pamela J. (Mt. San Antonio College)

[18] QUAKES AND CLAMS: GEOLOGICAL EVENTS AND ARCHAEOLOGICAL REALITIES

What happens to the coastal subsistence system when the resource base is shaken by an earthquake and inundated by a tsunami? The marine invertebrate assemblage from the West Point site complex documents pre and post earthquake resource dependence on the Northwest Coast of North America over a 4,500 year time span. These remains reflect changes in the locally available shellfish resource base instigated by geological alterations to the intertidal zone.

Forsman, Leonard A. (Larson Anthropological/Archaeological Services)

[76] TRADITIONAL CULTURAL PROPERTY EVALUATION IN URBAN CONSTRUCTION PROJECT SETTING: A SEATTLE, WASHINGTON CASE

Evaluation of traditional cultural properties (TCPs) in an urban setting presents unique challenges to archaeologists, Indian tribes, and project managers. The Municipality of Metropolitan Seattle (METRO) retained Larson Anthropological/Archaeological Services (LAAS) to evaluate TCPs within the construction corridor of proposed sewage and stormwater project in Seattle, Washington. Landforms within the project area are central to local aboriginal mythology and may have cultural importance to the Muckleshoot, Suquamish, and Duwamish Tribes. METRO and LAAS are working with the Tribes to acquire information from Indian communities in support of the TCP evaluation, which will be a model for future projects.

Foster, M. (see Breternitz, C.) [7]

Foster, M. (see Mitchell, D.) [80]

Foster, Michael (Soil Systems, Inc.)


Two hundred and fifty burials were recovered during excavations at several late Classic and Post Classic sites in the Marismas Nacionales of coastal west Mexico. Burials occurred in relatively discrete mounds and contained an array of burial goods. This study describes the results of a search for horizontal and vertical differentiation within and between the burial groups. Evidence of membership in social units and non-kin associations such as task groups is reviewed as evidence for social ranking. Finally, world view as reflected in the mortuary practices is discussed.

Fowler, C. (see Fowler, D.) [40]

Fowler, Don D. (Nevada-Reno) and Catherine S. Fowler (Nevada-Reno)

[40] FROM LOVELOCK CAVE TO PAQUIME: IMAGES OF THE PREHISTORIC AMERICANS WEST, 1846-1994

Interpretive illustrations—drawings, paintings and photographs of archaeological sites and imagined prehistoric scenes or events in the Great Basin and the Greater Southwest—have been published since 1846. These images, produced by archaeologists, artists, explorers, photographers and professional illustrators, reflect changing conceptions of the culture histories of the regions and varying degrees of "Romantic" and "scientific" interpretation of prehistoric sites and material culture. In this paper we discuss a number of illustrations in relation to changing archaeological and popular conceptions of prehistory and Native American heritage.
Fowler, Don D. and Nancy Parezo

[58] PRESERVING THE ARCHAEOLOGICAL RECORD: AN ETHICAL OBLIGATION

Archaeologists have always pointed to careful scientific recording of research data as one of the characteristics of professionalism. The records of archaeological research are an important part of the archaeological resource, and contain primary information needed for understanding the past. These materials are irreplaceable and essential for future research and education. These materials are unique resources for studying the history of archaeology and its contributions to the development of the sciences and humanities. Archaeologists have a professional responsibility to serve as stewards for these research records, and insure they are preserved for use by future generations.

Fowler, Peter J. (Newcastle Upon Tyne) [Respondent to Addyman 3]

Francis, Julie (Wyoming Transportation Department)

[103] ROCK ART TRADITIONS IN NORTHWESTERN WYOMING: CHRONOLOGY, SPATIAL DISTRIBUTION, AND IMPLICATIONS FOR THE NUMIC SPREAD

Northwestern Wyoming contains two distinct aboriginal rock art styles: the pecked Dinwoody tradition and a variety of incised motifs. Dinwoody rock art is the most ancient, with $^14$C and cation ratio dates of over 6000 years B.P. Dinwoody and incised rock art exhibit almost no spatial overlap. Yet, the two traditions are temporally coeval for at least the last 1000 years. It is argued that Dinwoody represents the indigenous rock art of northwestern Wyoming and can be ascribed to Numic speaking groups who have occupied the area for several thousand years.

Frangipane, Marcella (Università di Roma)


The 4th millennium levels at Arslantepe are important for understanding both the autonomy of the first "urban" centers in eastern Anatolia and the importance of interregional relations in subsequent developments. Continuity between the Late Local Chalcolithic and the Late Uruk is evident for the formation of an autochthonous centralized power at this site. However, the nature and extent of this power appear to be profoundly changed in the Late Uruk period, when participation in new interregional exchange networks likely put the elite in a position to exert administrative control over at least part of the primary economy.

Fratt, L. (see Gregontis, L.) [52]

Fratt, Lee (Arizona)

[55] THE ROCKY ROAD OF GROUND STONE ANALYSIS IN THE AMERICAN SOUTHWEST: A HISTORICAL PERSPECTIVE

This paper examines ground stone artifact analysis in relation to the major intellectual trends of Southwestern archaeology. Its purpose is to place in perspective the efforts of pioneering researchers such as Richard B. Woodbury and to suggest future orientations, problems, and goals. Considered an important part of archaeological assemblies during the first half of the 20th century, ground stone artifact analysis was virtually ignored in the 1960s and 1970s. This trend is reversing as new approaches to identifying artifact use, understanding grinding technology, and investigating artifact manufacture and tool design are producing new insights into prehistoric economics and social organization.

Frederick, Charles D. (Texas-Austin)

[8] GEOARCHAEOLOGICAL INVESTIGATIONS IN THE NORTHERN BASIN OF MEXICO

Geoarchaeological studies associated with excavations at Xaltocan explored two issues: the origins of the island, and the types of resources available to the former inhabitants. Reconnaissance of the northern Basin revealed geomorphic features, two beaches and a strand plain, on the northwest side of the basin which suggest that the lakes of Xaltocan and Zumpango probably were more stable than previous studies have suggested. Furthermore, stratigraphic and artifactual evidence suggest that the island of Xaltocan is a tell constructed on the lakebed more than a kilometer from the western shore. Aerial photograph analysis and additional fieldwork on the lakebed east of Xaltocan located the remains of chinampas presumably constructed during the Early Aztec occupation of the site.

Fredrickson, David [Discussant 83]

Fredrickson, David (Sonoma State), Greg White (Sonoma State), and Michael Love (Sonoma State)


Application of optimal foraging models to archaeological data from California's North Coast Ranges (NCRs) support the occurrence of a marked organizational change in several localities between about 2000 and 3000 years ago. This change is presumed to mark a shift from Forager to Collector and has been attributed to resource intensification. Recent investigations in the NCRs, reported here, suggest that social processes may contribute to such results and point out the need to study not only the development of Collector from Forager but also the interaction between Collector and Forager.

Freeman, A. (see Hajic, E.) [88]

Freeman, Andrea (Arizona)

[74] GEOARCHAEOLOGICAL APPROACHES TO PALEOINDIAN STUDIES: LIKE WATER FOR CHOCOLATE?

Prior to the Folsom discovery, geology was considered an integral part of what would become known as Paleolithic archaeology. Though an association has continued to the present day, "interdisciplinary" work between archaeologists and geologists often has separate goals. Developing a sound interdisciplinary approach demands that archaeologists and geologists work cooperatively in a milieu that addresses the interests of both sciences. Paleolithic archaeology operates at a geographic and temporal level that can take advantage of new conceptual schemes and funding opportunities in the geological sciences, and that can bring additional insight into the earliest human occupation of North America.

Frisom, G. (see Sellet, F.) [74]

Frisom, George C. (Wyoming) and Robson Bonnichson (Oregon State)

[56] THE PLEISTOCENE-HOLOCENE TRANSITION ON THE PLAINS AND ROCKY MOUNTAINS OF NORTH AMERICA

As the continental ice sheets and valley glaciers receded at the end of the Pleistocene, Clovis populations occupied the Great Plains and river valleys well into the lower elevations of the Rocky Mountains. Climates and vegetation were changing; several animal species were extinct or rapidly disappearing. After Clovis, continually increasing numbers of more localized human groups with different subsistence strategies in both plains and mountains continued until about 8000 years ago when the continual trend toward drier climatic conditions forced human groups into true hunting and gathering subsistence and exploitation of different ecological niches.

Frost, R. (see Raymond, C.) [52]

Fujiita, H. (see Rosales-López, A.) [57]

Fujiita, Harumi (Centro Regional del Instituto Nacional de Antropología e Historia)

[57] PREHISTORIC COASTAL ADAPTATIONS INFERRED FROM EXCAVATION DATA FROM THE SITE OF MEDANO AND EL CONCHALITO, BAJA CALIFORNIA SUR, MEXICO

Results to date of an ongoing research project addressing prehistoric coastal adaptations in the Cape Region of Baja California, Mexico are presented. The research area encompasses the littoral zone from La Paz bay on the Gulf of California south to Cabo San Lucas. This represents the most systematic and extensive survey program yet carried out in the Cape region, an area increasingly impacted by resort development. Along with primary data on site type and distribution along the coast, preliminary inferences regarding changing patterns of shellfish exploitation over the last 4,000 years will be discussed.

Gaines, Sylvia (Arizona State) and Warren M. Gaines (Arizona State)

[57] COMPUTER SIMULATION OF A DIACHRONIC MODEL PORTRAYING VILLAGE ADAPTIVE BEHAVIOR UNDER ENVIRONMENTAL STRESS

The focus is a hypothetical prehistoric, small farming community based on empirical data drawn heavily from the Colorado Plateau of the American Southwest. The model tracks an extensive range of village activities, kinship and population dynamics (by individuals), environment, food production, and building sequences through five generations. Available resources, human biological attributes, environmental factors and behavioral rules are input variables to the model. Dynamic adjustments of village strategies are simulated, using AI techniques of inference and knowledge base rules, to observe a year by year basis, the impact of changes on village behavior relating to land use, allocation of resources, labor and energy budgets. A modular, tabular-driven approach provides great flexibility for either instructional or research applications.

Gaines, W. (see Gaines, S.) [37]

Gamble, Clive (Southampton)

[40] IMAGES AS THEORIES ABOUT CAVE MEN

Cave men have been portrayed in three main ways—heroic, comic, and scientific. This paper examines the visual language employed by the three traditions and concludes that the central proposition of progress is common to all. The association of dinosaurs and cave men is presented as an example of the Jurassic tendency in contemporary paleolithic theory.
Gambl, Lynn

Gambl, Lynn (California-Los Angeles)


The Portola land expedition of 1769 marked the beginning of an era of intensified contact between the Chumash Indians of the Santa Barbara Channel Coast region and the Spanish. Journals from the 1769 expedition indicate that the settlement of Helo' was the largest village observed at this time, with an estimated population of approximately 900 individuals. By 1804, Helo' had been abandoned. Fluctuations in house size, village size, exchange goods, and political organization at Helo' during this critical 35-year period reflect the complex impacts of Spanish colonization on the sociopolitical systems of the Chumash.

Garber, James (Southwest Texas State)


During the summer of 1993 excavations were initiated by Southwest Texas State University at the medium sized Maya ceremonial center of Ontario Village in Cayo District, Belize. Excavations on the main mound revealed evidence of extensive ritual activity on the primary axis dating to the Late Classic period. Additionally, an elite burial was encountered within the construction fill of the final construction phase. The presence and character of this site provides important information in the reconstruction of the sociopolitical systems of the Belize River Valley.

Gardner, K. (see Shaffer, B.) [72]

Gayeheart, H. (see Kardulas, P.) [75]

Geiger, A. (see Price, T.) [47]

Geib, Phil R. (Navajo Nation Archaeology Department)

[97] CONTINUOUS OR NOT? ARCHAIC OCCUPATION OF THE CENTRAL COLORADO PLATEAU

Hunter-gatherer occupation of the Colorado Plateau during the Archaic Period has been traditionally characterized as continuous, but marked by evolutionary changes. An alternative model contends the Archaic period was punctuated by regional abandonment and reoccupations, resulting in a succession of new lifeways and material culture. These two models are evaluated with regard to the radiocarbon record and Archaic material culture of the Glen Canyon region. Long-term continuity in occupation throughout the entire Archaic period is supported. Adaptive shifts involving increased residential mobility and changes in settlement pattern partially account for previous gaps in the Colorado Plateau radiocarbon record.

Gerken, D. (see Carroll, M.) [65]

Gerlach, Craig (Alaska-Fairbanks)


This paper investigates the causes and consequences of shifting settlement patterns as a result of control over strategic resource locations on both the coast and in the interior of Alaska. Several cultural and economic traditions are discussed wherein the relationships of mobility to sedentism is a function of changing ecological relationships, the emergence of complex political systems, and patterns of cultural integration, trade, and warfare.

Garrell, P. (see Anskieczewicz, R.) [41]

Gerry, John (Harvard University)

[106] CLASSIC MAYA DIETARY PATTERNS: THE SIGNIFICANCE OF SOCIAL AND ECOCLOGICAL VARIABLES

This paper discusses dietary patterns among the Classic Maya as they are revealed by stable carbon and nitrogen isotope ratios preserved in human bone. Skeletal samples are drawn from seven sites: Uaxactun, Holmul, Baking Pot, Barton Ramie, Seibal, Altar de Sacrificios, and Copan. The isotopic results indicate that Maya diet was not so much socially dictated as it was spatially determined, i.e., neither class nor gender nor chronological context are significant factors of isotopic variation when compared to geographic location. Micro-environmental factors are examined to account for regional groupings, but ultimately, settlement density is considered a more significant variable.

Gessler, Nicholas (California-Los Angeles)

[99] STEPS TOWARDS CREATING AN "ARTIFICIAL CULTURE:" THE EMERGENCE OF GLOBAL CULTURAL PATTERNS FROM LOCAL PARTICIPANT RULES

Individual actors, operating under individual local rules, can automatically produce collective global patterns of behavior that emerge solely through their mutual interactions. Interestingly, these global patterns of behavior are not programmed into the simulation. They have no existence within the individual actors.

Goldberg, Paul and John Jacob

Rather, they come into being only as the entire system evolves. These dynamics of "The Science of Complexity" are variously referred to as emergent, self-organizing, cybernetic, synergetic, dynamical, or non-linear systems. Paradigms have crystallized in conferences on "Artificial Life." The term seems ripe to press epistemological successes in some behavioral and social sciences into service in modeling cultural evolution and change in anthropology.

Gettleman, K. (see Havill, L.) [106]

Glaeser, M. (see Glascock, M.) [19]

Gifford, John A. (Rosenstiel School of Marine and Atmospheric Sciences) and Steve Koski (Miami)

[41] EARLY HOLOCENE DEPOSITIONAL ENVIRONMENTS IN LITTLE SALT SPRING

Little Salt Spring (LSS: 858018), Florida, possesses an extensive funnel-shaped basin containing a terrestrial lacustrine sediment sequence from 1-4 m thick. Despite excavations from 1971 to 1979, a definitive stratigraphic sequence was never published. New test excavations in the LSS basin and cores from the sediment core in the spring bottom have yielded a sequence of subaqueous and subaerial deposits from the Late Pleistocene/Holocene boundary. Eolian quartz sands characterize the subaerial deposits. Intensive human activity, indicated by wood, bone, and antler implements, occurred between 8500-9500 C-14 y.B.P. during a period of lowered spring levels. Organics predominate in later deposits, including the peats that held 1000+ Middle Archaic burials on the basin's perimeter.

Gifford-Gonzalez, Diane (California-Santa Cruz)

[40] LE PLUS CEST LE CHANGE: REPRESENTATIONS OF AGE AND GENDER IN ARTISTS' PORTRAYALS OF HUMAN ANCESTORS

Artists' depictions of human ancestors have recently been recognized to be powerful and semi-autonomous discourses that actively form expert as well as popular understandings of the past. Analysis of over 500 such images reveals strong patterning in representations of activity, placement in the frame, and posture relevant to gender and age. Images drawn from the fine arts and media, the latter influenced by the fine arts, convey messages about gender and power in Paleolithic life. To disrupt our habits of viewing, post-war Western representations of anatomically modern humans are explored for aspects of their social content.

Gilman, Antonio (California-State-Norbridge) [Discussant 12]

Glascock, M. (see Copson, B.) [78]

Glascock, M. (see Olson, K.) [12]

Glascock, Michael (Missouri), Martin Glesso (Chicago), Richard L. Burger (Yale), and Ernesto Salazar (Universidad Autonoma-Quito)

[19] SOUTH AMERICAN OBSIDIAN STUDIES AT THE MISSOURI UNIVERSITY RESEARCH REACTOR

The Archacometry Laboratory at the Missouri University Research Reactor is assembling a database of obsidian source analyses for South America. Obsidian from sources and archaeological sites in the countries of Bolivia, Colombia, Ecuador, Peru, and Chile has been studied by neutron activation analysis. The complete analysis, which yields 27 elements, differentiates chemically similar sources. Source determination of artifacts is assisting archaeologists in understanding the movement of obsidian throughout the Andean region.

Glass, C. (see Hounard, J.) [26]

Glassoe, Michael A. (California-Santa Barbara) [Discussant 92]

Goeckel, Ted (Alaska-Fairbanks)

[94] LATE PLEISTOCENE HUMAN SETTLEMENT OF SUBARCTIC SIBERIA

Joint Russian-American field research has begun on a series of subarctic Siberian Upper Paleolithic sites previously identified from biological evidence. The sites are within the Lena Valley; 20,000-0 B.C. These sites have only been preliminarily studied. Each is well stratified and thought to contain an Upper Paleolithic component that, based on initial radiocarbon dates and/or stratigraphy, predates the last glacial maximum.

Goldberg, Paul (Texas-Austin) and John Jacob (Texas A&M University)

[87] GEOARCHAEOLOGICAL INVESTIGATIONS AT OP. 4046, COLHIA, BELIZE

Geological investigations at Op. 4046 focused on the delineation and documentation of site stratigraphy and the generation of hypotheses concerning site formation processes. Four stratigraphic units consisting of calcareous and decalcified silty and sandy clays were described over a weathered marly substrate; these contain artifacts material dated from 2500-1100 B.C. The two uppermost units are
noteworthy for anthropogenic inputs from nearby mound erosion. Micromorphological, grain size, carbonate and organic matter analyses suggest low energy sedimentation, modified by pedoturbation and leaching.

Goldstein, L. (see Watkins, J.) [38]

Goldstein, Paul (Dumbarton Oaks and American Museum of Natural History) [43] FORMATIVE AND TIWANAKU-CONTEMPORARY SETTLEMENT PATTERNS IN THE MOQUEGUA VALLEY, PERU

Results of the first season of the Moquegua Archaeological Survey suggest a more complex social landscape than indicated by previous site-centered investigations. The distribution of Prehispanic sites discovered in the 1995 season of systematic reconnaissance displays conspicuous differences in settlement choices and agricultural patterns among Formative (Huarcane Phase), Tiwanaku, Wari, and Late Intermediate occupations. Ongoing settlement pattern surveys will continue to shed light on the interaction of the first expansive states and indigenous chiefdoms in the South Central Andes.

Goles, G. (see Ayers, W.) [6]

Goodly, Robert G. (Wheaton College) [96]

TYPOLOGY AND MEANING: PROBLEMS WITH IMPOSING ORDER ON CONTACT PERIOD CERAMICS FROM SOUTHEASTERN NEW ENGLAND

Typology, with its emphasis on distinct cultural groups and hierarchy, reproduces in prehistory the dominant values of modern society. Typological frameworks mask diversity and individual expression in material culture much as modern elites emphasize consensus to marginalize dissenting voices in political discourse. The study of aboriginal ceramics in southern New England has relied on ceramic "types" as horizon markers and as markers of discrete social groups. Contact period ceramics from Narraganset Bay are used to dispute the existence of "types," and to argue that diverse ceramic styles were actively used to symbolize Native unity and autonomy in opposition to European colonialism.

Goodman, Dean (Miami, Japan Defense), Yasushi Yutshumura (Nara National Cultural Properties), J. Daniel Rogers (Smithsonian Institution), Mark Lynott (National Park Service), and James Price (Missouri) [63] JOINT U.S.-JAPAN RESEARCH PROJECT TO PROMOTE THE USE OF HIGH-TECH GROUND PENETRATING RADAR EQUIPMENT AND ADVANCED DATA PROCESSING FOR THE STUDY OF NATIVE AMERICAN ARCHAEOLOGY

The results of a joint U.S. and Japan research project using non-destructive Ground Penetrating Radar (GPR) at several native American Indian sites are presented. The application of advanced geophysical data processing, which provide estimated archaeological site plans based on gridded radar reflection data taken from closely spaced parallel profiles, are developed. The site plans made from the profiled data provide an estimate of the depth, shape, size and distribution of buried archaeological structures. The data are also integrated into 3-D depth maps depicting the depth to buried archaeological features across the sites. The data show the locations and general shapes of Hopewellian and Mississippian habitation sites, and burial mounds, as well as previously known and reburied excavation trenches.

Goodyear, Albert C. (South Carolina Institute of Archaeology & Anthropology) and Dan F. Moore (Arkansas Archeological Survey) [56] THE PLEISTOCENE-HOLOCENE BORDER IN THE EASTERN USA

The Eastern Woodlands from 11,000 to 9,000 B.P. displays both uniformity and diversity from the northeast to the Gulf of Mexico. After beginning with a very widespread Clovis culture, regionalization is readily apparent by latitude: While fluted points persist until 10,000 B.P. in the north, reshaped fluted points (Dolton) may be as early as 10,500 B.P. in the Southeast. Hafted bifaces are the most sensitive to these changes rather than flake tools. The Kirk horizon (9,500-9,000 B.P.) seems to represent a redefinition of the East during the early Holocene.

Godin, Russell T. (Southern Methodist) and Mark G. Plew (Boise State) [61] OPTIMAL FISHING APPROACHES TO PREHISTORIC SALMON FISHING IN THE NORTHERN GREAT BASIN: THE ECOLOGICAL DYNAMICS OF TRADE-OFFS AND STRATEGIC RESPONSES

When viewed from an optimal foraging perspective, historic Northern Shoshone salmon fishing provided an important alternative to camas root procurement and mammal hunting, even though the latter represented higher-yield, lower-cost resources. Salmon fishing and storage burdened camas and mammal shortfalls. Recent archaeological investigations in Southern Oregon have revealed ecologically dynamic patterns which link ecological patterns to spatial structure at a variety of scales allow for an empirical evaluation of optimality constructs. This approach allows for a mix of strategies, rather than asserting that one, and only one, predominates.

Green, Roger C. (Auckland) [6]

Grabber, Robert Bates (Northeast Missouri State) and Michael T. Dunne (Northeast Missouri State) [99]

CATASTROPHE THEORY, POPULATION PRESSURE, AND POLITICAL EVOLUTION

Viewing political evolution as a cusp catastrophe precipitated by increasing population density yields surprising retrodictions with definite archaeological implications. Three factors combine to trigger that many simulations: political evolution that then would proceed without further density increase, and (2) ranges within which considerable density decrease would fail to produce significant political evolution. That catastrophe theory can yield specific predictions of future archaeological discoveries is demonstrated by application to the Powhatan chiefdoms of Virginia.

Graffam, Gray (Trent University) [14]

BAYONNE COLLAPSE: A VIEW FROM THE TIWANAKU HEARTLAND

Pre Hispanic regime boundaries were never quite as totalitarian, in an economic sense, as some models predict, and the issues surrounding state collapse and rural restructuring are fertile topics for the consideration of cultural adaptation. At some point between A.D. 1000 and A.D. 1200, the Tiwanaku polity of the South Andes collapsed. At issue is the degree to which rural peoples were dependent upon state-level institutions for their survival, and ways in which they would have modified their economic activities in the wake of political collapse: The case is presented that field agriculture and llama herding were never matters completely under state control and that they present a degree of continuity that called for rural restructuring in the wake of Tiwanaku collapse.

Graham, Elizbeth (York University) [14]

THE MAYA COLLAPSE—CHAOS AND CONTINUUM

Having excavated sites with Postclassic and Historic components, I see bridges built as well as burnt over the chasm of Classic collapse. Although environmental degradation is a popularly cited "cause" of collapse, early Postclassic florescence suggests that whatever "degradation" occurred was in the process of punctuating political structures. Whole or partial disassembling of supports for Classic power necessitated new frameworks, and these came with new designs and hierarchies. An older view of collapse sees wider Mesoamerican cultural forces at work; though material culture demonstrates population continuity, some changes suggest significant shuffling of people and paraphernalia about the Yucatan peninsula.

Granger, Joseph E. (Louisville) [78]

ORGANIZING THE OBTAINABLE IN ORCHARD PARK: A RE-EXAMINATION OF EARLY WOODLAND EXTRACTIVE CAMPS IN WESTERN NEW YORK

Recent research conducted around the Petrie site in the town of Orchard Park in New York's Niagara Frontier yielded important information on the organization of catchment surrounding Meadwood Phase extractive camps. These spring-summer settlement types were utilized by microband segments for the taking and processing of fish and secondarily for cherit acquisition and territorial control. Petrie Site activities related to cherit acquisition are now understood to display a much more dispersed and complex pattern than heretofore defined. The "Petrie pattern" of Detached Clastic Activity Locality is described and applied to other extractive camp logistical situations in the Niagara Frontier.

Greaves, Michael W. (Hawai'i-Mauna) [Discusant 100]

Greaves, Michael W. (Hawai'i-Mauna) [81]

KALINGA REGIONAL COMMUNITY BOUNDARIES: AN EVOLUTIONARY EXPLANATION OF STYLE AND TERRITORIALITY

Ethnoarchaeological research among the Kalinga of the Philippines has documented aspects of their community organization, including locations of regional boundaries, size of territory, agricultural land, intra- and intercommunity integration, and intercommunity economic relations. This study examined the relations among these variables within the context of environmental variability involving resource distribution and predictability. An evolutionary explanation is offered for the development of differences in territoriality among the Kalinga. This explanation is tied to evolutionary-ecological models involving risk reduction in highly competitive settings.

Green, Roger C. (Auckland) [Discusant 6]

Green, Roger C. (Auckland) [100]

ARCHAEOLOGICAL MANIFESTATIONS OF SOCIAL AND POLITICAL ORGANIZATION IN POLYNESIA

The development of Polynesian social and political complexity appears to have followed two trajectories: one centered in West and the other in East Polynesia. Sufficient societies within each region conform to the pattern of the other, however, that it is evident actual historical developments were rather more
complicated than would be predicted solely from this fundamental geographic division. Rather, the added complications are suggested to stem from how various social, political, and religious arrangements were worked out among the different elites of each society, as reflected in the kinds of monumental structures they build in the different island groups.

Greenlee, Diana M. (Washington)
[35] DOCUMENTING SUBSISTENCE VARIABILITY IN THE OHIO RIVER VALLEY, A.D. 400-1650
The period A.D. 400-1650 is recognized as a time of settlement and subsistence change associated with the appearance of nucleated farming villages in the Ohio Valley. Because settlement and subsistence systems have specific requirements regarding the spatial and temporal distribution of resources, the distribution and particular manifestation of these phenomena will vary through time and across environments. This research documents temporal and environmental variability in faunal remains, botanical remains, and stable carbon isotope ratios from the central and upper Ohio River Valley as a basis for explaining subsistence change.

Greenwald, David (SWCA, Inc.)
[80] PUEBLO SALADO AND BRADY WASH: A CASE STUDY OF SITES FROM RIVERINE AND NON-RIVERINE SETTINGS
The Hopikan Classic to post-ClassiC transition is explored by comparing and contrasting two sites that contain occupations attributed to the Givano and Polvorón phases. Pueblo Salado, located on the floodplain of the Salt River in the Phoenix Basin, and Brady Wash, located on the bajada of the Picacho Mountains south of the Gila River, are used in this case study as both contained continuous occupations from the Givano phase through the Polvorón phase. Effects of the environmental settings upon these sites are examined and explanations concerning changes in attributes between the Classic and post-Classic periods are offered.

Greenwald, David (SWCA, Inc.)
[53] TABULAR KNIVES: TECHNO-MORPHOLOGICAL VARIATION WITHIN A TOOL CLASS
Tabular knives have a long use history over a wide geographic area in the Southwest. They form a unique component of both ground and flaked stone assemblages in Arizona by representing a tool of specialized function that crosses multiple cultural boundaries. Morphological, technological, and contextual data from these tools are examined from a variety of sites in the Southwest to derive intra- and interregional interpretations for tabular knife variability.

Greer, J. (see Greer, M.) [105]
Greer, John (Missouri-Columbia) and Mavis Greer (Missouri-Columbia)
[15] ANTHROPOMORPHIC STONE PICTOGRAPHS OF SOUTHERN MONTANA, VENEZUELA
Human forms are diverse and appear to refer to a wide variety of activities. Many are thought to refer back to creation time and to what may be mythological ancestors, while others may be triabally biographic and refer to specific events, others may refer to specific activities, such as dances. What are interpreted as human figures may refer either to spirits or to actual persons, while auxiliary figures seem to represent trance state while under the influence of hallucinogenic drugs. States of being (e.g., pregnancy, death) are portrayed, as are such materialistic details as clothing and decoration.

Greer, M. (see Greer, J.) [15]
Greer, Mavis (Missouri-Columbia) and John Greer (Missouri-Columbia)
[105] AN OVERVIEW OF CENTRAL MONTANA ROCK ART
During the past two years a continuing study of Montana Rock Art has increased the number of recorded pictograph sites in central Montana to over 125. Although paintings generally can be included in the "Central Montana Abstract Tradition," they display a wide variety of stylistic categories that can be differentiated by technological, artistic, and thematic characteristics with perceived temporal and ethnic differences. Some styles portray a public orientation, while others suggest private ritual. All appear to be associated with shamansitic activities.

Gregonis, Linda M. (Tucson Unified School District) and Lee Fratt (Tucson Unified School District)
[52] MULTICULTURALISM AND CITIZENSHIP: EVALUATING TUCSON UNIFIED SCHOOL DISTRICT'S ARCHAEOLOGY PROGRAM AT CAMP COOPER
Archaeology is an effective method for creating cultural awareness while developing citizenship skills and self-esteem. In 1992-1993, a middle school with a high Yaqui population participated in a program focusing on Native American perspectives on archaeology. During the 1993-1994 school year, an inner-city middle school will take seventh grade classes through an interdisciplinary unit. The teacher team will pre-teach and post-teach students to determine (1) the effectiveness of student-centered teaching for that age group, (2) the impact on attitudes toward other cultures, and (3) the impact of the program on citizenship skills.

Gregory, David (Archaeological Consulting Services) [Discussed 26]
Gregory, David (Archaeological Consulting Services)
[80] EL POLVORÉN PHASE IN A REGIONAL PERSPECTIVE
El Polvorén phase is reviewed from a regional perspective, including reasons for widespread changes that occurred in the late 1300s. Brief consideration is also given to the taxonomic status and general validity of the phase, based upon the various materials that have been grouped under it.

Grube, N. (see Hammond, N.) [60]
Gudjonsen, Thomas (St. Mary's University), Helen R. Haines (York University), Michael Lindeman (Soil Systems, Inc.), Ellen Ruble (Northern Arizona University), and Pamela Weiss (Montreal)
[60] THE BLUE CREEK RUIN, BELIZE: AT THE EDGE OF THE PETEN
The Blue Creek ruin is the largest of a series of Maya sites on top of the Bravo Escarpment in NW Belize. This escarpment delineates the eastern boundary of the Peten physiographic region as well as the Late Classic/Mayan area. The site of the Peten and Northern Belize spheres. Chronological architectural data support the idea that it may have been a "daughter site" of the regional center of La Milpa. The archeoastronomy seen in iconography and pottery may reflect attempts to link the rulers to their ancestral lineage and home.

Gummerman, George J. (Santa Fe Institute) and Timothy A. Kohler (Washington State)
[99] ARCHEOLOGY AND THE SCIENCES OF COMPLEXITY
Archaeologists have a long tradition of exploring the development of complexity, however, their use of the term is only partially consistent with the concept as used by the various developing sciences of complexity. Computational experimentation in artificial biological, physical, and cultural worlds may aid in understanding simple rules that result in complex behavior. Archaeologists could profit from the utilization of one of the major strengths of anthropology, the comparative approach, not only by comparing the evolutionary trajectories of diverse cultures, but through a broader comparison of culture with biological and physical complex adaptive complex systems.

Gustafson, Alice A. (Colorado-Denver)
[72] THE DUNCAN RANCH SITE 1: A LATE WOODLAND/INCIPENT ANTELOPE CREEK PHASE SITE
The origin of the Ancestral Creek village manifestation on the Canadian River in the Texas Panhandle has been attributed to migration from another cultural area or the acculturation of a local Woodland group based on diffusion of traits and ideas. Research and excavations on the Duncan Ranch Site 1, 41HC124, near the main aggregations of Ancestral Creek sites support indigenous development. Contact and trade with groups traversing the Canadian River and innovation resulted in a continuum of traits and processes between an earlier Woodland group and the Ancestral Creek village communities.

Gutiérrez, M. (see Hyland, J.) [57]
Gutiérrez, María de la Luz (Centro Regional del Instituto Nacional de Antropología e Historia, La Paz, Baja California Sur, Mexico) and Justin R. Hyland (California, Berkeley)
[57] FIRST REPORT ON THE PROYECTO ARTE RUPESTRE SIERRA DE SAN FRANCISCO, BAJA CALIFORNIA SUR, MEXICO
The Proyecto Arte Rupestre Sierra de San Francisco, Baja California Sur, Mexico, one of the twelve Proyectos Especiales now being carried out by the Instituto Nacional de Antropología e Historia, represents the largest archaeological project ever undertaken in Baja California. The goals of this two-year project are (1) the architectural investigation of the famous Sierra de San Francisco painted murals and (2) the development of conservation strategies for the mural sites. Project accomplishments to date are reported, including first AMS dates for the murals, the discovery of a new obsidian source, and evidence for Choris occupation of central Baja California.

Habicht-Mauhe, Judith A. (California-Santa Cruz)
[58] CERAMIC PRODUCTION AND SOCIOPOITIICAL CHANGE IN THE NORTHERN RIO GRANDE
This paper provides evidence for the organization of ceramic production and trade in the northern Rio Grande Valley of New Mexico within the context of shifting sociopolitical alliances in the region during the fifteenth century. Preliminary results of attribute and materials analyses of pottery collections from the Galisteo Basin sites of Pueblo Blanco (LA40) and San Marcos (LA98) are presented. This area is generally considered to have been a major center for the production of glaze-painted ceramics during the fifteenth
century, making it the ideal locality from which to explore processes of sociopolitical interaction and change among the Eastern Pueblos.

Habu, Junko

[47] JOMON, HUNTER-GATHERERS, HOW SEDENTARY WERE THEY?

Despite the common assumption of Jomon people as fully sedentary, living in permanent residential bases year-round, in reality, Jomon settlement systems are poorly understood. This paper and the accompanying paper from the Morinou phase (ca. 5,000 B.P.) are used to interpret Early Jomon subsistence-settlement systems. The results suggest that the Morinou phase people were relatively sedentary, but not necessarily remaining in the same settlement throughout the year. These results are then used to address the question of the development of sedentism from the Initial through to the Final Jomon periods.

Hackworth, Mark (Northland Research, Inc.)

[80] CLASSIC PERIOD HOHOKAM MORTUARY PATTERNS FROM THE SANTA CRUZ FLATS

Excavations at three Classic Period Hohokam sites in south-central Arizona have identified mortuary patterns from the Seditary Classic period transition and the Classic Period, including a Terminal Classic component. Evidence of secondary cremations, primary and secondary inhumations, mass graves, and initial processing in possible channel features was found at two habitation villages and one farmland. In conjunction with an analysis of grave goods, a review of these patterns documents a changing mortuary behavior on the Santa Cruz Flats. Modifications of Classic Period mortuary behavior are associated with the collapse and disintegration of Hohokam cultural systems within the Santa Cruz Flats Hohokam.

Hager, Lori D. (Stanford University)

[40] FASHIONING THE "PRIMITIVE" IN HUMAN EVOLUTION: ONE HUNDRED YEARS OF LOOKING AT NEANDERTHALS, LOOKING AT US

Since the first discovery of Neanderthal fossils more than 100 years ago, these early humans have frequently been represented in pictorial form as our "primitive" ancestors: bristly, beecled-browed, stooped over, and dim witted. Our interpretations of who the Neanderthals are in human ancestry have been significantly structured by the visual images presented in both public and scientific spheres. This paper examines how the Neanderthals, more than any other group of hominids, have been used as a focus from which to negotiate cultural, and especially racial, difference through the medium of visual imagery.

Haugstrum, M. (see Hildebrandt, J.) [61]

Haugstrum, Melissa (Washington)


The peasant household constituted the backbone of the Inka Empire's overall productivity. The family group, moreover, composed the core of craft production for local, provincial, and state consumption. Investigations in Peru and Argentina show the effectiveness of the peasant household for the multiple roles—agricultural and artisanal—that householders assumed in their economic lives. Archaeological evidence from domestic contexts reveals overlapping patterns in the pyrotechnologies, pottery-making, metal-working, and cooking as well. This paper discusses the character of the domestic pyrotechnic craft economy and examines the form and function of the hitherland household as family farm and craft studio.

Haines, H. (see Guderjan, T.) [60]

Hajic, Ed (Illinois State Museum) and Andrea Freeman (Arizona)

[88] STRATIGRAPHIC AND GEOMORPHIC CONTEXT AT THE PALEO CROSSING PALEOINDIAN SITE, OHIO

Surface survey of the plowed surface of kame topography yielded abundant Paleoindian debirs but the presence and context of potential intact sub-panwazone Paleoindian cultural deposits were in question. Results of a coring program revealed three pedogenically altered lithostratigraphic units. A basal terminal late Wisconsinan supraglacial and/or proglacial loam diamicton (1) consisting of various types of debris flows underlies a silt loam and silt loam diamicton, (2) consisting of debris flows, loess-derived colluvium, and possibly loess. The blow zone (3) differentially truncates these units depending on hillslope conditions. Units 2 and 3 contain Paleoindian materials. The geometry of Unit 2, deposited and preserved in foreset and toplete locations, and thickness of blow zone were used as guides of placement of excavations.

Haley, S. (see Miallowski, L.) [72]

Hall, Barbara Ann (Riverside Community College)

[36] SPINDLE WHORLS AND THE COTTON TRADE IN MIDDLE CLASSIC MESOAMERICA: PERSPECTIVES FROM THE GULF COAST

For the Aztecs, cotton cloth was a vital trade and tribute item that marked status and achievement. Spindle whorls, a primary artifactual indicator of cloth production, appear during the Epiclassic/Early Postclassic in most of Mesoamerica, but only in scarce quantities. However, evidence from the Gulf Coast suggests that cloth production became important beginning in the Middle Classic. A ratio of whorls to sherds, and other evidence, suggests that spinning became vital to the economy of certain sites in south and central Veracruz during the Middle Classic, driven at least partly by Teotihuacan interaction. Increased interregional interaction would promote the need for status markers such as cotton, which, in turn, would enhance economic growth and social differentiation in areas that supplied such goods. With the decline of Teotihuacan, cotton production spread to other regions in Mesoamerica.

Hammond, Christopher [Discussant 38]

Hammond, Norman (Boston University), Gair Tourtellot III (Boston University), John R. Rose (Pittsburgh), and Nikolad Grobe (Univestity of Bonn)


The Classic Maya city of La Milpa in northwestern Belize was until recently one of the least-known major centers in the eastern lowlands. Mapping has now revealed a ceremonial precinct covering 0.5 square kilometers, with a main plaza including two ballcourts and four large pyramids, and construction beginning in the Late Preclassic. Seventeen stelaic document elite occupation from before A.D. 450 to after 800, and name two rulers. Monument repositioning may be several centuries later, with veneration arguably continuing into the colonial period. The La Milpa community was extensive, and surveys document its settlement pattern and resource procurement activity.

Haney, Jefferson (Sonoma State)

[33] BEDROCK MORTARS AS A REFLECTION OF TRANS-SIERRA SOCIAL AND ECONOMIC INTERACTION

This paper examines hunter-gatherer adaptations through a study of bedrock mortars in the Mono Basin-Long Valley region of the eastern Sierra Nevada. These milling features occur throughout California and are common when associated with acorn processing. Oak trees, abundant in the western Sierra, are absent in most regions of the eastern Sierra. The distribution of the bedrock mortars in the latter region reflects a broad interaction sphere which involved economic and social relations among populations of the eastern and western Sierra. The importance of these relationships with respect to local adaptive systems and to prehistoric change in the region is investigated.

Hanson, C. (see Bey, G.) [60]

Hanson, Craig (Tulane University), William Ringle (Davidson College), and Sharon Bennett

[76] THE SIXTEENTH CENTURY ENCOMIENDA VILLAGE FROM NORTHERN YUCATAN, MEXICO

Historical accounts from northern Yucatan concerning conquest period Maya have been central to ethnographic reconstructions of the Maya, yet independent archaeological verification is as yet scarce. In 1991, discovery of a sixteenth century ranchera chapel near the center of the Terminal Classic site of El Batan, Yucatan, led in 1992 to mapping and excavations of the church and a portion of the surrounding reduction community, including intensive surface collections of structures. Since the site is located in one of the earliest zones of encomienda formation in Yucatan, El Batan provides insight into initial colonial strategies and indigenous responses.

Hanson, D. (see Ambrose, S.J) [54]

Hanson, Diane K. (Puerto Rico)

[10] ENVIRONMENTAL INFORMATION FROM SHELLFISH AT MONSERRATE, PUERTO RICO

A cultural break between the Cuervas and Ostiones traditions was identified in the 1930s at Monserrate, Puerto Rico, using shellfish associated with the distinctive ceramic styles. The shift in fauna associated with the cultural transition in the Caribbean has been interpreted by various scholars as a result of increasing demographic pressures, environmental changes, or cultural preferences. In 1992, shellfish were collected to determine what the environmental conditions were at the site during this transition: if the associated mangrove was present prehistorically, and what the characteristics were of the local intertidal zone which is now primarily an extensive mudflat bordered by coral reefs.

Hard, Robert J. (Texas-San Antonio)

[72] AGRICULTURAL INTENSIFICATION IN THE SACRAMENTO MOUNTAINS OF SOUTHCENTRAL NEW MEXICO

Excavations during the summer of 1993 by the University of Texas at San Antonio Field School provided evidence regarding the role of cullusins at a site which dates to the Late Pithouse period. Located in the pinyon-juniper zone in the Sacramento Mountains, this research can address issues regarding the role of ecological variability in bringing about agricultural intensification, particularly when contrasted with adaptations in the adjacent Chihuahua desert.
pattern of exploitative quarrying of lithic resources, (2) a dominantly early pattern of discard or loss of items from a transported toolkit, and (3) short-term residential use.

Haynes, Gregory (Desert Research Institute) [75] THE DEFINITION OF ARTIFACT CONCENTRATIONS, LITHIC REDUCTION STRATEGIES AND STONE TOOL DISTRIBUTIONS AT A WESTERN STEMMED SITE IN SOUTHERN NELADA

20NV720 is a 1.2 mile long Western Stemmed Tradition site that is located on the top of a 50 foot high terrace overlooking Forty Mile Canyon, on the Nevada Test Site. In 1993, Desert Research Institute recorded and performed an in-field analysis of lithic debitage and stone tools at this site. Spatial analysis of 30 randomly chosen debitage sample units shows at least three artifact concentrations across the site. Debitage analysis...
at 26NY7920 suggests that the primary reduction strategy at 26NY7920 was bifacial thinning, common in many large Western Stemmated sites. Spatial analysis of stone tool classes suggests differences in the activities that produced each artifact concentration.

Hayward, Michele (Panamerican Consultants, Inc.) and Michael Cinquino (Panamerican Consultants, Inc.)
[102] EXCAVATIONS AT THE SAN JUAN NATIONAL HISTORIC SITE, 1993, SAN JUAN, PUERTO RICO

Panamerican Consultants, Inc., for the US Army Corps of Engineers has recently completed a mitigation level excavation at the San Juan National Historic Site of El Morro, in Puerto Rico. The project included the excavation of two midden areas at the historic fort, administered by the National Park Service, as well as the undertaking of several specialized studies. The results from the excavation, review of documentary sources, and the stratigraphic/faunal/botanical analyses, are employed to synthesize and outline the nature of fortress construction techniques, military life, socio-economic status, and subsistence at El Morro during the Spanish Colonial Period.

Headrick, Annabeth (Texas-Austin)
[50] ANIMALS CAUGHT IN THE NET: EVIDENCE OF NAGUALISM AND SHAMANISM IN THE ART OF TEOTIHUACAN

The Teotihuacan occupation with imagery from nature has led to current theories of a state that controlled its population through the use of allegories from nature. However, recent studies of other Mesoamerican cultures have revealed the central importance of ritual shamans in the transformation among the ruling elite. Through comparison with other Mesoamerican cultures and ethnographic and ethnohistoric sources, this paper will show that depictions of animals from nature were actually perceived as humans in the midst of ritual. This identification of nagualism as an important aspect of Teotihuacan statecraft will illuminate the murky image we now have of the city's political activities.

Healy, Paul F. (Trent University), Jaime Awe (London), and Hermann Helmbuth (Trent University)
[44] PACIFITUM (BELIZE) BURIAL 1-9: TOMB OF AN ANCIENT MAYA RULER?

Excavations of Structure 1, the largest temple-pyramid at the Maya center of Pacbitum, Belize, revealed a deeply concealed, Late Classic period stone-lined tomb (Burial 1-9) with the human remains of an adult male. The substantial tomb construction, the central site location, associated offerings, and sumptuous grave goods collectively suggest not only high social status for the interred individual, but possible identification as a Maya site ruler. Comparison of Burial 1-9 with elaborate burials of reputed rulers from other lowland centers is made.

Heath-Smith, C. (see Smith, M.) [10]

Heideke, J. (see Milso, E.) [35]

Heideke, James M. (Desert Archaeology) and Miriam T. Stark (Desert Archaeology)
[42] STANDARDIZED THEORIES AND SPECIALIZED PRODUCTION: A VIEW FROM THE TONTO BASIN

Compositional analyses using quantitative petrography provides Desert Archaeology researchers with a basin-wide perspective for examining ceramic production in the early Classic period (Roosevelt Phase). Our research on local manufacturing traditions supports a model of intensive ceramic production during the early Classic period. Three aspects of productive specialization are explored: (1) how petrologically-based evidence for specialized production supports other compositional techniques; (2) whether extant models used to explain the ceramic patterning are appropriate; and (3) what types of material correlates are most useful for interpreting distributional patterning. Research directions regarding economic and social organizational issues in the Tonto Basin are then discussed.

Helmbuth, H. (see Healy, P.) [44]

Hempill, Brian (Vanderbilt University)
[90] WEAR AND TEAR: ANALYSES OF ARTHRITIS AND TRAUMA AMONG THE PREHISTORIC INHABITANTS OF THE MALHEUR LAKE WETLANDS

Recent recovery of 53 burials from the shores of Malheur Lake permit assessment of biocultural adaptation of prehistoric inhabitants from the northern Great Basin for the first time. Prevalence of osteoarthritis is high and reflects a demanding lifestyle for both sexes, but consistently higher frequencies of affection among males for most joints may indicate less habitual stress and mobility among females. Although the prehistoric inhabitants of Malheur Lake appeared to have enjoyed good health, traumatic injuries are common

(44%), and the majority of these injuries (64%) are the result of malevolent insult rather than accidental injury.

Henderson, J. (see Beaudry-Corbet, M.) [71]

Henderson, T. Kathleen (Northland Research)
[89] REPELLENTS ON THE LATE CLASSIC PERIOD: A VIEW FROM THE SANTA CRUZ FLATS

During the A.D. 1300s, a number of Hoboham villages were established along the lower course of the Santa Cruz River. The proliferation of population along the river not only reflects a shift from previous settlement patterns, but also occurs at a time when communities to the south were abandoned. Moreover, whereas much of the Hoboham region was depopulated during the A.D. 1400s, archaeological data indicate that the Santa Cruz community continued to be occupied into the sixteenth century, if not later. This study explores the importance of these findings for understanding the Classic to post-Classic transition.

Henry, D. (see Hietala, H.) [73]

Hers,R. Kaitly Niles (Arizona State)
[42] SOCIAL BOUNDARIES SET IN CLAY: TRADE WARE PATTERNING IN THE TONTO BASIN OF EAST-CENTRAL ARIZONA.

Ceramic exchange reflects the socioeconomic ties of the individuals and groups who are party to the exchange. Distributions of trade wares are examined for the Classic Period in the Tonto Basin of central Arizona. Initially all of Tonto Basin appears to have relatively equal access to distant trading partners. By the 14th century, however, trade wares have differential distributions within the basin, suggesting that sites in the eastern end of the basin traded with different areas than sites on the western end of the basin. These differences may represent boundaries between competing polities in the same basin.

Herbich, J. (see Dietler, M.) [151]

Herbalm, Cynthia L. (Arizona State)
[17] FOURTEENTH CENTURY AGRICULTURAL DIVERSITY IN THE NORTHERN RIO GRANDE VALLEY, NEW MEXICO (1993 Winning Poster, Student Category)

Agricultural intensification between A.D. 1315 and 1425 in the Rio Grande Valley is evident in the dry farming features documented by the 1990 University of New Mexico field school. The features are located on a basalt mesa above a 14th century aggregated site and an area suitable for floodwater farming, suggesting that two different agricultural strategies were in simultaneous use by the community. The co-occurrence of the two strategies suggests the existence of a diversified agricultural system not often recognized archaeologically.

Hernandez, G. (see Uruhuela, G.) [30]

Hersker, E. (see McManamon, F.) [38]

Hess, W. (see Ball, T.) [25]

Hester, Thomas (Texas-Austin)
[87] AN INTRODUCTION TO STUDIES OF THE COJAH PRECERAMIC

An introduction to testing in 1988 at the Maya site of Colha, Belize led to the discovery of buried preceramic deposits. In 1990-1991, further testing, and studies of soils and pollen in Colweb Swamp, confirmed the presence of human activities and agriculture ca. 2500-1000 B.C. In 1993, NSF-funded excavations clarified the stratigraphic sequence, in connection among these materials. The symposium reviews the ongoing research involving the Colha preceramic, and considers the implications of these data for studying the origins of lowland Maya culture.

Hicks, Frederic (Louisville)
[8] LATE PREHISPANIC XALTCAN AND ITS EXTERNAL RELATIONS

Xaltocan figures frequently in the ethnohistorical sources on late prehispanic Mexico, although different accounts are not always in agreement. In the 15th century it headed a large kingdom, but after its fall to Azcapotzalco it was briefly abandoned, then resettled under Mexican auspices. Throughout its history, its rulers and people entered into various kinds of relations with other polities; at different times they were allies, enemies, lords, vassals, and refugees. Examination of this diversity of external relations, and how they were constituted, helps us to understand the variety of forms that inter-poliy relations in ancient Mexico could take.

Hietala, Harold (Southern Methodist) and Donald O. Henry (Tulsa)
[73] A PRELIMINARY INTERPRETATION OF DIACHRONIC SPATIAL PATTERNING AT THE MIDDLE PALEOLITHIC ROCKSHELTER OF TOR FARAJ, JORDAN

Comparisons of the spatial distributions of features, artifacts and other behavioral residue furnish insights as to the number of occupants, seasons of occupation and economic activities of the inhabitants of the
Hildebrand, John and Melissa Hagstrum

Middle Paleolithic rockshelter site of Tor Faraj in Jordan. Interpretations focus not only on temporally redundant but also on occupationally specific behaviors through the stratigraphic comparison of intrusive patterns between "living floors". In addition, these patterns are compared to those at the neighboring rockshelter of Tor Sabila allowing a preliminary rest of ideas concerning settlement/procurement patterns, mobility, site organization, modern behaviors and transhumancy.

Hildebrand, John ( Scripps Inst. Oceanography) and Melissa Hagstrum (Washington)

[61] RESPONSES TO SUBSISTENCE STRESS IN LATE PREHISTORIC SOUTHERN CALIFORNIA

Responses to subsistence stress are examined for the late prehistoric Kumeyaay hunter-gatherers of interior southern California. Key subsistence stresses include the cessation of Lake Cahuilla (post A.D. 1750), with subsequent loss of its lacustrine resources, and the permanent residency of Europeans (post A.D. 1769), with subsequent resource loss and native population displacements. Archaeological and ethno- graphic data provide the basis to test five potential responses to the stresses: (1) alteration of foraging practices, (2) increased storage, (3) increased sharing, (4) resource base expansion, and (5) exchange of subsistence resources for durable goods.

Hildebrandt, William (Far Western Anthropological Research Group), Pail Mihkelson (Far Western Anthropological Research Group), and Paul Boney (Far Western Anthropological Research Group)

[83] LATitudINAL VARIABILITY IN RESOURCE STRUCTURE: IMPLICATIONS FOR HUNTER- GATHERER ADAPTATIONS IN NORTHERN CALIFORNIA

Several ethnographic models, covering a transect stretching from the California/Oregon border to the lower Sacramento Valley, indicate that northern groups relied more heavily on hunting and fishing than those in the south where plant resources comprised a larger percentage of the diet. The low frequency of projectile points recovered in the south appears to support these models. However, the near absence of freshwater in the region and a high degree of tool recycling are other factors affecting projectile point frequency, the latter producing strong implications regarding inter-regional variability in the utility of projectile points as chronological indicators.

Hill, Jr., Matthew E. (Kansas), Matthew G. Hill (Wyoming), Jack L. Hofman (Kansas), and Doug Drake (Texas-Austin)

[74] THE FAUNAL ASSEMBLAGE FROM THE MILNESAND SITE

In 1953, E.H. Sellards directed excavations at the Milnesand site in Roosevelt County, New Mexico. Sellards and later researchers have taken a multidisciplinary interest in the Milnesand site, examining geomorphological, paleontological, and lithic artifact databases. Unfortunately, the analysis of the faunal remains from the site has been minimal. The present study is based on a recent examination of the curated bison remains from the Milnesand site. The primary focus of this study is the identification of skeletal element frequencies, herd composition, seasonality of occupation, and site formation processes. This research forms a baseline for comparing the Milnesand site to other Paleoindian bonebeds from the Plains.

Hill, M. G. (see Hill, M. E.) [74]

Hill, Matthew G. (Wyoming)

[74] A NEW LOOK AT THE FOLSOM BISON BONEBED AT AGATE BASIN, WYOMING

Reexamination of the Folsom bison bonebed excavated during 1978 and 1979 by the University of Wyoming at the Agate Basin locality is discussed employing contemporary methods of bonebed analysis. Rapid burial and favorable soil conditions provided excellent documentation of Paleoindian butchery and non-human modifications to the bison remains in the Folsom level. Cutmark and impact fracture locations suggest bison carcasses were disarticulated, defleshed, and some limb bones subsequently processed for marrow. Also, there are indications that hideworking may have been an important activity at the site. These data are examined in the broader framework of Paleoindian bison hunting and subsistence and site formation processes on the northern Plains.

Hilton, M. (Geoconservation Consultants) and D.E. Strong (Baron Archaeological Institute)

[69] CONDUCTIVITY STUDIES AT MEZHIRICH, 1993

During the 1993 field season at Mezhirich an extensive and intensive conductivity survey was conducted at the site. The purpose of this non-invasive survey was to locate and establish the conductivity and in- phase signature of deeply buried cultural features such as dwellings, pits, and bone accumulations of various dimensions. The results of this work conclusively indicate the high potential of this method not only at Mezhirich but also, by extrapolation, at other deeply buried loci of sites on the East European Plain. The methodology and results of the 1993 conductivity survey are presented in graphic form using state-of-the-art data processing and presentation techniques.

Hoffman, Kathleen and Kathleen A. Deagan

Hitchcock, Robert (Nebraska-Lincoln) and Peter Bleed (Nebraska-Lincoln)

[84] EACH ACCORDING TO NEED AND FASHION: SPEAR AND ARROW USE AMONG IKUNG HUNTERS OF THE KALAHARI

Advances in projectile point interpretation have made it easy to understand behavioral implications of the alternatives represented by spears and arrows, their characteristic applications, and their associated payoffs. This paper describes the hunting methods of the Ikung (Ikung), Botswana. The advantages, disadvantages, and success rates of spear and bow hunting are considered to show that decisions about the use of different types of weapons depend on assessments of such factors as seasonality, prey type, the habitat to be hunted, and the use of poison.

Hockett, Bryan (Bureau of Land Management)

[61] THE LEPORID BONES FROM HOGUP CAVES, UTAH: IMPLICATIONS FOR UNDERSTANDING PREHISTORIC HUMAN ECOLOGY IN THE EASTERN GREAT BASIN

A total of 18,208 procured bison (cottontail and hare) bones recovered from Hogup Cave were analyzed. Approximately 2% of the assemblage bore clear evidence of human modification, and approximately 8% bore clear evidence of nonhuman modification. Raptors probably modified the majority of the latter bones. The culturally modified leporid bones were treated in a similar fashion throughout the depositional history of the cave. These data possibly could be used to support models which argue that the ancestors of the historic Numic-speaking peoples have occupied the Great Basin for many thousands of years.

Bode, Mary G. (Houston-Clear Lake) and Hector Nelle (University of New Mexico)

[94] GEOARCHAEOLOGY AND ZOOARCHAEOLOGY OF A MUSESTERIAN CAVE IN THE NORTHWESTERN CAUCASUS (RUSSIA)

Mezmisiay Cave is a limestone solution cavern located at an elevation of 1550 m asl in the northwestern Caucasus. Preliminary excavations by L.V. Golovanova (who discovered the site in 1987) have uncovered several Mousterian occupation layers dated (AMS radiocarbon) to 55,000-40,000 years B.P. and earlier. Information derived from analysis of sediment samples, in conjunction with paleoecologic data (especially rodent remains and pollen/spore samples), permits integration of site geology with Late Pleistocene stratigraphy. Analysis of medium and large mammal remains (some of which exhibit stone tool cuts) indicates that steppe bison, goats, and sheep were hunted by the Mousterian occupants of the cave.

Bojecker, J. (see Moeller, K.) [63]

Bojecker, John F. (Argonne National Laboratory), Robin L. Burgess (U.S. Air Force), and Genesrud Baryshnikov (Russian Academy of Sciences)

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Bodan, R. (see Maschmer, R.) [47]

Hoffman, Christopher R. (California-Berkeley)

[12] MAKING METAL, MAKING CULTURE: THE COPPER AND BRONZE AGES IN MALLORCA, SPAIN

Between the Copper and Bronze Ages on the island of Mallorca (Spain), there are significant changes in the procurement, production, distribution, use and deposition of metal artifacts. Evidence for these activities from five neighboring sites is presented. The goal is to demonstrate how metallurgy was actively involved in social organization at the site and regional levels.

Hoffman, Kathleen (Florida Museum of Natural History) and Kathleen A. Deagan (Florida Museum of Natural History)

[101] FRANCISCANS, THE SPANISH COMMUNITY, AND NATIVE AMERICANS IN 17TH CENTURY ST. AUGUSTINE

The Convento de San Francisco, a Franciscan monastery located in St. Augustine, served as the headquarters for the Franciscan mission effort in Florida during the sixteenth and seventeenth centuries. It functioned as a guest house for visiting officials, a training center for new friars; and as a hospice. The friary also played a vital role as an intermediary between the outgoing missions and the secular community of St. Augustine. Excavations at the Convento de San Francisco are clarifying the interactions between the Franciscan community, the presidio of St. Augustine, and the Native Americans.
Hoffman, Michael P. (Arkansas)

[78] ONEOTA CULTURE TIES TO THE HISTORIC QUAPAW TRIBE

If the Dhegiha Siouan speaking Quapaw tribe migrated from the Midwest to the mouth of the Arkansas River in late Mississippian or protohistoric times as their oral traditions relate, then Midwestern Oneota or Oneota-related manifestations should indicate the relationship. Brief examinations of collections and archeological records from the Utz site, sites of the Bold Counselor phase and sites of the Caborro-Welborn phase were made to discern the presence of Quapaw archeological correlates. The Utz site has the highest degree of similarity.

Hoffman, T. (see Lincoln, T.) [50]

Hofman, J. (see Hill, M. E.) [74]

Hofman, Jack L. (Kansas)

[74] THE SIGNIFICANCE OF FOLSOM POINT VARIABILITY: EVIDENCE FROM THE FOLSOM AND LIPSCOMB SITES

Stone tools commonly serve as "cultural markers" in Paleolithic research and are used as the "independent" variable in making assemblage, stratigraphic, chronometric, ecological, and economic comparisons between Paleolithic sites. The pivotal role which Paleoindian projectile points held in interdisciplinary research (e.g., evaluation of radiometric dated, assemblage comparisons, and study of socio-economic change) requires that we critically re-assess the meaning and uses of Paleoindian point types. Toward this end, variability in the Folsom point type is addressed here and the significance of this variability for spatial and diachronic comparative studies is emphasized.

Hobmann, B. (see Powell, T.) [60]

Hobmann, John W. (Louis Berger & Associates)

[19] ARCHITECTURAL INSIGHTS FROM STABILIZATION PROGRAMS

In the American Southwest, the call for prehistoric stabilization programs is increasing. Therefore, a secondary benefit is emerging: Additional detailed architectural information. The exposure of different structural aspects of prehistoric sites by stabilization activities has yielded a substantial set of data regarding architectural variability. This new source has the potential to yield significant new insights for issues of structural configuration and prehistoric site growth. Recent work undertaken at the Homolovi Ruins, a series of large, late prehistoric Southwestern Pueblos, will be used as an example of the type of architectural information which can be gleaned from such stabilization programs.

Hole, Frank (Yale University) (Discussant 24)

Holland, J. (see Smith, K.) [88]

Hollinger, Eric R. (Loucks and Associates, Inc.)

[78] ONEOTA DOMESTIC ARCHITECTURE AND THE SEARCH FOR RULES OF RESIDENCE

Changes through time in the size of Oneota houses support the hypothesis that rules of post-marital residence shifted from patriarchal/serial to matriloclal/unilocal during the prehistoric period and then returned to patriarchal with the advent of European contact. The mean floor areas of Early Oneota and Historic horizon houses are small, corresponding to expectations generated from cross-cultural studies of patriarchal societies. Floor areas during the Classic horizon were very large and compare favorably with those of matriloclal societies. The identification of patterns of residence provides insights into prehistoric social structure, the causes of social change and the sequence of those changes.

Holmes, Charles (Office of History and Archaeology, Alaska) and Richard Vanderloek (Illinois-Urbana)

[36] SWAN POINT: A MULTI-COMPONENT SITE IN THE TANANA VALLEY, CENTRAL ALASKA

Swan Point data are helping refine current archaeological models for central Alaska. Occupations are assignable to Northern Paleoindian and Northern Archaic complexes, e.g., Chindada, Nenana, Tuktuk, and Denali. The basal cultural level, AMS dated to 11,600 B.P., contains blades, microblades, bifacial tools, and dibeated burins associated with worked team (mammoth?) fragments. These data are among the earliest stone tool assemblages known for eastern Beringia. Distinctive triangular bifaces, date to c. 10,200 B.P., resemble Chindada or Nenana complex forms. Notched points appear clearly associated with microblade and burin technology is hypothesized to date 5,000 B.P.

Holmlund, James (Geo-Map, Inc.)

[86] THE RIPLEY GEOPHYSICAL COMPLEX: A CASE STUDY OF GEOPHYSIC SITE STRUCTURE AND FEATURE RELATIONSHIPS

This paper presents the results of the 1992 Ripley Geophysical Complex survey. 510 features and 15 km of trails were identified on three topographically distinct terrace systems within the study area. Based on the spatial distribution of feature types and feature density, it was concluded that the local physiography and concentration of essential resources played an important role in the location of certain feature types (those that may have related to social or ceremonial activities such as geoglyphs and rock alignments), but only a minor role in the distribution of other features.

Holson, John (BioSystems Analysis)


This paper will examine the intensity of Native American and Euro-American contact using materials excavated from three ethnocultural sites in California. The sites to be discussed are chosen for their proximity to Euro-American interaction spheres and represent the Spanish American and Mexican Periods prior to 1850. Comparisons will be drawn from the materials collected at the sites and the predicted results based on ethnographic accounts of Native California and Euro-American contact. The study will show that there is variability in the amount, type and quality of Euro-American goods found at Native Californian sites which may indicate the degree of Euro-American material culture acceptance and use by indigenous people.

Hommon, Robert F. (National Park Service, Pacific Area Office)

[99] EMERGENT COMPLEXITY IN ANCIENT HAWAII

Complex adaptive systems theory is applied to indigenous Hawaiian sociopolitical evolution, considered as a process involving interactions between bipolar phenomena such as self-organization and adaptation, hierarchy and heterarchy, stability and change, and chaos and order. The original settlers of Hawaii carried their sociocultural system in highly condensed form, the set of relatively simple rules of the Polynesian lineage or conical clan. The co-evolving states of 18th century Hawaii can be seen to have emerged from the interaction between these local rules of self-organization and non-linear responses to natural and cultural environmental stimuli.

Hoopes, John (Kansas)

[32] CONTRIBUTIONS OF NON-AGRICULTURAL SUBSISTENCE STRATEGIES TO THE FORMATION OF COMPLEX SOCIETIES IN COASTAL ZONES OF SOUTHERN COSTA RICA

Social complexity in large, late prehistoric demographic centers of southern Costa Rica was conditioned by antecedents in earlier sedentary villages. Traditional models have emphasized the adoption of maize as a staple as a crucial step towards complexity. However, data from coastal zones of the Golfo Dulce, Costa Rica indicate that communities not dependent upon maize played a key role in structuring relationships of centralization and specialization. This paper presents a detailed reconstruction of coastal subsistence strategies from organic remains at Costa Purruja that emphasizes the contribution of offshore and estuarine resources to the in situ evolution of complex social systems.

Hoover, Robert (California Polytechnic State-San Luis Obispo) (Discussant 101)

Hopenhayn, Mary (Brandeis)

[30] SCALE OF PRODUCTION AND PRODUCT STANDARDIZATION IN TEOTIHUACAN COOKING POTS

Classic Teotihuacan cooking pots made in two wares, Burnished (many forms, scattered small-scale production) and San Martin Orange (few forms, centralized large-scale production) are compared in terms of standardization at all stages of the production sequence: clay selection, paste preparation, forming, finishing, and firing. The effects of scale of production on uniformity vary considerably from one manufacturing stage to another. Large scale can result in increased consistency, fast sloppy work, or in major but inconsistent technical problems.

Horne, Melinda (INFOTEC Research) and Judith A. Willig (INFOTEC Research)


Site 35JE-49, adjacent to Mud Springs Creek in north-central Oregon, contains the longest record of human occupation of all sites investigated along the Pipeline Expansion Project (PEP) corridor. A residential base camp, 35JE-49 contains discrete lithic reduction loci, numerous rock features, and a deeply stratified rockshelter with varied cultural assemblages reflecting subsistence reliance on both faunal and floral resources. Geoarchaeological examination of the shelter's sediments indicate at least eight distinct periods of aboriginal occupation which correspond with buried paleosols, vertical increases in artifacts and faunal remains, and 25 distinct hearth/midden/pit features. Chronometric data support an occupation from 9900+355 years B.P.

Hosacker, Lisa

[101] BIOANTHROPOLOGICAL ANALYSIS OF A SEVENTEENTH-CENTURY NATIVE AMERICAN MISSION POPULATION

The biological and cultural consequences of the seventeenth-century Spanish mission system for the native inhabitants of La Florida, with particular emphasis on the northern Utina, a Western Timucuan
of structures, camp area, duration of occupation, and subsistence focus are examined using mapped data from more than 60 camps. A smaller data set is used to examine relationships between hut dimensions, family size and composition, and average body size, and between relatedness, hut location and hut spacing. These data are compared with published data for other groups and hypotheses of archaeological relevance concerning interpretation of group size and site function are reviewed.

Hughes, R. (see Cannon, K.) [105]

Hughes, Richard E. (Geochronological Research Laboratory) and Craig E. Skinner (INFOTEC Research)

[83] VARIABILITY IN OBSIDIAN SOURCE USE IN CENTRAL OREGON

The geologic sources for more than 6,500 obsidian artifacts from 84 archaeological sites in the PCT-PC&F Pipeline Exploration Project have been determined using x-ray fluorescence spectrometry. Although numerous artifact-quality glass sources exist within the potential procurement spheres of these sites, only a limited number of these obsidians were extensively exploited prehistorically. In this paper, we examine the spatial distribution of obsidian from major sources and provide a preliminary assessment of diachronic and synchronic variability in source use as monitored by time-sensitive artifact types and obsidian hydration rim measurements.

Hunt, Terry (Hawaii-Honolulu) [Discussion 6]

Hunt, Terry (Hawaii-Honolulu)

[79] NIHOA ISLAND: COLONIZATION, ENVIRONMENTAL CHANGE, AND ISOLATION ON A HAWAIIAN FRONTIER

The diminutive island of Nihoa lies 240 km northwest of the main Hawaiian Islands. The island was intensively occupied, then abandoned prior to European re-discovery in 1790. Polynesian occupation on Nihoa was late, of short duration, and brought significant change to the indigenous flora. In this paper I examine the evidence for the nature and chronology of settlement and human-associated environmental change. I consider the isolated position of the island and the implications for Hawaiian prehistory.

Hunter, Andrea A. (Northern Arizona)

[78] THE DOMESTICATION OF HORDUEM PUSILLUM (LITTLE BARLEY) IN THE MIDWEST UNITED STATES

A morphometric analysis of archaeological Hordeum pusillum and ethnographic research was conducted to evaluate the utilization of this plant. A comparison of criteria delineated for the domestication of Old World Hordeum spp. allowed for the identification of three specific morphological changes. Hordeum pusillum carpiospores exhibit two of these changes. Using Randolf Darwinian model of domestication, it was determined that incidental domestication occurred during the Middle and Late Archaic, specialized domestication during the Terminal Archaic/Early Woodland, incipient agricultural domestication during the Middle and Late Woodland, and thereafter a sharp decline occurred resulting in a remnant form of incipient agricultural domestication.

Hunter-Anderson, R. (see Ambrose, S.) [54]

Hutchinson, D. (see Larsen, C.) [90]

Hyland, David C. [69] ENZYME IMMUNOASSAY (EIA) STUDIES ON SELECTED LITHIC ARTIFACTS FROM MEZHRICH

Enzyme immunoassay (EIA) scrutiny of a selected suite of lithic artifacts from Mezhrich has revealed the presence of non-hemolysed blood attributable to Late Pleistocene food procuring and/or processing activities. The EIA method is described and discussed and the results of the analysis are related in terms of technology, scenarios of subsistence, and food processing in mammal-bone settlements on the East European Plain.

Hyland, J. (see Gutierrez, M.) [57]

Hyland, Justin R. (California-Berkeley) and Maria de la Luz Gutierrez (Centro Regional del Instituto Nacional de Antropologia e Historia, La Paz, Baja California Sur, Mexico)

[57] PREHISTORIC MOBILITY AND SUBSISTENCE IN THE SIERRA DE SAN FRANCISCO, BAJA CALIFORNIA SUR, MEXICO

As an integral part of the Proyecto Arte Rupestre Sierra de San Francisco, Baja California Sur, Mexico a stratified regional survey and limited test excavations were carried out in order to assess the temporal and functional position of Sierra de San Francisco mural sites in the overall prehistoric settlement pattern. Survey results and excavation data from type sites, including excavation data from the mural sites of Cave Pintada.
and Cuvea Soledad, are presented. Implications for evaluating overall seasonal mobility and resource scheduling and the specific case for aggregation at mural sites are discussed.

Hyman, M. (see Rowe, M.) [103]

Ibarra-Morales, E. (see McClung de Tapia, E.) [8]

Iceland, Harry (Texas-Austin) [87] COLHA PRECERAMIC PROJECT: EXCAVATIONS AND STRATIGRAPHY

The Colha Preceramic Project carried out excavations in Spring 1993 at Operation 40/46, where previous testing had revealed buried preceramic deposits. A 4x6 meter blow was opened on the edge of a Maya mound located next to an aguada. Four distinct stratified zones were identified, the lower two (Zeons C and D) representing preceramic occupations. The zones contained distinctive chert lithic assemblages. Zone C, radiocarbon-dated between 1100-1300 B.C., may be linked to early agricultural activities at Cobweb Swamp about 100 meters to the southeast.

Ingimundarson, J. (see Amorosi, T.) [79]

Inomata, Takeshi (Vanderbilt University) [60] ARCHAEOLOGICAL INVESTIGATIONS AT AGUATECA, GUATEMALA: THE STUDY OF A FORTIFIED MAYA CENTER

Archaeological investigations at the site of Aguateca, El Peten, Guatemala, have revealed an extensive and complex defensive wall system. The fortifications date to the end of the Late Classic Period (late 8th century), suggesting the intensification of warfare. In particular, the excavations of elite structures have demonstrated the abrupt abandonment of the center, which was probably caused by the attack of enemies. These new data imply the significance of warfare regarding the collapse of Classic Maya civilization.

Irish, J. (see Regan, M.) [98]


Between the 9th and 10th centuries, the Huari polity collapsed and its capital city was abandoned. Climatic change has been invoked to account for the failure of Huari, as has population replacement, perhaps through militaristic invasion of the heartland. Research in the prehistoric capital shows that while depopulation was fairly rapid, it was neither quick nor disruptive enough to support military invasion or acute natural disaster. Alternatively, new data regarding the relationship of open mortuary monuments, ancestor cults, and aestival organization may be revealing powerful, kin-based resistance to state construction and reconstruction in Middle Horizon 2 Huari. I suggest that internal resistance may have played a key role in the failure of Huari's centralization of power.

Jackson, T. (see Stevenson, C.) [8]

Jacob, J. (see Goldberg, P.) [87]

Jacob, J. (see Pope, K.) [76]

Jacoa, K. (see Havel, L.) [106]

Jacobs, Keith (Indiana University) [106] MORTUARY PATTERNS AT THE SPANISH-MAYA MISSION AT TIPI BELLZ

The site of Tipu in Belize includes a visita mission that was used from 1540 to 1638 A.D. Buried beneath and surrounding this Spanish-Catholic church were 518 individuals who are thought to be Maya. Analysis of the dental remains using non-metric traits allows for a more personal view of life at contact, comparison with known Spanish-Catholic burial practices, tests concordance with church recruitment procedures, and assesses the influx of Maya refugees. In addition, results indicate a sex division of burials within the church and the computer program MacClade has revealed family relationships within the cemetery.

Jacobs, D. (see Rice, G.) [98]

Jacobs, David (Arizona State) and Glen Rice (Arizona State) [26] LABOR INVESTMENTS AND ROOM FUNCTION AT THE CLINE TERRACE MOUND

The Cline Terrace Mound, a Salado platform mound in Tonto Basin, was occupied throughout the late Classic, and underwent a series of expansions. When estimates of the labor involved in these construction efforts are compared to the number of rooms and their function, it suggests the use of populations not residing at the site as a labor source. The Cline Terrace Mound also differs in other ways (e.g., amount of space devoted to storage, residences) from the contemporary Schoolhouse Mound. The implications of these differences in mound types are discussed.

Johnson, John R. [73] PHOTOLITH AND OTHER RESIDUE ON STONE TOOL SURFACES: EXPERIMENTAL RESULTS FROM BAMBOO AND BONE PROCESSING

We investigated stone tool surface-residues acquired in bamboo and bone processing, and that surface residues on tools obtained from the field may provide information on food availability and processing technologies. Chert tools were experimented manufactured and used for bamboo shredding, bone scraping, or left pristine. Scanning electron microscopy (SEM) was performed on all tool surfaces. Tools bearing bamboo residue exhibited bundles of hair-like bamboo phytolith. Tools were soaked in 35% H2O2 for 24 hours to simulate effects of burial and diagenesis. SEM/EDAX elemental analysis was invoked to distinguish the phosphate-based bone residue from the silica-based bamboo residue.

James, Steven R. (Arizona State) [46] DEPLETION OF ANIMAL RESOURCES IN PREHISTORIC AGRICULTURAL SOCIETIES: COMPARISONS BETWEEN THE AMERICAN SOUTHWEST AND PACIFIC ISLANDS

Archaeologists have the advantage and potential for examining both short-term changes and major trends in animal over-exploitation. Data from recent studies in both the American Southwest and Pacific Islands are examined in terms of four interrelated aspects: hunting, habitat destruction, impact of introduced species, and chains of extinctions. Polynesian chiefdoms brought about extinctions of numerous land birds, whereas Hohokum and Chacoan societies caused resource depletion of various game and food. Differences are viewed as ones between islands and continents and not technological or sociopolitical levels.

Jasusch, J. (see Seddon, M. T.) [43]

Jasusch, John W. (Chicago) and Sonia Acmont (Universidad Mayor de San Andrés) [43] SOCIAL DIVERSITY AND HISTORICAL CHANGE IN TIWANAKU CERAMICS: STEPS TOWARD A TIWANAKU IV-V CHRONOLOGY

For years now our understanding of prehispanic social formations in the southern Andes has suffered for lack of a detailed regional chronology. This study presents the results of an intensive ceramic analysis carried out between 1991 and 1993, covering numerous areas of excavation at the sites of Tiwanaku and Lukurmata in the southern Yungas Province of Bolivia. Our analysis compared several distinct contexts within the two prehispanic urban centers, including ceremonial, elite, specialized, and household areas. The results indicate that many traditional assumptions regarding the chronology of Tiwanaku vessels, and indeed the nature of the Tiwanaku polity in general, require re-examination.

Jenkins, L. (see Watkinson, J.) [38]

Jochim, Michael (California-Santa Barbara) [Discussed 56]

Jochim, Michael (California-Santa Barbara) [Discussed 45]

Jochim, Michael (California-Santa Barbara) [27] CHANCE AND CONTEXT IN EVOLUTIONARY CHANGE

Evolutionary thinking in archaeology is dominated by an emphasis on natural selection, to the neglect of other forces of evolution. This emphasis carries with it an implicit assumption of behavioral plasticity—that selection can shape behavior to any optimal end—with the implication that evolutionary change is regular and predictable. Recent work acknowledges the role of history and chance in affecting behavioral change, but it has been difficult to incorporate them into theoretical constructs. This discussion focuses on the role of chance in evolutionary change and on how we can accommodate this factor in our theoretical formulations.

Johnson, Roma (Bureau of Land Management) [86] THE ARCHAEOLOGY OF THE LOWER COLORADO RIVER: AN OVERVIEW

An overview of the archaeology of the lower Colorado River is presented on three related levels. First, a brief resume of the history of research is discussed; second, a review of the types of resources and research that have characterized the archaeology of the lower Colorado River in recent years is presented; and third, recent discoveries and new directions in research, including lithic technology and the interconnectedness of ethnology and archaeology, is considered. This paper advocates a greater relationship between the archaeological record, the ethnographic record, and the remaining knowledge the native peoples hold about their own past cultural experience.

Johnson, John R. (Santa Barbara Museum of Natural History) [11] CHUMASH SOCIO-CULTURAL ORGANIZATION DURING THE LATE EIGHTEENTH AND EARLY NINETEENTH CENTURIES

Chumash society was greatly impacted by Spanish colonization beginning in the late nineteenth century. Missionization and a catastrophic population decline led to the demise of old socio-political forms. Fragment-
Juel Jensen, Helle and Berit V. Eriksen

levels, however, there is a dramatic shift to intensive maize cultivation, along with cotton and probably chilies. Wild fruit trees were spared by the Maya, though ramon was not selectively maintained.

Jones, Robert (Desert Research Institute) and Harold Drolldinger (Desert Research Institute)

[37] DISTRIBUTION OF LITHIC MATERIAL ON FAHUTE MESA, SOUTHWEST GREAT BASIN

The spatial distribution of raw material sources on Pahute Mesa is presented. A variation in the types of raw materials and their spatial distribution is evident. A change in the use of various raw materials through time reflects a change to a greater use of local raw materials sources in the later periods. The variation in the distribution and the change throughout time of raw materials reflect on the subsistence and mobility patterns for the area.

Jordan, Juan Albarracin (Instituto Nacional de Arqueologia, Bolivia)

[85] INTEGRATION AND DISINTEGRATION: TIWANAKU'S COLLAPSE AND LOCAL NESTED HIERARCHIES

The Tiwanaku polity (A.D. 400-1100) extended its influence over a wide geographic area in the South-Central Andes, integrating local cultural diversity into a unified system of complementarity. This enduring hegemony has been traditionally perceived as the manifestation of a highly centralized and bureaucratic state that monopolized labor and agricultural production for the sustenance of its urban loci and its expansive state agenda; apparently, the collapse of the administrative apparatus took place due to environmental perturbations in the core region that disabled agricultural production and, therefore, the maintenance of its ruling social stratum; new, local ethnic identities developed as a result.

Joyce, Arthur (American Museum of Natural History)

[55] IDEOLOGY, POWER, AND STATE FORMATION AT MONTE ALBAN

This paper uses an actor-based theoretical perspective to examine the origins and development of the Monte Alban polity during the Late/Terminal Formative (500 B.C.-A.D. 250). The key theoretical problem raised by the development of Monte Albán is to explain why non-elites moved to ecologically risky piedmont areas and increasingly provided resources to support an emerging elite faction. This trend is explained by the implementation of an elite strategy of social deception through ideological manipulation, which involved increasing control of ritual, promotion of external conflict, and development of an elite social identity.

Joyce, Rosemary A. (Harvard University)

[74] OUT OF SIGHT, OUT OF MIND: "INVISIBLE" RESIDENTIAL SETTLEMENT IN THE CLASSIC MIAA LOWLANDS

Most Maya settlement analyses rest on the assumption that the full range of ancient Maya dwelling types, and, by inference, the remains of all social and economic groups, are represented by visible mounds. In fact, data indicating that "invisible" residences (nonmounded structures that leave no surface trace) were ubiquitous in the Maya lowlands. This has not been widely recognized is attributable to two factors: (1) inter-regional environmental variations that affect the archaeological perception of structure visibility; and (2) inconsistencies in the nomenclature used to describe "invisible" dwellings. Architectural attributes common to "invisible" houses are employed to devise a formal typology of pan-lowland "invisible" Maya residential settlement.

Jolly, K. (see Blach, S.) [19]

Jones, G. (see Bech, C.) [96]

Jones, J. (see Pohl, M.) [76]

Jones, J. (see Pope, K.) [76]

Jones, John G. (Smithsonian Tropical Research Institute, Panama)

[87] SETTLEMENT AND AGRICULTURE AT COLA: POLLEN EVIDENCE FROM COBWEB SWAMP

Analysis of pollen samples from Cobweb Swamp, part of the Maya site of Cola, has revealed a complex settlement record quite different than that known from archaeological excavations. Evidence of humans extends to before 6000 B.C., while periods of forest clearing and the cultivation of domesticated plants are clearly recorded. A distinct early horizon contains evidence of manioc, but no other cultigens. In Maya...
Julien, Daniel G. (Tuau-Austen)

[77] GRADUAL CHANGE AND CATASTROPHIC REALIGNMENT: THE EARLY INTERMEDIATE PERIOD AND AFTERWARDS IN CAJAMARCA

Settlement patterns in the Cajamarca region of the North Highlands of Peru indicate a gradual process of growing political centralization during the Early Intermediate period. The major centers of both population and political power were located in the Andean intermontane valleys. Ceramic distributions suggest that the period of the period, Cajamarca interacted most intensively with neighboring highland regions, and had little, if any, interchange with the coastal Moche culture. With the end of the Early Intermediate period, the situation changed drastically. The coast-highland axis became dominant in Cajamarca’s external relations, and the centers of population and political power moved to the western Andean slopes.

Julien, Michèle (C.N.R.S. Laboratoire d’Ethnologie Préhistorique), Pierre Bodu (Laboratoire d’Ethnologie Préhistorique), and Boris Valentin (Laboratoire d’Ethnologie Préhistorique)

[16] FLINT ECONOMY IN SOME LATE PALEOLOTHIC SETTLEMENTS OF THE PARIS BASIN (FRANCE)

Of the several Late Paleolithic sites of the Paris Basin, two types can be evidenced according to the economy of raw flint. Some, such as Estolles or Donnemarie, situated near Lutetian deposits containing voluminous flint blocks of an excellent quality, are mainly workshops where blade production was aimed at an extra-site use. Others, such as Pincevent and Marolles, settled near river banks where Senonian medium flint nodules of plain quality were available, are more related to hunting activities (reindeer, horse) and the knapping activity was subordinated to local animal treatment. But, in both types of settlements, the acquisition of raw material seemed to be ruled by some social control.

Juliø, P. (see Storek, P.) [74]

Junker, Laura Lee (Vanderbilt University)

[36] THE POLITICAL ECONOMY OF A.D. 500-1500 PHILIPPINE CHIEFDOMS

Ethnohistoric research suggests that the political economy in A.D. 500-1500 lowland Philippine chieftomns was characterized by a complex array of interlinked exchange systems: foreign luxury goods trade with China, regional specialization and inter-island trade in local prestige goods, and the use of status goods to obtain critical raw materials from upland tribal populations. Archaeological evidence from the Tajuay chieftomn of Negros Oriental is used to document the growth and expansion of this chiefly prestige goods economy, and the interrelationships between component exchange systems.

Kalass, S. (see Metcalf, M.) [66]

Kang, Rong (Oregon)

[94] THE IMPACT OF WARFARE IN THE FORMATION OF COMPLEX SOCIETIES IN THE PROTOHISTORIC KOREAN PENINSULA

Many scholars have formulated different models concerning the formation of complex societies, emphasizing factors such as irrigation, interregional exchange, population growth, warfare, and combinations of these. Archaeologists have begun to understand the underlying conditions and socio-cultural processes that led to the formation of complex societies and to realize that different factors were at work in different world regions. Certain sets of factors have been identified in the archaeological record in both Korea and world areas. This paper examines how one of these factors, warfare, contributed to the rise of complex societies in the protohistoric Korean peninsula (A.D. 300-600).

Kaplan, Florv E. S. (New York University) [Discussant 3]

Karadulias, P. Nick (College of Wooster), Richard W. Verkes (Ohio State), and Heather Gayheart (Kenyon College)

[84] FINDING THE NEOLITHIC "NEEDLED" IN THE CYPRHOT HAYSTACK: SURVEY AND REGIONAL DYNAMICS IN CENTRAL CYPRUS

The Athenian Archaeological Project conducted its fourth season of work in central Cyprus in 1993. The survey recorded seven additional sites, including a Neolithic cherty quarry, the second in the Maloussa Valley. Analysis of the Accretic Neolithic flaked stone assemblage has identified a number of diagnostic features for the research phase. The additional survey work also confirmed the initial assessment of a highly nucleated settlement pattern in the valley. The regional dynamics in the Maloussa Valley differ significantly from other areas in Cyprus, probably due to the location intermediate between the mountains to the north and the coast to the south.

Karimali, Evagelia (Boston University)

[50] SPECIALIZATION AND SELF-REPRODUCTION: THE NEOLITHIC MODE OF PRODUCTION RECONSIDERED

Until now, domestic production and gift exchange have been proposed as the sole possible modes of production and exchange for the early stateless societies of Neolithic Thessaly, Greece. Ethnographic data from the non-hierarchical societies demonstrate the co-existence of different modes of production and exchange. Although ideally thought as two entirely different types of trade, gift and market exchange, by being complementary and convertible to each other, ensure the process of social reproduction. Behind the operation of trade networks lie a quite stable system of domestic and specialized production units, characterized by different levels of technical competence and efficiency.

Kazenberg, Anne H. (Calgary)

[54] STABLE ISOTOPES AND INFANT FEEDING PRACTICES

Initial research on the use of the stable isotopes of carbon and nitrogen for reconstructing diet focused on adult individuals in prehistoric populations. More recent analysis of preserved protein from individuals of all ages reveals a recurring pattern where δ¹⁵N values are consistently higher in infants, then taper off around the first to second year of life. Based on the fact that nitrogen isotopes indicate trophic level, this pattern has been interpreted as evidence for breast-feeding and weaning. The pattern has been observed in several skeletal populations in the Americas, and a recent study of a historic cemetery sample from Ontario suggests the possibility of refining estimates of weaning age.

Kay, Marein (Aarhus)

[74] DALTON: AN ADAPTIVE RADIATION

Following Anderson, Dalton appears to represent a middle to late Paleoindian successful colonization of the interior uplands of what is nominally known as the southeastern United States. This paper reviews the Morse Dalton settlement model developed for the lower Mississippi River Valley and assesses Dalton settlement strategies and subsistence for the western Ozark Highlands, especially at Rodgers Shelter, Missouri.

Kellshofer, Lisa (Smithsonian Tropical Research Institute)


Sediment sequences from central Thailand document 8000 years of environmental change and human impact. Three sequences from the Lopburi region are compared with two from the Bang Pakong Valley, east of Bangkok, to achieve a more in-depth understanding of the changes in regional habitats during the Holocene. Evidence for human impact, including both economic species and carbon, in these sequences appears not long after 8000 B.P., however intensive human disruption begins in the third millennium B.C. These data serve to redefine our understanding of cultural and agricultural developments in central Thailand during the Holocene.

Kearns, Timothy (Western Cultural Resource Management)

[89] IN THE SYSTEM OR OUT: AN EXAMINATION OF SMALL HOUSE MATERIAL CULTURE VARIABILITY AND GREAT HOUSE ASSOCIATION IN THE SOUTHERN CHUSKA VALLEY, NEW MEXICO

Although many Pueblo II habitation sites in the southern Chuska Valley, northwest New Mexico are spatially associated with a Great House Community, others are spatially isolated. Does this differential association indicate variability in the level of socio-economic organization or participation in socio-political networks, i.e., the Chaco System? Variability in access to non-local material goods is considered one measure of involvement in regional socio-political systems. Data from recent excavations at Pueblo II small house sites in the southern Chuska Valley are used to examine variability in access to non-local goods between Great House community sites and spatially isolated sites. The results are then used to assess the relative degree of involvement in regional socio-political networks.

Keegan, W. (see Stokes, A.) [54]

Keegan, William F. (Florida Museum of Natural History)

[79] UNIVERSALS AND REPUTATIONIN LOGIC IN THE WEST INDIAN LABORATORY

The laboratory approach is based on the premise that a universal set of relations exists among variables such that the outcome of any experiment can be predicted from knowledge of the variable’s states. Use of this methodology to study Taino prehistory was recently criticized by a philosopher of archaeology. The present paper defends the use of the laboratory model and reviews insights gained from comparing population distributions across the Antilles. These insights correct recent misconceptions regarding the rate at which the Antilles were first colonized, the relative use of terrestrial and marine foods, and the initial emergence of caciques.

Keboe, Alice B. (Marquette University) [Discussant 52]

Keboe, Alice B. (Marquette University)

[54] WHAT WAS A CHILD?

"Child" is cognate to a Germanic term for "womb." Its primary meaning was "offspring." As Philipp Argue argued in Centuries of Childhood, immature persons past weaning have often been seen as small but not incompetent. They have been expected to endeavor to follow the activities of adults. Tailoring artifacts
to their size has not been common, and toys are generally flimsy and perishable. Recognizing "children" from societies that did not conceptualize "childhood" as Western bourgeois culture has constructed it, will require not only meticulous sorting out of features commensurate with small-size persons' activities, but radically confronting our emic concept "children."

Kelly, Jeffery (Washington State), William Lipe (Washington State), and Mark Varien (Arizona State)

[37] THIRTEENTH CENTURY CANYON-RIM ARCHITECTURAL COMPLEXES IN THE MESA VERDE REGION

The A.D. 1200s witnessed significant settlement aggregation and change in the central Mesa Verde region of southwestern Colorado and southeastern Utah. One manifestation is the widespread appearance of massive architectural complexes on canyon rims near reliable springs. Dominated by non-domestic features such as enclosing walls, towers, D-shaped buildings, and plazas, these complexes are generally associated with cliff dwellings and/or talus slope structures as parts of larger aggregates. The characteristics, distribution, chronology, and functions of sites with canyon rim architecture are explored, and a large, recently-mapped and dated example—the Woods Canyon Site—is analyzed in more detail.

Kelly, John (Southern Illinois-Edwardsville)

[78] POPULATION ESTIMATES AT CAHOKIA AND THE AMERICAN BOTTOM: PROBLEMS AND PROSPECTS

Gregg's 1975 population estimate for the large Mississippian center of Cahokia has perpetuated a demographically dominant contribution to a number of misconceptions regarding the overall size and complexity of this settlement. Milner's more recent estimate for the outlying Mississippian settlements is methodologically rigorous, however, tends to omit a number of settlement types and thus oversimplify the density of population surrounding Cahokia. A wealth of new information has been generated at Cahokia and the surrounding region. Utilizing this new data this paper examines these problems and offers a number of solutions to the demographic dilemma that dominates the literature.

Kelly, Kenneth (California-Los Angeles)

[73] RECENT EXCAVATIONS AT SAVI, AN 18TH CENTURY WEST AFRICAN TRADE TOWN IN BENIN

This paper discusses recent research conducted at Savi, a trade town located in the Bight of Benin. The town, destroyed by the Fon kingdom of Dahomey, had been important in the slave trade with the New World. Due to its destruction in 1727 and subsequent abandonment, the town site provides an excellent opportunity to investigate material culture in one region of the West African coast during the early period of European contact and trade.

Kelly, Robert L. (Louisville) [Discussant 16]

Kelly, Robert L. (Louisville)

[90] PREHISTORIC BACKGROUND TO STILLWATER MARSH BIOARCHAEOLOGY PAPERS

This paper presents the prehistory background to the Stillwater Marsh bioarchaeology papers. While providing "the best foraging game in town" the archaeology of the Carson Sink still points to a mobile adaptation. However, pinyon groves of the nearby Stillwater Mts. were used through logistical mobility only. Recently discovered sites in the marsh point to a reduction in residential mobility, perhaps after 1300 B.P. and a shift in settlement patterns after 650 B.P., although differential site exposure could play a role here as well. Ethnographic data point to residentially mobile groups thatered to wetlands; these data also show greater mobility of men than women.

Kennett, Douglas J. (California-Santa Barbara)

[92] OXYGEN ISOTOPE ANALYSIS OF ESTUARINE CLAM SHELLS AS A METHOD FOR RECONSTRUCTING PATTERNS OF MOLLUSCAN USE BY PREHISTORIC POPULATIONS LIVING ON THE COAST OF SOUTHWESTERN MEXICO

Stable oxygen isotope ratios in the shell carbonate of marsh clams living in the Acapetahua Estuary of southwestern Mexico record fluctuations in salinity caused by alternating wet and dry seasons. Isotopic composition of marsh clam shells from late Archaic Period (5000-4000 B.P.) archaeological deposits in this region are used to determine the season of clam harvest. In the early stages of the late Archaic Period marsh clams were collected all year but were primarily harvested during the dry season. Procurement patterns changed during the late Archaic Period with a general trend toward clam harvesting during wet season months. People living in this region possibly altered their overall subsistence strategy due to scheduling conflicts that occurred with the adoption of agriculture.

Kirch, Patrick V.

Kent, Jo (Colorado-Denver), James Kirk (Colorado-Denver), and Kimberly Lovett (Metropolitan State)

[66] SETTLEMENT PATTERNS IN THE MIDDLE ARCHIAC PERIOD IN THE HOGBACK VALLEY, COLORADO

The Dakota Hogback is located in the foothills of the Rocky Mountains, west of Denver, Colorado. It lies between two known culture areas—the Mountain Tradition to the west and the Plains Cultures to the east. Although there are over 55 recorded archaeological sites and field work has been conducted in the Hogback for many years, a comprehensive field survey and regional synthesis has not been attempted. This paper will present a synthetic view of this area concentrating on the Middle Archaic period. Specifically, this paper will examine the question of cultural affiliation (mountain, foothill, plains) and length of occupation at sites in the area (short term or seasonal).

Kemp, Susan (Old Dominion)

[81] UNSTABLE HOUSEHOLDS IN A STABLE COMMUNITY: THE ORGANIZATION OF A RECENTLY SETTLED EXCAVATION

Diachronic observations during most of the life of a sedentary Kalabari community occupied by recently nomadic peoples offers insights into the dynamic processes that may have been in operation during the initial shift to sedentism that occurred at different times and different places throughout prehistory. Factors not often considered when modeling prehistoric communities appear to be as important or more important than kinship and economics, such as sharing partners and friendship, in organizing the spatial patterning and interaction of camps and households, in at least this newly sedentary Kalabari community.

Kepecs, Susan (Wisconsin)


The Late Postclassic period marked a new world order in Mesoamerica, characterized by Aztec dominance over much of the macroregion. Yucatan was on the margins of this far-flung system. This is in stark contrast to the Early Postclassic, when northeastern Yucatan was under the political and economic influence of Chicén Itzá, a major pole of pan-Mesoamerican commerce. Using various lines of evidence, including regional settlement patterns and ethnohistoric records, this paper examines how northeastern Yucatan was affected by the changes generated by the Aztec state, and explores the nature of the core-periphery relationship between these two regions.

Kerley, J. (see Cassell, M.J.) [35]

Kesey, James (USDA Forest Service)

[106] ROBE ART: THE MISSING LINK IN THE BIOGRAPHIC ART LEXICON

Northwestern Plains Biographic Style Indian art was done in rock art, ledger books, and hide paintings. Rock art and ledger art have been well studied, and a preliminary lexicon to help interpret these drawings has been defined. Robe art, however, is not well known to scholars of Plains Indian art. Recent research shows that Biographic art on a number of these pieces can serve as a missing link to further develop the biographic art lexicon. The importance of these robe art drawings derives from the early date, coupled with the refinement and flexibility of this medium for illustrating nuances of detail.

King, Mark B. (Georgia State)

[55] DIFFERENTIATING IDEOLOGICAL SYMBOLISM FROM HISTORICAL SIGNS IN THE MIXTECO CODICES

The ideological content of Mixtec codices is examined, advocating the complementary analysis of language, symbolism, and ethnography as an effective means to interpret this content. This approach is shown to be effective in the identification of cultural and ideological categories, ranging from the most fundamental principles of Mixtec cultural logic to invariant collections of offerings for specific ritual contexts. Pursuing this methodology will lead to better understanding of ideological structure, and also offers the potential for an analysis of ideological praxis, by comparing how different elite families recorded their genealogical relationships using a common set of ideological concepts.

King, R. (see McCoy, P.) [102]

Kirch, Patrick V. (California-Berkeley)

[39] OCEANIC ISLANDS: MICROECOSMS OF "GLOBAL CHANGE"

Most natural scientists still work under the assumption that the island ecosystems of the Pacific have seen dramatic human impacts only since the intrusion of Europeans. Yet recent inter-disciplinary research between archaeologists, avian paleontologists, palynologists and others has now demonstrated that massive human-induced changes in insular biota and landscapes commenced with Polynesian colonization 3-2,000 years B.P. This paper explores some implications of these new data for understanding processes of "global change."
Kirch, Patrick (California-Berkeley) [6] LAPITA EXCHANGE: THE EVIDENCE FROM LITHIC MATERIALS OTHER THAN OBSIDIAN
The Lapita cultural complex in the southwestern Pacific (ca. 3600-2000 B.P.) is known to have involved extensive long-distance, inter-island exchange. To date, such Lapita exchange has been reconstructed and modelled largely on the basis of ceramic and obsidian evidence. In this paper, I consider the additional contribution to be made through petrographic analysis of non-obsidian lithic materials, particularly volcanic and meta-volcanic oven stones and manos, using materials from the Talepakemutai site in the Mussau Islands.

Kirch, J. (see Kent, J.) [66]

Kirkerdall, Melissa Ann (Hawaii-Manoa) [79] DIFFERENTIAL RESPONSES TO INFECTIOUS DISEASE IN THE PACIFIC AT EUROPEAN CONTACT
Responses to infectious diseases introduced at European contact varied throughout the Pacific. General issues in disease response include the timing and frequency of European contact, mortality induced from secondary factors, the genetic homogeneity of the indigenous population, and patterns of inter and intra group contact. Tahiti, Fiji, and Island Melanesia display characteristics along a continuum of variation when examined against the backdrop of the issues. Archaeological research exploring demographic and cultural change in the Pacific needs to take into account potential variation in disease response at European contact.

Klarsert, A. (see Benallie, L.) [93]

Knecht, Heidi (Miami) [84] PROJECTILE POINTS OF BONE, ANTLER, AND STONE: EXPERIMENTAL EXPLORATIONS OF MANUFACTURE AND FUNCTION
This paper explores ways in which the raw material selected for projectile point production influences projectile point design, manufacture, and use. The structural and mechanical properties of bone, antler, and stone are highly differentiated. Results of experimental manufacture and use of projectile points made from these three materials indicate the manner in which variables such as technique of manufacture, hafting technique, morphology, and performance characteristics (e.g., depth of penetration and reaction to impact) are related to the raw material of production.

Knobloch, Pat (Institute of Andean Studies) [77] ADAPTING TO THE EMERGING ROLE OF WARI LEADERSHIP
A 1978 analysis of ceramics from a 3 meter stratified refuse deposit at Wari produced evidence that Middle Horizon 1 Ayacucho populations were interacting with south coast Nasca 8 populations, then central coast Cajamarquilla populations and finally south highland populations. The transition from a long established Huara community that began the social ties with south coast Nasca 7 populations to a widespread interaction network indicates the dominating sociopolitical strategy of Wari leadership. This discussion will present recent research into the relationship of non-Wari politics at the end of the Early Intermediate Period as they adapted to the emerging role of Wari leadership.

Kohli, Philip L. (Wellesley College) [93] COLONIALISTS WEARING WHITE HATS: INTERNATIONALIST "READINGS OF THE PAST" IN THE FORMER USSR
Official state-sponsored archaeology in the former Soviet Union can be criticized on many grounds, including its forced adherence to an outmoded 19th century evolutionary orthodoxy that denied or minimized local cultural developments and diversity. While noting examples of this phenomenon, this paper focuses on the more positive aspects of internationalist "readings of the past" which impeded (or at least tempered) the construction of dangerous local national mythologies based upon the manipulation of the archaeological record.

Kohler, T. (see Gunneman, G.) [99]

Kohler, Timothy A. (Washington State and Santa Fe Institute) [46] PREHISTORIC HUMAN IMPACT ON UPLAND NORTH AMERICAN SOUTHWESTERN ENVIRONMENTS: HISTORY OF RESEARCH, CONSEQUENCES FOR CULTURE CHANGE, AND IMPLICATIONS FOR PREHISTORIC DECISION-MAKING
In this paper I review the history of research on the question of prehistoric human impact in the environment in the upland Southwestern portions of North America and present knowledge on the nature, severity, and consequences of those impacts. I then discuss how decision-making either by reference to social norms or rational strategizing can lead to nonsustainable use of the environment. This will lead to some predictions as to what strategies were in fact used for decision-making at certain points in the prehistoric Anasazi sequence, as well as a discussion of the general features of strategies that can result in sustainable adaptations, whether in prehistory or today.

Kolb, Charles C. (National Endowment for the Humanities) [Respondent to Snow 3]

Kolb, M. (see Murakami, G.) [94]

Kolb, M. (see Sweeney, M.) [100]

Kolb, Michael (State Historic Preservation Division, Hawaii) and James Snead (California-Los Angeles) [88] ISSUES IN COMMUNITY-LEVEL ANALYSIS IN ARCHAEOLOGY
The traditional dichotomy between the `site' and the `region' in archaeological research has limited our understanding of one of the most significant components of society lying between the two; the local community. Long a concern of ethnographers, study of this level of socio-political integration is relevant for a number of issues currently of interest to archaeologists. This paper discusses theoretical issues of community-level analysis in archaeology by first defining some of the methodological concerns at the core of this approach. Current research on community-level cultural landscapes in Hawai'i and New Mexico will provide relevant case studies.

Kornietz, N. (see Soffer, O.) [69]

Kostki, S. (see Gifford, J.) [41]

Kozarek, S. (see Connolly, R.) [25]

Krass, Dorothy Scholtebauer (Massachusetts) [52] TRANSMITTERS OF (ARCHAEOLOGICAL) KNOWLEDGE: A STUDY OF TEACHERS
As anthropologists, we recognize that every region has a unique environment for learning about archaeology. In Massachusetts, curriculum requirements are determined by the school district, not the state; and visible archaeological sites are all from a more recent historical period. Creating useful, attractive materials for teaching archaeology had to start with an evaluation of the knowledge and attitudes of teachers—What do they know about archaeology? Where do they get this knowledge? How accurate and current is it? How do they think archaeology relates to their teaching goals?—and of the institutional and cultural conditions that influence their including archaeology in their teaching.

Kruigger, H. (see Ambrose, S.) [54]

Kryder-Reid, Elizabeth (CASVA, National Gallery of Art) [62] CALIFORNIA MISSIONS: LANDSCAPES OF DISCIPLINE
The explicit purpose of the 21 California missions was the conversion of California's indigenous peoples to Catholicism, while the implicit purpose was claiming new territory and integrating its inhabitants into the Spanish empire. These missions were part church, school, factory, plantation, prison, hospital, and dormitory—all disciplining institutions. Through daily Regimen and a variety of panoptic devices, the missions were landscapes of control. The effectiveness of that control was not uniform; however, and this paper examines the historical, visual, and material evidence of the mission landscapes as a physical framework of relations of power between the Spanish and the Native Americans.

Kuckelman, K. (see Lightfoot, R.) [89]

Kulm, S. (see Stiner, M.) [19]

Kulm, Steven (Loyola-Chicago) [20] MIDDLE AND EARLY UPPER PALEOLITHIC TECHNOLOGICAL VARIABILITY AT RIPARO MOCHI (LIGURIA, ITALY)
This poster presents findings on Mousterian and Aurignacian lithic assemblages from Riparo Mochi, a deeply stratified rockshelter in northwest Italy. The appearance and character of change between Middle and early Upper Paleolithic (Aurignacian) varies with the analytical perspective. Typological indicators could suggest continuity between late Mousterian and earliest Aurignacian, whereas methods of tool blank production and patterns of raw material utilization changed radically across the same interval. These observations have implications for the techno-economic behavior of MP and UP hominids, as well as for the utility of many "diagnostic" features of Paleolithic industries.

Kulm, Steven (Loyola-Chicago) and Mary C. Stiner (Loyola-Chicago) [2] BEHAVIORAL ECOLOGY OF HUMAN ORIGINS RESEARCH
Many attempts to apply archaeological findings to debates about the biological origins of modern humans are overly typological, citing idealized conjunctural patterns of hominid behavior as support for competing models. However, it is inappropriate to assume that a single pattern of behavior characterized organisms
as complex as archaic or modern Homo sapiens. Moreover, when appropriately framed, archaeological research reveals much variety within the behavioral repertoires of hominids. The main contribution of archaeology to human origins research is a fuller comprehension of the limits and structure of different hominids’ responses to environmental, demographic and social factors.

Kulisheck, Jeremy (Southern Methodist University) and Michael Adler (Southern Methodist University)

[58] DIVERSITY AND CONTINUITY IN CLASSIC AND PROTOHISTORIC VILLAGES OF THE TAOS DISTRICT, NORTHERN NEW MEXICO

The material record of the Taos District, New Mexico, has been generally characterized by a significant degree of continuity from the Classic Period to the Classic Period, at a time when major changes are evident throughout the rest of the Rio Grande region. Examination of the materials from Pot Creek Pueblo and Picuris Pueblo indicate that such continuity takes place in the context of the adoption of other material culture traits which emerge throughout the Rio Grande region during the Classic Period. Examination of the site structure at Pot Creek and Picuris also indicates that site component, as well as possibly total site, abandonment, was a common phenomena.

Kunz, M. (see Reaster, R.) [74]

Kus, Susan (Rhodes College)

[67] HOUSE TO PALACE, VILLAGE TO STATE: SCALING UP ARCHITECTURE AND IDEOLOGY

In many societies house form and organization map social and cosmological principles allowing them to be appropriated somatically and intellectually by individuals. A state’s order that transcends rural routine and space can be articulated with having royal palaces follow rules of rural houses. In this scaling up the state benefits from the logic and metaphor of a world order whose “socialization” is guaranteed a solid base without much state imposition. The complexity of such architectural and ideological scaling up are discussed for 19th century Imerina in Central Madagascar using ethnohistorical, archaeological and ethnographic information.

Kwanne, Kenneth L. (Baylor University)

[94] SEEKING PATTERNS IN DATA: ALBERT C. SPAULDING AND STATISTICAL INFERENCE

Whether or not the quantitative revolution that has transformed some disciplines has come and gone in archaeology and whether it has achieved its proper impact is open to debate. Whatever the case, it is becoming clear that the EDA and pattern seeking approach advocated by Albert Spaulding some four decades ago is finally achieving major attention, but through a different and unexpected source. It is the advanced graphical output and data visualization offered by modern computer software that is realizing Spaulding’s original vision. It is through this mechanism that archaeologists are finally getting in tune with their data, an outcome which will hopefully lay a groundwork for richer theory.

Kwałtławskii, Scott (Archaeological Research Services)

[80] CONTINUITY AND CHANGE IN PHOENIX-AREA HOHOKAM SUBSISTENCE FROM THE CIVANO PHASE TO THE POLYVORON PHASE: THE FLOTATION EVIDENCE

A relatively large number of flotation samples dating to both the Civano and Polyvoron Phases have now been analyzed from several Phoenix-area Hohokam sites. Some authorities, especially Charles H. Milisiek, have suggested that these data indicate that local Hohokam populations may have had declining success with agriculture during the Civano Phase, and that this situation could have led to a greater reliance on wild plants by the Polyvoron Phase. This paper reviews the literature on Civano and Polyvoron Phases Hohokam subsistence—especially flotation studies from the metropolitan Phoenix area—and evaluates the data for quantitative evidence of subsistence shifts.

Ladefoged, Thueg N. (Auckland)

[100] SOCIOECONOMIC TERRITORIES ON MOTUTAPU, AOTEAROA

Throughout prehistoric Aotearoa (New Zealand) technological and environmental conditions necessitated annual storage of sweet potato for winter subsistence and planting stock. These food stores, and the land used to produce them, were not only subsistence resources, individuals were often organized into kin groups of between 50 to 150 people, the hapu. A landscape perspective is used to interpret the results of a geographic information system analysis of global positioning system and digital theodolite data from the small island of Motutapu. On one level, the replication of social and economic territories defined by the distribution of fortified pa, suggests competition between hapu. A higher level of political integration is suggested by morphologically distinct pa situated in strategic locations.

Lambert, Patricia (California-Santa Barbara)

[47] SETTLING DOWN IN SANTA BARBARA: THE ORIGINS AND CONSEQUENCES OF SEDENTARY VILLAGE LIFE IN SOUTH COASTAL CALIFORNIA

Cemetery data are used to identify and interpret changes in the settlement systems of prehistoric hunter-gatherers of the Santa Barbara Channel area. Throughout the long prehistoric sequence, burial was the primary means for disposing of the dead. Because the dead were buried in close proximity to habitation sites, variables such as the appearance, size, and distribution of cemeteries provide important clues about temporal and spatial variations in the duration and intensity of village occupations. Skeletal remains from these cemeteries provide a record of health and disease that is also useful in tracking increasing sedentism. The causes and consequences of sedentism for these complex hunter-gatherers are discussed in the context of the region’s unique prehistory.

Lamotte, Agnes (Lille)

[20] MIDDLE PLEISTOCENE BIFACE INDUSTRIES FROM NORTHERN EUROPE: THE BEHAVIORAL SIGNIFICANCE OF SOME SPECIALIZED ASSEMBLAGES

Several regularities are evident in the lithic assemblages of six northern European sites (11 levels) with similar geographic and paleoenvironmental contexts. Generally speaking, cleavers, choppers, chopping-tools, hoes and polyhedrals are not present. Rather, these assemblages vary along three axes: many or few bifaces (with an evolution in morphology), many or few flake tools (with variability in the use of interior and exterior flake surfaces), and the presence or absence of the lvallois technique. These three elements form assemblage variability in northern Europe, which parallels the situation in Africa and the Near East during the same period.

Lanata, Jose (Texas-Austin) and C. Britt Boussau (Texas-Austin)

[97] RISK AND ADAPTATIVE STRATEGIES IN PALEOINDIAN OCCUPATIONS AT CENTRAL TEXAS

In this paper we provide data from the Wilson-Leonard site that presents evidence for different exploitation patterns among Paleoindians. Small and unpredictable, yet significant fluctuations in local environments and climate could have played an important role in the employment of different adaptive strategies among Paleoindian inhabitants of Central Texas. During periods of environmental change, human populations could have altered their strategies to cope with food scarcity, including not only the exploitation of large mammals but small animals and plant foods as well. The characterization of Paleoindian adaptive strategies as concentrating on megafauna appears to be flawed.

Lange, Frederick William (Colorado) [Discussant 52]

Lange, Richard C. (Arizona State Museum)

[50] AS FAR AS THE EYE CAN SEE: SOME BASIC TESTS OF PREHISTORIC SIGNALLING CAPABILITY

Prehistoric architecture, such as towers, and site locations on high places lead many to speculate about communication or signalling. Researchers often draw lines of sight on maps to indicate potential communications routes and illustrate the case for common public sites, or distances involved. Some data, testing signalling abilities, have been collected but are not widely available or known. A number of field tests were conducted to test certain aspects of signalling, including different meanings and messages, and over various distances. Certain techniques permit signalling over long distances, but the messages are limited.

Larick, Roy R. (Bement School)

[34] CHILDREN LEARNING PREHISTORY IN CONTEMPORARY FRANCE

By American standards, prehistory bombards French children. The quantity and quality of learning avenues reflect French pedagogical and educational policies but are increasingly fueled by profit. Five avenues for learning Paleoindian life are illustrated; the case for common public sites, the use of fossils in schools, the use of field trips, the use of traditional school curricula in prehistory; a growing number of small-scale private theme parks, a widely proliferating popular literature; and academic learning modules developed by professional archaeologists. The paper evaluates these avenues on modes of presenting (questioning-answering) and learning (active-passive), and on explanatory attitude (open-closed). It speculates future developments in commercialism and international applications.

Larvalde, Stina (Museum of New Mexico) and Sarah H. Schliangar (Museum of New Mexico)

[33] ANASAZI AXES FROM THE LA PLATA VALLEY: MANUFACTURE, USE, AND DISCARD

Excavations of parts of two Anasazi communities during the La Plata Highway Project yielded a large sample of axes, other large tools, and other tools. Several types of axes were found in various stages of manufacture, making it possible to reconstruct a variety of manufacturing trajectories. Axe and maul distribution suggests patterns of tool use and curate, as well as patterns of residential abandonment of the Anasazi communities at Jackson Lake and Barker Arroyo. These patterns are contrasted with large flared tool distribution at other Four Corners Anasazi communities.

Larsen, Clark (North Carolina-Chapel Hill) and Dale Hutchinson (East Carolina University)

[90] OSTEOPATHOLOGY OF HUNTER-GATHERERS FROM THE CARSON DESERT: RECONSTRUCTING PREHISTORIC LIFESTYLES IN THE WESTERN GREAT BASIN

Study of human skeletal remains from the Stillwater Marsh region of western Nevada has revealed details of adaptation. This paper reports on a range of paleopathological indicators, indicating that populations
were generally healthy, with relatively little evidence of physiological stress or experience with infectious pathogens. High prevalence of osteoarthritis argues for a non-sedentary, physically demanding lifestyle.

Larson, L. (see Phillips, L.) [18]

Larson, Lynn L. (Larson Anthropological/Archaeological Services)

[18] RESULTS OF THE WEST POINT PROJECT EVALUATED IN REGIONAL AND ETHNOGRAPHIC CONTEXTS

The West Point artifact assemblage and data analysis provide a data base for 4,500 years of land use for a landform in Puget Sound. Comparison with sites on the Duwamish River, Chester Morse Lake, the San Juan Islands, and the Gulf of Georgia may provide answers to important regional questions such as: When and why did the shift from forager to collector organization occur in Puget Sound or throughout the Northwest? How did earthquakes affect settlement pattern through time in the Duwamish River Valley? Did the Duwamish Williamsians participate in an interdependent economy based on ecological strengths?

Larson, Mary Lou (Wyoming)

[66] ROCKY MOUNTAIN HOUSESPITS: THE EDESSELS OF THE INTERAMERICAN WEST?

Semi-subterranean features known as housepits in the Rocky Mountains and Northwestern High Plains served as dwellings throughout much of the area's prehistory, with a fluorescence during the Early Plains Archaic. If one subscribes to Gilman's criteria for the use of such dwellings, housepits should have been ideal dwellings for hunter-gatherers in the area. However, other architectural types, such as pits and kivas, surpassed housepits in importance. Investigation of the characteristics of Rocky Mountain housepits and their theoretical underpinnings provide insight into these enigmatic features.

Lash, Richard (Buffalo Museum of Science)

[74] THE PALEONDIAN RECORD AT THE HISCOCK SITE (WESTERN NEW YORK): ITS NATURE AND CONTEXT

Spring-derived terminal Pleistocene sediments at the Hiscock Site contain disarticulated, mixed bones of American mastodon (MNI = 8) and other megafauna species, as well as abundant conifer twigs and cones that were probably fecally deposited. These sediments have also yielded lithic artifacts (mostly flint bifaces), all of which may have been culturally modified. Two well-like excavations could be products of proboscidean and/or human activity. The site is interpreted to have contained several spring-fed pools in a corridor between two large lakes that extended more than 50 miles in an east-west direction.

Lawlor, Elizabeth J. (California-Riverside)

[25] SITE-FORMATION PROCESSES AFFECTING PHYTHOLITH DEPOSITS IN THE MOJAVE DESERT

In theory, phytoliths are deposited through decay of plant material and remain in place (i.e., within about 30 m.) until recovery by the archaeologist. Does this decay-in-place model apply in the Mojave Desert or adjacent Sinai? If so, then we can use phytoliths there to identify prehistoric plant-processing features. The answer depends on the reference collection focused on (1) cultural practices of gathering, processing, and discarding certain plant parts, and (2) phytolith assemblages from soils representing modern vegetation associations. I report an experimental field study comparing soil samples from modern food preparation areas to samples from control areas.

Lazarus, Paul Kay (New School for Social Research)

[91] FARMERS, PASTORALISTS & ENVIRONMENTAL DEGRADATION IN SARDINIA

Data from a recent field survey in two regions of Sardinia suggests that specialized pastoralism on the Island is a fairly recent phenomenon. Research on land-use and settlement patterns from prehistory through the present time, indicate that major environmental changes probably did not occur until the late Middle Ages or later. The most significant transformation of the environment is an even later phenomenon beginning in the 1800s due to external political and economic influences imposed on the island's inhabitants leading to the shift from agriculture to pastoralism and environmental degradation.

Leach, J. (see Mauldin, R.) [33]

Lebo, Cathy (Indiana)

[104] THE MYTH OF MARGINALITY: FEAST OR FAMINE IN THE AMERICAN SOUTHWEST?

The traditional view that the Southwest is marginal for corn agriculture, therefore all corn farmers lived under greater environmental influence, needs to be reassessed. Direct archaeological evidence from recent skeletal studies indicates reliance on corn as the overwhelming component of prehistoric meals. Ethnohistoric farming practices maintained a fairly dependable food supply in spite of recurrent crop shortfalls. A simulation of corn harvests under reconstructed paleoclimatic conditions is used to reexamine the marginality of prehistoric life in the presence and absence of such an adaptive farming strategy.

Lebow, C. (see Schall, R.) [85]

Levi, Laura

Lee, M. (see Stephens, D.) [70]

LeFeuvre, C. (see Corbett, D.) [79]

Lehmann, Stephen (Crow Canyon Archaeological Center)

[99] COMPLEXITY AT CHACO AND CAHOOKA

Archaeological complexity—a social condition—and SPI's complexity—a measurement of structure—most obviously intersect at points where relatively simple, homogeneous archaeological patterns are transformed into highly structured, heterogeneous patterns. In the late prehistory of America north of Mexico, two examples of complexity or complex transformations are central: Chaco and Cahokia. The strikingly parallel structures of these transformations are used to evaluate the utility of both archaeological and SPI's complexity in understanding the past on a continental scale.

Lester, Stephen C. (Iowa) and Fred A. Finney (Iowa)

[105] DEALING WITH RISK IN THE INITIAL MIDDLE MISSOURI VARIANT: LOCAL SUBSISTENCE SYSTEMS AND REGIONAL INTERACTION NETWORKS

People of the initial Middle Missouri variant in Iowa, known as Mill Creek, appear to have engaged in four strategies by which village agriculturists cope with risk—diversification, exchange, mobility, and storage. Previously collected subsistence data from Mill Creek is re-evaluated to suggest a more complicated system of resource diversification than originally proposed by the climatic hypothesis. New perspectives on Mill Creek field systems, storage capacity, remote hunting camps, and regional interaction with sites in the Mississippi valley are presented. These data argue for a greater range in the means of dealing with fluctuations in food supplies than previously known.

Lents, D. (see Pope, K.) [76]

Leonard, Banks L. (California-Los Angeles) and Glenn S. Russell (California-Los Angeles)

[77] COALESCENCE AND TRANSFORMATION IN THE EARLY INTERMEDIATE PERIOD: FROM HORIZON TO HORIZON IN THE CHICAMA VALLEY, PERU

Recent settlement pattern studies in the lower Chicama allow examination of sociopolitical transformations during the EIP. After Early Horizon numerous small sites became nucleated into fortified hill towns, suggesting intraculinity competition among small polities. By Late Gallinazo defensive sites were abandoned and major monumental centers were built, reflecting political unification of the valley. Middle Horizon saw further transformation, including the abandonment of Moche centers, construction of a new center, change in burial practices, ceramic diversification, and strong influences from Cajamarca and Lambayeque.

Leone, Mark P. (Maryland-College Park) [Discussant 62]

LeTourneau, Philip (New Mexico)

[37] RECENT INVESTIGATIONS AT THE ANTELOPE WELLS OBSSIDIAN SOURCE, ANIMAS MOUNTAINS, NEW MEXICO

Antelope Wells obsidian from the Animas Mountains of southern New Mexico saw heavy prehistoric use. While the location of the primary source area for this volcanic glass is generally known, knowledge of the source material's geologic, physical, and chemical characteristics is limited. This report summarizes recent field work that contributes new information regarding geologic occurrence, surface density, chemical composition, and physical characteristics of the obsidian.

Leits, K. (see Moe, J.) [52]

Leventhal, Richard (California-Los Angeles) and Wendy Ashmore (Pennsylvania)

[60] FROM EDGE TO CENTER: TERMINAL CLASSIC XUNANTUNICH, BELIZE

Originally a secondary component in the Naranjo polity, the ancient Maya center of Xunantunich emerged as the dominant political force in its part of the upper Belize river valley in the Terminal Classic (A.D. 650-1600). In its third field season (1994), the Xunantunich Archaeological Project (XAP) continues inquiry into the causes and implications of the rise and decline of this abruptly ascendant late center. As part of the inquiry, XAP is also testing hypotheses about the impact of the governance shifts on the surrounding populace; an impact current models of Maya society suggest were minimal.

Levi, Laura (Arizona)

[56] CENTER AND COMMUNITY AT SAN ESTEYAN, BELIZE

At the site of San Estevan, a typology of structure groupings facilitates investigation of the differential distribution of residential arrangements within a prehispanic Maya community. The study finds activities housed in monumental precincts to be directly implicated in the settlement's residential organization. Diffuse political authority, weak political economies, and kinship self-sufficiency are frequently invoked to account for the dispersion of residence around Maya centers of monumental architecture. Research at San Estevan
Levine, Frances

suggests, to the contrary, that these settlement systems achieved their form in response to stringent political and economic entailments of community life.

Levine, Frances (Santa Fe Community College)

REEXAMINING THE BASIS OF ETHNOGRAPHIC ANALOGY: AN EXAMPLE FROM PECOS PUEBLO, NEW MEXICO

Pecos Pueblo was the principle community on the Upper Pecos River in New Mexico from A.D. 1450 until the 1790s when Hispanic settlers entered the valley. In 1838, a much reduced Puebloan community emigrated to Jemez Pueblo. Archaeologists have referred to Pecos in modeling general theories of site abandonment and regional integration. Primary demographic records from Pecos Pueblo and the surrounding Hispanic communities are analyzed for the period 1696-1840. They suggest multiple factors contributed to population decline at Pecos Pueblo. Baptismal, burial and marriage records reflect the contributions of disease, exogamy, warfare and resource competition in the decline of the Pueblo population.

Levine, Mary Ann (Massachusetts-Amherst) and Barrett P. Brenton (Massachusetts-Amherst)

THE PRESENTATION OF PALEOINDIANS IN JUVENILE LITERATURE

Although Paleoindians have figured prominently in juvenile literature, this medium has received insufficient attention by archaeologists. This paper discusses images and texts portraying Paleoindians in fiction and non-fiction intended for children. We explore the repetition of some themes and the emergence of new themes throughout the history of juvenile literature about Paleoindians. In addition, we call attention to the role of children in these presentations of the past. An examination of such accounts illuminates the information available to children on these initial settlers. Reading these stories also forces us as archaeologists to reconsider our own stories about the past.

Ley, Janet E. (North Carolina-Charlotte) [Forum Participant 15]

Lewarch, D. (see Bangs, E.) [18]

Lewarch, Dennis E. (Larson Anthropological/Archaeological Services)

THE WEST POINT CHRONOLOGY: A 4,500 YEAR LAND USE SEQUENCE

Over 60 radiometric dates calibrate a long hunter-gatherer land use sequence at West Point, with initial urban occupation beginning ca. 4500 B.P. near the base of a bluff landscape and continuing on top of a higher elevation beach bench through ca. 200 B.P. Five temporal components are defined for West Point occupations using dendrochronological age ranges of radiocarbon dates, stratigraphic superposition relationships, and horizontal distribution of cultural deposits along changing landscape forms. Shifts in activity area locations through time are reviewed to document impacts on landscapes, changing sea level, and earthquake induced ground subsidence.

Light, P. (see Prentiss, W.) [105]

Lightfoot, Kent G. (California-Berkeley)

THE SOCIOPOLITICAL ORGANIZATION OF HUNTER-GATHERERS IN CALIFORNIA: ISSUES OF CONCERN

Two issues are introduced in a symposium on the sociopolitical organization of California hunter-gathers. The first concerns native responses to early European explorations, epidemics, and the later recruitment of laborers into Spanish missions and a Russian fur trade outpost. How did these encounters influence the spatial distribution, hierarchical elaboration and population size of native polities? The second issue concerns the evolution of sociopolitical typologies in California after the coming of European conquerors. The paper suggests that the transformation of sociopolitical ideal types in California may be modeled using ecological data for prehistoric native California.

Lightfoot, Ricky (Crow Canyon Archaeological Center) and Kristin A. Kuczkowski (Crow Canyon Archaeological Center)

WARFARE AND THE PUEBLO ABANDONMENT OF THE MESA VERDE REGION

Throughout the past century archaeologists have debated the role of warfare in the thirteenth century Puebloan abandonment of the northern American Southwest. The authors of this paper summarize regional evidence of the impact on settlements, community structure, and regional abandonment. A recent locality-based study in the Mesa Verde region addresses these issues using oral history, rock art, and excavation data from two villages. The results of this study support the argument that violence contributed to the formation and final abandonment of thirteenth century Puebloan villages in the northern Southwest.

Lillico, Katina T. (Ripon College) and Howard A. Snyder (Yale)

RESOURCE SELECTION AND GROUNDSTONE ARTIFACTS OF THE PORTUGUESE COPPER AGE: A CONTEXTUAL APPROACH TO PREHISTORIC TECHNOLOGY

A mineralogical and source assessment of groundstone artifacts from lowland Portuguese Copper Age sites provides evidence for selective and variable use of resources between burials and settlements and the possible criteria for which various artifacts and the materials used to make them were valued. Most groundstone tools found in settlements are amphiomitic, a metamorphic rock whose nearest sources are 100-500 km from lowland sites, but whose density, hardness, and foliation ideally suit it for manufacture and use as hammers, chisels, axes, etc. In contrast, groundstone artifacts from burials are made principally from local igneous and sedimentary rocks and are non-functional, unused replicas of the amphiomitic tools.

Lincoln, Thomas (Bureau of Reclamation), Teresa L. Hoffman (Bureau of Reclamation), Ronald Dorn (Arizona State), and Glen Rice (Arizona State)

THE AGE OF A MESOAMERICAN STYLE PETROGLYPH IN SOUTHERN ARIZONA

Cation-ratio dating of rock varnish is used to arrive at a minimum estimate for the age of a Mesoamerican style petroglyph near Phoenix, Arizona. The glyph was executed using the pecking techniques standard for Hohokam rock art, but the layout, dense packing of lines, and apparent subject matter are not characteristic of this area. The design may show the side-profile of a face with a speech bubble, pointed hat/cap, sectioned conch, and a shell necklace. This glyph is discussed in the context of other pictorial representations in the Southwest that reflect Mesoamerican influences but were executed within the local forms of material culture.

Lindauer, Owen (Arizona State)

SMALL SCALE INTEGRATION AND DIFFERENTIATION AT THE BASS POINT PLATFORM MOUND

The platform mound at Bass Point combined the functions of a residence, a storehouse, and a meetinghouse. Social differentiation is suggested by the placement of cremations and inhumations as well as the position of rooms on and around the platform.Analyses of the magnitude of storage, the amount of trash, and effort in platform construction are used to estimate a small scale of integrative activity. There is evidence that relatively few non-residents were required in the construction and maintenance of the platform. These data suggest that platform mounds may appear in a context of small populations having subtle levels of differentiation.

Lindeman, M. (see Guderian, T.) [60]

Lindly, John (Arizona State)

A TECHNOLOGICAL STUDY OF LEVANTINE MOSUERTER ASSEMBLAGES

Middle Paleolithic lithic assemblages from the Levant are studied to gain insight into the technological organization that occurred during this period. Currently favored technological typologies are scrutinized along with views of how and why change occurred through time. The goal of this study is to begin to characterize the range of adaptive choices that occurred from the point of view of lithic technology. This information is then utilized to comment upon the ongoing debate about the origins of modern humans.

Lile, W. (see Kelley, J.) [37]

Lile, William D. (Washington State and Crow Canyon Archaeological Center) [Discussant 3]

Lile, William D. (Washington State and Crow Canyon Archaeological Center)

MATERIAL EXPRESSION OF SOCIAL POWER IN THE NORTHERN SAN JUAN, A.D. 1150-1300

The Puebloan occupation of the northern San Juan region of SW Colorado and SE Utah in A.D. 1150-1300 is characterized by a peak in regional population size; locally high population densities, increasing aggregation, new forms of civic architecture, and rapid regional abandonment at the end of the period. A review of architectural, artifactual, mortuary, and settlement data indicates that the material expression of power differentials was continuously variable and subtle, rather than strongly patterned and ostentatious. The context includes both warfare and changes in subsistence risk; relationships of these variables to changes in sociopolitical organization are discussed.

Liss, K. (see Reese-Taylor, K.) [44]

Loedendorf, Larry (Arizona)

SHEILD-BEARING WARRIOR PICTOGRAPHS FROM MONTANA TO COLORADO

Shields and anthropomorphs are found throughout the Rocky Mountain states. Numerical age estimates (+/C and Cation Ratio dates) indicate the figures were made as early as A.D. 1100 in central Montana; A.D. 1200 in central Wyoming and A.D. 1500 to A.D. 1600 in southeastern Colorado. The dates for these figures could represent Athapaskan movements south or they could be the product of another group, perhaps the Kiowa.

Loeske, J. (see Hudler, D.) [87]

Longacre, William and Mark Neupert (Arizona)

IS THE CUSTOMER ALWAYS RIGHT? ETHNOARCHEOLOGICAL STUDIES OF CERAMIC PERFORMANCE CHARACTERISTICS IN NEGRIS, THE PHILIPPINES

Ethnoarchaeological field work over the past two summer's has focused upon the accuracy of customer's appraisals of the performance characteristics of pots produced in two localities on the island of Negros in
the Philippines. Overwhelming preference for pots produced in one locality led to an exploration of the production technology in the two sites and to physical/chemical compositional studies of the clays and temper used. Production of pots in the two sites is virtually identical, but there are substantial differences in the clays. We focus upon the behavioral relevance of such laboratory measurements. Is the customer always right? Sometimes!

Lopez Varela, Sandra (CONACYT/SEP)

[29] THE LATE AND TERMINAL CLASSIC AT YAXCHILAN AND POMONÁ: A MACROREGIONAL PERSPECTIVE ON CERAMICS AND SOCIAL REORGANIZATION

Following the decline of Teotihuacan, ceramic production in the Maya northwestern zone of Yaxchilán and Pomona includes stylistic traditions that were introduced by groups affiliated with the Teotihuacan past. These trends apparently reached the northernmost zone via the Gulf Coast, reflecting a Late/Terminal Classic period shift away from the earlier highlands-based network of pan-Mesoamerican interactions. Additionally, the “Teotihuacan revival” in the northwestern zone marks this region as an important periphery through which new products and ideology were transmitted to the rest of the Maya lowlands.

Lorenzen, Karl (California-Riverside)

[5] LATE POSTCLASSIC REUSE OF CLASSIC MONUMENTAL ARCHITECTURE AT NARANJAL, QUINTANA ROO, MEXICO

Preliminary analysis of monumental architecture at Naranjal reveals that Classic structures were modified and reused during the Late Postclassic period. Citing comparable architectural features from Mayapan, Tutum, and other Late Postclassic sites, this study describes the characteristics that define and differentiate the Late Postclassic occupation at Naranjal. Documentation of Late Postclassic reuse of structures at Coba, Dzibilchaltun, and other sites of the northern lowlands will be used to interpret the late reuse and modifications at Naranjal.


Loveland, Carol (Utah State)

[90] A BIOLOGICAL PERSPECTIVE ON PREHISTORIC HUMAN ADAPTATION IN THE GREAT SALT LAKES ECOSYSTEM

Eighty-six skeletons recovered after the retreat of floodwaters along the eastern shore of the Great Salt Lake provide valuable information about environmental stresses and disease episodes faced by the prehistoric inhabitants of the region. Dental wear and degenerative joint disease are the two most pervasive conditions noted in the population. Enamel hypoplasia and transverse lines occur on several skeletons suggesting that the population was under some dietary or disease stress. Skull radiographs reveal altered development of the mastoid in many individuals, reflective of frequent, virulent respiratory infections. Unusual anomalies conditions noted in this skeletal population are discussed.

Lovett, K. (see Kent, J.) [66]

Lovell, Julia C. (Northern Iowa)

[37] THE HEARTH AS ARTIFACT IN PREHISTORIC PUEBLOS

This session presents a statistical analysis of over 400 fire features from three prehistoric pueblo sites located in the Grasshopper region of Arizona. Six fire feature types are defined and illustrated that vary in features, processes, and associated artifacts. These include rectangular slab-lined, circular unlined, circular clay-lined, roasting pit, oven, and ceremonial types. Shifting patterns in fire feature types and preoccupations through the thirteenth and fourteenth centuries A.D. may reflect critical changes in subsistence, seasonality, food preparation techniques, ethnicity, or household and community organization. For comparison, fire features from the historic Pueblo are also illustrated.

Lucero, Lisa (California-Los Angeles)

[12] CERAMIC FUNCTION, TECHNOLOGY, AND LABOR INVESTMENT: FACTORS REFLECTING SOCIAL AND POLITICAL CONDITIONS

This paper addresses how ceramic function, technology, and labor investment reflect social and political conditions in late Classic Maya society. Current evidence indicates household level ceramic production. Although household level production suggests an open system, the distribution of certain vessels would indicate a more controlled system. Since it was not likely feasible for direct control of distribution, more indirect means of controls had to have been used. Such indirect means could have included ideological sanctions, a theme common throughout Mesoamerica. The extent of ideological control reflects social and political conditions.

Luedtke, Barbara E. (Massachusetts-Boston)

[22] GEOLOGY AND ARCHAEOLOGY IN BOSTON HARBOR

Recent research on the geological evolution of Boston Harbor allows new insights into the history of human uses of the area. The distributions of early Holocene river beds and the process of marine inundation

Mack, Joanne

are crucial to the interpretation of Archaic period activities. Later geological processes such as the growth of sand spits appear to have affected resource distributions as well as access to the islands in the harbor by Woodland Period people. The integration of new geological data with archaeological data increases the precision of our interpretations of changing settlement patterns and land use in the Boston Harbor area.

Levett, Mark T. (New Mexico)

[89] STRUCTURE AND CONTENT IN PREVIOUS RESEARCH: NIELS NELSON'S EXCAVATIONS IN THE GALISTEO BASIN

Between 1912 and 1914, N.C. Nelson conducted extensive excavations at seven large, late prehistoric or contact period habitation sites in the Galisteo Basin, Santa Fe County, New Mexico. Nelson recorded detailed descriptions of the material culture and artifact recovery for each excavated room. Using Nelson's notes and collections, this study investigates formal variation in architecture both within and between sites, as well as variation in artifact deposition by location, volume, and content. These data make it possible to study site structural variation at the level of a settlement cluster and to evaluate that variation in relationship to other changes in archaeological patterning coincident with European contact.

Lymann, R. Lee (Missouri-Columbia)

[18] THE WEST POINT TERRESTRIAL AND MARINE MAMMAL FAUNAL ASSEMBLAGE: PATTERNS AND COMPARISONS WITH OTHER PUGET SOUNC ARCHEOFAUNAS

The vertebrate faunal assemblage from the West Point site complex is one of the oldest reported from a salt-water coastal context in Washington State. While interpretations of richness or diversity are limited by correlations with sample size, tentative patterns can be proposed. Seasonality data indicate spring through fall use episodes with some differences by temporal component. Subtle spatial differences in processing activities are suggested by degree of bone fragmentation. Comparison of the West Point assemblage to other Puget Sound archaeofaunas suggests that local site habitat characteristics are important factors that condition faunal assemblage composition.

Lynott, M. (see Goodman, D.) [65]

Lynott, Mark (National Park Service) and Alison Wylie (Western Ontario)

[88] STEWARDSHIP: THE CENTRAL PRINCIPLE OF ARCHAEOLOGICAL ETHICS

The Ethics in Archaeology Committee was formed to address issues about the use of looted data in research and publication. The Committee's proposal to hold a workshop to discuss ethical issues was funded by the National Science Foundation and the National Park Service. In November, 1993 eighteen people participated in a workshop at the University of Nevada Reno. Three days of intensive discussions resulted in the development of six principles of archaeological ethics. The role of archaeologists as stewards of archaeological record is foundation upon which these principles are based. The principle of stewardship is presented.

Lyons, Patrick D. (Arizona State Museum)

[89] DESCRIBING AND EXPLAINING LITHIC VARIABILITY AT PREHISTORIC PUEBLOAN SITES

Analyses of lithic assemblages from prehistoric puebloan sites in the American Southwest have been problematic due to an incomplete understanding of site and assemblage formation processes and difficulty in dealing with "amorphous" or "expedient" lithic technologies. This paper illustrates examples of such problems and presents a number of attempts at solving them. Central to the paper is an examination of the traditional formal/expedient dichotomy and the application of shellage typologies to the description and explanation of intrusive lithic assemblage variability.

MacDonald, Catherine (Father Leo J. Austin Catholic Secondary School)

[52] PROGRAM EVALUATION AT THE SECONDARY SCHOOL LEVEL

How do you get school systems and teachers to buy into your education program? Effective program evaluation not only convinces schools that educational archaeology is worth spending tax dollars on but also helps you to develop programs which serve the education needs of your student clientele. Program evaluation illustrates that the amount of valuable classroom time spent using archaeology as a method of approaching history or any other subject increases cognitive thinking skills, encourages students to see the past in a new way, provides tremendous opportunity for interdisciplinary learning and assists students to become effective evaluators of their own learning.

Mack, Joanne (Pomona College)

[61] PREHISTORIC UPLAND SITES WITHIN THE UPPER KLAMATH RIVER DRAINAGE, SOUTHERN OREGON AND NORTHERN CALIFORNIA: VARIATION IN FUNCTION, SIZE, AND TOOL STONE SOURCES

Systematic surface collection and test excavation of prehistoric sites and a botanical inventory and evaluation of food plants in site locales within the Southern Cascades of Oregon and northern California
allows testing of an hypothesis proposing upland sites as small, specialized sites, used seasonally by the inhabitants of large campsites and village sites located on the terraces of the Upper Klamath River. Analysis and interpretation of materials recovered during two recent field seasons indicate the character of upland sites varies and includes large campsites with tool kits indicating their inhabitants exploited both animal and plant resources over approximately 8000 years.

MacKinnon, J. Jefferson (Collin County Community College) [76] RISE OF SEA LEVEL AND ACCOMPANYING MANGROVE ENCROACHMENT AS A POSSIBLE CAUSE FOR THE CESSATION OF ANCIENT MAYA SALT PRODUCTION ON BELIZEAN COASTAL LAGOONS

Ancient Maya salt production by the sal cocida method on Belizean coastal lagoons ceased largely coincided in time with the Late/terminal Classic, while it has continued down to the present in other areas. Explanations that coastal salt production in Belize ceased as a result of the Classic Maya "collapse" and/or due to the expansion of long-distance salt trade based in northern Yucatan are explored and a new possibility advanced that it resulted from sea level rise accompanied by mangrove encroachment.

MacNeilb, R. (see Taylor, R.) [97]

Maguiso, A. (see Shihada, I.) [151]

Mahaney, W. (see Storch, P.) [74]

Mainsfort, R. (see Cosgwell, J.) [78]

Makowsky, Krystof (Pontificia Universidad Catolica del Peru) [77] THE BEGINNING OF THE EARLY INTERMEDIATE PERIOD IN THE CENTRAL COAST OF PERU

The results of the works effectuated in the last five years at Chancay Chilión, Rimac and Larin Valles (the author's ones included) served as a starting point to make a multidimensional re-evaluation of the cultural situation at the Central Coast, nearly between 200 B.C. and 300 A.D. The gathered evidences fall in contradiction with the image of extreme political fragmentation and total absence of frontiers frequently attributed to this epoch (Early Intermediate Period 1-4).

Malinowski, Lynn M. (Argonne National Laboratory) and Shawn D. Halsey (Red Deer College) [72] NEW EVIDENCE FOR GREAT BASIN PREHISTORIC CONNECTIONS TO THE EARLY ARCHAIC IN THE WASATCH MOUNTAINS OF CENTRAL UTAH

The second season of fieldwork in the Wasatch Mountains has contributed significantly to the knowledge of prehistoric populations in the alpine valleys of central Utah. Continued work in this high altitude region has revealed distinct prehistoric settlement patterns. Early Archaic sites are found in certain east-west trending, high altitude finger valleys, while Formative and Protohistoric sites tend to be found in lower elevation north-south trending valleys. In addition, the Archaic sites yielded a larger number of obsidian artifacts than expected. The obsidian source analysis performed on these artifacts suggests a strong connection to the Great Basin.

Mandryk, Carole (Harvard University) [50] HUNTER-GATHERER SOCIAL COSTS AND THE NONVAILABILITY OF SUBMARGINAL ENVIRONMENTS

A review of general principles of hunter-gatherer adaptations and their applicability in Arctic and desert ecosystems provides a basis for modeling behavior in submarginal environments. The low primary productivity of extremely depauperate environments results in high mobility requirements and low population density; i.e., dispersion of the population past the point at which social relations maintaining essential mating and information networks can be maintained. It is determined that submarginal environments are nonviable because it is impossible to meet both economic and social needs within the constraints imposed by extremely impoverished ecosystems.

Mann, D. (see Reanier, R.) [74]

Manson, Joni and David Snyder (Ohio Historic Preservation Office) [102] USING TURN-OF-THE-CENTURY WHITIARES AS ECONOMIC INDICATORS

Late nineteenth/early twentieth century sites, common features of the American landscape, frequently yield large assemblages of whiteware sherds. Unfortunately, most laboratory analyses of historic whitewares do not consider the sherd's in their historical context—as the physical remains of consumption patterns determined by the socioeconomic status of the consumers. In this study, old merchandising catalogs and newspaper advertisements (1895-1929) were used to obtain price lists correlated with ware types, to create a ranking index by which comparative analyses of historic whitewares can provide data on the socioeconomic status of the turn-of-the-century consumer.

Masucci, Maria [33] MORTARS AND MARINE PROCUREMENT IN SAN DIEGO COUNTY, CALIFORNIA

Mortars made from water-rounded cobbles are found extensively in submersed localities along the coast of San Diego County, but the majority are in terrestrial sites. The majority of mortars are near shore reefs and kelp beds. The BTC site, yielding hundreds of mortars, may represent an ancient cobbles spit utilized as a mortar factory site. Its depth of 2.5 meters and a radiocarbon date of 4230+1200 B.P. place the manufacture and use of cobbled mortars in the Middle Holocene. 80% of the mortar sites are localities that could have been used for shellfish collecting or offshore fishing 4,500 years ago.

Marrinan, Rochelle A. (Florida State) [101] MISSION PATALE: THE ARCHAEOLOGY OF AN OUTLYING APALACHEE MISSION

Franciscan evangelization of Apalachee Province in northeast Florida began in 1633 and ended with the destructive raids of English colonists and their Creek allies between 1702 and 1704. Mission Patale represents the early phase of Franciscan evangelization. The mission is believed to have endured at the location under investigation for fewer than twenty years (1653-1655). During its existence, it was home to five to six hundred Apalachees and a single friar. Mission Patale informs us about the early mission setting and provides data against which the courses of cultural change can be measured.

Martin, D. Kristen (New Mexico) [80] VARIATION IN SMALL SITE CERAMIC TECHNOLOGY DURING THE HISTORIC PERIOD (1540-MID-1800S) AT ZUNI, NM

This study examines ceramic technology associated with little known small sites occupied between 1540 and the late 1800s in the Boson Wash area of Zuni, N.M. Preliminary analyses indicate that there is considerable variation in wares, temper, firing atmospheres, and vessel forms, possibly related to differences in site location and configuration. Preliminary analyses suggest little evidence for trade between site occupants and surrounding groups. Furthermore, a gap in the occupation of the valley is indicated by the near total lack of glazed wares.

Martinez, Antolosette (California-Berkeley) [11] SOCIOPOLITICAL INFLUENCES ON GENDER ROLES IN THE NORTH COAST REGION OF CALIFORNIA

Analysis of recent survey data from the Fort Ross region of northern California can not only be used to evaluate Kroeber's triblet model, but can also help gauge the degree of change that came with early nineteenth century fur trade at Colony Ross. Differentiation in site size, function, and distribution through time will be used to help define changes in sociopolitical organization. This information can then be used to hypothesize how shifts in intensification, production, and labor associated with changes in sociopolitical organization may or may not have altered the lives of the indigenous people, particularly women.

Maschner, Herbert D.G. (Wisconsin-Madison) and Hoffman, Brian W. (Wisconsin-Madison) [47] THE EVOLUTION OF VILLAGE LIFE ON THE NORTH PACIFIC

General trends in the formation of permanent villages and in the size and spatial organization of houses are compared for the northern Northwest Coast, Kodiak Island, and lower Alaska Peninsula. Similarities in the diachronic development of villages are demonstrated after 3500 B.P. Diachronically, house floor size is shown to be a good indicator of increasing political complexity and is seen mostly after A.D. 500 to A.D. 1000. Villages are argued to first form in all areas a product of economic affluence combined with reasonably dense populations. Late intensification in village formation, at least in some areas of the north Pacific, appear to correlate with increases of violent conflict.

Masson, Marilyn (Texas-Austin) [55] COCJO, ANCESTORS, AND THE ANNUAL CYCLE: REFLECTIONS OF SECULAR AND RELIGIOUS DIVISIONS OF POWER AMONG THE CLASSIC PERIOD ZAPOTEC

Ethnohistoric and ethnographic analogies illuminate ways in which rituals associated with Cocijo, the powerful Zapotec deity of rain and lightning, were used to express and maintain political power. Communication with Cocijo, aided by interceding ancestors, was a critical act which ensured the onset of rains for the agricultural cycle. The funerary contexts of Cocijo effigies suggest that they were used in calendrically-timed pilgrimages to tombs, in a manner comparable to the placement of Postclassic Maya effigy censers on ancestral shrines. Scenes of Cocijo effigies portray groups of impersonators in standardized regalia. Evidence suggests that such religious officials offset the power of secular leaders.

Masters, Patricia M. [11] TEMPER, POTS, AND INTERREGIONAL TRADE IN SOUTHWEST ECUADOR

Trade is cited as a major factor in the rise of late pre-hispanic hierarchical societies in the northern Andean area. The organization of this trade and its role in societal developments has been difficult to define. Research in southwest coastal Ecuador shows that pottery as well as tempering materials were moved between
regions. Only certain pottery types were transported and the imported tempering materials were limited to the manufacture of the fine paste decorated wares. The possible significance of the trade is considered through an examination of the types of items being transported.

Matthews, Jennifer P. (California-Riverside)


The distinctive Early Classic megalithic style of the northern lowlands did not exist in isolation, but rather shared a number of features with monumental architecture of the central Peten. One particularly striking example is the triadic platform grouping, found at Naranjal, Uaxactun, and other Late Preclassic sites of the central lowlands. The temporal and geographic distribution of Maya triadic platform groupings are reviewed in conjunction with such shared architectural features as apron moldings and inset corners. These comparisons support the early dating of the megalithic style and help define the special characteristics of this northern lowland style.

Matkosski, Ilona (Illinois-Urbana)

[91] THE USE AND SIGNIFICANCE OF AQUATIC FOOD SOURCES IN A FLOODPLAIN ECOSYSTEM DURING THE NEOLITHIC PERIOD

The role of non-domestic resources in the subsistence practices of neolithic communities in the Great Plain of Hungary has received little attention. Current studies stress the importance of domestic plants and animals, and ignore the prehistoric environmental setting, and its influence on subsistence practices. A new model of the neolithic subsistence practices on the Great Plain is presented based on a new and comprehensive synthesis of paleoenvironmental data from the Great Plain, my recent analysis of neolithic fish remains from the area, fish biological information, and ethnographic data on the utilization of aquatic resources in the Great Plain during the 19th century.

Matthews, Christopher (Columbia University)

[62] PANOPTIC THEATRICS: THE USE AND ABUSE OF ELEVATED SPACE IN COLONIAL AMERICAN PERFORMANCE

The panoptic metaphor has been fruitfully employed in the historical recognition of the means by which modern states established mechanisms of surveillance over their citizenry. First recognized in prisons and hospitals the mechanics of surveillance were interpreted as the means by which the modern state taught subjects to be citizens. This paper explores another venue of surveillance, the theater. The suggestion is that in the colonial theater of British North America the relationship of those in the elevated box seats and those on the floor is an element in the mechanics of surveillance by the elite as they came to see their elevated seats as a stage for the demonstration of appropriate behavior.

Mauch Messenger, Phyllis (Minnesota) [Discussed by 38]

Mauldin, Raymond (New Mexico) and Jeff D. Leach (Fl. Blizz)

[53] GRINDING ASSEMBLAGES AND ECONOMIC PATTERNS: AN EXAMPLE FROM THE AMERICAN SOUTHWEST

Ground stone research has often focused on specific tool types (e.g., manos) rather than the entire grinding assemblage. Here, we compare aspects of assemblages associated with food processing (mashers, metates, mortars, pestles) from the Chihuahua desert and the highlands of southern New Mexico to monitor aspects of economics in these two settings. Differences in tool type ratios and attributes of specific tools at sites within regions suggest that the highlands have diverse grinding technologies relative to the Chihuahua desert. These patterns may reflect both the different resource structure and the overall adaptation extant in the region.

Maxwell, David (Arizona)

[44] MARINE MATERIALS FROM CACHES AND PROBLEMATIC DEPOSITS AT TIKAL

Preliminary study of cache materials from Tikal reveals considerable variability, with a wide variety of lithic, marine, ceramic, and faunal materials described. While some caches consist exclusively of one class of materials, many show a mixture of items. This paper examines the relationship between marine objects (shell, fish remains, coral) and other artifact classes found in caches and problematic deposits. Correlations can be made between artifact types and the original environment of the marine items (beach, deep water, etc.). It is predicted that the degree of artifact elaboration will show a positive correlation with the degree of difficulty involved in obtaining a particular type of marine item.

Maxwell, Timothy D. (Museum of New Mexico)

[58] PREHISTORIC POPULATION CHANGE IN THE LOWER RIO CHAMA REGION OF THE NORTHERN RIO GRANDE

During the Rio Grande Classic period (A.D. 1325-1600) there was a dramatic population increase throughout the northern Rio Grande and its tributaries. In the lower Rio Chama region, changes in ceramic technology and decorative motifs, the appearance of certain items of material culture, and the establishment of several large villages led archaeologists to post migration into the region as an explanation for change and population growth. There have been few alternative explanations for this growth. Data from the lower Rio Chama region suggest that intracommunity population growth may have had a significant effect on overall population levels.

Mayer-Oakes, William J. (Texas Tech University) [Respondent to Pagano 3]

McCafferty, Prague G. (see McCafferty, S.J.) [30]

McCafferty, Geoffrey G. (Brown) and Sergio Suarez Cruz (CRIP-INAH)


Close cultural ties between the urban centers of Cholula and Teotihuacan have long been assumed based in similarities in architecture and ceramic types, yet little contextual information has been available to evaluate the processes involved in this interaction. Recent excavations at an Early Classic period house in Cholula recovered deposits relating to domestic activities as well as an elaborate subfloor tomb. These materials (including ceramics, liddic, and figurines) are used to interpret cultural identities represented, while radiocarbon dates from the excavation permit the refinement of the Classic period chronology. Results of this analysis relate to questions of Cholula/Teotihuacan interaction in terms of economic, political, and religious spheres.

McCafferty, Shariase D. and Geoffrey G. McCafferty (Brown)


Tlachihualtepetl, the Great Pyramid of Cholula, was the largest man-made structure of pre-Columbian Mesoamerica, built in a succession of building phases spanning both the prehispanic and Colonial eras. As one of the premier religious centers of central Mexico from at least the Classic period to the present, the meaning of Cholula as a sacred landscape has undergone important systemic changes while maintaining an underlying structure of religious importance. During the Postclassic period the Great Pyramid acted as a cosmic portal for supernatural communication with both the heavens and the underworld. This paper examines the changing meaning content of the Pyramid using ethnographical, ethnohistoric, and archeological evidence.

McCartney, Peter H. (Arizona State)

[98] MODELING PREHISTORIC AGRICULTURAL SYSTEMS IN THE TONTO BASIN, CENTRAL ARIZONA

The strong spatial correlation between natural drainage systems and platform mound sites in the Tonto Basin suggests that irrigation agriculture may have played an important role in the formation of Salado settlement systems during the late 13th century. A GIS database combining information on topography, hydrology, vegetation, soils and geomorphology is used to estimate the quantity and distribution of prehistoric arable lands in and around present-day Roosevelt Lake. The hypothesis generated by previous research that there were marked local differences in dry farming productivity is evaluated with added emphasis on the potential for irrigation agriculture.

McClung de Tapia, E. (see Tapia-Recillas, H.) [10]

McClung de Tapia, E. (see Zurita-Noguera, J.) [25]

McClung de Tapia, Emily (Universidad Nacional Autonoma de Mexico), Judith Zurita-Noguera (Universidad Nacional Autonoma de Mexico), and Emilio Ibarra-Morales (Universidad Nacional Autonoma de Mexico)

[8] PALEOETHNOBOTANICAL EVIDENCE FOR POSTCLASSIC PLANT USE AND ENVIRONMENTAL CONDITIONS FROM XALTOCAN, MEXICO

Preliminary results of the analysis of plant remains including macrofossil, pollen and phytoliths, recovered from excavations at Xalocan in the northern Basin of Mexico contribute to the reconstruction of Late Holocene environmental conditions in the area as well as to knowledge concerning plant use. Comparisons are made with evidence for plant use as well as paleoecological indicators from other subregions of the Basin of Mexico (Chalco, Teotihuacan) in order to outline general trends and specific variants.

McCormack, William (California-Berkeley)

[94] THE EVOLUTION OF LONG DISTANCE STONE PROCUREMENT SYSTEMS IN PALEOLITHIC INDIA

Surveys of the Vindhyan mountains south of the Ganges plain indicate that the Son river valley is the probable source of toolstone materials at Upper Paleolithic and post-Paleolithic sites in the middle Ganges valley. These findings double the estimated maximum length of the largest known Paleolithic procurement system in South Asia to 160 km and shed further light on economic events that culminated in the origins
of rice agriculture. The development of long distance procurement in the Upper Paleolithic marks a transition from the use of local materials during the Lower and Middle Paleolithic to one based on high quality imports. This change appears to represent a strategic shift from "expeditionary technology" to "personal gear" and signifies the emergence of curated technologies.

McCorriston, Joy (Smithsonian Institution) [75] THE FIBER REVOLUTION: AGRICULTURAL INTENSIFICATION IN ANCIENT MESOPOTAMIA Mass-produced textiles played a crucial role in the trade networks that sustained Mesopotamia's great urban centers in the third millennium B.C. Poor preservation, however, has made it difficult for archaeologists to trace the development of textile production from a generalized household activity to a specialized weavers' craft. This paper draws on archaeobotanical, archaeozoological, artifactual, and ecological evidence to argue that the transformation of textile production in Mesopotamia was linked to changing population pressure, agricultural intensification, changes in land use, and the development of a landless class. Changes in the social and economic organization of textile production can now be closely linked to these processes implicated in the emergence of complex societies.

McCorvie, M. (see Morrow, C.) [66]

McCoy, F. (see McMahon, N.) [75]

McCoy, Patricia (Bureau of Land Management) and Robert E. King (Bureau of Land Management) [102] AN ENORMOUS AND CONTINUOUS BODY OF WORKABLE GRAVEL OF PROVED HIGH GOLD CONTENT: APPROACHING TEN DECADES OF MINING, THE VALDEZ CREEK MINING REGION, ALASKA

The Valdez Creek drainage of South Central Alaska was the site of a 1903 gold rush. Since then, mining has continued sporadically, with most operations until recently being relatively small scale. Beginning in the 1980s this changed. Today in Valdez Creek, Cambio Alaska, Inc. operates the largest placer gold mine in the state. Using slides, the authors will review the history of this region, focusing on the changing nature of mining activities which have occurred since the early 1960s. Implications for future management of historic remains from prior mining episodes will be discussed.

McGutcheon, Patrick (Washington) and José A. Afonso (Granada) [19] QUANTIFYING THE MECHANICAL BEHAVIOR OF CHERT FROM THE CENTRAL MISSISSIPPI RIVER VALLEY AND SOUTHEAST IBERIA, SPAIN

The reduction of rocks to stone tools is possible through the initiation and propagation of cracks in a controlled manner. Control refers to predictability: a given force applied in a given mode will result in the detachment of a fragment with a particular size and shape within relatively narrow limits. Predictability can be evaluated by measuring the variability of mechanical behavior for a particular lithic raw material. We present the results of mechanical tests on unheated and heat-treated chert from the central Mississippi river valley and southeast Iberia, Spain.

McEwan, Bonnie G. (San Luis Archaeological and Historic Site) [101] TEN YEARS OF ARCHAEOLOGY AT MISSION SAN LUIS

As the capital of Florida's western mission chain during the second half of the seventeenth century, San Luis de Talimali was one of the largest missions in La Florida. The townsite consisted of a church complex, fort, native council house, and Spanish and Indian villages. A decade of archaeological and historical research at each of the major areas of the site has provided a wealth of information about native and European responses to various facets of mission life throughout several generations of cohabitation.

McErlain, M. (see Metcalf, M.) [66]

McGown, Thomas H. (Hunter College, CUNY), Paul Buchland (Sheffield), Andrew Dougurn (Edinburgh), Charles Schweiger (Alberta), and Cynthia Zatter (Alberta) [46] RAIDING THE LANDSCAPE: NORSE ENVIRONMENTAL IMPACT IN THE NORTH ATLANTIC

Between ca. A.D. 800-1000, Scandinavian chiefly societies with a mixed maritime/agricultural economy expanded into the offshore islands of the North Atlantic. Colonizing the Shetlands, Orkney, Caithness, Hebrides, Faroes, Iceland, Greenland and Vinland, during the Medieval Warm Period, these settlealt brought continental economies and expectations to a widely varied set of island ecosystems. In many regions, rapid degradation of flora and soils took place associated with social and climate change. Recent research coordinated by the North Atlantic Biocultural Organization (NABO) highlights the extent of premodern impacts.

McGuire, R. (see O'Donovan, M.) [7]
McManamon, Francis P. and Ellen Herscher

The next generation includes public understanding and relationships with Native Americans and other descendants of those we study; organizing, providing and preserving archaeological information, preservation and access of collections; and in situ site preservation.

McManamon, Francis P. (National Park Service) and Ellen Herscher (Archaeological Institute of America)

[38] THE OBLIGATION TO EDUCATE
Archaeologists must reach out to the many publics to explain and enlist their support for the stewardship of the archaeological record. These educational efforts should cover both the methods and outcomes of archaeology and the results of archaeological research. Archaeologists who are unable to understand these kinds of activities must encourage and support the efforts of others. A number of archaeological organizations have public education programs underway. Cooperation and coordination among these organizations is essential to ensure maximum impact of public education and outreach efforts.

McNut, Nan (Nuova Education Consulting)

[52] APPLYING THE RIGHT YARDSTICK
As archaeology education projects and products are developed for schools, museums and other public organizations, the need for sensitive and appropriate evaluations are vital for measuring outcomes. This paper will recount the steps in evaluating three diverse projects/products: (1) Project Archaeology: Saving Traditions, a curriculum project/product; (2) Field Studies in Social Sciences, a National Science Foundation teacher institute; and (3) Get a Handle on the Past, a travel exhibit. These will demonstrate the importance of "up front" evaluation as well as "field testing."

McPherron, Shannon (Pennsylvania)

[20] A REDUCTION MODEL TO ACCOUNT FOR MORPHOLOGICAL VARIABILITY IN LOWER PALEOLITHIC BIFACES
A metric analysis of several hundred Lower Paleolithic bifaces from northern European sites reveals a consistent pattern of bifacial reduction. Biface morphology is largely a function of the intensity of bifacial reduction within the limits imposed by raw materials. When previously published data from other parts of the Old World are reexamined from this perspective the results are identical. This implies that, despite considerable morphological variability, biface technology was remarkably consistent throughout the Middle Pleistocene and that typological comparisons of biface variability must consider the stage of reduction of each assemblage.

Médluzín, Sylea (California State-Fullerton)

[48] THE TUXTLA SCRIPT AND THE ORIGINS OF WRITING IN MESOAmerica
The Tuxtla script, in being an early (if not the earliest) writing system in Mesoamerica, prompts investigation into not only its origins but also the beginning of writing itself in this culture area. Three points relevant in studying the beginnings of any writing system are discussed as well as nine categories of potential sources for hieroglyphic models. Five facets of Middle Formative Mesoamerica that could have affected writing beginnings are then presented.

Mendosa, Ruben (Colorado-Denver)

[66] ASSESSING THE HUMAN ECOLOGY OF THE COLORADO FRONT RANGE, 7500-1000 B.P.
Current investigations by the University of Colorado at Denver are attempting to assess the impact of the Altithermal on the human ecology of the Colorado Front Range (7500-1000 B.P.). In addition to providing an assessment of the 1992-1993 field seasons at the Crescent Rockshelter locality (Site 5F148), this report reviews ongoing efforts to retrieve data pertinent to settlement and paleoclimatic patterns via a systematic program of auger testing, transect sampling, pni analysis, and pollen and radiocarbon tests. Implications from the data are reviewed in terms of the objectives of continuing investigations into the human ecology of the Crescent Rockshelter and the larger regional context of the Colorado Front Range.

Merriweather, D. Andrew (Pittsburgh), David M. Reed (Pennsylvania State), and Robert E. Forrelli (Pittsburgh)

[106] ANCIENT AND CONTEMPORARY MITOCHONDRIAL DNA VARIATION IN MAYANS
Mitochondrial DNA (mtDNA) variation was examined in ancient Mayans (Late Period) from the Copan site in Honduras and from contemporary Mayans from the Yucatan Peninsula in Mexico. Ancient DNA was extracted from rib bones from archaeological sites. Contemporary DNA was retrieved from blood samples and cell lines collected from living Mayans. Frequencies of Schurr et al's (1990) four founding lineages differed markedly between these two Mayan populations, with types A and B being most frequent in contemporary Mayans and types C and D being the most frequent in ancient Mayans.

Mertens, Steven (Illinois)

[91] THE EARLY UPPER PALEOLITHIC IN ROMANIA
The nature of the transition from the Middle to the Upper Paleolithic in Europe has become the focus of recent debate. The majority of research concerning this transition comes from Western Europe or the

Miller, Naomi F.

Near East. Recent research suggests that archaeological traits traditionally used to define the Upper Paleolithic in Europe are not applicable for the Early Upper Paleolithic in Romania. This paper will examine these traits and propose that major differences exist between the Early Upper Paleolithic and the Late Upper Paleolithic in Romania.

Messkill, Frances (Texas-Austin)

[48] LANDSCAPE, CREATION MYTHOLOGY, AND BALL COURT: A PERSPECTIVE ON IZAPAN ART AND CONTEXT
Increasing attention is given to the relationship between site planning and world view and its symbolic expression in art and architecture, particularly for the Mesoamerican area. For Izapan, southern Chiapas, NWF reports cite significant connections between landscape and site layout; these and other studies stress the importance of observing Izaptec art. Connections are made by Schele and others between creation myth and the Mesoamerican ball court. In this paper, the Izapan landscape is viewed as potential model for ball court and as interpretive vehicle for certain art works. This perspective may inform interpretations of other sites.

Metro, Michael D. (Metcalf Archaeological Consultants), Patrick K. O'Brien (Metcalf Archaeological Consultants), Kelly J. Pool (Metcalf Archaeological Consultants), Steve Kalax (Centennial Archaeological Consultants), and Michael McFaul (Laramie Soil Services)

[40] ARCHAIC PERIOD CHRONOLOGY AND RESOURCE UTILIZATION IN NORTHEASTERN COLORADO
Excavation at 40 sites along a major pipeline route across northwest Colorado and southern Wyoming allow a substantial revision of the Archaic Period prehistory of the region. Over 150 new radiocarbon dates and a sizable projectile point assemblage contribute to a refined chronology, and pollen, faunal, and geomorphic analyses correlate to reconstructions of subsistence and paleoenvironments. House pit structures were excavated on five sites. Research is structured to focus on subsistence and group mobility. Although most of the occupations on the project were archaic in age, the Paleolidian-Archaic and Archaic-Late Prehistoric transitions are represented as well.

Michaels, George (California-Santa Barbara)

[49] CONCLUDING REMARKS: ALBERT SPAULDING AND THE CONTINUATION OF ARCHAEOLOGICAL SCIENCE

Mihlksen, P. (see Hildebrandt, WJ) [83]

Miksa, Elizabeth (Desert Archaeology, Inc.) and James Heidke (Desert Archaeology, Inc.)

[36] EXTENDING POINT COUNT DATA TO THE "REAL WORLD" OF CERAMIC TEMPER IDENTIFICATION
Desert Archaeology, Inc., has developed petrofabric models for the identification of sand sources for sand tempered ceramics in the Tucson and Tonino Basins of Arizona. The petrographic point count methodology employed, however, is time-consuming and can only be applied to tens or hundreds of potsherds. Application of the model to the remaining thousands of sherds that require analysis is accomplished using petrographic data as the basis for careful description and discrimination of source sands in hand samples. The use of a flow-chart and representative samples for each source allows rapid identification of temper sources for thousands of sherds.

Miller, Arthur G. (Maryland)

[55] TEXTS AND MURALS: THE PLACEMENT OF POWER IN ZAPOTEC IDEOLOGY
Colonial Zapotec texts can serve as an interpretive tool in understanding pre-Hispanic Zapotec ideology. For example, a reexamination of the Period IIIA murals of Monte Alban Tomb 105 in the light of a study of extant Zapotec calendars written in Sierra Zapotec during the sixteenth century can reveal how the Zapotec may have physically constructed power relationships on their landscape and, specifically, where and when the Zapotec decided to build and move their cities. That the Zapotec worldview was little affected by Spanish incursions into the Sierra, as well as a growing mass of data from various disciplines, counter the "upstreaming" objection to the use of ethnohistoric data to explain the pre-Hispanic past and tend to support the validity of these insights into Zapotec ideology.

Miller, Naomi F. (Pennsylvania)

[24] LATE CHALCOLITHIC ARCHAEobotANICAL EVIDENCE FOR ENVIRONMENTAL CONSTRAINTS AND "FOREIGN" INFLUENCE IN SOUTHEASTERN ANATOLIA
Hacinebi Tepe, a fourth millennium B.C. site on the Euphrates, has two contemporary, but physically distinct components, an Indigenous Late Chalcolithic one and an intrusive Urak one (with Mesopotamian affinities). Archaeobotanical research on local Late Chalcolithic deposits has established the characteristics of the agricultural economy, and shown it to be similar to that of contemporary Kurbani Hoyuk, about 100
km upstream from Hacinebi. As environmental constraints are necessarily shared, identification of differences between the archaeobotanical assemblages of the newcomers and the indigenous people would suggest how strongly cultural traditions influence agriculture and land use practices.

**Miller, Naomi F. (Pennsylvania)**

[39] **LONG TERM VEGETATION CHANGES IN THE NEAR EAST**

The Near East provides some of the strongest evidence for the profound, long-term impact of people on regional vegetation, mainly because it has the longest continuous sequence of permanent settlement in the world. Human-induced vegetation change occurred at different rates over a broad area in a variety of ecological zones. Archaeobotanical evidence documenting these changes at Ain Ghazal (Jordan), the Exuphrates valley, Malyan (Iran), and Gordon (Turkey) includes declining building timber diameters and increases in three proportionate measures: anti-pastoral types in seed assemblages, distant or secondary forest types in charcoal assemblages, and seeds from dung relative to wood fuel quantities.

**Milkken, Randall T.**


Contact period Spanish missionarics perceived the landscape of Central California’s San Francisco Bay Area as having been controlled by dozens of land-holding groups, each with numerous villages within fixed territories some eight to ten miles in diameter. Mission baptismal records provide evidence that these “Naciones” numbered 200 to 400 persons and consisted of inter-marrying lineages. Residence was ambilocal and group endogamy varied from 50 to 80 percent. Call them tribes, tribesmen, or politicians, such groups were once common across North America. Unfortunately, we know next to nothing about the mechanisms of economic co-ordination and dispute settlement within the California groups.

**Mills, Barbara (Arizona)**

[12] **SHIFTING SOCIAL AND POLITICAL CONTEXTS AND THE TECHNOLOGY OF CERAMIC PRODUCTION IN THE ZUNI AREA**

The social and political contexts of craft technology at Zuni have shifted many times during the late prehistoric and historic periods. These shifts provide a backdrop for investigating the interplay between changing socio-political forms and technological variation. In particular, the impact of European expansion on Zuni ceramic technology is discussed, from the Catholic missions to the American period. The effects of contact include the introduction of new forms, the competition of technology transfer among the pueblos, and the spatial and social reorganization of production.

**Milner, George R. (Pennsylvania State) and James S. Oliver (Illinois State Museum)**

[36] **A GIS ASSESSMENT OF LATE PREHISTORIC LANDSCAPES AND SETTLEMENTS IN THE CENTRAL MISSISSIPPI RIVER VALLEY**

First approximations of Mississippi River channels and wetlands in ARC/INFO, a Geographic Information System (GIS), are generated for the Cahokia site area. The GIS is used in evaluating the natural and social attractants to various parts of the valley and the emergence of sociopolitical complexity in the region. Wetlands exerted a strong influence on the positioning of Mississippian settlements, including mound complexes. The spatial data highlight a poor match between the disposition of prehistoric remains, including mounds, and conventionally defined sites. Moreover, they underscore a need to reevaluate the commonly accepted Cahokia settlement model.

**Milner, Richard G. (Chicago)**

[2] **HOMINID MEAT PROCUREMENT AT KLASSEY RIVER MOUTH: PRELIMINARY RESULTS OF A MICROSCOPIC STUDY**

Preliminary results of a microscopic examination of the entire bovid assemblage from the Middle Stone Age layers at Klassey River Mouth Cave 1, in South Africa, suggest that the Middle Stone Age (MSA) hominids there were much more proficient at obtaining meat than has previously been thought. Cut marks and other disarticulation marks, some of them still containing fragments of stone tools, indicate that the Klassey hominids were at the least, the dominant scavengers of large mammals on the landscape. Additional evidence hints that the Klassey hominids may have been capable of actively taking the largest and most dangerous bovids.

**Minar, C. Jill (California-Riverside)**

[70] **HANDLING RADIOCARBON SAMPLES IN THE FIELD: MYTHS AND REALITIES**

A survey of archaeologists and field manuals revealed a surprising lack of consistency in methods for retrieving and handling radiocarbon samples in the field. Consultation with materials manufacturers and radiocarbon specialists suggested that some methodological concerns are unfounded. In other cases, methods used for retrieving and handling samples present unrecognized problems, especially for materials to be submitted for AMS dating. This paper will discuss the myths and realities associated with the collection and handling of radiocarbon samples by archaeologists in the field.

**Mithen, Steven**

[7] **BALL COURTS OF CHIHUAHUA**

Ritual architecture (e.g., ballcourts, kivas, and mounds) is often used to define the extent and character of prehistoric regional polities. Based on the study of thirty structures (both ballcourts and “stone circles”) from northwestern Chihuahua, we consider how differences between these structures are related to the dynamic history of Casas Grandes. There seems to have been communities within a short distance that competed with Casas Grandes during the early Medio period. In short, Casas Grandes may not have been as tightly unified a regional polity during its history as has been assumed.

**Miracle, P. (see O'Brien, C.)**

[91] **SUBSISTENCE INTENSIFICATION DURING THE LATE GLACIAL: EVIDENCE FROM THE EASTERN ADRIATIC**

Recent advances in our understanding of the tempo and mode of Late Glacial paleoenvironmental changes provide a sound and provocative basis for modeling changing human-ecologies around the Pleistocene-Holocene transition. I develop a model of subsistence intensification as a strategy selected in the context of increased environmental risk, and examine it against Late Pleistocene faunal data from the Eastern Adriatic Basin. Europe: I suggest that mobility by itself could not mediate these fluctuations, and that Late Glacial hunter-gatherers also responded by intensifying the processing of bones in pursuit of extracting grease and fat and expanding dietary breadth by taking lower ranked resources.

**Mitchell, Douglas (SWCA, Inc.) and Michael S. Foster (Soil Systems, Inc.)**

[80] **ASHES TO ASHES, DUST TO DUST: THE CLASSIC TO POSTCLASSIC TRANSITION AT PUEBLO GRANDE**

Recent work at the large Hohokam village of Pueblo Grande in the Salt River valley of central Arizona has resulted in new information on the Classic to Postclassic transition, the Givon to Polvoren phase, in the Hohokam area. The data from Pueblo Grande indicates the Polvoren phase may have occurred somewhat earlier at Pueblo Grande than suggested for other Hohokam populations. Changes in architectural styles, material culture, demography, and social organization between the Givon and Polvoren phases at Pueblo Grande are presented. Current models of phase transition are assessed as is the concept of the Polvoren phase in light of the Pueblo Grande data.

**Mitchell, Peter (Cape Town), John Parkinson (Cape Town), and Royden Yates (Cape Town)**

[45] **A TALE FROM TWO CAVES: THE ARCHAEOLOGY OF THE PLEISTOCENE-HOLOCENE TRANSITION IN SOUTHERN AFRICA**

Recent analyses of materials from Elinds Bay Cave and Sebhonghong in ecologically distant parts of southern Africa allow us to detect differences and similarities in archaeological records from the same time period. Extrapolating out from these two sites to others, we begin to write a history of settlement change during a period of dramatic environmental transition. We believe there are implications here for the understanding of the biological, demographic, technological, and social histories of southern African people.

**Mitchem, Jeffrey M. (Arkansas Archeological Survey)**

[50] **ONGOING MISSISSIPPIAN EXCAVATIONS AT THE PARKIN SITE IN NORTHEAST ARKANSAS**

During a fourteen-week field season at Parkin Archeological State Park, excavations were concentrated in three parts of the main village site. In Locus 2, a trench that was excavated across the moat in 1991 was extended to search for a presumed palisade wall. In Locus 3, two previously-discovered structure floors were more fully exposed. In Locus 4, additional units were excavated to better define structure floors and associated features encountered in previous field seasons.

**Mitchum, B. (see Walker, D.)**

[10] **Miten, S. (see Finlayson, B.)**

[84] **Miten, Steven (Rutgers University)**

[27] **EVOLUTIONARY PSYCHOLOGY AND PREHISTORIC ARCHAEOLOGY**

The appropriate use of evolutionary theory in archaeology is one that focuses on individual behavior and makes explicit reference to human psychology. Other approaches, such as a group adaptationist stance, may provide useful heuristic devices, but ultimately lack theoretical credibility and will fail to provide an adequate account of culture change. By adopting an evolutionary approach to human psychology, and focusing our studies on genetic, rather than allocentric, past individuals, we will gain a more profound understanding of the relationship between biological and cultural evolution. Arguments that this approach cannot be operationalized with archaeological data are challenged.
Moen, Joan M. (Bureau of Land Management) and Kelly A. Leets (Bureau of Land Management) [52] ARCHAEOLOGY EDUCATION: CAN IT MAKE A DIFFERENCE?

Can education alter values which translate into protection of archaeological sites and artifacts? The goal of Utah's Intergroup of the Past Archaeology Education Program is to teach young citizens to value and conserve the past. The program was launched in 1990 to combat vandalism of cultural resources. An evaluation of the program's instructional materials, their use in the classroom, and students' attitudes regarding archaeological conservation issues has been completed. This paper reports evaluation results and outlines future program directions.

Moeller, Konnie L. (Argonne National Laboratory) and John F. Hoffecker (Argonne National Laboratory) [63] CULTURAL RESOURCES AND A GIS APPROACH TO LAND MANAGEMENT AND ENVIRONMENTAL COMPLIANCE

Cultural resources management and compliance is approached best within the broader framework of natural resource planning and land management. Argonne National Laboratory is assisting federal agencies with the development of a computer-based resource management system for large facilities. Spatial and textual data regarding surveys, archaeological sites, and historic buildings can be stored, manipulated, and displayed in the context of a larger environmental database (e.g., wetlands, vegetation, hazardous waste) using a Geographic Information System. Predictive modeling capabilities also streamline planning practices by coordinating archaeologically sensitive areas with other environmental compliance concerns.

Monaghan, John (Vanderbilt University) [55] SACRIFICE AND POWER IN MIXTEC KINGDOMS

This paper examines sacrifice in ancient Oaxaca both as an expression of power, and as one of its material conditions. More specifically, it uses examples from the Mixtec kingdoms of the sixteenth century to argue that sacrifice, in addition to being an idiom through which questions of power were communicated, served as a transformational mode through which elites extracted resources from commoners. It goes on to suggest that this sacrificial mode of extraction correlated with particular religious roles played by elites, sometimes has implications for our understanding of the role of religion in the political evolution of Mesoamerican societies.


Decorated ceramics have long been used as markers of trade, population movement, and ethnic identity in the American Southwest. Undecorated ceramics have also functioned as ethnic markers. Brown wares have been equated with mountain people and gray wares with plateau people. Most of these studies have not distinguished the movement of pots from the movement of people. In this study, undecorated ceramics are shown to be useful in tracing population movement over short distances within a region, while decorated ceramics are limited to detecting movement between regions.

Montgomery, John (Eastern New Mexico University) (Respondent to McMammon) [5]

Moor, Jerry D. (California State-Dominguez Hills) [67] PREHISPANIC RITUAL AND HUMAN PERCEPTION IN THE PUBLIC ARCHITECTURE OF THE COAST OF PERU

The communicative element of ritual involves transmitting information between participants and observers of social dramas. When public ritual occurs in formalized spaces, architectural forms may reflect the modes of communication associated with particular rites. Using basic data about thresholds of visual and auditory perception, it is possible to suggest the modes of ritual communication that occurred in a built space. This approach is applied to a sample of public architecture of the North Coast of Peru. The analysis indicates major shifts in the organization of public ritual which marked fundamental reorganizations in prehispanic Andean societies.

Moore, Lawrence (Heritage Resources Branch) [102] STUDYING THE MODERN WORLD: TRENDS IN HISTORICAL ARCHAEOLOGY

The scope of historical archaeology is now much broader than it used to be. No longer is the field just the study of colonial sites or an interest in European expansionism. It is the study of these and much more: Victorianism, industrialization, capitalism, acculturation, to name a few. Additionally, historical archaeologists are exploring regions beyond the New World—Africa, Asia, and a new look at the Old World. These changes necessitate an expanded definition for the discipline: one that incorporates all the topics studied. Suggested here is that historical archaeology studies the Modern Period, the last 15th century to the present.


A five-year program of intensive field surveys and excavations involving 400 archaeological sites along the 1670-km route of a natural gas pipeline in ID, WA, OR, and CA was designed to address local, regional, and project-wide research problems focused upon variability in hunter-gatherer adaptive strategies, Paleo-environments and cultural archaeologies were investigated through a wide range of specialized studies. The results of these studies (geomorphology, tephrochronology, paleobotany, zooarchaeology, lithic analyses, x-ray fluorescence spectroscopy, obsidian hydration measurement, blood residue analysis, and others) have elucidated patterns of land use, sedentism/mobility, resource procurement, subsistence, and exchange over a span of 10,000 years.

Morrow, Jerry A. (Northern Arizona University) [106] THE IMPACTANCE OF HIGH-QUALITY PROTEIN ACQUISITION IN LATE SOUTHWESTERN PREHISTORY AND THE EXPLANATORY POWER OF NUTRITIONAL MODELS

The identification of an increased arildiodactyl index has inspired some researchers to elaborate on the importance of high-quality protein acquisition in late southwestern prehistory. This elaboration has led to the development of a nutritional model concerned with human dependence on low-quality protein intake. However, some questions in this model remain to be adequately considered. Using archaemas from a late pueblo community in eastern Arizona, the arildiodactyl index is calculated, bone density measures are assembled, and a cost surface analysis is conducted. These alternatives are weighted and the importance of high-quality protein in late prehistory, and the model, is assessed.

Morrice, L. (see Seeman, M.) [88]

Morrow, Carol (Southeast Missouri State) and Mary R. McCravey (USDA-Subeane National Forest) [36] GEOGRAPHIC CORRIDORS: MULTILAYERED CONDUITS OF EXPLORATION, CONQUEST, SETTLEMENT, AND TRANSPORTATION

Geographic features shape, constrain, influence, and reflect human movement on the physical landscape. In North America, the need for access combined with the danger of attack along the major waterways was an important impetus for developing the early major inland corridors of travel. The trans-Appalachian migration of peoples into the Midwest stimulated the development of transportation corridors in this area, facilitating the movement of populations and material culture on a massive scale. The need for access to markets and services further drove the process of developing road networks. The development of late eighteenth/early nineteenth century roads in southern Illinois is examined to illustrate these processes.

Morrow, Juli (Washington University and OSA, Ibeta) [88] CLOVIS LITHIC TECHNOLOGY: IMPLICATIONS FOR FLUTED POINT TYPOLOGY IN THE MIDCONTINENTAL UNITED STATES

Some researchers have made a strong distinction between eastern and western fluted points; some have claimed that true Clovis is not represented east of the Mississippi River. Western Clovis preforms and projectile points exhibit a highly distinctive bifacial reduction strategy. Examination of fluted point preforms from various eastern sites indicates that all of the characteristic hallmarks of Clovis bifacial reduction were employed in the manufacture of fluted points occurring in the midcontinental region of North America. From a technological perspective, the distinction that has been drawn between eastern and western Clovis points is not so clear as some have proposed and perhaps fluted point complexes in either half of North America are more intimately and chronologically related than has been suspected.

Morse, D. (see Goodyear, A.) [56]

Mortimore, M. (see Stone, G.) [9]

Mosler, Stephanie (Sydney) [40] EVOLUTIONARY IMAGES: HUMAN ANTIQUITY AND PICTURES OF THE "ETHNOGRAPHIC OTHER"

When archaeologists began to construct images of life in prehistoric times they drew on a number of different sources. Central among these sources were the pictures of "savages" living in far away lands. This
paper will explore the use of images to introduce evolutionary themes in the study of human history, and in particular, it will examine the role that pictures of the ethnographic "other" had in this process. A number of key texts on human antiquity from the nineteenth century, will be looked at in terms of the way that they utilized other visual traditions to inform their reconstructions of life in the past.

Moss, M. (see Erlandson, J.) [56]
Moss, Madonna L. (Oregon) and Jon M. Erlandson (Oregon) [92] RADIOCARBON DATING AS AN ARCHAEOLOGICAL SURVEY TOOL IN COASTAL ENVIRONMENTS

Radiocarbon dating has traditionally been used by archaeologists as a post-extraction strategy to define the antiquity of features, strata, or assemblages within sites. In this paper, we argue that 14C dating can be used as an effective research tool during archaeological surveys, especially in coastal areas where sites are often eroding rapidly. Using examples from the Pacific Coast of North America, we show how 14C dating can be used as a regional survey tool to identify and examine changes in settlement patterns, population levels, paleoenvironments, technology, and socio-political organization.

Moistinger, T. (see Phillips, D.) [104]

The Gila Butte Site and Snaketown have long been supposed to have served as the focus of a specialized production and exchange system that supplied much of the Mohohkan region with buffware ceramics. Recent investigations involving excavation, aerial photographic studies, ground-based survey, and ceramic analysis have yielded data that help clarify the nature of the sociodemical relationship that developed between the two villages. This new evidence supports the hypothesis that raw material was extracted at Gila Butte, then transported via a still-visible road or trail to Snaketown, where ceramic production was completed and the distribution system originated.

Muldau, S. (see Thompson, R.) [25]
Muldau, Susan C. (Minnesota-Duluth) [25] THE STATUS OF METHOD AND THEORY IN PHYTOLITH ANALYSIS

The growth of a discipline usually proceeds from specific project-oriented applications to a more general consideration of methodological and theoretical issues. Phytoliths have been reported for well over 100 years; at various times extensive research has occurred in different disciplines. The interdisciplinarity of the field has encouraged a wide range of approaches. No single research strategy can address all the research problems to which phytolith data are applicable. Clear descriptions of methods and research designs are essential for comparison of data and project results, as well as continued growth of the field.

Muller, Nancy (Massachusetts-Amherst) [62] A SPATIAL CONSISTENCY? WHITE SUPREME SET-UPPARED ARCHITECTURE: A COMPARISON BETWEEN PRISONS AND PUBLIC HOUSING PROJECTS

Spatial design determines an individual's sense of autonomy as well as access to community interaction. One way for the state to maintain White supremacy is to isolate so-called "undesirables" in both private and public space. In the case of penitentiary design, spatial security is enforced by an internalized discipline which restrains undesirables within the institution. In the case of public housing projects, external communities are disciplined to remain outside the project. Both of these concepts serve as a symbolic statement of the state's authority to "incarcerate" or purposefully exclude those people it deems "undesirables."

Müller-Beck, Hans-Jürgen (Universität zu Tübingen) [Discussed 45]
Müller-Beck, Hans-Jürgen (Universität zu Tübingen) [Discussed 56]
Mullins, Paul R. (Massachusetts-Amherst) and James A. Delle (Massachusetts-Amherst) [62] THE ARCHAEOLOGY OF THE MODERN STATE: THE MATERIAL CULTURE OF DISCIPLINE AND SURVEILLANCE

This paper will survey the archaeology of formal institutions and informal mechanisms that define the modern capitalist state. Institutions and mechanisms ranging from prisons to theaters materially produced, circulated, policed and reproduced social behaviors which maintained state power relations. Institutions such as prisons, factories, and plantations, systematically structure state authority through the surveillance of individuals. In addition to these formalized institutions we will consider less systematic surveillance mechanisms, including urban space, newspapers, and the theater. This paper will consider how apparently dissimilar institutions discipline and observe social subjects in capitalist states.

Murray, Mattheo L. (Harvard University) [91] ACTS OF ENCLOSURE: SOCIO-POLITICAL RITUAL IN IRON AGE CENTRAL EUROPE

Landscapes of the later Iron Age in Central Europe are characterized by large rectilinear enclosures known as "Vierecklachasen." These enigmatic monuments have been variously interpreted as fortifications, warehouses, and most recently as Celtic religious sanctuaries. A new approach to "Vierecklachasen" combined to focus around issues such as land rights and compensation which have themselves directly relied upon the demonstration of prior occupation and cultural continuity. This paper surveys the current relationship between Aboriginal people and prehistoric archaeologists in Australia.


Recently developed site oriented tree-ring databases provide information on tree cutting (and by extension) site occupation for prehistoric and ethnographic sites on sites around the Hopi Mesa, Arizona. These data, when considered in conjunction with published dendrochronological and historic data from Walp Pueblo, provide a sound basis for examining dynamics between archaeological site formation, dendrochronological data, and archaeological investigation.

Neck, R. (see Poli, M.) [76]
Neff, H. (see Cogswell, J.) [78]
Neff, H. (see Hodge, M.) [8]
Neff, Hector

[96] WHY ARCHAEOLOGISTS LIKE TO USE PHYSICS AND CHEMISTRY TO ANALYZE POTTERY

Chemical and physical analyses of pottery are believed to contribute toward explaining variation in readily observable macroscopic characteristics (e.g., form, surface finish, etc.). But to formulate testable hypotheses to account for macroscopic variation, the meaning of chemical and physical variation first has to be clearly established. Examples discussed in this paper illustrate how geological, cultural, and analytical processes can contribute to the chemical variation identified in "provenance" studies. Means for identifying the source(s) of chemical variation are presented. Examples also show how, once the meaning of chemical data is identified, they can be used to test hypotheses about other observable variation, including variation underlying such units as culture historical "types."

Neff, L. Theodore (Navajo Nation Archaeology Department and Pennsylvania)

[99] BLACK MESA ANASAZI: BURIAL PATTERNS: MOBILITY AND SITE ABANDONMENT

Archaeological survey, excavation and analysis on Northern Black Mesa, Arizona, has produced an unparalleled data base for the study of mortuary remains from a regional perspective. Although some analyses of the spatial location of inhumations have been brought to bear on questions of Anasazi mobility and adaptation on Black Mesa, work to date has focused chiefly on physical anthropological questions. The under utilized perspective of grave spatial location is used to further evaluate mobility hypotheses, as well as to consider site abandonment processes. The paper utilizes mortuary data collected during recent Navajo Nation Archaeology Department excavations at 32 sites on Northern Black Mesa.

Nelson, Ben A. (SUNY-Buffalo) [Discussant 42]

Nelson, Ben A. (SUNY-Buffalo)

[85] POWER AND POLITY IN THE BORDERLANDS: A MESOAMERICAN PERSPECTIVE ON THE AMERICAN SOUTHWEST

Dimensions of the political organization of Southwestern populations are examined by comparison with their more hierarchically organized neighbors in northwest Mexico. Chaco Canyon, New Mexico, and La Quemada, Zacatecas, are used as case studies which are drawn to demonstrate on four manifestations of political power: labor investment in central places, scale of road systems, status differentiation in mortuary programs, and symbolism associated with ritual facilities. The comparisons point to significant differences in the construction of social power in the two regions, and yet reveal more similarity in the degree of status differentiation than is commonly assumed.

Nelson, Greg C. (Oregon)

[98] DENTAL ENAMEL HYPOPLASIA AS INDICATOR OF PHYsiOLOGIC STRESS IN A SKELETONAL SERIES FROM MALHEUR LAKE, OREGON

Dental enamel hypoplasia has been shown to be a good indicator of non-specific physiologic stress occurring during the time of tooth crown formation (Goodman and Rose, 1990). For the Malheur Lake skeletal series 40% (24 of 52) of individuals exhibit at least one hypoplastic event. Although relatively high in comparison to other North American hunter-gatherer groups it is much lower than the rate of 66% found at Stillwater Marsh. These rates indicate that the inhabitants of the Malheur Lake area experienced relatively frequent episodes of dietary or disease stress during the early childhood years most probably related to weaning or fluctuations in food availability.

Nelson, Margaret C. (SUNY-Buffalo) [Discussant 84]

Nelson, Margaret C. (SUNY-Buffalo) [Discussant 49]

Nebel, Mark (Institute of Archaeology-London)

[4] NEW ARCHAEOLOGICAL EVIDENCE FOR PRE-AGRICARian DIET AND ENVIRONMENT IN NORTHERN IRAQ AND SOUTHEAST TURKEY

The application of macronutrient techniques has led to the recovery of large assemblages of charred plant remains from three contemporary (c 10,000 uncal. B.P.) epipaleolithic sites. Qerrmez Derre and Mcleafa in northern Iraq, and Hallan Cemi in southeast Turkey. These seed and charcoal remains offer the opportunity to compare developments in diet and environment in this region with evidence from the better known cultural sequence in the Levant, and to compare sites on a northeast environmental transect from Hallan Cemi (in oak forest) to Qerrmez Dere (on the border of the steppe).

Nesbitt, M. (see Longacre, W.) [71]

Nesbitt, Mark (Arizona)

[71] CERAMIC STRENGTH TESTING MADE EASY: METHOD AND THEORY FOR MAINSTREAM CERAMIC ANALYSIS

The measurement of ceramic strength provides insights into both the technology of pottery production and the performance of vessels during use. Thus, strength testing has a role in any comprehensive ceramic

Norr, Lynette (Illinois-Urbana/Champaign)

[54] DIETARY INTERPRETATION OF DELTA-13 C IN ARCHAEOLOGICAL HUMAN BONE APATITE

The stable carbon isotope ratios in archaeological human bone apatite carbonate, and the difference between the stable carbon isotope ratios in the carbonate and those of the collagen, provide useful dietary information beyond that of the carbon and nitrogen isotope ratios of the bone collagen. Studies of the stable isotope composition of human bone apatite and collagen from populations with coastal, agricultural, and non-agricultural diets are cited as examples for interpreting δ13C in bone apatite. Archaeological populations from coastal Central American sites are used as examples of consumers of botanically complex diets in which human bone apatite carbon isotope values have contributed significantly to paleodietary interpretation.
Novick, Lee (North Carolina Department of Transportation) [102] WASTE NOT: DEPRESSION ERA GOLD MINING IN NORTH CAROLINA

In 1759 gold was discovered near Charlotte, North Carolina, which became the leading gold producing state east of the Mississippi River prior to the Civil War. McDowell County boasted 118 recorded gold localities, with mines often funded by out-of-state companies, and mining towns similar to those of the western frontier. They became less successful in the period following the Civil War. With New York stock market crash and a world economy tied to nations using the gold standard, gold fever hit North Carolina. Investors capitalized mines and local residents conducted small operations processing spoil pits from old mines. This paper explores archaeological evidence from these depression era gold mining sites.

O'Brien, Chris (Wisconsin-Madison) and Preston Miracle (Michigan) [91] HOMINID PREY ACQUISITION IN THE BALKAN LATE PLEISTOCENE

We discuss temporal and regional patterns of hominid predatory behavior during the Late Pleistocene of the Balkan region of Europe. Dental increment analysis is used to establish mortality profiles and season of acquisition for large ungulate taxa from the sites of Badanj, Kopucina, and Sandalja II. Results from increment analysis are contrasted with those from alternative methods, including crown heights and dental wear, to examine the potential effects of analytical methods on variation in acquisition patterns. Variation in prey acquisition is then examined in the context of competing explanations, including ecological determinants of prey availability and current regional models of hominid behavior.

O'Brien, M. (see Cogswell, J.) [78]

O'Brien, Michael (Missouri) [27] THE HISTORIC DEVELOPMENT OF AN EVOLUTIONARY ARCHAEOLOGY

Evolutionary archaeology, with its strict adherence to neo-Darwinian principles and focus on artifacts as phenotypic traits, is but one of several competing frameworks for understanding the differential persistence of variation in the archaeological record. Recent archaeological literature would suggest that the approach is beginning to figure prominently in the discipline, though it is clear that several important theoretical and especially methodological issues have not yet been addressed. Serious attempts to advance our understanding of the role played by evolutionary processes such as selection and drift must be based on a firm understanding of the historical development of issues.

O'Brien, P. (see Metcalf, M.) [66]

O'Connell, James (Utah) and Kristen Haubes (Utah) [27] BEHAVIORAL ECOLOGY, ARCHAEOLOGY AND EVOLUTION

Archaeologists have a long-established interest in the evolution of human behavior but lack the theoretically well-grounded operational framework in which to pursue it. For nearly three decades, behavioral ecology has provided evolutionary biologists with just such a framework. Over the past ten years it has been employed productively by anthropologists as well. We review major elements of this paradigm, distinguish it from other evolutionary approaches now employed by archaeologists, and illustrate by example its applicability to the study of human behavior in both ethnographic and archaeological contexts.

O'Donovan, Marla (Binghamton) and Randall H. McGuire (Binghamton) [7] THE ACTIVITY STRUCTURE OF CERRO DE TRINCHERAS

Little research has been done on Cerro de Trincheras sites that were widely distributed in the Sonoran desert of the American southwest and Mexico during late prehistory. The distribution of these sites indicates their key role in understanding inter-regional relations. Before we can understand inter-regional relations, we have to determine the functions of these sites. Explanations have focused on the defensive or agricultural advantages of terraced hill sites. Others maintain the sites were primarily villages. Our research at the site of Cerro de Trincheras, a regional center, in Sonora, Mexico indicates that it is a multi-function village.

O'Rourke, Dennis (Utah), Ryan Parr (Utah), and Shae Gray (Utah) [90] MOLECULAR GENETIC VARIATION IN PREHISTORIC INHABITANTS OF THE EASTERN GREAT BASIN

Mitochondrial DNA from over 25 burials recovered from the eastern margin of the Great Salt Lake has been characterized using a series of molecular markers. All samples have been individually radiocarbon dated, and span the range 750-2,000 B.P. One molecular marker (a nine base deletion) occurs in over 75% of these samples, and in comparable Anasazi samples, but is absent in two ancient Siberian samples examined. The frequency of the deletion is less than 40% in most Amerind groups, and is apparently absent from circumarctic populations, including Northern Athapaskan. Such molecular diversity provides context for assessment of prehistoric population movement and affinities.

Oetting, Albert (Heritage Research Associates) [90] PREHISTORIC WETLAND ADAPTATIONS IN HARNEY BASIN, CENTRAL OREGON

The rich archaeological record of Harney Basin provides context for examining human burials from Malheur Lake. Archaeological research indicates that widespread use of the basin's lakes and marshes began after 5,000 B.P. and was most intensive after 2,000 B.P. Site locations and certain tool types indicate a lacustrine subsistence focus for many sites. Large, diverse sites, including housepit villages, are found along stable lakeshores and in the mosaic of marshlands. Harney Basin was one of several well-watered basins in the northern Great Basin that supported prehistoric populations making intensive use of wetlands resources and residing near these resources.

Ottev, M. (see Taborin, J.) [16]

Oliver, J. (see Milner, G.) [36]

Oliver, José R. (Garraw & Associates) [56] ECOLOGICAL ADAPTATIONS IN THE LATE PLEISTOCENE-EARLY HOLOCENE TRANSITION PERIOD OF NORTHERN SOUTH AMERICA

Based on the available published data, this paper examines the nature and diversity of human responses (adaptation) in Northern South America to changing ecological and climatic conditions during the transitional period between the Late Pleistocene and Early Holocene (ca. 13,000-8,000 B.P.). Although paleoclimatic data in this region is still wanting and often disarticulated from archaeological correlations, the general trend appears to be one of increased adaptive radiations resulting in roughly contemporary yet divergent traditions. This paper will test the preceding hypothesis by reexamining whether the hard facts support it or not.

Olsen, Nancy (New Mexico) [72] BANDelier NATIONAL MONUMENT PICTOGRAPHS AND PETROGLYPHS: A PRELIMINARY STUDY

A preliminary pattern recognition study to identify contextual use of petroglyphs and pictographs taken from the Bandelier National Monument Inventory Survey cavates provides heuristic information about motif category organization. A Maximum Likelihood factor analysis delineates three potential patterns, a Chi-square test confirms a fourth. This study is a first step towards constructing mid-range evolutionary theory to explain the appearance of pictographs and petroglyphs in archaeological contexts. These preliminary patterns, defined beyond the intuitive level, present a methodology for studying rock art distribution across a spatial section of the Pajarito Plateau.

Olsen, Kirsten A. (California-Los Angeles), Anabel Ford (California-Santa Barbara), and Michael Glascoc (California-Santa Barbara) [12] REGIONAL EXCHANGE AND LOCAL DISTRIBUTION: THE MANAGEMENT AND MEANING OF MAYA OBSIDIAN IN THE BELIZE RIVER AREA

Assumptions of centralized control over prestige goods are based on distributions of wealth and power inferred from settlement size and complexity. A good example is the Lowland Classic Maya obsidian trade. Throughout Mesoamerica, obsidian can be traced to highland sources that reveal long-distance connections. In the Lowlands, the obsidian industry has been traditionally associated with civic-ceremonial centers. Clearly, the Late Classic Maya elite effectively organized procurement, production and distribution of obsidian, yet the nature of centralized production has remained elusive. Data from the Belize River area present an alternative picture of decentralized control by elite in the hinterlands.

Orcutt, Janet (National Park Service), Timeke Van Zandt (Michigan), and Robert P. Powers (National Park Service) [58] BIG PROBLEMS AT BIG SITES: INTERPRETING FORMATION AND GROWTH AT CLASSIC AND PROTOHISTORIC RIO GRANDE PUEBLOS

Despite the nearly 100 years of investigation at large Classic and Protohistoric period Rio Grande pueblos, the formation and growth of these sites are poorly understood. Ranging from several hundred to over 1000 rooms in size, with numerous roomblocks and plazas, these villages apparently supported hundreds of people over long periods of time. This paper uses chronological information, particularly tree-ring dates, to investigate patterns of internal site growth and to map episodes of big site construction across the region. Social, economic and climatic reasons for the development and maintenance of large aggregates are explored.

Orr, Heather (Texas-Austin) [55] SACRIFICE PLACES AND THE RITUAL BALLGAME IN LATE FORMATIVE ZAPOTECA POLITICAL STRATEGY

An ideological substratum identifiable at Monte Alban and Dainzu interrelates creation, death, and rebirth through a ritual ballgame enacted at special sacrifice places. This pattern emerges in Late Formative Zapotec architectural programming, site layout, and iconography. The underlying mythological-ideological framework was wielded by Zapotec elite as a political tool during a period of intensified conflict and competition. The wider implications of this pattern include its appearance and manipulation at other Mesoamerican centers.
Osborn, Alan (Nebraska-Lincoln)

[51] SYMBOLS IN LIMBO: THE UTILITY OF POSTPROCESSUAL ARCHAEOLOGY

Postprocessual archaeologists have argued that material culture was used by societies to organize and manipulate their external world. Symbols, as ideologically expressions, were incorporated into the design and fabrication of material items. Postprocessualists have suggested that symbols inherent in material culture underlie human motivation and action. Symbols have not been studied within their broader systemic, behavioral context. Symbolic information is vital for human adaptation yet it has rarely been viewed within an integrated perspective. This paper reexamines Hodder's study of Maasai material culture and symbols using sociocultural theory and evaluates the utility of postprocessual efforts.

Queen, Bruce (Programma Contiunyi)

[45] WERE WARI AND TIWANAKU IN CONFLICT, COMPETITION, OR COMPLEMENTARY COEXISTENCE? EVIDENCE FROM THE UPPER OSMORE DRAINAGE, PERU

The prehistoric Andean states of Wari and Tiwanaku were contemporary, yet little is known of their relationship nor their differences in organization because their territories seemed to have little or no geographic contact. Systematic site survey shows that significant populations of both states occupied the upper Osmore drainage, living in close proximity in interdigitated but distinct territories defined by altitude, land form, and differing approaches to irrigation. Relative dating, settlement pattern, architecture, canal locations, and other evidence shed light on the relationship between the two states and the fundamental characteristics that distinguished the two from the other.

Özdoğan, Mefmet (Istanbul University)

[4] THE FORMATION OF NEOLITHIC CULTURES IN EASTERN ANATOLIA

Almost all models for the development of sedentary food-producing communities in the Near East have considered the Syro-Levantine lowlands as the nuclear zone and the eastern Anatolian highlands as a marginal zone. Despite the minimal number of sites yet excavated in eastern Anatolia, this area now stands as a major nuclear zone in the formation of Neolithic societies. The artificial, as well as non-artificial assemblages from these sites indicate the development of an indigenous mode of sedentary life, developing along parallel lines with the Syro-Levantine mode. This suggests sustained interaction between these two major culture zones.

Pagan, Daniel N. (Advisory Council on Historic Preservation)


A 20th century archaeological resource will be consumed by accelerated and dynamic changes in our environment. Encroaching development, scholarly research and shifting legislative priorities will contribute to further depletion of the resource base. In order to flourish, professional archaeologists will need to transform their twentieth century approach and expand beyond academic, cultural resource management and regulatory perspectives. One alternative is to seek greater involvement from a spectrum of interested public in the creation of community based preservation efforts. A rational and strategy for creation of new designs for community involvement in management of archaeological resources is presented.

Paiste, Richard R. (Southern Illinois University)


Hazard analysis of 105 residential mound group occupations from Copan, Honduras, indicates that non-royal elite household survival was unaffected by the collapse of the royal dynasty circa A.D. 822. Architectural activity within elite households expanded during the Late Classic, after all ecological zones in the Valley had been colonized. Non-royal elite households continued to prosper into Copan’s collapse period as resource stress increased abandonment rates of commoner households and royal monumental activity ceased. Implications concerning elite control of subsistence resources are discussed.

Papamarinopoulos, S. (see McMahan, N.) [73]

Parezo, N. (see Foerler, D.) [38]

Parker, R. (see Sheppard, P.) [6]

Parrington, J. (see Mitchell, P.) [45]

Parr, R. (see O'Rourke, D.) [90]

Parsons, Jeffrey R. (Michigan) [Discussant 8]

Parsons, Jeffrey R. (Michigan) [Discussant 85]

Pate, Donald (Finders University)

[104] STABLE CARBON ISOTOPE ASSESSMENT OF HUNTER-GATHERER MOBILITY IN PREHISTORIC SOUTH AUSTRALIA

The inland riverine Rookna Flat archaeological site is located 120 km north of the South Australian coast. The site was used as a burial ground throughout the Holocene. The Rookna Flat skeletal sample represents the largest excavated prehistoric burial population in Australia. Bone collagen stable carbon isotope values indicate a greater use of non-local marine and/or arid interior foods during the Early Holocene than in the Late Holocene. These paleodietaiy results support conventional archaeological data from southeastern Australia that suggest increased hunter-gatherer territoriality accompanied by more efficient use of local food resources in the Late Holocene.

Pavia, Ivan (Arizona State Museum)

[91] ENCLOSURES OF THE EUROPEAN DANUBE NEOLITHIC

At the specific moment of the European Danubian Neolithic the formally united group of circle enclosures appears within the central Danube area (Lower Austria and Southern Moravia) and adjacent countries (Bavaria, Bohemia and Slovakia). During the last two decades many of them were excavated or prospected by geophysicists. They represent most probably the social centers of the sites and archaeologically documented division of the settlement areas.

Pearlbree, E. (see Rolett, B.) [6]

Pearssall, D. (see Zhao, Z.) [25]

Pearssall, Deborah M. (Missouri-Columbia), Dolores R. Piperno (Smithsonian Tropical Research Institute), Robert A. Benfer, Jr. (Missouri-Columbia)

[25] IDENTIFYING CROPS THROUGH PHYTOLETHAL ANALYSIS

One focus of phytolith research is identification of cultivated plants in the archaeological record. The way in which crops are identified differs among crops (use of diagnostics, evaluation of assemblages) and among researchers (multiple identification methods for maize, rice). We review the methodology of establishing identification criteria for crops. Approaches discussed include use of diagnostics, classification approaches (using shape, size), and statistical approaches, including multivariate techniques. We evaluate the strengths and weaknesses of existing methods and of the ways analysts address the problem of identifying crops.

Pearson, Marly (Massachusetts-Amherst)

[62] "DELIGHT IN THE DISTRACTION AND RUIN OF FAMILIES". RUNAWAY WIFE ADVERTISEMENTS IN COLONIAL NEWSPAPERS AS A FORUM FOR CONTESTED POWER

Advertisements in Colonial newspapers can be interpreted as requests to control women through subjecting them to the public gaze. There they could be shamed, entreated, or threatened into coming home, or excoriated and humiliated in a final public good riddance. Although these advertisements are almost exclusively a male discourse, women's counter-strategies can often be discerned within them. This is especially true of those ads in which men feel compelled to respond to gossip, in itself a powerful agent of social control.

Peled, C. (see Adovasio, J.) [69]

Peled, C. (see Carr, K.) [69]

Peebles, Christopher S. (Indiana University)

[48] DATABASE AND THE DIMENSIONS OF ARCHAEOLOGY

Databases comprise representations and samples of reality: therein are recorded aspects of entities either real or imagined from a living present or a past that endures in the present. In the case of archaeology, these samples themselves are samples of surrogates that themselves represent past realities. The writings of Albert Sombudding express a deep concern with the ways archaeologists select samples, the ways in which they represent the durable remains of the past, and the ways in which they combine these representations to create prehistory. The methods he espouses in "The Dimensions of Archaeology" are directly applicable, although often ignored, in the construction of archaeological databases today.

Peeler, Damon E. (Proyecto Especial Monte Albán) and Marcus Winter (Instituto Nacional de Antropología e Historia)

[55] SACRED TIME AND SPACE AND THE GROWTH OF MONTE ALBÁN

Growth and development of the urban center of Monte Albán may have depended upon various manifestations of power, as well as economic and social factors. Recent work at this site suggests that, among these manifestations of power, specialized astronomical and calendric knowledge may have played a role in the foundation of Monte Albán and other Valley of Oaxaca sites. This paper examines how ideological factors may have contributed to urban development at Monte Albán.

Pendergrass, D. (see Chippendale, C.) [38]

Pennington, Susan J. (Minnesota)

[25] TOWARDS THE ROUTINE INTEGRATION OF PHYTOLETHAL INTO PALEOGEOBOTANICAL RESEARCH

Phytoliths are a multifaceted data resource, which has been used in isolation to address many archaeological and palaeoenvironmental research questions. However, an alternate approach is to view phytoliths as a
complementary data set. This approach allows the integration of phytoliths, both silica and calcium based, with macrobotanical and pollen data in order to describe a more complete archaeo-botanical record for any one plant. The author’s preliminary research into magical and medicinal plants of the medieval period will highlight quantification issues as well as providing models for production, deposition, and recovery.

Petersen, John (Bureau of Reclamation) [86] RESOURCE MANAGEMENT STRATEGIES ALONG THE LOWER COLORADO RIVER
The Bureau of Reclamation is implementing proactive resource management strategies along the lower Colorado River through the use of systematic field surveys, ethnographic studies, and data integration. This program has focused new attention on the fragile earth figures and related manifestations that are located on the desert pavement. Earth figures are rare and threatened cultural resources. The program is designed to balance resource management mandates with research concerns through the use of non-destructive data acquisition techniques. The end product will be an information base useful for managers, scholars, Native Americans, and the public.

Petit-Maire, Nicole (Laboratoire de Geologie du Quaternaire) [45] CLIMATIC CHANGE AND MAN IN NORTHERN AFRICA (SAHARA-SAHEL) DURING THE LAST TRANSITIONAL GLACIAL/INTERGLACIAL PERIOD
During the last glacial maximum (20—18 ka), the Sahara-Sahelian boundary was at 13°—14°N. During the last warm optimum (8.5—6.5 ka), it was at 22°N. Thus, in a span of some 10,000 years, more than 4 million km2 switched from a desert environment to a liveable steppe where Neolithic man settled.

Petruko, K. (see Ellwood, B.) [70]

Petruko, K. (see Harrold, F.) [9]

Petigrew, Richard (INFOTECH Research) and Craig Skinner (INFOTECH Research) [85] OCEANIC HYDRAZINE STUDIES IN THE CENTRAL OREGON CORRIDOR: RESULTS OF THE FIRST CUT
Over 6,500 obsidian artifacts from 84 central Oregon archaeological sites were chemically characterized and examined for obsidian hydration rims during the PGT-PH&E Pipeline Expansion Project. Carbon for carbon dating is often lacking and obsidian hydration data often provide the only available chronometric evidence. This initial examination primarily addresses four topics: (1) relative hydration rates of different sources (using Mazama tephras as a temporal control); (2) preliminary calculated rates for several sources; (3) effects of sample size on hydration results and their implications in developing sampling strategies; and (4) anomalous hydration measurements associated with the 1350-year-old Big Obsidian Flow in Newberry Caldera.

Phillips, D. (see Blinnman, E.) [19]

Excavations at the El Seco site in Arizona’s Awa Valley revealed a Classic period Hohokam field house on the edge of the northern bajada of the Serrita Mountains. Evaluation of conventional aerial and infrared satellite images indicates that the Maja Site and other sites in this part of the valley are located on alluvial fans where the potential for ak-chin style floodwater farming is greatest. By using similar remote-sensing data, it may be possible to predict the locations of pre-desert farming communities in southern Arizona.

Phillips, Laura S. (Larson Anthropological/Archaeological Services) and Lynn L. Larson (Larson Anthropological/Archaeological Services) [18] WEST POINT SUBSISTENCE ORGANIZATION: INSIGHTS FROM BOTANICAL, FISH BONE, AND SHELFISH STUDIES
Results from specialist studies of fish bone, botanical, and shellfish assemblages are reviewed. Botanical analysis documents high sample carbon content and taxa diversity compared to other sites in the region.

Abundance of conifer bark and hardwoods used as fuel suggests importance of shellfish drying/smoking. Seeds and fruit pits indicate summer plant collecting activities. The fish bone assemblage has freshwater and marine species. Increases in salmon abundance through time may indicate changes in procurement practices or be due to taphonomic processes. Shellfish species preferred for drying ethnomortally may demonstrate shifts in shellfish procurement patterns and importance of storage.

Pierce, C. (see Adams, K.) [19]

Pike-Tay, Anne (Vassar College) and Randall White (New York University) [30] ARCHAEOLOGICAL SEASONALITY AND PREY DEMOGRAPHY: CONTRIBUTIONS FROM DENTAL ANNUAL ANALYSIS OF THE KAMINURIK CONTROL SAMPLE
A brief summary of current results of a long term research project investigating the microscopically visible seasonal-annual bands in the teeth of the guanaco (Lama guanicoe) and the llama (Lama glama). Teeth were collected from as a thoroughly documented control sample of nearly 1000 Canadian llamas which span the entire year and represent the collection of all age groups. Results of dates presented in this report are based on the analyses of the control sample used to create the architectural profiles. Finally, the report will conclude with a discussion of a heretofore unreported special site depicting Spondylus shell drums uncovered by the Spanish in the Teotihuacan area.

Pillon, M. (see McBain, N.) [73]

Pillsbury, Joanne (East Anglia) [19] RECENT FIELDWORK AT CHAN CHAN, PERU
This research report is a brief overview of the principal findings of a survey of the architectural structure of Chan Chan, a Late Intermediate Period site on the north coast of Peru. The survey, conducted in 1990-91, included the documentation and conservation of the major adobe reliefs and their architectural contexts as part of a larger investigation of the use of the visual arts in the late pre-Andean period in the Andes. Among other aspects, the investigation has yielded new data with bearing on the chronology of the site and the development of Andean culture. Finally, the report will conclude with an analysis of a heretofore unreported special site depicting Spondylus shell drums uncovered by the Spanish in the Teotihuacan area.

Pinto, Diana G. (Greenwood and Associates) and Joan S. Schmidt (California-Riverside) [86] MILLING-IMPLEMENT QUARRYING AND PRODUCTION BORDERING THE LOWER COLORADO AND GILA RIVERS: ARCHAEOLOGICAL, ETHNOGRAPHIC, AND HISTORICAL EVIDENCE FOR AN ABORIGINAL INDUSTRY
Recent work along the Lower Gila and Lower Colorado Rivers has identified extensive areas where grinding stones, handstones, and pestles were produced using stone quarried from certain bedrock outcrops. Processing tools played such an important part of the subsistence systems of the aboriginal groups that used the area, that a high energy investment was required to construct those feasting sites. The most interesting specific is the millstone of structured pebbles. The use of water in shaping the cultural adaptations in the southern Great Basin.

Phillips, D. (see Pearson, D.) [25]

Piperno, Dolores (Smithsonian Institution) [58] EARLY FORAGING AND FARMING IN THE LOWLAND TROPICAL FOREST OF PANAMA
Phytolith, pollen, carbon, and diatom studies of lake sediments are used to reconstruct subsistence practices and associated environmental changes in lowland Pacific Panama from 11,000 B.P. until 4,000 B.P. The presence of the Putumayo River suggests that the climate and vegetation were no less profound then those which occurred at higher latitudes, and which have long been associated with major economic shifts elsewhere in the world. Modern modification of the watershed by human farming has been associated with the spread of the Panama forest. Evidence of slash and burn cultivation is present in Lake Panama forest.

Pippin, Lonnie C. (Desert Research Institute) [18] ABORIGINAL POTABLE WATER RESOURCES IN THE SOUTHERN GREAT BASIN
Potable water was a vital resource for the aboriginal hunters and gatherers who occupied the arid regions of the Desert West. This paper reviews the nature of water resources that were available to aboriginal populations in a portion of the southern Great Basin, categorizes these resources in terms of their sensitivity to climatic variables and consequently their overall reliability, and finally examines how variability in these resources may have influenced aboriginal cultural behavior and assesses the importance of water in shaping the cultural adaptations in the southern Great Basin.

Pitblado, Bonnie (Arizona) [111] GETTING TO THE POINT: A 'BIG PICTURE' LOOK AT ROCKY MOUNTAIN PALEOINDIAND TRADITIONS
It is suggested that a fundamental dichotomy exists between Great Basin and Plains Paleoindian traditions. This dichotomy, reflected in projectile point technology, can be related to differences in subsistence strategy.
Rocky Mountain Paleonindian material in general, and an assemblage from southwest Colorado in particular, is viewed as more closely related to Paleoindian occupation of the Great Basin than to occupation of the Plains.

Pitulko, Vladimir (Institute of the History of Material Culture)

[64] AN EARLY HOLOCENE SITE IN THE SIBERIAN HIGH ARCTIC

The results of excavations at an early Holocene site on Zhalok Island in the Delong Archipelago of the Siberian High Arctic are reported. The site's terrain and paleogeographic characteristics are discussed. Thirteen semi-subterranean house pits have been identified and excavations have been made in two of these. Artifacts reflect a Mesolithic association, with microblades, bone and antler inset tools, and groundstone adzes. Radiocarbon determinations indicate a date of about 7900 B.C. Faunal remains indicate a hunting economy relying mainly upon reindeer and polar bears. The significance of the site in terms of the early penetration of the High Arctic by a continental hunting culture is discussed, with commentary on the state of knowledge about early Holocene cultural complexes in Northeast Siberia.

Plew, M. (see Gould, R.) [61]

Plunket, Peter (see Uruñuela, G.) [30]

Plunket, Patricia (Universidad de Las Americas) and Gabriela Uruñuela (Universidad de Las Americas)


During the Postclassic period, Cholula's Temple of Quetzalcoatl was one of the most important shrines of Mesoamerica, a place where kings were crowned and a center to which pilgrims flocked. Recent excavations on the grounds of the Convent of San Gabriel, where according to tradition the temple was located, have revealed a construction sequence that begins in the Classic period. This paper will detail the major findings of these explorations and discuss their relevance to the transition from Classic to Postclassic in the Valley of Puebla and the development of the Postclassic ceremonial center of Cholula.

Pohl, M. (see Pope, K.) [76]

Pohl, Mary (Florida State), Kevin Pope (Geo Eco Arc Research), John Jones (Smithsonian Tropical Research Institute), Fred Valdez (Texas-Austin), and Ray Neck (Houston Museum of Science)

[76] MAIZE AGRICULTURE IN MESOAMERICA: THE LOWLAND MAYA CASE

Our program of excavation and coring in northern Belize in 1991-93 revealed that maize appeared about 2500 B.C. and was accompanied by significant deforestation. Excavation of settlement contemporaneous with early agriculture revealed that activity focused on the margins of wetlands where inhabitants continued to hunt. Cultivation intensified after 1400 B.C. when environmental changes resulted in higher water levels and the formation of a fertile black soil in wetlands. We propose that the adoption of maize agriculture in wetlands facilitated political competitiveness and set the stage for the emergence of centralized political control after 1000 B.C.

Pokines, James (Chicago)

[64] FORM, FUNCTION, AND CONTEXT IN CANTABRIAN LOWER MAGDALENIAN ANTLER PROJECTILE POINTS

A category of Cantabrian (Spain) lower Magdalenian (and Solutrean) antler point possessing an arched longitudinal profile, with a flattened area in its midsection probably used for hafting, may have functioned as a barbed point in the hunting kits of its manufacturers. As such, these points may have been precursors to the more elaborate multiply-barbed antler harpoons that, by definition, mark the Upper Magdalenian in Cantabria. Both a replication experiment and the archaeological context of this artifact type elucidate its probable hunting function: the spearing and subsequent holding of prey.

Poochajorn, Surin (Sillaphorn University)

[56] HUMAN ACTIVITIES AND ENVIRONMENTAL CHANGES DURING THE LATE PLEISTOCENE TO MIDDLE HOLOCENE IN SOUTHERN THAILAND AND THE MALAY PENINSULA

Recent excavations at Moh Khiew and Sakai caves are part of the "Hoabinhian Research Project in Thailand (Phase 2)." The data generated from Moh Khiew Cave provide new insights on Southeast Asian prehistory. They reveal the long term habitation and activities of prehistoric people from the Late Pleistocene to the Late Neolithic, around 25,000 to 4,300 B.P. Furthermore, the burials found may help fill the gap in the study of human evolution in Southeast Asia. More importantly, the data from this cave excavation suggest a new point of view on stone tool traditions, nutrition, and environmental change.

Pool, K. (see Metcalf, M.) [66]

Pope, K. (see Phol, M.) [76]

Powis, Terry and Bobbi Hohmann

Pope, Kevin (Geo Eco Arc Research), Mary Pohl (Florida State), John Jacob (Texas A&M University), John Jones (Smithsonian Institution), and David Lenitz (Mississippi)

[76] THE ORIGIN, EVOLUTION, AND DEMISE OF MAFIA WETLAND AGRICULTURE IN NORTHERN BELIZE

Polygonal features in the swamps of Belize have been interpreted as ancient Maya wetland fields for two decades. Research by the Rio Hondo Project reveals that these features are of complex origin, including human modifications of a hummocky surface and true canal construction. Wetland agriculture focussed upon swamp soils that became dry enough to cultivate without canals during an episode of a lowered water table ca. 1400 B.C. Water levels rose again ca. 110 B.C. to A.D. 200, apparently forcing the Maya to ditches, and ultimately abandon their fields. Water table fluctuations are linked to regional sea level changes.

Potter, D. (see Black, S.) [19]

Potter, James (Arizona State)

[89] THE IDENTIFICATION OF COMMUNAL RITUAL WITH FAUNAL REMAINS: A CASE STUDY FROM THE DOLORES ANASAZI

Communal ritual is undoubtedly one of the most important yet archaeologically elusive components of middle-range societies. Faunal remains, and the use of several quantitative techniques, including computer simulation, are argued to be effective in the identification of communal ritual in the prehistoric record. Published faunal data from McPhee Village, an aggregated Pueblo I Anasazi community located in the Dolores region, and dating to the ninth century A.D. are used to test several ethnographically derived faunal expectations. Two types of ritual behavior are identified, communal feasting and the use of fauna for ritual paraphernalia.

Powell, Mary Lucas (Kentucky) and Valerie Hashkins (Kentucky Heritage Council)

[59] TRADING OLD ACHES FOR NEW PAINS: CHANGING PATTERNS OF PALEOPATHOLOGY IN THE EASTERN WOODLANDS

The change from hunting/gathering to sedentary village life in the Eastern Woodlands exacted specific biological penalties: increased mortality for all ages, particularly women, increased in bacterial diseases due to increased pathogen exchanges and a decline in community sanitation; a rise in chronic iron-deficiency anemia in response to infection and parasite loads and iron-poor diets; and the appearance of mycotic/mycobacterial opportunistic diseases among highly stressed crowded populations.

Powers, R. (see Occkett, J.) [58]

Powers, William Roger (Alaska-Fairbanks)

[56] SIBERIA IN THE LATE GLACIAL AND EARLY POST-GLACIAL

This paper examines environmental and cultural changes in Siberia during the Pleistocene-Holocene transition. During the early part of this interval, areas east of the Yenisei contain late Paleolithic Dyrkaia-like assemblages. In northeastern Siberia, non-Dyrkaia assemblages are found. Between 10,000 and 11,000 years ago, Dyrkaia-like industries spread to the northeast and replaced the earlier industry. By 10,000 B.P., Sutunin industries appear in interior Siberia, while Dyrkaia-like industries remain in the northeast and the south. The implications for the peopling of Beringia and the Americas are discussed.

Powers-Jones, Alas (Cambridge)

[25] PHYTOFLS: A PROCESS-DRIVEN APPROACH

This paper explores an alternative approach to phytolith studies: examination and identification of the processes involved in the accumulation of phytolith suites, rather than basic plant identification. I do not decry plant identification as a powerful, essential tool in the archaeologist's repertoire, but stress the potential for a parallel, process-driven approach. Understanding the processes by which ecosys are deposited within a particular site can provide us with information about resource utilization and social organization, in circumstances where this information would otherwise be lost. Analyses of prehistoric sites in the Outer Hebrides of Scotland illustrate successful applications of this approach.

Powis, Terry (Trent) and Bobbi Hohmann (New Mexico)

[60] MIDDLE FORMATIVE ARCHITECTURE IN THE PERIPHERY OF CAHAL PECH, BELIZE: THE CASE OF TWO CIRCULAR PLATFORMS AT THE TOLOK GROUP

The discovery of two low circular platforms at the Tolok Group in the periphery of Cahal Pech may shed new light on late Middle Formative architectural techniques and practices. Evidence of several Late Formative and Late Classic period burials on these structures demonstrate their ritual importance to the community throughout the history of the Group. Also, the question arises as to whether round structures should be considered rare forms of architecture, as more of them are increasingly being found in close proximity to the surface and in various spatial contexts, particularly within the Belize Valley.
Pozorski, Shelia and Thomas Pozorski

Pozorski, Shelia (Texas-Pan American) and Thomas Pozorski (Texas-Pan American)


The Sechin Alto Complex, 10 square km in area, is the largest Initial Period (1800-900 B.C.) site cluster known in Peru. Although the complex was previously believed to comprise a late Initial Period polity within the Casma Valley, recent excavations at the component site of Tazanki Konkan revealed that it dates considerably earlier. These new data indicate that the major early Casma Valley sites existed simultaneously and interacted extensively. This revised scenario provides a unique opportunity to assess both the varied functions that characterized discrete units of monumental architecture within the polity and the nature of interactions among sites and site clusters.

Pozorski, T. (see Pozorski, S.) [10]

Prentiss, William (Frontier Archaeology, Inc.), Patrick F. Light (Frontier Archaeology, Inc.), James M. Welch (Frontier Archaeology, Inc.), and David D. Day, Jr. (Frontier Archaeology, Inc.)

[105] LITHIC DEBITAGE AND FLAKE TOOL ASSEMBLAGE FORMATION AT TWO HIGH ALTITUDE SITES IN NORTHERN WYOMING

Flake utility indices are used to model how the selection of complex flake debitage and flake tool assemblages from two quarry related sites in the Big Horn Mountains of northern Wyoming. Mathematically derived experimental assemblage formation sequences are used to simulate the effects of reduction strategies, taphonomic agents, flake removal processes, and flake tool use/sequences on the final appearance of archaeological assemblages. Archaeological data are interpreted as the result of dynamic, often complex behavioral and natural processes.

Price, Barry (INFOTEC Research) and Timothy Canaday (INFOTEC Research)

[83] PREDICTIVE MODELS AND SITE SURVEY: A 1,000-MILE TRANSECT

In the early planning stages of the PGT-PG&E Pipeline Expansion Project, INFOTEC Research, Inc. (IRI) developed a sensitivity model for predicting the distribution of historical and prehistoric cultural resources along the Project route. The model was based on historical, archaeological, and ethnographic surveys and related data available at that time (1988). Prior efforts to model site distribution in particular geographic zones were also considered, and the available data were combined to predict the types and spatial distributions of cultural resources expected in various environmental contexts along the pipeline corridor. The components of IRI's sensitivity model are evaluated, and predictions of site types, locations, and distributions are compared with data generated during the intensive survey.

Price, Heather (California-Berkeley)

[9] CONTEXT AND VARIABILITY IN UPPER PALEOLITHIC VISUAL IMAGERY: PRELIMINARY FINDINGS

Within a given time period and between populations exhibiting essentially the same general hunter-gatherer cultural adaptations, what is the significance of regional scale variation in the amount and kinds of cave art and portable art? I will first establish the nature of Upper Paleolithic art in the Aude region of southern France. I will then consider various environmental, demographic and social explanations for why this evidence varies from that of neighboring regions such as the Perigord and the Pyrenees.

Price, J. (see Goodman, D.) [63]

Price, T. Douglas (Wisconsin-Madison) [Discussant 54]

Price, T. Douglas (Wisconsin-Madison) and Anne Birgitta Gebauer (Wisconsin-Madison)

[47] THE MOBILITY MYTH: AN EXAMPLE FROM MESOLITHIC NORTHERN EUROPE

The appearance of permanent settlement is thought to be one of the important thresholds on the pathway to more complex society. The assumption that hunter-gatherers were highly mobile until the Holocene has dominated archaeological perspectives for many years and strongly biased interpretation of the archaeological record. Evidence from Holocene northern Europe and elsewhere, however, suggests that settlement occupations may well have been sedentary far earlier than previously thought. This presentation will make the argument that sedentism may well have been the norm for human groups in coastal and other non-marginal zones deep into prehistory.

Pritchard-Parker, Mari A. (California-Riverside) and John Torres (California-Riverside and INFOTEC Research)

[33] CAN ECONOMIC AND SOCIAL BEHAVIOR ASSOCIATED WITH MILLING EQUIPMENT BE DETERMINED FROM THE ANALYSIS OF ANOMALOUS DEBITAGE?

The surfaces of milling equipment, which become slick through use by the abrasive forces of the mano against the metate, were mitigated prehistorically to re-roughening of the implement surfaces. It has been assumed that this was accomplished through the use of a prepared, flaked stone edge. Our previous research shows this to be unnecessary (though it does not preclude it either). Analysis of the debitage produced during the re-roughening of experimental metates using various hammerstones was compared with that from archaeological specimens in an effort to characterize the re-roughening behaviors associated with milling equipment.

Purdu, J. (see Chambers, K.) [55]

Pyburn, K. Anne [Discussant 38]

Quillier, Jeffrey (Ripon College)


Three field seasons at the Riva site have revealed a scale and complexity of occupation previously undocumented for sites in southern Costa Rica. Two phases of monumental construction, extensive areas of artificial fill, and great amounts of pottery from outside the region have been encountered for an occupation from circa A.D. 900-1300. This paper will review significant finds to date, their implications for understanding the culture history of prehistoric Costa Rica, and their significance regarding the socio-political nature and dynamics of areas previously considered as "marginal" to Nuclear America.

Quintanailla, fjigënta (National Museum of Costa Rica)

[32] CHRONOLOGY, SETTLEMENT PATTERNS, AND SUBSISTENCE IN THE SIERPE-TERRABA DELTA, COSTA RICA

A regional project in the Sierpe-Terraba Delta of southern Costa Rica has documented human occupations there from 1000 B.C. to A.D. 1500. These occupations show settlement patterns different than those of the tributaries and intermontane valleys in the upper and middle Terraba Valley. They also show the exploitation of estuarine and tropical forest resources in addition to mixed agriculture subsistence practices. These factors, in combination with unique elements of material culture, such as stone anthropomorphic and zoomorphic statues, and metallurgy, suggest that the Delta can be considered as a cultural unit within the Chiriqui archaeological tradition.

Quinley, T. T. (Florida Museum of Natural History)

[41] MOLLUSCAN FAUNA AS AN INDICATOR OF ENVIRONMENTAL CHANGE AT THE PAELO-INDIAN SITE OF PAGE-LADSON (8JE591), AUCILLA RIVER, FLORIDA

The Page Ladson Site (8JE591), located in the Aucilla River of west Florida, represents a stratified section dating to the late Pleistocene—early Holocene epochs. This deposit contains the remains of plants and animals associated with Paleo-Indians living around the site. Aquatic molluscan fauna excavated from Page-Ladson are sensitive indicators of environmental change. Quantified samples of 12 taxa of mollusk indicate fluctuations in water chemistry, water depth and the energy of the river over a 12,000 year period. The molluscan data coupled with the identification of other well-preserved plant and animal remains from Page-Ladson provide a record of the local environment and how it changed at the end of the Pleistocene.

Raab, I. Mark (California State-Northridge)

[92] REASSESSING THE AGE AND IMPORTANCE OF SOUTHERN CALIFORNIA MARITIME SOCIETIES AMONG ARCHAI-STAGE CULTURAL ADAPTATIONS

Research during the last decade demonstrates occupation of the southern California coast as early as 11,000 cal years B.P. Scores of sites are now known with ages ranging between 8,000 and 10,000 cal years B.P., with many of the earliest dates in the California Channel Islands. Complex maritime economies and cultural interaction spheres linking the Channel Islands and the mainland existed at least as early as 5,000 years B.P. These data require re-examination of the marginal role traditionally assigned to maritime cultures in the development of Archai stage adaptations.

Rafferty, Kevin (Community College of Southern Nevada)

[75] GEOCYLPS AND GROUND FEATURES IN THE SOUTHERN NEVADA REGION

Geoglyphs and ground features are being recorded with greater frequency in the southern Nevada region. Although geoglyphs, such as those associated with the Mojave/Paday cultural tradition, are the most spectacular, other ground features, including linear features and abstract designs, have also been encountered. This paper discusses several such features recorded in the last five years in southern Nevada, dealing with such questions as age, morphology, cultural affiliation, and potential significance as religious structures or territorial markers for groups that lived in the region.

Rahemtulla, Farid (Simon Fraser)

[50] TECHNOLOGICAL ORGANIZATION STRATEGIES IN THE EARLY PERIOD AT NAMU, ON THE CENTRAL COAST OF BRITISH COLUMBIA

Research on the early prehistory of the Northwest Coast has generally focused on delineating initial cultural-historical concerns. Recently, a mass analysis was conducted on lithic debitage from an Early Period
Ramenofsky, Ann F. (New Mexico)
[58] INFECTIOUS DISEASES AND NATIVE POPULATION CHANGE IN NORTHERN NEW MEXICO

Scholars working in the Spanish Borderlands outside the Southwest have demonstrated repeatedly that infectious diseases were powerful selective agents in the earliest centuries of European contact. In appropriate contexts, native populations suffered significantly, if not terminally, population loss that affected the structure of native societies. In New Mexico, however, the survival and cultural vigor of native peoples suggests that the disease history may have been fundamentally different; these differences contributed to native persistence. The issue of whether or not infectious diseases caused significant population loss prior to 1680 is discussed.

Raftman, Alison (Michigan State)
[37] REGIONAL IMPLICATIONS OF LOCAL SUBSISTENCE CHANGE: THE PITHOUSE-TO-PUEBLO TRANSITION IN CENTRAL NEW MEXICO

Excavations at LA-2091, a thirteenth century pueblo in central New Mexico, show that change to pueblan architecture during this time period is associated with greater reliance on agricultural production. It is proposed that this change in economic organization altered the cultural perception of environmental conditions, affecting the definition of local resource stress as well as the utility of prior adaptive strategies for coping with that stress. During this time period, previously established social contacts (and ceramic exchanges) with groups in the Sierra Blanca region are supplemented by increased contact with groups in additional areas, particularly the Rio Grande region.

Ravesloot, J. (see Simon, A.) [42]
Ravesloot, John C. (Gila River Indian Community)
[85] ARCHITECTURAL PLANNING AND DESIGN: SOCIAL AND RELIGIOUS SYMBOLS OF POWER AT CASAS GRANDES

The prehistoric site of Casas Grandes located in northern Chihuahua, Mexico, is presumed to have served as the focal point of a complex regional system during the Medio period (A.D. 1200 to 1450) where political, economic, and religious activities were coordinated. The city's plan which included the construction of public, domestic, and religious architecture suggests a carefully thought out and controlled architectural design. This paper discusses how the Casas Grandes elite used architecture, in particular the placement and design of the monory complex and other religious structures, to communicate and legitimize ideas about the social order to the local populace.

Raymond, Christopher B. (Kansas) and R. Jeffrey Frost (State Historical Society of Wisconsin)
[32] STONE TOOLS AND ASSOCIATED MATERIALS AT THE RIVAS SITE

While the Rivas site has spectacular architecture and an inventory of ceramics, including a high proportion of fancy wares, the stone tool assemblage is not impressive at first view. Chipped stone tools remain are crude in manufacturing techniques while ground stone tools are few in number. However, these patterns reflect distinct adaptive strategies of tropical forest cultures as well as the unique activities that occurred in the monumental sector of the site. The nature of the Rivas stone tool assemblage, variability in its characteristics, and implications for the understanding of Rivas society and culture will be explored in this presentation.

Read, Dwight (California-Los Angeles)
[96] WHAT DO WE NEED TO KNOW TO DO QUANTITATIVE ARCHAEOLOGY?

The cultural materialist framework assumes the answer to understanding the past lies in external relationships framed in terms of universal concepts such as rationality and optimality. The contextual, interpretive framework finds importance in the particularistic, symbolic framing of internal relationships. These perspectives find convergence in a properly framed quantitative archaeology. The quantitative approach requires its homogenous data sets, which reflect the particular distinctions imposed on a continuous, natural world by a given group. What are those imposed, context specific relationships, and how do they map onto objects? An approach to this question, based on classification of utilized flakes, will be presented.

Reanier, Richard E. (Reanier & Associates), Daniel H. Mann (Alaska-Fairbanks), and Michael L. Kunz (Bureau of Land Management)
[74] ARCTIC PALEOINDIANS AND ENVIRONMENTAL CHANGE

The recently documented Northern Paleoindian presence at the Mesa site in arctic Alaska has led to a re-examination of the potential effects of climate and environmental change on these early cultures. Using palynological, plant macrofossil, geological, and ice core data, this paper reviews evidence for rapid climatic and environmental change in the region during the Paleoeindian period, and summarizes new lines of evidence being gathered by the Mesa Project. The chronologies of the paleoenvironmental and archaeological records are compared in order to demonstrate possible environmental constraints on high-latitude human occupation at the Pleistocene/Holocene boundary.

Reckman, Robert (California State-Dominguez Hills)
[94] FUJIAN ARCHAEOLOGY AND THE RECONSTRUCTION OF VILLAGE-LEVEL SOCIAL HIERARCHIES

Ethnohistorical information in conjunction with archaeological data recovered from the excavation of two fortified villages on Wakaya Island, Fiji are used to assess material and organizational correlates of social rank. The correlates include the organization of village space, a housing hierarchy, and a hierarchy in mortuary ritual. Such hierarchies are identified, reflecting the existence of multiple levels within the society. Further support that the spatial relations documented in the archaeological record represent and reproduce the social relations that existed among the village residents.

Redding, Richard W. (Michigan)
[4] THE ORIGIN OF FOOD PRODUCTION IN ANATOLIA: A TEST OF "FOREIGN" IDEAS

During the last ten years considerations of the origin of food production in the Middle East have focused on data from the Levant. Recent excavations in Anatolia have provided a new data set to examine some of the ideas about the process of and explanations for the origin of food production. The Anatolian data are an important test set because the environment differs from that of most of the Levant. The Anatolian data provide insight on the relation of sedentism to food production and the function of domesticates in the earliest phases of this important shift in human subsistence behavior.

Redman, Charles L. (Arizona State) [Discussant 26]
Redman, Charles L. (Arizona State)
[46] DECISION-MAKING, COMPLEX SOCIETIES, AND ENVIRONMENTAL IMPOVERISHMENT

Archaeological information from several regions of the world is reviewed as it informs on human impact on the environment. The late prehistoric Southwest and early historic period in Mesopotamia are discussed in detail in an attempt to formulate general propositions relating to decision-making within a complex society and impacts to the surrounding environment.

Redman, Charles L. (Arizona State)
[39] INTRODUCTION TO THE ARCHAEOLOGY OF GLOBAL CHANGE

Redmond, Louis A. (Nebraska National Forest) [Forum Participant 95]
Reed, D. (see Merritseehe, D.) [106]
Reed, D. (see Whittlingon, S.) [106]
Reed, Paul (Navajo Nation Archaeology Department)
[72] THE COVE COMMUNITY: A PUEBLO I-II ANASAZI SETTLEMENT IN RED VALLEY, NORTHEASTERN ARIZONA

Research undertaken in conjunction with the Cove-Red Valley Archaeological Project in northeastern Arizona has revealed the presence of a large Anasazi community. The community dates to the Pueblo I-II period, encompasses at least 40 distinct habitation structures, and is centered on a Great House and Great Plaza. This community, henceforth known as the Cove Community, is unique given its isolated location between the Lakachukai and Carizo mountains. This paper characterizes the Cove Community and places it within a cultural, economic, and sociopolitical context vis-a-vis other Anasazi communities and Chacoan outliers of the San Juan Basin.

Reese, R. (see Reese, M.) [105]
Ree-Taylor, K. (see Reese, M.) [10]
Ree-Taylor, Kathryn (Texas-Austin), Debra Walker (Florida International), Fred Valdez, Jr. (Texas-Austin), and Kenneth Liss (Minnesota)
[44] EVIDENCE FOR A SYMBOLIC BALLCOURT AT CERROS, BELIZE

Recent excavations from the site of Cerros revealed a miniature ballcourt on the central plaza. Because of its size, the ballgame could not have been played on this diminutive ballcourt. Therefore, we explore alternate functions related to symbolic interpretations. Metaphorical references to raised fields and cliffs in mountains place the Cerros ballcourt within the prevailing Mesoamerican cosmology. Archaeological evidence indicates that the ballcourt may have directed the flow of traffic during ritual processions. In addition, data suggest that all ballcourts at Cerros may have channeled the flow of water from the interior of the civic center to the surrounding drainage canal.
Regan, Marcia, Joel D. Irish, and Christy G. Turner, II

SKELETAL AND DENTAL INDICATORS OF HEALTH AMONG THE SALADO FROM TONTO BASIN, ARIZONA

Preliminary skeletal and dental analyses of human remains recovered near Roosevelt Lake, Arizona, imply that the —prehistoric Salado enjoyed superior health relative to other contemporary Southwest populations. Comparatively low occurrences of cribra orbitalia, porotic hyperostosis, dental caries, calculus deposition, enamel hypoplasia, and alveolar resorption suggest that the Salado had a well-balanced diet, perhaps consisting of large amounts of wild foods (e.g., game and native plants) in addition to maize. Relatively tall adult stature also indicates good (childhood) nutrition. These findings support the concept of the Tonto Basin as an area rich in natural resources and agricultural potential.

Reid, Dain M.

SACRÖBOB (ROADWAYS) AND INTERACTION IN THE NORTHERN MAYA LOWLANDS: INITIAL INVESTIGATIONS IN THE YALAHUAR ZONE

Macao sacrobob, or roadways, are extremely important in the reconstruction of political systems in the Northern lowlands of Mexico, where inscriptions describing alliances are scarce. Investigations at the Early Classic site of Naranjil revealed both inter- and intra-site roadways, which are described and compared to others in the region. Evidence of a political hierarchy within the site and interaction with neighboring sites and centers in the northern lowlands is discussed.

Reid, J. (see Montgomery, B.) [42]

Reilly, Frank K., III (Southeast Texas State)

COSMOLOGY AND POLITICAL POWER WITHIN THE OTOMANGUEAN AREAS OF THE MIDDLE FORMATIVE MEXICAN HIGHLANDS

The artifacts, symbols, and motifs created in the Olmec style during the Middle Formative Period should be classified as ritual objects that functioned in a geographically dispersed ceremonial complex. This Middle Formative Ceremonial Complex (MFCC) is defined as the shared thematic focus through which ideology and rulership were visually expressed throughout Middle Formative Mesoamerica. The symbols incised on a green stone figure from the Oaxaca area clearly demonstrates that the Otomangean speaking peoples of the Mexican highlands contributed significantly to the development of both the art and ideology of the Middle Formative Ceremonial Complex.

Reinhard, Karli (Bekassina) and John Denny (Washington University)

DIET AND DISEASE AMONG THE CHINCORROB: COPROLITE EVIDENCE

Previous analysis of Chinchorro diet indicated that this culture was almost exclusively marine dependent. Analysis of coprolites recovered from mummies shows that although marine dependent for animal protein, the Chinchorro had a well-developed, broad-scale foraging strategy for wild plants. This aspect of subsistence had not been previously detailed. The dependence on marine fish resulted in parasitism with Diphylyobibrium pacificum, a fish tapeworm.

Retz, Elizabeth (Georgia) and Elizabeth S. Wing (Florida)

RICE RATS OF THE NORTHERN LESSER ANTILLES

Rice rats, Oryzomys, were intensively exploited in the Lesser Antilles during prehistoric times, though they are now extinct throughout the West Indies. Comparison of the relative abundance of rice rats in assemblages, measurements of skeletal elements, and estimates of individuals' ages provide insights into the importance of this resource. Particular emphasis is placed on the relationship between size and the intensity of predation on these density-dependent rodents. Evidence for the transport and management of this resource will also be presented. This research is based on faunal samples from the following islands: Montserrat, St Martin, St. Eustatius, Nevis, and St. Kitts.

Renshen, L. (see Creamer, W.) [58]

Rhod, Benjamin (State of South Dakota Archaeological Research Center) [Forum Participant 95]

Rhode, David (Desert Research Institute)

OBSIDIAN STUDIES AT YUCCA MOUNTAIN, NEVADA: SOURCING AND REGIONAL CHRONOLOGY DEVELOPMENT

Obsidian artifacts from Yucca Mountain, Nevada, are used to examine diachronic regional patterns of artifact transport and chronology of landscape use. Eight known obsidian sources are represented: most obsidian was obtained locally, but some came from sources several hundred km distant. The greatest diversity of sources is from Early and Middle Archaic contexts; Late Archaic artifacts are almost exclusively locally derived. Chronology of regional landscape use is developed using obsidian hydration. An important constraint

Riseman, William

a the temporal resolution attainable by this method. Measurement of variables relevant to hydration rate allows estimation of the temporal resolution possible.

Rice, Don S. (Southern Illinois University)

THE HUMAN IMPACT ON LOWLAND MESOAMERICAN ENVIRONMENTS

The population history of the Mesoamerican lowlands provides a rich foundation for study of the human role in environmental change. At several important archaeological junctures it is possible to chart the impact of colonization and later population growth on biodiversity throughout the region. The implications of studying long-term human impact on the environment are significant to a variety of biodiversity studies currently underway. The results of archaeological work indicate direct and sustained human modifications of entire ecosystems. These results will require biologists to modify their models of floral and faunal diversity and interaction.

Rice, G. (see Jacobs, D.) [26]

Rice, G. (see Lincoln, T.) [50]

Rice, Glen (Arizona State) and David Jacobs (Arizona State)

SALADO PLATFORM MOUNDS AND SETTLEMENT NETWORKS IN CENTRAL ARIZONA

Settlement pattern data are used to estimate changes in the size and organization of the prehistoric Salado from A.D. 1270 to 1450 population in Tonto Basin, Arizona. Salado platform mounds functioned as centers for networks of related settlements. Of about a dozen networks in the valley, three were particularly successful through time. These three mound groups were rebuilt and expanded, and large satellite communities were established in the surrounding areas. Elsewhere networks collapsed into single, large communities or were completely abandoned. Explanations are sought for the success of some networks and the apparent abandonment of others.

Richardson, C. (see Stafford, C.) [97]

Ricketts, Robert A. (Coastal Archaeological Research)

TRACKING THE EFFECTS OF SEA LEVEL CHANGE ON BIOTIC ECOSYSTEMS AND HUMAN ADAPTATIONS ON THE TEXAS GULF COAST

The chronology of stratigraphically discrete shell midden components on the central Texas coast suggests that the region went through three major periods of human occupation and exploitation of shoreline resources: ca. 5000-7000 B.P., 5900-4200 B.P. and after 3000 B.P. These periods correspond to times of postulated sea level stillstand, whereas the intervening periods correspond to times of rapidly rising sea level, postulated independently on the basis of geologic data. Drawing upon fundamental biophysical principles of marine ecology, it is inferred that rapidly rising sea level adversely affected marine productivity, rendering coastal estuaries unattractive for human occupation.

Ricks, Mary F. (Portland State)

ROCK ART AS ARTIFACT: THE WARNER VALLEY ROCK ART INVENTORY

Warner Valley, Oregon offers an exceptional laboratory for the study of Northern Great Basin rock art. A data base, incorporating information about rock art and its archaeological context in 150 valley sites, allows rock art to be treated as artifact. The data base facilitates analysis of spatial distribution of rock art sites and design styles, and allows examination of relationships between rock art and other artifacts within the sites. Rock art is most diverse and most dense in sites which appear to have been occupied by relatively larger groups over extended time periods, and usually appear to serve a public function.

Rizzo, David

MODELING COLONIZATION: ADAPTATION, VARIABILITY, AND CULTURAL CHANGE IN AMERICA AND SAHUL

The mode and tempo of the initial human colonization of continental regions is a controversial topic in archaeology. A Darwinian model is developed which considers colonization in a unified manner. I suggest that selection would favor demes with subsistence strategy leading to low extractive rates and, hence, low realized environmental carrying capacities. This strategy would have brought about fast colonization. The model, developed for the Pleistocene colonization of Sahul, is tested against data from Clovis Period North America, where temporal imprecision is substantially smaller and the speed of colonization may be considered along with modes of adaptation.

Rziegel, W. (see Hanson, C.J.) [76]

Ringle, William (Davidson College) [Discussant 5]

Riseman, William (Williams Riseman Associates)

3-D COMPUTER RECONSTRUCTIONS: CREATING VIRTUAL ANCIENT BUILT ENVIRONMENTS

This demonstration is intended to demystify the use of computer-aided visualization techniques in archaeology. Among the techniques to be discussed are: scanning, tracing, and enhancing photographs; 3-D vector
Ritter, Eric

[57] EXPLAINING REGIONAL DIFFERENTIATION IN CENTRAL BAJA CALIFORNIA'S ROCK ART

Ethnographically the Central Desert of Baja California, Mexico was occupied by the Cochimi who linguistically have been divided into northern and southern dialectal regions. Late prehistoric pictograph motif complexes, probably manufactured by proto-Cochimi peoples, appear to vary by dialectal region with the naturalistic Great Mural art found to the south and the Northern Baja California Abstract art occurring in the north. This separation of style and content in the principal central peninsula rock art is hypothesized as an outgrowth of internal societal variation and changes in demography and mobility/residence patterns between related peoples of relatively richer (south) and poorer (north) upland resource zones.

Robb, John E. (Michigan)

[91] EVOLUTIONARY CONSEQUENCES OF A SYMBOLIC CURRENCY: THE CASE OF LATE NEOLITHIC ITALY

In Tribal social dynamics, what is critical is not prestige per se but rather its symbolic organization. The formation of a "symbolic currency," symbolically interdependent with ideologies of gender and personal identity and generalized to apply to multiple situations, is a key threshold between Great Man and Big Man societies. In Late Neolithic-Bronze Age Italy, a symbolic currency based upon male gender ideology provided new motivations for exchange and production intensification, linked individuals in new group formations, and made possible new settlement systems. The resulting interconvertibility of prestige from varied activities also allowed the rise of centrally placed social brokers.

Robertson, Ian G. (Arizona State)

[63] GIS-ASSISTED ANALYSIS OF TEOYHUACAN DATA

Spatial, architectural, and architectural information generated in the 1960s by René Millon's intensive survey of the prehispanic urban center of Teotihuacan have been integrated in a commercial GIS program called MapInfo. Analyses of the new data base have so far concentrated on the use of Empirical Bayesian statistical methods to refine intrinsic frequency estimates of diagnostic ceramics, including Thin Orange ware, and especially where small assemblages are involved. MapInfo's graphic display methods are allowing us to make rapid, preliminary assessments of a variety of new hypotheses, with a degree of spatial resolution that has not been previously available.

Robinson, C. (see Breternitz, C.) [7]

Rogers, Anne F. (Western Carolina University) and Jane L. Brown (Western Carolina University)

[35] RANGE AND VARIABILITY IN HISTORIC ARTIFACTS FROM THE PEACHTREE MOUND AND VILLAGE SITE (31CE1)

Re-analysis of artifacts excavated in 1933-34 at the Peachtree Mound and Village site (31CE1) has provided new insight into the range and variability of materials recovered there. Artifacts which date from historic times include objects of both Native American and European manufacture. Among these are utilitarian, decorative, and ceremonial artifacts, extending in temporal assignment from the early Contact period through the time of Removal. This re-analysis has provided a better understanding of the role of this site in historic as well as prehistoric times.

Rogers, J. D. (see Goodman, D.) [63]

Rogers, J. D. (see Nishimura, Y.) [63]

Roe, Barry (Hawaii), Eric Conte (Universite Francaise du Pacifique), and Erik Peartree (Hawaii)

[6] PATTERNS AND PROCESSES OF PREHISTORIC MARQUESAN VOYAGING

Located near the limits of human dispersal into the Pacific Ocean, the Marquesas are among the most geographically isolated islands in the world. Polynesian navigators eminently skilled in long-distance voyaging settled the Marquesas ca. 2000 B.P. but voyaging canoes and traditions had nearly vanished by Captain Cook's arrival in 1774. Prehistorians infer that voyaging spheres contracted through time but lack the archaeological evidence needed to test this hypothesis. This study presents results for X-ray fluorescence analysis of lithic artifacts from recent excavations in the Marquesas, providing the first empirical data documenting processes and patterns of prehistoric interisland exchange.

Roosevelt, Anna (Field Museum of Natural History) [Discussant 81]

Roveland, B.

Roosevelt, Anna (Field Museum of Natural History)

[59] THE RISE OF VILLAGE LIFE IN AMAZONIA

Village life appears to have begun early along rivers. Foragers migrated in about 11,000 B.P. and left hearths, finely flaked points and scrapers, paintings, fruit pits, and rare fishbones and shells in caves. About 7,500 B.P., foragers intensified fishing and shellfishing. Their settlements have post-structures and hearths and large heaps of shells and fishbones. Among their artifacts are pottery vessels, worked bones and shells, and stone flakes. Later peoples further intensified foraging, took up cultivation, elaborated crafts, and established cemeteries, population centers, and mounds in some areas.

Rowell, M. (see Ahler, S.) [97]

Rojales-López, Alfonso (Centro Regional del Instituto Nacional de Antropologia e Historia) and Harumi Fujita (Centro Regional del Instituto Nacional de Antropologia e Historia)

[57] EVIDENCE FOR CHANGING SUBSISTENCE STRATEGIES AT ENSENADA LOS ARIPES, BAJA CALIFORNIA SUR, MEXICO

In 1992, investigations were carried out at the site of Ensenada Los Aripes located along La Paz Bay, Baja California Sur, Mexico. Excavation data indicate two periods of site occupation with distinct subsistence strategies. The first, 4000-2200 B.P., was oriented primarily towards the exploitation of terrestrial resources while the second, 2200 B.P.-1700 A.D., was directed mainly towards the collection of shellfish. Evidence is also presented for climatic changes over the last 18,000 years that have been inferred from an analysis of regional geomorphology. A previously unknown burial type for Baja California will also be reported.

Rose, John R. (see Hammond, N.) [60]

Rosenberg, Michael (Delaware)

[14] HALLAN ÇEMI AND LATE 11TH MILLENNIUM SETTLED VILLAGE LIFE ALONG THE TAURUS-ZAGROS PLANKS

Three seasons (1991-1993) of excavation at Hallan Çemi have produced a body of data pertaining to early settled village life in eastern Anatolia that is considerably at odds with prior expectations. The data suggest that fully sedentary societies, dependent on only wild resources, existed along the Upper Tigris drainage at least as early as the mid-11th millennium B.C. Moreover, the emerging picture is that these societies exhibited a remarkable degree of social complexity in the context of a cultural tradition quite independent of that which gave rise to the Levantine Neolithics.

Rowth, Barbara (Torria Services)

[7] SEDENTARY PERIOD HOHOKAM OCCUPATION OF NONRIVERINE ENVIRONMENTS IN THE TUCSON BASIN

Much of what we know about the Sedentary Period Hohokam is derived from sites located along the major desert waterways. However, recent surveys and excavations in the Tucson Basin have documented substantial Sedentary Period (Rincon phase) presence in nonriverine settings, specifically the upper bajada or mountain foothills. This paper summarizes these new data and discusses the implications of Rincon phase occupation of nonriverine environments in terms of existing settlement-subsistence models. It is argued that these data must be considered in any discussion of the changes that occurred in the Hohokam region during the Sedentary Period.

Rothman, Mitchell S. (Widener University)

[24] THE VIEW FROM THE HIGHLAND BORDER LANDS

Our understanding of Cultural Evolution in the Middle East has been determined by developments in the optimal agricultural zones of the southern alluvium and the open steppes of Mesopotamia. However, the snow prone and agriculturally marginal high mountain zones of eastern Turkey surrounding Lake Wagney bordered four of the great culture areas of the ancient Middle East: Mesopotamia, Central Anatolia, western Iran and Trans-Caucasia. This paper will discuss the interaction of these culture areas and, as importantly, developments in these borderlands from the 3rd to 1st millennia B.C., based on new survey data.

Rouvot, Laura

[8] FISH PROCESSING AT XALTOCAN: AN ETHNOARCHAEOLOGICAL STUDY

During the twelfth century, residents of Xalotocan witnessed the decimation of their lake. Still, many pursue livelihoods bound up with the lake. At present, roughly half the village's households acquire and process lacustrine foods, adjusting techniques handed down possibly from prehispanic times. This paper will describe the methods used recently to process fish, shrimp, frogs, algae, and aquatic insects in Xalotocan and neighboring villages, along with some local accounts of pre-drainage techniques.

Roveland, B. (see Brennan, S.) [34]
Roveland, Blythe E. (Massachusetts-Amherst)

[34] IMAGINING PALEOLITHIC CHILDREN THROUGH FICTION
Archaeologists have rarely made the study of children in the past a research priority. On the other hand, and not surprisingly, writers and illustrators of juvenile prehistoric fiction have included children in their visualizations of the past. This paper presents the results of a survey of juvenile fiction with paleolithic themes in which children are featured in pivotal roles. I argue that fiction, as one medium through which children "learn" about prehistory, merits serious consideration. Furthermore, fiction may provide useful lessons for archaeologists by helping us imagine and reconstruct pasts in which children as well as adults were active participants.

Rone, Marvin W. (Texas A&M University), Marilyn Hyman (Texas A&M University), Ronnie L. Reese (Texas A&M University), James N. Derr (Texas A&M University), and Scott K. Davis (Texas A&M University)

[108] ANCIENT DNA IN TEXAS TEGOGRAPHS
We utilized polymerase chain reaction (PCR) and phylogenetic DNA analysis to aid in the identification of the organic binders/vehicles used in the 3000-4000 year old pictographs painted on shelter walls in Seminole Canyon, Texas. Because very little DNA is expected to remain after several millennia, and the small fraction which does survive will be seriously degraded, the ultra-sensitive method PCR is required. It amplifies DNA and can produce millions of DNA copies from only a few enduring DNA fragments. The replicated DNA can then be sequenced and information concerning the source derived. We extracted ancient DNA from two pictograph samples and subjected it to PCR.

Rivett, Ralph M. (Missouri-Columbia)

[34] EARLY LA TENE EAST MARIAN CHILDREN
The transmission of cultural and learned social behaviors to children occupies a key role in non-evolutionary processes. Children therefore must be a concern in archaeological studies. Juveniles known from cemeteries and habitations of the La Tene East Marian Group in northeast France provide interesting insights into "child culture" in an Iron Age chieftain society. Social classes are as marked among adults. Enculturation into adult roles can be traced in the equipment and toys supplied to children.

Ruble, E. (see Guiderd, T.) [60]

Rudebeck, Martin (California-San Diego) [Discussant 40]

Ruff, Christopher (Johns Hopkins University School of Medicine)

[90] SKELETAL STRUCTURE AND BEHAVIORAL PATTERNS OF PREHISTORIC GREAT BASIN POPULATIONS
A structural analysis is carried out of prehistoric human long bones recovered from the Great Salt Lake, Stillwater Marsh and Malheur Lake regions of the Great Basin. Bone cross-sectional properties of 67 individuals were obtained through CT scanning and analyzed using engineering principles. Measures of articular size and other structural dimensions were also collected. Results are compared between regions and with samples of Amerindians from other regions and subsistence types. All three Great Basin samples group best with hunter-gatherers in terms of mobility and sexual division of labor, and show evidence of a rigorous, demanding lifestyle.

Rubin, Donna (Florida)

[101] FROM APALACHEE TO GAULE: SIMILARITIES AND DIFFERENCES IN THE ARCHAEOBOTANY OF THE MISSIONS OF SPANISH FLORIDA
Archaeobotanical assemblages generated from seventeenth century Spanish missions and associated Native American villages have revealed an admixture of Old and New World plant foods, continued use of certain "special" plants for religious and daily purposes by each group, and possibly additional native plant husbandry practices not previously validated by Historic or archaeological data. Ongoing research indicates some similarities of plants utilized at Spanish Mission sites across Florida but differences in quantities and overall assemblages are beginning to reveal disparities between the missions and villages of western Apalachee and the eastern provinces of Galve and Timucua. Both lean and prosperous periodsmissions have been indicated temporally and topographically for the Missions of Florida.

Ruscavage-Barra, Samantha (Washington State)

[80] GROUND STONE ASSEMBLAGES AS MONITORS OF CHANGING HOHOKAM SUBSISTENCE STRATEGIES: CONTINUITY AND CHANGE DURING THE TERMINAL CLASSIC PERIOD
The Classic to Post-Classic transition in the Hohokam area appears to be marked by a decrease in agricultural intensity coupled with an increasing reliance on wild resources. This change in the subsistence regime may be represented in ground stone assemblages from Classic and Post-Classic Period sites. Certain technological and morphological characteristics of ground stone objects are indicative of the type of food

Sandweiss, Daniel H.

[34] RESOURCES BEING PROCESSED AT A GIVEN SITE. WITH THIS IN MIND, CLASSIC PERIOD GROUND STONE ASSEMBLAGES ARE EXAMINED AND CONTRASTED WITH PRE-CLASSIC ASSEMBLAGES IN ORDER TO ASSESS THE CORRELATION BETWEEN GROUND STONE TECHNOLOGY/MORPHOLOGY AND CHANGING SUBSISTENCE REGIMES DURING THE TERMINAL CLASSIC PERIOD.

Sandweiss, Daniel H.

[123] RECONSTRUCTED GENETIC RELATIONSHIPS AMONG THE PREHISTORIC GROUPS OF THE CAPE REGION, BAJA CALIFORNIA SUR, MEXICO
Ethnobiological sources mention the existence of different linguistic groups inhabiting the Cape region of Baja California. There exist, however, numerous discrepancies with respect to the number of these groups and the degree of their relatedness. Multivariate analysis of osteometric data from recent archaeological excavations has been carried out in order to characterize the genetic distance among the prehistoric populations of the Cape region. These results and their implications for Baja prehistory are presented.

Sanchez, Julia (California-Los Angeles)

[39] POCKET GOPHER DECIDUOUS TEETH: DISTINGUISHING INTRUSIVE REMAINS FROM ARCHAEOLOGICAL SITES
Immature specimens of Pocket gopher (Thomomys bottae) with deciduous teeth were identified from two prehistoric sites in southern California, Malibu (LAN-264) and an undesignated site in Long Beach (TSN 21). Gophers lose their deciduous teeth when they are three weeks old, too young to leave their burrows. These teeth are quite different from adult teeth and were recognizable to several experienced analysts; some were not aware that gophers had deciduous teeth. At this time, no other reports of deciduous gopher teeth are known from this area. Gophers were used prehistorically for food in this area, and their remains are not considered to be intrusive; these teeth have profound implications for how this faunal assemblage, as well as future analyses from this area are viewed.

Sanchez-Garcia, L. (Centro Regional del Instituto Nacional de Antropolog a e Historia)

[38] THEORETICAL AND COMPUTER-AIDED MODELING OF ANCIENT BUILT ENVIRONMENTS
Analyses of ancient built environments using methods and theories borrowed from environmental psychology and semiotics yield unexpected and illuminating results, including insight into past behavior, in turn generating new hypotheses about the architectural evidence. When coupled with 3-D computer graphics techniques, deductions about the past become more plausible and verifiable; behavior is envisioned in a three-dimensional spatial environment, and the archaeologist experiences complete cultural landscapes more intimately than has been permitted by traditional reliance on drawings and photographs. Thus, computer-aided visualization can alter our fundamental preconceptions about the archaeological record and its limitations.

Sandlin, F. (see Bey, G.) [60]
disarticulated bones and dried Crota foss. The context and condition of the archaeologically recovered rodent remains indicate their use as food, sacrifices, and diagnostic devices in indigenous medical practice—all of the roles these animals play today.

Sarris, Apostolos (Hellenic Air Force)

[19] MAGNETIC SUSCEPTIBILITY SURVEYING IN ANCIENT MANITINEA GREECE

Magnetic susceptibility surveying was part of the different geophysical techniques applied in ancient MANITINEA. The susceptibility "spectrum" was small for all the soil samples collected, most of which consisted of low frequency dependent sediment MD grains. The low frequency susceptibility map was similar to the map of the frequency dependent susceptibility. A trend to high values for both variables was shown at the SW end of the surveyed area, in agreement with the rest of the geophysical maps that indicated an intensive occupation at this part of the city. Heating experiments in oxygen environment confirmed the above results.

Saul, Frank P. (Medical College of Ohio) and Julie Maiber Saul (Lucas County Coroner's Office)

[106] THE PRECLASSIC SKELETONS FROM CUELLO

The Maya site of Cuello, Belize, has yielded the largest Preclassic skeletal series to date. In addition to the 122 individuals we described in Cuello, An Early Maya Community in Belize, (edited by Norman Hammond), excavations in 1990, 1992, and 1993 have brought the total to approximately 180 individuals, with almost one third of these dating to Early/Middle Formative. Although preservation of bones and teeth at Cuello has been recognized as "the worst ever seen, anywhere", intensive reconstruction and analysis has produced useful information on population composition, health status, cultural modifications and burial practices.

Saul, J. (nee Saul), F. (J)

Saunders, Rebecca (Louisiana State)

[101] MODEL BEHAVIOR: EXAMPLES FROM THE MISSION PERIOD IN LA FLORIDA

Beginning in 1668, the Florida Division of Historical Resources sponsored several inspired, but limited, testing programs of Spanish mission sites in northern Florida. The model of mission period settlement structure that emerged from those excavations has tended to be imposed rather than tested on subsequently excavated sites. Previously unreported information on the site settlement plan of the early 17th century San Luis Mission in Columbia County, Florida, is particularly relevant to this point. Additional information from two later 17th century missions on Amelia Island, Florida, is also germane. Taken together, the sites indicate considerable diversity in mission period settlements in both space and time.

Schaefer, Jerry (Brian F. Mooney Associates)

[86] AN UPDATE ON CERAMICS ANALYSIS IN THE COLORADO DESERT

More than a decade of archaeological research in the Colorado Desert has transpired since Michael Waters published his Patayan ware ceramic sequence. These new studies provide both substantiation and revisions to his examination of Malcolm Rogers' ceramic series and regional type collections. Several new types and variants of established types are proposed, based on repeated dates and geographical distributions of similar types. Potential research approaches are also discussed to show how ceramics analysis can address fundamental questions of chronology, cultural affiliation, mobility, and trade in the Colorado Desert and lower Colorado River region.

Schafer, David (Massachusetts, Amherst)

[8] ABOVE OR BELOW GROUND RESEARCH DESIGNS? EXAMINING THE OBISIAN INDUSTRY AT XALTOCAN

Lithic data from extensive surface collections and stratigraphic test pits provide insights into some limitations and benefits of different data gathering methods. The obsidian industry of Xaltocan is examined for patterns and changes over time and through space. Lithic tool production and use are investigated and related to the larger economic and social changes that affected this community.

Scholtz, Randall (UNPOTEC Research) and Clayton G. Lebow (UNPOTEC Research)

[109] ARCHEOLOGICAL LAND-USE SYSTEMS IN NORTH-CENTRAL OREGON

Various models have been proposed to account for the prehistoric transition from mobile to semi-sedentary systems of land use on the Columbia Plateau. This paper examines the utility of those models in the light of Pipeline Expansion Project (PEP) archaeological data from north-central Oregon. The PEP corridor crosses diverse physiographic zones with high site densities and considerable variability in site type and setting. Assemblages recovered from these diverse settings are examined and implications for understanding hunter-gatherer mobility are discussed.

Schambach, Frank (Arkansas Archeological Survey)

[35] A PROBABLE SPIRO ENTRAPMENT IN THE RED RIVER VALLEY IN NORTHEAST TEXAS

There is good circumstantial evidence that a Spiro-related Caddoan site in northeast Texas, was actually an important Red River Valley entrapment operated by long-distance traders from Spiro. These traders were probably mainly interested in exchanging Middle MississippiAN prestige goods with the Caddo for powerful, locally made, bowls of Osage orange or bois d'arc, which they then traded to Plains tribes for buffalo products.

Scheie, Linda (Texas) [Discussant 55]

Schiff, Ann M. (California-Berkeley)

[11] NATIVE/RUSSIAN ENCOUNTERS AT FORT ROSS, CALIFORNIA IN (WORLD-SYSTEMS) PERSPECTIVE

This paper examines the impact of Russian-American Company activities in the early 19th century on Native Californians in the Fort Ross region. Pre and post contact periods will be examined, focusing particularly on exchange and continuity in settlement patterns and subsistence activities as evidenced in the archaeological and ethnohistoric record. A central-based village model will be compared and contrasted to an alternative core/periphery world-systems model.

Schiffer, Michael (Arizona) and James S. Skibo (Illinois State)

[71] A COMPUTER SIMULATION MODEL FOR THE ORIGEN OF "STYLISTIC" VARIATION

One of archaeology's long-standing questions concerns the causes of culture-historical distinctiveness—"style"—among artifact types having apparently identical techno-functions. Recent approaches to this problem, based on social-interaction or symbolic models, have not supplied convincing answers. In this paper, we present another model, arguing that such differences can arise as people arrive at different solutions to practical, activity-related problems in contexts of varying initial and contingent behavioral-material conditions. The maturation of this perspective has awaited the development of principles that connect relationships between technical choices and performance characteristics now being produced by ethnarchaeologists and, especially, experimental archaeology. The behavioral model is illustrated with the clay cooking pot.

Schild, Romuald (Polish Academy of Sciences)

[45] CONTACT BETWEEN THE NORTH PART OF NORTH EUROPEAN PLAIN AND EASTERN SUB-BALTIC BETWEEN 12,000 AND 9,000 B.P.

In the Late Glacial and Early Holocene the North European Plain underwent several profound environmental changes that deeply affected cultural and demographic systems of the time. The most dramatic shift in the cultural system happened in the early Holocene, around 9,600-9,500 B.P. It was expressed by demographic movements, changes in technologies and raw material economies as well as by the shrinkage of the networks of information. A relative stabilization of the system took place at ca. 9,300 B.P.

Schleer, S. (see Lavallois, S.) [35]

Schlanger, Sarah B. (Museum of New Mexico)

[33] PROCESSING, MEALING (SOUTH), AND THE ORGANIZATION OF PREHISTORIC SOCIETY IN THE AMERICAN SOUTHWEST.

The archaeological record of the coevolution of processing technology and agriculture in the prehistoric Southwest contains well-documented trends toward more efficient tool design and increasing amounts of foodstuffs subjected to heavy processing. This paper explores the profound implications of another development at the juncture of technology and society: the construction of new rooms entirely devoted to food processing. These "mealing rooms" come into being when the traditional all-in-one house fissions into a dedicated food processing room and a "kiva" space for nonsecular activities. Their appearance marks a fundamental reorganization of workloads, workspaces, and gender relations.

Schmader, Michael (Open Space Division, City of Albuquerque)

[103] SPATIAL ANALYSIS OF ROCK ART SITES, PETROGLYPH NATIONAL MONUMENT

Spatial analyses have been used to objectively investigate artifact or site distributions. Although rock art site studies assume symbols found at sites are internally related, there have been few attempts to quantify these relationships. Standard spatial statistics (nearest neighbor, K-means) have not been satisfactory. Simple measures, such as the mean, are used to analyze a rock art site will show: (1) some symbol types are found closer together than other symbols, (2) certain symbol categories are found closer to each other than to other types. Thus, symbols are meaningfully arranged at sites and differences within and between sites can be shown through spatial analysis.

Schneider, J. (see Pinto, D.) [86]

Schneider, Joan S. (California-Riverside)

[33] AN ECONOMIC PERSPECTIVE ON THE ORGANIZATION OF PRODUCTION AT ABORIGINAL MILLING-IMPLEMEN TARY QUARRY SITES

The organization of standardized milling stone and pestle production at Antelope Hill, a large sandstone milling-implement quarry on the Gila River in southwestern Arizona, is discussed. Locations and types of
work areas reflect hill topography and accessibility of bedrock. The number of production attempts and failure and success rates are extrapolated from data gathered within sample tracts. Experimental replication allows estimates of energy and time expenditures. The great economic importance of Antelope Hill sandstone tools in Lower Colorado River subsistence systems is suggested in the ethnographic and historical literature. Thin-section petrography supports long-distance transport of Antelope Hill implements.

Schoeninger, Margaret (Wisconsin)

[90] DIETARY RECONSTRUCTION IN THE PREHISTORIC CARBON DESERT: STABLE CARBON AND NITROGEN ISOTOPE ANALYSIS

Samples for stable isotope analysis were taken from thirty-nine human skeletons, seven plants, and twenty animal skeletons from this wetlands area within the Great Basin. There was no partitioning according to site, sex, or age group, but the range of isotope values (6% in nitrogen and over 4% in carbon) indicates that these people ate a variety of foods. Indirect evidence suggests that people had distinctly different diets at various times throughout the occupation of the area although the general lack of temporal associations between individuals used in this study does not permit direct assessment of this possibility. The isotope data do refute a model suggesting that people remained year round in the vicinity of the marsh. Pinon, a non local plant analyzed in this study, was probably not a very important food source.

Schoeninger, Margaret (Wisconsin)

[54] PALEOENVIRONMENT RECONSTRUCTION: CONSTRAINTS ON EARLY HOMINID DIETS

Stable carbon and nitrogen isotope ratios are invaluable probes for reconstructing diets but the food items available must be delineated independently. For early hominids such delineation is limited by the accuracy of paleoenvironmental reconstructions. These have been based on non-primate faunal composition often from areas separate from the hominid fossils, sediment analysis, and temperature estimates from oxygen stable isotope ratios of carbonates mainly from deep sea ocean cores. Another promising method uses the oxygen stable isotope ratios in animal bone phosphate. The advantages over other methods are that the local climate is recorded and the humidity may be estimated in addition to temperature.

Schofman, Edward (Kenyon College) and Patricia A. Urban (Kenyon College)

[29] THOUGHTS ON THE PERIPHERY: THE IDEOLOGICAL CONSEQUENCES OF CORE-PERIPHERY RELATIONS

The archaeological literature on core-periphery relations focuses on trade among distinct polities and the creation of economic dependencies. Generally ignored are the ideological components of intersocietal contacts. Drawing on data from the Late Classic (A.D. 600-950) Naco valley, NW Honduras this paper addresses the question of why and under what conditions peripheral elites adopt ritual systems associated with core rulers and what affects such adoptions have on local political competition.

Schreiber, Katharina J. (California-Santa Barbara)

[36] THE EMERGENCE OF SOCIOPOLITICAL COMPLEXITY IN NASCA, PERU: SETTLEMENT PATTERN EVIDENCE

This poster session presents settlement data from the Nasca region of the south coast of Peru. Maps of settlement distributions are shown for periods beginning in the early horizon and ending with the Inca occupation. It is seen that there is little evidence of political centralization in early Nasca times (EIP 2-4). In Nasca 5 times there was a new trend toward larger sites in newly opened resource zones. In late Nasca (EIP 6-7) population aggregation and political centralization are evidenced for the first time. Finally Nasca society was completely disrupted at about the time that the Wari empire made its appearance.

Schroth, Adella (California-Riverside)

[61] ARCHAEOLOGIC DATING OF THE PINTO POINT TYPE SITES: IMPLICATIONS FOR GREAT BASIN PREHISTORY

The results of radiocarbon determinations and obsidian hydration measures for the two Great Basin Pinto point type sites, the Stahl site at Little Lake and the Pinto Basin sites, are presented. These results are then compared with other determinations throughout the Great Basin and the implications for the prehistory of the region are discussed. The use of the Pinto Basin series and the Little Lake series for placing surface sites in a chronological framework is widespread. The cumulative errors based on the assumed time frames for the occupations of these sites need to be rectified.

Schwab, H. (see Dent, R.) [19]

Schwartz, Glenn M. (Johns Hopkins University)

[73] SPATIAL ANALYSIS OF A THIRD MILLENIUM SYRIAN VILLAGE

The spatial functional organization of the village of Tell al-Ba‘qa‘a level 3 in northeastern Syria, ca. 2600 B.C., excavated almost in its entirety, is examined with the goal of investigating the socio-economic configuration of a small community during the development of early urban and state systems. Patterns in the distribution of architecture, associated installations, and artifacts suggest a dichotomy of social and/or professional groups in an essentially specialized community. The analysis provides a holistic perspective of the activities of an entire community, rather than the usual view obtained from a small sample.

Schauberger, C. (see McGovern, T.) [46]

Scott, Barbara G. (Minnesota)

[64] THE NORTHERN ISLES AND VIKING MIGRATION

There is a growing body of archaeological evidence for the initial Norse contact with the Northern Isles of Scotland, although the historical sources are silent on this period. Using the archaeological material in conjunction with linguistic, literary and historical evidence from the period of the medieval Norse earldom in Orkney can help us to investigate a proto-historic example of migration to and settlement in an already occupied landscape.

Sebastian, Lynne (State Historic Preservation Division, New Mexico)

[55] RELATIONS OF SOCIAL POWER IN CHACOAN SOCIETY

Evolutionary/typological studies of developmental change tend to be ahistorical and atemporal. They examine change along one or more organizational dimensions through cross-cultural comparisons rather than examining change through time in a single historical case. The purpose of such studies is to develop generalizations about culture change; their ability to explain change in any particular case is extremely limited because they do not take into account the historical context and material and social relationships of that case. This paper attempts to account for sociopolitical change in Chacoan society by examining the history and context of relationships of social power in the prehistoric Southwest.

Seddon, Matthew T. (Chicago) and John Janss (Chicago)

[43] RECENT RESEARCH ON THE ORGANIZATION OF AGRICULTURAL PRODUCTION IN THE RIO CATARI BASIN, BOLIVIA

The organization of agricultural production in the Andrean alltoplano has recently become the subject of intense debate. Intensive excavation and survey was carried out in 1995 in the Rio Catari basin of the Bolivian alltoplano with the goal of assessing the relationship between extensive agricultural raised fields and Tiwanaku and post-Tiwanaku societies in this region. The preliminary results of this investigation shed light on historical changes in the organization of raised field systems in the Andrean altiplano.

Seemann, Mark F. (Keni State), Larry Morris, and Gary L. Summers

[60] REEITING PALEOINDIAN TOOLS FROM NOBLES POND, METHODOLOGICAL LESSONS AND PROSPECTS.

Nobles Pond (33ST357) is a large, plow-disturbed early Paleoindian site in northeastern Ohio. A systematic program for logging broken tool fragments anddebitage recovered from the South Field portion of the site resulted in over 300 successful retouchers. This paper will discuss comparatively the methods used in refitting, and will focus particularly on the importance of systematic evaluation of the sample, and on multiple retch trials. The results are presented as they bear on the issues of 10 tool curation, and 2) site structure will be summarized and evaluated.

Sellers, Frederic (Southern Methodist University) and George Frison (Wyoming)

[74] HELL GAP REVISED

The Hell Gap site complex is one of the richest yet least known North American Paleoindian sites. Excavated in the 60's by a team from University of Wyoming and Harvard University, Hell Gap yielded a succession of Paleoindian occupations, going from Goshen to Lusk (including, Folsom, Midland, Agate Basin, Hell Gap, Alta, Cody, and Frederick), that helped establish the Paleoindian chronocultural sequence of the High Plains. This paper re-evaluates the cultural sequence originally described by the excavators through a close examination of the field notes as well as through a lithic analysis.

Semken, Jr., Holmes [Discussed 65]

Senior, Louise (Arizona)

[51] BABIES IN THE WOOD: A DISCUSSION OF INFANT AND CHILD BURIAL PRACTICES

Burials of infants and children are frequently encountered during excavations of domestic architecture. Generally, these finds are thought to be either iconoclastic or particularistic products of ancient cultures. Worldwide differential treatment of infant versus adult remains suggests that these practices are neither random nor especially particularistic. Rather, their differential patterning indicates that infants/children were not frequently accepted as full members of their communities. Near Eastern, Indian, Classical and Southwestern archaeological examples and relevant ethnographic literature on "personhood" are discussed. Archaeology may thus comment on the "Pro-Choice/Pro-Life" controversy since infant (and fetal) life has not been consistently valued until modern times.
Seymour, Deni (Marrick Associates)

[81] BOUNDING ECONOMICALLY COOPERATING GROUPS: THE ORGANIZATIONAL DEVELOPMENT OF A HOBIKAM COMMUNITY

Communities are composed of different types of economically cooperating social units. Using the prehistoric Hobikam as a case study, group boundaries are identified archaeologically on the basis of configurations of intrasite space and in the spatial patterning of structures, artifacts, and features. Cooperating groups are distinguished by the types of activities performed, the size of work groups, and the types and spatial distinction of use-areas. The reconfiguration of socio-economic boundaries and the incipient development of economic inequality are visible through changes in group size and storage capacity, formalization of distinctive residential clusters, proximity to public architecture, and access to valued items.

Shackel, Paul (Harpers Ferry National Historical Park)

[62] TRANSFORMING CRAFT TO INDUSTRY: THE MATERIAL CONSEQUENCES OF NEW SURVEILLANCE TECHNOLOGIES IN NINETEENTH-CENTURY HARPER'S FERRY

The Harpers Ferry armory developed in the first decade of the nineteenth century as a craft-oriented industry. By the late 1820s new surveillance technologies were introduced that affected both factory work and domestic life in an attempt to implement a modern industrial order. Factory layout, town plan redesign, workers' housing, and everyday domestic consumer goods became more orderly, disciplined, and structured. This new industrial order and the implementation of new surveillance technologies did not go uncontested by Harpers Ferry's residents. Various forms of resistance strategies occurred at the factory and domestic levels. By the 1840s the craft-oriented society became subordinate to a system of industrial capitalism.

Shafer, H. (see Breusington, R.) [89]

Shafer, Harry J. (Texas A&M University) [Discussant 103]

Shafer, Harry J. (Texas A&M University) and Robbins L. Breusington (Texas A&M University)

[67] THE PRECERAMIC LITHIC ASSEMBLAGE AT COLHA, BELIZE: OPERATION 4046

The technology and assemblage composition of the Preceramic lithic collection from Operation 4046 is presented. The lithic sample is derived from in situ quarrying of high quality chert. Macro cores, flakes, and blades dominate the assemblage, but some production of bifaces and unifacial implements occurred at the quarry location. Comparisons with similar artifact complexes in northern Belize suggest the Colha assemblage is part of a regional pattern tied to initial settlements of the lowlands by formative, non-pottery using peoples. Technological continuities in the lithic assemblage favor the theory that these people were the ancestors of the ceramic-making Maya.

Shafer, Brian (North Texas) and Karen M. Gardner (Presseit and Associates, Inc.)

[72] "KODAK MOMENTS": POTTERY MOTIFS BY THE MIMBRAS PEOPLE, Depicting human and animal interaction

Much of the information on prehistoric animal use must be inferred from archaeological deposits. The Mimbres-Mogollon of the southwest are known for their elaborate pottery, many vessels of which depict naturalistic motifs. Examination of the more than 6000 Mimbres Archives housed at the Maxwell Museum, University of New Mexico, and other records revealed less than 60 bowls that depict humans or human artifacts, and animals together. Of these vessels, very detailed motifs of hunting (tracking, driving, netting), fishing (weirs, nets, lines), trapping, ceremonies, and domestication are depicted. These vessels represent the Mimbres' own documentation of these activities.

Sharp, Nancy (INRTEC Research)

[83] FAUNAL EXPLOITATION AND LAND-USE PATTERNING ALONG THE PIPELINE CORRIDOR

During the Pipeline Expansion Project, faunal remains were recovered from 220 archaeological sites along a 1000-mile corridor from Canada to central California. Data recovery excavations from 1991 to 1995 yielded over 79,000 faunal specimens from 39 prehistoric sites in Idaho, Washington, Oregon, and California. These archaeological faunas show distinct geographic patterning in assemblage size and diversity, which can be related to predicted regional variation in hunter-gatherer mobility and resource selection.

Sbott, John (New York-Stony Brook)

[84] HUNTING TECHNOLOGY IN THE MIDDLE PALEOLITHIC/MIDDLE STONE AGE: AN INTER-REGIONAL PERSPECTIVE

Pointed stone artifacts from the Levantine Mousterian preserve wear traces and exhibit patterned geographic variation consistent with their having been used as hafted stone spear points. Points are more common in assemblages from the arid interior and southern Levant and less common in assemblages from cooler northern Levant and coastal lowlands. Plausible stone spear points exist in African Middle Stone Age industries, but European evidence is equivocal until early Upper Paleolithic times.

Shott, Michael J. (Northern Iowa)

[85] CONTINUOUS VARIATION IN POINT SIZE AND FORM: EXAMPLES FROM THE AMERICAN MIDWEST

 Projectile points were more than simple functional devices or markers of ethnic affinity. Their size and form were determined, to some extent, by performance requirements like range, accuracy, and delivered energy. As such requirements changed continuously, so too could the size and form of projectiles and their points. This paper interprets continuous variation in Paleo-Indian and Woodland points from the American Midwest from this perspective, suggesting that major technological transition may have occurred more gradually than often thought.

Sheets, Payson (Colorado) and Monica Barnes (Cornell University)

[48] THE MAIZE CYCLE AT CEREN, EL SALVADOR

The Ceren village's sudden burial, 1400 years ago, fortuitously preserved evidence of maize from planting, through storage and processing, to consumption. Fields were ridged and drained, and multiple seeds were planted together. Maize was stored doubled-over in milpas, and in structures. Most metates were elevated on 'barquets'. Maize was consumed in various ways. This paper describes the full cycle, and compares it with archaeological, ethnohistorical, and ethnographic data. Clearly maize was the staple, supplying the majority of calories and contributing to protein and fat needs, yet numerous other domesticated and wild species were cultivated or collected.

Shennan, Stephen J. (Southampton)

[99] THE EMERGENCE OF STRUCTURE IN REGIONAL ARCHAEOLOGICAL DISTRIBUTIONS

Patterning in the distributions of artefact attributes is still largely assumed to be a reflection of other underlying causal factors, such as ecological variation or social boundaries. While these may certainly be relevant in particular situations, they represent special cases of a more general phenomenon, the transmission of cultural information under the influence of the various factors which affect it. Transmission, at least in non-literate contexts, operates at the level of micro-scale inter-individual interactions which can have self-organizing properties at larger spatiotemporal scales. A cellular automaton model is used to explore these issues.

Sheppard, Peter (Auckland), Walter Richard (Otago), and Robin Parker (Auckland)

[6] LITHIC RAW MATERIAL SOURCING IN THE SOUTHERN COOK ISLANDS

Results of a program of research on the sourcing of lithic materials used to manufacture adzes in the Southern Cook Islands is presented. This includes the characterization of stone from Rarotonga, Atiuatui, Atiu, Ma'uke and Mitiaro by thin section petrography and wavelength dispersive XRF and the analysis by similar means of samples taken from the adze collection of the Cook Islands Museum in Rarotonga. The implications of these analyses in respect of prehistoric inter-island voyaging is discussed.

Shick, K. (see Jahmen, B.) [25]

Shifrin, L. (see Ahler, S.J.) [97]

Shima, Izumi (Harvard University) and Adriana Maguia (Catholic University of Peru)


Recent data from survey and excavation in the Lambayeque region of the Peruvian North Coast call for significant revision of long-held views of the Gallinazo culture and its relationship with the contemporaneous Moche based on data from the southern North Coast. The Lambayeque region had a significant Gallinazo occupation including various monumental constructions. It coexisted with the northern Moche polity perhaps into the fifth century A.D. Both polities appear to have been incorporated into a pan-North Coast hegemony established by the southern Moche ear in the sixth century.

Shocondeg, Rasmie (Michigan)

[73] COLONIALISM AND NATIONALISM IN SOUTHEAST ASIAN ARCHAEOLOGY VIEWED THROUGH NATIVE EYES

In Third World Archaeology today, Western Colonialism continues while Native Nationalism is becoming increasingly important. In both cases, the past is used to serve the present. This paper examines the epistemological underpinning of Colonialism and Nationalism and how these affect the nature of archaeological research. It suggests that both Colonialism and Nationalism can lead analysis and interpretation in preconceived directions and that both types of bias should be seriously evaluated. Mainland Southeast Asia provides a good illustration of the problem.

Shott, Michael (Northern Iowa) [Discussant 74]

Shott, Michael J. (Northern Iowa)

[86] CONTINUOUS VARIATION IN POINT SIZE AND FORM: EXAMPLES FROM THE AMERICAN MIDWEST

 Projectile points were more than simple functional devices or markers of ethnic affinity. Their size and form were determined, to some extent, by performance requirements like range, accuracy, and delivered energy. As such requirements changed continuously, so too could the size and form of projectiles and their points. This paper interprets continuous variation in Paleo-Indian and Woodland points from the American Midwest from this perspective, suggesting that major technological transition may have occurred more gradually than often thought.
Smith, Kevin P. and John D. Holland

of a ceramic assemblage from Salado cemeteries in the Tonto Basin. These results suggest that the pots and their placement reflect the social relationships of the deceased within the larger community.

Simen, Brona G. (Massachusetts Historical Commission) [Discussant 5]

Simons, J. (see Dorn, RJ) [103]

Sisk, Caleen (Wintu Tribe) [Forum Participant 95]

Sisney, L. (see Blinnman, E.) [19]

Skibo, J. (see Schiffer, M.) [71]

Skinner, C. (see Hughes, R.) [85]

Skinner, G. (see Pettigrew, R.) [83]

Skourenok, Russell K. (Santa Clara University) [Discussant 101]

Small, David B. (Lehigh University)

[67] PARLOR AND ASSEMBLY: PUBLIC/PRIVATE SPATIAL CHANGE AND THE DYNAMICS OF SOCIAL NEGOTIATION AT POMPEII

The negotiation of social status within a community often integrates many contexts of social interaction, making them mutually sensitive to status seeking. A change in one context can engender proportionate changes in others. Spatial studies offer a unique opportunity to study the specific linked configurations of contexts within identified social strategies and the dynamics of change within these configurations. In Pompeii the introduction of new people changed the public negotiation of social status (new hierarchical seating in public assembly), which in turn engendered the spatial transformation of more private contexts of social negotiation within individual houses.

Smith, Adam (Arizona)

[51] COMMUNICATIVE SPACES

Present approaches to space consider it an analytical category only to the extent that it is reified, directed, and purposeful. This paper argues that the built environment, and the spaces which it defines, communicate meanings and are thus deeply involved in ideological representations and factional negotiations over political, economic, and symbolic power. Central to this type of analysis is a consideration of circulation, architectural, and spatial production. This approach will be illustrated with a discussion of Urantian and Neo-Assyrian communicative spaces.

Smith, Charlotte A. (Archaeofacts)

[67] PREHISPANIC ARCHITECTURE AND SOCIAL ORGANIZATION IN OAXACA

PC-based computer mapping techniques greatly increase our ability to manipulate graphic representations of architectural features that have been recorded archaeologically. Digitized maps readily allow both internal and external comparisons and enhance our ability to combine cognitive and symbolic interpretations of architectural features with traditional structural/functional classifications. With digitized maps, classes of data can be selectively viewed and maps can be readily rescaled. Maps from a 1990 intensive survey in the mountains of Oaxaca, Mexico, show how architecture reflects aspects of social organization and settlement hierarchy. Brief comparisons are made with architectural data from other geographic areas.

Smith, KC (Museum of Florida History)

[52] CAN'T JUDGE A BOOK BY ITS COVER!

Shortly after its organization, the Formal Education Subcommittee of the SAA Public Education Committee determined that criteria were needed for the evaluation of teaching materials used in pre-collegiate archaeology education programs and activities. Subcommittee members developed a series of guidelines that can be applied to existing resource materials, or to resources in the process of being developed, to determine whether fundamental concepts of anthropology and archaeology, basic educational elements, and required curriculum components are included. The composition of these guidelines and examples of their application will be the focus of this presentation, in hopes that archaeologists and educators will derive information useful for their own attempts to select and develop teaching materials.

Smith, Kevin P. (Buffalo Museum of Science) and John D. Holland (Buffalo Museum of Science)

[88] WANDERERS OF THE WETLANDS? THE LATE PLEISTOCENE OCCUPATION OF WESTERN NEW YORK

The Niagara Frontier region of western New York and adjacent Ontario appears to be unexpectedly rich in Paleolindian sites, most of which have only been identified in the past ten years. Data obtained from recent surveys and excavations, coupled with examination of older collections, suggests that Paleolindian

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Siegel, Peter E.

[61] IDEOLOGY AND CULTURE CHANGE: A VIEW FROM THE COMMUNITY

American settlements in lowland South America are physical models of the cosmos. Social behavior, political relationships, and activity organization are structured by how the participants interact within and interpret cosmology. Culture change in the Amazon Basin and the West Indies is rooted in increasingly asymmetrical power relationships and control over ideology. In this paper, I explore linkages between the archaeological record at the community level and ideology to discuss culture change in the West Indies. Anthropological theory, ethnohistoric documents, ethnographic observations, and archaeological data inform this analysis.

Siegel-Causey, D. (see Corbett, D.) [79]

Silverman, Helaine (Illinois-Urbana)

[77] COMPARATIVE PERSPECTIVES ON THE EARLY INTERMEDIATE PERIOD FROM THE SOUTH COAST

Dramatic changes occurred in the valleys of the south coast at the end of the Early Horizon, most notably in Ica, Chincha, and Pisco with the Rio Grande de Nazca lagging far behind in sociopolitical integration and economic organization. The demise of the Chavin interaction sphere created conditions for competitive political growth leading to the caesalpino of the florescent Paracas-Ocujaye, Paracas-Cavernas, Paracas-Necropolis (Topuraj, Nazca), and still poorly known Carmen social formations. Toward the end of the Early Intermediate Period the south coast entered and/or was forced into intensive contact with the expanding Wari state, resulting in new political strategies and cultural reconstructions.

Simmons, Alan (Nevada-Las Vegas)

[23] SURFACE FRAGMENTS, BURIED HIPPOS

In the Old World, surface information frequently is considered inferior to excavation data. Recently, however, surveys with careful surface control have led to substantial inferences of past activities. While this trend is desirable, caution still must be used because correspondence between surface and subsurface materials may be illusory. Examples from Cyprus and Jordan show there is no guarantee that buried deposits can be predicted accurately from surface analysis; therefore, cultural or management conclusions from surface materials can be misleading. The inferential potential of surface materials must be carefully assessed and, as discussed, geoarchaeology can aid in these efforts.

Simmons, Scott (Colorado)

[46] CEREMONIALISM AT THE CEREN SITE, EL SALVADOR: THE EVIDENCE FROM STRUCTURE 12

The archaeological evidence for ceremonialism or ritual behavior is often elusive. Such is not the case at the Cerén site. This paper focuses on how artificial and architectural information on Structure 12 indicate its status as a building with a ritualistic function. The structure contained an unusual assemblage of artifacts uncharacteristic of those found in domestic house structures. Architectural details are also indicative of the special function of the building within the community. This paper presents the evidence for this belief and explores other archaeological and ethnographic information on the relationships among structures in a community and that community's ceremonial system.

Simms, Steven R. (Utah State)

[90] FARMERS AND FORAGERS IN THE GREAT SALT LAKE WETLANDS AT THE FREMONT TO LATE PREHISTORIC TRANSITION

A large archaeological data set, innovative artifact analyses, and the recovery/dating of human skeletal remains of 86 individuals, all from the eastern shores of the Great Salt Lake, Utah, provide context for bioarchaeological studies in this symposium. Interaction with the Northwestern Band of the Shoshoni nation led to state legislation for burial in a vault and support for the bioarchaeological analyses. Archaeology has focused on mobility and adaptive diversity. The period from A.D. 900—1600 features a farmer-forager system of increasing adaptive diversity after A.D. 1000—1100. By A.D. 1350—1400, farming is abandoned or rare. Transgressive lake levels by the early 1600s made the locale uninhabitable.

Simons, A. (see Burton, J.) [42]

Simons, Arleya (Arizona State), John C. Ravesloot (Gila River Indian Community), and James H. Burton (Wisconsin-Madison)

[42] CERAMIC OFFERINGS IN SALADO BURIALS AND PREHISTORIC SOCIAL STATUS

Archaeologists studying prehistoric southwestern burial populations have traditionally assumed that there is a correlation between the number and types of ceramic vessel accompaniments and the social standing or personal wealth of the deceased. This direct correlate is an oversimplification and subjective measure of social differentiation. Alternatively, these vessel accompaniments may represent possessions of the deceased or gifts from relatives and others with social relationships. A compositional analysis was conducted
occupation and processing sites in this region are strongly associated with the rapidly-shifting margins of Late Pleistocene lakes and wetlands. Patterns of Paleoindian settlement distribution, lithic resource utilization, and typology suggest a strong Early Paleoindian occupation and less evidence for a strong Late Paleoindian presence.

Smith, L. (see Nickens, P.) [35]

Smith, Michael E. (State University of New York-Albany) and Cynthia Heath-Smith (State University of New York-Albany)

[10] EXCAVATIONS OF AZTEC HOUSES AT YAUTEPAC, MORELOS, MEXICO

Seven houses plus 12 other contexts were excavated in 1993 at the Late Postclassic urban center of Yautepac, Morelos. This paper describes the excavations and preliminary results of the project. The houses exhibit great architectural variability, from small structures to large palatial compounds. Their spatial distribution does not appear to conform to a model of discrete status districts or barrios. Evidence for craft production is widespread throughout the site (e.g. obsidian cores, figurine molds, spindle whorls), but we did not encounter any dense concentrations suggesting workshops. The Yautepac data have implications for models of Aztec urbanism and socioeconomic organization.

Smyth, Michael P. (Kentucky)

[23] SURFACE ARCHAEOLOGICAL, SITE ORGANIZATION, AND SAYIL: NEW METHODS FOR STUDYING MAYA COMMUNITIES

Few studies of surface archaeology in the Maya Lowlands have been attempted. It is often argued that surface vegetation and soil deposition in lowland tropical environments prohibit the recovery of meaningful surface patterning across site landscapes. Instead, most archaeological investigations have focused on architectural remains to guide excavation strategies. Terminal Classic (A.D. 800-1000) Sayil in northern Yucatan has recently undergone an intensive site-scale systematic surface-collection. Results show that surface survey produces representative archaeological data that can reveal significant insights into the activity organization of Prehispanic Maya communities unattainable by traditional approaches emphasizing architectural mapping and excavation.

Snarskis, Michael J. (Inter-American Institute for Cooperation on Agriculture) [Discussant 52]

Sobolik, Kristin D. (Maine)

[65] DIRECT EVIDENCE FOR THE IMPORTANCE OF SMALL ANIMALS TO PREHISTORIC DIETS: A REVIEW OF COPROLITE STUDIES

Researchers tend to underestimate or ignore the importance of small animals to the prehistoric diet due to the difficulty of separating cultural from noncultural faunal debris excavated from sites. Human coprolite analyses indicate prehistoric dietary consumption of small animals. The large number of coprolites analyzed from North America reveals direct ingestion of small animals and indicates that small animal remains from sites indeed reflect human dietary patterns. The coprolites reveal that reptiles, birds, bats, and a large variety of rodents were an important and prevalent component of the prehistoric diet.

Sollmann, Paul (Larson Anthropological/Archaeological Services) and Paula G. Johnson (Larson Anthropological/Archaeological Services)

[18] AN OVERVIEW OF THE METRO WEST POINT ARCHAEOLOGICAL PROJECT

In February, 1992 cultural deposits were discovered 15 feet below modern sea level at the METRO West Point Sewage Treatment Plant situated on the north side of Discovery Park in Seattle. Washington. Data recovery excavations were conducted in the area immediately to accommodate tight construction schedules. Archaeologists monitoring construction activities over the next year and one-half identified six additional areas with intact hunter-gatherer materials. Distribution patterns of archaeological deposits across the West Point landform are summarized and approaches to construction monitoring, testing, evaluation, and data recovery are reviewed.

Spaulding, W. Geoffrey (Dames and Moore)

[75] TOWARD A COMPREHENSIVE UNDERSTANDING OF POSTGLacial ENVIRONMENTS IN THE SOUTHERN GREAT BASIN

Data accumulated as a result of paleoenvironmental investigations in southern Nevada and adjacent regions have greatly improved our understanding of postglacial environments in the area. These findings include (1) a chronology of activation and senescence of valley-bottom springs that may be regionally applicable, (2) conclusive evidence for an arid "Altithermal," between ca. 7,000 and 5,000 B.P. and (3) physical and biotic evidence for increased precipitation during both the Neoglaciation and the Little Ice Age. Assertions that postglacial climatic change was negligible can be based only on a compliant record, or stem from a disregard of available data.

Stead, J. (see Kolb, M.) [81]

Stafford, C. R., R. L. Richards, and C. M. Anslinger

Snell, James E. (California-Los Angeles and School of American Research)

[93] "KNOW AMERICA FIRST": ARCHAEOLOGY AND IDENTITY IN THE AMERICAN SOUTHWEST DURING THE TERRITORIAL PERIOD

The development of archaeology in the American Southwest was strongly conditioned by the complex sociopolitical environment of the region after 1850. As an ambiguously defined "territory" of the United States, New Mexico in particular presented circumstances unparalleled elsewhere in the nation. These included conflicting federal policies, the intellectual colonialism of large Eastern institutions, and the interests of a small immigrant class seeking legitimacy for its position of dominance over a much larger indigenous population. This paper examines the role of archaeology and archaeologists in this nationalistic and regionalistic social climate and its importance for the history of the discipline.

Snider, Julianne (Illinois State Museum)

[69] CONSERVATION OF SUBFOSSIL VERTEBRATE MATERIAL IN SITU AND BEYOND MEZHIRICH DWELLING #4

Mezirch Dwelling #4 is predominantly subfossil mammoth bone and ivory partially excavated though left in situ. Subfossil bone, not being fully mineralized, is susceptible to environmentally induced stresses. Predominantly bone elements examined include massive and complex, dense compact bone, porous cancellous tissue, extensive, intra-osteal sinuses, ivory, enamel, dentine, and cementum. The character and composition of the deposits combined with the conservation materials and facilities available in Ukraine led to some interesting challenges. Elements remaining semi-in situ have accumulated a patina of dirt obscuring exposed surfaces and what archaeologically and taphonomic information those surfaces may hold. Conservation of these subfossils will allow examination of presently unexplored surfaces and provide new information.

Snow, Elizabeth (Department of Canadian Heritage)


Since 1991, a new paradigm has emerged in Canada, at least at the federal level, for the protection and management of archaeological heritage. The new policy environment is requiring federal archaeological resource managers to adopt new strategies in the face of increased Aboriginal involvement, stakeholder activism, budget cutbacks, and a new legal framework emerging in Aboriginal claims legislation. Strategies for repositioning archaeological resources within a continuum of cultural and heritage considerations are discussed.

Snow, Susan (Iowa)

[48] CLOUDS, STARS AND CONSTRUCTED IMAGES IN THE NEW WORLD TROPICS

This paper will examine the interrelationship between meteorological and astronomical phenomena in the cosmology of cultures within the New World Tropics. Specifically, it will look at how related images and clusters of images are constructed based on the symbolic interpretation of the different phenomena. Some of the interrelationships are based on scientific data while others are based on the symbolic interpretation of the different cultures or a combination of these ideas. The variability of the clusters of constructed images between different cultures within the New World Tropics will be summarized and discussed in light of the historical relationships between these cultures.

Snyder, D. (see Mansfield, J.) [102]

Snyder, H. (see Lillicott, K.) [91]

Soffer, O. (see Advocado, J.) [69]

Soffer, Olga (Illinois) and N.L. Kornietz (Ukrainian Academy of Sciences)

[69] MEZIRICH CA. 15,000 B.P.

Mezirch is latest Upper Paleolithic site with mammoth-bone dwellings to have been found on the East European Plain. Previous research, focused on the excavation of cultural features, showed the presence of four round or oval mammoth-bone dwellings (represented by remains of more than 150 individuals) surrounded by pits, hearths, and interior and exterior work areas. Our current work on Dwelling #4 and its environs is directed towards understanding the human use of the site, including the use or deposition types of pits. The two types of pits found at the site to date suggest the use of pits to store meat as well as for garbage dumping.

Stafford, C. Russell (Indiana State), Ronald L. Richards (Indiana State Museum), and C. Michael Anslinger (Indiana State)

[97] A VIEW OF MIDDLE ARCHAIC FORAGING FROM AN UPLAND BASE CAMP/CEMETERY IN SOUTHWESTERN IOWA

Reduced mobility during the Middle Archaic (after 7000 B.P.) in the midcontinental U.S. has often been linked to an increased use of resource-rich habitats in major river valleys. The Bluegrass site, a base camp and cemetery occupied between 5300 and 5000 B.P., is an upland lacustrine plain setting in southwestern
Stokes, Robert

spectroscopic analysis was used to determine the OH concentration of obsidian blades identified through x-ray fluorescence analysis as originating from the Pachuca source. Results of the IR analysis documented a small but significant variation in OH concentration. The chronometric obsidian dates from ten radiocarbon dated contexts showed good agreement with the 

Stevenson, Joe (Washington State)

[9] PRELIMINARY ARCHAEOLOGICAL INVESTIGATION OF A CENTRAL AFRICAN TROPICAL FOREST CAVE: MBUYA RAPIDS CAVE, CENTRAL AFRICAN REPUBLIC

An archaeological survey conducted in the Central African Republic's tropical forest, near the Lobaye River, discovered several caves. These caves were tested for archaeological significance. One of these caves, the Mbuya Rapids Cave (Latitude North three degrees, forty-six hours, zero minutes, Longitude East seventeen degrees, fifty-one hours, nine point six minutes) provided a substantial number of artifacts, quantities of charcoal and well preserved faunal remains. These artifacts are thought to represent at least three separate periods of human occupation, including an Iron Age occupation, a ceramic/ lithic occupation and a pre-ceramic/lithic occupation.

Stewart, Andrew (Royal Ontario Museum)

[104] EFFECT OF FOOD SHORTAGES ON SETTLEMENT PATTERNS AMONG THE CARIBOU INUIT IN THE CANADIAN ARCTIC

Among interior-dwelling Caribou Inuit during the 20th century, communal caribou hunting remained a primary focus of subsistence and settlement organization despite an increase in annual shortages of caribou. Evidence for smaller, more loosely organized fall aggregation sites, less reoccupation of sites, and changes in spatial association among hunting-related features suggest that regular seasonal aggregations declined in favor of smaller camps. This conclusion accords with the prediction, based on theory drawn from behavioral ecology, that independent foraging, involving greater variance in subsistence outcome, replace aggregated settlement and communal foraging in the context of annual subsistence shortages.

Stewart, J. (see Adams, K.) [19]

Stinner, M. (see Kubn, S.) [2]

Stinner, Mary C. (Loyola-Chicago) Stephen Weiner (Weizmann Institute of Science), Ofer Bar-Yosef (Harvard University), and Steven L. Kubn (Loyola-Chicago)

[19] DIFFERENTIAL BURNING, RECRYSTALLIZATION, AND FRAGMENTATION OF ARCHAEOLOGICAL BONE

The poster presents research on the conditions under which progressive levels of burning may occur on archaeological bone and how burning changes bones' susceptibility to fragmentation. In experimental fires, bones buried up to 6 cm below firebeds were carbonized, but calcination occurred only with direct exposure to coals. Analysis of specimens by infrared spectroscopy reveals the changes that accompany macroscopic transformations. Recrystallization greatly affects, for example, the potential durability of fire-altered bone, especially in the calcined case. These findings have implications for the spatial associations of burned material and the archaeological visibility of some types of burning damage overall.

Stokes, Anne (Florida) and William F. Keegan (Florida Museum of Natural History)

[54] STABLE ISOTOPES VERSUS ENVIRONMENTAL ARCHAEOLOGY IN RECONSTRUCTING WEST INDIAN DIET

This study addresses the discrepancies obtained from results of environmental archaeological studies and stable isotope studies of prehistoric human diet. Both human bone collagen, which reflects the origin of the diet, and human bone carbonate from apatite, which reflects the origin of all foods in the diet, were analyzed for individuals from several sites in the West Indies. Collagen values indicate that a majority of the protein in the diet was derived from terrestrial sources. However, the carbonate values indicate that a large proportion of the diet was obtained from C₃ plant food.

Stokes, Robert (Eastern New Mexico University)


This paper describes the relationship between site location and landform type in the Sapillo Valley, southwestern New Mexico. The Sapillo Valley is located adjacent to the Mimbres Valley. A generalized Mimbres-Mogollon regional settlement pattern has been established that specifies a relationship between site location and landform type. This model is based on site location data through time from the Mimbres Valley. The Sapillo data is used in terms of the generalized Mimbres-Mogollon settlement model. The conclusion of this assessment is that: very coarsely, the generalized model fits the Sapillo Valley survey data, although significant refinements are suggested.
Stone, Glenn (Columbia), T. J. Wilkinson (Chicago), and M. J. Mortimore (African Drylands Research) [9] REFUSE SCATTER AND AGRICULTURAL INTENSIFICATION: AN ETHNOARCHAEOLOGICAL EXAMPLE FROM KANO, NIGERIA

A promising indicator of the location and degree of ancient agricultural intensification are artifact scatters around towns. Wilkinson proposes that urban detritus was incorporated in organic refuse brought from towns as fertilizer. This very process is described for Kano, a Nigerian city surrounded by highly intensive farming. Goat and sheep dung, collected from Kano streets along with refuse, is carried by donkey-cart to farms where it is sold. The loads are then sorted by farmers, leaving distinctive rings of urban refuse in the countryside. The density of urban refuse declines with distance from Kano.

Stone, Tammy (Colorado-Denver) [Discussant 33]

Stone, Tammy (Colorado-Denver) [66] SHIFTS IN RESOURCE PROCUREMENT AND REGIONAL ORGANIZATION DURING THE ARCHIPELAGIC PERIOD IN THE HOGBACK VALLEY, COLORADO

The Crescent Rockshelter (75JF148) is located in the Hogback Valley, an intermontane zone west of Denver, Colorado. The site contains over two meters of deposits representing approximately 6000 years of deposition, beginning with the Late Paleoindian-Early Archaic transition. This paper will discuss the chipped stone material recovered from deep stratigraphic units with regards to changes in resource procurement strategies. This study will aid in understanding the changes in regional organization patterns that were precipitated by changes in mobility, subsistence patterns, and demographics in the area over the 6000 years of occupation of the site.

Storch, Peter L. (Royal Ontario Museum), P. Jutli (Laurentian University, Sudbury), T. Anderson (Geological Survey of Canada, Ottawa), P. Barnett (Ontario Geological Survey, Sudbury), and W. Mabuya (York University, Toronto) [74] IS THERE A CLOVIS COMPONENT AT THE SHEGUAIANDAH SITE, ONTARIO—NEW GEOARCHAEOLOGICAL EVIDENCE

The Sheguaiandah site on Manitoulin Island, Ontario, was discovered and excavated in the early 1950s by Thomas Lee and interpreted to contain two strata of mid Wisconsinan glacial till with incorporated artifacts representing human occupation older than 30,000 years. Recent multidisciplinary studies on the site, the first conducted since Lee's work, indicate that the alleged till is probably re-worked beach deposits. The Pleistocene stratigraphy of the region and the elevation of the site suggest that these deposits are of postglacial age and that the earliest human occupation occurred ca. 9500 years ago by Late Paleoindian peoples.

Storey, Rebecca (Houston) [106] CHILDREN OF PRIVILEGE AND STRESS IN LATE CLASSIC COPAN

Oh-h is a Late Classic elite compound at Copan, Honduras. The skeletal population included 122 subadults. Their age distribution of deaths has high proportions from ages 1-9. If this pattern reflects mortality rates, there should be corroborating information from palaeopathological indicators. Enamel defects in the deciduous and permanent dentitions reveal that physiological stress that disturbs normal growth is very common. The ages at which stress occurred and how these relate to ages at death will be presented. The various implications of these defects for characterizing child health among the Copan elite before the Classic Maya Collapse will be discussed.

Stuhldreher, Karen (Trinity University) [15] PATTERNS OF PRODUCTION AND EXCHANGE VIEWED FROM THE COLONCIL HILLS OF SOUTHWEST ECUADOR

New research in a previously unexplored region of Ecuador reveals patterns of community craft specialization and inter-regional exchange during two prehistoric periods. Interpretations are based on recent excavations in the dry tropical forest of the Coloncils Hills, about 40 km inland from the coast. An early (c. 2000 B.C.) Chiriqui camp (100 x 100 m) was the largest structure excavated, and a squares and circular elements for the manufacture of groundstones is described; and for the late prehistoric period (c. 1000 to 500 B.P.), large Manteño sites for the production of domestic pottery are described.

Strand, Jennifer G. (Arizona) [37] A PRELIMINARY STUDY OF THE POST-PLEISTOCENE DISTRIBUTION OF ABERT'S SQUIRREL IN THE SOUTHWESTERN UNITED STATES AND THE ARCHAEOLOGICAL IMPLICATIONS

Recently it has been proposed that post-Pleistocene dispersal played an important role in the modern distribution of ponderosa pine and Albert's squirrel. Archeological site reports and collections from the northern region of Albert's distribution are examined to determine if the proposed dispersal is viable. To establish historical distribution patterns, elements from modern Sciuromy were examined, and the Willcox test performed. Site records and collections were used to determine their presence geographically and chronologically. The direction of environmental change indicated may have modified prehistoric subsistence choices.

Stroess, Lawrence (New Mexico) [45] THE ARCHAEOLOGY OF THE PLEISTOCENE-HOLOCENE TRANSITION IN SW EUROPE

Sw Europe saw great interregional differences in human responses to the environmental changes of the period between 11,800-ka B.P. In some regions major climatic, vegetative and faunal disruptions led to abrupt, significant changes in settlement-subistence systems. But in Iberia subsistence intensification (including both overall diversification and situational specialization, best shown in Canaveri) began early (Upper Pleniglacial and Tardiglacial) and climatic fluctuations after 16 ka B.P. were relatively attenuated (especially in S. Spain and Portugal), so that adaptive changes were gradual. In S. France general specialization in herb ungulate hunting (e.g. reindeer) and open vegetation conditions ended abruptly, with marked consequences for humans.

Strange, Melanie J. (Minerals Management Service) [43] SYNTHESIS OF LATE WISCONSINIAN RELATIVE SEA LEVEL DATA FOR NORTH AMERICA: THE CHANGING SHAPE OF THE PREHISTORIC LANDMASS

The eustatic fluctuations and isotatic adjustments caused by the building and waning of the late Wisconsinan glaciers resulted in a continual shifting of the extent of the North American lands below sea level. Questions of prehistoric human migrations, adaptations and subsistence strategies can hardly be addressed without considering the total extent of the prehistoric landmass. This paper includes a review of published relative sea level curves for North America for the period 13,000 B.P. to present. These curves are used to define the changing coastline of the North American landmass from 13,000 B.P. to present. The effect of this bias on the archaeological record will be discussed.

Strong, D. (see Hiltun, M.) [69]

Stuart, Glen (Arizona State) and Suzanne K. Fish (Arizona) [98] POLLEN PATTERNS AND REGIONAL SUBSISTENCE IN THE TONTO BASIN

Archaeological pollen of cultivated and wild resources exhibits strong horizontal and topographic patterning across the Tonto Basin in Central Arizona. The data set consists of more than 100 samples that are well distributed over time, space, environmental zones and site types. Geographic analysis of results at this scale represents new methodological challenges in the archaeological palynology of the Southwest. Contextual information is used to evaluate the role of environmental versus behavioral factors in basin-wide patterns, such as the concentration of many resource pollen types in valley bottom sites. Conclusions provide an economic backdrop for processes of aggregation.

Sulioan, A. (see Tolonen, A.) [23]

Summers, G. (see Seemans, M.J.) [98]

Sutton, Mark Q. (Colorado State-Bakersfield) [55] RODENT UTILIZATION IN THE GREAT BASIN: ETHNOGRAPHIC AND ARCHAEOLOGICAL PERSPECTIVES

Current views of Great Basin cultural ecology are heavily influenced by the general anthropological bias on the importance of large game. As this perspective evolves through diminishing ethnocentrism and advances in archaeological methods and analyses, it is becoming clear that small animals formed a very significant aspect of the aboriginal diet in the Great Basin (and elsewhere). A review of the ethnographic and archaeological data is presented and it is argued that rodent use was important throughout the human occupation of the Great Basin.

Sweaty, Tracy (Colorado) [51] ADVERSE EFFECTS OF A TRADITIONAL ARCHAEOLOGICAL PERSPECTIVE ON PREHISTORIC CONSTRUCTIONS OF GENDER AND THE POTENTIAL FOR RESOLUTION

Archaeology developed within an historical context: Researchers using traditional categories have unintentionally biased the representations of prehistoric peoples by overestimating the roles of male members while understating the role of female members. This approach to archaeological information reflects traditional, historically constructed "ideals", and cannot be considered applicable to all prehistoric cultures. I use the case study, "The Ceren Site" by Payson D. Sheets, to demonstrate the ways this perspective affects archaeological representations of gender. To conclude, I show that the abandonment of this practice is not a problem for intergenerational bias, but can be replaced by a more balanced perspective.

Stooney, Maria T. K. (Hawaii-Manoa), Patty J. Conte (State of Hawaii Historic Preservation Division), and Michael J. Kolig (State of Hawaii Historic Preservation Division) [100] ROLES AND REFLECTIONS: MONUMENTAL ARCHITECTURE AND EXPLANATORY THEORY IN HAWAII

The ongoing debate concerning the social role of monumental architecture in Hawaiian society is explored together with concurrent attempts to employ scientific or evolutionary theory in the study of ritual land-
scapes. Archaeologists have traditionally used monuments as indicators of hegemony and view them as expressions of socio-political complexity. They also represent an important link between the past and present. An environmentally based model to explain the presence and persistence of large-scale structures across the archipelago is examined using alternative histories derived from ethnohistoric sources.

Swink, C. (see Blinnman, E.) [19]

Szuter, Christine (Arizona) [65] WOMAN THE HUNTER

The role of women and children as hunters in the prehistoric record has been overlooked for several reasons. Hunting is often narrowly defined as the actual killing of large game. The importance and significance of hunting small game, therefore, are diminished in discussions of subsistence strategies. Hunting involves more than killing the animal. The supportive activities associated with the hunt, for example, making nets, working a drive, processing the animal, often go unnoticed. This paper presents arguments on the role of women and children in hunting small game in the prehistoric and ethnographic record.

Taborn, Yvette (Université de Paris I) and Monique Olivier (Université de Paris I) [16] LITHIC AND SHELL RAW MATERIAL ACQUISITION AT ETIOLLES AND COMPARISON WITH OTHER GROUPS

The lithic material acquisition system at Etioles (Essonne, France) is marked by the near presence of abundant and exceptional flint beds. The limits of the territory visited by the Magdalenian populations at Etioles, as well as their movements in this area, can be determined according to the fossil shells they have gathered and also the lithic tools that they have taken with them. Etioles seems to belong to a larger network of Magdalenian period mobility in the Paris Basin.

Tainter, Joseph (USDA Forest Service) [Discussant 23]

Tankersley, Kenneth (SUNY-Brockport) [74] 0221.0, 51—CLOVIS MASTICS: A STICKY SUBJECT

Mastics have been found on the haft element of blunted projectile points from a number of Clovis sites in Oregon, Utah, Wyoming. Chemical analysis and high magnification microscopy have identified several compounds on these artifacts including an amber-like substance, pitch (plant resin), and iron oxide (red ochre). Similar compounds have been identified on the haft elements of Early Paleoindian stone tools and ivory objects in Eastern North America. AMS age determinations on carbon extracted from these artifacts may provide a direct means of chronometrically dating the Eastern Fluted Point Complex.

Tapia-Recillas, Horacio (Universidad Autonoma Metropolitana-Iztapalapa) and Emily McClellan de Tapia (Universidad Autonoma Metropolitana de Mexico) [10] NEW APPROACHES TO THE STUDY OF ENVIRONMENTAL FACTORS IN REGIONAL SETTLEMENT PATTERNS IN THE TEOTIHUACAN VALLEY, MEXICO

Ecological factors have long been a topic of interest insofar as development and decline of Teotihuacan are concerned. Many of the hypotheses formulated on the basis of intensive survey in the valley surrounding the urban center can be re-examined in the light of new data and new techniques. Soil profiles in the region are studied using GIS techniques and other mathematical approaches, together with new ¹³C determinations in order to better understand the dynamics of geomorphological changes in relation to prehistoric human activities.

Taube, K. (see Fedick, S.) [5]


This study examines the important but little studied Early Classic megalithic style of the northern lowlands. Although best known for Yucatan sites of Ake and Izamal, this paper documents the occurrence of this megalithic style far to the east, at the sites of Naranjal and Tres Lagunas. The newly documented presence of the megalithic style in northwestern Quintana Roo not only reveals its broad distribution, but also reaffirms and amplifies its distinctive architectural traits. The many striking architectural features shared between the megalithic sites of Quintana Roo and Yucatan suggest that there was considerable interaction across the northern peninsula.

Taylor, R.E. (California-Riverside) and Geoffrey Cannar (Andover Foundation), and Richard S. McNelis (Andover Foundation) [97] CRITICAL EVALUATION OF THE RADIOCARBON CHRONOLOGY AT PENDUJO CAVE, NEW MEXICO

More than 50 radiocarbon determinations on largely wood and charcoal from a stratified cave deposit at Pendejo Cave, New Mexico indicate that the age of the sediments ranges from essentially modern (350

R.C. B.P.) to at least 55,000 years (greater than 55,000 R.C. B.P.). A critical evaluation of the radiocarbon evidence in light of geomorphological data will be presented. Also, the results of direct radiocarbon determinations on materials with unambiguous human attribution from levels currently dated by associated charcoal/wood radiocarbon determinations in excess of 15,000 R.C. B.P. will be presented.

Terrell, John (Field Museum of Natural History) [79] THE POSTPONED AGENDA: ARCHAEOLOGY AND SCIENCE IN THE 21ST CENTURY

As later reported in Science, the Wenner-Gren Smithsonian Conference on Human Biogeography was held exactly twenty years ago in conjunction with the 1974 SAA meetings in Washington, D.C. The conference surveyed the application of modern procedures, concepts, and theoretical developments in population biology and biogeography to the archaeological and anthropological study of human populations. Subsequent reactions within anthropology against sociobiology and against science postponed the research agenda of human biogeography. The research achievements of the Field Museum's 1993-94 A.B. Lewis Expedition to the North Coast of New Guinea illustrate that it is time to "come on home" to science as a way of looking at the world.

Thacker, Paul (Southern Methodist University) [16] RAW MATERIAL PROCUREMENT, LITHIC TECHNOLOGY, AND SETTLEMENT PATTERNS: APPLYING MODELS OF HUNTER-GATHERER SYSTEMS TO THE UPPER PALEOLITHIC OF PERTUGAL

Lithic technology can be fully explained only within the broader context of hunter-gatherer subsistence systems. This paper tests numerous middle-range expectations regarding mobility and lithic technology using data from Gravettian and Magdalenian periods in eastern Portuguese Extremadura. Current models of hunter-gatherer systems fail to encompass variability in these lithic assemblages. Explanations of change must account for the interrelationships of raw material selection and procurement with mobility and technology. A preliminary attempt to expand models of lithic economy and respective linking arguments is undertaken.

Thomas, David Hurst (American Museum of Natural History) [101] NATIVE AMERICAN ARCHAEOLOGY AT MISSION SANTA CATALINA DE GUALE, GEORGIA

This paper discusses the latest iteration of our fifteen year-long project at Mission Santa Catalina de Gual (ca. 1566-1680) on St. Catherines Island, Georgia. Using a combination of regional randomized sampling and remote sensing, archaeologists from the American Museum of Natural History discovered this site in 1981; for the next dozen years, we concentrated upon the central Hispanic mission compound, particularly the church, cemetery, kitchen, and convento. Three years ago, we launched a new program of geophysical prospection and correlative limited excavation to investigate the Guale Indian pueblo at Santa Catalina. We believe that, thoughtfully utilized, such low-impact approaches both conserve archaeological resources and permit archaeologists to explore in situ patterns at a scale previously unachievable through conventional excavation techniques.

Thompson, Robert G. (Minnesota-Minneapolis) and Susan C. Mulbolland (Minnesota-Duluth) [25] OPAL PHYTOLITH ANALYSIS PROVIDES A METHOD FOR TRACING THE USE OF POTTERY VESSELS TO PREPARE CORN

Food residues recovered from prehistoric ceramics directly reflect the foods cooked in the pottery. Opal phytoliths extracted from food residues provide an assemblage reflecting the plants cooked in a pot. Using the method developed by Mulbolland in a study of sediments at the Big Hidatsa site, the assemblage of phytoliths representing corn cob chaff and cob fragments incorporated into food cooked in pottery was recognized at the Shea sites (32CS101). The utility of this method of tracing crop use was confirmed on food residues from Peru, which were also shown to contain corn by carbon isotope analysis.

Todd, Laurence (Colorado State) [74] QUARRIES, COMMUNAL KILNS, AND MULTI-ANIMAL MASS MORTALITIES: INTERDISCIPLINARY STUDIES AND INTERPRETATIONS OF BISON BONEBEDS

Paleoindian archaeology in western North America has relied heavily on sites where stone tools are associated with large animal bones. For nearly 50 years, these bonebeds were interpreted as either (1) quarries for recovery of extinct animals and Paleoindian artifacts (bonebeds as quarries), or (2) fossilized instances of human behavior (bonebeds as artifacts). Recent work emphasizing an interdisciplinary/taphonomic approach demonstrates that neither perspective is appropriate for interpreting human hunting and processing activities. Multi-animal bonebeds contain a complex and diverse paleoecological data set and the human actions that commonly were the interpretative focus (killing, butchering, processing) are seldom the primary cause of documented archaeological patterns.
Tolonen, Anthony (Cincinnati) and Alan Sullivan (Cincinnati)

DIVERSITY MEASURES AND SURFACE ASSEMBLAGES

Because some measures of assemblage diversity, such as evenness, are considered unreliable, richness has become increasingly popular in diversity studies. However, critics cite a strong positive correlation between type variety and sample size as evidence that richness measures are flawed, thereby affecting the validity of richness-based inferences. If true, such a situation would affect intersite comparisons of assemblage diversity that rely upon type inventories—the basis of richness calculations. Surface archaeological data from the Grand Canyon are used to evaluate these viewpoints demonstrating, in the process, that such data can contribute to the development of methodology and regional prehistory.

Tores, J. (see Pritchard-Parker, M.) [35]

Toth, N. (see Jabren, H.) [25]

Toth, Nicholas (Indiana)

DECIPIERING THE EARLY STONE AGE: SEARCHING FOR ACTUALIST ROSETTA STONES

The archaeological of the Early Stone Age provides important clues pertaining to the behavioral and biological evolution of Pleo-Pleistocene hominids. This paper examines various avenues of inquiry into our understanding of the Early Stone Age, including the analysis and comparison of assemblages, actualistic experiments (experimental archaeology, primatology, ethnoarchaeology, geoarchaeology), and palaeo-neurological studies. Based upon such studies, a more realistic picture of the nature and complexity of Early Stone Age hominids is made possible, and new directions for future archaeological research are presented.

Tourtellot, G. (see Hammond, N.) [60]

Towner, Ronald H. (Arizona)

BIG BEAD MESA (LA 15251) IN REGIONAL PERSPECTIVE

Big Bad Mesa (LA 15251) is one of the most significant sites in the history of Navajo archaeology. Pioneering work by Keur (1941) placed the site in temporal perspective, but her research has never been augmented by additional studies. Recent tree-ring and ceramic analyses confirm the temporal and cultural site affiliation. Additional analyses indicate that, although outside the Navajo homeland of Dinétah, Big Bad Mesa was part of a larger 18th century Navajo community of defensive habitations. Similar sites are spread throughout the Rio Puerco Valley and belove a large Navajo community unassociated with the contemporary Navajo expansion to the west.

Triebeln, Daniela (Freie Universität Berlin)

WHITE MOUNTAIN REDWARE: AN EXOTIC TRADE ITEM OR A LOCAL COMMODITY?

PERSPECTIVES FROM THE GRASSHOPPER REGION, ARIZONA

White Mountain Redware, a decorated pottery ware from the southern Colorado Plateau, has been used frequently to reconstruct socio-political and socio-economic structures and to evaluate trade routes and exchange patterns in the Southwest. It becomes a prominent decorated ware in the Grasshopper Region during the aggregation phase of the 14th century. Neutron-activation analysis on a large sample of reconstructible vessels and sherds from Grasshopper Pueblo and contemporary sites of the region sheds new light on the production and circulation of White Mountain Redware in the east-central Arizona mountains during the 14th century.

Tringabom, Ruth (California-Berkeley)

VISUAL IMAGES OF ARCHEOLOGICAL ARCHITECTURE

The ambiguity of the archaeological record and the multiplicity of its interpretations have come under sharp and critical examination in the recent archaeological practice of the elite academic world. This paper explores the popularization of these concepts through the powerful medium of visual imagery. It focuses on computer-aided constructions, juxtapositions, and "virtual realities" of the archaeological record of prehistoric architecture in Europe.

Trunser, James (Washington)

A MINERALOGICAL CHARACTERIZATION OF MIDDLE ATLANTIC STEATITE QUARRIES

USING ENERGY DISPERSIVE SPECTROSCOPY (EDS)

Energy dispersive spectroscopy (EDS) has been used to assess the mineralogy of prehistoric steatite quarries in the Middle Atlantic region. EDS provides a fast method to identify mineralogical composition with a high degree of accuracy and precision. Mineralogical identification, when used in combination with chemical analyses, increases the likelihood that these quarries can be individually characterized and that artifacts can be attributed to them.

Turner, G. (see Regan, M.) [98]

Valdez, Jr., Fred

Suzpin, Solveig (Texas-Austin) and H. B. Elmgren, Jr. (Texas-Austin)

ROCK ART AS PROPAGANDA: SPANISH AND NATIVE AMERICAN PICTOGRAPHS IN THE BOZLON DE MAPIMI, MEXICO

For three centuries after Spanish expansion into northern Mexico, the Bozlon de Mapimi served as a refuge for displaced Native American groups who systematically raided the ranches and settled communities of Chihuahua, Chihuahua, and their southern neighbors. After initial explorations proved the intractability of the landscape, Spanish expeditions were largely retaliatory and punitive attempts to dislocate the hostile peoples from their mountain hideouts. This conflict is perpetuated in native pictographs and Spanish inscriptions, both intended to advise the opposition of their presence in the region. Thus, rock art that once served as propaganda now identifies camps and routes through the desert from waterhole to waterhole.

Tremace, M. (see Byram, R.) [35]

Tybot, Robert H. (Harvard University)

NEOLITHISATION IN THE WESTERN MEDITERRANEAN ISLANDS

The islands of Sardinia, Corsica, and Sicily played a central role both geographically and economically in the neolithisation of the western Mediterranean. New chronological and other data concerning the Mesolithic settlement of Sardinia and Corsica, the early use of ceramics, the exploitation of obsidian and greenstone, and the appearance of domesticated plants and animals suggest that the neolithisation process was neither spatially nor temporally uniform and that a generic "neolithic package" derived from the Near East was not simply "adopted." A more complex explanatory model based on indigenous adaptations and developments is proposed for this important transition in Mediterranean prehistory.

Urban, P. (see Bell, E.) [19]

Urban, P. (see Schortmann, E.) [29]

Urban, Patricia (Kenyon College)

COUNTING HEADS: LATE CLASSIC DEMOGRAPHY OF THE NACO VALLEY, NW HONDURAS

Recent discussion of prehistoric demography for the Classic Maya area has highlighted a series of deranging factors which render difficult the assessment of prehistoric population size and change through time. This paper examines whether such factors—non-contemporaneity of structures assigned to phases; reuse and abandonment of structures; functional differentiation among buildings; and hidden/visible-to-survey structures, among others—are operative in a non-Maya portion of SE Mesoamerica. Also examined are the problems produced by differences in wealth, power, and site location. Finally, estimates for Late Classic population and a discussion of its distribution are presented.

Urcid, J. (see Bray, T.) [19]

Urcid, Javier (Smithsonian Institution)

MOUND J AT MONTE ALBAN AND ZAPOTEC POLITICAL GEOGRAPHY DURING PERIOD I (200 B.C.-A.D. 200)

This paper outlines the complex archaeological history of Mound J at Monte Albán. These data are presented as background in order to discuss the manner in which the inscribed "conquest slabs" were originally displayed. Methodological shortcomings in previous interpretations of the epigraphy on the slabs are considered. An alternative approach to the study of Zapotec hieroglyphic place names is presented.

Uruñuela, G. (see Plunket, P.) [30]

Uruñuela, Gabriela (Universidad de las Americas), Patricia Plunkett (Universidad de las Americas), Gilda Hernandez (Universidad de las Americas), and Juan Albaidero (Universidad de las Americas)

BI-COONAL GOD FIGURINES AND THE CODICES OF THE BORGIA GROUP

Archaeological explorations in Cholula, Puebla, often encounter bi-conical mold-made figurines of different deities. An analysis of a cache of this type of artifact found during rescue work on the campus of the University of the Americas suggests that these figurines provide an important link between Cholula and the codices of the Borgia Group.

Valdez, J. (see Demorest, A.) [76]

Valdez, F. (see Plunket, M.) [76]

Valdez, F. (see Reese-Taylor, K.) [44]

Valdez, Jr., Fred (Texas-Austin)

THE EARLIEST MAYA IN CURRENT CONTEXT

Material remains of the "earliest Maya" are currently dated to ca. 1000 B.C. Recent investigations in Belize have shown human presence in the lowlands back to the Paleo-Indian era with evidence for a widespread
Archaic. Especially interesting is a "pre-ceramic" occupation at the site of Colha where proto-Maya developments may be in evidence. Data from Belize and surrounding areas are used to present a model for the preservation of development(s) of early occupation and settled life in the Maya lowlands.

Valentin, B. (see Julien, M.) [16]

Vandenbergool, R. (see Holmes, C.) [30]

van der Merwe, Nikolaas J. (Harvard University) [54] ISOTOPIC BONE CHEMISTRY AND THE DIETS OF THE MAYA

A carbon and nitrogen isotopic study of human and animal bone from Cuello, Belize provides a window on pre-Classical Maya diet and environment. Maize was an important but not overwhelming staple in the pre-Classic; the diet was varied, and included wild animal protein. Data from other Maya sites show that maize increased in dietary importance through the pre-Classic and Early Classic (presumably due to higher-yield varieties), then declined steadily to a nadir in the Terminal Classic (presumably due to population increases). During the post-Classic/Historic times, the Maya were totally dependent on maize, and the diet lacked variety.

VanPool, C. (see VanPool, T.) [70]

VanPool, Todd (New Mexico) and Christine VanPool

SOLUTION PH AND OBSIDIAN HYDRATION DATING: AN EXPERIMENTAL STUDY

Obisidian hydration dating has assumed an increasingly important role in the construction of archaeological chronologies. However, several significant questions remain concerning the nature of the hydration process and factors that influence the rate of hydration. This paper reports the results of an experimental study of the effect of solution pH on obsidian hydration rates. Specifically, obsidian from Glass Buttes, Oregon, has been hydrated in solutions ranging from pH 1 to pH 11. The results of these experiments and their implications for the archaeological use of obsidian hydration dating are examined.

Van West, Carla (Statistical Research) and Jeffery H. Altschul (Statistical Research) [98] MODELING AGRICULTURAL PRODUCTIVITY, CARRYING CAPACITY, AND CULTURAL CHANGE IN THE TONTO BASIN: A CASE STUDY APPROACH

In 1992, the Statistical Research Group constructed a model of potential agricultural production and carrying capacity for the lower Tonto Basin using a tree-ring-based reconstruction of climate. Estimates of potential maize yield and population size were produced. Recently gathered archaeological data are used to evaluate our predictions. Settlement pattern and demographic data generated from the Meddier Mound and Schoolhouse Mound studies are employed. The results are used to suggest modifications to the model, assess the modeling approach, and evaluate cultural responses to risk in the highly variable environment inferred for the Basin during the late pre-Classic and Classic periods.

Van Zanzt, T. (see Orcutt, J.) [58]

Vareen, M. (see Kelley, J.) [37]

Vauker, A. (see Hartley, R.) [108]

Velickova, Andrei (Mercyhurst College), J. M. Audas deo (Mercyhurst College), R. Bayse (Mercyhurst College) [69] GEOLOGY AND GEOMORPHOLOGY AT MEZHIRICH: MACRO- AND MICRO-PERSPECTIVES

The site of Mezhirich is placed in a macro- and micro-environmental context using traditional geological methods and high-resolution geoarchaeological techniques. The genesis, subsequent evolution, and ultimate abandonment of the Mezhirich locality is examined. The bedrock geology, Pleistocene sediment package with included palaeosols, sedimentation and soil-formation mechanisms, and post-depositional site modifications are presented as an ever-changing backdrop to the human utilization of this area in the Late Pleistocene.

Verano, John W. (Smithsonian Institution) [Discussant 22]

Verbaaren, Bruce (Argonne National Laboratory) [24] THE EFFECTS OF URBAN DECLINE ON A SMALL SETTLEMENT: A VIEW FROM THE PERIPHERY

Kurban Høyük, a site on the Euphrates in southeastern Anatolia, declined from a respectable walled town in the mid-Third Millennium to a rather scratchy village by the beginning of the Second. Third Millennium Kurban declined in size and complexity in concert with the broader settlement system of which it was part. Using a Geographic Information System as an intra-site analytical tool, this paper explores the evidence for social and economic change found in the broad exposures of the mid-Third and Second Millennium settlements at Kurban Høyük and their implications for our understanding of contemporary regional changes.

Walsh-Anduze, M. (see Motsinger, T.) [7]
[50] EVIDENCE FOR HOHOKAM CERAMIC PRODUCTION USING INDUCTIVELY COUPLED PLASMA SPECTROSCOPY

A survey of potential temper sources used to produce Hohokam Red-on-buff ceramics led to the identification, recording, and sampling of numerous quarries, presumably prehistoric. Inductively coupled plasma spectroscopy was used to characterize the source material and a sample of sherds. Separate proveniences for two sources were established, and results of statistical analyses led to the inference that the pottery was produced from a single production locus.

Wallen, B. (see Sheppard, P.,) [6]

[33] LANDSCAPE ARCHITECTURE AND THE CHARACTER OF SURFACE ARCHAEOLOGICAL DEPOSITS: INSIGHTS FROM A CONTEMPORARY INDIAN PASTORAL LANDSCAPE

Landscape elements with different qualities attract human visitations of varying amounts and kinds. Archaeologists have profitably analyzed landscape deposits according to landscape element qualities such as landform, distance to ecotone, distance to water, and so forth. Recent study of an intensively used landscape in southern India points to other qualities of the landscape—especially its physical architecture (size and shape of “habitable” space)—and how they influence recurrent construction of site facilities and, hence, archaeological structure. Archaeological landscapes of the American West are analyzed according to landscape element architecture, demonstrating further the high information potential of surface archaeological deposits.

Warner, Mark S. (Virginia)

[62] FOOD, FISHING, AND THE MARKETPLACE: AFRICAN-AMERICAN RESPONSES TO MASS CONSUMER SOCIETY

The regimentation of individual lives has been an increasingly all-pervasive process since the eighteenth century. Due to technological limitations, however, food-production industries did not become standardized in the manner that other consumer goods such as bottles and ceramics did until the second half of the nineteenth century. This paper explores the reactions of an African-American household to the rise of a commercial food industry. Faunal remains from the Maynard-Burgess household, in Annapolis, Maryland, illustrate one family’s response to an increasingly homogenized and anonymous industry, reflecting incorporation as well as resistance to a mass consumer society.

Warren, Claude N. (Nevada-Las Vegas)

[75] ARTIODACTYLS TO TORTOISES: FOUR THOUSAND YEARS OF CHANGING SUBSISTENCE AT ATLATI ROCK

Arlati Rockshelter and two nearby sites in the Valley of Fire, Nevada, contain a record of ca. 4000 years occupation. This paper describes the changes in the faunal remains and technology of these sites, reviews pertinent paleoclimatic evidence for the region, and discusses correlations of changes in faunal remains and technology.

Warren, D. (see Harlow, L.) [106]

Warren, Diane (Indiana)

[35] CUTMARKS SUGGEST MORTUARY DEFLESHING AT BALDHILL SITE (32-BA-1), AN EARLY CERAMIC PERIOD MOUND GROUP IN NORTH DAKOTA

Cutmarks are present on a minimum of ten of sixteen individuals whose disarticulated remains were recovered from the Baldhill Mound B ossuary. Location of the cutmarks corresponds closely with muscle attachment areas, suggesting remains were defleshed prior to interment. This interpretation is supported by ethnographic analogy and by the presence of red ochre paint on bone surfaces covered in life by soft tissue. SEM appearance of the cutmarks is discussed.

Waters, Michael (Statistical Research)

[98] GEOARCHAEOLOGICAL INVESTIGATIONS IN THE TONTO BASIN, ARIZONA

Geoarchaeological investigations in the Tonto Basin, Arizona indicate that during the time of the Salado occupation the landscape consisted of a number of stable Pleistocene surfaces, two late Holocene terraces, and an actively aggrading floodplain. Canal irrigation was practiced on the lowest Holocene terrace which stood two meters above the streambed. Paleohydrological reconstructions indicate that ample water was available for successful irrigation, however the amount of arable land was limited. The small amount of arable land may have been the environmental factor that limited population growth and contributed to the decline of the Salado.

Wells, Peter S.

[38] RESPONSIBILITIES OF ARCHAEOLOGISTS TO NON-ARCHAEOLOGICAL INTEREST GROUPS

At the Workshop on Ethics in Archaeology held in Reno, Nevada, in November of 1993, a series of "Principles" were developed to help guide archaeologists and archaeology into the next century. One of the key ethical principles in archaeology must focus on the nature of responsible archaeological research. Responsible archaeological research must include public accountability and a commitment to work with affected groups ranging from Native Americans and other groups with biological or cultural affinity to the people studied by archaeology to local communities near sites of archaeological interest. The paper discusses the key terms and concepts within the principle, and includes a series of case studies and examples relevant to each.

Watson, Patty Jo (Washington University) [Discusant 40]

Wattemaker, Patricia (Virginia)

[34] URBANISM IN UPPER MESOPOTAMIA: PERSPECTIVES FROM SOUTHEASTERN TURKEY

Third Millennium B.C. cities of southeast Turkey provide an opportunity to study origins in the drying farm zone of Mesopotamia. Traditionally, ancient settlements in southeast Turkey have been viewed as smaller and less complex than those in other regions of upper Mesopotamia. Moreover, state and urban formation in this area has been attributed to interaction with more complex societies outside the region. However, recent research at Kazanc Höyük reveals that urbanism in the region followed a distinct long-term indigenous process of development, and was on a scale similar to that documented elsewhere in north Mesopotamia.

Waybomans, C. (see Butler, V.) [97]

Wells, S. David (Florida Museum of Natural History)

[41] LATE PLEISTOCENE ENVIRONMENTS IN THE MIDDLE AULICIA RIVER

Paleoindian artifacts abound in submerged sites along west peninsular Florida. In the Aulicia River we have excavated sedimentary sequences of late Pleistocene to early Holocene age which range from coarse clastics to marls, peats, and muds. They produce not only lithics and bones, but also shell, wood, pollen, and other organic materials. Sedimentary sequences represent marshland deposits containing sediments and epiphytic cells.

Weber, Andrej (University of Alberta)

[94] THE NEOLITHIC OF THE LAKE BAikal AND ANGARA RIVER REGION: A REVIEW OF PAST AND PRESENT RESEARCH ADVANCES

The rich settlement and burial evidence available from the Baikal/Angara region in central Siberia provides one of the most promising opportunities to study Holocene foragers within the entire boreal forest. The Neolithic is the first culture best known to western scholars through only a few English translations of A.P. Okladnikov's works and a few transcripts of his model by Western archaeologists (e.g., H.N. Michael and C. Chard). This model, not unanimously accepted in Siberian archaeology, was recently challenged by C-14 dating, stratigraphic, and stratigraphic evidence exposing a need for a new archaeological study of the Lake Baikal Neolithic with the aid of a new approach and modern analytical techniques.

Weinert, S. (see Stiner, M.) [19]


[6] LONG-DISTANCE INTERACTION IN PREHISTORIC POLYNESIA

The identification of exotic pottery and obsidian has played key roles in defining prehistoric long-distance interaction networks in Melanesia. The limited occurrence of these commodities in the eastern Pacific has hindered our ability to document external contacts between islands within Polynesia. The recent application of geo-chemical techniques to Oceanic island basalt artifacts has greatly improved the ability to examine external communication of previously thought isolated island societies. This paper explores the methodological and theoretical advances made in Polynesian interaction studies.

Welch, P. (see Guiderian, T.) [60]

Welch, J. (see Prentiss, W,) [105]

Wells, C. (see Williams, J.) [52]

Wells, Peter S. (Minnesota)

[64] GERMANIC MIGRATIONS AND CELTIC RESPONSES

Ancient writers recorded migrations from northern Europe into central and southern regions by peoples they called Chirn and Turoval, in and after 113 B.C. Material effects of these migrations have been difficult to identify, and their impact has been unclear. New evidence pertaining to the establishment of large fortified settlements in the Celtic regions of central Europe suggests a scenario of abrupt change in which the...
Whalen, M.

migrations can be viewed as a decisive factor in major cultural change in the final phase of European prehistory.

Whalen, M. (see Minnis, P.) [7]

Whalen, Norman (Southwest Texas State)

[9] PLEISTOCENE SITES IN SOUTHERN YEMEN

A survey in south Yemen in the fall months of 1992 resulted in the discovery of 37 Paleolithic sites, most of them multicomponent. The sites were located on escarpments emanating from high mountains and paralleling major wadis coursing south toward the Gulf of Aden. They were all surface sites and yielded 2,159 artifacts. Sixteen contained artifacts resembling the Developmental Core and showed evidence of a schedule of occupation by several groups. Both industries appeared together on ten sites but differed in various attributes. These sites agree with others in suggesting an early occupation and settlement of the Arabian peninsula.

Whedon, Patricia (Crow Canyon Archaeological Center) and Joan Few (Houston-Clear Lake) [52] IN THE CLASSROOM: A SURVEY OF TEACHERS IN TEXAS

Workshops about archaeology— including archaeological methods, cultural sequence and stewardship—have been offered to Texas teachers. These sessions range from about 1½ hours to 30 hours in length, with activities inside and outside the classroom. A recent survey of teachers who have attended these workshops asked, among other things: What message did the teacher hear? How does the "taught" teacher relate to archaeological stewardship to his/her students? Are sites being vandalized by naive teachers? Do teachers want more information or other resources? The results of the survey will be used to design workshop sessions and develop new materials.

White, Christine (Western Ontario)

[106] DIETARY DENTAL PATHOLOGY AT LAMANAI

Previous stable isotope and trace element analysis of human bone from Lamanai, Belize has demonstrated significant dietary shifts occurring in association with cultural change from the Preclassic period to early Colonial times (1250 B.C.-1670 A.D.). The human dentition can also provide a reliable means of reconstructing food consumption among ancient populations. The favorable preservation of teeth makes them particularly important sources of information for the tropical lowland Maya whose bones have been subject to the high levels of degradation. In this study, an analysis of dental pathology on the entire Lamanai sample (N = 122) is done to complement the earlier chemical study.

White, G. (see Fredrickson, D.) [11]

White, R. (see Pike-Ty, A.) [30]

White, Randall (New York University) [Discussant 16]

White, William G. (Bureau of Reclamation)

[75] 26CK4695—A DAM WORKER'S CAMP OR PROSPECTOR'S CAMP?

The Hoover Dam landscape is covered with historic archaeological sites associated with the construction of Hoover Dam, Clark County, Nevada. Local oral history contends that a recently identified site, 26CK4695, is a campsite associated with job-seekers waiting to be hired as construction laborers during the early 1930s. Artifacts and archival evidence, however, suggests that this multi-component site is associated with localized mineral prospecting activities and claim development prior to the construction of the dam.

Whitley, D. (see Dorns, R.) [103]

Whitley, David S. (California-Los Angeles)

[103] ORIGINS OF GREAT BASIN NUMIC POLITICAL DIFFERENTIATION

An old debate concerns the origin of Numic hand headmanship. Julian Stewart, using the Numic as the foundation for his cultural-evolutionary model, argued headmanship was a reaction to Euro-American contact. Omer Stewart countered that it had prehistoric roots. Most now view the ethnographic evidence as equivocal. To resolve this impasse, I reanalyzed Numic social relations, and examined site survey and rock art data from the Coso Range California. This suggests that political differentiation appeared circa 1000 B.P., evidenced by changes in: subsistence; logistical organization of the settlement pattern; and rock art iconography and production rates.

Whitridge, Peter (Arizona State)

[105] THE RISE AND FALL OF A WINTER VILLAGE: QUANTIFYING THULE SITE STRUCTURE

Recent investigations at Paja-2, in the Central Canadian Arctic, have documented an unusually large Classic Thule occupation consisting of at least 57 winter houses. Interpretation of the village’s social and economic organization hinges on the notoriously difficult task of accurately assessing stability or change in settlement size over time. An analysis of formal house attributes reveals robust patterning in the spatial distribution of

heuristic house "types" across the site. The implications of these results for modeling the organization and growth of this and other Thule winter villages are discussed.

Whittington, Stephen (Maine) and David M. Reed (Pennsylvania State)

[106] "LET THEM EAT CAKE": LOW-STATUS MAYA DIET AT COPAN, HONDURAS

The bones of low-status Maya who died during the Classic Period at Copan contain both direct and indirect indicators of diet. Based on statistical analysis of the complex patterns reflected in dental diseases, porotic hyperostosis, ename hypoplasia, periodontal reactions, stunted carbon and nitrogen isotope ratios in collagen and demography, we suggest that the low-status residents of Copan were poorly nourished around the time of the polity's demographic collapse. Illnesses and diminished work capacity related to diet appear to have been involved in the collapse, which began in the ninth century.

Whittlesey, S. (see Ciolek-Torrello, R.) [77]

Wicker, Nancy (Mankato State)

[64] MIGRATION OR ITINERANCY: MIGRATION PERIOD SCANDINAVIAN TYPE BRACETES FOUND OUTSIDE SCANDINAVIA

The Migration Period, named for European population movements during the fifth and sixth centuries A.D., seems apropos for a session on migration. Similarities in material culture have been explained as a result of diffusion of skills, trade of objects, or even migration of peoples. This paper focuses on Scandinavian bracteates to demonstrate two kinds of migrations: long-distance movements of populations and travels of specific segments of populations such as craft workers and traders. Understanding the nature of contacts that produced archaeologically recognizable connections between objects and peoples illuminates the relationship between material culture and ethnicity.

Widmer, Randolph J. (Houston)

[92] THEORETICAL IMPLICATIONS OF COASTAL ARCHAEOLOGY

Archaeological studies in various coastal regions of the world have resulted in a broadening of our understanding of human adaptation, the effect of environmental change on settlement and subsistence strategies, and sociopolitical development. The theoretical implications of these works cannot be directly paralleled in studies of terrestrial regions. It is argued that the study of coastal regions can bear important independent lines of evidence for understanding cultural adaptation and change. A series of theoretical problems, relevant to archaeology in general, will be presented and discussed and the role in which such problems may be addressed will be discussed.

Wirth, Richard (Indiana University) [Discussant 38]

Wilkinson, T. (see Stone, G.) [9]

Wilkinson, Tony J. (Chicago)


Results of recent surveys conducted in southeast Anatolia will be used to demonstrate how urban settlements became nucleated from smaller more dispersed communities during the mid-third millennium B.C. Emphasis will be placed upon how much growth was related to change in land use and agricultural production, and how, with increased urbanization, settlement systems became more integrated into larger economic entities. This process did not occur in isolation and urbanization in southeast Anatolia will be placed within the context of urban growth that characterized the entire rain-fed farming belt of upper Mesopotamia.

Williamson, J. (see Aber, S.) [97]

Williams, Joyce A. (Southern Illinois University-Edwardsville) and Christy L. Wells (Southern Illinois University-Edwardsville)

[52] WHAT WORKS AND DOESN'T WORK: AN EVALUATION OF A PRE-COLLEGE TEACHER EDUCATIONAL FIELD SCHOOL

The Contract Archaeology Program at Southern Illinois University at Edwardsville has conducted an Educational Field School at the World Heritage Cahokia Site for two summers. The Field School focuses on teaching teachers about archaeological preservation through development of classroom lessons based on hands-on activities such as creating archaeological sites. Changes in the original program were ongoing based on participants feedback through surveys. In other words, what worked and what didn’t?

Williams, Robert (Old Catholic Church in Texas) and Tim Albright (Texas-Austin)

[55] THE CLASSIFICATION & EXTENSION OF LINEAGE IN THE MIXTEC CODICES FROM POSTCLASSICAL TIMES TO CA. 1505 A.D.

This paper will present the Mixtec scribal classification of four ancient lineages and trace the temporal and geographic extension of one of them from its origination in Postclassic times at one locality and its
extension to yet another location and its survival there until after the Conquest. These data will be collated from three Mixtec Codices: Zoache-Nuttall, Side One, Viandobenais Mexicanus I and Selden.

Willig, Judith A. (INFOTEC Research) [85]

[85] HOLOCENE CLIMATIC CHANGE AND HUMAN OCCUPATION: THE RECORD FROM WESTERN PALEOSOLS
Large numbers of Pipeline Expansion Project sites have produced a broad spectrum of stratigraphic sequences and paleosols associated with human occupation. The complex sequence of 55E-49 to 1353C-49 in central Oregon is the most complete, with occupation episodes (including 25 hearth/pit/midden features) from 11 major strata/paleosols dating from 9980-3355 B.P. Pre-Mazama paleosols represent five cycles of wetter, colder, early Holocene periods, corresponding to similar mesic episodes documented in the regional climatic record. At southeastern Washington's 45-FF-100, a paleosol developed in bedded, fanglomeracial flood sediments immediately below Glacier Peak ash dates 12,160 B.P. indicating a major soil formation hiatus between flood episodes.

Wilschnucn, Richard (Cone Canyon Archaeological Center) [89]
A COMPARISON OF TWO PREHISTORIC ABANDONMENTS OF THE SAME REGION
The Mesa Verde region of the American Southwest has at least two major prehistoric abandonments—one late in the ninth century A.D. (Pueblo I) and another in the thirteenth century A.D. (Pueblo III). Prior to both of these abandonments, settlement in the Mesa Verde region is characterized by high population levels with population concentrated in villages of 100 to 600 rooms. In both periods abandonments are rapid and regional in scale. Recent syntheses of data for all known Pueblo I and Pueblo III villages are used to compare settlement patterns, economic risks, and behavioral responses for the two abandonments.

Wing, E. (see Retz, E.) [65]

Winslow, Diane Lynne (Desert Research Institute) and Susan R. Edwards (Desert Research Institute) [57]
CORDAGE AND CERAMICS FROM PAHUTE MESA: EXAMINING PREHISTORIC TECHNOLOGY IN THE SOUTHERN GREAT BASIN
Recent research at Pahute Mesa on the Nevada Test Site has produced new knowledge about prehistoric cordage and ceramic technology. Cordage fragments, a rarity in the southern Great Basin, were discovered during excavation of a small rockshelter. Also, brownware ceramics from within the shelter and adjacent occupation areas, have revealed vessel forms previously unknown for this region. This poster will summarize and illustrate these recent discoveries.

Wintzer, M. (see Peeler, D.) [55]

Winsler, Susan (California-Riverside) [5]
WATER RESOURCES AND ANCIENT MAYA WELLS OF NORTHERN QUINTANA ROO
Water resources are recognized as a major factor in the pattern of settlement within the northern Maya lowlands. The Holbox Fracture Zone of Quintana Roo represents a water-rich environment within the generally arid northern lowlands. Investigations at the site of Naranjal and the surrounding local area revealed numerous ancient wells which apparently provided for domestic water needs. The distribution and characteristics of these wells are discussed in relation to the local terrain and settlement pattern. The potential regional significance of hand-excavated wells is explored through the use of computer modeling of water-table accessibility in the northern lowlands.

Wise, Alicia L. (North Carolina) [13]
INTRODUCTION TO DARE TO DOMINATE: A DOMINERING DISSERTATION

Wise, Karen (Natural History Museum of Los Angeles County) [22]
CHINCHORRO MORTUARY PRACTICES AND SETTLEMENT IN SOUTH COASTAL PAR
Ongoing research in the Ilo region of Peru demonstrates the presence of Chinchorro tradition extended burial sites in highland and lowland cemeteries at sites dating to the Middle to Late Archaic Period. These sites contain domestic and midden areas as well as cemeteries, and appear to represent sedentary or semi-sedentary coastal villages near sources of fresh water. It is suggested that Chinchorro mortuary practices represent ritual aspects of territorial behavior of small groups tied to certain choice locations with access to both marine resources and fresh water along the desert coast of the south-central Andes.

Wobst, H. (see Brennan, S.J.) [54]

Wobst, H. Martin (Massachusetts-Amherst) [56]
ANTI-PARADIGMATIC TYPOLOGY, OR THE REPRESION OF VARIATION IN ARCHAEOLOGY
Regardless of paradigm, archaeological typology and classification have proceeded as if they did not matter. When it comes to typology and classification, modernist and post-modern archaeologists tend to

contradict their most basic assumptions. Much of the variation which they want to account for gets inadvertently classified away. The paper illustrates that, in ethnographic contexts, typologies and classifications are highly variable, multi-dimensional, multi-logical, contradictory, and contested. We need the archaeological record to increase our appreciation of typological and classificatory dynamics and to broaden our ethno-graphically limited knowledge of this important arena for human behavior.

Woodward, M. (see Bruchez, M.) [10]

Woody, Alanah J. (Nevada-Reno) [19]
ROCK ART AND THE SOCIAL ORDER: EXAMPLES FROM THE GREAT BASIN
Rock art is an important part of the archaeological record. Aspects of the social order that can add to our understanding of the interactions of prehistoric peoples and their environment may be contained in these motifs. Hypotheses have been presented that describe the role that the function of this art as relating to hunting magic. This poster will present data from diverse sites in the northern Great Basin, which confirm this hypothesis. Additional data will also be presented, however, that suggest a relationship to other activities associated with gathering pursuits, fertility rites, puberty rites and other aspects of female behavior.

Woollett, J. (see Amorosi, T.) [79]

Wright, E. (see Clark, J.) [66]

Wright, Henry (Michigan) (Discussant) [79]

Wright, Katherine I. (University of London) [33]
GROUND STONE ASSEMBLAGE VARIATIONS AND THE ORIGINS OF AGRICULTURE IN THE NEAR EAST
The role of ground stone technology in the origins of agriculture in the Near East is reviewed. Data were collected from 22 Jordanian sites dating to 22,000 to 5,500 B.P. The sites include hunter-gatherer campsites, farming villages, and herding camps. The significance of ground stone assemblages is investigated using ethnographic and experimental data on plant-food processing. The transition to agriculture may have had consequences for women. Mesopotamian texts indicate that grain milling was associated with adult women in household economies. Analysis of grave goods suggests that this pattern may not have existed before the development of agriculture.

Wright, Lori (Chicago) [106]
ANCIENT DIET AND SOCIAL EVOLUTION IN THE PASION MAYA LOWLANDS: INSIGHT FROM BONE CHIROSTERY
Stable isotopic and trace element data are presented for 5 sites in the Pasion river region: Altar de Sacrificios, Seibal, Dos Pilas, Aguateca and Itzan. Ancient diet was largely similar across the region, but individual sites show distinct chronological and social patterning. Together these results suggest that the significance of chronological trends in maize and animal protein consumption do not conform with the expectations of an ecological model for the collapse of this region. Instead, changes in the nature of inter-site diversity in dietary partitioning suggest that social factors may have been involved in this transition.

Wright, Rita P. (New York University) [12]
TECHNOLOGY AND DIFFUSION: PROBLEMS ENCOUNTERED BY AN AMERICAN NEAR PARIS
The apparent failure of Euro-Disney at the site near Paris raises questions about the neutral nature of technology and diffusion that are relevant in archaeological contexts. This paper refutes current discourses on technology and diffusion by focusing on them as integrated phenomena and reframing assumptions about them. The main thrust of the argument is that by returning to a methodological understanding of diffusion and technology as viewed as interdependent and by extending their definitions beyond current narrow limits, their importance in social activities will be better understood.

Wurzel, Laura (Syracuse University) [93]
COLONIZING OURSELVES: THE LAST FRONTIER?
Archaeologists are aware that colonialism has impacted the way we study the pasts of conquered peoples. However, we rarely recognize that colonialism extends further than the "other" to influence our own historic past. This paper will examine the effects of colonialism on the practice of historic archaeology in the United States by translating the assumptions, expectations, and explanatory models we use for interpreting the behavior of diverse communities and peoples. American historical archaeology seldom challenges common misconceptions such as the "vanished" Native Americans, the "melting-pot" of immigrant groups, and traditional or "primitive" behavior ascribed to Afro-Americans.

Wyley, A. (see Lynnott, M.) [38]
Yates, R. (see Mitchell, P.) [145]

Yellow Kidney, Buster (Blackfeet Tribe) [Forum Participant 95]

Yener, Asilan (Smithsonian Institution)


The metallurgical transformation of the Chalcolithic is part of the wider phenomenon occurring throughout the highland resource areas of Anatolia. A basic tenet for fabricating metal ornaments changes in this region to one for the manufacture of functionally and technologically superior tools and weapons. A whole range of metallurgical techniques, metals, and skills appear in close proximity to mining areas and quantities of metal finds are greatly increased. These changes coincide with the socio-political transformation evident in the Ubaid and subsequent Uruk periods in Mesopotamia.

Yerkes, R. (see Kardullas, P.) [75]

Yesser, David (Alaska)

[56] ENVIRONMENTAL CHANGE AND SUBSISTENCE DIVERSITY IN THE LATE PLEISTOCENE/EARLY HOLOCENE OF ALASKA

The earliest occupation of Alaska occurred during the "Birch Period," dating from 14,000 to 9,000 B.P., when rapid environmental changes, leading to a post-glacial thermal maximum, radically transformed the landscape. The clearest patterns of occupation are seen in basins north of the Alaska Range, where loess deposits have sealed occupations in well-defined paleosols dating to 11,800 B.P. To date, well-preserved faunal remains are known only from the central Tanana Valley, where they suggest a wide subsistence diversity, including large and small game, birds, and fish. Maritime adaptations are exclusively Holocene in date, and begin ca. 9,000 B.P as are areas to the south.

Yoffee, Norman (Michigan) [Discussant 99]

Young, Bailey K. (Assumption College)

[64] MIGRATIONS AND INVASIONS OR HOSTILE TAKEOVERS AND RESTRUCTURING: THE FALL OF ROME REVISITED

Did the Roman Empire in the West actually "fall" during the fifth Century to migrating barbarian invaders? This notion, derived from contemporary written sources, underlay the archaeology of this period in France until recently. A re-examination of the evidence concerning the three major groups to "invade" Gaul and establish "successor states" there suggests that "restructuring" offers a better metaphor for a long and complex process, with episodes comparable to hostile takeovers in the corporate world.

Young, D. Craig, Jr. (Yavapai-Reno)

[56] LOCATIONAL MODELS: SETTLEMENT PATTERN CHANGE IN WARNER VALLEY, OREGON

Warner Valley, Oregon, provides a case study for modeling prehistoric adaptation to the varied resource mosaics of the northern Great Basin. A locational model based on local geomorphology and resource productivity may clarify our understanding of the variation visible in the archaeological record. A model of settlement patterns has been developed using fluctuations in recent lake levels and marsh productivity. Landscape simulation, a computerized graphic used to show landform response to climatic variation. This poster shows model development and results of initial testing against the local record. An understanding of possible settlement regimes, and their expression in the archaeological record, may provide a better understanding of levels of sedentism in the Great Basin.

Zedeno, M. Nieves (Arizona)

[42] A RETURN TO THE GIFT: PREHISTORIC RECIPROCITY IN THE NORTHERN SOUTHWEST

The study of circulation of goods is crucial for understanding economic, social, and political relationships among neolithic-level societies; unfortunately, archaeological research has been largely limited to the reconstruction of long-distance trade of exotic or scarce commodities. At present, increasing access to sophisticated methods of physico-chemical characterization opens new possibilities for investigating the circulation of goods on a fine scale. This paper uses ceramic data from east-central Arizona to explore social and ritual aspects of reciprocity and discusses the archaeological correlates of reciprocal exchange among prehistoric communities of the northern Southwest.

Zedler, James (Illinois-Urbana/Champaign)

[59] POPULATION DYNAMICS AND DOMESTIC LABOR ORGANIZATION IN THE EARLY SEDENTARY VILLAGE: A VIEW FROM REAL ALTO (ECUADOR)

This paper examines emergent social complexity in the Early Formative Period of coastal Ecuador by focusing on habitation space and paleodemography at the Valdivia site of Real Alto. Between Phases 1 and 3 (ca. 3500-2500 B.C.), changes in village size, configuration, and domestic architecture correlate with changes in population structure inferred from life table analysis. Archaeological evidence from both data sets indicates a strong trend toward increasing social differentiation, household size variability, and status inequality. The implications of these trends are explored with regard to models of household competition, domestic labor control, and the rise of "big-man" leadership.

Zellander, Anne C. (Watertoo)

[34] PRIMATE CHILDREN AS MODELS FOR ARCHAEOLOGICAL INVESTIGATIONS

Anthropologists study primates as models to help understand early hominid social behavior and ecological adaptations. Most field research has been focused on the requirements and contributions of adult group members to the virtual exclusion of young, except in their roles as a focus of mate selection or social buffering. Specifically considering the needs of primate "children" alters projections of ecological parameters such as food procurement patterns, home range size, and adult tasks. The nature and scope of changes in accepted models of social organization and energy budgets when the requirements of young are considered could provide useful parallels when studying populations archaeologically.

Zhao, Zhijun (Missouri-Columbia) and Deborah M. Pearssall (Missouri-Columbia)

[25] USING MULTIVARIATE ANALYSIS TECHNIQUES TO SEARCH FOR DIAGNOSTIC PHYLOTOLIC PHYTOLITHS

Phytoliths are silica bodies produced in plant cells. In some taxa, phytoliths are highly variable in their characters. Recognizing the patterns of variability of diagnostic phytolith types is the key for identifying plant taxa from archaeological soil samples. In this paper, we explore multivariate approaches to study phytolith shape and size for developing species-level diagnostics. We use Drosophyllum and Setaria as our examples, and illustrate how species level diagnostics can be identified using discriminant analysis and other multivariate analysis techniques.

Zier, Christian J. (Centennial Archaeology, Inc.)

[66] HOLOCENE ADAPTATIONS AS EXHIBITED IN ROCK SHELTERS ALONG THE FLAINS—FOOTHILLS TRANSITION ZONE, SOUTHERN COLORADO

Seven rock shelters on Fort Carson Military Reservation provide a stratigraphic record of human occupation during the period 5700-770 B.P. Paleoclimatic data suggest rather subtle environmental variation during this span, with conditions never profoundly different from those at present. A stable hunter-gatherer economy oriented principally toward consumption of small mammals and Chenopodiaceae is evident. Maize appears in the stratigraphic record around 2750 B.P. but in small quantities, with little obvious effect on the overall subsistence system. Lithic materials analysis suggests use of, or contact with, plains areas further east as well as high mountains to the west.

Zimmerman, Larry (South Dakota) [Discussant 38]

Zimmerman, Larry (South Dakota) and Leonard Bruguier (South Dakota and Inhunkhtowan Sioux Tribe)

[93] USURPING NATIVE AMERICAN VOICE

The use of "voice" is not often a matter of conscious choice for scholars. Archaeologists erroneously assume that they have the authority to speak for the human beings under archaeological investigation and that they have some understanding accessible only through archaeological reconstruction. Because archaeology is purported to be the only way that information about the past can be obtained, the archaeologist claims the voice of those studied and asks others to yield to that authority. For many Native Americans, archaeological usurpation of Native American voice must be challenged because it allows the power of the living cultural tradition to know the past. Application of "ethnocriticism" may allow legitimate archaeological use of Native American voice.

Zubrow, Erez (SUNY-Buffalo and National Center for Geographic Information Analysis)

[96] ASSOCIATION, SPATIAL VARIATION, SPATIAL TAXONOMY AND GIS IN ARCHAEOLOGY

Underlying a considerable amount of analysis in archaeology is the concept of association, which suggests "like is near like" both spatially and temporally. On this premise various archaeological taxonomies are traditionally defined: the "horizon-phase" taxonomy, the "activity area-site-culture" taxonomy, and the "hamlet—village-town—city" taxonomy, to name a few. This paper considers the appropriateness of such theoretical and methodological concepts, and uses spatial semi-variance and spatial autocorrelation to illustrate their strengths and weaknesses. Examples use GIS for analytic and presentation purposes.

Zukosky, William (Dames & Moore, Inc.)

[37] ARCHAEOLOGY OF THE EASTERN GREAT BASIN: THE KERN RIVER GAS TRANSMISSION LINE PROJECT

The Kern River Gas Transmission Line project under the direction of Dames and Moore mitigates 140 prehistoric and historic cultural properties in the eastern Great Basin, western Utah. Site types consist of residential bases, short-term logistic or foraging camps, diurnal task sites, and extractive locations. Research
domains include chronology, paleoenvironments, lithic procurement and technology, subsistence and settlement patterns, and site structure and activity reconstruction. With the use of these research domains we seek to explain variation in human behavior throughout the eastern Great Basin from the perspective of evolutionary ecology.

Zurita-Noguera, J. (see McClung de Tapia, E.) [8]  
Zurita-Noguera, Judit (Instituto de Investigaciones Antropológicas UNAM) and Emily McClung de Tapia (Universidad Nacional Autónoma de Mexico)  
[25] IDENTIFICATION OF CARBONIZED AND MINERALIZED AGAVE FIBER REMAINS FROM TERREMOTE-TLALTENCO, TEOTIHUACAN AND TLALTELOCO  

There is substantial information concerning the uses of Mexican Agave fibers to manufacture fabrics, sandals, cordage, rope, etc. Most of the archaeological remains of fibers are poorly preserved and, especially if carbonized or mineralized, do not respond to traditional laboratory treatments. The study of phytolith extractions of modern specimens revealed silicified structures that can be considered diagnostic of Agave fibers. Application of phytolith analysis was carried out with specimens from Terremote-Tlalteco, Teotihuacan and Tlalteco. It was possible to identify which specimens were Agave fibers and to determine which corresponded to other plant families on the basis of diagnostic phytoliths.

Zutter, C. (see McGovern, T.) [46]