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 (Charlottff 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/PGE 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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Proceedings of the Society for California Archaeology, Volume 17, 2004, pp 3-10
recent research is that California now plays a vital role
in the larger geographic and theoretical contexts of
North American and World archaeology (Chartkoff
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 racemization—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 (Brescini 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-Millstone pattern (Colten and Erlandson 1991). At the Cross Creek site in San Luis Obispo County, Terry Jones and his team have discovered abundant millstone demonstrations 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 millstone 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 lakemash 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) millstone, 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.

Endnotes

This paper was presented in the plenary session on “Tracing Our Roots,” chaired by John Holson, at the 37th annual meeting of the Society for California Archaeology, in Sacramento, 27 March 2003.

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II presents the overview of the project. Section III presents the description of the project. It includes the main areas of the project and the tasks overview for the Smart-Clothing project. Section IV presents preliminary results of movement and ECG sensing.

Overview of Progress in Smart-Clothing Project for Health Monitoring and Sport Applications. LuÃ­s M. Borges, Andreia Rente, Fernando J. Velez, Luisa R. Salvado, AntÃ³nio S. Lebres From Middle English progressse, from Old French progres (à©œa going forwardà©œ), from Latin prÄgressus (à©œan advanceà©œ), from the participle stem of prÄgrædÄ (à©œto go forward, advance, developà©œ), from pro- (à©œforth, beforeà©œ) + âž GRADI (à©œto walk, goà©œ). (UK) enPR: prÄgræs, IPA(key): /ˈpɹəʊɡɹɛs/, /ˈpɹɒɡɹɛs/. (US) enPR: prÆ'græs, IPA(key): /ˈpɹɑɡɹɛs/, /ˈpɹoʊɡɹɛs/. Rhymes: -əʊɡɹɛs, -ɒɡɹɛs. progress (countable and uncountable, plural progresses). Translations of the phrase OVERVIEW OF PROGRESS from english to french and examples of the use of “OVERVIEW OF PROGRESS” in a sentence with their translations: ...overview of progress. Translation of Overview Of Progress in French. Synonyms. Results: 30, Time: 0.0616. Overview of progress. aperÂšu des progrÂš s rÂ€alisÂš (5) aperÂšu des progrÂš s accomplis (5). overview of progressoverview of the progress madeoverview of the progress achieved. progress definition: 1. movement to an improved or more developed state, or to a forward position: 2. happening or... Learn more. Prereaders progressed faster in learning to read the visual list, whereas novice and veteran readers progressed faster in learning to read the phonetic list. From the Cambridge English Corpus. It is this affective and evaluative progress that teachers might try to develop in pupils in order to develop their skills of musical thinking further. From the Cambridge English Corpus. 1. Overview of Conceptual Issues. The problem of progress can be approached from many directions. Three questions will provide the starting points for this particular analysis. These are: (1) Does the theory under consideration rigorously define a conception of human well-being and, if so, what is it?