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ARCHAEOLOGY OF THE SHASTA DAM AREA, CALIFORNIA

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Contents

	Page
Preface	1
Introduction	2
Character of the Shasta Dam Archaeological Sites	5
Sites Excavated in the McCloud Canyon	6
Site 22	6
Site 21	7
Site 20	7
Chipped Stone Artifacts	9
Projectile Points	9
Regional Distribution of Projectile Point Types	13
Chipped Blades	14
Scrapers	14
Drill Points	14
Ground Stone Artifacts	14
Abrading Tools	14
Shaft Smoothers	14
Whetstones or Files	15
Hone	15
Pestles	15
Hoppered Mortar Stones	16
Palettes	16
Miscellaneous Flat Slate Objects	17
Pipes	17
Rectangular Hammerstones	18
Cobble Hammerstones	18
Miscellaneous Ground Stone Artifacts	18
Bone Artifacts	19
Cordage	20
Aboriginal Beads and Ornaments	20
Marine Shell Beads	20
Seed Beads	22
Burials	22
Orientation and Position	23
Grave Pits	23
Associated Grave Artifacts	24
Points	28
Aboriginal Beads	28
Glass Trade Beads	28
Nonaboriginal Artifacts	29

	Page
Conclusions	29
Notes	32
Appendix: Excavations at Redding Mound No. 1 (Sha-47) in 1935	36
Artifacts of Stone	38
Artifacts of Bone and Antler	39
Artifacts of Shell	40
Conclusions on Site Sha-47	41
Notes to Appendix	42
Bibliography	43
Explanation of Plates and Figures	46

Tables

Table 1. Site Reconnaissance Data	3
Table 2. Projectile Points	12
Table 3. Vertical Distribution of Points from Site 20	12
Table 4. Burials, Site 20	25

Illustrations

	Following page
Map 1. Archaeological Sites in the Shasta Dam Area	2
Map 2. Contour Maps of Sha-21 and 22	5
Map 3. Contour Map of Sha-20	6
Plate 1. Sites and Excavations in the Shasta Dam Area	At end
Figure 1. Artifacts from Shasta Dam Area Sites	At end
Figure 2. Typology of Projectile Points, Shasta Dam Area	At end

Preface

At the time the basin of present Shasta Lake was being cleared of vegetation prior to its filling by the waters of the Little Sacramento, McCloud and Pit rivers, and their affluents, the University's Department of Anthropology recognized the need of a reconnaissance of the area and of salvage excavation to whatever extent was practical.

Initial survey was undertaken by W.D. Weymouth and R.K. Beardsley, and a number of sites were mapped in 1941. By the following summer, when excavation was contemplated, funds for such work were low and workers themselves were widely scattered in the armed forces, the shipyards, and elsewhere. It was found possible to finance and field only a two-man crew.

Because of the nature of the area, and the exigencies of short funds, no government vehicle was left on the job; all moving from site to site and the occasionally necessary replenishing of supplies had to be accomplished on foot. This restriction naturally limited movement and choice of sites for excavation; the small size of the party limited the actual amount of digging that could be done.

The authors wish to express their sincere appreciation of the assistance and guidance of various members of the staff of the Department of Anthropology, University of California, especially Professors A.L. Kroeber, E.W. Gifford, and R.F. Heizer.

Special appreciation is accorded Mr. Francis Riddell for constructive criticism; to the staff of the Anthropology Museum and to the University of California Archaeological Survey for incidental assistance. We are indebted to Mr. John Goins for his kindness in drawing up final copy of the maps and Fig. 1.

Introduction

Shasta Dam, on the Sacramento River approximately 9 miles north of Redding, California, impounds a reservoir which, when full, extends up the Sacramento River almost 20 miles above the mouth of the Pit River, and up the lower course of the McCloud River to a point 14 miles above its junction with the Pit. In a like manner the canyons of the lower courses of the Pit and its principal affluent, Squaw Creek, are flooded by Shasta Lake. (Map 1). This reservoir, formed within the drainage pattern of three large rivers and their tributary streams, lies in the northeastern part of the Wintu area,¹ entirely within the subareas designated by Du Bois² as the Upper Sacramento and McCloud. Almost the entire habitable terrain once occupied by these two subgroups of the Wintu tribe has been inundated.

This part of Wintu territory has a Mesothermal climate, characterized by a Yellow Pine-Douglas fir forest landscape.³ Along the lower McCloud daily temperature range, particularly in the late summer and autumn months, is markedly wide, and fluctuates rapidly.⁴ Zoologically, the area has both Sonoran and Transition life zones.⁵ However, the lower McCloud country, with which this paper is primarily concerned, presents some variations from the norm for the region as a whole for it lies entirely within the Transition Life Zone, partly because of the unusually cold temperature of the water of the McCloud.⁶ During September, when the water should be warmest, the temperature near the river's mouth ranges from 48 degrees to 54 degrees Fahrenheit.⁷ The river's fall is rapid, the rate, even along its lower course, being from 20 ft. to 35 ft. per mile.

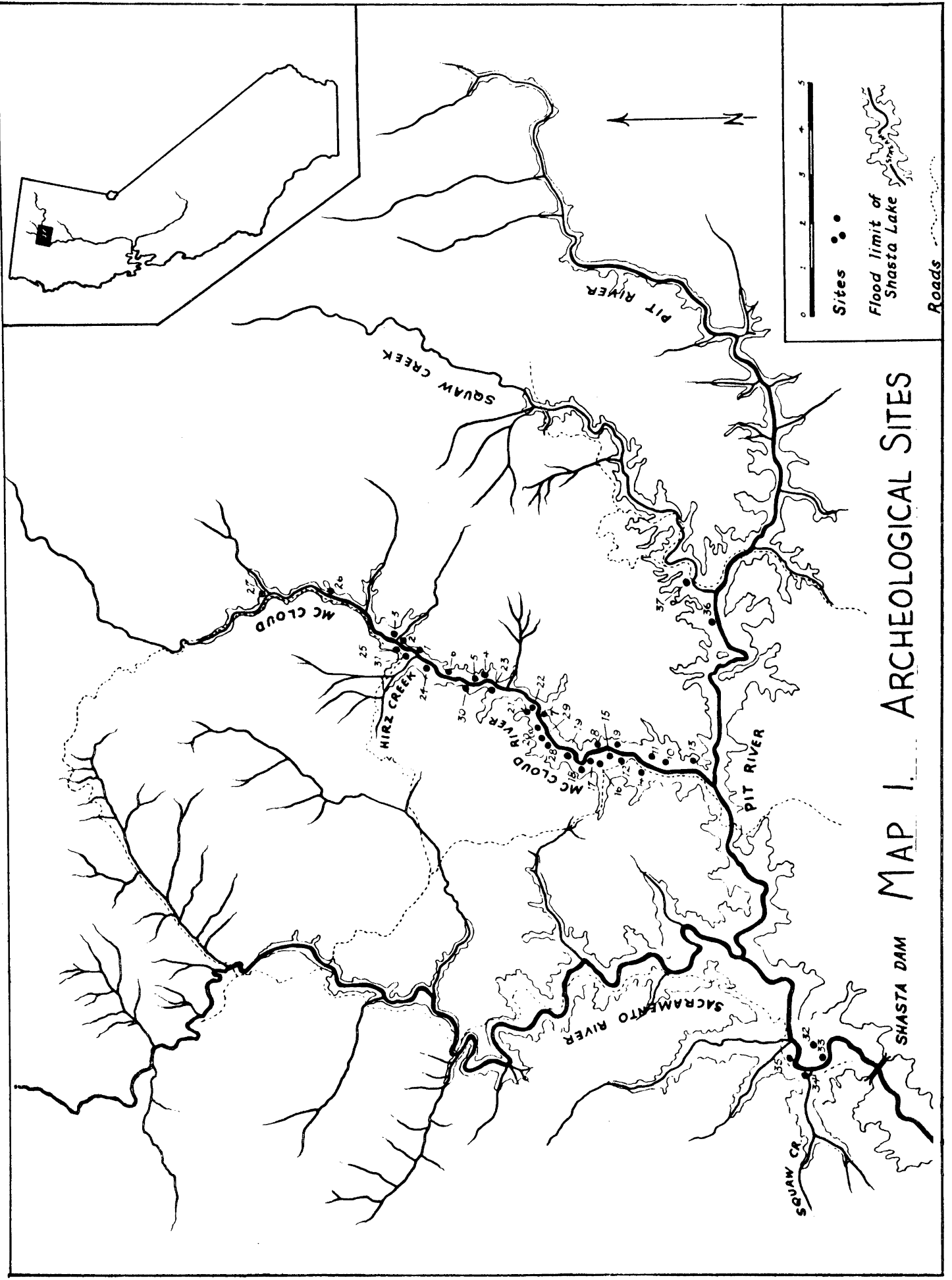
The geology of the area, one of renewed early topographic maturity, indicates two major and three or more minor cycles of stream rejuvenation resulting from uplift.⁸ The area, for the most part, is thoroughly dissected by a network of valleys, forming an essentially rugged topography. Potential permanent aboriginal habitation sites were limited almost completely to occasional meadows along the terraces above the streams and to enclaves of level ground along the river courses. In respect to number of sites suited to aboriginal villages it would appear that the McCloud was especially favored, since terraces are more common and extensive along that river.

The excavations of three sites in the McCloud canyon in 1942 was followed by a thorough reconnaissance of that area; thirteen sites were added to those located the previous year. Thus a total of thirty-seven sites were mapped in the Shasta Lake basin, thirty-one of them on the banks of the McCloud. These figures appear to support the contention of Du Bois that the McCloud canyon was particularly favorable for aboriginal habitation,⁹ although the picture is undoubtedly somewhat distorted by the more intensive nature of the survey along that river.

The table on the following pages presents in brief outline the data for thirty-four sites. The three excavated are not included; detailed description of these follows in the subsequent discussion.

MAP I. ARCHEOLOGICAL SITES

SHASTA DAM



Sites ●●

Flood limit of Shasta Lake

Roads

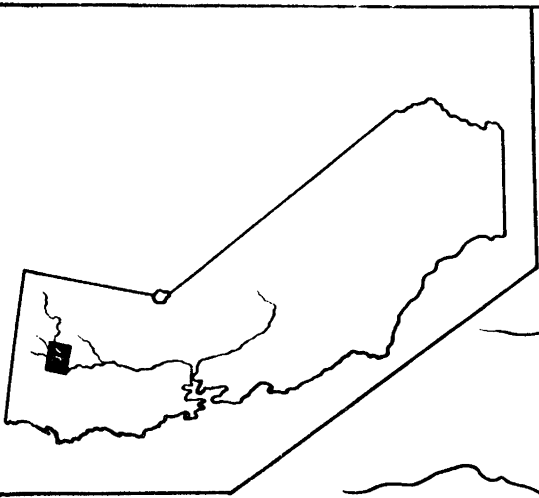
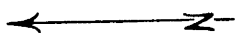


Table 1

Site Reconnaissance Data

Site No.	T	Location R	Sec	1/4Sec	Area (in ft.)	Surface Artifacts	Structures
1	35N	3W	30	SE	66 x 100 d. indet.		4 housepits
2	35N	3W	30	NE	80 x 100 d. indet.	Hoppered mortar stone, hammerstone, porcelain	3 housepits
3	35N	3W	30	NE	300 x 300 d. indet.	3 pestle frags., 3 obsidian points, hammerstone, metal and glass objects	
4	34N	4W	1	NE	200 x 200 d. 3 ft.	5 pestles, 2 obsidian points, 3 hammerstones, clam disc bead	Large house pit
5	35N	4W	36	SE	200 x 400 d. indet.	Hammerstone	12 housepits
6	35N	5W	36	NE	200 x 500 d. indet.	Obsidian point, metal and glass objects, trade beads	Dancehouse pit
7	34N	4W	12	NW	200 x 500 d. indet. deep		
8	34N	4W	14	SW	150 x 300	Trade beads	
9	34N	4W	14	SW	125 x 175 d. 3 ft.		
10	34N	4W	22	SE	150 x 150 d. indet. deep	Obsidian point, mussel shell and bone, 3 china frags.	
11	34N	4W	23	SW	100 x 160 d. indet.	Hammerstone, china frags.	4 housepits
12	34N	4W	23	NW		Trade beads, glass and metal objects	
13	34N	4W	27	NE	300 x 300 d. indet. shallow	Hammerstone, 2 obsidian point frags., clam disc bead, porcelain button, mussel shell	8 housepits, earth lodge pit, rectangular dancehouse pit
14	34N	4W	22	NE	150 x 150 d. indet.	Chert blade frag.	4 housepits
15	34N	4W	14	SW	90 x 180 d. indet.	Obsidian point	
16	34N	4W	14	SW	300 x 300 d. indet.	Obsidian point, obsidian scraper	
17	34N	4W	14	NW	150 x 350 d. 5 ft.		12 housepits
18	34N	4W	14	NW	80 x 120 d. 4 ft.	Trade bead	
19	34N	4W	11	SW	75 x 160 d. indet.	Pestle, obsidian point	4 housepits

Table 1 (Continued)

Site No.	T	Location R	Sec	1/4Sec	Area (in ft.)	Surface Artifacts	Structures
23	34N	4W	1	NE	150 x 450 d. indet.	Hammerstone, 8 obsidian points, numerous non- Indian arti- facts	Dancehouse pit, earth lodge pit
24	35N	3W	31	NW	200 x 200 d. indet.	Pestle, 2 ham- merstones, 3 obsidian points, 2 obsidian blade frags., Haliotis frag.	6 housepits
25	35N	3W	30	NE	50 x 300 d. indet. shallow	4 hammerstones, 3 obsidian points, numer- ous non-Indian artifacts	10 housepits
26	35N	3W	20	NE	80 x 200 d. indet.		
27	35N	3W	8	SE	Small shallow		
28	34N	4W	11	NE	Small trace		
29	34N	4W	11	NE	80 x 200 d. indet.		
30	35N	4W	36	SE	100 x 180 no deposit		3 housepits
31	35N	3W	30	(center)	290 x 320 d. indet.	9 obsidian points, 2 pestles, sand- stone shaft smoother frag.	
32	33N	5W	10-11		180 x 300 d. indet. shallow		4 housepits
33	33N	5W	10	SE	200 x 250 d. 5 ft.		
34	33N	5W	10	NW	105 x 210 2 1/2 to 4 ft.	Glass bottle, human skeletal frags.	
35	33N	5W	4	SW	85 x 400 5 to 8 ft.	5 obsidian points, 5 point frags., 8 pestle frags., 2 hammerstones, bone awl	Dancehouse pit
36	34N	3W	31	NE	70 x 120 d. 5 ft.	Obsidian point, pestle, ham- merstone	Dancehouse pit
37	34N	3W	29	SE	240 x 450 d. indet.		

Character of Shasta Lake Archaeological Sites

The essentially rugged character of the region limits habitable areas to the occasional flat places along the river courses or away from the river near a spring or stream. Infrequently sites are noted on ridge points, but most of them are found on lower or middle terraces or, in the upper reaches of the rivers, directly on the flood plain. A spot with a southerly exposure, abutting on some rise of ground to the north, was especially favored, although sites with eastern, western, or immediately open exposure occurred on all three rivers surveyed. No site with a strictly northern exposure was noted.

On the basis of differences in deposition and kind of mound mass, together with distances from larger waterways, three types of sites are distinguished:

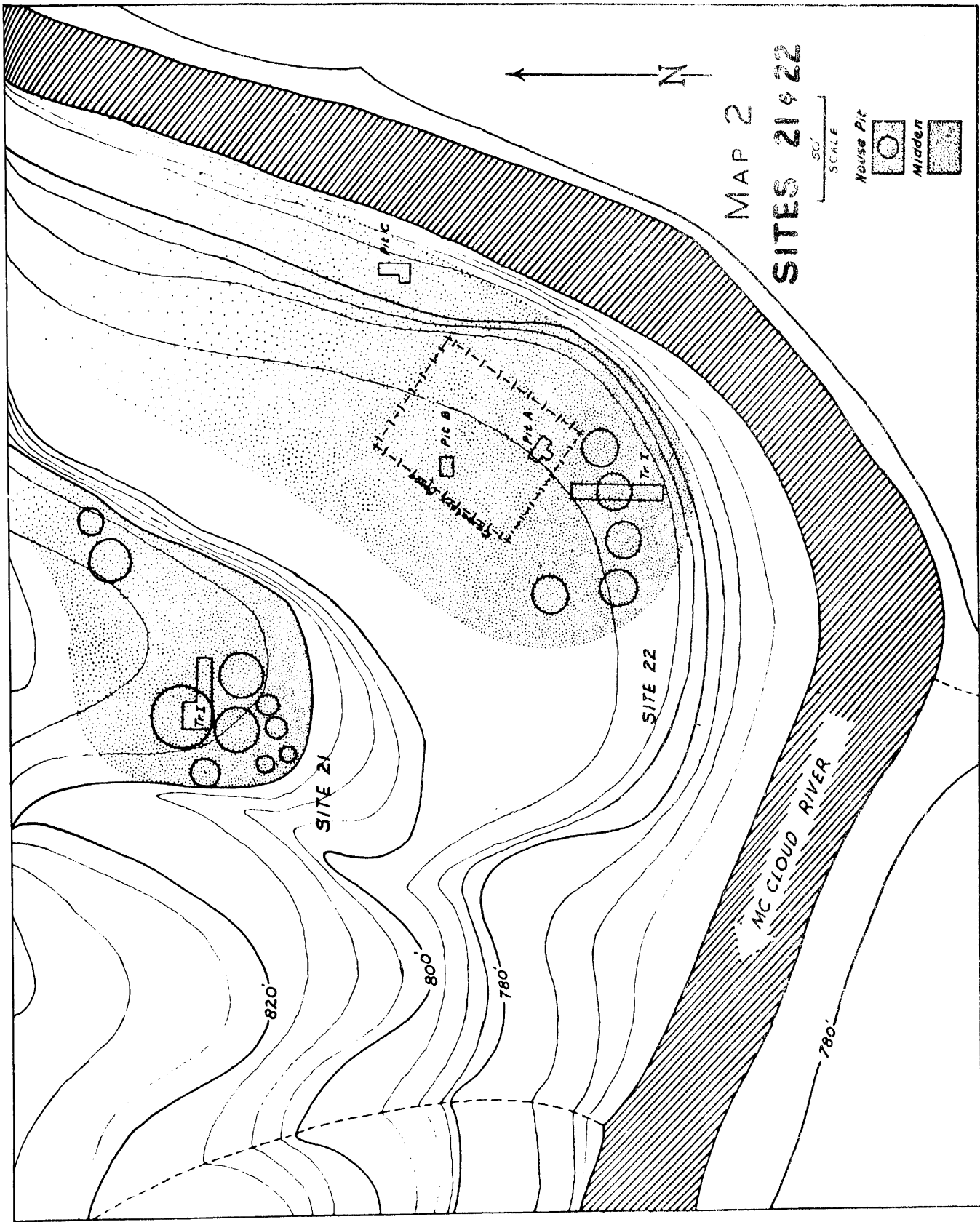
(1) River sites have a mound mass consisting of sand or very sandy loam with a large percentage of organic matter and a moderate percentage of transported rock. Water worn cobbles, from 1/2 lb. to 15 or 20 lbs. in weight, occur in sufficient number to make excavation tedious. This type of mound mass has a limited distribution -- the sites are always on the river (i.e., on the flood plain) or abutting against and sometimes lying on the first terrace. They occur most often near the confluence of a small tributary or intermittent stream with the river. These sites are invariably deeper than the other two types, attaining a depth of 7 to 8 ft., which seems to be the maximum for the area surveyed. Only a few sites even approach this depth. A deposition of about 3 to 4 1/2 ft. would approximate the average for River sites over the whole area.

(2) Terrace sites have a deposit mass composed of the native soil upon which they are situated, plus ash, charcoal, and other organic matter. Water-worn cobbles and small boulders carried from the stream beds occur in considerable number, as do inclusions of angular rock.¹⁰ These sites are found on the second terrace level or at a comparable distance above the rivers. The matrix of these sites reaches a maximum depth of about 2.5 ft.

(3) Hill sites have a matrix similar to that of Terrace sites, but water-worn cobbles are rare and refuse deposit seldom exceeds 12 in. These sites are farthest from the river, and lie on flattened hilltops or the remnants of ancient terraces, usually as near as possible to springs or small waterways.

In linear dimensions, sites (of all three types) range in area from 600 by 900 ft., the largest noted, to the smallest, which measured about 60 ft. in diameter. River and Terrace sites are invariably greater in depth and often larger in area. The implication might be that Hill sites are temporary locations, perhaps hunting camps or summer dwellings,¹¹ although all of them yield considerable evidence of prolonged historic occupation.

Many of the sites surveyed still retain evidence of aboriginal structures in the form of shallow depressions ranging from 5 ft. to as much as 50 ft. in diameter. In depth the pits varied from a barely discernible depression to 6 or 7 ft.



MAP 2
SITES 21 & 22

SCALE
50'

House Pit
Midden

SITE 21

SITE 22

MC CLOUD RIVER

820'

800'

780'

780'

N

Pit C

Pit B

Tr. 1

Tr. 1

Du Bois has differentiated three major types of house or lodge constructed in this area, as follows:¹²

(1) Dwellings: These were conical in shape and bark covered, with no center pole. Floors were excavated to a depth of 1 to 3 ft., and earth was banked up around the outside of the structure. Corridor entrances occurred in the McCloud area but were rare.

(2) Earth lodges: Circular in ground plan, 15 to 20 ft. in diameter, excavated to approximately shoulder depth. These occurred in the larger permanent villages and were generally placed from 100 to 300 yds. from a creek or river.¹³

(3) Semisubterranean dancehouses: These replaced the earth lodges after 1870. They were 30 to 50 ft. in diameter, 4 to 7 ft. deep, and usually had a downward sloping corridor entrance 10 to 20 ft. long, which was oriented south or southeast¹⁴ (Pl. 1b).

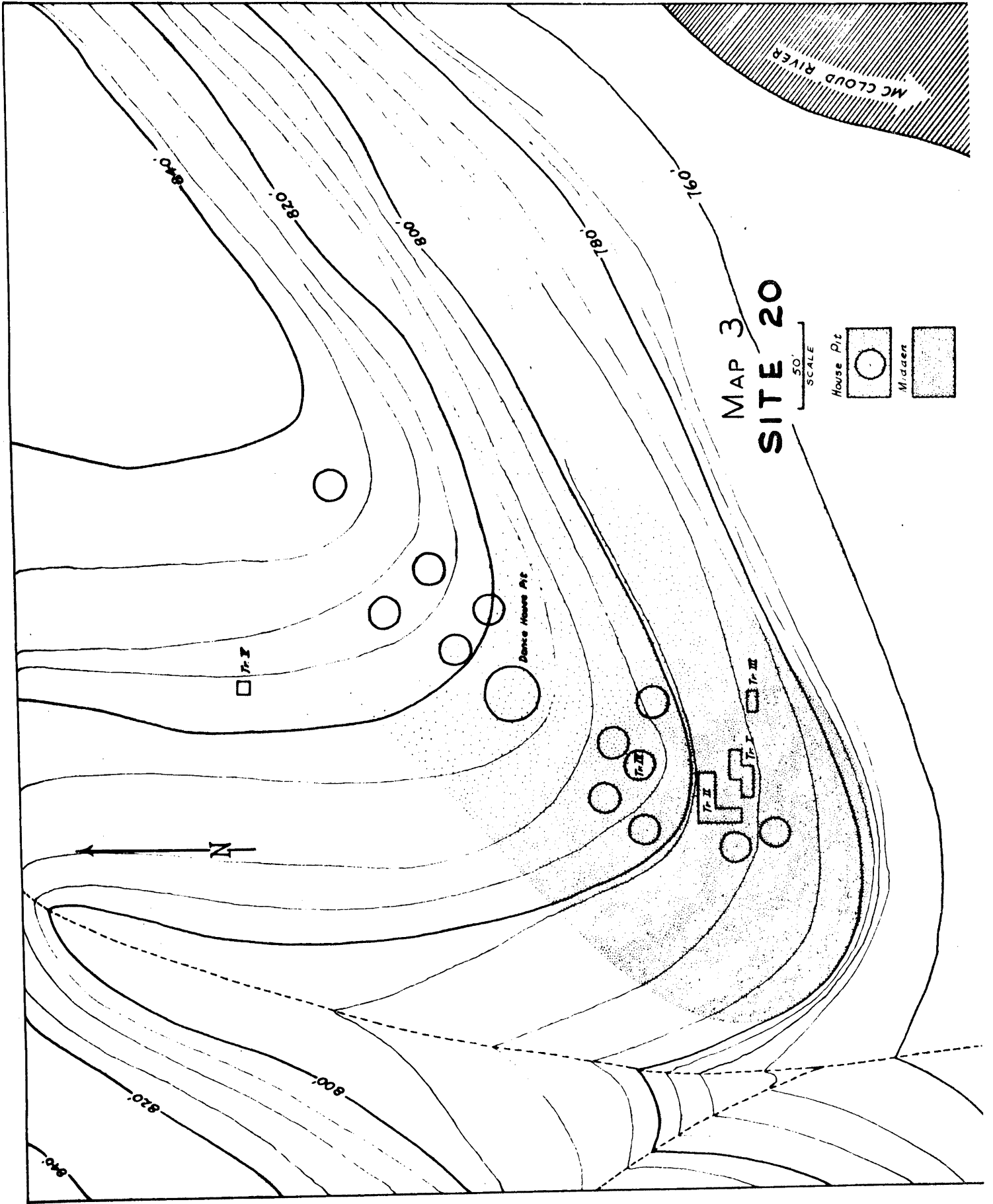
Sites Excavated in the McCloud Canyon

Site 22

Site 22,^{14a} approximately 3 air-line miles north-northeast of Baird in the NW 1/4 of section 12, township 34 N, range 4 W, was a River site situated on the nearly level top of the most recent (18 ft.) terrace, with the McCloud River immediately to the east. The river at its highest levels must have washed very close to the base of the site. Indeed, during the great flood of February, 1881, when, at the Baird Fishery, the river rose to a height of more than 26 ft. above its summer level, the water undoubtedly swept over the top of this site.¹⁵ In area the site was larger than average, measuring 330 ft. from northwest to southeast. Five house pits could still be discerned on the south and southwestern portions of the site, each measuring approximately 12 ft. in diameter from crest to crest. Along the northwest side, opposite the river, the site tapered off gradually in depth to an undefined edge. Beyond this edge was a shallow depression, 45 to 50 ft. in width, then a very sharp escarpment rose 40 ft. to the second terrace upon which Site 21 was located. Somewhat to the south of the center of Site 22 was the Curl Cemetery from which the Federal Government had removed 21 burials for reinterment.¹⁶ The cemetery occupied 1,675 square yards, and had in and around it a profuse growth of Ailanthus altissima, locally called Chinese locust or Chinese Heaven Trees (see Pl. 1c).

Excavation. Trench 1 was laid out on the south edge of the site running northward 45 ft. in a strip 6 ft. wide. Near its center it cut directly across one of the 5 house pits. Datum was established at the northwest corner of the trench (Pl. 1d).

Approximately 950 cu. ft. of material were removed from this trench, with excavation extending to the submound soil at an average depth of about 40 in. Artifacts recovered were relatively few and were limited to points, scrapers, hammerstones, pestles and hoppers-mortar stones.



MAP 3
SITE 20

50'
SCALE

House Pit



Midden



Test pits were dug at various places in an effort to find the aboriginal cemetery, but without success. Pit A was dug 6 ft. by 9 ft. to a depth of 55 in., with an area 68 by 55 in. on the south side of the pit which went to a depth of 84 in. before reaching mound base. This deeper section of Pit A had been sunk into undisturbed terrace gravel. It had 7 flat stones, each roughly circular and each about 14 to 16 in. in diameter, laid horizontally across the top of the pit as if to cover it. No evidence of cached material was found in the pit. A total of 410 cu. ft. of material was removed from Pit A.

Pit B was dug 6 ft. by 9 ft. with an average depth to submound of 44 in. Volume of material removed was a little more than 205 cu. ft.

Pit C was originally also 6 ft. by 9 ft., but an adjoining section 6 ft. by 9 ft. was later dug. Depth averaged 42 to 48 in. The total volume of material removed was about 420 cu. ft.

Artifacts from the 3 test pits were of the same nature as those from the trench. No non-aboriginal material was found except that which was exposed when burials were removed from the historic cemetery. It is evident that Site 22 had been abandoned before articles of White manufacture were in general use in the area.

Site 21

Site 21, 200 yds. to the northwest and about 40 ft. above Site 22, was a Terrace site lying on the southwest end of a remnant of the 50 ft. terrace, with sharp escarpments to the east, south, and southwest. The site was about 230 ft. long by 150 ft. in maximum width. Mound mass was primarily terrace deposit, including boulders, with a considerable amount of charcoal. Ten shallow house pits were visible; other pits were probably obliterated in the process of clearing the ground of timber.

Excavation. Trench 1, 30 ft. by 6 ft., with an added area of 12 ft. by 6 ft., was dug to an average depth of a little over 24 in. to the submound. Total volume removed was about 500 cu. ft. (Pl. 1e).

Artifacts were few, but included articles of non-Indian manufacture, such as square iron nails, bits of glass, some with worked edges, and pieces of tin, all indicating that Site 21 was inhabited for a time after White influences had reached the area. Again, no burials were found. The statement by Du Bois that graveyards were located at considerable distance from the villages¹⁷ seems substantiated.

Site 20

Site 20, in the E 1/2 of the NE 1/4 of section 11, township 34N, range 4 W, about 1 mi. downstream from Sites 21 and 22, was essentially a River site, lying along the base of a south-sloping ridge. It ranged in elevation

from 783 ft. to 823 ft. above sea level, which made the base of the site, during the summer months, about 15 ft. above and approximately 240 ft. northwest of the river (Pl. 1f, g).

The history of development of this site is suggested as follows: there are three distinct divisions representing three periods of expansion of occupation with resultant differences in the deposition of mound material and accompanying artifacts.

First: the area occupied by the original village covered about 5,000 sq. ft., with a maximum depth of 72 in. to 84 in. of deposit being attained.

Second: an adjoining area, lying above a scarp which was 5 or 6 ft. high at the time of establishment of the original village, was occupied only after deposition in the first area had reached nearly its maximum depth. The addition of the second part more than doubled the area of the site, widening it and extending it northeastward to another low escarpment.

Third: after the deposit of the second area had reached a maximum depth of 24 in., occupation was extended to the level beyond the second escarpment, this level being a remnant of the second or 50 ft. river terrace. The third area stretched northeastward 135 ft. in a strip averaging 60 ft. wide. Occupation was not of long enough duration for deposit to accumulate except in scattered patches; the major remains were sharply defined housepits and occasional artifacts on the surface.

The deposit of the first and second areas differed markedly. That of the first was mostly loosely compacted fine sand resembling that of Site 22 except that it was looser, and boulder and cobble inclusions were neither as large nor as numerous. The midden of the second area, however, was nearly identical to that of Site 21, being primarily terrace deposit with charcoal inclusions.

It should be noted here that in the first area no artifacts of non-Indian manufacture were found at depths exceeding 10 in. except as occurring with burials, whereas in the second area such artifacts were found throughout the deposit.

The site as a whole measured 300 ft. along the northeast-southwest axis, and a little more than 100 ft. at the widest point along the opposing axis. Twelve house pits and one dance house pit were well defined. It is probable that there were 2 additional house pits in the original village area, but they were so nearly destroyed that their existence could not be definitely established. The house pits averaged approximately 17 ft. in diameter from crest to crest; doorways could not be located. A dance house pit, located at the southwest extremity of the third occupied area on the 818 ft. contour, was 33 ft. in diameter, with its entrance on the south-southeast side, facing the river.

The entire surface of the first and second areas bore an extremely dense growth of Ailanthus altissima, which had to be cleared before excavation could proceed. Near the central portion of the first area were the opened graves of Wycotte Cemetery, from which the remains of 9 individuals, from 8 graves, had been removed by the Federal Government for reinterment outside the reservoir.

Excavation. An area 9 ft. wide from east to west and 12 ft. long from north to south, lying immediately south of the opened graves, was designated Trench I. Datum was set at the northwest corner of the area. After partial excavation, Trench I was extended eastward 8 ft. from 0 ft. to 6 ft. south of Datum, and 9 ft. westward from 6 ft. to 12 ft. south of Datum. A volume of over 3,900 cu. ft. of this site was excavated from Trench I and from four additional pits designated as Trenches II to V. (See map of site).

Burials and artifacts were so frequent in Trench I that work progressed slowly. Excavation was done mostly by trowel and brush.

Trench II yielded a considerable number of deer bones (long bones, scapulae, mandibles, etc.). Charred manzanita berries and acorns were numerous. Only one burial (Burial 15) occurred in this trench, which lay northwest of Trench I and was laid out in an L-shape with the north-south arm being 9 ft. by 25 ft. and the east-west arm 10 ft. by 20 ft.

Trench III was a pit 6 ft. by 12 ft. excavated to the east of Trench I; and Trench IV was a pit dug in exploration of a house pit lying to the north of Trenches I and II.

Trench V, in area 9 sq. ft., was dug to a depth of 10 in. It was located well outside and to the northwest of what is considered the site area, and was dug in order to determine what lay beneath a shallow pile of river cobbles, which had obviously been carried well up the side of the hill.

Numerous artifacts were found in this pit, only three of which (two obsidian points and a stone scraper) were of Indian manufacture. The others included china sherds, large iron rings, round iron wire and nails, a tin plate, metal corset stays, a teaspoon, a shovel blade, a pair of scissors, a bronze thimble inscribed "Friendship" and other metal objects.

In this trench also was found a cowrie shell, Cypraea vitellus, a species native only to the South Pacific.

It is believed that the area of Trench V was the site of a house in which someone died, the house being then demolished and the area covered with dirt and stones in the manner described by Voegelin.¹⁸

Chipped Stone Artifacts

Projectile Points

Nearly 95 per cent of the total of 588 projectile points collected are obsidian. With the exception of 2 points which are of iron and 3 others of glass, the remaining 5 per cent are made of various types of chert. Most of the cherts are black and are indigenous to the Shasta Lake area and to the Sierra east of it. A few, however, are Franciscan chert, indicating their importation from the west, possibly as finished pieces.

Published accounts give Glass Mountain as the origin of the obsidian used by the McCloud Wintu in the manufacture of arrowheads.^{18a} Glass Mountain is situated well within Modoc territory, hence a journey there meant crossing many miles of country occupied by an unfriendly people. Voegelin says that the trip, two or three days from the McCloud, was usually made by two or three men as a semi-religious quest.¹⁹

The two metal points were found at Site 20, one in Trench I at a depth of 3 in.; the other in Trench II, 6 in. deep. Both are stemmed and barbed. The point from Trench I is 33 mm. in length, 15 mm. thick, and has a parallel-sided stem. The other is 37 mm. long, 2 mm. thick, with a contracting stem.

One of the three glass points was found on the surface of Site 21. It is of a blue tinted glass, 22 mm. long, with two side notches. A second side-notched point, 35 mm. in length, of pale green glass, came from a depth of 5 in. in Trench II of Site 20. The third, also of pale green glass, was found in Site 20, Trench II, at a depth of 11 in. It is a narrow triangular point, 32 mm. long, with a straight base.

Most of the points in this collection are small and light. Nearly all of them range between 18 mm. and 28 mm. in length, and between 0.5 gm. and 1 gm. in weight. A few seem far too small to be of utilitarian value, and about an equal number are too large to be used with facility as arrow heads.

Pressure flaking was employed to finish every point. Serrations, which occur only on stemmed and barbed points, were formed by pressing off several relatively shallow flakes in the same plane on either side of the point to achieve the desired depth of serration.

B.B. Redding, writing in 1880, gave an eyewitness account of arrowhead manufacture by the McCloud Wintu. Of especial interest is his description of the method of removing flakes of which points were to be made, from the larger pieces of obsidian: "They split the flakes from the large pieces of obsidian by holding against an edge a piece of split deerhorn, the split deerhorn having been ground off squarely at each end. ... The line of the diameter of the split horn is held to cover as much of the edge of the obsidian as will make the thickness of the flake proposed to be split off. Holding one end of the horn firmly against the obsidian, with the other hand holding a round, waterworn boulder, a sharp blow is given to the other end of the split horn. If successful, and the obsidian is uniform in texture, a conchoidal, leaf-shaped flake will be split off."²⁰

Following the typologies erected by Wilson; Gifford and Schenck; Strong; Lillard, Heizer and Fenenga, and others,²¹ twenty-one types of points are represented from the Shasta Lake area. Table 2 lists the types, numbers of each, sizes and material of manufacture.

In accord with the procedure followed by Wallace²² the points have been grouped into two classes, stemmed and stemless, each of which further divides into smaller groups.

Stemmed Class: 467 (89 per cent) of the total number from all sites are stemmed. Of this number approximately 1/2, primarily of Types SAbl and SBbl, bear rather deep serrations around the periphery of the blade.

Six descriptive groups can be defined for this class; within each there is considerable range in size and in form except for gross outline.

- Group 1. Comprises Types NBa1 and NBb1. Triangular blade, with deep, squarish side notches, straight or concave base, with, in the latter case, the barbs frequently being exaggeratedly long, giving the base the appearance of a deep U. 66 specimens: longest, 54 mm.; shortest, 14 mm.; average length, 24 mm.
- Group 2. Comprises Types SAa, SAB, SAB1. Triangular blade, with rounded or contracting stem, squarish shoulders or shallow, broad U-shaped notches producing barbs usually shorter than the stem, but some examples of Type SAB and SAB1 have very long, fragile barbs. 164 specimens: longest, 60 mm.; shortest, 13 mm.; average length, 23 mm.
- Group 3. Comprises Types SBa, SBb, SBb1. Triangular blade, with parallel sided stem, rounded or flat base, squarish shoulders or wide V notches producing barbs of length no greater than that of the stem. 215 specimens: longest, 47 mm.; shortest, 15 mm.; average length, 22 mm.
- Group 4. Comprises Types SCa1, SCa2. Triangular blade with expanding stem, rounded or flat base, squarish shoulders, no barbs. 3 specimens: longest, 25 mm.; shortest, 23 mm.
- Group 5. Comprises Types SCb1, SCb2, SCb3. Triangular blade, with expanding stem; rounded, flat or concave base; long, narrow U-shaped notches producing barbs equal in length to, or shorter than, the stems. 15 specimens: longest, 34 mm.; shortest, 18 mm.; average length, 26 mm.
- Group 6. Comprises Type SCa4. Lozenge-shaped blade, with a wide, expanding stem of maximum width less than the maximum width of the blade; deeply concave base. 4 specimens: longest, 29 mm.; shortest, 14 mm.; average length, 22 mm.

Stemless Class: 57 (nearly 11 per cent) of the total number from all sites are stemless. Three descriptive groups can be defined.

- Group 1. Comprises Types NAa, NAb1, NBc, SAc. Leaf-shaped or triangular blade, with a rounded or convex base. 20 specimens: longest, 45 mm.; shortest, 20 mm.; average length, 30 mm.
- Group 2. Comprises Type NAb2. Leaf-shaped blade, with a flat base. 6 specimens: longest, 28 mm.; shortest, 21 mm.; average length, 25 mm.
- Group 3. Comprises Types NBa, NBb. Triangular blade, with a flat or slightly concave base. 31 specimens: longest, 42 mm.; shortest, 22 mm.; average length, 32 mm.

Table 2

Projectile Points

(Unless noted, all points are of obsidian)

Type	No.	Length in mm.			Width in mm.			Material
		Max.	Min.	Av.	Max.	Min.	Av.	
NBa1	5	23	22	20	13	13	14	
NBb1	55	54	14	28	15	11	15	2 glass
SAa	11	30	16	22	18	13	18	2 chert
SAb	54	33	13	24	22	12	13	1 chert, 1 metal, 2 quartz
SAb1	99	60	17	24	22	18	14	2 chert
SBa	7	40	22	22	27	11	20	1 quartzite
SBb	101	47	15	23	25	13	20	4 chert, 1 metal
SBb1	107	38	15	21	21	14	17	2 chert
SCa1	2	25	23		16	14		
SCa2	1			23			14	
SCb1	6	34	26	34	26	11	16	1 quartz
SCb2	3	25	18	19	16	11	14	
SCb3	6	37	21	26	33	13	13	
SCa4	4	29	14	22	12	10	12	1 chert
NAa	2	46	41		17	15		
NAb1	8	26	20	26	21	15	20	
NBc	8	44	26	29	15	12	14	1 chert, 1 quartz
SAc	4	45	32	44	27	11	13	2 chert, 1 quartz
NAb2	6	28	21	25	20	17	21	1 chert
NBa	25	40	22	25	25	14	16	1 chert, 1 glass

Table 3

Vertical Distribution of Points from Site 20

Depth (inches)	Stemmed Class	Stemless Class
0-6	51	6
6-12	18	0
12-18	19	1
18-24	17	0
24-30	25	1
30-36	17	3
36-42	29	4
42-48	42	2
48-54	44	2
54-60	18	2
60-66	11	2
66-72	5	0
72-78	2	0
78 plus	2	0

Points recovered during the excavation of Sites 21 and 22 numbered 11 and 42 respectively.

Those from Site 21 fall within Groups 1, 5, and 6 of the stemmed class, and Groups 1 and 3 of the stemless class. Frequency and levels of occurrence carry no significance.

The 42 points from Site 22 belong in Groups 2 and 3 of the stemmed class and Groups 1, 2, and 3 of the stemless class. Of interest in this series is the fact that the elaborately serrated types SAbl and SBbl, of such frequent occurrence as burial offerings in Site 20, occur here in fair abundance completely unassociated.

An examination of the vertical distribution of the stemmed class of points from Site 20 shows a high frequency in the upper 6 in. of the deposit, a fairly uniform lesser distribution downward to the 36 in. level, and then high frequency to the 54 in. level with decline in numbers below this depth.

The increase in numbers of points between the 36 in. and 54 in. levels is especially marked for those of Groups 2 and 3, and is a result of the very high frequency of Types SAbl and SBbl, respectively, within these Groups. The reason for this condition seems to be a preference for these serrated points as burial offerings.

Similar examination of the vertical distribution of the 23 examples of the stemless class from Site 20 indicates little of significance. Occurrences range from the surface to over 60 inches in depth; a minor concentration (9 points) occurs between the 30 and 48 in. levels. This is due to the inclusion of points of this class with burials lying within that depth range.

Regional Distribution of Projectile Point Types: The projectile points conform generally to the various types reported for the recent prehistoric and historic tribes of Northern and Central California. Thus the variants of Types NBal and NBbl, those with exaggeratedly long barbs, occur infrequently in the collections from the Yuki area of Mendocino County,²³ and are pictured by Goddard for the Hupa.²⁴ Loud pictures specimens from the Wiyot²⁵ which are identical to the long-barbed variant forms of Type SAb of Group 2 of the stemmed class. The collections from the Achomawi and Atsugewi region in northeastern California include a number of points similar or identical in type to various of those from the Shasta Lake area.²⁶ The same may be said of some Maidu and some Patwin specimens from the Sierra foothills and of specimens from the general area of Cache and Putah Creeks along the eastern Coast Range foothills of the southwestern side of the lower Sacramento valley. Wallace sketches a series of points from Siskiyou County, any one of which could have come from the McCloud collection.²⁷ He includes as his Group 1 of the stemmed class, most numerous of all his forms, a long-barbed type identical with the McCloud variants of Type SAb.

The deeply serrated points from the McCloud are closely similar to some pictured by Lillard, Heizer and Fenenga for the Late Horizon from Central California.²⁸

Aside from these apparent correlations (connection between the various areas is not necessarily implied) no significant statements concerning the distribution of types can be made at the present time. It would be a major project to assemble sufficient descriptive and statistical data on projectile points, even from California north of Sacramento, to permit definitive statements on areal distributions of specific forms.

Chipped Blades. Nineteen leaf-shaped blades, probably used as knives, occurred whole or in fragments in association with burials. Material was variable, 8 being of black or grey obsidian and 11 of Franciscan chert. The largest blade, of obsidian, measures 26 cm. long, 6.2 cm. wide, and 13 mm. thick; it corresponds to Type NAa. The smallest piece classed as a blade (rather than a point) of Type NBa, is also of obsidian, measuring 6.9 cm. long, 3.5 cm. wide, and 9 mm. thick. Side notches occur near the ends of the blades, giving evidence of a particular type of hafting (Fig. 1, m, o). Blades of this type are identical with many from Northwestern California.

Scrapers. Thirty-four artifacts identifiable as scrapers occurred at random within the mound mass at all 3 sites excavated, on the surface of others, and with 2 burials from Site 20. Most of these pieces were flake tools with one or more retouched edges. Five specimens were small chert cores of the "pulping plane" or steep type; 3 were probably shaft scrapers, since the working edge was deeply concave; and 3 examples were finely worked flakes of the "turtle-back" or "button" type, ovoid in outline with one flat and one convex surface, or nearly hemispherical. These were small, the largest measuring 32 mm. in longest diameter.

Scraper material was usually obsidian, but chert, hornfels, and quartzite were also used.

Drill Points. Four artifacts, of chert, which could be classed definitely as drill points were associated with 2 burials. These articles ranged from 27 mm. to 39 mm. in length; all were about 10 mm. in greatest diameter. Two were slightly flattened or "winged" at the proximal end; the other 2 were roughly cylindrical with a taper toward the point at the distal end (Fig. 1, c).

Ground Stone Artifacts

Abrading Tools. Three general types of abrading tools of ground stone were collected. All these, with the exception of a few fragments of shaft smoothers, came from excavations at Site 20, where they most commonly occurred in association with burials.

Shaft Smoothers. Nineteen sandstone specimens, 4 of them complete, all longitudinally grooved. Shapes vary from rounded rectangular and rounded trapezoidal to semicircular in cross section, with either squared or rounded ends. Size range from 8.8 to 15.4 cm. in length; 3.1 cm. to 8.5 cm. in width, and 14 to 29 mm. in thickness. Longitudinal grooving is evident on one, two, or all four sides.

In addition, 9 pumice specimens, 5 of them complete, have the same general characteristics, although they are generally broader and thinner. They are all either rounded rectangular or rounded triangular in cross

section, with squared or rounded ends.²⁹ Sizes of these range from 7.7 to 9.4 cm. in length, 3.3 to 4.6 cm. in width, and 15 mm. to 23 mm. in thickness. The pumice varies from very light, highly vesicular to heavy and dense with a large amount of sandy inclusions. Grooves in the pumice specimens run with, straight across, or diagonally across the grain. Grooves running along the flattest surfaces are consistently U-shaped in cross section (Fig. 1, q).

Du Bois figures a pair of these objects from the Wintu describing them as "arrow polishers."³⁰ Ethnographic evidence recorded by Voegelin³¹ substantiates the archaeological evidence that these artifacts were used in pairs by the McCloud Wintu. However, she denies purposeful manufacture of shaft smoothers by this group. This denial appears to strengthen our belief that the smoothers from the McCloud area were trade articles, especially since neither sandstone nor pumice was noted as float or in situ along this river. Voegelin suggests as a probable source of the pumice large deposits of that material in the Hat Creek (Atsugewi) and Fall River (Western Achomawi) areas.³²

Whetstones or Files. Two specimens, both of sandstone, accompanying Burial 7. Both are rounded rectangular in cross section and ungrooved. The measurements of 1 specimen are 165 mm. x 40 mm. x 35 mm.; of the other, 167 mm. x 40 mm. x 33 mm.³³

Hone. A single specimen of sandstone, rounded rectangular in cross section, ungrooved, with one concave surface, accompanying Burial 6. It measures 11.6 by 4.1 by 2.8 cm. This artifact, like the two described above, was used as an abrader, but its form shows that it was used in a different manner and probably in the manufacture of different types of artifacts.³⁴

Pestles. Although a few of the pestles collected were only slightly changed from their original cobble shape, they are all included here under ground stone. Most of the pestles, however, were well formed and carefully finished, of varied materials including sandstone, granite, diorite, schist and basalt.

There are three general types represented in the collection.³⁵

Type B1, cylindrical with slight taper, proximal and distal ends used for pounding. Five specimens notably uniform in size, varying only 10 mm. from an average of 23.7 cm. in length.

Type B2, tapering cylinder or long cone, distal end only used for pounding. Nineteen specimens ranging from 12.8 to 49.5 cm. in length. Maximum diameter, which occurs approximately one quarter of the distance from the distal ends, varies from 5.8 to 6.8 cm. Two pestles in this group have very slightly bulbous distal ends; a third has a carefully finished phallus-like proximal end.

Type C1, cylindrical, greatest diameter at center, both ends used for pounding. One specimen approximates this type; it is a large crudely worked pestle of basalt, 49 cm. long, with a maximum diameter of 15 cm.

Three pestles are unsmoothed, flattish, and roughly pear-shaped. They do not conform to any type figured by Lillard, Heizer and Fenenga.

The 28 specimens described above are complete. Thirteen of them apparently had been "killed" or ceremonially broken; 10 of these were found associated with burials. Three of the 10 were broken in half, 6 were broken into 3 pieces, and 1 was in 5 pieces. Of the 3 unassociated pestles, 2 were in 2 pieces and 1 in 5 pieces. The number of pieces seems to be a factor of the original length of the pestle: the longer the pestle, the more pieces into which it was broken. Of the 15 specimens which were never broken, 4 were associated with burials, 11 were not.

An additional number of fragments of pestles consisting of 16 distal ends, 4 proximal ends and 9 mid-sections, may be considered as either Type B1 or B2. Of these, 9 fragments were associated with burials; the remaining 20 were dissociated finds.

Hoppered Mortar Stones. Although these artifacts are unaltered from their natural form except by use, they are included here because they were used with pestles like those described above. Hoppered mortar stones were small, disc-shaped, river-worn boulders with one or both of the broad sides fairly flat. The flatter side was used as the base for an open-bottomed basket or hopper. A shallow pit, the size of the open bottom of the hopper, is formed by continued use. It is only after a period of use that these artifacts become recognizable.

Two hoppered mortar stones were found in Trench I of Site 22, and 4 were recovered from Trench II of Site 20. None were associated with burials. These artifacts have an average maximum diameter of about 37 cm. and average maximum thickness of about 8.5 cm.

Palettes. Within this group of ground stone artifacts are included a number of slate slabs, all from excavations at Site 20, which are believed to have been used in the grinding of pigments. Although no slate was noted along the course of the McCloud River, it was seen in quantity among the gravels in the bed of Squaw Creek near its confluence with Pit River.³⁶

Five slate slabs, all of which had been broken ceremonially, were found associated with burials. Three of these were reconstructed to complete specimens. They vary in shape, 2 of the complete specimens are roughly right-triangular in form, the third is semielliptical. Variation in surface area is not marked; the semielliptical piece may be taken as representative. It has a maximum length of 41.0 cm., a maximum width of 33 cm., and a variation in thickness of only 2 mm. or 3 mm. from 14 mm. Both surfaces of this slab have been carefully smoothed, but the other slabs have only one surface finished, the opposing surface being left rough and irregular. Each smooth surface is covered by fine, short, closely spaced straight incised striations, which run in groups haphazardly in all directions, and are such as might be made by sandstone abraders. Superimposed upon this finish are from 2 to 4 highly polished circular spots, their borders encircled by striations. These polished spots are about 75 mm. or 80 mm. across, and very shallow, being scarcely deeper than the all-over striations on the surface of the slab. Four of the palettes have hematite adhering to the striated surface around one or more of the polished spots.

In addition to those described above, fragments of 5 other slate slabs were recovered from Site 20. It is apparent that, at least locally, slate palettes were in rather common use. It is not surprising that such artifacts were not noted at other sites in the area; they were found at Site 20 only during excavation, and even fragments occurred rarely except in definite association with burials.

Since we have been unable to learn of the existence of similar artifacts in contiguous areas, we suggest that this type of artifact may represent a local development of paint grinding device. While no detailed reference is given in the literature on the Wintu, Du Bois does mention use of slabs as cooking pans for small fish,³⁷ but such use would hardly produce the striations and polished spots noted on our specimens.

Miscellaneous Flat Slate Objects. Two narrow, elongated, flat slate artifacts, measuring 25.0 by 3.6 cm. by 12 mm. and 24.0 by 4.0 by 8 mm. respectively, display slight polish along the edges near the center, as if they had been gripped in the hand or had been wrapped. The longer specimen is battered on one end as if it had been used as a pecking stone.

One long, tapering, flat, square-edged slate object yields no clue to its use or intended purpose. It measures 30.5 cm. in length, 4.7 cm. in width at one end, tapering to 18 mm. at the other end, and is a uniform 11 mm. in thickness. This is perhaps one of the naturally formed "pencil slates" coming from northwest of the McCloud.³⁸

A pendant or needle of slate is 19.8 cm. long by 8 mm. in diameter at the thicker end. It is slightly flattened and tapers to a slender sharp point. There is an encircling groove 5 mm. from the larger end.

Pipes. Only four aboriginal pipes are represented in the collection; 3 are of soft, blue-grey steatite; 1 is of fired clay. All were recovered from Trench I of Site 20; 1 steatite specimen and the clay pipe were associated, respectively, with Burials 6B and 6A. The others were dissociated finds. It is not surprising that so few pipes were found, for as Du Bois points out,³⁹ the native pipe of the region was usually of wood, and uncarbonized wood was not preserved in the soil.

The steatite pipes are very carefully polished, and all had been smoked. Two of them are fragmentary, but there is nothing to indicate that they were not nearly the exact shape of the single complete specimen. The unbroken pipe is 156 mm. long, with a minimum diameter of 10 mm. 17 mm. from the mouthpiece end. The diameter of the bowl is 20 mm., and the thickness of the wall of the bowl, 2 mm. The shape is like that of a modern cigarette holder, except that the stem is round rather than flattened. This is a typical shape of pipes to the west and far north of the Wintu,⁴⁰ and is quite unlike the native wooden pipes figured by Du Bois (Fig. 1, p).

The two fragmentary pipes were probably slightly shorter than the complete specimen. The longer of these, from which the stem had been broken at about the point of minimum diameter, measures 12.4 cm. in length. The diameter at the point of fracture is 10 mm., and the diameter of the bowl is 16 mm. The thickness of the wall of the bowl is 2 mm. This specimen has an unusual etched design of six evenly spaced, very fine zigzag lines ending 7 mm. beyond the point of fracture.

The shorter of these 2 fragmentary pipes is a reworked fragment, of which a large portion of the original mouthpiece end is missing. It is possible that the fracture was a result of faulty boring which made one side quite thin. The fragment is roughly abraded on the thicker side toward the point of fracture, as if the process of refinishing to increase the taper of the pipe had not been completed. The interior of the bowl was not as carefully finished as in the other 2 pipes. This specimen measures 6.5 cm. in length, and the diameter at the point of fracture is 11 mm. The diameter of the bowl is 17 mm.; the thickness of the bowl wall, 2 mm.

The fourth aboriginal pipe, represented by a small fragment 4.4 cm. long, is made of fired clay. The center, marked by an encircling groove, is 23 mm. in diameter. Both the base of the bowl and the beginning of the stem are present in this fragment. The bore was formed by a round stick drawn backward and forward, and the interior of the bowl by a gouging process with some thin, flat tool. The entire pipe, with the exception of the encircling groove, was completed before firing. There is no evidence that this pipe was ever smoked.

Rectangular Hammerstones. Two unusual hammerstones were found. They are long and slender, and present a rounded rectangular form in cross section. The ends are rounded to a dull point. One specimen, of serpentine, measuring 21.8 cm. by 3.2 cm. by 2.4 cm., is a finished tool, all sides being polished smooth and the ends somewhat flattened by use. It was found in Trench II of Site 20. The other, measuring 190 mm. by 37 mm. by 28 mm., from the surface of Site 35, is unfinished. Smoothing was begun on the narrow sides; 1 wide side had been flattened by percussion flaking while the other had been rounded by pecking. It is evident that, if the second tool had been completed, it would have resembled the first very closely. The ends of the unfinished specimen show no use.

Cobble Hammerstones. A total of 106 cobbles show evidence of use as pounding tools. These differentiate into two basic types: discoidals and simple elongate cobbles.

Discoidals: Shaped, 14 in number, are round, flattish cobbles of sandstone, quartzite, or vesicular basalt, thinned by having one entire side flattened by percussion flaking.⁴¹ In most specimens the entire periphery shows wear. This type ranges from 14 mm. to 67 mm. in diameter, 19 mm. to 38 mm. in thickness.

Discoidals: Not shaped, 9 in number, are round, flat cobbles showing use-abrasion either entirely around the periphery or only at one or two points. These range from 39 mm. to 107 mm. in diameter, 16 mm. to 48 mm. in thickness.

Elongate cobbles hammers: most often of sandstone or quartzite, are cylindrical or ovoid in cross section. Several approach a flattened pear shape in outline. Use-abrasion is evident on one or both ends. Sizes range from 4.3 to 22.5 cm. in length, and 1.8 to 9.1 cm. in width. Ten specimens within this group are irregular elongates, tending toward a "spatulate" form,⁴² and seem to have had a specialized use; the fractured ends are more or less wedge-shaped, giving a long, thin striking surface.

Miscellaneous Ground Stone Artifacts. The following ground stone artifacts are represented by single specimens; all are from Site 20, unless

otherwise noted.

A problematical pumice object measuring 7.3 by 6.9 by 5.5 cm. with a deep V-shaped groove encircling 3 sides, may be a fragment of one of the types of "figurines" which occur commonly in the Modoc region. It is also possible that it may have been a large but not very heavy sinker.

A sinker or charmstone formed of a small, wedge-shaped stone measures 2.5 by 2.6 by 1.8 cm. It bears a completely encircling lateral groove.

An elongate pebble measuring 10.6 by 2.0 by 1.4. It has been smoothed by rubbing, is subrectangular in cross section, and has a narrow band of fine scratches near one end. Its use was possibly ceremonial.

A small squarish mano and large fragment of a well finished grinding slab were found at Site 21 in close proximity to each other. Artifacts of this type have been recorded ethnographically for the Atsugewi and Achomawi to the east, but are denied by all Wintu groups.⁴³

A flat, rectangular piece of a micaceous, felspathic sandstone with Burial 6D had been broken ceremonially into 5 pieces. Reconstructed, it measures 24 by 14.7 by 1.5 cm. and displays on both major surfaces irregularly spaced pits about 20 mm. in diameter and 1 to 2 mm. in depth, which may be the result of natural weathering; there is no other evidence of use.

The absence of artifacts which could be classed definitely as charmstones is in keeping with the findings of Du Bois: "Strangely shaped stones found anywhere might be picked up and kept by the finder as a charm (xosi) ... They might not under any circumstances be brought into the dwelling house. Charmstones had to be wrapped in grass or hide and buried or in some way secreted at a distance from dwellings."⁴⁴ Strangely shaped stones, especially fossil coral from the McCloud limestones, were found throughout the deposit of all sites excavated, particularly at Site 20.

Bone Artifacts

Artifacts of bone are few; only 14 were recovered from survey and excavation. Five of these were probable salmon harpoon points of 2 types,⁴⁵ none of which were associated with burials. Three of the points are of an elongate diamond shape in longitudinal section, with the greatest width closer to what could be described as the "proximal" end, i.e., the end bound to the toggle.⁴⁶ These range from 2.1 to 3.4 cm. in length and 7 mm. to 9 mm. in greatest width. The other two points measure 3.0 and 3.1 cm. in length with a maximum diameter of 5 mm. In use, each point was inserted in a short section of pithy wood which was then bound with twine and covered with pitch to form a toggle.⁴⁷ No barbs were employed.

A composite artifact of bone, the use of which is uncertain, was found with Burial 6B. It is made of a flattened piece of cannon bone from a large ungulate (elk or large deer), is rounded rectangular in form, slightly tapered toward one end. The broader end is worked into a fork, one side

of which is slightly longer than the other. Ten mm. below the fork is a biconically drilled perforation with an inside diameter of 5 mm. On the obverse side, beginning 5 mm. below the perforation, are 3 impressed transverse lines spaced 5 mm. apart. Toward the narrower end there occur on each edge 3 pairs of short, converging incised lines. On the reverse side at the narrower end a rounded rectangular flat plate of bone, 4.8 by 2.0 cm. by 1 mm., was attached with an adhesive. The complete artifact measures 11.1 by 3.4 cm. at the broader end, and is 7 mm. thick.

Six large canine teeth, one of which was identified by Dr. R.A. Stirton as that of a toothed whale (species unidentified), were found with Burial 6C. The under side of each is somewhat flattened, particularly toward the proximal end. All but one were badly disintegrated, making positive identification impossible. The average length was probably about 9 cm. These undoubtedly formed part of a headdress of a type common in northwestern California⁴⁸ and was probably traded to the Wintu from that area (Fig. 1,r).

Only 2 bone awls were found in the entire undertaking. One, found on the surface of Site 35, is a rather blunt, broad specimen, made from a large deer or elk ulna, approximating Gifford's Type AlaII.⁴⁹ It is 10 cm. long and 5 mm. thick, with a maximum width of 3 cm. The other, a sharp-pointed, daggerlike artifact 9.6 cm. long, made of an ungulate radius (close to Gifford's Type AlbIV), was found with Burial 8 at Site 20. This specimen may actually have been a dagger of a type similar to that described by Du Bois.⁵⁰

The scarcity of awls may be explained by lack of emphasis on the coiling technique in basket manufacture throughout the region.⁵¹

Cordage

With Burial 1B was found about 200 cc. of fragmentary and carbonized native cordage of milkweed fiber,⁵² two-ply, with S-twist. Apparently it was used as rope and was made by twisting 4 strands loosely together. Numerous knots indicate the possibility that these fragments are the remains of a fish net.

Aboriginal Beads and Ornaments

Marine Shell Beads. Beads of several types were made from various kinds of shell, and were abundant with burials at Site 20; they were also present in the backdirt from graves opened by the Government at Site 22.

Most numerous were clamshell disc beads, made from Saxidomus nuttalli (Type Vla2) and S. giganteus (Type Vla3),⁵³ of which there was a combined total of 1,472. They range in size from 9 mm. to 20 mm. in diameter; the holes in a number of them were drilled straight, as though with a metal drill, but conical and biconical drilling were the most usual, with the latter predominating. There was no evidence of local manufacture. Ethnographic reports indicate a southern origin, ultimately from the Miwok at

Bodega Bay, by way of the Pomo and Yuki, or via the Patwin.⁵⁴

Second in point of number were spire-lopped Olivella biplicata (Type F5b): 1,079 relatively whole specimens were recovered. In length they range from 6 mm. to 28 mm. All of these beads were found associated with burials. Because of the widespread distribution of this type of bead throughout California their immediate origin must remain much a matter of speculation; it appears likely that most of these were obtained in trade from the south simply because of geographical proximity to an area with which trade is recounted ethnographically. It is possible, however, that they came from the northwest along the same routes which other artifacts must have travelled. Loud's excavations at Gunther Island demonstrate their archaeological occurrence about Humboldt Bay.⁵⁵

Beads of relatively whole shells of Dentalium pretiosum (type B2) were associated with several burials; a total of 324 specimens range in length from 13 mm. to 35 mm. These beads came from the Karok by way of the Shasta,⁵⁶ and seemingly were passed on by the McCloud Wintu to other groups to the east and south.⁵⁷

Kroeber gives the distribution of use of dentalia as money, as a belt stretching outward from the northwestern Californian area, "limited very nearly, to the south, by the line that marks the end of the range of overlay twined basketry."⁵⁸ This means, and the ethnographic evidence provided by Du Bois and Voegelin substantiates, that the Wintu were within the area where dentalia were valued as a medium of exchange.

Seventy-three unusual beads of Dentalium pretiosum were found with Burial 6A. These are short sections cut transversely from larger portions of shell, ranging in length from 1 mm. to 5 mm. The only other beads of this kind from California⁵⁹ known to the writers were found by Olson on Santa Cruz Island,⁶⁰ are somewhat longer than the McCloud specimens -- 5 mm. to 13 mm. -- and are covered with red ochre.

Cardium shells, Protothaca staminea, each ground off at the peak to form a hole (Type D12), are represented by 3 complete and 32 fragmentary pieces. The 3 complete specimens measure 37 mm. in transverse diameter. It is likely that the ultimate sources of these shells were Bodega Bay, Drake's Bay and San Francisco Bay,⁶¹ and that they moved to the Wintu along the same routes as the clamshell discs.

There are 13 specimens of limpet shells, Acmaea mitra, each with the spire ground off (Type F1). The average maximum diameter is 25 mm.⁶² The source is probably the northwestern California or the Oregon coast.

Four specimens of Tegula funebris, each with a hole made in the side of the lower coil, were recovered from the dirt of Government-opened graves at Site 20. These molluscs have a natural range from Puget Sound to Baja California⁶³ but seem not to have been employed for beads or ornaments; the 4 from Site 20 constitute the total in the UCMA.

A single cowrie shell, Cypraea vitellus, a South Pacific species, 4.4 cm. long, was found at a depth of 8 inches in Trench V of Site 20. A recent time of introduction is indicated by its association with Caucasian material. Its origin is conjectural; it may have come with one of the many

Polynesians who were brought in to work for the early fur traders, or it may represent a Caucasian trade item.

Whole shells of abalone, Haliotis rufescens, were rather numerous with burials at Site 20, but ornaments of this shell were relatively rare. Three complete and 2 fragmentary pendants, and 3 unfinished pieces cut in the form of pendants were the total collected. Of the last three, 2 are rectangular (Type S1) and 1 is triangular (Type U1). Two of the complete pendants are each roughly triangular in shape, with a conically drilled hole near the apex (Type U4b). The larger is 5 cm. long with a maximum width of 25 mm. The smaller measures 4.2 by 2.3 cm., and differs from the larger in having a notched periphery. The third complete specimen is a large triangular piece, 12.2 by 9.7 cm., the outer edge being the natural border of the shell. One natural opening is located near one corner, and there is a straight-drilled hole near the angle formed by the two cut edges. There is nothing comparable in Gifford's typological study of shell artifacts.

Seed Beads. Native beads other than shell are represented by 21 specimens of Viburnum seeds, and 4,765 pine nut beads. Of the latter there are 3 types: (1), barrel-shaped, with both ends cut or ground off; (2), one end cut or ground diagonally and one side ground through; and (3), one end cut or ground square and one side ground through. Of the total, about 4,000 were of Type 1, the remainder being about equally divided between Types 2 and 3. Concerning the second type, Heizer⁶⁴ concludes from his survey that "... since the type appears archaeologically late and among ethnographic aboriginal groups, we can state with fair certainty that wherever these pine nut beads are, archaeologically we are dealing with relatively recent remains."

Approximately 6,330 cc. additional fragments of pine nut beads are not sufficiently complete to be classified.

Although it is not an ornament one other specimen may be mentioned here. This is a "whizzer" made of a trimmed and smoothed pine cone scale, partially carbonized, which is 22 mm. long, 13 mm. wide, and has 2 straight-drilled holes spaced 10 mm. apart at the center.⁶⁵

Burials

Except for a single burial exposed at Site 35, graves were found only at Site 20 where all but one were found in Trench I.⁶⁶ Burial 15, the exception, was found in the southeast portion of Trench II at a depth of 14 in. Burials in Trench I were concentrated between 1 ft. west of Datum A and 9 ft. east, at depths ranging from 21 to 66 inches. Only 3 burials occurred in the portion of Trench I between 9 ft. and 12 ft. east of Datum.

The condition of the skeletal remains was generally very poor. Most of the bones of all the burials were badly decalcified. This condition was largely caused by the dense cover of Ailanthus whose roots, of all sizes ranging from hair-like feeders to roots 6 or 8 in. in diameter, penetrated the mound mass and skeletal material alike. Another reason for

the poor condition of a number of burials was the native practice of removing and reintering bones encountered in digging a grave (Pl. 1e).⁶⁷

The burials exposed at Site 20 comprised remains of approximately 37 individuals. Eight of these were either infants or young children, only one of whom perhaps exceeded 9 years of age. Of the 29 adults, 5 were classified definitely as male and 3 definitely as female. Two more were probably female. The sex of the remainder, because of the poor and fragmentary condition of the skeletons, could not be determined with any degree of certainty.

Orientation and Position. In spite of the poor condition of the skeletal remains, excavation yielded considerable information on burial method. Only 5 burials gave no evidence concerning the burial complex other than the depth at which they were found and the artifacts which were associated with them. There was no evidence of extended burial; all corpses were flexed. The degree of flexion, however, varied; in nearly every burial where ample data was available (this included at least 8 individuals) the body had been completely flexed. In one instance, Burial 19, the body seemed to have been only semiflexed, but this burial had been disturbed and the evidence is not conclusive. In many instances the skull was at an angle which indicated that the head of the corpse was placed within the bundle into which the body was wrapped.⁶⁸ Burials on either side as well as on the back were represented. Three skulls lay face down, but of these burials 2 were badly disturbed, and the third, an infant, was extremely fragmentary. Hence it could not be determined whether or not this was the position in which the heads had been placed originally. Twenty-six burials yielded information on the direction of the head in relation to the body. The divergence of direction displayed in the orientations of burials was equal to the variable opinions on the subject encountered by Du Bois.⁶⁹ There seems to have been no custom governing the placing of the head of the corpse in any given direction. If 3 burials recorded as oriented in a west-southwestern direction are considered as being west in orientation, directions to all sides of the compass were equally favored. One type of orientation, however, warrants special notice. This is the upright or "seated" position definitely established for 4 burials, and possibly for a fifth. They differ in no way from the other tightly flexed burials except for the position in which they were placed in the grave. Du Bois mentioned this practice: "Others, however, said the head was also bound with sinew, but that its position was marked in order that the body might be set upright in the grave."⁷⁰ Three of these seated burials faced directly north, one faced west, and the fifth (the case in which there remains some room for doubt) faced north-northwest. This series, however, is so small that no very great point should be made of the tendency of seated burials to face in a northerly direction (Pl. 1 h-j).

Grave Pits. With one exception there was no direct evidence of dug graves. The bottom of the grave for Burial 11 had been dug to a depth of 6 in. below the mound mass in the form of a bowl-shaped pit 33 in. in diameter. The remainder of the graves, being completely within the mound mass, left no trace of side walls, and no evidence was found of any grave lining or burial covering like that recorded by Du Bois.⁷¹ Certain indirect evidence of graves may be drawn both from associated

artifacts and from depth of burial. The locations of the artifacts associated with individual burials, particularly those which were broken before being deposited with the corpse, suggest that the diameters of most graves made for burial of adults must have been close to that indicated for Burial 11. The 4 most shallow graves were for Burials 2, 10, 12 and 15, and were respectively 25, 21, 20, and 14 in. deep to the highest point on the skeleton. It is not believed that more than 6 or 7 in. of mound deposit, if any, was laid down after these individuals were buried (see p.). Hence it becomes apparent that even the most shallow graves were dug for the specific purpose of burial. Just how deep graves were dug cannot be determined with accuracy; Du Bois was told that they were dug to a depth of approximately 4 ft., but it is obvious that depths varied considerably. The introduction of the shovel, several specimens of which were noted on the surface of Site 20, facilitated the digging of graves to a greater depth than had been customary with native tools. In later years acceptance of the custom of digging graves to a depth of 6 ft., as well as the use of the coffin and the extended position of the corpse, is evident in the Government burial records for burials made before the turn of the century. Stone recorded the building of a coffin for an Indian in 1878.⁷²

Associated Grave Artifacts. Materials interred intentionally with the corpse were found with all burials with the possible exceptions of 3 adults and 1 infant. With these burials artifacts may have been associated which were not recorded as such, or which, being of perishable material like basketry or wood, had completely disintegrated. Most burials were amply furnished with artifacts, which, with the exception of most points, some small blades, and occasional other pieces, had been broken before burial.

Table 4 records observed data for the burials from Site 20.

Table 4
Burials, Site 20

Burial No.	Depth (in.)	Age	Sex	Orienta- tion	Position	Associated Objects
1A 3 indi- viduals	38	Adult	M(1)	N(1)	?	Trade beads, clay pipe, 5 axe heads, hatchet head, file, 3 metal knife blades, 4 iron rods, obsidian point
1B 2 indi- viduals	32	Adult	?	E	?	Trade beads, mirror, leather belt frags., textile frags., metal hooks and eyes, button, native cordage frags., dentalia beads, clamshell disc beads, pine nut beads, 12 limpet ornaments, 2 clamshell ornaments. Many obsidian flakes under skulls
1C	36-48	Adult	?	N	seated	Trade beads, 30 obsidian pebbles, chert blade, pestle frag., tin cup
1D	42	Adult	?		?	Trade beads
1E	44	Adult	?		?	Trade beads, 2 pestles
2	25	Child	?	N	on back	Trade beads, pine nut beads
3	42	Child	?		?	Pine nut beads, clamshell disc beads, whole Olivella beads, white chert blade, obsidian point
4	41-56	Adult	F	E	seated	4 obsidian points, obsidian blade, slate pendant, pestle, 10 slate palette frags., sandstone shaft-smoother, 3 ditto frags., Haliotis shell, quartzite scraper
5	49	Adult	F	?		11 obsidian points, obsidian blade, 10 whole Olivella beads, <u>ca.</u> 12 pine nut beads
6A	52-62	Adult	M	N	seated	Haliotis shell, 275 whole Olivella beads, 106 clamshell disc beads, 7 dentalia frags., 73 dentalium section beads, 2 chert drills, 2 pumice shaft-smoothers, 2 slate palette frags., 3 pestle frags., large obsidian blade, 4 or more obsidian points, white chert point

Burial No.	Depth (in.)	Age	Sex	Orienta- tion	Position	Associated Objects
6B	46-61	Adult	M	N	seated	140 whole Olivella beads, 2 metal knife blades, bone artifact, steatite pipe, 3 slate palette frags., 2 chert blade frags., chert blade, 2 shaft-smoother frags., 2 obsidian points
6C	53	Adult	?	W	on back	6 canine teeth (whale) 155 whole Olivella beads, 2 limpet ornaments, fragmentary dentalia, 50 clamshell disc beads, hundreds of minute pieces of obsidian under skull
6D	50	Child	?	?	?	3 slate palette frags., 3 pestle frags., chert blade frag., 5 shaft-smoother frags., sandstone slab, (association of any or all artifacts may have been result of reburial custom)
6E	51	Adult	?	S	?	Shaft-smoother frags.
7 2 individuals	50	Adult	?	N	?	19 pine nut beads, 26 clamshell disc beads, 215 whole Olivella beads, 4 obsidian points, chert point, pestle frag., sandstone shaft-smoother frag., pumice shaft-smoother frag., 2 whetstones. Ca. 3 lbs. of obsidian flakes about skull of disturbed burial
8 3 individuals	44	Adult	M(2)	E	?	4 Haliotis shells, metal knife blade, 360 clamshell disc beads, whole Olivella beads, 275 pine nut beads, 3 pestle frags., 2 chert blades, chert blade frag., 5 obsidian points, 3 chert points, chert drill, slate palette frag., bone awl, 2 Haliotis pendants
9	45	Adult	?	N	seated	320 clamshell disc beads, 90 whole Olivella beads, Haliotis shell frag.
10	21	Adult	M	S	?	Obsidian blade, obsidian point

Table 4 (Continued)

Burial No.	Depth (in.)	Age	Sex	Orienta- tion	Position	Associated Objects
11	66	Adult	?	N	?	7 obsidian points, 2 obsidian blades, chert point, chert blade, pestle frag., many obsidian flakes
12	20	Adult	F	S	left side	
13	53	Child			?	4 obsidian points
14	39	Infant		N	?	
15	14	Child	?	?	?	2 hammerstones, stone with encircling groove, discoidal hammerstone, piece of iron ore, 3 charred nuts
16	36	Adult	?	?	?	
17	36	Adult	F	W	right side	
18	40	Adult	M	W.	?	7 large flakes of obsidian
19	38	Adult	?	S	?	Obsidian point
20	38	Adult	?	SE	?	Obsidian point
21	38	Adult	?	W	?	2 obsidian points
22	34	Child	?	?	?	30 whole Olivella beads, 7 pine nut beads, 4 shaped pieces of Haliotis shell
23 2 indi- viduals	21	Adult Child	F	SE	on back	22 whole Olivella beads, 7 pine nut beads, 2 quartzite scrapers, obsidian point, shaft-smoother frag.

It may be seen from the preceding data that artifacts and other objects were associated with 84.3 per cent or more of all burials. This large percentage of associated artifacts at Site 20 is in considerable contrast to that which was found by Wedel at Redding Mound 1 (see Appendix); there, only 66 per cent of the total number of burials had any objects in association, and the number and variety of associated objects were relatively small.

Most of the burials at Site 20 were close together, often so close that it was impossible to assign artifacts to one rather than to its neighbor. This crowding was especially marked in Burials 1A to 1E, and Burials 6A to 6E. For such, only those objects unquestionably associated with one skeleton were recorded as so being.

Points. Chipped stone points were present in more graves than were any other artifacts. They were recorded as associated with 17 burials: 14 adults and 3 children. The problem of determining whether or not projectile points were intentionally interred with burials was made difficult by their common occurrence throughout the midden. For this reason it was necessary to be conservative in recording projectile points as associated objects.

Aboriginal Beads. Second in frequency of occurrence with burials were aboriginal beads. Pine nut beads were present with 8 burials, 5 adults and 3 children. Whole Olivella beads were found with 8 adult burials and 2 burials of children. Clamshell disc beads were associated with only one sub-adult, but were associated with 6 of the adult burials. Dentalia occurred with 3 burials, all adult.

Glass Trade Beads. Glass trade beads were associated with 6 burials, representing 9 individuals, one of which was an infant. All of these were found immediately south of the historic cemetery from which burials were removed by the Government. Numbers of beads were present throughout the mound mass surrounding Burials 1A to 1E, at depths ranging from 28 in. to 48 in.

Eighty-seven different types of trade beads are recognizable in the collection.⁷³ Samples of 34 of these were sent for examination to Dr. Arthur Woodward of the Los Angeles County Museum of History, Science, and Art. With the beads was included a sample of the 517 china buttons which were also associated with one or more of Burials 1A to 1E.

Dr. Woodward stated that buttons of this type "were invented in France around 1850,"⁷⁴ and that judging by the beads the period of interment of the corpses with which they were associated was perhaps as early as 1850-1860, or perhaps as late as the middle 1860's.

Dr. Clement Meighan examined the beads and found 49 types datable approximately. A range of from 1840 to 1910 is represented, with most of the 49 types dating post-1880; none of the types are assignable to a single source, i.e., none are strictly from the Hudson Bay Company, nor are any only from the American Fur Company.

No differentiation in types is discernible between beads from the burials (1A to 1E) and beads from the known graves opened by the Government.

These latter interments were made between approximately 1885 and 1910; the inference is, then, that Burials 1A to 1E could not be particularly older than the known interments, certainly not more than 35 or 40 years older at the very most. There is thus fairly close agreement between the findings of Drs. Woodward and Meighan.

The burials with which no trade beads occurred are presumably older than those with trade beads. It is possible that some of the former may date into the 18th century, but there seems no reason for postulating any greater antiquity for these.

The geographic distribution of most of the datable types is sketchy as yet, but there seems to be a northern and eastern weighting in frequency of occurrence, perhaps indicating movement of at least some of the beads to the Wintu through the Modoc and Achomawi-Atsugewi.

A number of undatable bead types have not yet been reported from sites other than Site 20 on the McCloud. These are not particularly distinctive, nor are they represented by any great quantity of any type. It is possible that these represent minor importations of beads not in the regular trade inventories.

Nonaboriginal Artifacts. Other objects of nonaboriginal manufacture, in addition to trade beads, were commonly associated with Burials 1A to 1E. These include such items as various iron tools and utensils, textile fragments, leather fragments, a mirror, and a clay pipe, the bowl of which is in the form of a bearded human head wearing an ornamented hood. Similarly, other metal objects were found with Burials 6B and 8. Shovel blades were found shallowly within the midden and on the surface of Site 20, and upon the surface of several other sites including Site 21.

Conclusions

The excavation undertaken in the Shasta Lake area provided sufficient material evidences to permit some rather general conclusions.

In the first place, with the exception of a few articles known to have been introduced as random trade pieces in very recent times, and of perishable materials, the archaeological inventory is essentially the same as the ethnographies describe the material culture. This implies either a relatively short span of time represented by the deposits excavated, a fairly static culture, or both.

Secondly, cultural connections with contiguous and even quite distant areas can be demonstrated, as with the shell bead types, some projectile points, pipes, etc. Thus, the steatite pipes have a northern and western distribution, occurring on the Northwest Coast and elsewhere including eastern Washington. The long barbed variants of Types SA_b and SB_b of arrowpoints have a distribution west and north of the McCloud Wintu,⁷⁵ and may be a late introduction. The end-and-side perforated pine nut beads have a similar distribution to the west and north of the Wintu, and, like the long barbed points, also extend south of the Wintu at least as

far as the Yuki.⁷⁶ The dentalia came from the west; the clamshell discs from the south.

If we include materials and practices noted ethnographically,⁷⁷ but not of archaeological occurrence, it seems the greatest weight of cultural influence was felt from the west, although a general sifting out of certain elements had occurred before these influences got to the Wintu; the woodworking complex and extensive use of antler, for example, are missing.

Also quite strong were influences from the north and northeast, from the Klamath, Modoc, and Achomawi. Although this conclusion is based primarily upon ethnographic data, it is bolstered by the occurrence on the McCloud of projectile points, shaft smoothers, and hammerstones, as well as those things mentioned earlier, with an apparent northern origin.

The similarities (between 850 and 900 shared traits) between the Wintu and various Maidu divisions to the south may be the result, more than of any connection, of rough similarity of environment and mode of life.

The only items of distinctly local and unique occurrence seem to be the slate palettes. Actually these may sometime be found to be of wider distribution; the archaeology of areas to the north and east of the McCloud Wintu is still pretty much unknown.

The picture on the McCloud, as defined archaeologically, seems closely in accord with Du Bois' drawing of this group of the Wintu as a hill people intermediate between two major spheres of influence, that of northwestern and that of central California, with northwestern influences being perhaps the strongest, and with a mingling of northern and northeastern factors somewhat modifying both the western and the southern influence.

It seems the McCloud subgroup were a population occupying a fairly easy and productive environment; with an economy developed around fishing, hunting, and gathering, probably in that order of importance; and receptive, but selective, of introduced cultural materials.

So far as the time represented archaeologically is concerned, little can be said on the basis of the work done; a single cultural manifestation is all that is evidenced, extending backward in time to some not very ancient period from an historic period beginning around the middle of the 19th century.

Some inferences may perhaps be drawn concerning absolute antiquity, at least of the sites investigated from the data at Site 20.^{76a} As has been said, the southern or oldest part of the site (the site of the original village) yielded no objects of non-Indian manufacture from depths greater than 10 in. except with burials. Since it is unlikely that this site was occupied for more than 50 years after contact with western civilization, it may be inferred that the depth of the site there did not increase more than 1 ft. in half a century. The maximum depth of deposit was slightly less than 7 ft. Had the site increased in depth at a constant rate from inception to date of abandonment, it would not have been more than 350 years old. The actual age could vary in either direction

from this figure depending upon such factors as fluctuations in numbers of persons in the village at different periods, continuous or intermittent occupation, etc.

Applying the evidence provided by the absence of Caucasian materials it seems reasonable to give Site 22 an age greater than that of Site 20, but probably no more than a hundred years or so at the very most.

The question must remain, does this short record of occupation mean the region was only so recently occupied, or are there somewhere in the area sites of greater antiquity? If the latter do exist, these were not found in the survey. Few of the River sites had depths comparable to that of Site 20; Terrace and Hill sites were relatively shallow, and, as far as is known, all had items of Caucasian culture in the midden.

It may be that the McCloud canyon, favorable as it is, offered a refuge area to groups pushing up from the south originally, as it seems to have done during the 19th century when some of the Hill sites and the last-occupied terrace of Site 20 were settled. If this is so, and the excavation done so far does not support such a contention, then there should be sites in whose lower levels it would be expected to find materials correlating to more southerly cultures and antedating those things derived from the directions of west or north.

It is hoped that the information included in this paper will be an addition to the framework being constructed for the understanding of the cultures of California.

NOTES

¹ Wintu, or Northern Wintun, is a dialect of the Wintun language, affiliated with the Penutian linguistic family. See Kroeber, pp. 353-354, and Du Bois, p. 1.

² Du Bois, p. 6.

³ Russell, pp. 73-84.

⁴ In September a rise of 50 degrees Fahrenheit in 5 hours of the morning and an equally rapid fall in the evening is normal. See Stone, 1872, p. 179.

⁵ Grinnell, p. 3.

⁶ Hall and Grinnell, 1919.

⁷ Stone, 1872, p. 176.

⁸ Sinclair, pp. 23-24.

⁹ Du Bois, p. 6.

¹⁰ The most commonly exposed bedrock in the McCloud canyon is the tan or reddish grey Baird shale.

¹¹ Du Bois, p. 10, 123.

¹² Ibid., p. 122.

¹³ Earth lodge pits were noted at Sites 13 and 23.

¹⁴ On Site 13, at the junction of the Pit and McCloud Rivers, there was evidence of a semisubterranean rectangular dance house, 60 ft. by 65 ft., 6 ft. deep, with a corridor 40 ft. long oriented south. See Du Bois, p. 33.

^{14a} In the text the original site numbers are retained, without the county abbreviation preceding. No confusion is inherent; our sites 20, 21, 22, etc., are simply Sha- 20, 21, 22, etc., according to the manner of designation instituted by the UCAS in accordance with the system followed by the Smithsonian's River Basin Surveys.

¹⁵ Stone, 1881, p. 1063.

¹⁶ Known burials in all cemeteries within an area to be flooded by construction of a dam are required by law to be removed and reinterred in an area outside the reservoir basin.

¹⁷ Du Bois, p. 64.

¹⁸ Voegelin, p. 231.

18a

The great Medicine Lake Highlands volcanic eruption formed Glass Mountain. In September, 1952, a carbon-14 date for this volcanism of 1360 ± 240 years ago was published by W.F. Libby, 1952, p. 14, sample no. C673. Howel Williams says of this date that it refers to the "maximum age for the huge flows of obsidian found in the vicinity of Medicine Lake." If this is so, no aboriginal artifact made of Glass Mountain obsidian is older than about 600 A.D. Although not at present of use in chronology, due to our ignorance of the prehistory of the northeastern portion of the state, this time datum will ultimately be of much importance if pre-Glass Mountain period flaked implements are found. (Editor's note).

19 Ibid., p. 191.

20 Redding, pp. 125-128.

21 Wilson, 1889, pp. 887-944; Gifford and Schanck, pp. 80-81; Strong, 1935, pp. 88-89; Lillard, Heizer and Fenenga, p. 13.

22 Wallace, pp. 16-19.

23 Treganza, Smith and Weymouth, Pl. 12.

24 Goddard, Pl. 12.

25 Loud, Pl. 15, no. 8.

26 Observations of collections in UCMA.

27 Wallace, Pl. 1.

28 Lillard, Heizer and Fenenga, Pl. 24.

29 Similar to specimens figured by Collier, Hudson, Ford, Pl XIV, h, i, j, from the Upper Columbia River, eastern Washington.

30 Du Bois, p. 124.

31 Voegelin, p. 72.

32 Ibid., p. 191.

33 For description of same type see Wedel, 1936, pp. 79-80; historic Pawnee specimens.

34 Strong, (1940, pp. 385-386) describes a similar hone from the northern Great Plains.

35 Lillard, Heizer and Fenenga, pp. 10-11.

36 Heizer and Treganza (1940) mention no known special source of slate for this north central area.

37 Du Bois, p. 17.

- 38 Oral communication from Dr. Howel Williams, Dept. Geology, University of California.
- 39 Du Bois, pp. 128-129.
- 40 Loud, Pl. 17; Goddard, Pl. 17; collections observed in Maryhill Museum, Maryhill, Washington; and in Sacajawea State Park Museum, Pasco, Washington.
- 41 Similar to many observed in the eastern Washington collections; also some in UCMA from northern California.
- 42 Treganza, Smith and Weymouth, p. 118.
- 43 Voegelin, p. 74.
- 44 Du Bois, pp. 82-83.
- 45 Both types are similar to specimens figured by Collier, Hudson, Ford, Pl. VIII, f-h, j-n.
- 46 Gifford, 1940, pp. 177, 22; Bennyhoff, Fig. 5-t, u, or v, p. 335.
- 47 Du Bois, p. 128; Bennyhoff, Fig. 7-v, p. 337.
- 48 Kroeber, Pl. 3; Goddard, Pl. 30.
- 49 Gifford, 1940, p. 199.
- 50 Du Bois, p. 125.
- 51 Ibid., p. 131.
- 52 Oral communication from Dr. Lila O'Neale.
- 53 Shell bead and ornament types are based on Gifford, 1947.
- 54 Du Bois, p. 26; see also Sample, 1950.
- 55 Loud, p. 386.
- 56 Du Bois, p. 25.
- 57 Sample, 1950.
- 58 Kroeber, pp. 824-825.
- 59 Beads of this type are described by Collier, Hudson, Ford, from the Upper Columbia River; see Pl. XI, f.

- 60 Excavations at Site 3, Forneys Cove, Santa Cruz Island.
- 61 Keen, p. 24.
- 62 Ibid., p. 28.
- 63 Ibid., p. 46.
- 64 Heizer, p. 126 and fig. 71.
- 65 Du Bois describes similar artifacts, p. 44.
- 66 The western part of Trench I was almost immediately south of the grave area opened by the Government.
- 67 Du Bois, p. 64.
- 68 Ibid., p. 64, 65.
- 69 Ibid., p. 64.
- 70 Ibid., p. 64.
- 71 Ibid., p. 65
- 72 Stone, 1878, p. 744.
- 73 According to the type series prepared by Dr. Clement Meighan, deposited in the UCMA.
- 74 Correspondence with Dr. A. Woodward, Los Angeles County Museum.
- 75 Loud, Pl. 15, no. 8; Cressman, p. 16; Berryman, Pl. VIIA, figs. 21 and 22; Strong, Schenck, and Steward, Pl. 14, h; Pl. 15, t, u.
- 76 Treganza, Smith and Weymouth, p. 116.
- 76a Cf. note 18a.
- 77 Du Bois, 1935; Voegelin, 1942.

APPENDIX

Excavations at Redding Mound 1 (Sha-47) in 1935

Introduction

In July, 1935, a University of California field party under the direction of W.R. Wedel excavated in an archaeological site atop the east bank of the Sacramento River just north of the mouth of Sulphur Creek, a short distance south of Redding. The site was designated Redding Mound 1 (UCAS designation, Sha-47).

The geographic surroundings of this site differ markedly from those of the Shasta Lake area. Here, relatively flat open park-land extends for some distances in all directions, with small oaks and grasses constituting the major part of all vegetation.

Since this site is within the southeast portion of the Wintu area, permission was obtained from Dr. Wedel to include this short discussion, which is based on his field notes and on the specimens from the site in the University of California Museum of Anthropology. Du Bois, in her discussion of territories occupied by the various Wintu subgroups¹ unfortunately does not make clear exactly which subarea included the territory immediately around the site, but it is likely that this was part of the area of the Bald Hills Wintu division, or at least an area visited by them for fishing purposes.

Exact measurements of the site's area are lacking. It is described as a large site, with an average depth of approximately 102 in. A trench was dug 6 ft. 6 in. wide by 40 ft. long, running magnetic north to south. Datum was established at the northeast corner of the trench.

The mound mass is described as an unstratified mixture of dark brown, loose, crumbly, clayish soil with ash and charcoal, numerous stones and stone fragments, and a fair percentage of shell. Charred acorns were common throughout the mound mass, but fish, bird, and mammal bones were rare. From the upper 8 in. of the mound artifacts of non-Indian manufacture were recovered. These include bits of glass, a few square iron nails and a few scraps of metal.

In contrast to sites excavated on the McCloud, wood was preserved to a degree in this mound. Post fragments and fragments of planks or pine bark slabs, apparently parts of a house, were found in one part of the trench. Also, covering an infant burial, Burial 1, the most shallow of the six interments, there were about 2 sq. ft. of pine bark slabs.

Five burials were exposed, representing 6 individuals. They were about evenly distributed along the length of the trench and ranged in depth from 30 in. to 90 in. The skeletal remains, with the single exception of Burial 4, were in very poor and fragmentary condition.

Four individuals were very young infants. In fact, 2 of them were recorded as embryonic, but it is more likely that they were newborn or very young infants. Of the two adults, Burial 4 was identified as a female, but Burial 6 was too fragmentary for the sex to be determined. Burial 4 was the only skeleton yielding reliable data not only as to sex, but also as to position and orientation. It was compactly flexed and lay on its back with its head to the southwest. The notes seem to indicate that the infant burials were tightly bundled as were those at Site 20 on the McCloud River.

Burials and Associated Objects, Redding 1

Burial	Depth (inches)	Age	Associated Objects
1	30	Infant	Pine bark slabs in grave
2	50	Infant	1 spire-lopped Olivella bead, 1 Haliotis shell with perforation
3	90	Infant	None
4	87	Adult	ca. 12 spire-lopped Olivella beads, 1 Haliotis ornament, 2 baked clay (?) objects
5	66	Infant	15 <u>Glycymeris migueliana</u> ornaments
6	66	Adult	(?) Disturbed, probably when Burial 5 interred.

By comparison with the richly furnished burials at Site 20, those at the Redding mound appear rather poor. There is also a difference in closeness of spacing of burials, which leads one to believe the trench excavated only passed along the fringe of a cemetery. Burial grouping similar to that recorded both ethnologically and archaeologically for the Wintu group to the north would be expected, particularly since the same practices were also recorded ethnologically for the Valley Maidu to the south.² There were no articles of non-Indian manufacture in any of the graves, but the bark slabs covering Burial 1 may indicate contact with white culture. Conversely, the slabs are a standard feature in northwestern California Indian culture, and so may represent an influence derived from that area.

Artifacts of Stone

Pestles. Pestles from Redding Mound 1 are relatively numerous. Materials used include andesite, lava, old conglomerate, sandstone and serpentine. At least three types are represented: Types B1, B2, and B5.3 Forms approaching Type B2 are most common, while Type B5 is represented by a single distal fragment.

Elongate river cobbles, either unaltered or only slightly trimmed for use as pestles, are more common than carefully manufactured pestles at this site in contrast to the Shasta Lake area. Only 3 complete specimens and 5 fragments of carefully made pestles were found at Mound 1. The largest complete pestle is 435 mm. long; the smallest 93 mm. The longer tool is somewhat tapered at the distal end, the maximum diameter, 64 mm., being 35 mm. from the base. In this it resembles several pestles from Site 20.

Three elongate river cobbles ranging from 65 mm. to 55 mm. in length, certainly were used as pestles, and 3 more, with lengths from 54 mm. to 182 mm., were used either as pestles or hammers, perhaps as both.

Hoppered Mortar Stones. Eight discoidal small boulders, used as bases for hopper baskets, resemble very closely those described above on page . The largest of these is 430 mm. in diameter, the smallest 254 mm. It is possibly significant that only 1 of these was found at a depth in excess of 48 in. (82 in.).

Hammerstones. Elongate cobbles of sandstone, serpentine, metamorphosed lava, conglomerate, or basalt were used as hammers. There are 4 shapes, as follows: simple elongate, elongate with 2 sides flattened, flattened pear-shape, oval in cross section.

Five of the simple elongate cobbles, one slightly trimmed along one edge, range from 101 mm. to 235 mm. in length.—

Similar specimens with 2 sides flattened are represented by 3 complete hammers and 1 fragment. The longest of the complete artifacts is 140 mm. long; the shortest 130 mm.

Six cobble hammers, of a flattened pear-shape similar to those described for the McCloud area (supra) range in length from 128 mm. to 157 mm.

A single hammer, 140 mm. long, oval in cross section, is trimmed all over for smoothness. The pounding end is smaller than the body, indicating a specialized use.

Stone Balls. Two carefully manufactured stone balls, one 57 mm. in diameter, the other 71 mm., were found at depths of 84 in. and 80 in., respectively. The first is of andesite, the second of a fine grained igneous rock, probably diorite. Both are almost perfectly spherical.

Whetstone. A fragment, 113 mm. long, of a sandstone abraded, representing probably somewhat more than half the complete piece, was found at a depth of 30 in. Almost the entire upper surface is abraded, resulting in a roughly boat-shaped form. Its maximum width is 50 mm., its maximum thickness 21 mm.

Discoidal Cobbles of Uncertain Use. Three discoidal cobbles of rather uniform size -- approximately 130 mm. to 145 mm. in diameter, 40 mm. to 45 mm. in maximum thickness -- were found at depths of 38 in. and 48 in. All have small areas on the edges trimmed, probably to produce a more rounded form, and all have one very flat smooth surface. There are no striations on these surfaces or other evidence of abrasion such as would appear on an artifact used in grinding. Nor is there evidence of their use as hammers. All, however, show the effect of fire. Possibly they were used in some specialized cooking technique.

Chipped Points. Following established typologies, there are 6 point types represented from Redding 1: SAA, SAb, SAbl, SBb, SBbl, and SCb2, with a total of 88 specimens. All are of obsidian except 2 which are of chert, one of the indigenous black variety, the other of Franciscan chert.⁴ All are small and light, ranging in length from 20 mm. to 33 mm., and in weight from 0.5 gm. to 2.2 gm.

Categorizing these as was done for the McCloud specimens, it is found that all are of the stemmed class, and that Groups 2, 3, and 5 only are represented in the number of 29, 41, and 6 points respectively. An additional 12 point fragments are unclassifiable but are probably of either Group 2 or Group 3.

Seventy-five of the total of points came from stratigraphic levels, with the majority of these occurring between the depths of 48 in. and 90 in. There is an apparent higher frequency of the unserrated examples in the levels between surface and 60 in., with the serrated points (Types SAbl and SBbl) being slightly numerically preponderant below this depth. The field notes do not supply data permitting elaboration of this situation.

Artifacts of Bone and Antler

Awl. In direct contrast to sites in the Shasta Lake area, bone tools were abundant at Redding Mound 1. At least three types of awl are represented in the collection; most numerous are simple splinters, sharpened and polished at one end. Of the nine complete awls of this type, one was perhaps used as a flaking tool. In addition there are five fragments at least some of which perhaps were originally only splinters. The complete specimens range in length from 34 mm. to 82 mm. The fragments are all longer, the shortest 71 mm. long, the longest 107 mm., and the pointed ends are more blunt indicating a use different from that of the complete awls. This group does not match any of Gifford's types.⁵

The second type of awl is of deer cannon bone with a portion of the articular end intact (Type AlblV); there are seven of these, ranging from 42 mm. to 145 mm. in length.

The third type, represented by a single specimen, is of deer cannon bone with the entire articular end intact. It is 109 mm. long.

Fish Spear Points. Twelve complete bipointed fish spear points of the type described on page for Site 20 were recovered from Redding Mound 1. Seven of these are markedly broader near one end than the other, and Gifford figures two of them as Type T1f.⁶ In addition there are 7 fragments, most of which were probably once similar in shape. The complete specimens range in length from 23 mm. to 53 mm., and the fragments from 22 mm. to 37 mm.

Gaming Bones. Four carefully shaped pieces of bone and antler undoubtedly represent game bones of the type used in the widely distributed "hand game." All are rounded-rectangular in transverse section; one is of antler, the other three of unidentified bone. These last fit Gifford's Type S. The antler specimen has no identifying marks or striations; the bone pieces range in length from 35 mm. to 58 mm., with widths and thicknesses comparable to the dimensions of the antler piece: 14 mm. wide, 5 mm. thick. Two of these are each marked with striations or grooves across the short axis of the bone. The other specimen is plain, like the antler piece.

One thin, polished piece of bone poses a problem. It is only 3 mm. thick, is 37 mm. long and 6 mm. wide. All surfaces are covered with longitudinal striations with, at each end, numerous short striations at right angles to the longer ones, giving each rounded end a roughened appearance. This piece, although quite different, is possibly a variant form of the game bones described above.

Bone Pendant. A fragment of bone pendant 71 mm. long, 24 mm. wide, and 5 mm. thick, perforated 6 mm. from the proximal end, was found at a depth of 51 in. One side has a series of groups of short incised lines along each edge, beginning 36 mm. from the proximal end. The opposite side is plain. The distal end has been broken away, but it is probable that the complete artifact was roughly rectangular in form. In the central Sacramento-San Joaquin Valley region perforated incised bone pendants have been considered unique to the Middle Horizon.⁷

Antler Tines. Five antler tines, broken from the head, cut off, or picked up after shedding; both complete and fragmentary; show no usage. A sixth piece, split longitudinally, perhaps deliberately, may have been smoothed, particularly toward the point.

Artifacts of Shell

Artifacts of shell from this site are not numerous. Three of the six burials had shell beads or ornaments associated; with the infant Burial 5, there were 15 ornaments of *Glycymeris migueliana*⁸ perforated by horizontal abrasion at the top near the umbo (Type D9). Gifford describes their extensive use in historic times by the Indians of northwestern California.⁹ Their presence at Redding is indicative of trade from that direction. Three other ornaments of this type were found at depths ranging downward to 94 in.

Field notes record "Olivella beads" also with Burial 5, but none in the collection are catalogued from this burial. Burial 4, however, had 12 spire-lopped Olivella biplicata (Type F5b), and Burial 2 had one. Three other beads of this type were found at depths from 40 in. to 60 in.

With Burial 4 there was also a Haliotis ornament, badly eroded, roughly rectangular in outline with one perforation near each end (Type U7a). The other Haliotis object recovered from this mound was a nearly complete shell, perforated, possibly for use as an ornament, which was associated with Burial 2.

Conclusions on Site Sha-47.

The vertical distribution of artifacts from the trench dug at Redding Mound 1 either indicates a very warped picture from a sample which was too small, or there were factors at work which have not been recorded elsewhere in the region. More than 75 per cent of all artifacts came from the lower 60 per cent or less of the mound. It would be unwise to draw conclusions based on stratigraphy, regarding these artifacts.

Resemblances to the archaeology of central California are apparent to a degree. Bone awls are common to both, and many of the arrowpoints are, in general, not unlike many from the Late Horizon of the central Sacramento-San Joaquin Valley. Considerable use of antler is another feature common to both areas, as well as to the region of northwestern California.

A few projectile points with extended tips demonstrate a relationship to cultures to the north, as do the discoidal hopped mortar stones and the flattened pear-shaped, almost spatulate, hammerstones. Bipointed bone fish spear points also may be considered as being more common to the north than to the south of this site.

Many archaeological items are absent, but the collection is so small that negative evidence should not be considered. It is safe to say, however, that the collection from Redding Mound 1 indicates a culture marginal to both northern and central California, with a resultant mixture of traits from both areas plus items penetrating from the west.

Much more extensive work is necessary before an accurate appraisal is possible.

Notes to Appendix

- ¹ Du Bois, pp. 6-8.
- ² Voegelin, p. 137, 230.
- ³ Lillard, Heizer and Fenenga, p. 10, 11.
- ⁴ Heizer and Treganza, p. 314, give approximate distribution of the Franciscan cherts.
- ⁵ Gifford, 1940, p. 222. All bone and shell types are after Gifford, 1940, 1947.
- ⁶ Ibid., p. 176, 221.
- ⁷ Lillard, Heizer and Fenenga, p. 78.
- ⁸ Midpoint of natural range of G. migueliana is Cape Mendocino.
- ⁹ Gifford, 1947, p. 9, 69.

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Abbreviations

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SI-MC	Smithsonian Institution, Miscellaneous Collections
UCAS-R	University of California Archaeological Survey, Reports
UC	University of California Publications
-AR	Anthropological Records
-PAAE	American Archaeology and Ethnology
-PG	Geography
-PZ	Zoology
UW-PA	University of Washington, Publications in Anthropology

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Plate 1. Sites and excavations in the Shasta Dam area.

- a. R.K. Beardsley exposing burial in cutbank of Site 35.
- b. Dancehouse pit at Site 13, view south. Fallen timber lies along west side of bottom of corridor entrance.
- c. Site 22 (midground) from north end of Site 21, view east. Fence encloses historic cemetery. Backeldirt from Trench 1 can be seen behind oak tree to right of cemetery.
- d. Trench 1, Site 21, view east. An additional 6 ft. by 12 ft. was later dug at the northeast corner.
- f. Site 20 (midground) with cover of Ailanthus altissima, view north-east.
- g. Site 20 (midground), view southwest. Trenches I and II lie in the center of the picture.
- h. Burial 4, Site 20, with some of the associated artifacts: slate palette fragments, shaft smoothers, slate pendant or needle, "killed" pestle. Trowel points north; scale is in inches.
- i. Another view of Burial 4, Site 20.
- j. Burial 6B, Site 20.
- k. Burial 23, Site 20, (renumbered from 01). Skull rests on small river boulder; lump to left of skull contains bones of very young infant.
- l. Burial 8, Site 20, one of the disturbed burials, showing result of practice of removing and reintering bones encountered while digging a grave. The central of three skulls in a north-south line is not visible.

Fig. 1. Artifacts from Shasta Dam area Sites.

(Specimens a-c are natural size; d. is twice natural size.)

a-b, d-l. Representative examples of projectile points.

c. Drill point.

m-o. Blades.

Numbers refer to UCMA catalogue numbers. All specimens are natural size.

- (a. 1-62690; b. 1-62560; c. 1-62427; d. 1-63421; e. 1-64506;
 f. 1-63159; g. 1-63134; h. 1-63234; i. 1-63205; j. 1-63603;
 k. 1-62611; l. 1-63322; m. 1-62585; n. 1-62676; o. 1-62554)
 p. Steatite pipe. (1-62709)
 q. Pumice shaft smoother. (1-62671)
 r. Sea-mammal canine tooth. (1-62694)

Fig. 2. Typology of projectile points, Shasta Dam area.



a



b



c



d



e



f



g



h



i



08 B

j



k



l

Plate I. Shasta Dam area sites and excavations

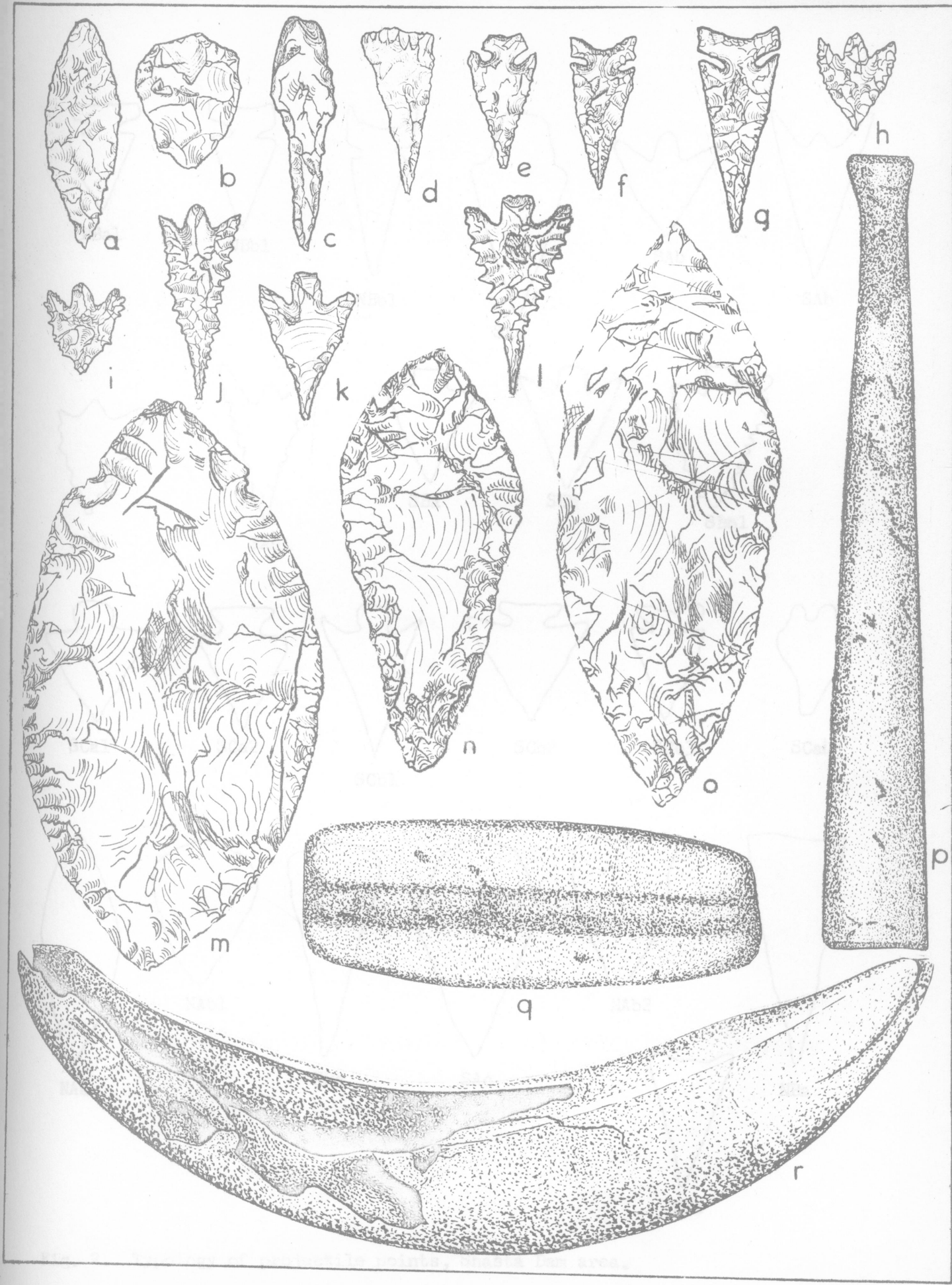


Fig. 1. Artifacts from Shasta Dam area sites

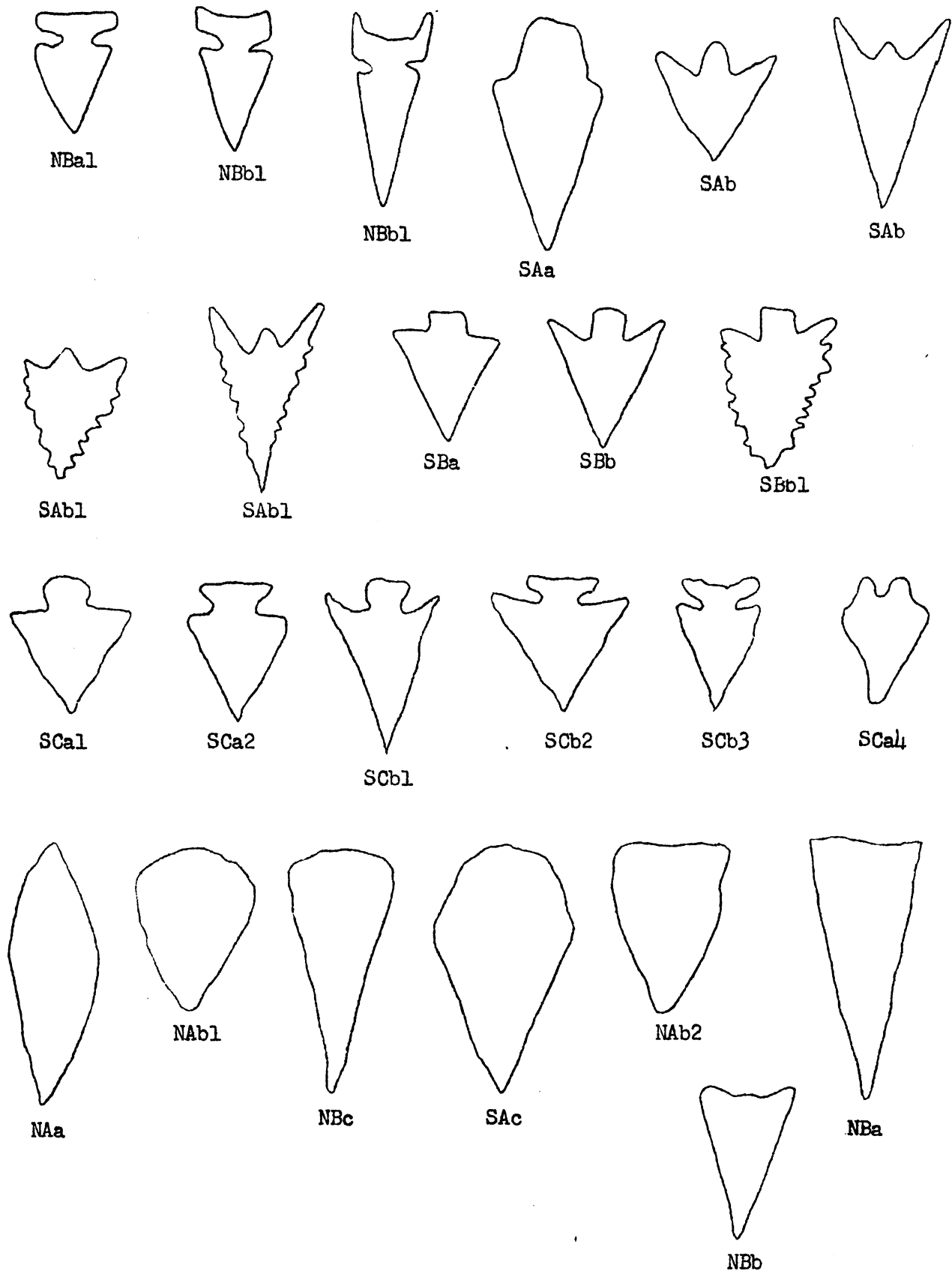


Fig. 2. Typology of projectile points, Shasta Dam area.