CALIFORNIAN CULTURES AND THE CONCEPT OF AN ARCHAIC STAGE

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WESTERN archaeologists have almost unanimously shunned the term "Archaic" in describing their finds. In the few cases where the word has been used at all, it has generally been qualified by using quotation marks, a question mark, or some statement indicating the author's belief that this is not a *real* Archaic culture. As a result, none of the described western cultures is conventionally labeled "Archaic." Avoidance of the term has stemmed from two conditions: *a*) a desire to avoid confusing western cultures with those generally called Archaic in the East; and *b*) the temporal implications of the word "Archaic." The continuity of some western cultures leads to a paradox when certain manifestations which actually persisted until the recent historic period are labeled Archaic. As a result of these problems, the literature has tended to emphasize the distinctive features of western cultures and only a few attempts have been made to observe fundamental features of continent-wide distribution.

In order to compare the culture history of the western margin of the continent with that of eastern areas, it is most convenient to discuss western prehistory from two directions: a temporal view, equating early developments on both sides of the continent; and a view of the Archaic as a culture stage, showing the continuity and relative lack of change in the west.

TEMPORAL AND REGIONAL COMPARISONS

Recent radiocarbon dates show three very old dates for a relatively small area of southern California. They include: Scripps Campus, La Jolla, 19,550 B.C.±700 (W-142, Rubin and Suess 1955), Santa Rosa Island, 27,700 B.C.± 2500 (L-290R, Orr 1956) and Texas Street, San Diego, older than 36,050 B.C. (Lamont, unpublished, from George Carter, personal communication). A preliminary discussion of the Santa Rosa Island date has been published by Orr (1956: 7); the other dates are not yet reported in detail. All of these dates are reported to apply to "hearths" although evidence for human utilization of these "hearths" is not yet conclusively demonstrated. Until full publication of the circumstances of the occurrence of the samples is made, it is not possible to assess their validity or significance. It would be premature to accept the early dates at face value, however, since all of them are open to question at the present time. [This was written before the publication of Carter 1957. See Addendum. — EDITOR.]

Much later in time, but still of great importance to western prehistory, are the dates obtained from midden and cemetery material on Santa Rosa Island. There are two dates: 4870 B.C.±160 (L-257) and, an average of three measurements, 5120 B.C.±250 (L-290D, Orr 1956: 5-6). These dates apply both to extensive midden and to cemeteries from which many burials have been taken. The dates imply coastal occupation of California throughout the Altithermal period.

At present the Santa Rosa dates are the oldest coastal dates in the west, although still older dates have been obtained by Cressman on material from inland Oregon. However, on typological grounds it may be assumed that some of the southern California sites are older than the 5000 B.C. surely demonstrated by radiocarbon dates. The Topanga site, for example, with its heavily altered soil and crude chopper-scraper complex, should be considerably older than the described material from Santa Rosa. It has not been possible to obtain organic material from the Topanga site for dating. Detailed artifact comparisons cannot be made until the Santa Rosa specimens are published, yet the Santa Rosa dates suggest that sites like Topanga are likely to be pre-Altithermal, perhaps dating back to 8000 B.C. as a guess.

Recent evidence shows rather clearly that the west coast was occupied as early as any other part of the country, rather than being marginal and only lately settled by migrants from the east or north. There is reason to believe that California was occupied by people who were contemporaneous with the Folsom and perhaps the Clovis cultures of the Southwest and Plains. Unfortunately, the cultural picture of these ancient peoples cannot yet be drawn. The oldest dated cultures have not yet been described, and other remains of presumed antiquity yield only fragmentary information. Hence it is not possible at this writing to make

a cultural comparison between the west coast and other areas on a time level of more than about 5000 years ago, even though the west coast was probably occupied for at least twice that period.

Several finds of human skeletons that appear to be of great age have been made in California. Probably the best contender for contemporaneity with fossil animals is "Los Angeles Man," a skeleton found in excavation of a large drainage ditch in 1936. Nearby, bones of the Imperial elephant (*Archidiskodon*) were recovered, and recent fluorine dating suggests the finds to be of the same age (Heizer 1952: 7). Other "early man" finds are discussed by Heizer (1948, 1952).

Artifacts of the fluted point traditions are generally absent in California. A few scattered points have been reported, but their cultural affiliations are not clear. Points of the Middle Central California culture are frequently concave-based and have basal thinning, suggesting but not duplicating the fluted appearance of Clovis points. The Californian examples are most often of obsidian and are sometimes shaped by very careful pressure flaking. The greatest number of such points is reported from the Borax Lake site in northern California (Harrington 1948). There is considerable divergence of opinion over the position of the Borax Lake site and its fluted points, but there now seems to be general agreement that the points are not to be equated typologically with Folsom points. The temporal placement of the site is also disputed, although it appears to represent the basement complex for the North Coast Ranges (Meighan 1955: 26). The Borax Lake problem is further complicated by the presence of a few points which could be in the Clovis-Folsom tradition. Harrington (1948, Fig. 21, Pl. 14 *a*) illustrates some and I have seen three or four more in the collection of C. C. Post of Berkeley. This group of points is exceptional and anomalous in the Borax Lake collection: the points are of gray or brown flint, although the overwhelming majority of Borax Lake objects is obsidian; the type is not duplicated in the obsidian artifacts; and the workmanship is also unusual compared with the rest of the artifacts from the site. This is not clearly evident from the published illustrations. The possibility should be considered that the convincingly "Folsom" specimens are somehow intrusive and not actually a part of the Borax Lake complex, although there are definitely fluted points of a rather crude sort at the Borax Lake site. Similar fluted points have been found at site Nap-131, which is believed to represent the basement complex for Napa County (Meighan 1953b: 316).

The oldest published cultural remains giving a reasonably complete picture of Californian peoples are those of the Desert cultures of southern California, the Topanga culture from near Los Angeles, and the Early Central California remains from near Sacramento. Several other Californian cultures of presumably equal or greater age are known and currently under study. These include Orr's "Dune Dwellers" on Santa Rosa Island, the lower levels of the West Berkeley site on San Francisco Bay, and the lower levels of the Karlo site in Lassen county, northeastern California. This roster includes cultures separated by millenia in time and by some 800 miles in distance; hence it is not surprising that variation in artifact types may be seen among the cultures named. Indeed, it is a little surprising that not more variation is present.

The features of some sample cultures (insofar as they are available to me) are indicated in a schematic way in Figures 1 through 4. The correlation chart (Fig. 6) is arranged according to the areas shown in Figure 5. The charts and illustrations have been prepared to substitute for lengthy descriptive text. They are all subject to change, particularly the correlation chart which would be prepared quite differently by other western archaeologists. I have followed a conservative dating throughout and have placed on the chart only those cultures which have been defined to some extent in publication. There are at least a dozen additional named complexes, some of which will prove to be very important to our understanding of western prehistory. I have omitted cultures of disputed existence — Texas Street and Malpais, for example — as well as those not yet published by their discoverers. Dates given on the chart are based on radiocarbon dating, estimates of the discoverers, and typological crossties. I have accepted dates estimated by the various authors except where a contrary view has been developed in print; in such cases I have tried to follow the majority opinion as well as I could judge it. The charts may emphasize the stylistic differences; a discussion of the general similarities is given below.

Southern California is characterized, in the early period, by cultures called "Early Milling

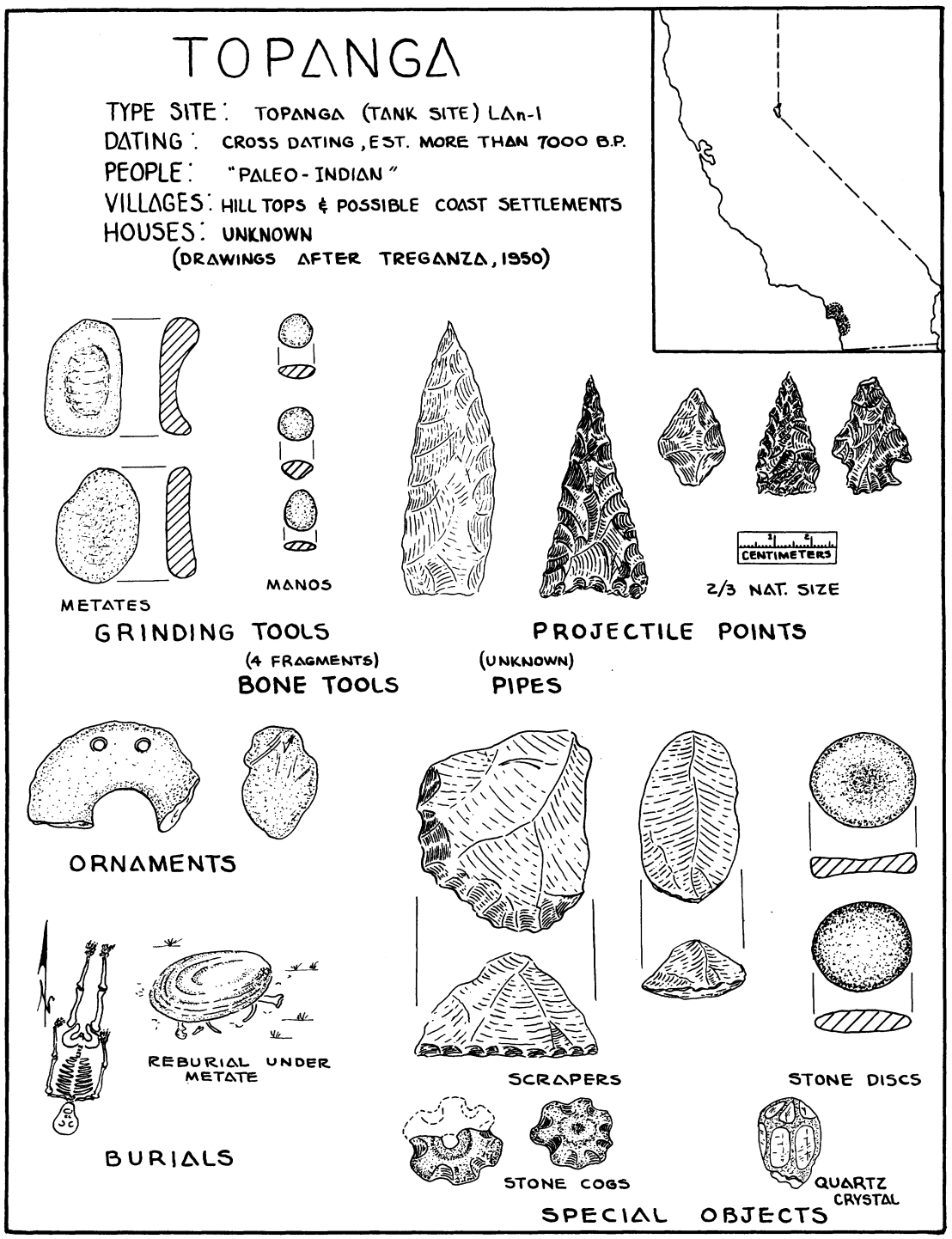

FIG. 1. Traits characteristic of the Topanga culture.

FIG. 2. Traits characteristic of Late Canaliño culture.

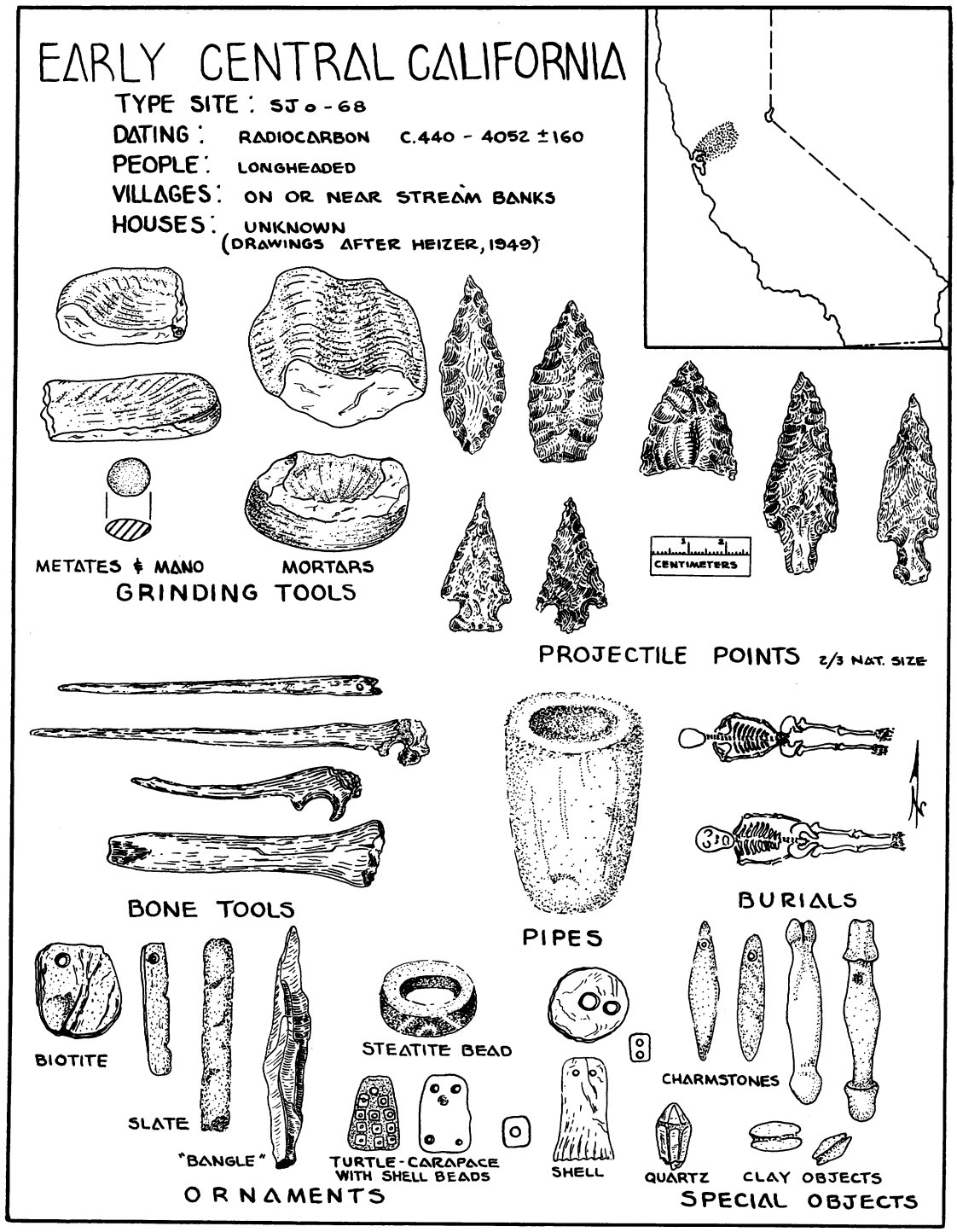

FIG. 3. Traits characteristic of early Central California culture.

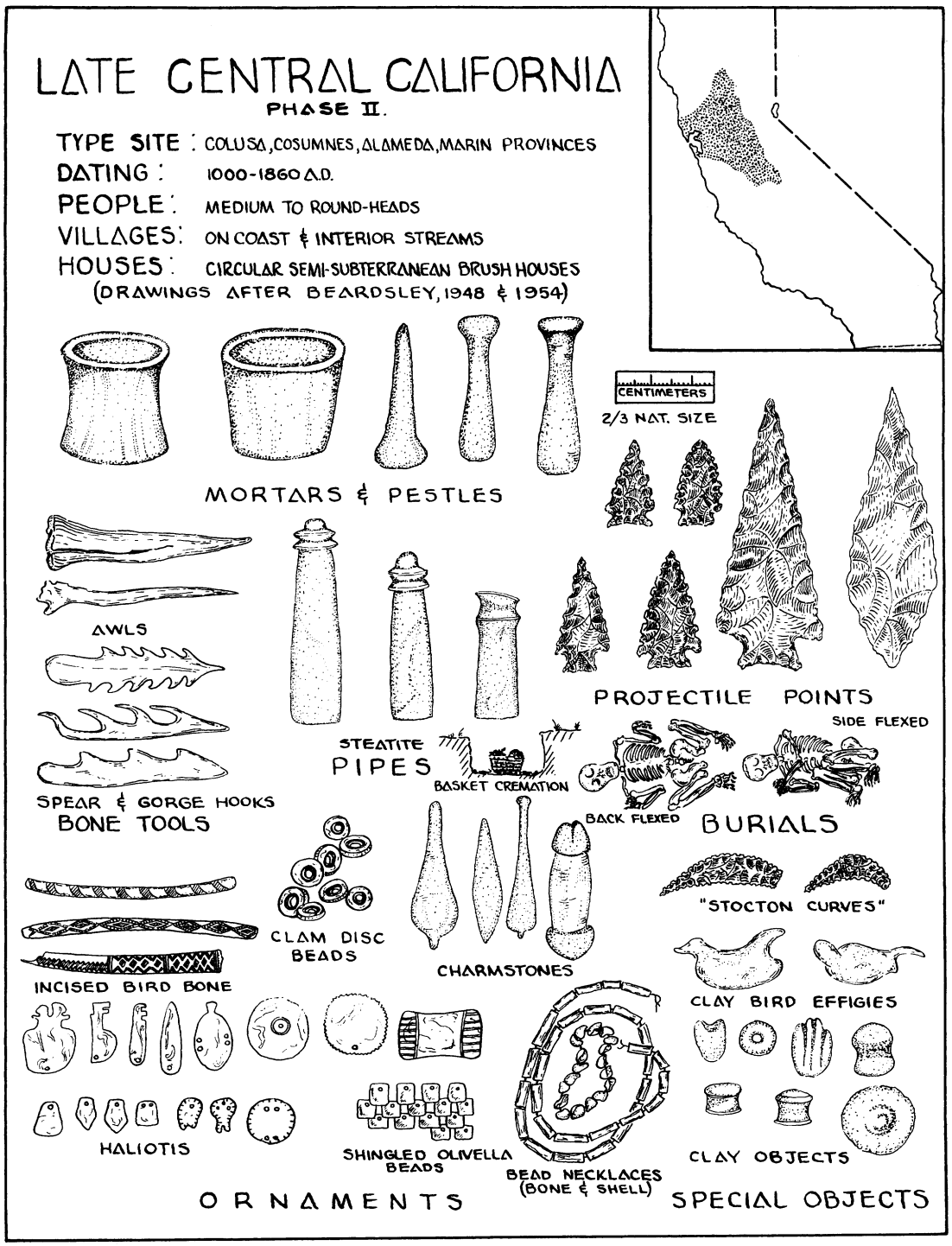

FIG. 4. Traits characteristic of late Central California culture (Phase II).

Stone Cultures" by Wallace (1955). These are most clearly seen along the coastal strip; the inland cultures of the desert appear to be somewhat different, but this may be a function of comparing midden sites with surface sites. There is a considerable overlap of artifact types between desert and coastal cultures, although some specific differences are also seen. The commonest specimens throughout the area are metates, often containing a very deep groove, and crude percussion-flaked choppers and scrapers. Points of several varieties occur, but they are numerically rare in comparison to the crude material. Topanga yielded 31 points and over 1500 percussion tools (Treganza and Malamud 1950); the Zuma Creek site yielded ten points (of which two are most likely recent intrusions) and over 400 percussion-flaked scrapers and choppers (Peck 1955). Similarities between these cultures and the early phases of Cochise have often been noted, and it is true that the same kinds of artifacts occur in both cultures. However, proportions of representative types are different; some of the California cultures seem to place more emphasis on tools of a "palaeolithic" appearance. When adequate dating evidence is available, it may be shown that the Cochise culture represents an intrusion from the west, displacing or replacing the mammoth hunters of sites like Naco and Lehner. However, this conclusion is speculative; present information suggests it as a possibility, but it cannot be verified.

Surface collection or casual excavation of sites like Topanga can yield a sizeable aggregation of crude core tools without turning up either grinding implements or projectile points. This is particularly true for the early remains of San Diego County and Baja California, which seem to have experienced a remarkable cultural lag even within the generally isolated Californian region. For this reason, workers in the west are apt to believe that they have found complexes of extreme simplicity, and references to such complexes have appeared under names such as "early lithic," "palaeolithic," and "pre-projectile point" or "non-projectile point." I have tried to verify the reality of such complexes by careful search of the literature, and have concluded that all claims of this nature are likely to be due to inadequate sampling or to sampling of a workshop or quarry rather than a habitation area. The Texas Street material is a special case. In my opinion the claimed artifacts are actually broken rocks of natural origin. If these are indeed accepted as artifacts, then we must conclude that there is a pre-projectile point culture on the west coast. I think it possible that a culture of "palaeolithic" appearance may yet be demonstrated for the west coast, particularly in Baja California and other marginal areas, but at the present time the evidence for such a culture is inconclusive and highly vulnerable to the criticisms suggested above. It must be emphasized that all of the Californian complexes which include a controlled and reasonably large sample of artifacts have both grinding tools and projectile points.

The Central California cultures of the early period show some similarities to those of southern California, but in general the Central California remains show a more advanced technology in that more attention is paid to finished objects and aesthetic elaboration. There is hence a much smaller relative number of core tools. Milling stones are also relatively scarce, only three being reported for Early Central California (Heizer 1949: 20).

The Karlo site in Lassen County is of particular interest because it shows artifact similarities to the Great Basin on the one hand and to Early Central California on the other. So far as the general cultural development goes, the site reveals a pattern not dissimilar from the other early cultures just discussed.

All these complexes are most similar to the cultures called Archaic in the east, and they also occupy the same approximate time period — from about the time of Christ to 3000 B.C. The Californian cultures do not represent big game hunters of the Folsom type. Rather, the Californians seem to have exploited a considerable range of resources from the earliest time, including not only the available animals, large and small, but also plant products. There was regional variation in the food resources available, and also in the relative emphasis given to plant as opposed to animal foods. In at least some of the California cultures, plant foods were probably as important as or more important than game. There is evidence for a fair amount of foraging or general collecting and hunting in the variety of animal species present in some sites and in the use of mussels, rodents, small birds, and similar resources.

The early Californian cultures show a number of differences from the Archaic cultures of the east, in both their general appearance and in the specific kinds of artifacts found. Among the artifacts found in one or another of the

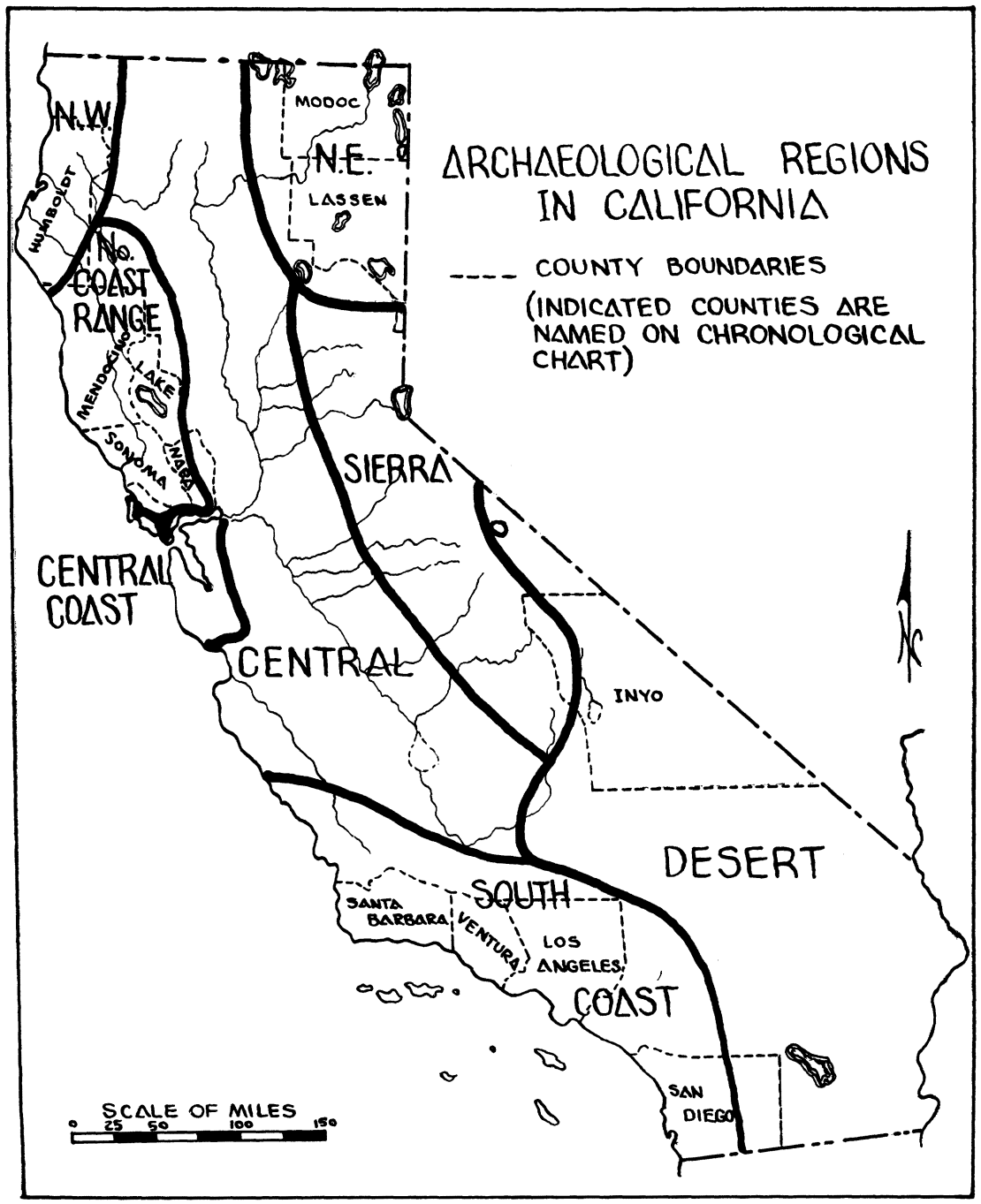

FIG. 5. Archaeological regions in California.

eastern Archaic cultures, the following do not occur in California:

Bannerstones. The winged forms are entirely absent. "Boatstones" presumed to be spear-thrower weights do occur in California, but only a few have been found (Heizer and Elsasser 1953: 26). Boatstones are not found in any of the cultures so far discussed here.

Axes and adzes. There are a few grooved axes from the Sierras, possibly native to California, but in general Californians used percussion-flaked choppers instead of celts or axes. Most of the functional stone tools in California are made of chipped rather than of ground stone; an exception is the grinding stone, but this is often shaped by use rather than design.

Pottery. Pottery does not occur at all in most of California, and its introduction is very late (after A.D. 1000) in the southern and eastern areas where it is found.

On the other hand, some specific similarities between the eastern Archaic and the early cultures of California — particularly Early and Middle Central California — have been noted (Beardsley 1948: 22-5). One of the most striking of these is the common occurrence of plummets or charmstones, an artifact form which is very rare or absent in much of North America. Compare examples from Early Central California illustrated by Heizer (1949), with eastern specimens in Griffin 1952b, Figs. 13 *d*; 96 *o*; 138 *c*; 181 *b, d*; 184 *d*. The cultures represented in the East include Frontenac, Baumer, Deptford, Weeden Island, St. Johns I, and various Archaic cultures in the Southeast. No intensive comparison can be made here, but it is noted that this artifact form is generally associated with the older and simpler complexes. Charmstones or plummets may well be a diagnostic of an Archaic culture *stage*. The California examples are more abundant, more diversified, and in general better made than their eastern counterparts, and specific typological similarity is not demonstrated. Charmstones continued in use in California until the historic period and there is evidence for their use as hunting fetishes and good luck charms. Another artifact of common occurrence is the baked clay object believed to be used for cooking in baskets by stone boiling, found in Central California, Poverty Point, and Tchefuncte. Such congruence may well be due to similar responses to similar environmental conditions, that is, lack of stone. A number of general artifacts are also shared by east and west on this time level, including such things as bone fish spears, stemmed points, simple shell ornaments, and bone whistles.

In spite of east-west similarities, it is not possible to show any direct historical connection between the cultures on both sides of the continent. If a detailed trait list of comparisons is compiled, no two cultures appear to share a significant number of features. Rather, the western culture will share one element with one eastern culture and another with an entirely different culture, often widely separated in time and space from the first. Such a scattering of similarities can be most readily explained as due to sharing of a common cultural stage — all were hunters and gatherers with a relatively simple technology.

To summarize this discussion, the following points may be made.

1. The similarities between eastern and western cultures lend support to the idea of a continent-wide distribution of Archaic hunters and gatherers between about 2000 and 5000 B.C.

2. The differences between eastern and western cultures of this period emphasize a diversity of origins. The oldest of the Californian complexes show evidence of having already attained adaptation to particular environmental conditions on the west coast. The Californian complexes are therefore already specialized, environmentally speaking, even though their technology can be called "generalized Archaic." This point is discussed in more detail in the following section. The suggestion is that the western complexes developed in place out of an older and simpler cultural stratum.

THE ARCHAIC AS A CULTURAL STAGE

California provides one of the best regions for definition of an Archaic stage, since most of the Californian tribes were living examples of an Archaic stage of culture at the time of European discovery. Because of California's marginal position, isolated by deserts and the Sierra Nevada, the inhabitants of the state had limited contact with outsiders, and their cultures reveal a slowness in technological change which is often mentioned as one of the principal characteristics of the region.

Except for groups along the Colorado River, all of the California Indians were hunters and gatherers until the time of European and American settlement. They had no agriculture, no

Correlations in California Archaeology

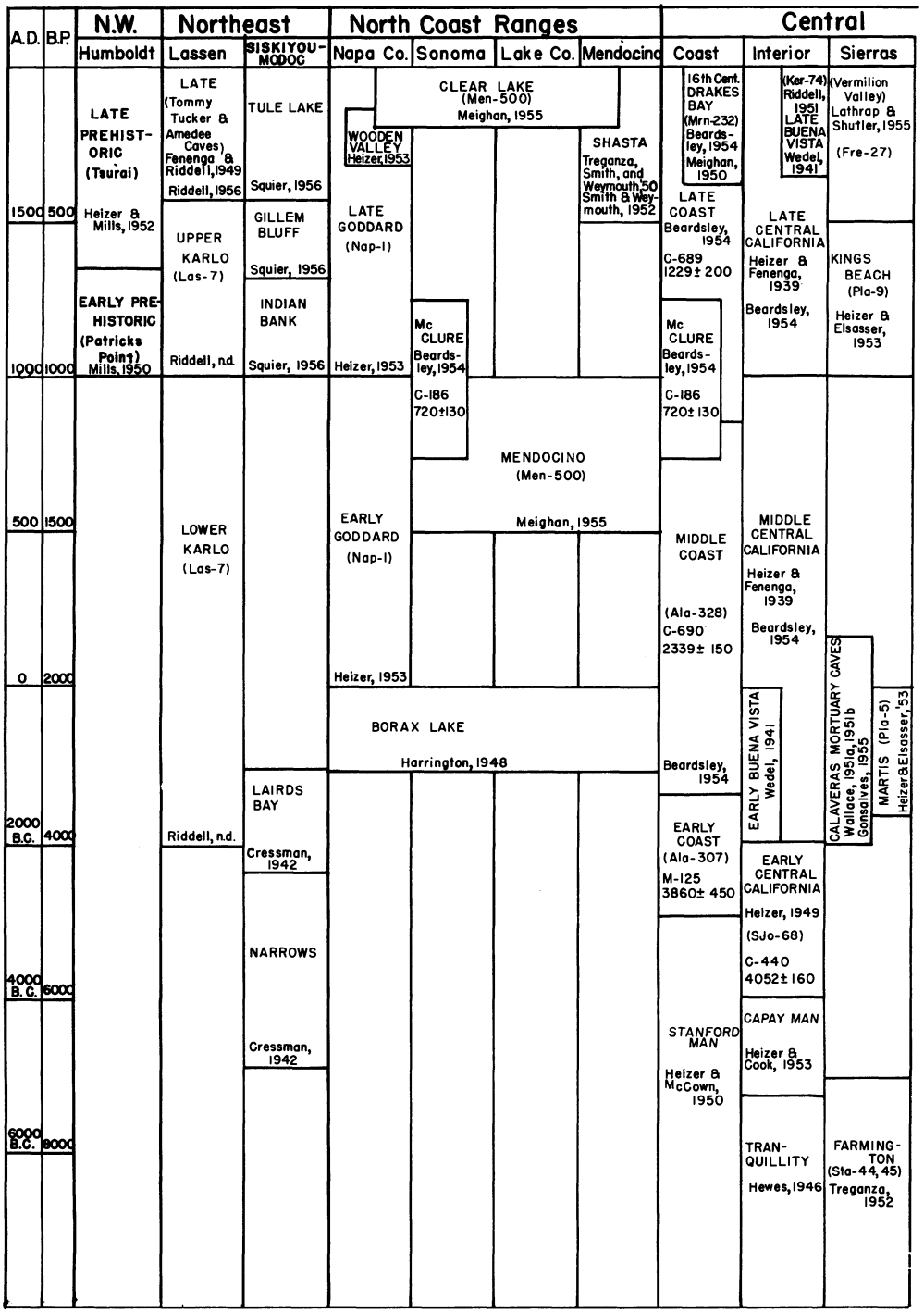

FIG. 6. Correlations in California archaeology. Riddell, n.d., refers to Riddell 1956b.

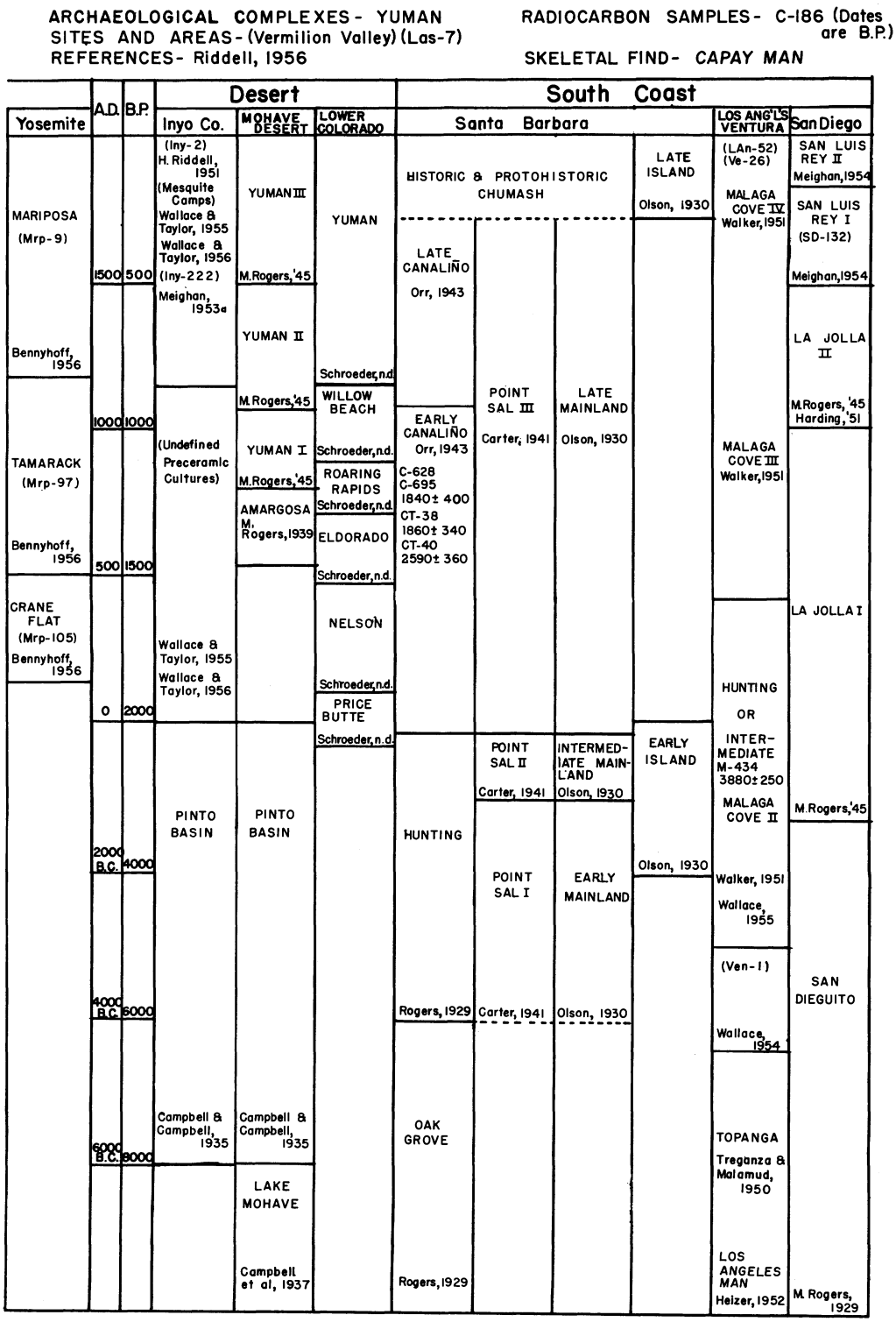

FIG. 6. Continued. Schroeder, n.d., refers to Schroeder 1952a, 1952b.

domesticated animals except the dog — and not even dogs for some groups — and no pottery save for some southern groups who got pottery very late from eastern contacts.

In addition to these general appearances of simplicity, several specific cultural elements can be shown to have persisted through very long periods of time. In Southern California, the milling stone as a grinding implement served as a basic tool from the earliest defined cultures to the historic period—a poorly dated sequence but one which certainly spanned several thousand years. Despite minor changes in form, nothing as distinctive as the Southwestern trough metate developed in California, and many individual specimens out of context could not be dated any closer than "somewhere between 5000 B.C. and A.D. 1800." Many of the simpler shell ornaments have a similar time span. Some objects of a ritual or fetish nature likewise continue throughout, including not only such natural items as quartz crystals, but also the charmstones or plummets characteristic of Central California. For charmstones there are again minor stylistic variations, but the objects are abundant from horizons dated at more than 4000 years ago down to and including the historic present. The general similarity through time is clearly indicated by Beardsley (1948, Pl. 1), whose chart of artifact types is now known to span several millenia.

Such a continuity of Californian cultures leads to some confusion in applying "Archaic" as a label. If we identify the Central California culture of 4000 years ago as Archaic, we are surprised to find that essentially the same culture was functioning 200 years ago as well. This is not to say that cultures at both ends of the time scale are identical, for archaeologists can and do define cultural horizons marked by changes in artifact style, the introduction of new elements, and the disappearance of some old ones. Yet the basic and significant features of the cultures — their subsistence patterns, social organization, and religion, insofar as these may be inferred from the archaeological record, remain remarkably stable throughout not centuries but millenia. This situation has been somewhat vexing to the archaeologist seeking for markers of cultural and chronological difference in California, but for purposes of the present study it is more of a help than a hindrance. This is because we can utilize ethnographic information as a check, with some confidence that it reflects the conditions of the past. It goes without saying that the recent California Indians did not have a culture identical to that of several thousand years before; still, these tribes come closer than any others to showing us what the Archaic cultural stage looks like "in the flesh." A judicious use of ethnographic information to check and supplement the archaeological record may therefore afford a more lifelike picture of Archaic peoples than can be derived in regions where the Archaic culture stage was replaced by other developments a long time ago.

Californian Cultures Included in an Archaic Stage

Although basing their description of an Archaic stage primarily on eastern data, Willey and Phillips (1955) have presented a summary which conforms in nearly every detail to the Californian picture as well. As a preliminary comment, I would include in the Archaic stage not only the later Californian cultures but also many which they considered as possibly belonging to their base culture labeled Early Lithic. Scarcity of site reports and a virtual absence of dependable absolute dates make the earlier Californian material subject to some honest differences of opinion. However, using some of the important criteria of the Willey-Phillips outline — including presence of ground stone, some accumulation of midden indicating temporal continuity for villages, evidence of reliance upon coastal resources — I would include within the Archaic stage such cultures as Topanga, Oak Grove, and similar manifestations called "Early Milling Stone Cultures" by Wallace (1955), Borax Lake, and the Buena Vista site in its entirety. I also believe all of the Calaveras mortuary caves to be part of the Archaic tradition. Dating of such caves is disputed, but the similarity of artifacts from the caves with those of Early and Middle California is so great that it is difficult to believe in greater antiquity for the caves (Wallace 1951a, 1951b; Gonsalves 1955). Regardless of their absolute dates, the artifacts reflect an Archaic stage as defined by Willey and Phillips.

Lest this seem like an indiscriminate lumping of everything on the west coast into one catch-all category, a few brief comments on the western Early Lithic are necessary here. To judge from the available published information, complexes which *may* be definable as Early

Lithic in the Willey-Phillips scheme include Farmington, San Dieguito I, and Playa. Possibly the Lake Mohave site and the earlier manifestations of the La Jolla culture in San Diego County belong in this category as well. All of these give some indications of being not only typologically crude but also close to the basement cultures of their local regions. However, much additional information is necessary before such a classification of these cultures can be made. Many questions, both chronological and cultural, remain to be worked out in detail. If the presence of grinding tools marks the separation of the Archaic from the Early Lithic, it may prove to be necessary to classify all of the named cultures except Farmington as Archaic; relatively small artifact samples prevent a final judgment on this question.

The general marginal conservatism of Californian cultures has already been mentioned. Within the state there are some regions which are marginal even to Californian cultures, where outside contacts were almost nil. Southern San Diego County and the adjacent peninsula of Baja California are good examples. Here, typological crudity is of virtually no significance in dating. The region appears to have maintained very simple cultural patterns until the protohistoric period, and sites known to be relatively late yield an artifact complex of "Lower Palaeolithic" appearance, containing the coarsest of percussion-flaked implements. Some sites of this sort no doubt have very great antiquity, but the extreme marginal survival of crude artifact types makes this region one of the most difficult to divide into chronological units.

Absence of Post-Archaic in California

So far as post-Archaic developments are concerned, except for the few Colorado River tribes, none of the Californian cultures acquired agriculture. Hence for practical purposes there is no post-Archaic stage for California.

It is most important to note that the Archaic stage is not necessarily inferior in its subsistence techniques to simple agricultural communities. Where the environment is favorable, as it was in all of California except the desert regions, the people may work out such an efficient ecological adaptation that they are actually better off than developmental agricultural peoples. The later Indians of southern coastal California, whose livelihood was based upon a maritime economy, maintained larger and more prosperous communities than any of the agricultural groups of the Colorado River, and indeed than all of the Southwestern groups except those living in the most elaborate of the Southwestern sites. As has been suggested before (Jennings and others 1956: 108-10), the failure of the "Archaic" Californians to adopt agriculture was not due to their stupidity or to environmental deficiencies, but simply to the fact that they were relatively well off and saw no particular advantage to agriculture as a way of making a living. As clearly stated by Willey and Phillips (1955) in their suggestion of a "Preformative" stage, agriculture has no particular advantages to offer hunting and gathering groups until farming techniques and storage facilities are well developed. Agriculture appears superior only in retrospect; the individual who begins to grow crops certainly does not see himself as revolutionizing his culture, nor is he likely to perceive major improvements in his own living until quite a long time has elapsed. The fact that California supported the greatest density of aboriginal population in the United States *without* agriculture is of the greatest significance to this discussion.

Economic Features of the California Archaic

Although the basic economy of the Californian cultures was hunting and gathering, within this broad category the region supported a considerable diversity of economic techniques. The remarkable geographic variability of California, with elevations from 200 feet below sea level to 14,000 above, rainfall from less than 2 inches to well over 100 inches annually, and the tremendous diversity of plant and animal resources, provided the Californian peoples with a variety of ecological niches. From the earliest known Archaic cultures, the Californians were already rather closely adapted to the kind of hunting and gathering necessary for existence in one of the specialized ecological regions within the state. Recent attention to the analysis of midden components on the west coast has provided us with some details of the different hunting and gathering emphasis in different areas. The following broad categories may be recognized.

1. Primary dependence upon plant seeds and small game. The perishable nature of foods utilized makes this one of the most difficult of environmental adaptations to define archaeologically. However, living desert Indians of

California, in particular the Cahuilla, provide a good picture of such environmental use. Archaeologically, all of the Cochise-like remains probably reflect the seed-gathering economy. The Oak Grove and Topanga cultures are Californian representatives of this group, as are all of the recent desert cultures, historic and prehistoric.

2. An economy based upon acorns, fish, birds, and larger game animals such as deer and elk. This is typical of the central valleys and most of the mountainous areas of the state.

3. A maritime economy based upon resources of the Pacific Ocean. There is a wide divergence within this category. Some groups depended primarily upon shellfish, others upon hunting sea mammals, still others upon fish. Some specific examples follow.

a) One small group (protohistoric) in northern California had a diet composed of waterfowl, crabs, and clams, apparently in that order of importance.

b) Some northern Californian groups, many of the Monterey coast groups, and the earlier southern California coastal peoples, appear to have subsisted primarily on shellfish which were collected from the rocks, particularly mussels and abalones.

c) Several coastal cultures show a heavy dependence upon sea-mammal hunting for seals, sea lions, sea otters, and dolphins; shellfish were probably mainly a supplement for these groups.

d) Late southern California cultures depended heavily upon ocean fishing, including game fish like tuna, barracuda, and swordfish.

Some important conclusions may be drawn from this diversity. In the first place, it is apparent that Archaic economies are not generalized, but may be highly specialized — closely adapted to the resources of a small region whose inhabitants have a thorough knowledge of their environment. On the positive side, such adaptation led to greater population, demonstrable archaeologically in the presence of midden sites of considerable depth and extent. On the other hand, we may see in this specialization the beginnings of cultural divergence and cultural isolation, leading to the many small tribes and the linguistic variability characterizing California in the historic period.

Both archaeological and ethnographic information show another important feature of the close ecological adaptation, namely the presence of some selection of part of the available resources. Although the people knew and used nearly all of the edible resources available to them, they frequently emphasized a portion of these resources as the major element of the diet and utilized other parts of the environment to a lesser extent. In some cases selection of resources was dictated by the technology (as among coastal peoples who utilized shellfish but lacked the boats and gear to acquire deepwater fish), but in some cases it appears that simple cultural choice played a part. A good example of this can be seen in modern Seri culture — the Seri are fishermen who have abundant shellfish available. However, they consider shellfish an inferior food and eat shellfish only for variety and when other foods are in short supply. Such a choice is probably the explanation for certain Californian middens which show a great predominance of particular foods and a near absence of other resources which must have been present in about the same amounts.

The technology of the Archaic Californians includes ground stone in a diversity of forms but concentrated in two main categories: grinding implements — mortars, pestles, manos, metates — and ornamental devices — charmstones, pipes, and so forth. There are some exceptions, but most of the tools aside from grinding tools are made of chipped stone. Some sort of projectile weapon, atlatl or bow and arrow, was universal, although it seems to have been of limited importance to some of the gathering economies.

Some of the desert groups had pottery in late times, but the art of pottery making was generally absent. Bowls of steatite and other stone were used to a limited extent, but the emphasis in container manufacture was no doubt on basketry. Only scattered finds attest this statement for the prehistoric period, but all dry caves so far excavated have yielded a relative abundance of basketry and it may be assumed that the ethnographic importance of this craft extended back into the distant past.

Bone working was abundant in many, although not all, of the Archaic cultures. Bone objects of wide distribution include fish gorges, pointed awls and awl-like instruments in a variety of forms, whistles, fishspears, and wedges. The latter afford evidence of woodworking, but virtually no examples of wooden objects have been found.

Marine shells were widely used for ornaments and occur in sites throughout California. A favorite shell was the iridescent *Haliotis* (abalone) of several species, although most other available shells were used by one or another of the Californian groups.

Californian technology shows few devices of any degree of technological complexity; nearly all of the objects found are simple and basic tools known widely in other areas of the world. However, although the technology was simple it would not be correct to call it crude, except for some southern California complexes like La Jolla. Nearly all objects are finished pieces executed with control and precision; careless or haphazard workmanship is the exception rather than the rule.

Social Features of the California Archaic

The following social features may be inferred.

1. The largest political unit was no doubt the village, ranging in size from a few to several hundred persons. Larger aggregations may have occasionally come under the authority of a ruler, but to judge from the customs of the recent California tribes, such larger political units were no doubt rare and of short duration.

2. There was a definite stratification of society, but this was primarily a recognition of the superiority of individuals rather than classes. A few individuals in each village were sorted out for special treatment in mortuary rites; these people usually have burial offerings in greater quantity and sometimes more fancy quality than the bulk of the people. Yet the social distance between high and low was not great and probably rested upon personal qualities rather than inherited status. Social distinctions apparently were not made on the basis of sex, for the special individuals may be of either sex in nearly all archaeological complexes. Age may have been a primary factor for segregating the upper groups, as among many living peoples, but archaeological evidence in this matter is very limited due to lack of skeletal studies.

3. Warfare on a small scale was prevalent, mostly by ambush. Trophy heads were taken by some groups. Organized and persistent warfare is not revealed in the archaeology of California, however; few sites look as if they had been selected with an eye to defensive possibilities, and there are no indications of palisades or other constructed defenses.

4. Trade over long distances was common. Much of this was hand-to-hand trade with articles being passed from group to group. However, ethnographically there are records of trading trips of 300 to 400 miles, and we cannot overlook the possibility that such trips were made in the prehistoric period as well.

Religious Features of the California Archaic

Religion is always one of the most difficult aspects of culture to interpret from archaeological evidence, but a few general statements can be made. The most obvious feature of the archaeological finds which attests to religious beliefs lies in the mortuary practices, which are everywhere formalized to a more or less standard pattern. There are some indications of a simple "cult of the dead" in the presence of mourning sites in southern California and the occurrence of fairly elaborate burial offerings in some complexes.

Several objects which had a fetish or shamanistic significance among the living Californian tribes occur widely in the archaeological remains from very early periods. These include charmstones, quartz crystals, and pipes or sucking tubes, all of which are standard shaman's equipment in many historic Californian groups. Such objects were used by living Indians in curing, sorcery, and control of nature. Their significance in the prehistoric period is very likely the same.

There is no clearly defined mortuary treatment which enables us to recognize the tomb of a priest or shaman. It is likely that such individuals were part-time specialists — individuals with recognized supernatural powers. Like political heads, who may well have been the same individuals in many cases, shamans were probably recognized on the basis of personal qualities rather than membership in a particular social group.

Cultural Elaboration Through Time

Although an Archaic technology persisted throughout aboriginal California until historic times, it would be incorrect to assume that the relative constancy of artifacts represents no cultural change. California prehistory shows a continuous search for more efficient adaptation to the environment, and the later cultures may be quite different from the early ones in the efficiency of their subsistence techniques. The difference between California and most other parts

of North America is that the Californians devoted their interests to improving their lot while maintaining cultures that belong in the Archaic pattern rather than by substituting agricultural techniques. That they succeeded is shown by a population that increased through time, and by greater numbers and more kinds of artifacts. In addition, there is an increased elaboration of artifacts, with more attention being paid to artistic embellishment and the production of ornaments and other nonfunctional objects. Compare Topanga (Fig. 24) and Canaliño (Fig. 25) for example. Part of the apparent increase in artifact types through time is the result of differential preservation of objects — in older sites like Topanga or even Borax Lake, soil conditions destroy bone and shell objects. Still, there can be little question that more and fancier objects were made in the later periods.

Another reflection of improved "Archaic" economy is seen in the shift in reliance from one resource to another. The early cultures of southern California were essentially land-oriented, basing their living upon seeds and land animals. When they did use the resources of the sea, they collected the obvious and easy-to-get shellfish such as mussels and abalones. Through time there appears a shift to marine resources, the culmination being the fishing economy of the Canaliño. Such a change permitted greatly increased population, centers of population housing over 1000 people, and greatly increased leisure time for the production of art objects and ceremonial paraphernalia. In terms of population increase, the southern Californians developed as fast and as far as the Southwestern agriculturalists. Other segments of the Californian population did not experience as great an increase, probably largely because their local environments did not permit as greatly enriched exploitation. However, the general picture is one of experimentation and cultural change with recent cultures somewhat better adapted to the environment.

Understanding of Californian culture history can perhaps be clarified by reference to the models for culture change defined by one of the 1955 seminars in archaeology. In terms of the models (Haury and others 1956: 43-4) California represents a Direct Tradition in its persistence of basic tool types. However, the Californian use of subsistence resources represents an Elaborating Tradition of ornaments, art, and other leisure-time activities. All of this is taking place within the framework of an Archaic cultural stage. Hence, although it may be useful to retain the concept of an Archaic stage for some purposes, many complex factors remain to be isolated and defined.

It is unfortunate that current appraisal of the changes within California must be on an impressionistic basis. Detailed definition of the ecological shifts may provide a basis for a more discriminating understanding of Archaic cultures in general. The road to clear understanding of the Californian cultures now lies in such studies as settlement patterns and quantitative midden analysis. The quantitative approach outlined by Heizer and Cook (1956) and demonstrated by them in several recent papers will ultimately permit recognition of detailed changes in ecological adjustment, along with correlated population shifts.

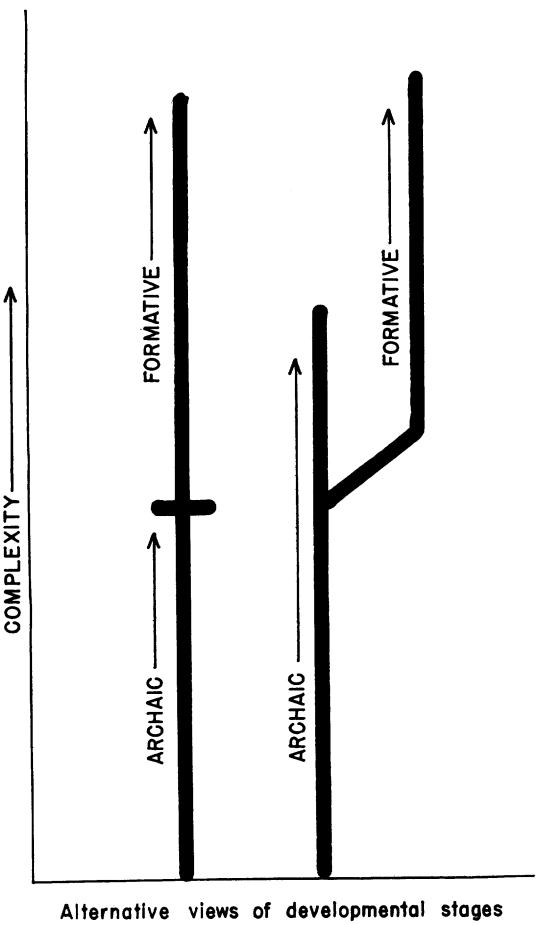

FIG. 7. Alternative views of developmental stages.

ADDENDUM

Since the preceding discussion was written, a number of significant contributions to California archaeology have appeared. It is not feasible to include discussion of all of them, but two are important in bringing this paper up to date.

The first is the book by George Carter (1957) in which there is a great mass of material dealing with the presumed very ancient California cultures mentioned briefly in this report. It is beyond the scope of the present paper to consider in detail the various lines of evidence utilized by Carter, including soil formation, geology, and climatology as well as archaeology. However, speaking of the archaeological discussion only, I still feel that the *archaeological* evidence is entirely inadequate to support the existence of "Pleistocene man." Most of the "artifacts" presented as evidence seem to me to be naturally-fractured rocks; the acceptable artifacts are all types known to occur in relatively recent times and their archaeological context is not unquestionable. There is considerable published archaeological evidence not in agreement with Carter's interpretation which is not considered in his book.

So far as the theoretical part of the discussion in this paper is concerned, there should be considered an important recent paper by Heizer (1958). He presents the point of view that the more elaborate California complexes may be considered "Preformative" or "Formative" in the Willey-Phillips classification, and that they should not all be considered "Archaic" as is done here. Heizer raises a significant question here which highlights the inevitable difficulty of defining developmental "stages." Whether one calls the California cultures Archaic or Formative depends on whether the classification rests fundamentally on technological stage or whether more emphasis is placed on social features, population density, and nonmaterial elaboration of the culture. In this paper I have chosen the former emphasis, although the broader view presented by Heizer may well be more meaningful for interpreting cultural development. Both Heizer and I have arrived at the same essential conclusion, however: namely, that hunting-gathering cultures in a favored environment may reach equal or greater complexity than some agricultural communities. Heizer has expressed this conclusion by classifying some California cultures in the more complex "Formative" stage; I have done it by pointing to the diversity of cultures possible in an "Archaic" technology. The different points of view can be represented as in Figure 7.

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Los Angeles, Calif.
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REFERENCES

Although every effort has been made to check each of these references, some have been beyond the resources at the editor's command. We believe that this list is reasonably accurate; its completeness is a responsibility of the contributors. The following abbreviations are used:

AA	*American Anthropologist.* Menasha.
AJS	*American Journal of Science.* New Haven.
AlMNH-MP	*Alabama Museum of Natural History, Museum Paper.* Geological Survey of Alabama. University.
Am Ant	*American Antiquity.* Menasha and Salt Lake City.
AMNH-AP	*American Museum of Natural History, Anthropological Papers.* New York.
Ar	*Archaeology.* Cambridge and Brattleboro.
ASC-B	*Bulletin of the Archeological Society of Connecticut.* New Haven.
ASNJ-B	*Archaeological Society of New Jersey Bulletin.* Trenton.
ASV-QB	*Quarterly Bulletin of the Archeological Society of Virginia.* Williamsburg.
BAE-B	*Bureau of American Ethnology, Bulletin* Washington.
Ec	*Ecology.* Lancaster and Durham.
EP	*El Palacio.* Santa Fe.
GSA-B	*Geological Society of America, Bulletin.* Baltimore.
MAIHF-INM	*Indian Notes and Monographs. Museum of the American Indian. Heye Foundation.* New York.
Mas	*Masterkey.* Los Angeles.
MAS-B	*Bulletin of the Massachusetts Archaeological Society.* Attleboro.
MoA	*Missouri Archaeologist.* Columbia.
MP	*Medallion Papers.* Globe.
NMC-B	*Bulletin of the National Museum of Canada.* Ottawa.
NSIS-T	*Transactions of the Nova Scotian Institute of Natural Sciences.* Halifax.
NYSAA-RT	*Researches and Transactions of the New York State Archaeological Association.* Rochester.
OAS-B	*Oklahoma Anthropological Society Bulletin.* Norman.
PA	*Pennsylvania Archaeologist.* Milton.
PM-P	*Papers of the Peabody Museum, Harvard University.* Cambridge.
RMAS-RR	*Research Records of the Rochester Museum of Arts and Sciences.* Rochester.
RSPF-P	*Papers of the Robert S. Peabody Foundation for Archaeology.* Andover.
S	*Science.* Washington.
SAA-M	*Memoirs of the Society for American Archaeology.* Menasha and Salt Lake City.
SJA	*Southwestern Journal of Anthropology.* Albuquerque.
SMC	*Smithsonian Miscellaneous Collections.* Washington.
SwM-P	*Southwest Museum Papers.* Los Angeles.
TA	*Tennessee Archaeologist.* Knoxville.
TAPS-B	*Bulletin of the Texas Archeological and Paleontological Society.* Lubbock.
TAS-B	*Bulletin of the Texas Archeological Society.* Austin.
UC-AR	*University of California Anthropological Records.* Berkeley.
UCAS-R	*Reports of the University of California Archeological Survey.* Berkeley.
UK-RA	*University of Kentucky Reports in Anthropology.* Lexington.
UU-AP	*Anthropological Papers, University of Utah.* Salt Lake City.

ADAMS, R. M.

1941 Archaeological Investigations in Jefferson County, Missouri, 1939-40. *Transactions of the Academy of Science of St. Louis,* Vol. 30: 151-221. St. Louis.

ALBRITTON, C. C. AND KIRK BRYAN

1939 Quaternary Stratigraphy of the Davis Mountains, Trans-Pecos, Texas. *GSA-B,* Vol. 50: 1423-74. Baltimore.

ANONYMOUS [CROOK, W. W., AND R. K. HARRIS]

1956 Oldest Traces of Early Man in the Americas. *S,* Vol. 124: 396-7. Washington.

ANTEVS, ERNST

1950 Conditions of Deposition and Erosion by Streams in the Great Plains. In "Proceedings of the Sixth Plains Archaeological Conference" (1948). *UU-AP,* No. 11: 42-5a. Salt Lake City.

1955 Geologic-Climatic Dating in the West. *Am Ant,* Vol. 20: 317-55. Salt Lake City.

ARNOLD, J. R. AND W. F. LIBBY

1950 *Radiocarbon Dates (September 1, 1950).* University of Chicago, Institute for Nuclear Studies. Chicago.

1951 Radiocarbon Dates. *S*, Vol. 113: 111-20. Washington.

AVELEYRA (ARROYO DE ANDA), LUIS

1951 Reconocimiento Arqueológico en la Zona de la Presa Internacional Falcón, Tamaulipas y Texas. *Revista Mexicana de Estudios Antropológicos*, Tomo 12: 31-59. Mexico.

BAERREIS, D. A.

1951 The Preceramic Horizons of Northeastern Oklahoma. *Anthropological Papers, Museum of Anthropology, University of Michigan*, No. 6. Ann Arbor.

BAERREIS, D. A., W. L. WITTRY, AND R. L. HALL

1956 The Burial Complex at the Smith Site, Delaware County, Oklahoma. *OAS-B*, No. 4: 1-12. Norman.

BAILEY, J. H.

1939 A Ground Slate Producing Site near Vergennes, Vermont. *Bulletin of the Champlain Valley Archaeological Society*, Vol. 1, No. 2. Fort Ticonderoga.

BATES, ORIC AND H. E. WINLOCK

1912 Archaeological Material from the Main Littoral, with Especial Reference to the Bates Collection. MS, thesis for Anthropology 20, in the library of the Peabody Museum, Harvard University, Cambridge. Copy in the library of the R. S. Peabody Foundation, Andover.

BEARDSLEY, R. K.

1948 Culture Sequences in Central California Archaeology. *Am Ant*, Vol. 14: 1-28. Menasha.

1954 Temporal and Areal Relationships in Central California Archaeology. *UCAS-R*, Nos. 24-25. Berkeley.

BEARDSLEY, R. K., PRESTON HOLDER, A. D. KRIEGER, B. J. MEGGERS, AND JOHN RINALDO

1956 Functional and Evolutionary Implications of Community Patterning. In "Seminars in American Archaeology: 1955," edited by Robert Wauchope, *SAA-M*, No. 11: 129-57. Salt Lake City.

BELL, R. E.

1953 The Scott Site, Le Flore County, Oklahoma. *Am Ant*, Vol. 18: 314-31. Salt Lake City.

BELL, R. E. AND D. A. BAERREIS

1951 A Survey of Oklahoma Archaeology. *TAPS-B*, Vol. 22: 7-100. Lubbock.

BENNYHOFF, J. A.

1956 An Appraisal of the Archaeological Resources of Yosemite National Park. *UCAS-R*, No. 34. Berkeley.

BOAS, FRANZ

1915 Summary of the Work of the International School of American Archaeology and Ethnology in Mexico, 1910-1914. *AA*, Vol. 17: 384-9. Menasha.

BRANNON, H. R., JR., A. C. DAUGHTRY, D. PERRY, L. H. SIMONS, W. W. WHITAKER, AND MILTON WILLIAMS

1957 Humble Oil and Refining Company Radiocarbon Dates I. *S*, Vol. 125: 147-50. Washington.

BRAY, R. T.

1956 Culture-Complexes and Sequence at the Rice Site (23SN200) Stone County, Missouri. *MoA*, Vol. 18, Nos. 1-2: 46-134. Columbia.

BROECKER, W. S., J. L. KULP, AND C. S. TUCEK

1956 Lamont Natural Radiocarbon Measurements III. *S*, Vol. 124: 154-65. Washington.

BRYAN, KIRK

1941 Pre-Columbian Agriculture in the Southwest as Conditioned by Periods of Alluviation. *Annals of the Association of American Geographers*, Vol. 31: 219-42. Lancaster.

BRYAN, KIRK AND J. H. TOULOUSE, JR.

1943 The San Jose Non-Ceramic Culture and Its Relation to a Puebloan Culture in New Mexico. *Am Ant*, Vol. 8: 269-80. Menasha.

BULLEN, R. P.

1948 Culture Dynamics in Eastern Massachusetts. *Am Ant*, Vol. 14: 36-48. Menasha.

1949 Excavations in Northeastern Massachusetts. *RSPF-P*, Vol. 1, No. 3. Andover.

1950 Chronology and Virginian Prehistory. *ASV-QB*, Vol. 4, No. 3. Williamsburg.

1951 Certain Small Triangular Arrowpoints. *MAS-B*, Vol. 12: 64-6. Attleboro.

BURGER, VALERIE

1953 Indian Campsites on Kempt and Manowan Lakes in the Province of Quebec. *PA*, Vol. 23: 32-45. Milton.

BYERS, D. S.

1954 Bull Brook — A Fluted Point Site in Ipswich, Massachusetts. *Am Ant*, Vol. 19: 343-51. Salt Lake City.

1955 Additional Information on the Bull Brook Site, Massachusetts. *Am Ant*, Vol. 20: 274-6. Salt Lake City.

1958 Two Sites in Southern New England. *MAS-B*, Vol. 20, No. 1: 1-7. Attleboro.

BYERS, D. S. AND W. S. HADLOCK

1955 Carbon-14 Dates from Ellsworth Falls, Maine. *S*, Vol. 121: 735-6. Washington.

BYERS, D. S. AND FREDERICK JOHNSON

1940 Two Sites on Martha's Vineyard. *RSPF-P*, Vol. 1, No. 1. Andover.

CAMPBELL, E. W. AND W. H. CAMPBELL

1935 The Pinto Basin Site. *SwM-P*, No. 9. Los Angeles.

CAMPBELL, E. W., W. H. CAMPBELL, ERNST ANTEVS, C. A. AMSDEN, J. A. BARBIERI, AND F. A. BODE

1937 The Archaeology of Pleistocene Lake Mohave: A Symposium. *SwM-P*, No. 11. Los Angeles.

CAMPBELL, T. N.

1947 The Johnson Site: Type Site of the Aransas Focus of the Texas Coast. *TAPS-B*, Vol. 18: 40-75. Lubbock.

1952 The Kent-Crane Site: A Shell Midden on the Texas Coast. *TAPS-B*, Vol. 23: 39-77. Lubbock.

CAMPBELL, T. N. AND J. Q. FRIZZELL

1949 Notes on the Ayala Site, Lower Rio Grande Valley, Texas. *TAPS-B*, Vol. 20: 63-72. Lubbock.

CARTER, G. F.

1941 Archaeological Notes on a Midden at Point Sal. *Am Ant*, Vol. 6: 214-26. Menasha.

1957 *Pleistocene Man at San Diego*. Johns Hopkins Press, Baltimore.

CASON, J. F.

1952 Report on Archaeological Salvage in Falcon Reservoir, Season of 1952. *TAPS-B*, Vol. 23: 218-59. Lubbock.

CHAMPE, J. L.

1946 Ash Hollow Cave. *University of Nebraska Studies, New Series* No. 1. Lincoln.

CHAPMAN, C. H.

1956 A Resume of Table Rock Archaeological Investigations. *MoA*, Vol. 18, Nos. 1-2: 15-45. Columbia.

CHAPMAN, C. H., T. J. MAXWELL, JR., AND E. KOZLOVICH

1951 A Preliminary Archaeological Survey of the Table Rock Reservoir Area, Stone County, Missouri. *MoA*, Vol. 13, No. 2: 5-39. Columbia.

CLAFLIN, W. H., JR.

1931 The Stallings Island Mound, Columbia County, Georgia. *PM-P*, Vol. 14, No. 1. Cambridge.

COLE, FAY-COOPER AND THORNE DEUEL

1937 *Rediscovering Illinois*. University of Chicago Press.

COLE, FAY-COOPER AND OTHERS

1951 *Kincaid: A Prehistoric Illinois Metropolis*. University of Chicago Press.

CRANE, H. R.

1955 Antiquity of the Sandia Culture: Carbon-14 Measurements. *S*, Vol. 122: 689-90. Washington.

1956 University of Michigan Radiocarbon Dates I. *S*, Vol. 124: 664-72. Washington.

CRESSMAN, L. S.

1942 Archaeological Researches in the Northern Great Basin. *Carnegie Institution of Washington, Publication* 538. Washington.

CROOK, W. W., JR.

1952 The Wheeler Site: A 3500-Year-Old Culture in Dallas County, Texas. *Field & Laboratory*, Vol. 20: 43-65. Dallas.

CROOK, W. W., JR. AND R. K. HARRIS

1952 Trinity Aspect of the Archaic Horizon: The Carrollton and Elam Foci. *TAPS-B*, Vol. 23: 7-38. Lubbock.

1958 A Pleistocene Campsite near Lewisville, Texas. *Am Ant*, Vol. 23, No. 3, pp. 233-46. Salt Lake City.

CROSS, DOROTHY

1941 *The Archaeology of New Jersey, Vol. 1*. The Archaeological Society of New Jersey and The New Jersey State Museum, Trenton.

1953 Delaware and Related Horizons in New Jersey. *ASNJ-B*, No. 6. Trenton.

1956 *The Archaeology of New Jersey, Vol. 2, The Abbott Farm*. The Archaeological Society of New Jersey and The New Jersey State Museum, Trenton.

CROZIER, A.

1939 The Steatite Quarry near Christiana, Lancaster County, Pennsylvania. *Bulletin of the Archaeological Society of Delaware*, Vol. 3, No. 2: 13-15. Wilmington.

DAVENPORT, HARBERT (EDITOR)

1924 The Expedition of Panfilo de Narvaez [by Gonzalo Fernandez Oviedo]. *Southwestern Historical Quarterly*, Vol. 27. Austin.

DEEVEY, E. S., JR.

1939 Studies on Connecticut Lake Sediments, I. A Post-Glacial Climatic Chronology for Southern New England. *AJS*, Vol. 237: 691-724. New Haven.

1943 Additional Pollen Analysis from Southern New England. *AJS*, Vol. 241: 716-52. New Haven.

1951 Late Glacial and Post Glacial Pollen Diagrams from Maine. *AJS*, Vol. 249: 177-208. New Haven.

DICK, H. W.

1954 The Bat Cave Podcorn Complex: A Note on Its Distribution and Archaeological Significance. *EP*, Vol. 61: 138-44. Santa Fe.

EKHOLM, G. F.

1944 Excavations at Tampico and Panuco in the Huasteca, Mexico. *AMNH-AP*, Vol. 38, No. 5. New York.

ENGSTROM, R. E.

1951 A Preliminary Report on the Nunkatusset Site. *MAS-B*, Vol. 13, No. 1: 5-9. Attleboro.

EVANS, CLIFFORD

1955 A Ceramic Study of Virginia Archeology. *BAE-B*, 160. Washington.

FAIRBANKS, C. H.

1942 The Taxonomic Position of Stallings Island, Georgia. *Am Ant*, Vol. 7: 223-31. Menasha.

FENENGA, FRANKLIN AND F. A. RIDDELL

1949 Excavation of Tommy Tucker Cave, Lassen County, California. *Am Ant*, Vol. 14: 203-14. Menasha.

FLANNERY, REGINA

1939 An Analysis of Coastal Algonquian Culture. *The Catholic University of America, Anthropological Series* No. 7. Washington.

FLINT, R. F. AND E. S. DEEVEY, JR.

1951 Radiocarbon Dating of Late Pleistocene Events. *AJS*, Vol. 249: 257-300. New Haven.

FORD, J. A.

1954 Additional Notes on the Poverty Point Site in Northern Louisiana. *Am Ant*, Vol. 19: 282-5. Salt Lake City.

FORD, J. A. AND C. H. WEBB

1956 Poverty Point, A Late Archaic Site in Louisiana. *AMNH-AP*, Vol. 46, Pt. 1. New York.

FORD, J. A. AND G. R. WILLEY

1941 An Interpretation of the Prehistory of the Eastern United States. *AA*, Vol. 43: 325-63. Menasha.

FOWKE, GERARD

1894 Archeologic Investigations in James and Potomac Valleys. *BAE-B*, 23. Washington.

FOWLER, M. L.

1957 Archaic Projectile Point Styles, 7,000-2,000 B.C. *MoA*, Vol. 19, Nos. 1-2: 7-20. Columbia.

FOWLER, M. L., HOWARD WINTERS, AND P. W. PARMALEE

1956 Modoc Rock Shelter Preliminary Report. *Illinois State Museum, Report of Investigations*, No. 4. Springfield.

FOWLER, W. S.

1951 Ragged Mountain: Cultural Sequence in a Connecticut Quarry-Shelter. *ASC-B*, No. 25: 3-25. New Haven.

FULLER, G. D.

1935 Postglacial Vegetation of the Lake Michigan Region. *Ec*, Vol. 16: 473-87. Lancaster.

GLYNN, FRANK

1953 The Pilots Point Submerged Sites. *ASC-B*, No. 27: 11-29. New Haven.

GONSALVES, W. C.

1955 Winslow Cave, A Mortuary Site in Calaveras County, California. *UCAS-R*, No. 29: 31-45. Berkeley.

GREENMAN, E. F. AND G. M. STANLEY

1943 The Archeology and Geology of Two Early Sites near Killarney, Ontario. *Papers of the Michigan Academy of Sciences, Arts, and Letters*, Vol. 28: 505-30. Ann Arbor.

GRIFFIN, J. B.

1946 Cultural Change and Continuity in Eastern United States Archaeology. In "Man in Northeastern North America," edited by Frederick Johnson. *RSPF-P*, Vol. 3: 37-95. Andover.

1952a Culture Periods in Eastern United States Archeology. In *Archeology of Eastern United States*, edited by J. B. Griffin, pp. 352-64. University of Chicago Press.

GRIFFIN, J. B. (EDITOR)

1952b *Archeology of Eastern United States*. University of Chicago Press.

GUERNSEY, E. Y.

1937 An Archaeological Survey of Clark, Floyd, and Harrison Counties. MS, in files of the Indiana Historical Society. Summarized in Eli Lilly, 1937, *Prehistoric Antiquities of Indiana*, pp. 27, 98-101, 215-18. Indiana Historical Society, Indianapolis.

GUTHE, A. K.

1957 Northeast, In "Notes and News," *Am Ant*, Vol. 22: 330-2. Salt Lake City.

HAAG, W. G.

1942 Early Horizons in the Southeast. *Am Ant*, Vol. 7: 209-22. Menasha.

HACK, J. T.

1942 The Changing Physical Environment of the Hopi Indians of Arizona. *PM-P*, Vol. 35, No. 1. Cambridge.

HADLOCK, W. S.

1939 The Taft's Point Shell Mound at West Goulds-boro, Maine. *Robert Abbe Museum, Bulletin* 5. Bar Harbor.

HADLOCK, W. S. AND D. S. BYERS

1956 Radiocarbon Dates from Ellsworth Falls, Maine. *Am Ant*, Vol. 21: 419-20. Salt Lake City.

HALL, R. S.

1954 Ck-44: A Bluff Shelter Site from Northeastern Oklahoma. *OAS-B*, No. 2: 49-67. Norman.

HARDING, MABEL

1951 La Jollan Culture. *El Museo*, Vol. 1, No. 1: 10-11, 31-8. San Diego.

HARP, ELMER, JR.

1951 An Archaeological Survey in the Strait of Belle Isle Area. *Am Ant*, Vol. 16: 203-20. Salt Lake City.

1952 The Cultural Affinities of the Newfoundland Dorset Eskimo. MS, doctoral dissertation, Harvard University, Cambridge.

HARRINGTON, M. R.

1920 Certain Caddo Sites in Arkansas. *MAIHF-INM*, No. 10. New York.

1924 The Ozark Bluff-Dwellers. *AA*, Vol. 26: 1-21. Menasha.

1933 Gypsum Cave, Nevada. *SwM-P*, No. 8. Los Angeles.

1934 A Camel-hunters' Camp in Nevada. *Mas*, Vol. 8: 22-4. Los Angeles.

1948 An Ancient Site at Borax Lake, California. *SwM-P*, No. 16. Los Angeles.

1956 The Latest from Tule Springs. *Mas*, Vol. 30: 108-9. Los Angeles.

HAURY, E. W.

1943 A Possible Cochise-Mogollon-Hohokam Sequence. *Proceedings of the American Philosophical Society*, Vol. 86, No. 2, pp. 260-3. Philadelphia.

1950 *The Stratigraphy and Archaeology of Ventana Cave, Arizona*. University of Arizona Press and University of New Mexico Press, Tucson and Albuquerque.

HAURY, E. W., ERNST ANTEVS, AND J. F. LANCE

1953 Artifacts with Mammoth Remains, Naco, Arizona. *Am Ant*, Vol. 19: 1-24. Salt Lake City.

HAURY, E. W., R. L. RANDS, A. C. SPAULDING, W. W. TAYLOR, R. H. THOMPSON, AND R. WAUCHOPE

1956 Archaeological Approach to the Problem of Cultural Stability. In "Seminars in Archaeology: 1955," edited by Robert Wauchope, *SAA-M*, No. 11: 31-58. Salt Lake City.

HEIZER, R. F.

1948 A Bibliography of Ancient Man in California. *UCAS-R*, No. 2. Berkeley.

1949 The Archaeology of Central California: I. The Early Horizon. *UC-AR*, Vol. 12: 1-84. Berkeley.

1952 A Review of Problems in the Antiquity of Man in California. In "Symposium of the Antiquity of Man in California." *UCAS-R*, No. 16: 3-17. Berkeley.

1958 Prehistoric Central California: A Problem in Historical-Developmental Classification. *UCAS-R*, No. 41: 19-25. Berkeley.

HEIZER, R. F. (EDITOR)

1953 The Archaeology of the Napa Region. *UC-AR*, Vol. 12: 225-358. Berkeley.

HEIZER, R. F. AND S. F. COOK

1953 "Capay Man," An Ancient Central California Indian Burial. *UCAS-R*, No. 22: 24-6. Berkeley.

1956 Some Aspects of the Quantitative Approach in Archaeology. *SJA*, Vol. 12: 224-8. Albuquerque.

HEIZER, R. F. AND A. E. ELSASSER

1953 Some Archaeological Sites and Cultures of the Central Sierra Nevada. *UCAS-R*, No. 21. Berkeley.

HEIZER, R. F. AND FRANKLIN FENENGA

1939 Archaeological Horizons in Central California. *AA*, Vol. 41: 378-99. Menasha.

HEIZER, R. F. AND T. D. MCCOWN

1950 The Stanford Skull, A Probable Early Man from Santa Clara County, California. *UCAS-R*, No. 6. Berkeley.

HEIZER, R. F. AND J. E. MILLS

1952 *The Four Ages of Tsurai: A Documentary History of the Indian Village of Trinidad Bay*. University of California Press, Berkeley.

HEUSSER, C. J.

1955 Pollen Profiles from Prince William Sound and Southeastern Kenai Peninsula, Alaska. *Ec*, Vol. 36: 185-202. Durham.

HEWES, G. W.

1946 Early Man in California and the Tranquillity Site. *Am Ant*, Vol. 11: 209-15. Menasha.

HIBBEN, F. C. AND KIRK BRYAN

1941 Evidence of Early Occupation in Sandia Cave, New Mexico, and Other Sites in the Sandia-Manzano Region. *SMC*, Vol. 99, No. 23. Washington.

HODGE, F. W.

1907 The Narrative of Alvar Nuñez Cabeça de Vaca. *Spanish Explorers in the Southern United States 1528-1543*, pp. 1-126. Scribners, New York.

HOLDER, PRESTON AND JOYCE WIKE

1949 The Frontier Culture Complex, A Preliminary Report on a Prehistoric Hunters' Camp in Southwestern Nebraska. *Am Ant*, Vol. 14: 260-6. Menasha.

HOLLAND, C. G.

1955 Analysis of Projectile Points and Large Blades. Appendix 2 in "A Ceramic Study of Virginia Archeology" by Clifford Evans. *BAE-B*, 160. Washington.

1956 Through Space and Time with Rock Types in South Central Virginia. *ASV-QB*, Vol. 10, No. 4. Williamsburg.

1959 Preceramic and Ceramic Cultural Patterns in Northwest Virginia. *Anthropological Papers*, No. 57 (in press). *BAE-B*, 173. Washington.

HOLMES, W. H.

1890 Excavations in the Ancient Soapstone Quarry in the District of Columbia. *AA*, o.s., Vol. 3: 321-30. Menasha.

HOUGH, J. L.

1953 *Final Report on the Project Pleistocene Chronology of the Great Lakes Region*. Office of Naval Research Contract No. N6ori-07133, Proj. No. NR-018-122, University of Illinois. Urbana.

1956 Lake Chippewa, A Low Stage of Lake Michigan Indicated by Bottom Sediments. *GSA-B*, Vol. 66: 957-68. Baltimore.

HOWARD, E. B.

1932 Caves along the Slopes of the Guadalupe Mountains. *TAPS-B*, Vol. 4: 7-19. Abilene.

1935 Evidence of Early Man in North America. *Museum Journal, University of Pennsylvania*, Vol. 24: 61-175. Philadelphia.

HUGHES, J. T.

1949 Investigations in Western South Dakota and Northeastern Wyoming. *Am Ant*, Vol. 14: 266-77. Menasha.

1955 Little Sunday. An Archaic Site in the Texas Panhandle. *TAS-B*, Vol. 26: 55-74. Austin.

JENNINGS, J. D.

1953 Danger Cave: A Progress Summary. *EP*, Vol. 60: 179-213. Santa Fe.

1957 Danger Cave. *SAA-M*, No. 14. Salt Lake City.

JENNINGS, J. D. AND EDWARD NORBECK

1955 Great Basin Prehistory: A Review. *Am Ant*, Vol. 21: 1-11. Salt Lake City.

JENNINGS, J. D., E. K. REED, J. B. GRIFFIN, J. C. KELLEY, C. W. MEIGHAN, STANLEY STUBBS, AND J. B. WHEAT

1956 The American Southwest: A Problem in Cultural Isolation. In "Seminars in American Archaeology: 1955," edited by Robert Wauchope, *SAA-M*, No. 11: 59-127. Salt Lake City.

JOHNSON, FREDERICK

1937 Problems Surrounding the Classification of Certain Culture Complexes in New England. *Am Ant*, Vol. 3: 161-5. Menasha.

1948 The Rogers' Collection from Lakes Mistassini and Albanel, Province of Quebec. *Am Ant*, Vol. 14: 91-8. Menasha.

1956 Chronology and Development of Early Cultures in North America. Preliminary Transcript, Proceedings of a Conference, sponsored by the R. S. Peabody Foundation with the assistance of the Wenner-Gren Foundation.

JOHNSON, FREDERICK (ASSEMBLER)

1951 Radiocarbon Dating. *SAA-M*, No. 8. Salt Lake City.

JOHNSON, FREDERICK, AND OTHERS

1942 The Boylston Street Fishweir, A Study of the Archaeology, Biology, and Geology of a Site on Boylston Street in the Back Bay District of Boston, Massachusetts. *RSPF-P*, Vol. 2. Andover.

1949 The Boylston Street Fishweir II, A Study of the Geology, Palaeobotany, and Biology of a Site on Stuart Street in the Back Bay District of Boston, Massachusetts. *RSPF-P*, Vol. 4, No. 1. Andover.

JOHNSON, FREDERICK AND H. M. RAUP

1947 Grassy Island: Archaeological and Botanical Investigations of an Indian Site in the Taunton River, Massachusetts. *RSPF-P*, Vol. 1, No. 2. Andover.

KELLEY, J. C.

1947a The Cultural Affiliations and Chronological Position of the Clear Fork Focus. *Am Ant*, Vol. 13: 97-109. Menasha.

1947b The Lehmann Rock Shelter: A Stratified Site of the Toyah, Uvalde and Round Rock Foci. *TAPS-B*, Vol. 18: 115-28. Lubbock.

1948 Arrow or Dart Shaft Tools and Problematical Incised Stones from Central and Western Texas. *EP*, Vol. 55: 73-85. Santa Fe.

1952 Some Geographic and Cultural Factors Involved in Mexican-Southeastern Contacts. In "Indian Tribes of Aboriginal America," edited by Sol Tax, pp. 139-44. *Selected Papers of the XXIXth International Congress of Americanists* [New York, 1949]. University of Chicago Press.

KELLEY, J. C. AND T. N. CAMPBELL

1942 What Are the Burnt Rock Mounds of Texas? *Am Ant*, Vol. 7: 319-22. Menasha.

KELLEY, J. C., T. N. CAMPBELL, AND D. J. LEHMER

1940 The Association of Archaeological Materials with Geological Deposits in the Big Bend Region of Texas. *Sul Ross State Teachers College Bulletin*, Vol. 21, No. 3. Alpine.

KIER, C. F., JR.

1948 A Narraticon Village Site in Gloucester County, New Jersey. *ASNJ-B*, No. 1. Trenton.

1952 Return to Yesterday. *ASNJ-B*, No. 5. Trenton.

1953 The Wood's Mill Site, Salem County, New Jersey. *ASNJ-B*, No. 6. Trenton.

KINGSBURY, I. W. AND W. S. HADLOCK

1951 An Early Occupation Site, Eastport, Maine. *MAS-B*, Vol. 12: 22-6. Attleboro.

KLINE, H. K.

1953 A Remarkable Paleo-Indian Site in Alabama. *TA*, Vol. 9: 31-7. Knoxville.

KRIEGER, A. D.

1946 Culture Complexes and Chronology in Northern Texas. *Univ. of Tex. Pub.*, No. 4640. Austin.

KRIEGER, A. D. (ASSEMBLER)

1957 Early Man In "Notes and News," *Am Ant*, Vol. 22: 321-3. Salt Lake City.

KULP, J. L., H. W. FEELY, AND L. E. TRYON

1951 Lamont Natural Radiocarbon Measurements I. *S*, Vol. 114: 565-8. Washington.

KULP, J. L., L. E. TRYON, W. R. ECKLEMAN, AND W. A. SNELL

1952 Lamont Natural Radiocarbon Measurements II. *S*, Vol. 116: 409-14. Washington.

DE LAGUNA, FREDERICA

1934 *The Archaeology of Cook Inlet, Alaska.* The University of Pennsylvania Press, Philadelphia.

LATHAM, ROY

1953 Notes on the Orient Focus of Eastern Long Island, New York. *PA*, Vol. 23: 108-10. Milton.

LATHRAP, D. W. AND DICK SHUTLER, JR.

1955 An Archaeological Site in the High Sierra of California. *Am Ant*, Vol. 20: 226-40. Salt Lake City.

LEE, T. E.

1954 The First Sheguiandah Expedition, Manitoulin Island, Ontario. *Am Ant*, Vol. 20: 101-11. Salt Lake City.

1955 The Second Sheguiandah Expedition, Manitoulin Island, Ontario. *Am Ant*, Vol. 21: 63-72. Salt Lake City.

1957 The Antiquity of the Sheguiandah Site. *Canadian Field-Naturalist*, Vol. 71: 117-37. Ottawa.

LEIGHTON, M. M.

1957 The Cary-Mankato-Valders Problem. *Journal of Geology*, Vol. 65, No. 1: 108-11. Chicago.

LEOPOLD, L. B. AND J. P. MILLER

1954 A Postglacial Chronology for Some Alluvial Valleys in Wyoming. *U.S. Geological Survey Water Supply Paper* 1261. Washington.

LEWIS, T. M. N.

1953 The Paleo-Indian Problem in Tennessee. *TA*, Vol. 9: 38-48. Knoxville.

LEWIS, T. M. N. AND MADELINE KNEBERG

1947 The Archaic Horizon in Western Tennessee. *Tenn. Anth. Papers* No. 2. *Univ. of Tenn. Rec., Ext. Ser.*, Vol. 23, No. 4. Knoxville.

LIBBY, W. F.

1951 Radiocarbon Dates II. *S*, Vol. 114: 291-6. Washington.

1952 Chicago Radiocarbon Dates III. *S*, Vol. 116: 673-80. Washington.

1954a Chicago Radiocarbon Dates IV. *S*, Vol. 119: 135-40. Washington.

1954b Chicago Radiocarbon Dates V. *S*, Vol. 120: 733-41. Washington.

1955 *Radiocarbon Dating*, 2nd ed. (1st ed., 1952). University of Chicago Press.

LILLY, ELI

1937 *Prehistoric Antiquities of Indiana.* Indiana Historical Society, Indianapolis.

LOGAN, W. D.

1952 Graham Cave, An Archaic Site in Montgomery County, Missouri. *Memoir of the Missouri Archaeological Society*, No. 2. Columbia.

MACNEISH, R. S.

1947 A Preliminary Report on Coastal Tamaulipas, Mexico. *Am Ant*, Vol. 13: 1-15. Menasha.

1948 The Pre-pottery Faulkner Site of Southern Illinois. *Am Ant*, Vol. 13: 323-43. Menasha.

1951 An Archaeological Reconnaissance in the Northwest Territories. *NMC-B*, No. 123: 24-41. Ottawa.

1953 Archaeological Reconnaissance in the Mackenzie River Drainage. *NMC-B*, No. 128: 1-17. Ottawa.

1954 The Pointed Mountain Site near Fort Liard, Northwest Territories, Canada. *Am Ant*, Vol. 19: 234-53. Salt Lake City.

1955 Two Archaeological Sites on Great Bear Lake, Northwest Territories, Canada. *NMC-B*, No. 136: 54-84. Ottawa.

MAHAN, E. C.

1954 A Survey of Paleo-Indian and Other Early Flint Artifacts from Sites in Northern, Western, and Central Alabama — Part I. *TA*, Vol. 10: 37-58. Knoxville.

MANSON, CARL

1948 Marcey Creek Site: An Early Manifestation in the Potomac Valley. *Am Ant*, Vol. 13: 223-7. Menasha.

MARTIN, PAUL S., J. B. RINALDO, ELAINE BLUHM, H. C. CUTLER, AND ROGER GRANGE, JR.

1952 Mogollon Cultural Continuity and Change. *Fieldiana: Anthropology*, Vol. 40. Chicago.

MAYER-OAKES, W. J.

1951 Starved Rock Archaic, A Pre-pottery Horizon from Northern Illinois. *Am Ant*, Vol. 16: 313-24. Salt Lake City.

1954 Review of Graham Cave by Wilfred Logan. *Am Ant*, Vol. 20: 185-6. Salt Lake City.

1955 Prehistory of the Upper Ohio Valley; An Introductory Archeological Study. *Annals of Carnegie Museum*, Vol. 34, *Anthropological Series*, No. 2. Pittsburgh.

MCCANN, CATHERINE

1950 The Ware Site, Salem County, New Jersey. *Am Ant*, Vol. 15: 315-21. Menasha.

MCCARY, B. C.

1951 A Workshop Site of Early Man in Dinwiddie County, Virginia. *Am Ant*, Vol. 17: 9-17. Salt Lake City.

MEIGHAN, C. W.

1950 Excavations in Sixteenth Century Shellmounds at Drake's Bay, Marin County, California. *UCAS-R*, No. 9: 27-32. Berkeley.

1953a The Coville Rock Shelter, Inyo County, California. *UC-AR*, Vol. 12: 171-224. Berkeley.

1953b Archaeology of Sites Nap-129, Nap-131, Appendix III. In Heizer 1953: 315-7. Berkeley.

1954 A Late Complex in Southern California Prehistory. *SJA*, Vol. 10: 215-27. Albuquerque.

1955a Archaeology of the North Coast Ranges, California. *UCAS-R*, No. 30: 1-39. Berkeley.

MEIGHAN, C. W. (EDITOR)

1955b Early Man. In "Notes and News," *Am Ant*, Vol. 21: 202. Salt Lake City.

1956 Notice of Conference on Early Lithic and Archaic Cultures in North America. In "Notes and News," *Am Ant*, Vol. 22: 217. Salt Lake City.

MILLER, C. F.

1956 Life 8,000 Years Ago Uncovered in an Alabama Cave. *National Geographic Magazine*, Vol. 110: 542-58. Washington.

1957 Radiocarbon Dates from an Early Archaic Deposit in Russell Cave, Alabama. *Am Ant*, Vol. 23: 84. Salt Lake City.

MILLS, J. E.

1950 Recent Developments in the Study of Northwestern California Archaeology. *UCAS-R*, No. 7: 21-5. Berkeley.

MOFFETT, ROSS

1946 Some Shell Heaps in Truro, Massachusetts. *MAS-B*, Vol. 7: 17-23. Attleboro.

1951a The Rose Site, A Stratified Shell Heap on Cape Cod, Massachusetts. *Am Ant*, Vol. 17: 98-107. Salt Lake City.

1951b Late Excavations at the Holden Site. *MAS-B*, Vol. 12: 47-52. Attleboro.

MOOREHEAD, W. K.

1916 The Problem of the Red-Paint People. *Holmes Anniversary Volume*, pp. 359-65. Washington.

1922 *A Report on the Archaeology of Maine.* Department of Archaeology, Phillips Academy. Andover.

MORRIS, E. H.

1927 The Beginnings of Pottery Making in the San Juan Area; Unfired Prototypes and the Wares of the Earliest Ceramic Period. *AMNH-AP,* Vol. 28, Pt. 2. New York.

MULLOY, WILLIAM

1954a The McKean Site in Northeastern Wyoming. *SJA,* Vol. 10: 432-60. Albuquerque.

1954b Archaeological Investigations in the Shoshone Basin of Wyoming. *University of Wyoming Publication,* Vol. 18, No. 1: 1-70. Laramie.

NEWELL, H. P. AND A. D. KRIEGER

1949 The George C. Davis Site, Cherokee County, Texas. *SAA-M,* No. 5. Menasha.

NEWKUMET, P. J.

1940 Preliminary Report on Excavation of the Williams Mound, Le Flore County, Oklahoma. *The Oklahoma Prehistorian,* Vol. 3, No. 2: 2-10. Tulsa.

OLSON, R. L.

1930 Chumash Prehistory. *University of California Publications in American Archaeology and Ethnology,* Vol. 28: 1-21. Berkeley.

ORR, PHIL

1943 Archaeology of Mescalitan Island and Customs of the Canaliño. *Santa Barbara Museum of Nat. Hist., Occas. Papers,* No. 5. Santa Barbara.

1956 Radiocarbon Dates from Santa Rosa Island, I. *Santa Barbara Museum of Nat. Hist., Dept. of Anthrop., Bull.* No. 2. Santa Barbara.

OSWALT, WENDELL

1955 Prehistoric Sea Mammal Hunters of Kaflia, Alaska. *Anthropological Papers of the University of Alaska,* Vol. 4: 23-61. College.

PARKER, A. C.

1920 The Archeological History of The State of New York. *New York State Museum Bulletin,* Nos. 235-8. Albany.

1923 Outline of the Algonkian Occupation of New York. In "The Algonkian Occupation of New York," *NYSAA-RT,* Vol. 4: 49-80. Rochester.

PATTERSON, E. D.

1955 Garvie Point — NAS Site 1. *Bulletin of the Nassau Archeological Society,* Vol. 1, No. 1: 1-3. Mineola.

PEARCE, J. E. AND A. T. JACKSON

1933 A Prehistoric Rock Shelter in Val Verde County, Texas. *Anthropological Papers of the University of Texas,* Vol. 1, No. 3. Austin.

PECK, S. L.

1955 Zuma Creek. *Archaeological Survey Association of Southern California Papers,* No. 2. Los Angeles.

PHILHOWER, C. A.

1936 The Semilunar Knife in New Jersey. *The Archeological Society of New Jersey Leaflet* No. 5. Trenton.

PHILLIPS, PHILIP AND G. R. WILLEY

1953 Method and Theory in American Archeology: An Operational Basis for Culture-Historical Integration. *AA,* Vol. 55: 615-31. Menasha.

PIERS, HARRY

1889 Aboriginal Remains of Nova Scotia Illustrated by the Provincial Museum Collections. *NSIS-T,* Vol. 7, Pt. 3: 276-99. Halifax.

1896 Relics of the Stone Age in Nova Scotia. *NSIS-T,* Vol. 9: 26-58. Halifax.

POPE, G. D.

1952 Excavation at the Charles Tyler Site. *ASC-B,* No. 26: 3-29. New Haven.

POPHAM, R. E. AND J. N. EMERSON

1954 Manifestations of the Old Copper Industry in Ontario. *PA,* Vol. 24: 3-19. Milton.

QUIMBY, G. I.

1954 Cultural and Natural Areas before Kroeber. *Am Ant,* Vol. 19: 317-31. Salt Lake City.

RIDDELL, F. A.

1951 The Archaeology of Site Ker-74. *UCAS-R,* No. 10: 1-28. Berkeley.

1956a Final Report on the Archaeology of Tommy Tucker Cave. *UCAS-R,* No. 35: 1-25. Berkeley.

1956b Summary Report of the Excavation of the Karlo Site. *UU-AP,* No. 26: 63-73. Salt Lake City.

RIDDELL, H. S.

1951 The Archaeology of a Paiute Village Site in Owens Valley. *UCAS-R,* No. 12: 14-28. Berkeley.

RIDLEY, FRANK

1954 The Frank Bay Site, Lake Nipissing Ontario. *Am Ant,* Vol. 20: 40-50. Salt Lake City.

1956 An Archaeological Reconnaissance of Lake Abitibi, Ontario. *PA,* Vol. 26: 32-6. Milton.

RITCHIE, W. A.

1932a The Algonkin Sequence in New York. *AA*, Vol. 34: 406-14. Menasha.

1932b The Lamoka Lake Site: The Type Station of the Archaic Algonkin Period in New York. *NYSAA-RT*, Vol. 7: 79-134. Rochester.

1936 New Evidence Relating to the Archaic Occupation of New York. *NYSAA-RT*, Vol. 8: 1-23. Rochester.

1938 A Perspective of Northeastern Archaeology. *Am Ant*, Vol. 4: 94-112. Menasha.

1940 Two Prehistoric Village Sites at Brewerton, New York. *RMAS-RR*, No. 5. Rochester.

1944 The Pre-Iroquoian Occupations of New York State. *Rochester Museum Memoir* No. 1, Rochester Museum of Arts and Sciences. Rochester.

1945 An Early Site in Cayuga County, New York. *RMAS-RR*, No. 7. Rochester.

1951 A Current Synthesis of New York Prehistory. *Am Ant*, Vol. 17: 130-6. Salt Lake City.

1953 A Probable Paleo-Indian Site in Vermont. *Am Ant*, Vol. 18: 249-58. Salt Lake City.

1955 Recent Discoveries Suggesting an Early Woodland Burial Cult in the Northeast. *New York State Museum and Science Service, Circular* 40. Albany.

1957 Excavations in 1956 on Archaic Sites of Long Island. *Eastern States Archaeological Federation, Bulletin* No. 16. Trenton.

ROBBINS, MAURICE

1943 Archaeological Reconnaissance in the Marion Region during 1942. *MAS-B*, Vol. 4: 17-24. Attleboro.

1944 The Faulkner Spring Site. *Papers of the Attleboro Museum of Art and History*, Number 1. Attleboro.

1946 The Ford Site, A Protohistoric Station in Norton, Massachusetts. *Am Ant*, Vol. 12: 80-94. Menasha.

ROBERTS, F. H. H., JR.

1951 Radiocarbon Dates and Early Man. In "Radiocarbon Dating," assembled by Frederick Johnson, *SAA-M*, No. 8: 20-2. Salt Lake City.

ROGERS, D. B.

1929 *Prehistoric Man of the Santa Barbara Coast.* Santa Barbara Museum of Natural History. Santa Barbara.

ROGERS, E. S. AND R. A. BRADLEY

1953 An Archaeological Reconnaissance in South-Central Quebec, 1950. *Am Ant*, Vol. 19: 138-44. Salt Lake City.

ROGERS, E. S. AND M. H. ROGERS

1948 Archaeological Reconnaissance of Lakes Mistassini and Albanel, Province of Quebec, 1947. *Am Ant*, Vol. 14: 81-90. Menasha.

1950 Archaeological Investigations in the Region about Lakes Mistassini and Albanel, Province of Quebec, 1948. *Am Ant*, Vol. 15: 322-37. Menasha.

ROGERS, M. J.

1929 The Stone Art of the San Dieguito Plateau. *AA*, Vol. 31: 454-67. Menasha.

1939 Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas. *San Diego Museum Papers*, No. 3. San Diego.

1945 An Outline of Yuman Prehistory. *SJA*, Vol. 1: 157-98. Albuquerque.

ROWE, J. H.

1940 Excavations in the Waterside Shell Heap, Frenchman's Bay, Maine. *Papers of the Excavators' Club*, Vol. 1, No. 3. Cambridge.

RUBIN, MEYER AND H. E. SUESS

1955 U. S. Geological Survey Radiocarbon Dates II. *S*, Vol. 121: 481-8. Washington.

SARGENT, H. R.

1952 A Preliminary Report on the Excavations at Grannis Island. *ASC-B*, No. 26: 30-50. New Haven.

1954 An Archaeological Survey of New Hampshire. *MS*, submitted for publication in *RSPF-P*. Andover.

SAYLES, E. B.

1935 An Archaeological Survey of Texas. *MP*, No. 17. Globe.

1945 The San Simon Branch: Excavations at Cave Creek and in the San Simon Valley: I. Material Culture. *MP*, No. 34. Globe.

SAYLES, E. B. AND ERNST ANTEVS

1941 The Cochise Culture. *MP*, No. 29. Globe.

SCHROEDER, A. H.

1952a *A Brief Survey of the Lower Colorado River from Davis Dam to the International Border.* Bureau of Reclamation, Boulder City.

1952b *The Archaeological Excavations at Willow Beach, Arizona 1950.* MS, National Park Service, Santa Fe.

SEARS, P. B.

1942 Forest Sequences in the North Central States. *The Botanical Gazette*, Vol. 103: 751-61. Chicago.

1948 Forest Sequence and Climatic Change in Northeastern North America since Early Wisconsin Time. *Ec*, Vol. 29: 326-33. Durham.

1951 Pollen Profiles and Culture Horizons in the Basin of Mexico. In "The Civilizations of Ancient America," edited by Sol Tax, pp. 57-61. *Selected Papers of the XXIXth International Congress of Americanists* [New York, 1949]. Chicago.

SEARS, W. H.

1948 What is the Archaic? *Am Ant*, Vol. 14: 122-4. Menasha.

SELLARDS, E. H.

1940 Pleistocene Artifacts and Associated Fossils from Bee County, Texas. *GSA-B*, Vol. 51: 1627-64. Baltimore.

1952 *Early Man in America.* University of Texas Press. Austin.

SETZLER, F. M.

1935 A Prehistoric Cave Culture in Southwest Texas. *AA*, Vol. 37: 104-10. Menasha.

SKINNER, ALANSON

1919 Exploration of Aboriginal Sites at Throgs Neck and Clasons Point, New York City. *Contributions from the Museum of the American Indian, Heye Foundation*, Vol. 5: 47-126. New York.

1920 Archeological Investigations on Manhattan Island, New York City. *MAIHF-INM*, Vol. 2: 125-218. New York.

1923 General Archeological Criteria of Early Algonkian Culture. In "The Algonkian Occupation of New York," *NYSAA-RT*, Vol. 4: 29-48. Rochester.

SMAIL, WILLIAM

1951 Some Early Projectile Points from the St. Louis Area. *Journal of the Illinois State Archaeological Society*, n.s., Vol. 2: 11-16. Springfield.

SMITH, B. L.

1948 An Analysis of the Maine Cemetery Complex. *MAS-B*, Vol. 9: 17-72. Attleboro.

SMITH, C. E. AND W. D. WEYMOUTH

1952 Archaeology of the Shasta Dam Area, California. *UCAS-R*, No. 18. Berkeley.

SMITH, C. S.

1950 The Archaeology of Coastal New York. *AMNH-AP*, Vol. 43, Pt. 2. New York.

SMITH, V. J.

1932 The Relation of the Southwestern Basket Maker to the Dry Shelter Culture of the Big Bend. *TAPS-B*, Vol. 4: 55-62. Abilene.

SODAY, FRANK

1954 The Quad Site, A Paleo-Indian Village in Northern Alabama. *TA*, Vol. 10: 1-20. Knoxville.

SPAULDING, A. C.

1946 Northeastern Archaeology and General Trends in the Northern Forest Zone. In "Man in Northeastern North America," edited by Frederick Johnson, *RSPF-P*, Vol. 3: 143-67. Andover.

SPINDEN, H. J.

1915 Notes on the Archaeology of Salvador. *AA*, Vol. 17: 446-87. Menasha.

1917a The Origin and Distribution of Agriculture in America. *Proceedings of the XIXth International Congress of Americanists* [Washington, 1915], pp. 269-76. Washington.

1917b *Ancient Civilizations of Mexico and Central America.* American Museum of Natural History, Handbook Series No. 3. New York. 2nd ed., 1922; 3rd ed., 1928.

SQUIER, R. J.

1956 Recent Excavation and Survey in Northeastern California. *UCAS-R*, No. 33: 34-8. Berkeley.

STEWARD, J. H.

1938 Basin-Plateau Aboriginal Socio-Political Groups. *BAE-B*, 120. Washington.

1940 Native Cultures of the Intermontane (Great Basin) Area. In "Essays in the Historical Anthropology of North America," *SMC*, Vol. 100: 445-502. Washington.

STRONG, W. D.

1930 A Stone Culture from Northern Labrador and Its Relation to the Eskimo-Like Cultures of the Northeast. *AA*, Vol. 32: 126-44. Menasha.

1935 An Introduction to Nebraska Archeology. *SMC*, Vol. 93, No. 10. Washington.

SUESS, H. E.

1954 U. S. Geological Survey Radiocarbon Dates I. *S*, Vol. 120: 467-72. Washington.

1956 Absolute Chronology of the Last Glaciation. *S*, Vol. 123: 355-7. Washington.

SUHM, D. A., A. D. KRIEGER, AND E. B. JELKS

1955 An Introductory Handbook of Texas Archaeology. *TAS-B*, Vol. 25. Austin.

TAYLOR, W. W.

1956 Some Implications of Carbon-14 Dates from a Cave in Coahuila, Mexico. *TAS-B*, Vol. 27: 215-34. Austin.

TOZZER, A. M.

1916 The Domain of the Aztecs and Their Relation to the Prehistoric Cultures of Mexico. *Holmes Anniversary Volume*, pp. 464-8. Washington.

TREGANZA, A. E.

1952 Archaeological Investigations in the Farmington Reservoir Area, Stanislaus County, California. *UCAS-R*, No. 14. Berkeley.

TREGANZA, A. E. AND C. G. MALAMUD

1950 The Topanga Culture: First Season's Excavation of the Tank Site, 1947. *UC-AR*, Vol. 12: 129-70. Berkeley.

TREGANZA, A. E., C. E. SMITH, AND W. D. WEYMOUTH

1950 An Archaeological Survey of the Yuki Area. *UC-AR*, Vol. 12: 113-28. Berkeley.

TUNNELL, C. D. AND J. T. HUGHES

1955 An Archaic Bison Kill in the Texas Panhandle. *Panhandle-Plains Historical Review*, Vol. 28: 63-70. Canyon.

WALKER, E. F.

1951 Five Prehistoric Archaeological Sites in Los Angeles County, California. *Publications of the Frederick Webb Hodge Anniversary Publication Fund*, Vol. 6. Los Angeles.

WALLACE, W. J.

1951a The Mortuary Caves of Calaveras County, California. *Ar*, Vol. 4: 199-203. Cambridge.

1951b The Archaeological Deposit in Moaning Cave, (Calaveras County). *UCAS-R*, No. 12: 29-41. Berkeley.

1954 The Little Sycamore Site and the Early Milling Stone Cultures of Southern California. *Am Ant*, Vol. 20: 112-23. Salt Lake City.

1955 A Suggested Chronology for Southern California Coastal Archaeology. *SJA*, Vol. 11: 214-30. Albuquerque.

WALLACE, W. J. AND E. S. TAYLOR

1955 Early Man in Death Valley. *Ar*, Vol. 8: 88-92. Brattleboro.

1956 The Surface Archaeology of Butte Valley Death Valley National Monument. *Contributions to California Archaeology*. Archaeological Research Associates. Los Angeles.

WAUCHOPE, ROBERT (EDITOR)

1956 Seminars in Archaeology: 1955. *SAA-M*, No. 11. Salt Lake City.

WEBB, C. H.

1944 Stone Vessels from a Northeast Louisiana Site. *Am Ant*, Vol. 9: 386-94. Menasha.

1948 Evidences of Pre-Pottery Cultures in Louisiana. *Am Ant*, Vol. 13: 227-32. Menasha.

WEBB, W. S.

1939 An Archeological Survey of the Wheeler Basin on the Tennessee River in Northern Alabama. *BAE-B*, 122. Washington.

1946 Indian Knoll, Site Oh2, Ohio County, Kentucky. *UK-RA*, Vol. 4: 111-365. Lexington.

1950a The Read Shell Midden, Site 10, Butler County, Kentucky. *UK-RA*, Vol. 7: 355-401. Lexington.

1950b The Carlson Annis Mound, Site 5, Butler County, Kentucky. *UK-RA*, Vol. 7: 265-354. Lexington.

1951 The Parrish Village Site, Site 45, Hopkins County, Kentucky. *UK-RA*, Vol. 7: 403-51. Lexington.

WEBB, W. S. AND D. L. DEJARNETTE

1942 An Archaeological Survey of Pickwick Basin in the Adjacent Portions of the States of Alabama, Mississippi and Tennessee. *BAE-B*, 129. Washington.

1948a The Flint River Site, Ma°48. *AlMNH-MP*, 23. University.

1948b The Whitesburg Bridge Site Ma^{v}10. *AlMNH-MP*, 24. University.

1948c The Perry Site Lu°25, Units 3 and 4, Lauderdale County, Alabama. *AlMNH-MP*, 25. University.

WEBB, W. S. AND W. G. HAAG

1939 The Chiggerville Site, Site I, Ohio County, Kentucky. *UK-RA*, Vol. 4: 1-62. Lexington.

1940 Cypress Creek Villages, Sites 11 and 12, McLean County, Kentucky. *UK-RA*, Vol. 4: 63-110. Lexington.

1947 Archaic Sites in McLean County, Kentucky. *UK-RA*, Vol. 7: 1-46. Lexington.

WEBB, W. S. AND C. G. WILDER

1951 *An Archaeological Survey of the Guntersville Basin on the Tennessee River in Northern Alabama*. University of Kentucky Press, Lexington.

WEDEL, W. R.

1941 Archeological Investigations at Buena Vista Lake, Kern County, California. *BAE-B*, 130. Washington.

WHEAT, J. B.

1953 An Archeological Survey of the Addicks Dam Basin, Southeast Texas. *BAE-B*, 154: 143-252. Washington.

1955 Mogollon Culture prior to A.D. 1000. *SAA-M*, No. 10. Salt Lake City.

WILLEY, G. R. AND PHILIP PHILLIPS

1955 Method and Theory in American Archeology II: Historical Developmental Interpretation. *AA*, Vol. 57: 723-819. Menasha.

WILLOUGHBY, C. C.

1935 *Antiquities of the New England Indians*. Peabody Museum, Harvard University, Cambridge.

WINTEMBERG, W. J.

1943 Artifacts from Ancient Workshop Sites near Tadoussac, Saguenay County, Quebec. *Am Ant*, Vol. 8: 313-40. Menasha.

WITTHOFT, JOHN

1952 A Paleo-Indian Site in Eastern Pennsylvania: An Early Hunting Culture. *Proceedings of the American Philosophical Society*, Vol. 96: 464-95. Philadelphia.

1953 Broad Spearpoints and the Transitional Period Cultures. *PA*, Vol. 23: 4-31. Milton.

1954 A Note on Fluted Point Relationships. *Am Ant*, Vol. 19: 271-3. Salt Lake City.

WITTRY, W. L.

1952 The Preceramic Occupation of the Smith Site, Units I and II, Delaware County, Oklahoma. MS, masters thesis, University of Wisconsin, Madison.

WRIGHT, H. E., JR. AND MEYER RUBIN

1956 Radiocarbon Dates of Mankato Drift in Minnesota. *S*, Vol. 124: 625-26. Washington.

ZUMBERGE, J. H. AND J. E. POTZGER

1955 Pollen Profiles, Radiocarbon Dating, and Geologic Chronology of the Lake Michigan Basin. *S*, Vol. 121: 309-11. Washington.

GORDON CHILDE MEMORIAL FUND

A memorial fund is being established to honor Professor Gordon Childe. It is planned to either establish an annual memorial lecture or to provide grants for foreign travel, in either case helping to increase the communication of ideas between scholars throughout the world, which Childe did so much himself to promote during his lifetime.

Although our Society is not in a position to make a contribution directly to the Fund, it is hoped that many members and other readers of this journal will wish to make personal contributions. All donations should be sent to The Secretary, University of London Institute of Archaeology, 31-34 Gordon Square, London, W.C.1, England.