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Western Pomo Prehistory: Excavations at Albion Head, Nightbird's Retreat, and Three Chop Village, Mendocino County, California.

Thomas N. Layton (with contributions by Dwight D. Simons and Glen Wilson). Los Angeles: University of California Institute of Archaeology Monograph No. 32, 1990, 229 pp., 77 figures, 74 tables, \$20.00 (paper).

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Upon hearing that Tom Layton's work at Albion Head had been published in monograph form, those of us with an interest in northern California prehistory were excited. A host of presented and circulated papers by Layton and students had already hinted at the importance of this research, and we looked forward to seeing the data and interpretations presented in one, widely disseminated form. The document (which reports also on investigations at two interior sites) offers much to ruminate on, but leaves unanswered some key questions. Conducted under the umbrella of a single research plan, the monograph deals with three separate studies, performed from 1980 to 1984 at sites on Albion Head (CA-MEN-1704, MEN-1809, and MEN-1844), in 1984 at Nightbird's Retreat (MEN-1805), and in 1985 at Three Chop Village

(MEN-790). After a brief introduction that outlines the research design and previews major results of the study, subsequent chapters summarize work at each of the localities.

Research at Albion Head was designed to achieve three aims: (1) define and date any archaeological components and assemblages represented at the subject sites; (2) trace the core territory of sociocultural groups that deposited those materials; and (3) identify the point at which the study area came under control of people speaking Pomoan languages. Various linguistic reconstructions suggest that the Pomo language family spread and differentiated from an ancestral homeland near Clear Lake (Halpern 1964; Oswalt 1964), arriving at the Mendocino coast sometime within the last two millennia. Albion Head was thought to possess good potential for tracing such movements insofar as ethnographic accounts indicate that the coastal strip was not permanently occupied during historic times. Sites in "peripheral" areas should contain curated tool assemblages (made elsewhere of tool stone from core areas); display seasonal, task-specific occupational profiles (with less noise than loci in core territories); and as a result, provide a good vantage from which to monitor regional cultural dynamics.

The three Albion sites, situated on the headland north of the Albion River mouth, comprise flaked stone and shell accumulations of moderate size (430-590 m.²) and depth (60 to 80 cm.). Layton identifies "living surfaces" in two deposits (MEN-1809 and MEN-1844), reflecting "either the end product of a period of occupation or an isolated event" (p. 13), after which a site was abandoned long enough to initiate development of a new O Horizon. Soils at MEN-1704 were too churned to preserve distinct strata. Fieldwork at these locations resulted in excavation of 145 1.5 x 1.5-m. units (198 m.³), a truly impressive amount for a student effort, and the recovery of a diverse artifact assemblage including flaked stone tools (projectile points,

bifaces, cores, flake tools) and debitage, ground/battered stone (milling implements, hammers, net weights), modified bone and shell, shellfish (mussel, chiton, turban, barnacle), vertebrate fauna (elk, deer, pinniped), and hazelnut seeds. Hydration analysis of obsidian tools and flaking debris from each of the sites demonstrates an abrupt increase in use of this material (most of which is from Clear Lake sources) at 2.5 microns (for Mt. Konocti glass).

Dwight Simons contributed two sections to the Albion chapter, the first a site-catchment evaluation of the locality and nearby coast, and the second an in-depth analysis of vertebrate faunas. In his usual, thorough manner, Simons follows earlier work in interior northern California (e.g., Simons 1983) in using baseline ecological information (California Department of Forestry soil/vegetation maps) to derive indices (cf. Baumhoff 1963) of resource productivity (fish, acorns, large game) in adjacent environmental zones. These data suggest that the resource base would have been dominated by fish (76%), followed by large, terrestrial game (15%), and acorns (9%). Establishing that conditions remained relatively stable for the past 5,500 years, Simons constructs an annual-round model based on a variety of biological and ethnological information. This scenario provides expectations regarding what resources native peoples should have exploited in which geographic circumstances.

The faunal analysis deals with a full spectrum of contextual and economic issues normally traceable through such studies: the nature of past environments (thought to be similar to those of today), the seasonality of site occupation (late spring to midsummer), the dietary contribution of prey taxa (elk, harbor seal, deer), hunting strategies (highly opportunistic), and butchering patterns (reflecting preliminary, bulk processing of large game). Quite apart from contributing to the regional zooarchaeological data base, which remains sketchy, specialists will find

Simons' innovative approaches to seasonality and dietary profiles useful.

Layton identifies seven occupational "components" or phases at Albion Head. The earliest components, C-1 to C-3, are characterized by chert dart points (concave-base, side-notched, and leaf-shaped bipoints, respectively) and minimal obsidian use. Denoted by obsidian bipoints, C-4 marks the first extensive presence of volcanic glass with hydration rinds of ca. 2.5 microns (K) or A.D. 500. Component C-5 is represented by medium-sized, chert, stemmed points, and C-6 and C-7 are signified, in turn, by notched (Rattlesnake) and tanged (Gunther) arrow points. The first three chert-dominated components are seen as pre-Pomo (probably Yukian) due to a dearth of Clear Lake obsidian, while C-4 is thought to herald the arrival of Western Pomo in the area. The C-5 component, again testifying to heavy chert use, is viewed as a short-lived incursion by a neighboring, non-Pomo group. Following a period of "settling-in" (accompanied by increased use of local tool stone), C-6 is inferred to reflect Central Pomo presence and C-7 occupation by a Northern Pomo tribelet. The last distinction is offered on the basis of chert composition: Rattlesnake series points were made from both Franciscan (53%) and Monterey (47%) chert, Gunther variants were made only from the former. Since the nearest Monterey formation occurs to the south, at Point Arena, Layton suggests a south-coastal focus for C-6 peoples. Unfortunately, extensive mixing severely constrains efforts to flesh out these components into full assemblages.

Chapters pertaining to investigations at Nightbird's Retreat and Three Chop Village are more modest than the Albion treatment. Work at the former, located about 10 km. northwest of Calpella, involved the exposure of four house-pits, along with limited excavation of associated, extramural midden deposits. Structural remains consist of circular to oval depressions 3-4 m. across and contain somewhat compacted floors,

chunks of conifer bark (wall residues), perimeter rubble accumulations (wall anchors), and in two cases, hearths. Adjacent midden extends to a depth of 160 cm. and contains cultural debris attributed to three occupational components. Most dense in nonhouse contexts, artifactual and organic refuse included a range of flaked and ground/battered stone, one steatite bead, a few historical items, some calcined bone, and five *Mytilus* shells. As at Albion Head, cultural deposits at MEN-1805 show considerable disturbance. Markers (projectile points and hydration measurements) from each component are spread throughout much of the site matrix, though the most recent materials tend to cluster in house and surficial midden contexts. Layton argues for cultural continuity from the middle to late components, but views the earliest, chert-dominated, occupation as a separate tradition. In keeping with the broader model, the advent of increased Clear Lake obsidian use (here at 3.0 microns [K]) is considered a harbinger for the arrival of Pomo-speaking peoples.

Investigations at Three Chop Village, situated on a ridge roughly equidistant between MEN-1805 and the coast, encountered a similar pattern. Exposure of three house depressions yielded a relatively sparse inventory of flaked, ground, and battered stone, some shell, and a sizeable collection of historical debris. The latter is of particular note because it contains Chinese porcelain, glass, and brass objects that can be traced directly to the wreck of the *Frolic*, a sailing ship that sank off the Mendocino coast in A.D. 1850. Their presence at Three Chop Village is consistent with written records that report widespread salvaging by local populations. Layton identifies three main components at MEN-790, the last two (post-A.D. 1400) attributed to Pomoan occupants due to abundant Clear Lake obsidian.

In evaluating the final contributions of this monograph, it is important to emphasize that these are not full-fledged site reports of the sort

prevalent in the ubiquitous "gray" literature, nor did the author intend them to be. Apart from the Albion faunal section, most data classes receive minimal description or discussion and interpretations are largely impressionistic. In this sense, the volume shares traits with reports in series such as the *University of California Publications in American Archaeology and Ethnography*, *Contributions of the University of California Research Facility*, and *University of California Archaeological Survey Reports*. The author clearly wished to produce a treatise focused on a single problem—the ethnogeographic history of Pomo peoples—and he stresses data that are most relevant to that aim. While there is, of course, nothing wrong with this goal, the lack of more detailed information on artifact morphology, function, technology, and condition will make it difficult to compare Albion materials with other assemblages or to evaluate them in terms of alternative problem orientations.

More immediately problematic, however, are serious questions concerning site chronology and the analytical resolution offered by phase- or component-specific assemblages. Given the severe stratigraphic disturbance attending most of the cultural deposits that were investigated, exacerbated by their shallow depth and the episodic nature of the occupations, it proved virtually impossible to assign most material remains to discrete components. Thus, while Layton recognized seven "components" at MEN-1704 on the basis of projectile point types and tool stone profiles, he was unable to specify any portion of the deposit (unit, level, or locus) that contains the unadulterated remains from one of these occupations. Even at MEN-1844, where select strata are ascribed variously to three separate "components" (with three others undefined), published point distributions (pp. 70-71) suggest that these are far from unmixed. Given this situation, there is no basis for attributing materials that are not projectile points (or manufactured from obsidian) to an occupa-

tional component or phase. That there are few matches between "components" and physical stratigraphy raises further questions regarding how projectile point variability is treated. Because some marker types are known to co-occur elsewhere (e.g., concave-base/side-notched dart points, chert/obsidian bipoints, tanged/notched arrow points [Fredrickson 1973, 1984; White 1984]), there may well be less than seven discrete components at Albion.

Several comments are in order regarding Simons' treatment of site catchment data. In testing the model against archaeological data, several departures were noted with respect to observed and expected levels of resource exploitation. Most conspicuous was a dearth of evidence for fish procurement, which productivity indices suggested should have been a primary focus of local subsistence systems. Such deviations have implications for the reliability of estimation procedures (cf. Baumhoff 1963), especially since the coefficients employed (p. 80) fail to weigh the role of shellfish and marine mammals. More importantly, they underscore the fact that human land-use patterns comprise far more than simple environmental templates. Indeed, tenets of evolutionary ecology and economics (Bettinger 1980) offer means of explaining why resources that are perfectly abundant and nutritious are in some cases not exploited. Thus, even if resource potential at the Albion locality remained essentially stable for the last 5,500 years, variation in group size/composition, residential stability, and technological organization would have contributed to differences in how dietary profiles were assembled.

Finally, what was the ultimate success of Layton's principal endeavor, to monitor the expansion of Pomoan populations across the North Coast Ranges? In a nearly decade-old paper (Basgall 1982), this author attempted a similar enterprise, endeavoring to identify the arrival of Pomo in northern Sonoma County by

comparing archaeological patterns with models of language divergence offered by several linguists. Arguing that good archaeolinguistic correlations demanded a polythetic approach, a match with glottochronological time-depth estimates was proposed on the basis of dramatic changes in assemblage composition (increases in Clear Lake obsidian use, shift to mortar/pestle technology, and innovations in point styles and other artifact treatments), settlement pattern, and finally, subsistence base. Lacking a means of defining component-specific assemblages due to extreme depositional churning, in the present instance Layton is forced to track the movement of Pomoan populations based solely on the abundance of Clear Lake obsidian—assuming that when such glass first becomes common it denotes the arrival of Pomo speakers. Obsidian might, in fact, constitute just such an ethno-linguistic signature, but it probably does not, and numerous other cultural processes could account for sudden changes in the representation of volcanic glass. These range from site-specific stoneworking trajectories to the emergence of regional trade systems. If Layton's culture-historical ascriptions prove correct, it will be due to more than tool stone source profiles and changes in obsidian abundance.

Notwithstanding these and other quibbles, substantive and conceptual, this volume contributes significant new data for a region that has until now received minimal archaeological scrutiny. Likewise, Layton's characterization of coastal occupation patterns as discontinuous, episodic, and related to multiple sociocultural groups is almost certainly correct and being borne out by other, recent studies (White 1989). Linguistic complexity at the time of Euro-american contact clearly testifies to numerous migrations/replacements through prehistory—ethnogeographic changes that must be identified and traced if archaeologists are to unravel culture process in California. Studies such as this one underscore the need to pursue

such investigations with increasingly refined methods.

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Prehistoric Human Geography in the Carson Desert, Part I: A Predictive Model of Land-Use in the Stillwater Wildlife Management Area.

Christopher Raven and Robert G. Elston. Portland, OR: U.S. Fish and Wildlife Service, Region 1, *Cultural Resources Series* No. 3, 1989, ix + 184 pp., 1 appendix, 39 figs., 20 tables, gratis (paper).

Prehistoric Human Geography in the Carson Desert, Part II: Archaeological Field Tests of Model Predictions.

Christopher Raven. Portland, OR: U.S. Fish and Wildlife Service, Region 1, *Cultural Resources Series* No. 4, 1990, vi + 143 pp., 5 appendices, 73 figs., 7 tables, gratis (paper).

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The wet years of 1982-84 and 1986 flooded much of the Carson and Humboldt sinks in western Nevada; when the waters receded, a remarkable and unexpected archaeological record lay exposed. The remains of houses, storage pits, middens, and many burials demonstrate that prehistoric peoples had frequently made their residences, livelihoods, and last days in the wetlands of the Carson Desert. These discoveries, and the research and management problems they generated, spurred a host of new archaeological studies in the Carson Desert.

One such program is sponsored by the U.S. Fish and Wildlife Service (USFWS), the agency responsible for management of the Stillwater