Looking Back: Advances in California Archaeology Since 1984

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Our knowledge of California prehistory has grown steadily during the past 20 years. This paper, first, provides a brief overview of recent progress in building regional chronologies and in such research domains as cultural ecology and the evolution of social complexity. Second, it examines in greater depth some notable advances in late Pleistocene and early Holocene archaeology.

Albert Einstein once spoke of his famous theory this way: "When you sit next to a beautiful woman for an hour and it seems like only a minute, or when you sit next to a hot wood stove for a minute and it seems like an hour, that's relativity." Now I won't confess with whom or next to what I've been sitting, but I can say that time has passed quickly. Nearly two decades have elapsed since the first book-length syntheses of California prehistory appeared in print (Chartkoff and Chartkoff 1984; Moratto 1984). A great deal of archaeological work has been done since then, and much has been learned about California's past. Thus, it may be useful now to look back and consider what has been accomplished during the *relatively* brief span of time since 1984.

Overview of Progress

Research in both academic and cultural resources management (CRM) contexts has improved our grasp of prehistory throughout the state. As examples: we have studied the origins of social complexity, notably among the precontact Chumash (Arnold 1992, 1993; Arnold and Green 2002; Arnold *et al.* 1997; Erlandson 1999a, 1999b; Gamble *et al.* 2002; Pletka 1996); we have learned a good deal about the effects of prehistoric exploitative pressure on resource abundance near the Channel Islands, in San Francisco Bay, and along the central coast (Broughton 1999; Erlandson 1994, 1997; Salls 1991); we have investigated the Medieval Climatic Anomaly as it relates to culture change in the Sierra Nevada and in coastal southern California (Hull and Moratto 1999; Kennett and Kennett 2000; Moratto *et al.* 1988; Raab and Larson 1997); and we have gained promising insights into the meaning of California rock art (Gilette and Haslam 1999; Foster and Foster 2002; Whitley 2000).

While many of the advances have been made possible by innovations in method and theory, others have depended on new or refined techniques. Especially noteworthy are the strides made in archaeological applications of obsidian hydration and trace-element analyses, radiocarbon dating, and DNA analysis (Fredrickson 1992; Gilreath and Hildebrandt 1997; Hull and Moratto 1999; Hughes 1989, 1992a; Jackson 1986; Kaestle and Smith 2001).

Every region of the state has witnessed so much archaeological work since 1984 that all of the cultural sequences have been greatly revised. This has not been mere typologic elaboration. Archaeologists have designed their research to investigate myriad facets of human adaptation in California prehistory, so that we now know much more about environmental change, adaptive processes, and cultural ecology than we did two decades ago (Arnold *et al.* 1997; Erlandson 2002; Jones *et al.* 2002; Lightfoot 1995; Salls 1991). We have also discovered ceramics—perhaps the oldest in America—in buried deposits more than 8000 years old in the San Jacinto Valley (Horne *et al.* 2003). This progress in building local and regional sequences is in no small measure the result of very large projects: Fort Irwin, Eastside Reservoir, All-American Pipeline, New Melones Reservoir, PGT/PG&E Pipeline Expansion, I-5 Shasta, and Tuscarora Gas Transmission Line, to name a few (e.g., Basgall and Hildebrandt 1989; Byrd 1998; Far Western Anthropological Research Group 1997; Goldberg 2001; Moratto 1994; Moratto *et al.* 1988; Various 1982-1987).

Similar progress has been made in studies of resource production, interaction spheres, and trade. We have also gained substantial knowledge of prehistoric social organization, gender roles, territoriality, population dynamics, demography, and linguistic prehistory. An important consequence of this

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recent research is that California now plays a vital role in the larger geographic and theoretical contexts of North American and World archaeology (Chartkoff 1996, 2002; Erlandson 1997a; Fagan 1990, 2003; Fowler 1993; Glassow 1997).

Many more examples could be cited. However, our progress since 1984 has been far too extensive for me to review adequately here. In the time available I can touch upon just a few recent advances. My comments will focus mainly on what we have learned recently about California's early prehistory.

ADVANCES IN EARLY PREHISTORY

Twenty years ago we faced a bewildering array of claims about human antiquity in California. Putative artifacts and/or hearths from Calico Hills, Yuha Pinto Wash, Texas Street, Buchanan Canyon, China Lake, and Santa Rosa Island were alleged variously to be 30,000 to 200,000 years old (Moratto 1984). Pleistocene age estimates—often based upon assumed rates of amino acid recemization—also were proposed for human remains from nine sites: La Jolla Shores, Del Mar, Sunnyvale, Baldwin Hills, Angeles Mesa, Laguna Beach, San Jacinto, Yuha, and Truckhaven (Moratto 1984). Most of these claims have now been laid to rest as a result of careful archaeometric and geoarchaeological work. For example, Taylor *et al.* (1985) have shown by means of AMS (Accelerator Mass Spectrometry) radiocarbon dating that human bones from nine of the sites mentioned above are all of Holocene age and not 17,000-70,000 years old as previously averred.

While some findings have withered under close scrutiny, others have emerged to provide new insights into Pleistocene cultures and to trigger a dramatic paradigm shift in Early Man studies. A generation ago the prevailing view was that people from Siberia had walked across Beringia sometime before 12,000 years ago, lived for awhile in an Arctic refuge, and then trekked southward along an ice-free corridor when continental glaciers began to recede in Canada. About 11,500 years ago, they reached the northern Plains from which they fanned out into the great American wilderness and—as the ultimate predators—wiped out many species of big game animals (Anderson and Gillam 2000:Fig. 2; Haynes 1964, 1969; Martin 1973). At their kill sites and camps these early hunters left fluted points—hallmarks of the Clovis culture and signatures of the "First Americans." We had found plenty of fluted points in California, so the consensus was that the earliest people here were big game hunters somehow related to Clovis.

We are now aware that the "Clovis-first" model is flawed in several respects. First, analyses of ice cores, ocean sediments, marine corals, and lake deposits from around the world show that radiocarbon dates for the terminal Pleistocene are about 2,000 years too young (Fiedel 1999:95); hence, Clovis is actually 13,600-13,000 years old. Second, from the Cactus Hill site in Virginia (McAvoy and McAvoy 1997), Topper in South Carolina (Goodyear 1999), Meadowcroft Rockshelter in Pennsylvania (Adovasio and Stuckenrath 1990), Monte Verde in Chile (Dillehay 1989, 1997; Melzer *et al.* 1997), and other sites we have learned that the New World was inhabited not only before the era of fluted points but also before the ice-free corridor opened up (Mandryk 1996; Mandryk *et al.* 2000). Third, we now have good reason to think that biologically diverse human populations from multiple Old World centers traveled, at times by boat, along the coast from eastern Asia to western America (Erlandson 2002; Jablonski 2002). And, finally, we know that late Pleistocene economic practices were highly varied, intensive, and by no means limited to big game hunting (Dillehay 1989, 1997; Erlandson *et al.* 1999; Roosevelt *et al.* 2002).

Recent findings on the Channel Islands of California support the new paradigm. Jon Erlandson has reported artifacts and other evidence of littoral and marine resource use in stratified cultural deposits of late Pleistocene age at Daisy Cave on San Miguel Island (Erlandson *et al.* 1996; Wisner 1998). Roy Sall's (1991) analysis of a stratified midden at Eel Point on San Clemente Island has revealed intensive fishing and mollusk collecting by 9775 B.P. On Santa Rosa Island, Erlandson and his colleagues have excavated a deeply buried shell midden attesting to a maritime economy 9,300 years ago (Erlandson *et al.* 1999). Also from Santa Rosa Island, human remains exhumed in 1960 at Arlington Springs have been further studied by an interdisciplinary team led by John Johnson who have obtained additional radiocarbon dates. One of these, when recalibrated, is ca. 13,000 calendar years. If this date is correct, "Arlington Springs Woman" would be among the most ancient human remains known in the New World (Wisner 1999). The Islands thus provide some of the oldest evidence in the Americas for littoral habitation, seafaring, and maritime economic practices.

Over the past 20 years much has been learned also about ancient adaptations to the mainland coast. Numerous sites of Pleistocene or very early Holocene age have been reported. Of these, CA-SCR-177 in Scotts Valley, might have been occupied initially some 13,000 years ago, possibly earlier (Breschini and Haversat 1991). Many of the early sites contain both

ground and flaked stone tools; but components lacking ground stone have also been found, implying a non- or pre-Millingstone pattern (Colten and Erlandson 1991). At the Cross Creek site in San Luis Obispo County, Terry Jones and his team have discovered abundant millingstones and simple core and flake tools in midden deposits more than 10,000 years old. This is among the oldest shell middens known in western North America, and the earliest appearance of a robust millingstone assemblage in California (Jones *et al.* 2002).

So where does Clovis fit in this new scheme? What progress has been made to understand Clovis manifestations in California? To date, at least 578 fluted points have been reported from a total of 54 sites and localities in 28 counties, from the Oregon line to the Mexican border, and from the Pacific shore to the high Sierra and beyond (Dillon 2002; Moratto 2000). Although most discoveries consist of only one or two fluted points each, four locations—Borax Lake (Harrington 1938, 1948; Meighan and Haynes 1968, 1970; Willig 1991), the Komodo site (in Long Valley Caldera) (Basgall 1988), China Lake (Davis 1974, 1978; Dillon 2002; Willig 1991), and Tulare Lake (Dillon 2002; Hopkins p.c. 2003; Moratto 2000), respectively, have produced 20, 45, 49, and >400 specimens.

Fluted points in California occur in a wide range of environmental settings: on coastal terraces, in mountain passes, along streams, in valleys, hill country, and deserts. Most (504/578 = 87%), however, are associated with ancient lakes and wetlands. As Don Grayson observed with regard to discoveries in the Great Basin,

> we know that nearly all of these sites are located along the edges of the now-extinct lakes and marshes that existed...during the late Pleistocene and early Holocene. Because no buried fluted point sites are known from the Great Basin, we have no direct evidence of what these people were doing for a living. It is, however, clear that, whatever they were doing, they were doing a lot of it near shallow water [Grayson 1993:238].

Determining the place of the fluted-point culture(s) in California prehistory will require accurate dating, but this has proven to be easier said than done. Most of the recovered artifacts are surface finds lacking stratigraphic context or cultural association. *Possible* associations with Rancholabrean fossils have been suggested, but not established, at China Lake and Tulare Lake. There are as yet no radiocarbon dates for bona fide assemblages including such points from buried deposits in California. Obsidian hydration measurements on the Borax Lake and Komodo site artifacts can be used for relative dating, but their potential for absolute dating is limited by the absence of calibrating radiometric dates. Typologic dating suggests an age of ca. 13,600-13,000 years, but this assumes that the fluted points in California are coeval with the carbon-dated examples farther east. This may be a reasonable assumption, but the fact is we still do not have good temporal controls for the fluted points in California.

Conclusions

I conclude with these brief observations: (1) Prehistoric California did not exist in a cultural vacuum, and recent discoveries in both North and South America imply that archaeological remains older than 13,600 years are to be expected; (2) the coast and Channel Islands were occupied 13,000-12,000 years ago by people whose maritime adaptations were already manifest; (3) the lakemarsh economic focus of those who used fluted points was coeval with and probably not ancestral to the coastal and insular patterns of the 12th millennium B.C.; (4) the origins of the Western Pluvial Lakes Tradition and related cultural expressions are deeper in time, ca.130 centuries ago, than we had previously thought; and (5) millingstones, and by implication vegetal food processing, were established in western California by 10,000 years ago. All things considered, it appears as if late Pleistocene California was extensively used by diverse societies who followed a wide range of subsistence practices in varied environmental settings.

This is quite a change from the views of California prehistory held just 20 years ago. Clearly, recent findings have rendered obsolete many of the ideas presented in my 1984 book. Maybe its time to write another.

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Endnotes

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