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**ABSTRACTS OF PAPERS PRESENTED AT THE
43RD ANNUAL NORTHWEST ANTHROPOLOGICAL CONFERENCE,
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Implications of Current Soviet Archaeological Research for Pacific Northwest Archaeology

DANIEL C. ALDEN
Western Washington University

Recent Soviet literature concerning prehistoric maritime cultural adaptations in the Soviet Far East is reviewed. Located on opposite sides of the Pacific Rim, the Soviet Far East and the Pacific Northwest share many environmental similarities, and there are direct historical relationships between the cultures of the two areas. A review of current Soviet cultural resource management practices and methodological approaches to maritime adaptations in the Soviet Far East may provide insights into comparable issues in the Pacific Northwest.

The 1989 Excavations at the Meier Site

KENNETH M. AMES
DORIA RAETZ
STEVEN HAMILTON
Portland State University

The Meier site is a plank house village dating to the last millennium in the Portland Basin near the downstream end of Sauvie Island. The excavations have focused on one structure, which appears to be 12-13 m wide and at least 25 m long. The 1989 excavations exposed a fine-grained architectural record of continual rebuilding, with the house being completely rebuilt once.

Unorthodox Associations in the People's Republic of China

DANIEL M. AMOS
Pacific University

Many foreign observers of China have argued that the People's Republic of China is a totalitarian society. In the 1960s some Sinologists argued that the Chinese Communist Party was able to organize every aspect of society. It was proposed, for example, that personal relationships based on friendship were being replaced by more centrally

controlled relationships, by comradeship. Self-interest associations in the People's Republic of China and the relationship of such associations to unofficial and unorthodox associations are explored.

*When Anthropologists Serve Power: The Political Economy
of the Federal Acknowledgement Process*

RUSSEL L. BARSH

Several times this century the federal government has tried to redefine "Indians" more restrictively, as a means of reducing federal costs and responsibilities. Blood quantum was introduced in the 1910s, consolidated in the 1930s, and efforts were made to raise the legal quantum in the 1970s. Readiness for independent life was used to select tribes for "termination" in the 1950s. A new theory has emerged in the 1980s: "tribalness," as evaluated by government anthropologists. In more than 20 decisions on individual groups seeking clarification of their status, the BIA has failed to produce a consistent or ethnologically meaningful definition of "tribal." Some of the least defensible decisions involve Northwest groups, and it will be argued that the entire "federal acknowledgment" program is an effort to rationalize, in the 1980s and 1990s, political decisions regarding Indian fishing rights that were made by Northwest congressmen and bureaucrats in the 1970s.

Cascadia Cave Revisited

PAUL W. BAXTER

In 1965 Thomas Newman excavated Cascadia Cave, a rock shelter located on the South Santiam River, Oregon. His excavations obtained a basal radiocarbon age of 7910 ± 280 BP in association with willow leaf points, edge ground cobbles, and a variety of chipped stone tools. The site is also the location of an extensive and unique petroglyph panel. In 1988 Heritage Research Associates received an SHPO grant to conduct limited geomorphic and archaeological testing, as well as documentation of Cascadia Cave's petroglyph panel, to aid in the nomination of the site to the National Register of Historic Places. The results of that project are discussed.

Aerial Photographic Detection of Prehistoric Housepits at Lake Abert, Oregon

JAMES W. BELL
Oregon State University

Human occupation of the area around Lake Abert, Oregon, has occurred for the past 9000 years. About 5000 years ago housepit type dwellings were constructed on the east shore of the lake. There are over 100 known housepit remains on the shoreline of Lake Abert, many of them having large basalt boulders on the outer perimeter of the structure. Over the past three years, aerial and terrestrial photography was acquired of some of these housepits. The photography was interpreted and used to map locations. Computer enhancement and use of color infrared film was also employed. This continuing research will be discussed and results presented.

Evidence for Native American Bark Containers from the Western Cascades of Oregon

ERIC O. BERGLAND
Willamette National Forest

Living, culturally-modified trees can provide direct evidence for ethnohistoric land use patterns in the Pacific Northwest. The author documented peeled cedars and hemlocks on the Blue River Ranger District, Willamette National Forest. Over 40 trees at Hidden Lake (in the western Cascades) exhibit peeling patterns directly comparable to those observed near Mt. Adams on the Gifford Pinchot National Forest. Archival research, interviews, and unpublished Forest Ranger memoirs indicate that a Warm Springs Indian (or his descendants), named Tullux Holliquilla, probably used the site. Tree-ring dates establish a latter period of occupation, ending about 1935.

Lithic Technology at the Tosawihi Quarries, North-Central Nevada

WILLIAM W. BLOOMER
Intermountain Research

Tosawihi toolstone is predominantly white chert. Raw material was quarried from bedrock exposed in pits, from outcrops, and to a lesser degree, through the collection of cobbles over approximately nine square kilometers. Lithic reduction at Tosawihi was focused on the production of intermediate stage bifaces for transport. Ongoing technological analysis of debitage from reduction locations adjacent to the main area of quarry activity is providing data that indicate the distribution and intensity of staged reduction and heat treatment. The accumulating results of debitage analysis are discussed and compared with the preliminary results of concurrent biface analysis, as they bear upon research interests concerning the economics of toolstone procurement and regional settlement patterns.

The Ridge Trail: A Forest Service Maintained Resource Procurement Route on the Wind River Ranger District of the Gifford Pinchot National Forest

ALEX BOURDEAU
Gifford Pinchot National Forest

Ridge Trail, a currently maintained Forest Service trail, is a series of travelways and ridge lines originally utilized for resource procurement by the aboriginal population. The probable termini of the trail on the Columbia and Lewis rivers are identified. Aboriginal land use patterns are defined by the types of archaeological sites present along the trail. Although a considerable part of the trail has been obliterated by road construction and timber harvest, sites recorded before, during, and after disturbances provide information pertaining to historic, protohistoric, and prehistoric utilization of the resources in the area.

What is a U and A?

DANIEL L. BOXBERGER
Western Washington University

By treaty, most tribes in western Washington are entitled to fish at their "usual and accustomed grounds and stations" (U and A in the vernacular). This right was upheld in *United States v. State of Washington* (1974), the so-called "Boldt Decision." As a result of this case, there have been numerous subproceedings to determine exactly what constitutes particular U and A's. The role of the anthropologist in this process is examined.

Fortress on the Columbia: Archaeological Investigations at Old Fort Stevens, Clatsop County, Oregon

DAVID BRAUNER
Oregon State University

Archaeological sampling at the site of Old Fort Stevens was conducted by archaeologists from Oregon State University, under the direction of David Brauner, during the summer of 1989. The excavations were conducted at the request of the Friends of Old Fort Stevens. The objectives of the 1989 field season were to locate the site of the Civil War-era earthworks, determine how much of the original fortification is still intact, and generate recommendations for future site management and site interpretation, including the partial reconstruction of a portion of the earthworks. Results of the archival, remote sensing, and archaeological program focused on the above objectives are highlighted.

Cultural Resources Law Enforcement: An Emerging Science

SANDI BRONCHEAU-MCFARLAND
Nez Perce Tribe/University of Idaho

Vandalism of cultural resources is a growing threat to our nation's heritage. This has become a topic of interest and concern for archaeologists, lawyers, law enforcement, and judges alike. Cultural resource vandalism is looked at by examining vandalism and vandalism prevention, crime prevention, looting and vandalism behavior, the artifact trafficking network, and the public attitudes toward looting and vandalism.

Factors in Family Change: Asian Immigrants--A Model for All?

ROBERTA R. BUCK
Western Washington University

The lives of immigrants obviously change rather significantly upon migration. How the immigrant family changes upon migration to the West is specifically considered. The author first discusses the various transformations in the roles of family members including husband/father, wife/mother, children, and grandparents. Following is a review of the literature debating the degree to which immigrant families conform to the Western nuclear model. In lieu of a conclusion, the author discusses the inadequacies of current theoretical explanations for the extent of this nuclearization and notes that many of these same explanations (and inadequacies) can be applied to changes in the non-immigrant family as well.

A Cascade Phase Site on the Lower Willamette River

ROBERT M. BURNETT
Portland State University

Artifacts recovered from excavations near the Willamette River in a southwestern Portland area suburb indicate the presence there of a Cascade phase site possibly dating to 8000 BP. The excavated assemblage includes some 80 projectile points or fragments, predominantly of the "Cascade" type, together with knives, choppers, scrapers, hammerstones, cores, and microblades. Surface collections contain similar items. More than 6000 stone flakes representing tool manufacturing and maintenance also were recovered from the 10.42 m excavated. No notched or shouldered points were found, but two fragments of stemmed points of the Windust type suggest the possibility of an earlier component.

*The Cultural Resource Program of the Confederated Tribes
of the Umatilla Indian Reservation: A Progress Report*

MICHAEL S. BURNEY
Burney & Associates, Inc.
JEFFERY VAN PELT

Confederated Tribes of the Umatilla Indian Reservation

Long before the Treaty of 1855, the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), Pendleton, Oregon, have attempted to protect their cultural resources from molestation by non-Indian peoples. Theft, vandalism, illegal trafficking, development, and meaningless consultation continue to take their toll on CTUIR cultural resources. Responding to this legacy of degradation to their cultural heritage, the CTUIR have begun the development of a tribal cultural resource program. The accomplishments and future goals of this program are discussed in hopes of reinforcing the awareness needed to respect, appreciate, and protect the remaining cultural resources within CTUIR ceded lands.

Ethnography and Naturalistic Observations: Applications in Pedagogical Contexts

MINERVA CAPLES
Central Washington University

A rationale for the utilization of ethnographic concepts and techniques in a variety of educational settings including multiethnic, bilingual, and regular classrooms is presented. Naturalistic observations, which constitute the pedagogical activity based on ethnographic principles, is discussed with respect to its delimitations, its differentiation from actual ethnography, its potential, and its value. Examples of use and misuse of naturalistic observations in the classroom are given, and recommendations for improvements are outlined. Also discussed is the importance of incorporating knowledge about the ethnography of school into the teacher preparation program. This (incorporation) has implications for today's complex culture and its elements of unstable pluralism.

*A View from Hemlock: The Development of the Forest Service
in the Pacific Northwest as Seen from Hemlock Lake*

GRADY H. CAULK
Gifford Pinchot National Forest

Hemlock Lake was formed by the construction of a logging slash dam (1901) that was later replaced by a power generation dam incorporating probably the first fish ladder in the Northwest (1935). By 1906 a logging camp and the Wind River District office were located at Hemlock. The Region's Nursery (1909), Pacific Northwest Experiment Station and Arboretum (1912), Regional Ranger Training Center (1931), and a large CCC camp (1933)

were located at Hemlock. From general forest management to experimental developments, the site at Hemlock Lake is representative of the development of the USDA Forest Service in the Pacific Northwest.

Climatic Cooling and the Development of Collector Strategies on the Columbia Plateau

JAMES C. CHATTERS
Battelle-Northwest

Studies of adaptive strategies among ethnographic hunter-gatherers indicate that logistically mobile, storage-based "collector" strategies characterize northern latitudes, whereas nonstoring, residentially mobile "forager" strategies typify warmer regions. Between 6000 BP on the Columbia Plateau, a residentially mobile foraging adaptation is replaced first by periodically-sedentary foraging, then by archetypical, logistically-mobile, storage-based, collecting. Paleoecological data are examined in detail for a possible climatic trigger, with special attention to resource productivity and seasonality. Results show that increasing moisture ca. 5000 BP improved the productivity of local food resources, then neoglacial cooling restricted resource accessibility, stimulating reduced mobility, increased populations, and ultimately, storage-based collector adaptations.

Descriptive Analysis of Pathological Conditions in a Cranium from the Missoula County Poorhouse Cemetery in Montana

HENRY CHOONG
University of Montana

A cranium from the Missoula County Poorhouse Cemetery in Missoula, Montana, exhibiting extensive scarring (multiple lesions) and abnormal bone addition to the vault was examined using gross and radiographic analyses. Based on the descriptive analysis and a survey of paleopathologic literature, a tentative differential diagnosis of osteopetrosis was made. A careful descriptive analysis is not only important in identifying the disease process in a pathological specimen but also provides information on the frequencies of cases in the descriptive categories.

Development of the Far West: Romantic Individualists or Agents of Capitalism?

PAUL G. CLAEYSSENS
Ochoco National Forest

The study of the American West has been influenced by Frederick Jackson Turner's seminal work of 1893, which postulated that the unique American character was forged in the frontier experience. The study of regional episodes along the Far West's natural

resource frontiers by using a critical anthropology of development provides a different perspective. The Census of 1890 announced the "end of the frontier;" however, "frontiers" continued to be encountered throughout the twentieth century. These frontier experiences engendered not self-sufficiency and economic independence, but greed, conflict, and threats to the environment. These may be more accurate legacies of the American West.

Interpreting the Klovdahl Tunnel Display

PAUL G. CLAEYSSSENS
Ochoco National Forest

The interpretation of natural and heritage resources present many challenges to resource specialists. Chief among these is the task of presenting information that is both understandable and interesting to the forest and park visitor. Freeman Tilden's principles of interpretation help meet these challenges. The Klovdahl Tunnel interpretive sign applied his principle of provocation. The sign text, though brief, attempts to stimulate the visitor to consider what would have happened to Waldo Lake had the historic Klovdahl Tunnel Project been successful in transforming the lake into a reservoir in the early twentieth century.

USDA Forest Service Pacific Northwest Region ARPA Display

PAUL G. CLAEYSSSENS
Ochoco National Forest

The Archaeological Resource Protection Act educational display developed by the Region 6 ARPA Task Force is made available for installation during the conference. The "Thieves of Time" brochure is made available for distribution at the display table.

A Site Protection Strategy for the 1990s

LINDA CLARK
JILL OSBORN
Deschutes National Forest

The 1980s brought many changes to the field of archaeology. Archaeologists and Cultural Resource Managers broadened their horizons to include not only traditional research and compliance, but public education, interpretation, and protection of the archaeological resource. These changes stem from a growing awareness of the public's interest in archaeology and the dangers to the resource at the hands of commercial collectors. The Pacific Northwest Region of the USDA Forest Service responded to the challenge of site

protection by initiating a regional protection plan. The Deschutes National Forest has tailored that plan to address the situation in central Oregon. The results of the first year's work on the protection plan, the field findings, the problems, and the successes are presented.

Late Quaternary Geochronology of Pittsburg Landing, West-Central Idaho

BRUCE D. COCHRAN
University of Idaho

The age of the deposits and landforms relevant to human prehistory in the Pittsburg Landing area spans the last 15,000 years--a period of time marked by rapidly changing climates and catastrophic and "normal" geologic events. These events include: (1) the last catastrophic Bonneville and Missoula floods (14,000-15,000 BP and 12,000-13,000 BP, respectively); (2) the end of glacial climates (ca. 12,000-13,000 BP); (3) the formation of Holocene flood plains, terraces, and alluvial fans along the Snake River and its tributaries (ca. 11,000-present); and, (4) anomalous stream aggradation (ca. 5000-6700 BP) in the Pittsburg Landing area.

Back to the Roots

BRUCE CRESPIAN
Bureau of Land Management, Burns District

The Burns District of the Bureau of Land Management demonstrates that traditional Native American practices and natural resource requirements can be integrated into land-use plans. Root harvesting by Harney Valley Paiutes and others is recognized to be an important land use to be accorded management considerations, as exemplified in the multiple-use Three Rivers Resource Management Plan. Demonstrations and discussions of traditional root harvesting on public lands are depicted by Native Americans, a research ethnobotanist, and the agency specialist. Agency decisions to minimize or reduce conflicts between consumptive and traditional land uses should perpetuate and enhance this ancient custom.

Assault on Time

BRUCE CRESPI
 Bureau of Land Management, Burns District
 RICHARD HANES
 Bureau of Land Management, Portland

A comprehensive overview of the current status of looting and vandalism at prehistoric sites and historic features nationwide is presented. This broad focus is well illustrated by case examples taken from various federal agencies representing many regions of the United States. A special reference is made to the ongoing looting situation at Malheur Lake in eastern Oregon and focuses upon Native American perspectives on the issue. Additionally, historic presentation and educational efforts by urban volunteers at metropolitan museums are discussed.

*Modeling the Evolution of Prehistoric Northwest Coast Economic Decision Making:
 Considering Division of Labor, Prestige, and Plant Foods*

DALE R. CROES
 Washington State University

Using computer simulation techniques, 9000 years of economic patterns have been modeled concerning the southern Northwest Coast of North America. In preliminary efforts to consider new aspects affecting decision-making by prehistoric Northwest Coast groups, the emphasis on division of labor, increased consideration of prestige and ownership, and the role of plant foods in the overall diet have been added to the programming. The early results provide interesting hypotheses involving the influence of these additional modeling criteria. For example, plant food use probably decreased in emphasis through time.

Working for a Gorilla

BOB DAUGHERTY
 Pierce College

Ivan is a solitary 25-year-old wild-born silverback gorilla that has lived in a compound inside a shopping center in Tacoma, Washington, for the past 20 years. Four years ago this writer began working with Ivan to increase the gorilla's interaction with humans and to generally improve the quality of his life. Projects have included sensory enhancement, plan, exercise, and painting. Attempts at the artificial insemination of Ivan's potent sperm with Koko, of the Gorilla Foundation, and Nina, of Seattle's Woodland Park Zoo, are also discussed.

Peeled Cedars on the Wind River Ranger District: A Collation of the Data Retrieved from Five Peeled Cedar Sites on the Gifford Pinchot National Forest, Wind River Ranger District

JEFFERSON D. DAVIS
Gifford Pinchot National Forest

Five recorded peeled cedar sites containing culturally modified western red cedar (*Thuja plicata*) were investigated. Primary data recovery information includes: tree peel dates ranging from 1852 to 1950 and a possible correlation between tree age, and desirability for peel and correlations between aspects and peels. Additionally, experimental methods were used in an attempt to develop a nonfatal methodology of dating peeled cedar trees.

Archaeological Investigations at 10-IH-1017 (Upper Landing Site): A Preliminary Report

JOHN A. DRAPER
Washington State University

In 1989 data recovery excavations at 10-IH-1017 in the Hells Canyon focused on two previously recorded house depressions. Non-house deposits also were sampled, leading to the discovery of two additional structures. Twenty-two features including hearths, ovens, and storage pits both within and external to the houses were delimited and sampled. Present data suggest that once the house structures were abandoned, the exposed depressions served as windbreaks and temporary camps. Cultural residues throughout the deposits indicate the house and post-house subsistence base was largely dependent on ungulate resources, particularly deer and elk. A radiocarbon age of 560-60 BP (Beta 33817), coupled with temporarily diagnostic projectile points, indicate the site was occupied during the Piquin Phase.

Recent Research at Cowlitz Falls, Western Washington

DAVID V. ELLIS
Historical Research Associates

Mitigation excavations this past fall at 45-LE-209 (the Koapk site) concluded ten years of archaeological investigations at Cowlitz Falls on the upper Cowlitz River. The Koapk site is a complex of activity areas and camps, the occupation of which extends back at least 4000 years and continued into the early 1800s. The preliminary results of the 1988 and 1989 excavations are presented, as well as an examination of the light shed by the research on the prehistory of southwestern Washington and prehistoric relationships between the Columbia Plateau and the interior western valleys.

Temporal and Technological Variability in the Use of Obsidian at the Dietz Site

JOHN L. FAGAN
Cultural Heritage Foundation

Clovis and Western Pluvial Lakes Tradition (WPLT) obsidian tools and technologically diagnostic pieces of debitage recently subjected to X-ray fluorescence spectrometry by Richard Hughes are discussed. The results of the trace-element analysis are combined with the results of detailed lithic analysis to compare Clovis and WPLT reduction strategies for the production of distinctive projectile points. Use breaks, manufacturing breaks, and methods of rejuvenating and recycling points by both Clovis and WPLT knappers are examined, as well as their raw material source preferences. Distinctive cultural patterns reflecting different adaptive and mobility strategies are also presented.

Diamond Lil: Lithic Technology of a Deer Kill Site

J. JEFFREY FLENNIKEN
TERRY L. OZBUN
Lithic Analysts

The Diamond Lil deer kill site, located in the Willamette National Forest, on the west side of the Oregon Cascade Mountains, was originally recorded as a lithic scatter. Excavation yielded over 20,000 lithic artifacts and nearly 800 bone fragments, many identified as deer. Lithic technological analysis, supported by replication of the obsidian reduction system and ethnographic data, indicate that the site was used as a killing, butchering, and meat-processing location. The site's lithic assemblage, dominated by projectile point rejuvenation debitage from lanceolate, arrow, and dart points, is interpreted as representing a multiple weapons technology utilized in a communal hunting situation.

*Late Middle Period Occupation in the Northern Columbia Plateau:
The View from Salishan Mesa*

JERRY R. GALM
Eastern Washington University

Recent archaeological investigations at the Salishan Mesa site (45-GR-445) in north-central Washington included excavation of a single housepit depression and sampling of cultural deposits on the nearby mesa top. Radiocarbon ages derived from hearths within the housepit place the major occupation of this dwelling at 2330-2390 BP. Seriation of projectile points from the mesa confirms a similar time frame for occupation/use of this feature. Results of preliminary analyses of artifact assemblages and features from both areas of this site are examined as part of broader discussion of potential shifts in settlement pattern during late portions of the Middle Period. Comparisons to Hudnut Phase occupations in and around Chief Joseph Reservoir suggest intensified use of nonriverine environments as an important component of changes occurring in this region.

A Review of Late Period Prehistory in the Columbia Plateau

JERRY R. GALM
Eastern Washington University

Recent excavations at riverine and off-river sites in central Washington have provided important new information on cultural developments and the nature of group interaction in the Columbia Plateau during the Late Period of prehistory (ca. 2500/2000 to 250 BP). Information on house forms and the internal structure and geographic distribution of village sites is discussed in the context of existing subsistence-settlement models. Early and late subdivisions of this time period are identified in artifact assemblages and differences in the internal patterning of sites between subdivisions are examined from the perspective of changes in adaptive strategies.

The Role of Southern Oregon's Coastal Islands in Prehistoric Subsistence and Settlement

HOWARD A. GARD
Oregon State University

The discovery of an archaeological site on an island off the southern Oregon coast provided the first direct evidence of prehistoric offshore land use. Test excavations, undertaken to determine the site's function, have resulted in recovery of faunal remains from locally obtainable resources, suggesting the site's use as a resource procurement station. The site's presence provided impetus to locate other offshore sites. An archaeological survey of coastal rocks and islands was conducted, and two additional sites were discovered. A review of resources available on and around these topographic features suggests they served to concentrate foodstuffs and, therefore, may have played an important role in native economies.

*A Comparative Derivation of Quantitative Results from Semi-Quantitative
ED-XRF Obsidian Analyses*

D. I. GODFREY-SMITH
J. M. D'AURIA
D. E. NELSON
Simon Fraser University

A nondestructive semi-quantitative ED-XRF study of 174 obsidian samples from alluvial, glacial, and outcrop sources within the Mt. Edziza Volcanic Complex resulted in identification of ten chemically-distinct obsidian types. The discrimination of the ten types was made on the basis of relative element concentrations, using Compton and Zr normalizations, and graphical data analysis. The methods used are described. Representative samples of each of the ten chemical types were selected and prepared (destructively) for quantitative analysis. 28 major and minor element concentrations obtained by each method were correlated with each other. How the resultant data may be used to derive absolute element estimates for semiquantitative data from ED-XRF measurements of obsidian is shown. This approach will be particularly useful in identifying obsidian sources for which reference material is not available, provided that their element concentrations can be found in the literature.

*The People Who Give More: Health and Mental Health
Among the Contemporary Puyallup Indian Tribal Community*

GEORGE M. GUILMET
University of Puget Sound
DAVID L. WHITED
Metropolitan Development Council, Tacoma

The coauthors present an overview of their research monograph, "The People Who Give More: Health and Mental Health Among the Contemporary Puyallup Indian Tribal Community," (published by the National Center for American Indian and Alaska Native Mental Health Research, *The Journal of the National Center Monograph Series*, Volume 2, Monograph No. 2, Winter 1989). The work is both a contemporary ethnographic analysis of the Puyallup Indian Tribal urban health care system (with particular emphasis on mental health issues) and an attempt to place this system in ethnohistorical perspective.

*Orders of Magnitude in Settlement Analysis: Knight Creek Site House Excavations,
Snake River Canyon, Hells Canyon, NRA*

STEVEN HACKENBERGER
University Wisconsin Centers

If 1800 known house depressions were occupied for an average of ten years over a 1000-year period, then regional populations would only have averaged about 180 people. This low figure suggests that houses were occupied repeatedly for long duration and/or historic population levels and village settlement were the product of very late exponential population growth. Excavations at Knight Creek support both conclusions, and findings are consistent with a model of sedentary "homestead" settlements.

*Physical Characteristics and Affiliations of Native People Living
at the Mouth of the Coquille River*

ROBERTA L. HALL
Oregon State University

Studies of skeletal remains of people living in late prehistoric times at the mouth of the Coquille produce a picture that is consistent with accounts of people given by traders and Indian agents in the mid-nineteenth century, with anthropometric observations of coastal peoples made by Franz Boas in the late nineteenth century, and with historic photographs of full-blooded Coquilles. Twentieth-century texts have tended to consider the Lower Coquilles as part of the South Slough linguistic group, but a re-examination of nineteenth-century observations suggests other possibilities.

Site-Catchment Analysis of the Meier Site (35-CO-5)

STEPHEN HAMILTON
Portland State University

A one-day site catchment area for the Meier site located in the Portland Basin of the lower Columbia Region is defined. Saleeby concluded that sites in and adjacent to Sauvie Island in the Portland Basin had sufficient resources to allow a sedentary life-way. A more detailed catchment area for the Meier site shows that its catchment area could support sedentism.

Prehistoric Plant Resources of Southwestern Oregon

NAN HANNON
Southern Oregon Historical Society

Archaeologists need a detailed understanding of the nature of the resources utilized by the Indians of southwestern Oregon in order to retrodict and explain settlement patterns, population density, and cultural changes. Five characteristics of the relationship between southwestern Oregon's native plants and native people are described: (1) many plants of potential importance in the aboriginal diet produced small and irregular harvests; (2) important resource plants were unevenly distributed in the environment; (3) the major plants exploited prehistorically had insufficient genetic plasticity to enter into an agricultural relationship with humans; (4) the landscape and human culture co-evolved, with human actions amplifying environmental conditions to create new habitats with exploitable resources; and, (5) associations between particular ethnic groups and particular plant communities suggest cultural habitat imprinting.

Real Women Do It With A Smile: Myths About Natural Childbirth

NAN HANNON
Southern Oregon Historical Society

During decades of institutionalized childbirth in this country, Americans lost their knowledge about how to manage birth. Lacking this tradition, when the alternative birth movement rejected medical models of childbirth, it substituted an idealized model of birth in primitive cultures. The model rested on myths about the "natural" woman's instinctive knowledge of how to birth and nurture. Despite the absence of the scientific support for these myths about natural childbirth, they have been incorporated into our health care delivery systems, often with negative consequences for the child-bearing family. Historical and cross-cultural perspectives on human birth suggest that changes are needed in the management of childbirth in the United States.

Yupik Dance for Community Health

SHIRLEY A. HAUCK
University of Alaska and Northern Folklore Center

For indigenous Alaskan Eskimos, dance was a public forum for spirit propitiation, grievance venting during public song duels, and lauding or roasting individual feats and foibles. Contemporary Eskimo dance troupes have begun utilizing traditional dance as a heritage-consistent vehicle for publicizing substance abuse problems and suggesting causes and cures. The fit between this innovative social idea-marketing scheme and the Eskimo high-context culture is investigated.

*An Analysis of the Human Remains From the Crate's Point Site (35-WS-228),
Wasco County, Oregon*

BRIAN E. HEMPHILL
University of Oregon

The Crate's Point site is a late period cemetery located on a low bluff above the Columbia River near The Dalles, Oregon. Interments are secondary burials placed below a cobble layer. 1841 human bone and dental fragments represent 36 individuals. Most of these individuals died before 20 years of age. Analysis of dental disease suggests that while generally healthy, these individuals suffered low-level physiological stress throughout childhood and early adolescence. Mortality profiles indicate few early childhood deaths coupled with high mortality in late childhood and early adolescence. These results differ markedly from the nearby site of Wildcat Canyon. Such differences may reflect the encroachment of European diseases before actual contact at Crate's Point or differential treatment of the dead.

Bobcat Cave: Storage Practices on the Snake River Plain

LAEL SUZANN HENRICKSON
Idaho State University

A unique assemblage of elk antler tines and hammerstones was recovered from Bobcat Cave, a lava tube located in the Arco Desert. These artifacts, accompanied by ice discovered in the cave during test excavations, indicate that the cave was used as a "cold storage facility." Charcoal samples taken from the test excavations date to 4000 BP and denote use of the cave at the end of the Altithermal. If the evidence from Bobcat Cave indicates that storage technology was practiced by prehistoric groups living on the Snake River Plain, it will greatly increase current knowledge of prehistoric foraging strategies in the region.

Microblades: A Functional Perspective

BRENT HICKS
Western Washington University

Pacific Northwest literature on microblades is surveyed and the traditional cultural historical view is critiqued. Based on the observation that microblades are generally found in disproportionately greater numbers in resource-gathering sites compared to habitation sites, a hypothesis of the function of microblades and their role in subsistence systems is offered.

Paint on the Walls: Rock Art, Los Padres National Forest

STEPHEN P. HORNE
 JANINE R. MCFARLAND
 Los Padres National Forest

Los Padres National Forest is caretaker to a unique and rich heritage of rock art. Professional interest began early in the twentieth century. Recent studies indicate an upsurge in professional, avocational, and general public interest. Current research focuses on explaining variability and current management attempts to cope with advancing natural deterioration and depreciation from public visitation.

The Prehistory of Etsel Ridge, Central North Coast Ranges, Mendocino County, California

AMY HUBERLAND
 Mendocino National Forest

The results of a large-scale archaeological survey along Etsel Ridge in the central North Coast Ranges, Mendocino County, California, are presented. Data from this survey, together with data from earlier work in the area, are synthesized from both surface and subsurface contexts. A tentative model of diachronic settlement and subsistence patterns is proposed for the Etsel Ridge locality. Obsidian sourcing and hydration data from Etsel Ridge are compared to similar data from the adjacent Middle Eel lowlands. Both spatial and temporal variability in the use of Borax Lake obsidian are explored.

The Mon-Tung Site: Chinese Gold Miners in the Snake River Canyon

RONALD JAMES
 University of Idaho

The Mon-Tung Site was a nineteenth century Chinese gold mining camp located in the Snake River canyon near Twin Falls, Idaho. The rock wall remains of the site's cabin were discovered last spring. The site appeared to have been undisturbed. A thorough and scientific excavation conducted in 1989 uncovered an impressive collection of artifacts dating to the 1870s. The Chinese were an integral and dynamic component of Idaho's frontier history. The information gained from the Mon-Tung excavation helps illuminate what has been until now an obscure but remarkable chapter in Idaho's history.

The Oral Tradition of Lane County Witches

LINDA JENCKSON
University of Oregon

Although they live in a modern literate society and much of their beliefs and practices can be found in books, modern witches have a thriving body of oral lore. This oral lore is both source and repository for group identity, tradition, and values. Individual witches make use of this lore to give meaning to their lives and forge a sense of place in both the witchcraft subculture and the wider society around them.

Archaeological Investigations in the Fort Rock Basin: 1989 University of Oregon Field School

DENNIS L. JENCKSON
University of Oregon

The University of Oregon Field School was conducted at Silver Lake in 1989. Research focused on the transition zone between the Cascade foothills, traditionally occupied by the Klamath, and the floor of Fort Rock Basin, occupied by the Northern Paiute. The program attempts to define and date the establishment of the occupations. Projects included: (1) mapping a complex of rock cairns atop Table Rock; (2) surveying at Duncan Creek; (3) excavating at the Duncan Creek Rockshelter; (4) excavating a house-ring at Duncan Creek; (5) excavating the Zane Church site; and, (6) sampling at the "Big M" site. Radiocarbon ages indicate the majority of sites sampled date from 500 to 1500 BP. Contacts between the Klamath and Northern Paiute had apparently occurred by 500 BP. Fishing was a large part of subsistence activities at the Zane Church site, ca. 1200 years BP, and may have been associated with shrinking desert lakes. Macrobotanical remains recovered from a hearth feature at the Zane Church site indicate seed exploitation.

Mortality in a Nineteenth-Century Hungarian Village

DAVID R. JONES
PETER E. NUTE
University of Washington

In 1987 a study of the structures of 21 village populations was begun in the Tiszahat region of Hungary. Data collected from the mortality registers maintained by the Reformed Protestant Church were used in estimating fertility rate and constructing sex-specific survival curves for one of these villages, Barabas, as it existed during the mid-to-late fifteenth century. Causes of death and their spatiotemporal distributions among selected villages, in addition to being indicative of the stresses experienced by the people, are indicators of the extent of contact (and, perhaps, gene flow) between villages.

*Historical and Archaeological Resources Relating to Steamboat Transportation,
Nooksack Valley, Washington*

JAMES R. KANGAS
Western Washington University

Before the construction of railways, steamboats provided frontier communities of Puget Sound with reliable service for commercial enterprises and transport of export commodities. Steam transportation has been identified by the Office of Archaeology and Historic Preservation as an important historical theme, but poor documentation of related archaeological resources has resulted in serious data gaps. The results of a preliminary study of historical documents and archaeological sites related to steamboat transportation in the Nooksack Valley, Whatcom County, Washington is presented.

Ongoing Analyses of Osteological Collections at Eastern Washington University

S. A. C. KELLER
Eastern Washington University

Since 1987 Eastern Washington University has received several large and small collections of osteological material, both from local museums and current excavations. In the past year a group of fifteen partial skeletons from the North Central Washington Museum (Wenatchee), five individuals washed out of a site near Moccasin Bay, and fourteen+ individuals recovered in the course of the 1989 Bureau of Reclamation Burial Review of Lake Roosevelt have been analyzed. Prior to repatriation an extensive analysis of metric, nonmetric, continuous, and pathological traits are being undertaken. Due to the reburial policy, the objectives are partially archival, but the longer-term goal is to develop a large sample of late prehistoric and protohistoric Plateau burials from which to discuss the physical parameters of the populations, as well as the effects of disease and various environmental stresses.

Windows on the Past: The Cultural Resource Celebration

JAMES D. KEYSER
TIMOTHY J. BRADY
USDA Forest Service, Pacific Northwest Region, Portland

Today's Forest Service has redoubled its efforts in such key areas as site enhancement, development, and interpretation for public benefit. To emphasize this shifting focus, the Pacific Northwest Region of the Forest Service sponsored a Cultural Resource Celebration in Portland, Oregon. This event showcased the Northwest's archaeological and historical treasures through exhibits and demonstrations, most of which involved public participation. Two full days were reserved for school children; a total of 1100 students, from grades 2-5 attended. The video program documents the Celebration and invites participation in true "Public Archaeology."

The Nonmigration of Hunters and Gatherers

GROVER S. KRANZ
Washington State University

Hunting and gathering tribes have little ability to overrun neighboring tribes. Each have similar numbers, resources, and technologies; most lack formal organization and must forage almost daily for food. In conflict situations the advantage lies with the defenders who know their territory. Agricultural people and adverse climates may eliminate hunting groups, but cannot push them anywhere. When hunters enter unoccupied or underutilized lands, it is only by an expanding frontier zone. Suggested migrations of hunters over each other's lands must include some explanation of how it could have happened.

*The Looking Glass of Historic Preservation in Micronesia:
A Reflection of Modernization and Changing Values*

ELIZABETH L. KRAUSE
Oregon State University

Development threatens the cultural, historic, and prehistoric resources of Micronesia as the island nations make the transition to economic independence and a cash-based economy. The Micronesian Resources Study employs high-power Macintosh databases in six of the region's Historic Preservation Offices to protect those resources. The relationship between the Micronesians' solutions, which rely on Western methods and technology, and their problems, which have resulted largely from embracing Western industrial values and a twentieth century consumer society are explored. Also considered are the ramifications of objectifying a given culture--how this approach allows for reflecting on what is valued, yet may also distort those values.

Vocal Communication of Francois's Langurs (Presbytis francoisi)

RAMESHA S. KRISHNAMURTHY
Oregon State University

Vocalizations among captive Francois's langurs have been recorded at the San Diego Zoo and Washington Park Zoo, Portland, since August 1989. Physical characteristics of the calls are being examined through sonographic analysis and their functions are being discussed with respect to the circumstances of emission. So far, fourteen different types of calls are recognized. During the course of recording, the threat and the scream calls dominated. Vocal comparisons with other bioacoustic studies of the family *Cercopithecidae* are made to see the general trend in the evolution of call systems. Further work is in progress.

Do Traditional Storytellers Revise Their Work? Two Snohomish Examples

TOBY LANGEN
Western Washington University

The work of Snohomish storyteller Martha Lamont is extraordinarily well-documented, for in the late 1950s and early 1960s, she recorded texts with two different collectors. For two of her stories, there are two different versions recorded, some five years apart, that show the effects of purposeful revision. In the later versions rhetorical figures are more refined, and point of view and characterization have been brought into focus. In one case, such changes give the story a new direction; in the other, they turn an adventure story into a social commentary.

Hells Canyon Rock Art--New Discoveries

DANIEL LEEN
USDA Forest Service, Hells Canyon NRA

During the summer of 1987, the Hells Canyon National Recreation Area of the Wallowa-Whitman Forest was resurveyed for rock art sites. Within a project area of 71 river miles, 177 rock art sites were located and documented. Sixteen additional sites were recorded during the course of a survey conducted in 1989, resulting in a total of 193 rock art sites in Hells Canyon--approximately one-fifth of Columbia Plateau rock art sites. Five distinct styles of rock art (cupules; pecked curvilinear abstract petroglyphs; painted red, green, white, yellow, and black pictographs; drawn black pictographs; and scratched angular abstract petroglyphs) were identified. Approximately two thirds of all sites were located on the Idaho side. Cupules are probably the earliest style present in Hells Canyon, pecked petroglyphs and painted pictographs are coeval and probably more recent, and the drawn black pictographs and scratched petroglyphs are superimposed over the painted pictographs, and appear to be the most recent styles of rock art found in the project area. While some of the rock art in Hells Canyon may have been made as early as 7000 BP, most was probably made during the last 2000 years.

*Chronological Sequences and Technological Systems
in the Southern Washington Cascade Range*

DENNIS E. LEWARCH
Larson Anthropological/Archaeological Services
JAMES R. BENSON
Environmental and Natural Resources Division, Fort Lewis

Data from recent CRM excavation projects at seven sites in the Southern Cascade Range of Washington document long-term land use in the region beginning ca. 7000 BP. Tephra, radiocarbon, and stratigraphic analyses demonstrate the utility of Columbia Plateau projectile point styles for relative temporal ordering of artifact assemblages. Patterns in lithic manufacturing sequences, tool assemblage organization, and variability in lithic

material types are outlined. There appears to be a hiatus in occupational intensity after 5000 BP that may be a function of large-scale Mt. St. Helens' volcanism. Dated components occur again in the area after 2000 BP.

1350 BP at Bandon, Oregon

LEE LINDSAY
Oregon State University

Site 35-CS-43 on the Oregon coast has proven to be of great interest and some antiquity. A date of 1350 BP has come from a lower cultural level. This level has also produced bone artifacts and faunal material. These artifacts and faunal materials are discussed.

Do Archaeologists Have a Moral Obligation to Native People?

LEE LINDSAY
Oregon State University

Anthropologists have an ethical obligation to the peoples and cultures they study. This extends to archaeologists, who are anthropologists studying the peoples and cultures of the past. It must be decided what is or is not ethical concerning these cultural remains. Archaeologists, it is suggested, do have ethical obligations to the peoples and cultures of the past, and also that archaeologists must turn to the descendents of those past cultures as representatives who have moral obligations to their ancestors, when deciding how the remains of the past must be treated.

Families in Caves: The Uniquely Mundane Archaeological Site

SKIP LOHSE
Idaho State University

Recent excavation at Aviator's Cave (10-BT-1582), a lava tube on the Idaho National Engineering Laboratory, southeastern Idaho, has defined a remarkable sequence of at least three activity surfaces dating from about 1000-200 BP. Distinct living surfaces were found at the mouth of the tube, consisting of mats of sagebrush bark and grass. There has been little or no disturbance of these features, and tests have produced a wide variety of fiber, hide, stone, shell, and bone artifacts, and floral and faunal evidence of human economy. Preserved are the everyday odds and ends of the tool kits of desert-dwelling families. Activities of men, women, and children are evident at this unique site.

The Hows and Whys of Projectile Points

SKIP LOHSE
Idaho State University

Archaeologists persist in drawing detailed functional inferences from defined types of projectile points. Forget the points--it is the shafts that count. Analysis of aboriginal projectile systems show that there were increasingly sophisticated design improvements in methods of delivering points to their targets over the 10,000 or so years of North American prehistory. The consistent element in that evolution is the shaft. Points can only be used to infer something about the shaft and propulsor. In fact, projectile points are the least important part of the weapons system.

A Model for Prehistoric Bighorn Sheep Procurement Along the Middle Reach of the Columbia River, Washington

GORDON ALLAN LOTHSON
Washington State University

One of the more seriously neglected areas of archaeological research in North America and, in particular, the Plateau, concerns the prehistoric use of North American Bighorn Sheep. A model generated largely from the ethnographic data collected from the Plateau and adjacent regions, and tested against the archaeological data gathered from the middle reach of the Columbia River using a spatial approach, suggests a relatively complex and yet in some ways simple set of procurement-processing-utilization strategies and techniques. It appears that the late prehistoric occupants of the middle Columbia River region hunted the bighorn with the bow and arrow utilizing the "pocket blind" and drive system. It is also suggested that these people processed the animals at small camps near the kill sites and they used very simple butchering. It also appears that a minimal amount of utilization (consumption) took place at the hunting camps. It is likely that the fortifications studied and described at the mesa sites in central Washington by William C. Smith are examples of this system.

Agricultural Intensification and Dental Pathology in Prehistoric Pakistan

JOHN R. LUKACS
University of Oregon

Different subsistence techniques and dietary patterns are often associated with unique dental disease profiles in both prehistoric and living populations. The archaeological site of Mehrgarh provides a rare opportunity to examine, diachronically and sympatrically, changing patterns of dental disease prevalence that accompany the increased dependence on agriculture and improvements in food processing. The inhabitants of Neolithic Mehrgarh enjoyed lower incidence of dental afflictions than their successors due to their reliance on a mixed economic system. The increase in disorders evident among the

chalcolithic occupants of Mehrgarh may be due in part to more developed food preparation methods and appear to override the therapeutic effects of naturally fluoridated water previously documented for Mehrgarh.

Trauma Analysis in Forensic Anthropology

JOHN K. LUNDY
Clark College, Vancouver
Oregon State Medical Examiner's Office

Traditionally, forensic anthropology has been associated with the identification of unknown skeletal remains. In such cases, from the skeletal evidence, the forensic anthropologist provides a general description of the deceased which includes race, sex, age at death, stature/build, and an estimate of time since death. Individual characteristics are also sought such as evidence of antemortem pathologies, occupational stress markers, healed trauma, and the cause of death. However, more and more frequently, the forensic anthropologist is called upon to interpret violent trauma in fleshed remains where identity may not be in question. Often, in cases involving trauma to the head, the soft tissues mask the nature and degree of the underlying trauma. After removing the soft tissue, the bony components can be examined, and determinations made about the type of weapon used, number and direction of blows in bludgeoning, and the identification of entrance and exit wounds and estimates of distance in gunshot wounds. Several recent cases are discussed to illustrate the role of the forensic anthropologist in trauma analysis.

*Public Archaeology on Public Lands: Volunteers and Visitors at the Salishan Mesa
Archaeological Project*

LYNNE MACDONALD
Bureau of Reclamation, Boise

In 1989 the Bureau of Reclamation sponsored State Centennial projects at three cultural resource sites in Washington and Idaho. Public involvement activities that occurred there are discussed, focusing upon interpretive programs at the Salishan Mesa Archaeological Project. There, Reclamation contracted with Eastern Washington University to conduct a program that integrated amateur volunteers and visitors into a scientific excavation program. During a six-week period, 150 amateurs participated, and more than 5000 visitors toured the site. Also mentioned are projects at the Minidoka Relocation Camp and Walcott Park in southeastern Idaho that are cooperative efforts between Reclamation and public interest groups.

Ceramic Figurines From the Western Cascades

JOANNE M. MACK
Pomona College

The ceramic figurines of the Western Cascades of southern Oregon and northern California appear to be unique within the western United States. They are realistic representations of a variety of animal forms, including humans, but unlike most figurine traditions, animal forms overwhelmingly dominate the assemblages. These two characteristics cause these assemblages to contrast sharply with figurines from surrounding regions. The figurines date between AD 900 and 1600. They are almost always found in association with Siskiyou Utility Ware and Gunther Barbed projectile points.

Prehistory of the Upper Klamath River, Oregon and California

JOANNE M. MACK
Pomona College

The prehistory of the Upper Klamath River drainage in southern Oregon and northern California and a regional chronological sequence covering approximately the last 7000 years are discussed. Several hypotheses concerning settlement patterns, subsistence patterns, cultural interaction with adjacent regions, and ethnic boundaries are presented.

Early Human Social Organization and Mating Tendencies

MARK C. MANSPERGER
Washington State University

What was the precultural human social organization and mating system? Primate cross-species comparisons are used to arrive at a plausible answer that challenges many current theories. The results of this investigation suggest that our precultural ancestors resided in multimale, multifemale communities; the male-female consortships of our ancestors were genetically programmed to last for a short period; and, the precultural human mating system was a form of "selective promiscuity." It is also suggested that our precultural mating system is a continuing fundamental tendency within us that is being suppressed and modified by culture.

*Packwood Lake: Lithic Technology of a Multi-Resource
Acquisition Site in Southwestern Washington*

JEFFREY A. MARKOS
Washington State University

Data from the Packwood Lake site, located in the Cascade Mountains, provide an opportunity to examine the relationship of lithic technology and site function. Lithic scatters in upland environments are traditionally interpreted as hunting camps. A technological analysis of the lithic assemblage and ethnographic information specific to utilization of Packwood Lake suggests activities associated with logistical procurement of various seasonally available resources. Data from the technological analysis of the Packwood Lake site are compared to data from a kill Site and a hunting camp.

*The Prehistory of Tebenkof Bay, Kuiu Island, Southeastern Alaska, and Its Relationship
to the Prehistory of the Northern Northwest Coast*

HERBERT D. G. MASCHNER
University of California

Two seasons of survey and excavation were conducted in Tebenkof Bay. Over 100 prehistoric sites were discovered and the four largest villages were mapped and tested. Analysis reveals a cultural sequence spanning the last 4500 years. The results indicate that there were fundamental changes in site organization and location during the last 3000 years. These changes closely correspond to regional climatic fluctuations and glacial advances. An overview of the prehistory of the region demonstrates that the patterning seen in Tebenkof Bay can be shown to be part of a more general southeastern Alaska phenomenon.

Building Community: Urban Indians in the Rogue Valley

JEAN MAXWELL
Southern Oregon State College

Residence off the reservation, particularly in urban areas, is commonly assumed to have an individualizing and culturally disintegrating effect on Indians. For urban Indians of southern Oregon, however, kin-based support networks, and recently an emergent cultural center, speak to material and cultural well-being. The three-year history of the American Indian Cultural Center, including how it came into being, how it is structurally changing, and how the founders' vision is being perpetuated, reveals both a conscious effort at building community among urban Indians and a complex set of factors affecting that endeavor.

Plateau Bags: Change and Continuity

TIMOTHY F. MCCLEARY
University of Montana

The ethnographic research collection of the University of Montana was recently enhanced by the addition of the Fran Breitenstein Memorial Collection, a collection compiled by Fran Breitenstein over the past forty years. The greater part of this collection is composed of contemporary beaded bags made by the Salish (Flathead) of western Montana. The bags, when compared to each other and older Plateau bags in the University of Montana ethnographic collection, illustrate the continuity and change of Plateau bags. This continuity and change in Plateau bags is discussed, utilizing ethnographic data and slides of the material in the collection.

Archaeology in the Shadow of Patoos: The Council Lake Project--1989

RICK McCLURE
JANET UDDLE
Gifford Pinchot National Forest

Council Lake is located at the base of the Mount Adams volcano in the southern Washington Cascades, occupying a watershed divide that separates the Lewis and Cispus river drainages. Test excavations at site 45-SA-202 were conducted in 1989 to assess archaeological significance and potential impacts of National Forest campground development. The cultural stratum at the site produced a radiocarbon age of 6500 years BP and is overlain by Mount St. Helens Y set tephra. The site was not reoccupied after the ca. 3500 BP eruption that produced tephra. The lithic assemblage includes a high percentage of artifacts related to core reduction and biface blank and preform production. Assemblage composition indicates site function was closely associated with local subalpine chert and chalcedony procurement. A small nearby quarry site was also investigated as part of the project. Data generated from the testing were used to develop a research strategy for planned 1992 excavations.

Body Composition and Dominance Rank in Captive Pigtail Macaques

ROBIN MCFARLAND
University of Washington Primate Field Station

Body fat is related to dominance rank in some species of primates. Captive studies of female rhesus macaques, for example, show that females with relatively more body fat are higher ranking. For this study behavioral and anthropometric data have been collected from captive female pigtail macaques at the University of Washington Primate Research

Center. Preliminary data show that there is a positive correlation between body fat and rank, but there is also a relationship between the state of sexual receptivity (as indicated by sexual swelling) and rank.

*Babies, Bishops, and Bucks: The Interaction of Birthrate, Religion,
and Economics on the Texas-Mexican Border*

NANCY P. MCKEE
Washington State University

Entrenched views of the traditionally high birthrate of Mexican-Americans point to the opposition of the Catholic Church to birth control and the persuasive power of this position among overwhelmingly Catholic Mexican-Americans. Easily available census data, however, point to a dramatic decline in birthrate along the Texas-Mexican border in the last 25 years. In addition, ethnographic evidence indicates that, despite continuing Catholicism and awareness of the Church's prohibition of birth control, economic factors are largely responsible for determining family size for Mexican-Americans, as they are for other Americans. Interestingly, there is some indication of a gender-based difference of opinion on the need to restrict family size.

*Infants and Infant Caregiving Practices in Evolutionary Perspective: Implications for the Study
of the Sudden Infant Death Syndrome (SIDS)*

JAMES J. MCKENNA
Pomona College

Important clinical data on the relationship between infant fragility, factors in the infant's microenvironment relevant to SIDS, and the physiological regulatory effects, so well documented among nonhuman primates, that parents assert on their infants when they sleep together, is investigated. Data from a study of five co-sleeping mother-infant pairs, the first to be conducted using simultaneous polysomnographic procedures, demonstrates that continuous communication occurs between sleeping partners that affects their induced sleep progressions, breathing patterns, transient and epochal arousal rates, and physiological states in general. It is shown that the mother's arousals induce infant arousals and vice versa, and that both partners are responsive to particular state changes in the other. Patterns of sleep and wake synchronicity as well as independence among co-sleeping pairs is demonstrated. Because current SIDS research suggest that the infant's arousals and awakenings constitute a stimulus to breathing and that a failure to arouse to breathe may be part of the unfolding patho-physiology of SIDS for one of the many subclasses of different SIDS victims, further behavioral research into the potential effects of parent-infant co-sleeping is warranted.

Full-Coverage/Large-Scale Survey Projects: Some Thoughts

GEORGE R. MEAD
Wallowa Whitman National Forest

What has been going on in the academic world in terms of very large scale projects is discussed. Some thoughts on what the Forest Service has been doing and what direction it might grow is included.

*An Archaeological Survey in the Upper Skagit River Valley, North Cascades
National Park Service Complex, Washington*

ROBERT R. MIERENDORF
National Park Service

The upper Skagit River valley area comprises the valley floor and adjacent steep mountain slopes between 460 and 490 m (1500 - 1600 ft.) amsl in a large valley in the central northern Cascade Range. An intensive, inventory-level survey of 27 km² (6622 acres) of reservoir bottomland recorded 126 prehistoric sites and 52 isolated artifacts, resulting in an overall site density of 4.7 sites/km². All sites consisted of lithic scatters, some associated with fire-modified rock concentrations, burned mammal bones, charcoal, and saucer-shaped depressions. The project terrain was classified into five landform types, permitting quantification of site densities for each. Landform-type densities ranged from 0.7 km² on the flood plain to 56 km² on abandoned terraces. The wide range of observed densities is related to both intensive prehistoric use of the valley and extreme variations in ground surface visibility.

The War on Poverty on the Reservation

BRUCE G. MILLER

The federal war on poverty on Indian reservations has not been adequately examined because the consequences were unintended and slow to develop, and because program evaluations have relied on macroeconomic perspectives. I argue that an ethnographic view is needed to highlight important developments. Positive consequences of these programs, particularly CETA and CAP, include the training of a generation of leaders now active on reservations of western Washington. Funding was especially timely in that leaders emerged who helped mediate between tribe and government during the difficult struggles over federal recognition, fisheries, and other treaty issues. These programs contributed far more than income transfer and can be regarded as seed money.

*Ecological Consequences of the Mt. Mazama Ash-Fall and Human Response
in the Archaeological Record*

SUSAN D. MONTGOMERY
Simon Fraser University

Ash from the climactic eruption of Mt. Mazama, ca. 6000 BP, is recognized as a useful stratigraphic marker by archaeologists. However, the possibility of long-term ecological consequences arising from the addition of volcanic ash to the environment, and its significance to human populations, has not yet been adequately explored. Based on the studies of the effects of contemporary ash-falls on faunal and floral communities, it is suggested that the Mazama literature on pre- and post-eruption archaeological assemblages from the Canadian and Columbian plateaus be reviewed to determine if this ecological readjustment is reflected in the human adaptive pattern. An apparent shift from seed processing to root processing may be such evidence, as well as concomitant changes in lithic technology. This preliminary examination suggests that intensive investigation of the ecological effects of catastrophic natural events may provide causal explanations of culture change over time.

Klamath Messengers of Hope: Oral Histories of Klamath Women as Culture Keepers

LORNEL T. MORTON
Southern Oregon State College

The Klamath Tribe of south-central Oregon was terminated in 1954. Their ancient lands became the Winema National Forest. The result was economic, political, and personal disaster. Still minus their land, tribal status was restored in 1986. At present, the Tribe is attempting to reclaim their "lost" culture. Crucial to this process are a handful of elders. Only in their memories, and thanks to the work of a few anthropologists, do we have access to this ancient way of life. The life histories of Klamath women contribute valuable insight into their precontact culture and provide essential data on the processes of change and the formation of the recent and emerging culture of the Klamath.

Biface Reduction: An Explicitly Nonexperimental Approach

ROBERT R. MUSIL
Oregon State Museum of Anthropology

Archaeological research undertaken in a small upland valley in south-central Oregon has revealed a number of seasonal task sites. Quartz Valley is located in the immediate vicinity of the Drews Creek/Butcher Flat obsidian source, and the sites are dominated by debris from the manufacture of bifacial implements. An examination of the archaeological evidence has delineated three differing biface reduction sequences (trajectories), two of which are contemporaneous within the same site. The evidence for these archaeologically-defined reduction sequences, and the variation in techniques used for each, indicates a more varied and less structured approach to biface reduction by native peoples than has been previously suggested.

History Repeats Itself in the Andaman Islands

FRANK MYKA
Washington State University

When the British came to the Andaman Islands in the late eighteenth century, they encountered a native population of an estimated 5000. Today they number less than 600 and are continuing to decline. This decline is typical of encounters between isolated hunter/gatherer peoples and industrialized nations. The decline of the Andaman Islanders was exacerbated by the policy decisions of the British, which were implemented under the rubric of being humane. Today the policies of the British are being replicated by the Indian government with the same rationalizations for their implementation. With the belief that acculturation is inevitable and necessary, the Indian government is repeating the mistakes of the past. The process of extinction now under way can only be prevented with a "hands off" policy towards the islanders.

Because It's There: A Summit Attempt of Mt. Rainier Wearing Traditional Yakima Indian Moccasins

MARC B. NANCE
Central Washington University

Was the summit of Mt. Tahoma (Rainier) first reached by Yakima Indians wearing their customary winter footwear? That possibility as well as all aspects of making traditional Yakima Indian winter moccasins is explored. Also described is a how well these moccasins performed on a recent summit attempt of Mt. Tahoma

The Role of Genetics in the Development of Maxillary Canine/Third Premolar Transposition

GREG C. NELSON
University of Oregon

Canine/Premolar transposition is rare in both historic and prehistoric Homo sapiens, with modern rates being less than one tenth of one percent. Due to this rarity, ideas as to its etiology have tended to be educated guesses and range from its being the result of dental crowding to being a by-product of deciduous tooth retention. Although a genetic cause has been postulated, lack of samples of sufficient size have, except in one case, failed to yield worthwhile results. However, site SCr1-3 on Santa Cruz Island, California, has produced a prehistoric sample in which 8.5 % of the crania exhibit transposition. This high rate in a small, relatively isolated population, when combined with studies of root location and high incidence in isolated families, indicates that the cause may be due to inbreeding and in the case of SCr1-3 also related to founder effect.

More Complete Analysis of the Vicos Quechua Indians in Peru

MARSHALL T. NEWMAN
University of Washington

In 1956 a quite fully integrated study of the 2500 Vicos Quechua Indians population was begun. These were peons the Spanish had originally pressed into service in Peru's Callejon de Huaylas, 250 miles north of Lima. For five years the boys at the local consolidated school were served 1000 calorie lunches, heavy in proteins plus vitamins, on a matched pair basis. Indeed, the lunches continued for some years more. In 1961, more studies showed significant and salutary increases in body weight and other lateral dimensions, skeletal maturation, bone density and hemoglobin. Forty-five percent of the adult males in the communities were also studied. Like the children before the lunches, the Vicos men were smaller in body, head, and face size than other Quechuas. Blood pressure, weight, and cholesterol levels were low and even decreased with old age. In addition to usual anthropometry, skin reflectances and skin folds, eight blood group systems, and dermatoglyphics were included. Much of the anthropometry remains unpublished, and a total integrated study is still lacking after two more generations of Mestization.

The Transition of Neanderthals to Anatomically Modern Europeans

MARKKU E. W. NISAKANEN
Washington State University

Anatomical "peculiarities" of Neanderthals are often used to argue for their extinction and subsequent replacement by anatomically modern Europeans. In reality, these "peculiarities" are the result of anatomy or geographic isolation (line traits). The similarity of European line traits in Neanderthals and anatomically modern Europeans argues for an in-place transition and not replacement.

Western Washington Witches

ANDREA M. NOBLE
Central Washington University

There exists in western Washington a community of witches or *wiccans*. The members of this community consider themselves pagans who celebrate life and nature in ritual. All religious ceremonies are performed by individual covens, which leads to many misconceptions. People who have no knowledge of these ceremonies usually stereotype *wiccans* as "Satanists." Like everyone else, these people have emotions and everyday problems to deal with. Yet they practice a nature religion so they can live within the environment and with each other. Material obtained as a result of participant observations in coven worship and ceremonies are discussed.

Archaeology on the Flooded Shores of Malheur Lake, Harney County, Oregon

ALBERT C. OETTING
Heritage Research Associates, Inc.

The recent cycle of flooding at Malheur Lake left new shorelines that were partially eroded and temporarily denuded of vegetation exposing numerous archaeological sites. Two archaeological surveys were conducted to take advantage of the enhanced visibility and to minimize the loss of information to both erosion and vandalism. Sections of the current mainland shore and twenty-seven islands were examined. Seventy-two sites were recorded, ranging from small lithic scatters to villages with housepits. The lacustrine subsistence orientation of many sites is apparent in the observed material culture. Collected projectile points suggest that the basin was frequented throughout the Holocene.

Small Streams, Big Hopes

RICHARD K. OLMO
Southern Oregon State College

Archaeological inquiry over the last three years in the Bear Creek Valley reveals a pattern of prehistoric aboriginal use and contemporary archaeological recovery conditioned by geomorphic process regulated by highly variable precipitation. Documented events such as low run off, flooding, channel bottom alteration, and stream channel migration conspired to decrease aboriginal use of this area and to reduce the probability of encountering intact aboriginal occupation remains using current investigation strategies. A more intensive survey strategy is proposed.

Boulder to Bifaces: Initial Reduction of Obsidian at Newberry Crater, Oregon

TERRY L. OZBUN
J. JEFFREY FLENNIKEN
Lithic Analysts

The archaeological remains within Newberry Crater are associated with a large prehistoric obsidian quarry complex. The main attraction to Newberry Crater obsidians throughout prehistory appears to be the availability of boulder-sized blocks. These large-sized materials were used to manufacture remarkably large cores, bifaces, and projectile points. Although manufacture of large tools may have been the norm at quarry areas throughout western North America, it is infrequently reflected in lithic assemblages on the landscape because of use-life reduction prior to discard.

Dental Microwear, Attrition, and Diet in the South Asian Mesolithic and Chalcolithic

ROBERT F. PASTOR
University of Oregon

This qualitative analysis of molar teeth from the Chalcolithic Greater Indus Valley site of Mehrgarh (period III: ca. 6500 BP) and the Mesolithic Ganga Valley site of Mahadaha (10,000-8000 BP) establishes an association between specific dental microwear patterns and dietary specializations for Baluchistan and northeastern India. The pattern of microscopic dental wear at Mahadaha consists of a rough-textured fabric overlain by many long, fine and wide parallel scratches with rounded and relatively smooth margins, combined occasionally with a few small pits. Molars from the incipient agricultural site of Mehrgarh exhibit a dental microwear pattern consisting of a relatively smooth polished surface with abundant small and large pits and long fine scratches with sharp angular margins. Both the enamel polishing and high frequency of pitting evident in this early pottery-using population are associated with the consumption predominantly of processed grains, with the addition of meat from domestic bovinds. Mahadaha microwear shows a partial resemblance to that reported for prehistoric populations of Eskimo and precontact Georgia-Florida coast groups.

Backtracking: Ancient Art of Southern Idaho

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Boise State University
JAMES C. WOODS
Herrett Museum, College of Southern Idaho

The Backtracking project was designed to expand beyond regional archaeological emphases of dating, settlement, and subsistence. We attempted to minimize mechanistic models and provide an alternative humanistic profile of the ancient peoples of southern Idaho. The effort assumes archaeologists can make contributions in the reconstruction of ancient symbolism, caching, and others are addressed through three-dimensional objects and rock art panels. Our effort has culminated in a museum display and a published catalogue. The project was sponsored in part by the Idaho Humanities Council.

A Cautionary Tale About Radiocarbon Dates in Southwestern Oregon

RICHARD M. PETTIGREW
INFOTEC Research

The best foundation for a trustworthy regional chronology is a reliable set of culturally relevant radiocarbon ages. However, when radiocarbon ages derived from charcoal that is not unambiguously cultural are reported as the basis of a cultural chronology, progress in regional research may be handicapped until the error is corrected. Such a situation may exist in southwestern Oregon today. The problem and its possible solutions are discussed.

A Survey of Public Attitudes Towards Archaeological Resources and Their Management

DAVID POKOTYLO
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University of British Columbia

Public interest is the basis of heritage conservation acts and programs both in Canada and the United States. Little effort, however, has been made to monitor this interest level. As archaeological research funding and effective heritage resource conservation legislation increasingly depend on public understanding and support of archaeology, a thorough knowledge of public perceptions is important to the survival of the discipline. The results of an initial survey of public attitudes of Vancouver area residents towards prehistoric archaeology and heritage preservation in British Columbia are presented. The study revealed that although the public is very interested in prehistoric archaeology and is willing to support heritage conservation programs, there is considerable misunderstanding of current heritage conservation legislation and British Columbia archaeology. The results raise questions about the effectiveness of present means of disseminating information about archaeology to the public.

Harappan Dietary Differences Sorted by Gender

STEFAN C. RADOSEVICH
University of Oregon

It has been argued that the Harappan Civilization was egalitarian, based on the uniformity of architectural features. Using trace element analysis of Harappan femora, a statistically-significant difference in strontium (Sr) levels between males and females, with adult females consistently showing a much greater Sr content than males was detected. Though the femora are seriously contaminated by accumulative diagenesis, the strength of the correlation (Pearson's $r = 0.987$), led to the postulation of an explanation for the data which is in part that dietary-Harappan females had a calcium-poor diet that predisposed the interred bones towards absorption of Sr from the soil. Such a diet can also be interpreted as an indication of differential access to calcium-rich foods in a non-egalitarian society.

Bone Tool Assemblages As an Aid to Shell Mound Site Typologies in the Northwest Coast

DORIA RAETZ
Portland State University

Fifteen bone tool assemblages from shell midden sites were compared. Three of these are unpublished sites from Prince Rupert Harbour. They were grouped using cluster analysis. Inter and intragroup variation in bone tool assemblage structure was analyzed. The objectives of this study were: (1) to generate hypotheses about the function of the unpublished sites by comparing their bone tool assemblages with those from sites which are

better understood and looking for underlying patterns; (2) to test the utility of using bone tool assemblages as a diagnostic tool in analyzing sites; and, (3) to test the utility of the cluster analysis procedure with this data set. Hypotheses were developed identifying possible site usage at the three Prince Rupert Harbour sites. Bone tool assemblages were shown to be a useful aid in site analysis, and cluster analysis was quite useful in identifying existing patterns in these data

*Preliminary Analysis of the Eastgate Points and Preforms
from the Nicholarsen Cache, Winnemucca Lake, Nevada*

ANAN RAYMOND
U.S. Fish and Wildlife Service

The preliminary analysis of the 101 Eastgate points and preforms from the Nicholarsen cache is discussed. The points and preforms were cached in a cave that was excavated by looters in the 1960s. The points and preforms appear to be the working stash of a single flintknapper. The manufacturing technology is described. The commonly used Great Basin point typology does not accommodate the Nicholarsen collection. The ethics of working with a commercially valuable collection in a private museum are also considered.

Subsurface Testing at the Whill Wetz Village Near Clatskanie, Oregon

JO REESE
JOHN L. FAGAN
Archaeological Investigations Northwest

Archaeological testing at 35-CO-16, a late prehistoric site on the lower Columbia River near Clatskanie, Oregon, was done in the fall of 1989. Subsurface work and examination of privately held collections reveal a rich and varied artifact inventory in a site that is now deeply buried by gravel and dredge deposits. A review of historic documents suggests that 35-CO-16 is the location of the Whill Wetz Village noted by Alexander Ross in 1811. Ethnographic and linguistic evidence suggests that the occupants of Whill Wetz were a small but distinctive group of Lower Columbia Athapaskan speakers surrounded by Chinookan speakers.

An Overview of the Pittsburg Landing Archaeological Project

KENNETH C. REID
Washington State University

The 1989 field season at Pittsburg Landing focused on six prehistoric sites on the east bank of the Snake River in the Hells Canyon National Recreation Area. The research design sought to: (1) develop a chronology for the sites; (2) define subsistence and settlement patterns; and, (3) identify demographic shifts through time with archaeological evidence. The emerging cultural and geochronology suggests that all six sites were occupied during the last 2500 years and span the Harder/Piquin/Numipu phase sequence. A logistical model of structure and feature patterning indicates that the full Binfordian array of residential bases, field camps, locations, and stations is represented in the sample. Finally, dated hearths at Upper Landing (AD 1390), Cliff Face (AD 1790) and Deep Gully (AD 1750) suggest that we may be able to examine the Campbell (1989) thesis of a smallpox-induced demographic collapse in the sixteenth century with a Hells Canyon data base. Post-collapse reorganization may be indicated by changes in site size, changes in assemblage composition, and by a disintegration in cultural norms manifested in arrow point styles.

*Hunter-Gatherer Intensification in Eastern Oregon: Evidence from
the Silvies Plateau and Joseph Upland*

KENNETH C. REID
JOHN A. DRAPER
PETER E. WIGAND
Washington State University

Eastern Oregon plateaus adjacent to pluvial lakes in the Harney Basin and to the canyons of the lower Snake River offer scope to examine the pressure of a growing regional population on a fixed resource base. Hunter-Gather "intensification" in the late Holocene has been linked to regional changes in fire history, to an increase in the variety and frequency of upland sites over time, even to the appearance of a native "agroecology" among the Wada Paiute. Recent archaeological and paleoenvironmental findings from the Silvies Plateau, the Joseph Upland, and Hells Canyon relevant to the intensification there are examined.

Ethnohistorical Research in the Records of the Northwest Boundary Survey, 1857-1861

ALLAN RICHARDSON
Whatcom Community College

The land boundary between the United States and Canada at the 49th Parallel, from the Rocky Mountains to the Pacific Ocean, was first surveyed in the years 1857 through 1861. The records of this Northwest Boundary Survey include extensive documentation of Indian use of areas near the boundary, details of Indian culture, and descriptions of the involvement of Indian people in the work of the survey. Unfortunately, most of these

records are available only in the original at the National Archives in Washington, D.C. Even so, anyone studying Indian groups near the boundary or having a general interest in the ethnohistory of this area should be aware of, and make use of, these materials.

Uses of Ethnohistorical Research in Nooksack Tribal Programs

ALLAN RICHARDSON
Whatcom Community College

Research on the ethnohistory of Nooksack Indian settlement and subsistence has great potential for practical application. These were deliberately explored in research funded by tribal planning grants, especially in studies of the history of land titles. Extensive research on traditional resource exploitation areas and settlement locations, while not intended for practical application, has many practical and political implications. Results of various research studies have been used in tribal programs for housing, fisheries, enrollment, education, and resource management.

*Development of a Library of Known Obsidian Sources in the Pacific Northwest:
A Progress Report*

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M. JAMES
D. GODFREY-SMITH
J. M. D'AURIA
Simon Fraser University

A project is underway to establish a reliable, standardized library of obsidian source spectra for the geological obsidian sources found in the Pacific Northwest. The source spectra will be based on the relative trace element concentrations of the source obsidian rocks, applying a nondestructive method of X-ray fluorescence to discriminate between obsidian material from different sources on the basis of their relative element concentrations. Several problems have been encountered: 1) a number of sources have been referred to by more than one name in extant literature; 2) the element concentrations of the obsidian sources have been measured by different groups using a number of different analytical techniques; 3) because the usual purpose of obsidian sourcing is to compare the trace element chemistry of an obsidian artifact to that of known sources, the results are often quoted in terms of relative rather than absolute concentrations; and, 4) the characterizations of some sources are so similar that the parent source of an individual obsidian artifact may not be conclusively determined.

Keep the Circle Strong: Native Health Promotion

JANE ROSS
 JACK ROSS
 University of Alberta

Ways in which native cultural beliefs and practices can serve as a base for health promotion and health education are discussed. The content emerged from an anthropology course ("Health and Healing") that involved native people, integrating their views about health maintenance and disease prevention with the Epp Health Promotion Framework. To assist application elsewhere, the educational methods and an overview of the outcomes are summarized. For example, to honor native custom governing the ownership and distribution of health knowledge, native elders were involved in the design and implementation of the course. The course was opened ritually by elders, also native healers, who burned sweet grass and conducted a pipe ceremony to legitimate the course content and discussions and to illustrate cultural practices used in health promotion.

From Beads to Blacksmithing: Beyond Particularism

LESTER A. ROSS
 San Bernardino County Museum

Historical archaeological investigations often produce particularistic studies of sites, their architecture, and material culture. They often utilize idiosyncratic methods of analysis, chosen to complete investigations expeditiously. Consequently, descriptive information lacks standardization, inhibiting comparative and substantive studies of regional, national, and international issues. As the field of historical archaeology matures, standards have been established (e.g., for ceramic marketing, mining technology, and ethnicity research). Through a brief examination of new approaches used for the study of glass bead technology and blacksmithing sites archaeology, benefits for comparative, substantive, and international research are discussed using research conducted at Fort Vancouver as an example.

SEM Applications to Prehistoric Cutmarks on Bone From Southwestern Oregon

DONALD SAKAL
Southern Oregon State College

Stone tools used by prehistoric people to process animal carcasses leave cutmarks on bone surfaces. Striated cutmarks have characteristic serration patterns, and the baffle of the serration may distinguish whether a stone tool or metal edge had contact with the ecofact. Silicon rubber casts of bone from southwestern Oregon archaeological sites have been used with the scanning electron microscope in the study of these cutmarks.

The Expert Witness: Forensic Anthropology

CATHERINE J. SANDS
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Many jokes are told in regard to the pitfalls and traps that expert witnesses fall prey to in answering questions. Where do attorneys get the questions they ask of an expert witness? What type of responses should an expert witness avoid making? What makes one witness appear more credible than another one? How should one prepare himself to take the witness stand? How much do expert witnesses expect to be paid for their testimony? The answers to these questions are the result of many years of research and participant observations.

Wasco-Style Woven Beadwork: Merging Artistic Traditions

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Mt. Hood, Oregon
KATE C. DUNCAN
Seattle University

Several of the earliest beaded bags collected in Oregon Territory show a marked similarity in designs to the distinctive basketry of the Wasco/Wishxam people of the Mid-Columbia River region. However, the forms of these early beaded bags are unlike the traditional Wasco-style twined bags, but are related to two long-established Algonkian forms, the octopus bag and the panel bag. The family history of one Dog River Wasco woman whose beadwork can be documented offers some clues to the origin of this distinctive art form and its relationship to the development of the Northwest.

*Vertebrate Taphonomy and Human Subsistence at
Times Square Shelter, Southwestern Oregon*

DAVE N. SCHMITT
Intermountain Research

Animal bones retrieved from excavations at Times Square Shelter (35-DO-212) constitute one of the largest and most taxonomically diverse archaeofaunal assemblages recovered in southwest Oregon. Although the skeletal remains are from an undeniably cultural context and commonly possess evidence of human modification (e.g., butcher marks), attritional analyses also reveal the taphonomic presence of nonhuman predators, and collectors, including terrestrial carnivores, wood rats, and possibly raptors. Through detailed examination of bone damage in concert with recent actualistic and ethnoarchaeological studies, the formational history of the shelter, including the identification of human subsistence refuse versus nonhuman fossil accumulations is explored.

Flake Size: What Does It Mean?

SARA A. SCOTT
CH2M Hill, Inc.

Size-grading lithic debitage is a traditional way to describe and analyze stone tool manufacturing waste from archaeological sites in eastern Oregon. More recently, this approach has begun to be replaced by technological analyses of lithic debitage. With research at lithic scatter sites in central Oregon, the benefits of both approaches are compared.

The Japanese Early Paleolithic: Problems and Interpretations

RICHARD SHUTLER, JR.
Simon Fraser University

Since the first Paleolithic site (Iwajuku) was discovered in Japan in 1949, there have been controversies regarding the claimed age or whether or not the lithics at some of these sites are natural or artifactual. Since 1976, a number of sites have been excavated in Miyagi Prefecture of northern Honshu for which a Paleolithic, pre-30,000 BP, age has been claimed. Serious criticisms have been made of the field methods practiced and the interpretations of the evidence from these sites. The controversies surrounding some of these sites and earlier worked sites are discussed.

Unifacial Bifaces: More Than One Way to Thin a Biface

BETSY SKINNER
 Navajo Nation Archaeology Department
 PETER AINSWORTH
 University of New Mexico

The sequencing of biface reduction is viewed by nearly all archaeologists involved in lithic studies as a standardized procedure. This concept, as championed by Guy Muto in the West and Errett Callahan in the East, assumes that as a biface proceeds along the reduction trajectory, from blank to preform to end product, flakes are removed systematically from both faces. Recent studies at the Casa Diablo obsidian quarry in east-central California have revealed a substantially different approach to biface reduction. An alternative biface reduction strategy, the unifacial biface, and its implications for prehistoric stone tool studies and replicative experiments are described.

"Mimic" Mystery Solved: A Geochemical Reassessment of the Volcanic Tephra From Vine Rockshelter

CRAIG E. SKINNER
 STEFAN C. RADOSEVICH
 University of Oregon

Previous neutron activation analyses of volcanic ash from Vine Rockshelter (35-LA-304), and from nearby 35-LA-51, concluded that the source of the tephra was not the culminating eruption of Mt. Mazama (6800 BP), but was only similar in appearance to the ejecta from that event. The ash was designated the "Mazama mimic." A new tephra horizon would have important archaeological implications for the area. Another study undertaken, including resampling major potential sources, revealed that Mt. Mazama was clearly the source of the tephra. The initial misidentification is attributed to unexpected geochemical variation during correlation of the samples.

Mesas and Mysteries: An Overview of Mesa Sites Research

WILLIAM C. SMITH
 Central Washington University

Scattered throughout the Channeled Scablands of the Columbia Basin stand many small, isolated basalt buttes and mesas. Some show evidence of prehistoric occupation, including lithic artifacts, habitation residues, and a variety of enigmatic rock structures such as cairns, pits, and alignments. The earliest archaeological investigation of these sites was carried out by Harlan I. Smith before 1910. Since that time several generations of archaeologists have been intrigued by these mesa sites and their associated cultural materials. Serving as an introduction to subsequent presentations in the Mesa Sites Symposium, a review is

provided of previous mesa sites research by investigators, including Harlan I. Smith, Douglas Osborne, Steven Clinehens, Nat Washington, William C. Smith, and others, and indicating the range of interpretations that have been offered concerning these interesting and unusual sites.

Hudson Coulee Project Progress Report

WILLIAM C. SMITH
JEAN B. ALSOSZATAI-PETHEO
Central Washington University

Hudson Coulee is located south of Lower Grand Coulee in Grant County, Washington. A systematic survey of the southern portion of this coulee was conducted on three consecutive Saturdays in the spring of 1989. Past work by Smith focused on the mesa sites with the hypothesis that they were strongholds used for defensive purposes. His reasoning was based in part on the strong association between mesa sites and structural features of basalt. In the Hudson Coulee survey, however, mesas were purposefully ignored and the search for basalt structures themselves became the focus. The efforts were restricted to the coulee floor and the surrounding talus slopes. Within these areas 100% coverage of approximately 190 acres was attempted. The types of features recorded, together with the frequency and spatial context of each type, are reported. Implications for the interpretation of mesa sites are explored.

Elevation As a Factor in Western Oregon Cascades Site Distribution Patterns

SANDRA L. SNYDER
Portland State University

A recent archaeological study set in the Clackamas River drainage mirrors results from others in the western Oregon Cascade Range that report a bimodal distribution of sites by elevation. Nearly 1000 recorded site locations are employed here to further examine such distribution patterns along the Oregon Cascades' west slope. These data consistently support a bimodal elevation distribution in the north and central Cascades. A somewhat different pattern is indicated south of the Umpqua River. Several potentially relevant variables are discussed and general conclusions offered.

Spring Chinook, Seasonal Movements, and Climatic Change: An Explanatory Model for Prehistoric Use Intervals at Times Square Rockshelter, Oregon

LEE SPENCER
Lee Spencer Archaeology

Data recovery excavations at Times Square Rockshelter (35-DO-212) were undertaken for the Umpqua National Forest. Stratigraphy, carbon ages, obsidian hydration rinds, faunal remains, and a rich and varied artifact inventory--including a large unique perishable artifact assemblage--disclose five recognizable intervals of site use spanning more than 3200 years. These intervals have a striking similarity to xeric/mesic climatic periods based on the work of Mehringer and Wigand. The resolution offered by the stratigraphy at Times Square Rockshelter has allowed the design of an interpretive model that correlates inferred shifts in climatic periods with changes in site use. The suggested mechanism for the interaction of climate and culture is the relationship between the seasonal availability of Pacific salmon at South Umpqua Falls and the seasonal movements of the people using the drainage basin in prehistoric times.

Innovation Diffusion Theory in a Public Policy Contest

GARRY STEPHENSON
Oregon State University Extension Service

In the United States and throughout the world, the success of development programs depends in part upon implementing change in an effective manner. Theories of innovation diffusion have evolved a great deal over the past 45 years, yet the new perspectives of innovation diffusion are not being utilized by development agencies. Could greater social science input increase the success of development programs? Various innovation diffusion perspectives are examined using the author's research in the Oregon trawl fishery and current programs of the Oregon State University Extension Service.

The Exxon Valdez Oil Spill and the Role of the United States Forest Service

SCOTT E. STUEMKE
Deschutes National Forest

On Good Friday, 24 March 1989, over 250,000 barrels of Alaskan North Slope crude oil was introduced into the environment of Prince William Sound, Alaska. Prince William Sound is a unique environment that is resource-rich and includes numerous prehistoric and historic cultural resources. The Federal On-scene Coordinator, the United States Coast Guard, designated the Forest Service with the responsibility for ensuring cultural resource protection during the cleanup operations in accordance with federal policies, laws, and regulations. Presented is a summary of the "Incident on the Chugach" and what role the Forest Service played in the cleanup response during the summer of 1989.

Lithic Caches of Central Oregon: A Descriptive Comparison

MARK SWIFT
Deschutes National Forest

Lithic caches are relatively rare site types in the archaeological record. Private collectors, public informants, and compliance level survey and excavation have located multiple cache sites in the central Oregon area. Descriptive information in an attempt to identify variation found within and between these cache collections is presented.

Scientific Racism in Anthropology: Indians and Anthros

STEVE TALBOT
University of California

Anthropology arose as a profession in the United States in the study of the American Indian during the westward expansion and consolidation of the capitalist political economy. Thus, the study of Indian culture took place in the crucible of internal colonialism and racism accorded the indigenous peoples. Despite the positive contributions of anthropology, this racist context left its mark on both anthropological theory and ethics. The history and parameters of the current Indian-anthro controversy surrounding "bones" (sacred remains) and certain artifacts (sacred things) are explored and recommendations for resolving the conflict are made.

Root-Foods and Hunter-Gatherer Intensification: The Role of Camas in the Pacific Northwest

ALSTON V. THOMAS
Washington State University

Camas (*Camassia quamash*), a lily with a nutritious bulb, was used regularly by about 7000 to 5500 BP. Its use as a bulk-processed, overwintering staple probably developed about 4000 to 3500 BP. Ecological and ethnoarchaeological studies provide useful data on the expected nature of intensively-used camas grounds and processing places. Archaeological camas-processing camps are characterized by: (1) rock-filled earth ovens; (2) carbon-stained sediments and/or high densities of fire-cracked rocks; (3) low densities of chipped stone artifacts, mostly expedient tools; and (4) few, if any, pestles, grinding stones, or other presumed root-processing tools.

*Projectile Point Style: Some Thoughts Regarding the Concept of Style
and Its Analytical Utility for Southwestern Oregon Archaeology*

CHRIS THOMPSON
Siskiyou National Forest

Recent explanations of the archaeological record in southwestern Oregon have attributed primary significance to variation within projectile point assemblages. Projectile point style has largely been used as a measure of culture over time and space. Considerable debate has raged in the archaeological literature over the last twenty years regarding the utility of style for explaining cultural processes. The methods used by southwestern Oregon archaeologists to measure variability in projectile point assemblages is reviewed. These methods are discussed with regard to their suitability for measuring cultural variability. It is argued that application of flawed concept (i.e., style) and use of inappropriate analytical methods have contributed to poor understanding of the prehistory of southwestern Oregon.

The Coast Salish and the Researcher: Observations Regarding Conflicts in Values

NILE ROBERT THOMPSON

Drawing on fifteen years of experience working with, on, and for tribes in western Washington, examples are presented in support of the hypothesis that conflicts in cultural values impair Native American projects. The focus is on how traditional Coast Salish values and their linked social and political practices can limit working arrangements with applied researchers. Value oppositions discussed include family advancement versus nepotism, social stratification versus racism, group needs versus individual rights, and conflict resolution versus investigative accuracy.

Danish Museum-Based Anthropology 1860-1960

BENT THYGESEN

Prior to 1955 all Danish practitioners of anthropology were educated in fields such as geography, archaeology, and natural history. They never developed an autonomous anthropological epistemology but relied predominantly on the culture-historical approach developed by German and American anthropologists. Their academic background led them to establish anthropology as a branch of the National Museum. In their teaching they emphasized the study of material culture over studies of the cultural, social, and applied aspects of anthropology that are now prevalent. A chair of anthropology was established at Copenhagen University in 1964.

A Closer Look at Margin "Grinding" on Clovis and Folsom Points

GENE L. TITMUS
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One distinctive attribute of most fluted points is the presence of intentionally dulled lateral and basal margins. This attribute variously called grinding, abrading, or dulling, has been assumed to have been incorporated into the tool design to prevent cutting the fiber wrapping by the otherwise freshly flaked margins. It is herein proposed that there is an alternative explanation for the intentional dulling of tool margins. Experimental replication offers insight into the methods used to dull tool margins, and breakage pattern analysis suggests at least one additional reason why fluted point margins were dulled.

Homo Habilis in Java

DONALD E. TYLER
 University of Idaho

The six Sangiran mandibles of Java are commonly placed in the single genus and species; *Homo erectus*. However, the jaws do not constitute a homogeneous sample, but morphologically consist of a *habilis* male, *habilis* female, two *erectus* females, two *erectus* males, and possibly a pongid. If they are all *erectus*, they have a sexual dimorphism exceeding that of modern gorillas. Such dimorphism is found in *habilis* but not in *erectus* sites anywhere in the world. Furthermore, if mandible six is an *erectus*, the skull would have had heavy temporal lines and a sagittal crest, neither of which is found on any *erectus* specimen.

The Flaked Stone Assemblage From Navajo Springs, Arizona

MIRANDA WARBURTON
 Navajo Nation Archaeology Department

The prehistoric Anasazi community of Navajo Springs consists of a Pueblo II Chaco Era Great House and approximately twenty related sites. In 1989 a sample of the flaked stone from the Great House and three community habitation sites was examined from a technological perspective. Preliminary results of the analysis are presented. Research foci include defining the manufacturing sequence from raw material procurement to desired end product to rejuvenation and discard, comparing site function based on lithic assemblages, assessing evidence of local and regional trade, and defining the socio-economic relationship of the community sites with the Great House.

The Not-So Peaceful Plateau: A New Look at the Writings of Verne F. Ray

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Pacific Northwest Archaeological Society

The belief that the prehistoric Plateau region was a peaceful place without violent social conflict is widespread. The strength of this belief reflects the great respect that is held for ethnographer Verne F. Ray, generally considered to have been the source of the "peaceful Plateau" concept. A search into Ray's writings led me to some passages that surprisingly paint an entirely different picture of the Plateau. These commonly overlooked passages show that the Plateau was not peaceful, but was often scourged by death-dealing raids perpetrated by violent Plateau people against the pacifistic Sanpoil and neighboring tribes.

Who's Been Workin' on the Railroad? An Examination of the Construction, Distribution, and Ethnic Origins of Domed Rock Ovens on Railroad-Related Sites

PRISCILLA WEGARS
University of Idaho

In recent years small domed rock structures have been recorded on railroad-related sites throughout western North America. Although folklore sometimes refers to them as "Chinese ovens," no archaeological or documentary evidence has yet been found that definitely supports a Chinese association with either their manufacture or use in the United States. Instead, there is reason to believe that they were built and used mainly by Italian immigrants as ovens for baking bread. Rock oven construction techniques, distribution, ethnic associations, dating, and related literature are surveyed; a starting point for more intensive, localized studies of such structures is provided.

Archaeological Investigations at 45-MS-100, An Early to Mid Holocene "Olcott" Site on the North Fork of the Skokomish River, Mason County, Washington

GARY C. WESSEN
Western Heritage, Inc.

Recent surface mapping and testing activities at 45-MS-100 have recorded data on a collection of 8111 pieces of chipped stone. Although the collection is overwhelmingly debitage, a sample of 641 formed tools and tool fragments is also available. Analysis of debitage indicates that a wide range of stone tool production and maintenance occurred. Formed tools in the sample are those associated with hunting--mostly lanceolate bifaces and small unifacial tools. The vast majority of all materials are associated with at least nineteen reasonably distinct surface features. Analysis of feature contents indicates that the contents of all features are similar, and thus the features appear to represent a series of essentially similar reoccupation events.

From Tourist Commodities to Tourist Managers: Asserting Aboriginal Control in Australia

ELVI WHITTAKER
University of British Columbia

In the age of the politics of representation and of ownership, the aboriginal people of Australia are reviewing the use of their image in advertising, their existence as a tourist commodity, and their art and its adaptations as a medium of tourist communication. Efforts are underway to construct their own images, make claims on their arts and its adaptations, and manage their own tourist sites and tour companies. Postcards, tourist pamphlets and guides, and recent art and its place in various products are used to illustrate the discussion.

Clovis Technology at the Anzick Site, Montana

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TERRY L. OZBUN
Lithic Analysts

Discovered more than two decades ago, the large assemblage of flaked stone and bone artifacts recovered at the Anzick Clovis site, Montana, has never been systematically reported. Most of the recovered assemblage has now been examined and it is possible to assess aspects of Clovis technology in an apparent mortuary context. This discussion focuses on the overall lithic reduction technology employed by Clovis people and offers interpretations on stone acquisition, heat treatment, bifacial core reduction strategy, pressure flaking with specialized bone tools, and Clovis point-production strategy. Comparisons are made with other similar Clovis assemblages.

*Pittsburg Landing Field Reports: Kloptan Fan, Vista Point, Nick Point,
Cliff Face, and Deep Gully*

JERRY D. WILLIAM
Washington State University

Preliminary results of field work at five prehistoric sites at Pittsburg Landing are summarized. Four (Kloptan Fan, Vista Point, Nick Point, and Deep Gully) represent short-term occupation sites, while the fifth (Cliff Face) contains a semipermanent component represented by house structures. Multiple occupations represented by vertically stratified cultural deposits are definitely present at two sites, and it is expected that continued analysis will define second occupations or components at two more sites. Radiocarbon, stratigraphic, and typological evidence suggest that the sites date to 2500-150 BP.

Archaeology and the Case for Catastrophic Earthquakes on the Oregon Coast

JOHN WOODWARD
RONALD CUMMINGS
JAMES WHITE
Mt. Hood Community College

Archaeological, geological, and tree-ring data have been used to support the hypothesis that major earthquakes have occurred along the Oregon and Washington coasts. Archaeological evidence from coastal Tillamook and Clatsop counties can be used to assess the hypothesis that the northern Oregon Coast experienced at least four major subsidence events in the last 2000 years. At both Tillamook and Nehalem bays, significant and rapid estuarine changes are indicated in the archaeological record. These changes may be attributed to subsidence, storm-generated sand spit erosion, tsunamis, or a combination of these.

Prehistoric Use of the Eastern Cascade Mountains of Central Washington: An Overview of Site Types, Site Locations, and Potential Resource Utilization

MATTHEW ZWEIFEL
CONNIE REID

Although once considered a cultural wasteland, recent work in the upland and mountainous regions east of the Cascade summit in central Washington has revealed large numbers of prehistoric sites. These sites include: lithic scatters; lithic source sites; hunting blinds; rock alignments and cairns; trails; peeled trees; food gathering, preparation, and storage locations; rock shelters; rock art; and major seasonal camps. Sites are found in all biotic zones between the Columbia River and the Cascade crest, reflecting diverse resource availability and utilization. Projectile-point types suggest upland use, at least on a seasonal basis, from 11,000 BP to protohistoric times.

