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#### **Title**

Hughes: Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon

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prehistory and sacred traditions of Indians in these localities, and these studies are included in the bibliography. Unpublished B.A., M.A., and Ph.D. theses are also included, adding to the scope of the bibliography's coverage. Many of these dissertations focus on contemporary issues of importance to Native American groups generally. such as the problem of protecting Indian graves and cemeteries from looting and desecration (and the obvious problem this poses for archaeologists) and such innovative studies as the social ecology of mixed community of Karuk Indians, gold miners. loggers, retirees, 1960s-style "longhairs/ communards," and Forest Service employees in a small settlement on the Salmon River.

The bibliography is organized both by author and chronologically, and it contains a section on documentary and archival sources for further study. There is also a comprehensive subject index. In short, this bibliography is not only comprehensive and scholarly, but it is "user friendly" with respect to identifying useful sources. Even a relative newcomer to Northwestern California Indian studies will be able to use this bibliography effectively. As is almost inevitable in an undertaking of this kind. there are a few omissions. Where, for example, are such obvious items as Jedediah Smith's journals of exploration in the Trinity and Klamath River region in 1828 (along with discussions of his exploring party's observations of the Indians of this region in several secondary publications)? Nor are the entries for Alexander Taylor's "Indianology of California" (1860) complete for the Tolowa-Tututni. But such minor omissions do not detract seriously from the value of this new bibliography, which provides a valuable aid to scholarship in this important area of Native American studies.

### REFERENCES

Nelson, Byron, Jr.

1978 Our Home Forever: A Hupa Tribal History. Published by the Hupa Tribe, Hoopa, CA. (printed by University of Utah Printing Service, Salt Lake City, Utah).



Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon. Richard E. Hughes. Berkeley: University of California Publications in Anthropology, Vol. 17, 1986, 429 pp., figures, tables, appendices, references, \$35.00 (paper).

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In the introductory chapter Hughes briefly reviews the anthropological literature concerning prehistoric exchange and outlines his approach to the analysis of obsidian exchange in the long and complex archaeological record in northeastern California and southcentral Oregon: "It is the human behavioral systems that are of primary interest, . . . obsidian is of interest only to the degree that it allows investigation of these systems" (p. 11). To achieve his end, Hughes selects obsidian projectile points for analysis because, he argues, they are abundant, datable, and as "technomic" (after Binford) artifacts they should reflect a close articulation with subsistence-related "socioeconomic subsystems." Artifact samples were drawn exclusively from sites representing "residential base camps" (term after Binford), and Hughes hypothesizes that "frequencies of projectile points manufactured from discrete obsidian source materials might be used to identify the home range or terREVIEWS 137

ritory typically exploited by specific human populations during a particular period of prehistoric time."

In the second chapter ("X-ray Fluorescence") and third ("Assigning Artifacts to Source") Hughes describes the analytical method used to chemically characterize the artifacts and obsidian from the 79 sources he has identified in this study area. He strongly argues for a rigorous statistical approach to assigning artifactual obsidian to an original geological source. For most readers these very technical discussions will be insufferable; for the specialist, these chapters (with the appendices) are essential references.

Typological descriptions and temporal distributions of projectile points from the Great Basin are the subject of the fourth chapter ("Projectile Points as Time Markers in the Study Area"). Hughes includes eight common projectile point "types" from the northwestern Great Basin in his analysis: Desert Side-notched, Cottonwood Triangular, Rosegate series. Gunther series. Elko series. Gatecliff series, Humboldt series, and Northern Side-notched. After discussing potential dating problems Hughes concludes that "these projectile point types generally mark discrete temporal intervals of 'short' duration in the northwestern Great Basin," and therefore provide the necessary temporal control for his investigation of diachronic change in obsidian procurement patterns. More than a few regional archaeologists will contest the way Hughes uses projectile points as temporal and cultural markers, thus spawning debate over aspects of his basic methods and interpretations.

Each of the next three chapters presents a detailed analysis of projectile point chronologies from a specific site (Nightfire Island, Ch. 5; Kawumkan Springs, Ch. 6) or group of sites (Surprise Valley, Ch. 7) which Hughes uses to describe a history of obsidian procurement and use in the region of the site or sites. Chapters 4 through 7, will be convenient references for researchers working in the northwestern Great Basin. Hughes has brought together in one place a careful discussion of the provenience of the projectile points found at these important sites, accompanied by well executed artifact illustrations.

In the final chapter ("Summary, Conclusions, and Implications for Future Research") Hughes concludes that obsidian procurement patterns did change over time in the northwest Great Basin, and that defined procurement patterns cannot be explained simply with reference to distance-related economic models, thus, "they must have resulted from changes in human behavioral patterns" (p. 264). However, Hughes is not explicit as to what these behavioral patterns were, or how and why they may have changed, offering instead a series of non-exclusive hypotheses relating his perceived changes in obsidian procurement to alterations in post-marital residence patterns, population replacement, settlement-subsistence shifts, or development of regional exchange systems. All of these hypotheses are of long standing in the regional archaeological literature.

Hughes has made an invaluable contribution to northwestern Great Basin archaeology. He has provided an essential data base for further analysis and that ultimately may be what will keep this volume close to hand for students of Great Basin prehistory.

