AN ABSTRACT OF THE THESIS OF

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Title: Archaeological Investigations at the Marial Site (35CU84) Curry County, Oregon

Abstract approved: Richard E. Ross

Evidence recovered from the Marial site (35CU84) on the lower Rogue River in southwestern Oregon will provide a much needed source of archaeological data for the region of southwestern Oregon. It exists as a deep, multicomponent, C14 dated site in a region typified by single component sites and a lack of C14 data. To date seven discreet cultural components have been discovered at Marial, three have yielded C14 dates (2810±50BP, 5850±120BP, 6485±80BP, 8560±190BP) and six contained distinct projectile point types clustering within well defined temporal spans. A chronological model of the projectile points recovered at the Marial site is presented here, along with a comparison of these types to other similar point styles in the region.

Archaeological Investigations at the Marial Site (35CU84), Curry County, Oregon

by

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(35CU84), Curry County, Oregon

Chapter 1 INTRODUCTION

The Marial site (35CU84) is a multicomponent prehistoric aboriginal site located on the lower reaches of the Rogue River in southwestern Oregon. Oregon State University has been conducting research along the Rogue River and in other areas of southwestern Oregon for several years. The ongoing excavations at the Marial site are an integral part of this regional study. The long term research goals of the work at Marial are:

(1) to establish a dated sequence of cultural components, the assemblages from which will typologically cross date similar projectile point styles from as yet undated prehistoric sites in southwestern Oregon;

(2) to discern prehistoric human use of the Rogue River corridor as well as diffusion of cultural ideas through the region of southwestern Oregon and possibly beyond;

(3) to add to existing data concerning which ethnographic group or groups actually utilized the territory around Marial. This issue has yet to be resolved up as the site lies in the "gray" area between the territory of the Lowland Takelma (Penutian speakers) and Athabaskan speaking peoples.

The research objectives of this thesis are threefold and differ somewhat from the long range project objectives. They are 1) to present the data recovered from the 1984 excavations of the site, 2) to create a chronological model of the projectile point types recovered from Marial during both the 1983 and 1984 field seasons, and 3) to compare the projectile point types from Marial

to those recovered from other archaeological sites in the region of southwestern Oregon.

David Hurst Thomas (1981:7) states that contemporary American archaeology has three primary and sequentially ordered objectives: 1) definition of cultural chronologies, 2) reconstruction of prehistoric lifeways, and 3) explanation of cultural processes. Thomas feels that in this new age of "Explanation" (Willey and Sabloff 1980) with the emphasis on processualism, many archaeologists "jump the gun" in their rush to explain processes, thus, failing to take time to establish the proper archaeological foundation built by objectives 1) and 2).

The immediate goals of this thesis lie in the realm of objective 1), definition of cultural chronology, in order to lay the proper foundation for the realization of objectives 2) and 3) in future work at Marial. It was decided that the most feasible and appropriate form of chronology for Marial was a projectile point chronology due to the large sample size of points recovered from the site, as well as the long term survival rate of points in poor tauphonomic conditions and their demonstrated temporal sensitivity manifested in morphological changes.

Baumhoff (1982:1) notes that it has been long customary for archaeologists to rely upon time sensitive artifact types as primary dating tools. He states, "It is a well recognized fact that for any given area, artifacts having certain formal characteristics occur at some time but not others" (Baumhoff 1982:1). Projectile points are an artifact class that will undergo morphological changes through time and are, therefore, temporal indicators.

The physical properties of the Marial site offer ideal conditions for the formulation of a site-specific projectile point chronology. To date, seven well defined, discrete cultural components have been located in Marial's soil stratigraphy. Three of the cultural components have C14 dates associated with

them and six of the components have distinct projectile point types that cluster in and around them. The C14 dates place a temporal control upon the cultural components and the artifact assemblages within them.

The first step in the formulation of a site specific projectile point chronology for Marial was the formulation of a descriptive typology based upon common or shared morphological attributes (Steward 1954). Once this morphological typology was created, each individual type was then tested for temporal significance against the independent stratigraphic and C14 data. This was accomplished by plotting the occurrence of each projectile point type onto a map of the soil horizons, the time span of which had been discerned by the C14 data. If a particular point type was found to cluster around a particular stratum or strata, this was considered to be an indication of the occurrence of a temporal type, i.e., a projectile point type occurring within a defined period of time.

The significance of a projectile point chronology for Marial extends well beyond the site itself to encompass the entire region. Southwestern Oregon is a region that presently lacks a comprehensive cultural chronology. To date, the archaeology of the region is characterized by single component sites and a lack of C14 dates. Lyman (1985:4.9) has observed that despite more than 50 years of archaeological research in the region, a well synthesized projectile point chronology has yet to be formulated. However, within the single component sites of southwestern Oregon lie the building blocks of such a regional chronology, but these components must first be synthesized into phases consisting of similar components manifested at one or more sites within the region (Willey and Phillips 1958). Although the formulation of a regional projectile point chronology is beyond the present scope of research at Marial, the formulation of a site-specific point typology for the site will contribute significantly to its eventual formulation.

A multicomponent, C14 dated site such as Marial is a rare and significant find within the archaeological region of southwestern Oregon. Data obtained from the research at Marial will contribute much to the knowledge of the prehistory of the region.

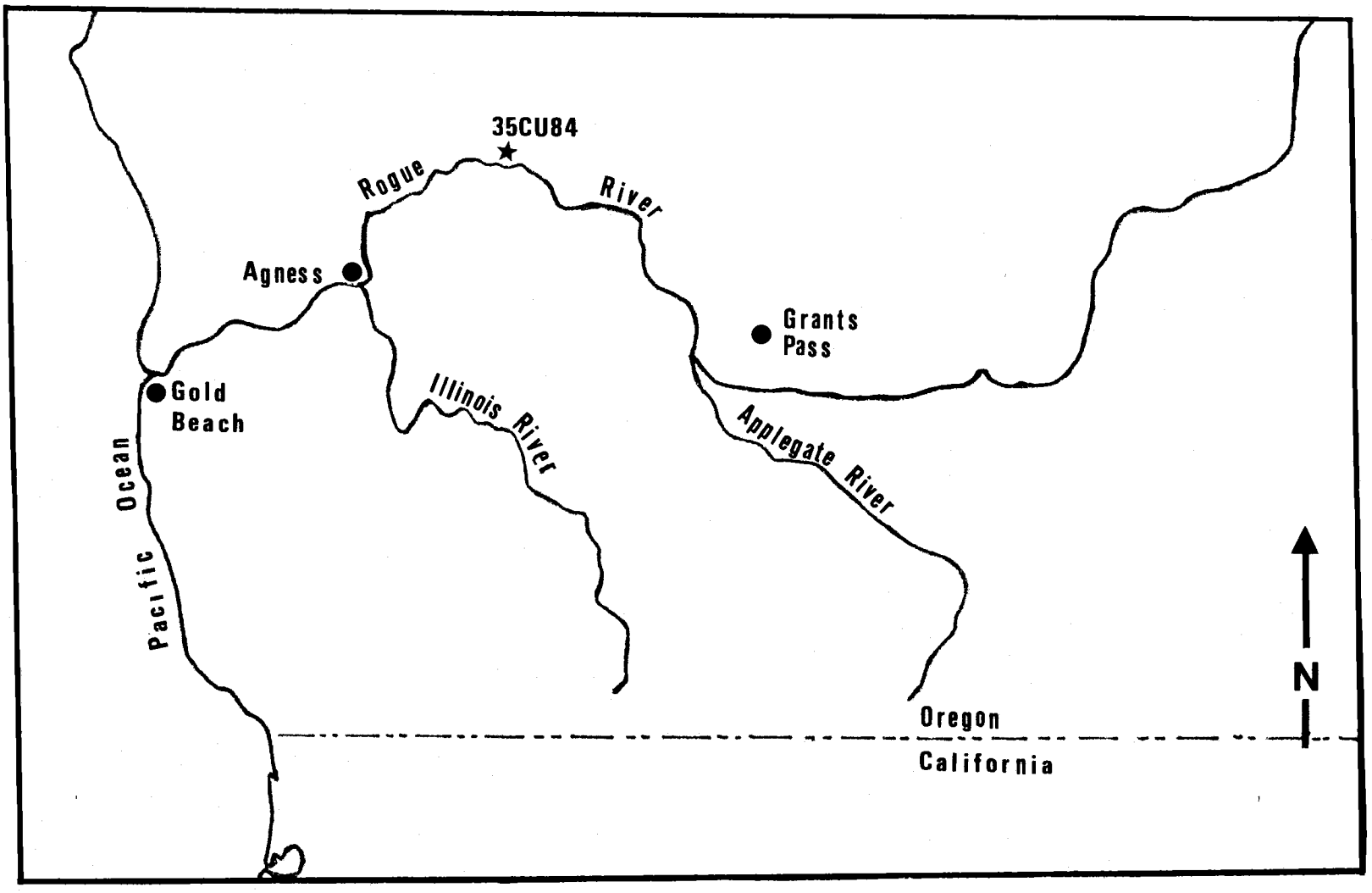

Figure 1. Southwestern Oregon.

Chapter 2 ENVIRONMENTAL SETTING

The Marial site lies within the Klamath Mountain geologic province which is characterized by steep topography, dense vegetation, and a structural complexity resulting in a confusing geological record (Highsmith and Kimerling 1979:35). The underlying geological formations contain both Paleozoic and Mesozoic volcanic and sedementary rock (Baldwin 1964:66). These formations have since then been folded, uplifted and dissected by erosion.

The topography of the region is characterized by canyons and ravines which channel drainage systems. Elevations within the province range from sea level to 7500 feet. Outcrops of serpentine are common to the area and result in unique geological formations and plant communities (Baldwin 1964:69-70).

The climate of the region is moderate with an annual rainfall average of 25 to 50 inches. Although temperatures are usually moderate, extremes regularly occur in the canyons of the Rogue where summer temperatures may surpass 100 degrees for several successive days. Winter snowfall occurs in the higher elevations of the region (Highsmith and Kimmerling 1979:46-47).

The Rogue River is a major drainage system within the region, and is one of two rivers which drain the Klamath Mountains, the other being the Klamath River 60 miles south (Greenspan 1979:1).

The Marial site is located on the lower Rogue River, near the point where Mule Creek flows into the Rogue. The site lies on what is referred to as the "West Field" of the Rogue River Ranch, west of the main building complex, and across Mule Creek. The West Field is an ancient river terrace bound by wooded slopes to the north and west, Mule Creek to the east, and the Rogue

River to the south (Fig. 2). The legal description is the NW 1/4 of the NW 1/4 of the SE 1/4 of Section 9, Township 33 south, Range 10 west, Willamette Meridian. UTM coordinates are Zone 10 and 427,650 Easting and 4,729,400 Northing. The approximate elevation of the site is 400 feet above sea level.

Griffin (1983:7) notes that the site lies on the portion of the Rogue River located between China Bar Rapids to the east and Blossum Bar Rapids to the west. This quiet water between rapids provides a resting place for migrating salmon and would have been a productive fishing area for native peoples. At present exploitable fish species include:

Steelhead (Salmon gairdneri)
Chinook salmon (Oncorhynchus tshawytscha)
Coho salmon (Oncorhynchus kisutch)
Sea-run cut throat trout (Salmon clarkii)

According to the ethnographic record, freshwater mussels found in the river were also gathered for food (Sapir 1907). Mammals available as a food or clothing source in the area include:

Black-tailed deer (Cervus lewisii)
Roosevelt elk (Cervus canadensis roosevelti)
Black bear (Ursus americanus)
Mountain lion (Felis concolor)
Bobcat (Lynx fasciatus)
Racoon (Procyon lotar)
Beaver (Castor canadensis)
Otter (Lutra canadensis)
Rabbit (Sylvilagus bachmani)
Silver grey squirrel (Siurvus griyseus)
Weasel (Mustela frenata)
Townsend's chipmunk (Eutamias townsendii)
Siskiyou chipmunk (Eutamias townsendii siskiyou)

Camas pocket gopher (Thomomys bulbivorous)
Grey-tailed meadow mouse (Microtus canicandus)
(Bailey 1936).

Other readily available food sources include various rodent, reptile and insect species.

Griffin (1983:8) noted that the vegetation zone is one of mixed evergreen, mixed conifer, and oak woodland forest with a brushy understory. The predominate species include:

Sugar pine (Pinus lambertiana)
Douglas fir (Pseudotsuga menziesii)
Tan bark oak (Quercus kelloggii)
Oregon white oak (Quercus garryanna)
Mountain mahogany (Cerococarpus sp.)
Madrona (Arbutus menzieii)
Manzanita (Arctostaphylos sp.)
Golden chinquapin (Castanopsis chrysophylla)
Buckbrush (Ceanothus cuneatus)
(Franklin and Dyrness 1969).

Greenspan (1979) observed Oregon maple (Acer macrophyllum), red alder (Alnus oregona), and California laurel (Umbellularia californica) growing along the banks of the Rogue River.

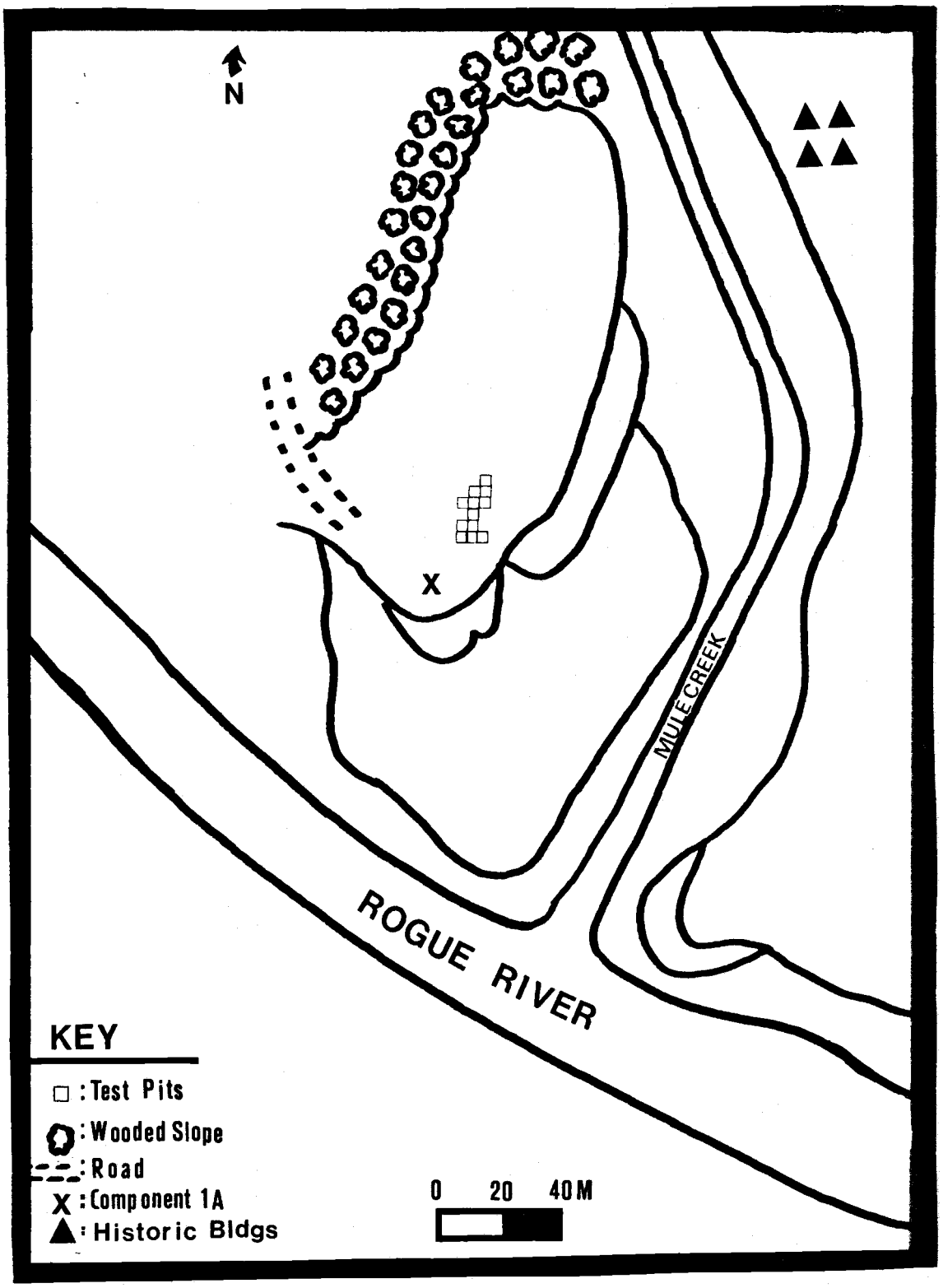

Figure 2. Environmental Setting (after Griffin 1983:24)

Chapter 3 ARCHAEOLOGICAL BACKGROUND

Very little is known about the prehistory of the lower Rogue River. From Galice Creek to Gold Beach 65 miles downstream on the coast, approximately 20 sites have been recorded but only three have been scientifically examined (Griffin 1983). These are Tlegletlinten (35CU59), Blossum Bar (35CU143), and Marial (35CU84).

The Tlegletlinten site is located near the town of Agness, Oregon, 30 miles upriver from the coast. It is situated on a terrace overlooking the confluence of the Illinois and Rogue River. The site was an important late prehistoric/historic village site occupied by the Shasta Costa band of Athabaskans (Dorsey 1890) and was recorded by Joel Berreman (1937). Information from Berreman and local relic collectors revealed a late occupation level on a low river terrace (Pullen 1981), but this component was apparently destroyed by a major flood in 1964.

Oregon State University test excavated the site in 1982 and uncovered an older component containing predominately large lanceolate point styles (Tisdale 1986). Similar styles have been located at 35JA52 on the Applegate River where they were tentatively dated from 4000 to 8000 years BP (Nisbet 1981). Typological cross dating of the lanceolate styles would tentatively date Tlegletlinten from 4000 to 8000 B.P.

Blossum Bar is located 20 miles upstream of Tlegletlinten and was also excavated by Oregon State University in 1982. The site was dominated by the Gunther Barbed projectile point style that was prevalent 500 to 700 years ago in southwestern Oregon and northwestern California.

Marial is located three miles upriver from Blossum Bar and was test excavated in 1978 and 1982 by the BLM, and in 1983 and 1984 by Oregon State University in a cooperative agreement with the BLM. Marial is a highly stratified, multicomponent site with a late Gunther Barbed component and C14 dates ranging from 2810 BP at an upper cultural zone to 8560 BP at the lowest cultural zone. Point styles from Marial are similar to both Tlegletlinten and Blossum Bar as well as other coastal and interior sites in the region (Griffin and Schreindorfer 1984).

In a survey of the Rogue River from Grave Creek to Mule Creek, Susan Nielsen (1978) discovered several lithic scatters, firecracked rock, and two stone ring features. Beckham (1978) has interpreted similar stone rings along the lower Rogue River as spiritual vision quest sites.

Local loggers report finding many lithic scatters on the ridge tops high above the river.

Several archaeological sites and localities have been located on the middle and upper portions of the Rogue River. The Ritsch site (35J04) is situated near the town of Grants Pass at the confluence of the Rogue and Applegate rivers. It was excavated in 1977 by Oregon State University and two distinct cultural components were found. Component I was characterized by the presence of a concave base style usually associated with late prehistoric shell midden sites on the coast. These concave base points were found exclusively in Component I. Wilson (1979:56) postulated that the presence of this style may indicate close affiliations with the coast at this period in time. A C14 date of 460±90 BP was obtained for this component.

An older component was located and contained two housepits and predominately triangular blade, corner to basal notched point styles. Component 2 yielded three C14 dates averaging around 1400 BP (see Table 1).

The Gold Hill site (35JA130) was excavated in 1930 and 1931 by Luther Cressman and represents the first archaeological investigations of the Rogue River area. The site was located on the south bank of the Rogue River opposite the town of Gold Hill.

Two components were discovered. The lower levels of the site contained flexed human burials associated with large obsidian blades, leafshaped projectile points, and stone mortars and pestles. Cressman estimated this level to be at least 2000 years old (Cressman 1933a:22).

The upper levels contained flexed burials without obsidian blades, Gunther Barbed style points, and tubular stone pipes. Cressman estimated that this site was "pre-white" but did not give it a more specific time frame (Cressman 1933a:22).

The Elk Creek and Lost Creek sites were sampled by Wilbur Davis (1968a, 1968b, 1970, 1974, 1983) and David Brauner (Brauner and Honey 1979; Brauner and Lebow 1983). A variety of projectile points were found at these sites, including large serrated leafshapes, side notched and stemmed varieties, and Gunther Barbed types. These styles have been typologically cross dated and range from 7000 BP to the historic era. Three C14 dates were obtained from this area. 35JA6 at Lost Creek yielded a date of 290±80 BP which dated concave base and small corner removed and basal notched point styles, as well as a 550±80 BP date found in association with Gunther Barbed point styles. 35JA19, also at Lost Creek, yielded a date of 830±75 associated with Gunther Barbed and desert side notched styles. 35JA26 at Elk Creek was C14 dated 1250±90 BP. The date was found in association with Gold Hill

leafshaped styles as well as side notched varieties (Davis 1983:78). Site types include village sites, quarry sites, burial sites, and seasonal hunting/resource gathering camp sites (Davis 1983).

The Applegate drainage system has been extensively excavated by David Brauner (Brauner 1983; Brauner and Lebow 1983; Brauner and McDonald 1983, Brauner and Nisbet 1983). Site types have ranged from historic dump sites and protohistoric housepits to various stages of prehistoric sites ranging back as far as a pre-8000 BP site which Brauner feels may represent the pioneering population into the Applegate area (Brauner and Nisbet 1983).

Site 35JA52 on the Applegate is of particular interest to research at Marial. This single component site yielded a projectile point collection dominated by large, heavily serrated leafshaped type very similar to those found in Component 3 at Marial. 35JA52 has been tentatively dated 4000 to 6000 years BP (Nisbet 1981).

Projectile points recovered from the sites discussed above were frequently morphologically similar to those recovered from the Marial site. This seems to indicate that similar styles were utilized region wide despite cultural boundaries. This matter will be more thoroughly discussed in Chapter 7.

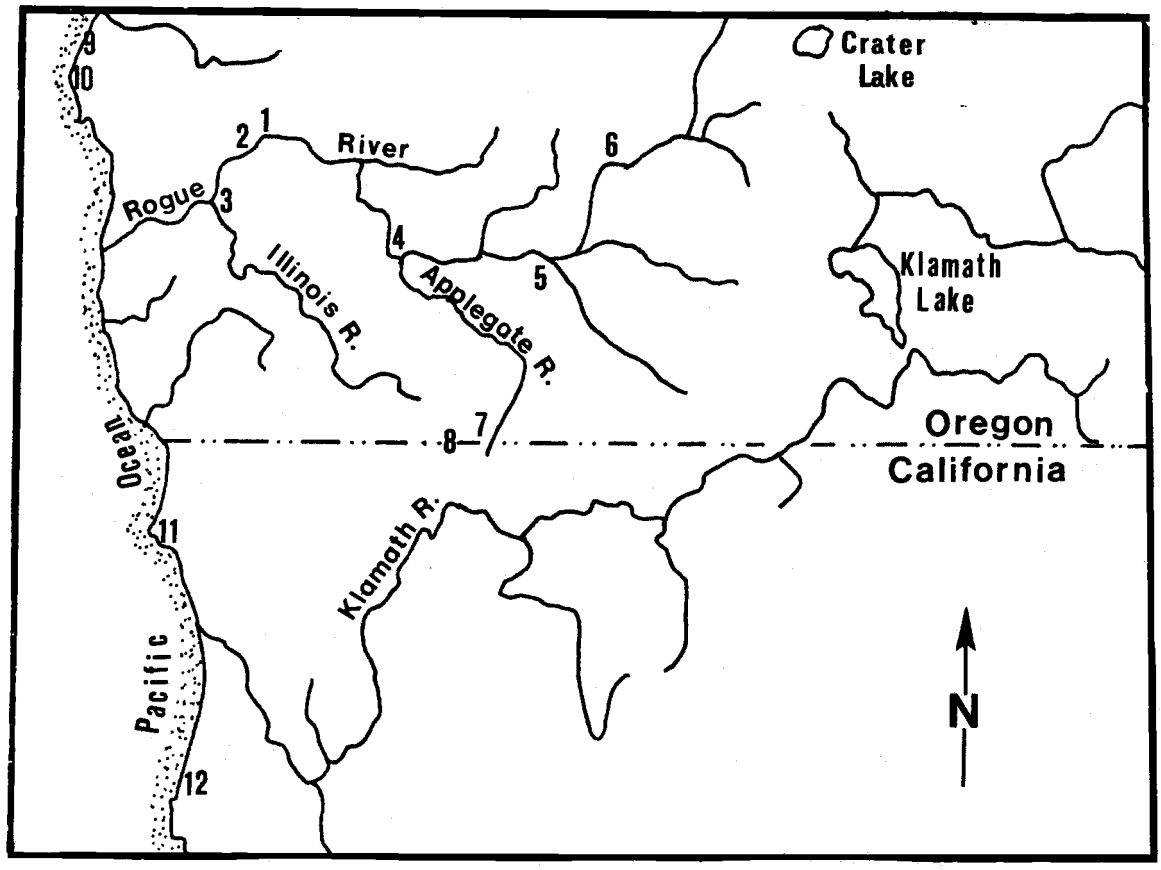

Figure 3. Location of Archaeological Sites.

1. Marial (35CU84)
2. Blossum Bar (35CU143)
3. Tlegletlinten (35CU59)
4. Ritsch Site (35JO4)
5. Gold Hill (35JA130)
6. Elk Creek/Lost Creek Sites
7. Applegate Sites (35JA52 and 35JA47)
8. Salt Cave Locality
9. Whiskey Run (35CS62)
10. Blacklock Point (35CU75)
11. Point St. George (4DNO11)
12. Gunther Island (4HUM67)

TABLE 1

Rogue River Radiocarbon Dates

Site	Date	Associated Projectile Point Styles
Lost Creek 35JA6	290±80	Triangular concave base; small corner removed and basal notched stemmed.
Ritsch 35J04	460±90	Triangular concave base.
Lost Creek 35JA6	550±80	Gunther Barbed.
Lost Creek 35JA10	830±75	Gunther Barbed; desert side-notched.
35JA100	1150±85	Gunther Barbed.
Ritsch 35J04	1150±100	Gunther Barbed, small corner removed and basal-notched stemmed.
Elk Creek 35JA26	1250±90	Gold Hill leafshaped; medium-sized side notched.
Ritsch 35J04	1400±80	Gunther Barbed.
Ritsch 35J04	1470±100	Small corner removed and basal notched stemmed.
Marial 35CU84	2810±50	Small basal, corner, and side notched, stemmed.
Marial 35CU84	5850±120	Large leafshaped, Gold Hill leafshaped.
Marial 35CU84	6485±80	Large leafshaped.
Marial 35CU84	8560±190	Large Leafshaped.

(Information presented for all sites except 35CU84 was obtained from Lyman 1985: Table 4.8 and reprinted with the author's permission.)

Chapter 4 ETHNOGRAPHIC BACKGROUND

The exact identity of the Indian group utilizing the Marial site at the time of contact is not known. Marial lies in a "gray" area between the Lowland Takelma (Penutian speakers) to the east and the Shasta Costa band of Athabaskan speakers to the west (Fig. 4). The early ethnographic literature is both conflicting and vague regarding territorial boundary lines and does little to resolve the issue.

Sapir (1907:251) wrote that the determination of the exact area occupied by the Takelma is "a matter of some difficulty." He defined the western boundary of the Lowland Takelma as "some point between the Illinois River and Galice Creek." This spans a distance of some 35 miles.

Dorsey (1890:234-235) had a local informant explain to him that the Lowland Takelma occupied the south bank of the Rogue River as far west as the Illinois River. Barry (1927:60) also placed the western boundary of the Takelma at the Illinois River but noted that there did not appear to be a definite line marking the end of the Takelma territory and the beginning of lands claimed by the Athabaskans.

Berreman (1937:28) in his article, "Tribal Distribution in Oregon", wrote that the boundary between the Lowland Takelma and the Shasta Costa "is a matter of uncertainty" yet he made no further attempt to resolve the issue.

More recently Dennis Gray, in his 1985 Master's Thesis titled "The Takelma and Their Athabaskan Kin: an Ethnographic Synthesis of Southwestern Oregon," concluded that the western boundary of the Lowland Takelma was at the confluence of Grave Creek and the Rogue River. His evidence came from the notes of J. P. Harrington, an early ethnographer who

noted that the point furthest downriver mentioned by any of his informants was a spot located three miles downriver from Grave Creek (Harrington 1981:509). It was on the basis of this information that Gray designated Grave Creek the eastern boundary line. It is not clear whether Harrington's informants were defining the area near Grave Creek as a boundary line or simply mentioning a name place (in this case a set of waterfalls) three miles downriver from Grave Creek. If the latter is the case, then this evidence is not strong enough to designate Grave Creek as the western boundary.

Since the early Takelman ethnographic literature offers little in the way of a definition of territorial boundaries, it is possible that early Athabaskan literature may shed some light on the subject. Drucker (1936: Map 1) does just this by placing the eastern boundaries of the Shasta Costa near the confluence of the Illinois River and the Rogue.

It seems that in most cases the early ethnographic literature places the boundary line near this point. This would place the Marial site well within the realm of the Lowland Takelma. It is unlikely that the issue will ever be clearly resolved using the evidence from early ethnographic data. It is possible, however, that the issue be resolved with archaeological evidence from the area. The Marial site offers us an excellent opportunity to do so as it lies in the middle of the disputed area, between the two cultural groups. Although this subject is beyond the scope of work of this thesis, this problem is an integral part of the research design for future work at Marial.

Due to the uncertainty as to which ethnographic group actually utilized the site, ethnographies of each group will be presented.

Lowland Takelma

Edward Sapir, an early ethnographer, spent the summer of 1906 at the Siletz Indian Reservation studying native language and culture and recording much of what is known about the Takelma. Unfortunately, by that time few Takelman people remained and those that did were long removed from their original culture. Sapir's primary informant was Frances Johnson, a Lowland Takelma woman who spoke broken English, Chinook Jargon, and Athabaskan. The following information has been obtained from Sapir's research (1907).

The Takelma consisted of two separate subgroups, each speaking a different dialect of the same linguistic stock. The Lowland Takelma referred to themselves as Dagelman or "those living alongside the river" while the Upland Takelma were known as Latgawa or "those living in the uplands" (Sapir 1907:252). Sapir described the Upland Takelma as "less advanced than their downriver kinsmen" (1907:252). This may have been due to the fact that they occupied resource-poor land and were forced to spend more time and energy obtaining food. They were said to be shorter in stature than the Lowland Takelma, they used log rafts instead of canoes, and were more warlike in nature. They often made raids on their western neighbors in order to obtain food, valuables, and slaves whom they sold to the Klamath Indians to the east (Sapir 1907:252).

Takelman territory included most of the watershed of the Illinois River and the watershed of the Rogue River upstream from the disputed western boundary line between Galice Creek and the Illinois River. This territory included two enclaves of Athabaskan speaking peoples residing on Galice Creek and the Applegate River.

Athabaskan speakers also bordered the Lowland Takelma to the west. To the north resided the Upper Umpqua and Southern Molalla, and to the south along the Klamath River were the Shasta Indians to whom the Takelma were culturally similar (Sapir 1907).

The Takelma were fairly sendentary people with a band level social organization oriented toward family and village. Permanent winter villages were often located in the lower elevation river and creek valleys near the confluence of two streams (Gray 1985:75). Each village was economically independent and wealth determined who was politically powerful within the village. Wealth was determined by the possession of wives, houseplanks, canoes, woodpecker scalps, and the much prized dentalium shell obtained through trade from Vancouver Island.

Clothing was made of deerhide and was often decorated with the quills of a porcupine. Personal adornment included the scalps and tailfeathers of the pileated woodpecker, shells, charcoal, paint, and tatoos on the chins of the women and the arms of the men.

Five structural types of housing have been documented for the Lowland Takelma: I) A semi-subterranean winter dwelling consisting of sugar pine boards made into a rectangular plank house, each house had a central fire hearth and a small smoke hole in the roof above it; 2) a bark covered winter house owned by those too poor to obtain sugar pine planks; 3) a men's sweathouse consisting of a semi-subterranean earthen structure that held up to six men at a time, heat was produced by sprinkling water upon hot stones; 4) a smaller version of the men's sweathouse constructed by the women and consisting of a stick frame covered with hides that held two or three women at a time; and 5) summer brush shelters that were used on long distance forages for food and were erected around a fire pit (Sapir 1907:262-263).

The subsistence pattern of the Takelma consisted of hunting game and gathering wild plant foods. In the summer they traveled to fishing sites and berry picking locations some distance from their permanent villages. The quest for food occupied a considerable portion of Takelman time (Beckham 1978:17). The residents of Marial probably utilized the rich riverine environment of the Rogue. The use of salmon and trout species, crawfish and freshwater mussels has been documented (Sapir 1907). Fishing was done with a hook and line, nets, or spears. Canoes were also used to obtain fish (Sapir 1907:260). The men wove the lines and nets and manufactured the hooks from the bone.

The men manufactured projectile points using percussion and pressure flaking techniques. Arrowpoints were hafted onto shafts and used with sinew backed bows. Shafts were carried in either fawn or wildcat skin quivers. During warfare arrow points were often dipped into rattlesnake blood, and elkhide armor was worn for protection.

Land mammals such as deer, elk, and bear were hunted for food. Deer were sometimes caught by driving them into a fenced enclosure made of woven grass. Insects such as grasshoppers and larvae were also eaten.

Plant foods utilized by the Takelma included acorns, camas bulbs, local berries, and sunflower and tarwood seeds. Berries and seeds were pounded with stone pestles and camas bulbs were baked in stone-lined fire-heated pits.

The primary food source of the Takelma was the acorn. Several species exist along the Rogue River, but the black acorn (Quercus kelloggii) was preferred. Sapir (1907:257-258) states that the acorns were first gathered in the spring. It is not clear why the acorns were gathered in the spring when they would have been very small and would have offered little nutrition. Two possibilities exist; 1) the statement is an error on either Sapir or his informant's part, or 2) the spring gathering was ritualistic in nature and a fall gathering was

also done when the acorns were larger and more suitable for eating. Possibility 2 may be feasible when Sapir's exact original statement is considered. He states:

> The first acorns appeared in the early spring, at which time they were gathered and prepared by the women, who, however, were not permitted to partake of them until men had performed a formulaic ceremony and themselves eaten; only then, after the vessels had been washed anew, could the women also take part in the first eating (Sapir 1907:257-258).

Sapir seems to be describing a ritualistic "first eating" which unfortunately has been interpreted in later literature as a spring gathering of the total acorn crop. Although Sapir does not speak of fall gathering, it seems more likely that either he or his local informant were describing a spring ritual and not the seasonal gathering of the entire acorn crop. Once the acorns were gathered, they were then ground into flour with a grinding stone and a basket hopper atop a stone mortar. Tannic acid was leached out by pouring hot water over the flour. The flour was then made into dough which was then stone boiled into mush in a cooking basket (Sapir 1907:258).

The women manufactured several types of twined baskets out of willow and hazel. Large burden baskets were used to carry food gathered while foraging. Other types of rush baskets, wicker cradleboards, small drinking cups and cattail mats were also made. Red and black colors were added to the basketry by using red dye obtained from alder bark and by burying weaving fibers in clay to turn them black (Sapir 1907:260-261).

The men carved spoons from wood and elk horn; needles were made from wood and bone. Fires were started by using a firedrill on a stick to ignite the bark. The only documented musical instrument was a flute made from cut and drilled wild parsnip stems. Tobacco is the only documented cultigen and was

smoked in pipes made of wood or stone. Pipes were sometimes as much as a foot in length.

Athabaskan

The most complete ethnography done on the Athabaskans of southwestern Oregon was compiled by Philip Drucker in 1933 and l934 using informants at Crescent City, California and at Siletz, Oregon (Drucker 1936). In 1937, Homer Barnett compiled culture element distributions along the Oregon coast using Athabaskan informants (Barnett 1937).

Athabaskan territory included the coastal area from Crescent Bay, California north to the Sixes River and inland along major streams. They also held the upper valleys of the Coquille and Umpqua rivers, and formed two enclaves in the heart of Takelma country on Galice Creek and Applegate River. The inhabitants of each drainage system formed a distinct cultural unit, each speaking differing dialects of the same language (Drucker 1936:222).

The Athabaskan group nearest the Marial site were the Shasta Costa band. Drucker (1936: Map 1) places the boundary between Athabaskan and Takelma territory near the confluence of the Illinois and Rogue rivers. Drucker notes that a "river town" was located at this confluence. It was occupied by the "Shasta Costa" and it was one town divided into three parts. He does not explain what he means by this (Drucker 1936:271).

The Shasta Costa were organized into band level social units. Kinship was partilocal with villages consisting of related men and their families (Drucker 1936:273). Wealth determined the social standing of an individual within the society. Indicators of such wealth included dentalium shell imported from Vancouver Island to the north, abalone shells, clamshell disk money,

woodpecker scalps and pine nuts (Barnett 1937:174). Beckham (1978:34) notes that although local informants never mentioned large obsidian blades as wealth items, the archaeological evidence and early photographs taken on the Siletz reservation strongly suggest that these large blades were used as symbols of wealth.

Ethnographic accounts provide little information about clothing, although Barnett (1937:172-173) documented the use of buckskin and cedar bark clothing by the Galice Creek Athabaskans. Both men and women wore basketry hats and the women commonly tatooed their chins similar to the Indians of the Klamath River area.

Three types of housing are documented for the Athabaskans of southwestern Oregon (Drucker 1936:272):

1) A semi-subterranean rectangular plank winter dwelling in which the women and children slept, and where food processing took place; 2) a semi-subterranean sweathouse covered with boards and earth, a structure that held up to seven people and functioned as a sleeping place for men and boys, as well as a place for ritual purification and sweating; and 3) a rectangular grass house constructed to provide temporary shelter at subsistence camps and also occupied by those too poor to afford a plank house in the permanent village.

As with the Takelma, the quest for food demanded a "seasonal round" settlement/subsistence pattern of existence. Permanent winter villages were often located at meadows or bars along the river. During the winter the people survived by using the food they had gathered and prepared in the previous seasons. Winter was a social time in which to attend dances, gamble, and repair gear (Drucker 1936:232).

In the spring they gathered along the river to catch salmon on their spring run. In the summer roots and berries were gathered. In the fall fish, acorns and

upland game were exploited. Each of these resources required traveling to the particular resource and setting up temporary camps in which to live while gathering food.

Drucker (1936:231) stated that salmon and acorns were both important staples in the Athebaskan diet. Fish were caught using wooden weirs, nets on poles, as well as a hook and line. Acorns were gathered in the fall by the women and dried and stored in baskets. When it came time to use them they were ground on a slab mortar, leached in sand with warm water, then cooked into mush (Drucker 1936:235). Camas root was another staple which was gathered in the summer and roasted in pits.

Beckham's (1978:32) research of Athabaskan ethnographic literature led him to conclude that "Living in a more forbidding environment, the Athabaskans of the interior of southwestern Oregon, like their Takelma neighbors to the east, made minor use of some foods not so readily exploited by their downriver kinsmen." Such foods included birds, eggs, small game, grasshoppers, yellow jacket larvae and local seeds (Barnett 1937:165-164).

As with the Takelma, wood, stone, shell, bone, and plant fibers were used by the Athabaskans to manufacture tools. Canoes were made from red cedar and were very similar to those made by the Indians of the Lower Klamath River. River canoes averaged around 3.5 fathoms in length and were smaller than ocean going canoes.

Household utensils and other tools were often manufactured from wood. Examples include yew wood bows, vine maple arrow shafts, as well as wooden digging sticks and cooking troughs (Drucker 1936:272).

The women made extensive use of plant fibers for manufacturing basketry. Hazel bark was used for warp, spruce roots were used for weft, bear grass provided white overlay, while the stripe of maidenhair fern provided black

overlay (Curtis 1924:97). Varieties of baskets included storage and water baskets, as well as cooking and eating basket utensils. Drucker (1936:273) reported that the Rogue River Athabaskans often journeyed to the Tolowa Athabaskans on the coast to trade for women's basketry caps, eating baskets, and trinket baskets.

Conclusion

Several questions need to be answered in the future research at Marial. First, the determination of the exact cultural group utilizing the site at the time of contact would aid in discerning the Takelma-Athabaskan territorial boundary. Once this has been answered, we must then determine how long this particular group utilized the site. Marial shows evidence of intermittent human occupation over a period of 8500 years or more. It is not known, however, if each occupation was related to one another. Was the same cultural group using Marial over this extended period of time, or, do the seven cultural components represent use by several unrelated cultural groups through time? These questions can only be answered with further research.

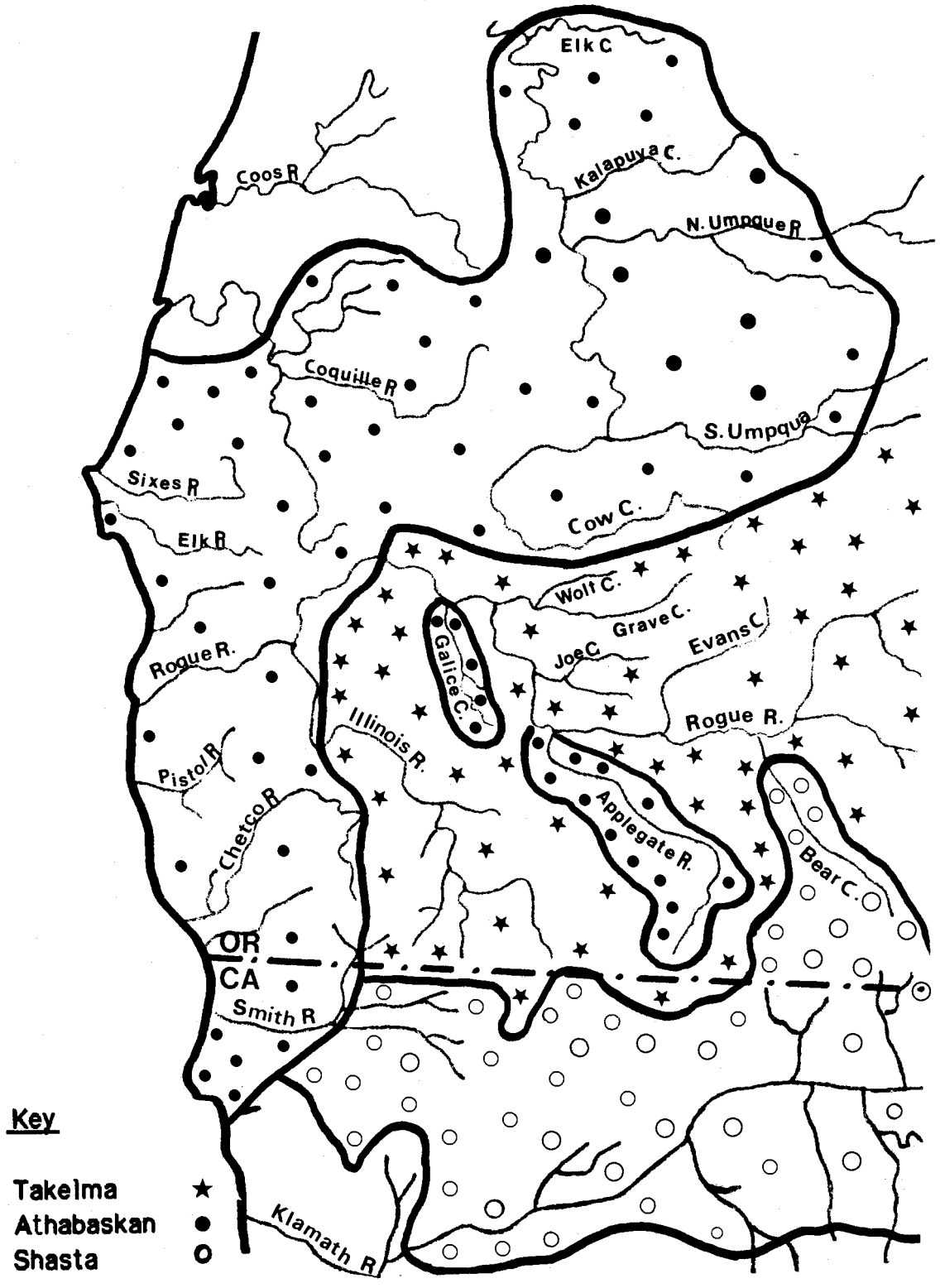

Figure 4. Linguistic Distribution (after Beckham 1978:15)

Chapter 5 HISTORICAL BACKGROUND

Rogue River Wars

Initial contact between natives and white explorers was relatively peaceful, however, this contact introduced diseases into non-immune native populations which eventually resulted in their decimation.

The quest for gold brought a rush of miners into southwestern Oregon in the early 1850's. This instigated violence and hostility between natives and whites culminating in the so-called Rogue River Wars. Protesting encroachment on their native lands and resources, Indians attacked white settlers at Port Orford on the coast in June of 1851. This bloody encounter began a five-year period of intermittent conflicts between natives and whites. In these conflicts the Indians were seldom the aggressors but were almost always vanquished (Beckham 1971).

During the five-year period of the Rogue River Wars, hostilities spread all across southwestern Oregon and involved the Klamath, the Modoc, the Shasta, the Deschutes, and Upland and Lowland Takelma, the Umpqua, and the Athabaskan Indians (Follansbee 1978).

Throughout the years 1851 to 1855, the rugged canyons of Rogue River provided a sanctuary for native peoples while the hostilities occurred all around them. In the spring of 1856, however, Colonel Robert Buchanon, commander of Army Regulars in southwestern Oregon, launched an all out offensive attack against the Indians of the Rogue River canyon. "The stage was set for the final conflicts of the war" (Beckham 1978).

Upon reaching the confluence of the Rogue and Illinois rivers, U.S. Army soldiers and Oregon Mounted Volunteers from Fort Orford burned down Indian villages and battled with the Shasta Costa.

Later that same spring a bloody massacre occurred at Big Meadows near Mule Creek as Army personnel murdered Indian men, women, and children who were attempting to flee in their canoes down the river (Beckham 1971:186).

Shortly after this, the last deadly conflict occurred at Big Bend, 15 miles downstream from Mule Creek. Having received news of the massacre at Big Meadows, the Indians launched a final, futile offensive. The survivors surrendered to Army personnel on May 29, 1856. Later that summer they were torn from their homeland and placed on the Siletz and Grand Ronde Reservations in northwest Oregon.

Mule Creek

The history of Mule Creek is a rich and colorful one. Mule Creek got its name in 1851 when an Army pack mule named John was stolen by Indians on a high cliff overlooking the creek. The creek became known as John Mule Creek (Atwood 1978:65).

Discovery of gold in the area in 1850 brought white prospectors and miners into the canyons of the Rogue River and Mule Creek searching for rich alluvial deposits. During the 1860s and 1870s, groups of Chinese miners worked the bars and creek mouths between Foster Creek and Mule Creek. The Chinese were often harassed and driven from their mining sites by white miners. With the passage of the Chinese Exclusion Act of 1882 most of the Chinese disappeared from the area.

In 1875 a rather ambitious mining venture began near the mouth of Mule Creek. Two brothers, Asher and Solomon Marks, and a partner, built a high trestle bridge and flume across Mule Creek. This operation continued for several years. This claim and others at Mule Creek were purchased in 1906 by the Red River Gold Mining and Milling Company of Indianapolis, Indiana. This lucrative operation continued for six years (Atwood 1978:101).

Settlement of the meadows surrounding Mule Creek began in 1881 when Elijah H. Price constructed a small cabin near the mouth of Mule Creek. It was used for many years after by miners working the area. In the early 1880s the O&C railroad completed a line reaching the west fork of Cow Creek, some 18 miles northeast of Mule Creek, which provided transportation for supplies. After the railroad arrived, the West Fork trail was cleared in order to pack these supplies in to the residents of Mule Creek.

In 1890, George Billings began to mine for gold in the area, and in 1898 he and his family settled into a new cabin in the meadow where Elijah Price's cabin once stood. Billings later constructed a two-story building and a barn. Here he established the Billings Trading Company, which consisted of a small store and packing operation. The Billings Trading Company operated from 1903 to 1930 and became the center of social life for the residents of the Mule Creek area. Kay Atwood (1978:80) describes life at Mule Creek during this era:

> George Billings home served for years as a gathering place on the Rogue River. Miners, packers, and river families stayed there, voted on election day at the trading company, danced above the barn, were born and died in the main house.

In October 1903, Tom Billings became postmaster and named the office Marial after his young daughter. By this time few Indians remained in the area, although some of the white miners and trappers were married to Indian women. Marial Billings maternal grandmother was a Karok Indian from the lower Klamath River, and many of the Billings children attended Indian schools. Atwood (1978) noted the frequent use of Indian medicinal remedies to cure various maladies as doctors rarely visited the area.

The Billings sold their land to the Anderson family in 1931, who in turn sold it to the BLM in 1970 under the National Wild and Scenic Rivers Program. Many of the original buildings are still standing and are maintained by the BLM. This historic complex is now called the Rogue River Ranch. The prehistoric site lies on the West Field of this complex which once had buildings located on it; the buildings were torn down in the 1930s.

The historic component of the Rogue River Ranch has been placed on the National Register of Historic Places and receives many visitors each summer.

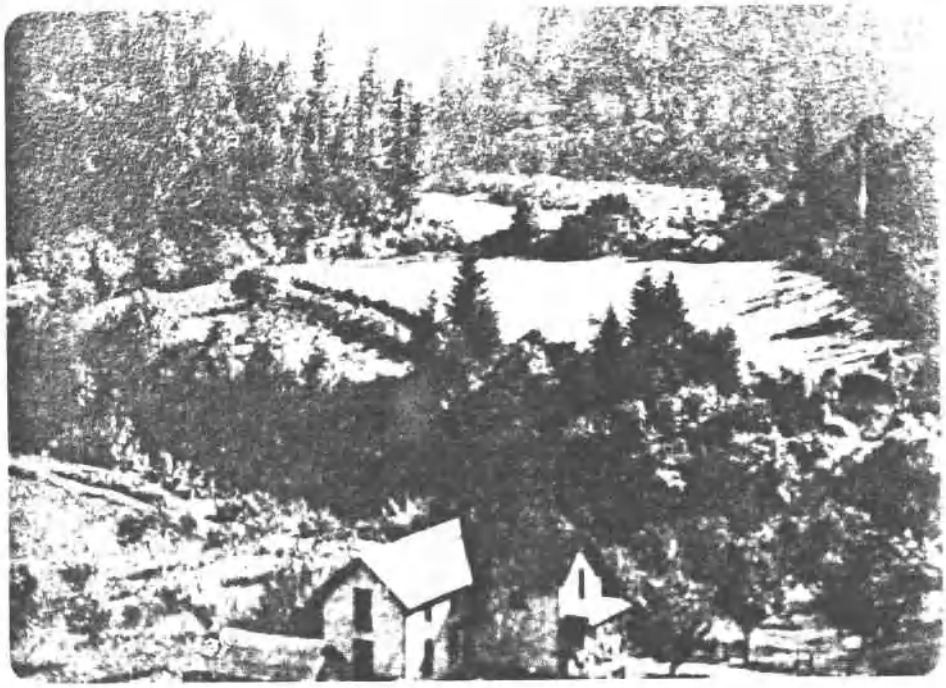

Figure 5. George Billings Ranch (Rogue River Ranch), Mule Creek 1915 (Siskiyou National Forest Collection).

Figure 6. Marial Site (35CU84), Looking Southeast Towards the Rogue River (Griffin 1983).

Chapter 6 SITE DESCRIPTION AND SOIL STRATIGRAPHY

Site Description

The Marial site (35CU84) is located at the confluence of Mule Creek and the Rogue River approximately 50 miles upstream from the coastal community of Gold Beach. Marial contains the prehistoric components of the historic "Rogue River Ranch" complex owned and maintained by the Medford District Bureau of Land Management. The site lies on what is referred to as the "West Field" of the ranch, located due west of the main building complex across Mule Creek (See Figure 2).

Test excavations of the Marial site were conducted in 1978 and 1982 by the BLM, and in 1983 and 1984 more extensive excavations were undertaken by Oregon State University under the direction of Dr. Richard E. Ross. The 1982 field season yielded a C14 date of 6485±80 at a depth of 250 centimeters below surface. The 1983 and 1984 excavations concentrated on the area that yielded this date. It became apparent in 1983 that the site was quite deep and contained several discrete cultural components. At the close of the 1984 field season seven cultural components had been discerned and C14 dates were obtained for three of them. The seven cultural components were arbitrarily numbered from IA to 6, from top to bottom. Components 1A and I both lie on and directly below ground surface yet they differ from one another in age and artifact assemblages. Component IA, located on the edge of the river terrace, is more recent than Component I and has been typologically cross dated from AD 500 to 700 by using projectile point style comparisons with other dated sites in the region.

Component I, located in the central portion of the terrace, yielded a C14 date of 2810±50 BP at a depth of 60 centimeters below ground surface. Components 2 through 6 lie directly below Component I and each component is separated from the other by layers of light sandy soil containing very little cultural material. Component 3 yielded a C14 date of 5850±120 BP at a depth of 190 centimeters below surface, thus confirming the 1982 date. Component 6 yielded a C14 date of 8560±190 at a depth of 370 centimeters below surface, making Marial the oldest dated site in the region. It has not yet been determined if Component 6 represents the oldest component at the site, leaving open the possibility that Marial predates 9000 BP.

Soil Stratigraphy

The site is located on an alluvial terrace deposited by the flood cycles of Mule Creek. The soil stratigraphy consists of alternating layers of sandy and silty loams (Figs. 7 and 8).

Six culture bearing strata were located during the 1984 field season, each consisting of dark silty loam. Each culture bearing strata was separated by a layer of lighter sandy loam in which artifact frequency declined significantly. The artifacts located in the light sandy levels may be intrusions from the upper cultural zones. In these loose sandy soils it is quite possible that artifacts could have filtered down through the sand, away from their original location.

Component I consisted of a dark silty layer characterized by a high frequency of firecracked rock. The undisturbed portions of this zone began directly below the plowzone and continued down approximately 80 to 100 centimeters below surface.

Component 2 consisted of a dark gray silty loam that began at roughly 130 centimeters below surface. It existed as a discrete stratum in the southern units but merged with Component 3 in the northern units (Fig. 7).

Component 3 was a dark brown strata that began at roughly 160 centimeters below surface and continued down for at least half a meter. This stratum dropped in elevation as it proceeded south (Fig. 7). Component 3 was the thickest of the six cultural components and yielded the highest artifact frequency. Analysis of soil samples taken revealed an increase of organic matter in the third and fourth components indicating the presence of buried surface horizons which at one time were exposed long enough to support plant life (Shade 1984).

Component 4 was a grayish brown zone located approximately 250 centimeters below surface. Component 5 began at approximately 300 centimeters below surface and terminated at a white sandy stratum that separated Component 5 from Component 6, the last cultural level.

Below Component 6, soils began to turn to clay and soon a hard packed gravel bar was encountered. A low frequency of artifacts, including a basalt leafshaped projectile point, were located in the clay. According to BLM Soil Scientist, Steven Shade, sandy horizons could exist beneath the gravel bar.

Excavations ceased at the gravel bar, 4.5 meters below surface, due to time constraints. This may or may not have been the bottom of the site, only further excavations will determine this.

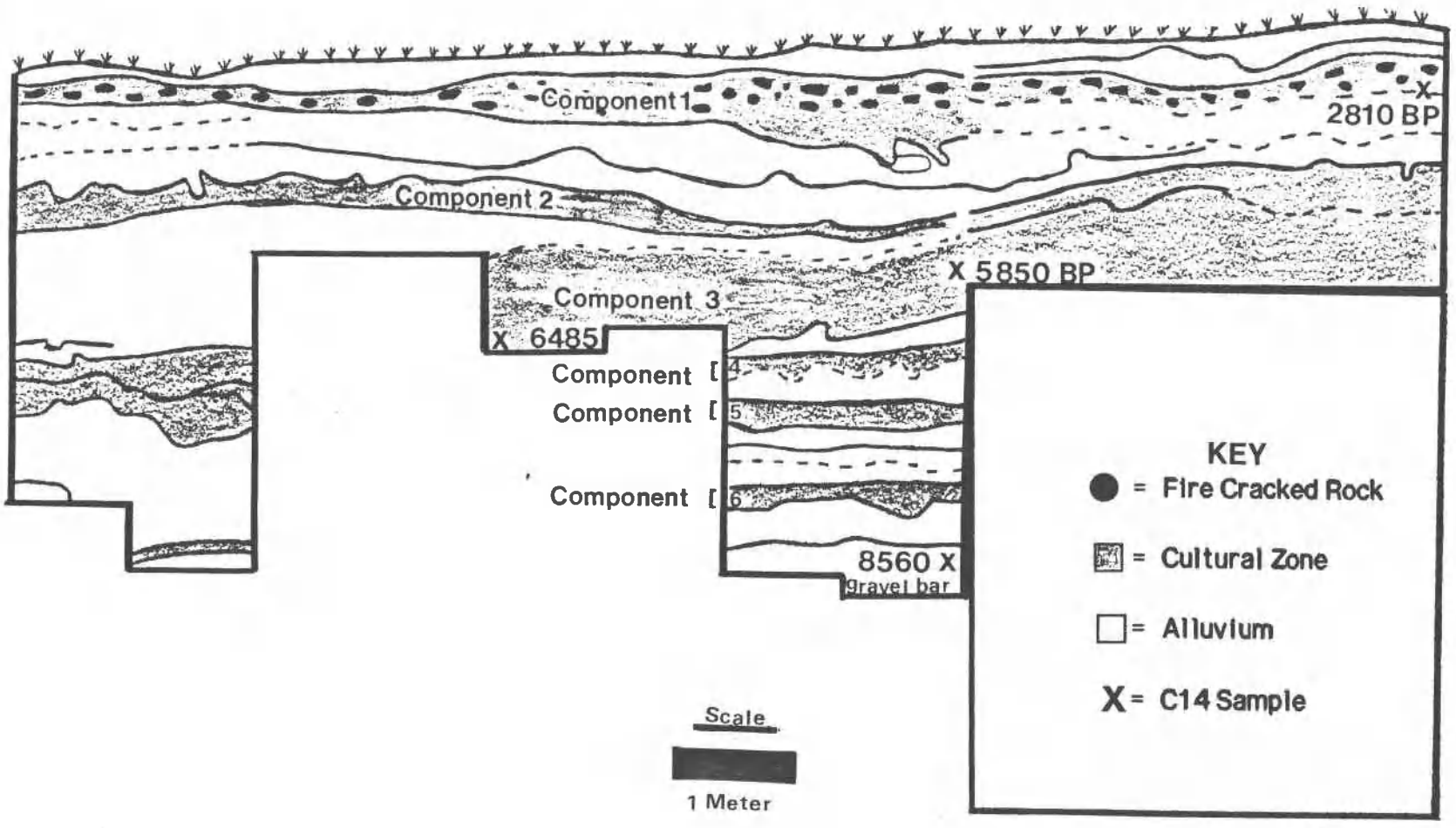

Figure 7. West Wall Soil Profile of 35CU84.

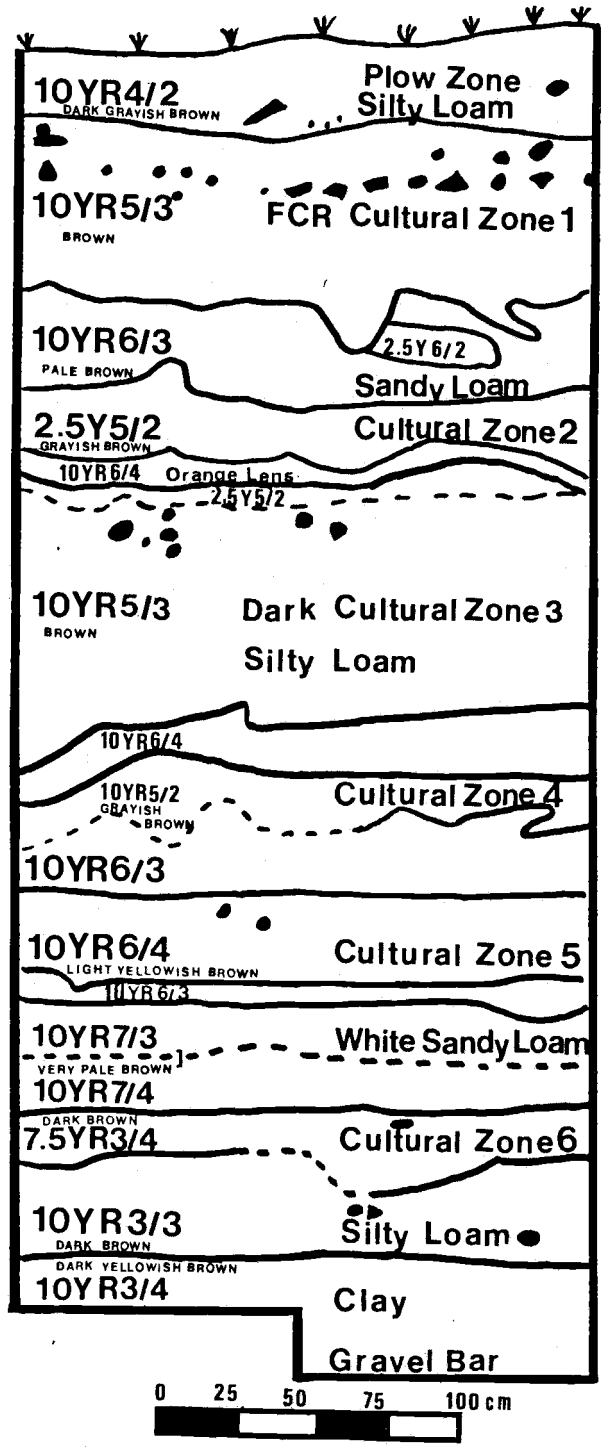

Figure 8. Soil Profile Map

Chapter 7 ARTIFACT ANALYSIS

Excavations at Marial yielded predominately lithic artifacts. The absence of organic artifacts may be due to the fact that preservation is poor in the sandy soils. The 1984 excavations yielded a total of 17,306 artifacts, 3030 of these were tools, and the remaining 14,276 were waste flakes and chunks characteristic of those generated during tool manufacture.

The three predominant lithic materials were cryptocrystalline silica, obsidian, and basalt, in order of decreasing frequency. A very small percentage of sandstone and other lithic materials such as quartz and petrified wood were also used to manufacture tools.

Of the 3030 tools retrieved, 1939 (64 percent) were cryptocrystalline silica, 666 (22 percent) were obsidian, and 425 (14 percent) were basalt or other similar lithic types. The lithic material percentages of the waste flakes and chunks were very similar to that of the tools. Out of a total 14,276, 9175 (64 percent) were cryptocrystalline silica, 3373 (24 percent) were obsidian, and 1726 (12 percent) were basalt or "other."

Cryptocrystalline silica and basalt are available locally in the form of natural nodules found in local river and creek beds (Putnam 1982). Dr. David Jones of the U.S. Geological Survey analyzed chert (a form of cryptocrystalline silica) samples from Marial and found a variety of red chert from Component 3 to be a type found locally along the Rogue River, Cow Creek, and elsewhere in southern Oregon (Jones 1984). Both unmodified ("natural") and worked nodules of cryptocrystalline silica were located, indicating that primary reduction (the reduction of nodules into flakes suitable for tool manufacture) had occurred

at the site. Cryptocrystalline silica was used primarily for manufacturing projectile points and scrapers, as well as worked and utilized flakes.

Basalt river cobbles, found in abundance in both the Rogue River and Mule Creek, were manufactured into cobble tools such as grinding stones, unifacially and bifacially worked choppers, pestles, hammerstones and spall scrapers (rounded, primary cortex flakes removed from the flat face of a river cobble).

Obsidian was the only exotic material located at Marial. This would have had to be imported either by trade or by quarry treks to the actual source. The closest known obsidian flow is in the Mt. Lassen area of northern California. Actual obsidian sourcing procedures are needed to determine the exact sources of Marial's obsidian.

Obsidian was recovered from all seven cultural components. Only 13 percent of the projectile points and 14 percent of the scrapers were obsidian, no doubt a direct reflection of the scarcity of the material. No primary or secondary reduction flakes (flakes displaying original cortex) were found. This may indicate that obsidian was brought to the site after primary reduction had occurred.

Although obsidian occurred at a lower frequency than cryptocrystalline silica, it was the predominant material of some artifact types. Of 107 small blade-like flakes, 96 (90 percent) were obsidian. Ninety-one, or 85 percent of the total 107 blades, were utilized. Out of 11 small leafshaped (type B) projectile points, eight were obsidian. Three teardrop shaped gravers, comprising the total number of type A gravers, were manufactured from obsidian. Both the small leafshaped points and the gravers clustered in or near Component 3.

It is interesting to note that when sample areas were screened with 1/8 inch mesh screen, obsidian flake percentages increased disproportionately to cryptocrystalline silica and basalt. A reasonable explanation for this would be the frequent reworking of obsidian due to both its rarity and superior tool making properties. This would result in a high frequency of smaller waste flakes.

Firecracked rock was located at all levels, but its frequency increased within each component. No concentrations or heaps of firecracked rock were located, as it seemed to be randomly distributed upon each occupation floor.

TABLE 2

1984 Artifact Frequency per Excavation Unit

Artifact Types	N96 E78			N96 E80			N96 E82			N98 E80			N101 E80			N102 E78		
	ob	ccs	bs*	ob	ccs	bs*	ob	ccs	bs*	ob	ccs	bs*	ob	ccs	bs*	ob	ccs	bs*
Projectile Points																		
Corner-notched		1									2							
Side-notched								2		1	1							
Basal-notched								2			1						1	
Stemmed/Shouldered		3			1						1			1			5	
Leafshaped	2			3				2			1			4		2	3	
Point Fragments	2	3		1	5					3	8		2	10		1	17	
Unifaces											1							
Gravers											1					1		
Blanks		2				1		1			2			2				
Scrapers		6		3	11			8			7	1	3	8			7	
Scraper Fragments	1	2			2					1	2			5		1	8	
Spall Scrapers						3			2			2			4			4
Spall Fragments						2												3
Bifacially Worked Flakes	1	4		2	9			4			3			2			8	1
Unifacially Worked Flakes	2	12	3	3	30	14	3	34		4	16	2	16	44	5	13	64	3
Worked Chunks		1			3			2			1		1	4				
Utilized Chunks		2						1			1			1			2	
Utilized Flakes	25	66	6	28	52	8	3	33	1	20	25	1	25	45	3	87	169	11
Worked Blades																		
Utilized Blades	5			6	1		2	1		3	2		5			9		
Unmodified Blades													2					
Nodules (natural)		2												1			1	
Nodules (worked)		1			2						2							
Pipe																		
Line Sinker																		
Atlatl Weight															1			
Drilled Pumice																		
Clay Ball																		
Pendant Fragment																		
Incised Stone						1						1			1			
Cores									1					1				
Worked Cobbles			1			10			2			5			12			8
Cobble Choppers			8			11						5			3			4
Pecking Stone			5			5			2			1			2			3
Hammerstone						8			1			1			4			4
Pecked Stone			1						1									
Ground Stone						2			1			1						
Edgeground Cobbles																		
Pestles									1			1			1			1
Total Artifacts	33	110	24	46	116	65	8	91	11	32	77	21	54	128	36	105	294	42
		167			227			110			130			218			441	
Sample Size (levels)	14	2x2M		24	2x2M		18	2x2M		11	2x2M		13	1x2M		20	2x2M	
1 level = 10cm	7	1x2M		8	1x2M					8	1x2M							
				1	1x1M													

* or other lithic type

TABLE 2 (Continued)
1984 Artifact Frequency per Excavation Unit

Artifact Types	N102 E80 ob	ccs	bs*	N102 E82 ob	ccs	bs*	N104 E80 ob	ccs	bs*	N104 E82 ob	ccs	bs*	N106 E82 ob	ccs	bs*	Total
Projectile Points																
Corner-notched		1			1		1							3		9
Side-notched					3			3						2		12
Basal-notched					2											6
Stemmed/Shouldered		4			1			3						4		23
Leafshaped	2	10	3		2		2	3			3			2		44
Point Fragments	3	21		1	15		3	19	1	1	6		5	30		157
Unifaces		1			1		1	1						1		6
Gravers							2							1		5
Blanks			1				1	2								12
Scrapers		18		3	17		3	29	1		5		2	33		165
Scraper Fragments		3			9		4	8			1		1	9		57
Spall Scrapers			4			2			4						9	34
Spall Fragments						3			1							9
Bifacially Worked Flakes		8		2	6		2	4			1		3	14		74
Unifacially Worked Flakes	25	69	3	13	45	8	16	66		2	14		20	84	2	635
Worked Chunks		1			2			3			2			5		25
Utilized Chunks		1			1	1								3		13
Utilized Flakes	34	72	8	50	133	25	49	91	10	8	14	1	86	156	13	1358
Worked Blades				1									1			2
Utilized Blades	11			7			20						16	3		91
Unmodified Blades	4	2	1				2	2					1			14
Nodules (natural)																4
Nodules (worked)		2			8			1						7	1	24
Pipe									1							1
Line Sinker			1		1											2
Atlatl Weight																1
Drilled Pumice															1	1
Clay Ball															1	1
Pendant Fragment															1	1
Incised Stone			1			1			1							6
Cores	1							2			1			3		9
Worked Cobbles			5			4			12		4				12	75
Cobble Choppers			3			3			13						8	58
Pecking Stone			7			4			5		2				2	38
Hammerstone			2			2			6						5	33
Pecked Stone						1			1							4
Ground Stone			1			1			2		1				4	13
Edgeground Cobbles			1			1					1					3
Pestle															2	6
Total Artifacts	79	214	41	77	246	56	86	257	58	11	46	10	135	360	61	
		334			379			401			67			556		3030
Sample Size (levels)	23	2x2M		19	2x2M		18	2x2M		3	1x2M		20	2x2M		
1 level = 10cm	5	1x2M														
	3	1x1M														

* or other lithic type

Projectile Point Typology and Regional Comparisons

As previously discussed, the primary research goal of this thesis is the formation of a projectile point chronology for the Marial site. Inherent to studies of a chronological nature is the concept that artifact classification and typology are a means of organizing and arranging things to make them more easily interpretable (Fagan 1978). The objective of archaeological classification technique is to simplify the comparison of artifacts in order to discern chronological and cultural relationships (Hole and Heizer 1965:201).

Archaeology's basic unit of classification is an artifact type (Thomas 1979:213). Such types consist of abstract forms or ideal constructs created by the archaeologist to aid in the analysis of an entire artifact collection. This is done by grouping individual specimens into typological categories or types. There are several kinds of artifact types, each needing an appropriate modifier describing the type of "type," and each utilizing different criteria in order to define them. For example, a morphological type is a type based on shared morphological traits, whereas a temporal type is a type that occurs within a well defined time frame (Steward 1954, Thomas 1979:213).

Thomas (1979:213) states that "the main point of archaeological classification. . . is that each classification must be formulated with a specific purpose in mind; archaeology has no general, all purpose classification."

The purpose for classifying Marial's projectile points was the eventual formulation of a point chronology for the site. The first step in the creation of such a chronology was the formulation of a projectile point typology. Points recovered from both 1983 and 1984 field seasons were analyzed in order to increase the sample size. It was decided that the most appropriate type of

typology for the specific goal in mind (i. e., chronology building) was a temporal chronology whereby the time spans of each type could be discerned if possible. Thomas (1981:14) defines temporal types as "nothing more than morphological types that are found consistently to be associated with a particular span of time in a given area."

Since a temporal type must first be a morphological type, projectile points from Marial were first typed on a morphological or descriptive basis. A morphological or descriptive typology is one based on all of the attributes the classifier can show to be shared by the artifacts comprising the artifact type (Steward 1954). Jennings (1957:22) states that the use of descriptive types is perhaps the most useful in studies of chronology.

Typing procedure concentrated upon the proximal and/or basal attributes of each point such as notch style, stem shape and shoulder angle. Projectile points displaying similar basal attributes comprised each type. The result was the formulation of six major groups: Concave Base, Basal Notched, Corner Notched, Side Notched, Stemmed/Shouldered, and Leafshaped. Each major group was then further subdivided into subgroups or types. (For results see Appendix B.)

Proximal/basal attributes were used due to their ability to provide the most stable variables for monitoring temporal changes in projectile points (Thomas 1981:15). Thomas has observed that basal attributes are least likely to be modified during use-life within the cultural system. Ideally, a point is manufactured, hafted, then utilized. During this use-life it may suffer edge attrition, impact shatter, resharpening procedure, or may even by remade into a different tool type. Due to such attrition, attributes such as length, width, and weight are systematically reduced and for this reason are relatively unstable;

however, the majority of the attrition occurs on the distal portion of the point leaving the proximal/basal portion relatively unchanged.

Basal/proximal portions of points have also demonstrated a sensitivity to cultural/temporal changes due to their stylistic nature. Sackett (1973:320) uses the term "stylistic mode" to describe this phenomenon. Basal portions of projectile points function within a cultural system (i. e., "functional mode"), as a place where the point may be hafted on to a shaft. However, there are many ways to manufacture such a hafting element; therefore, there are several "styles" to choose from. Sacket (1973:320) states:

> The concept of style is based on the notion that there are usually alternative means of achieving the same end, that the specific expression of any given artifact assumes results in a sense from a choice made among several equally valid and feasible options, and that the choice made in any given cultural situation is determined by its historic-genetic setting.

Once a morphological typology was created for Marial's projectile points, then signifcant temporal associations were studied. This was done by plotting the location of each morphological type onto a map of the actual soil stratigraphy (Figs. l3, 14, 15). During this process the morphological types become "in a sense, hypothesis to be tested against the stratigraphic record" (Thomas 1979:222). Thomas notes that this process is deductive in nature, therefore scientific, because the morphological types created are then tested for temporal significance against the independent stratigraphic data. If a morphological type is found to cluster around a dated stratum or strata, then the morphological type may be elevated to the status of temporal type.

The results of the testing for temporal significance is shown on Figure 13, 14, and 15, and are summarized on Table 3. It is clear that certain types do occur within a well defined period of time and may possibly represent the presence of temporal types.

The first such type was Concave Based Type A which occurred exclusively in Component IA which has been tentatively dated from 500 to 700 BP. The occurrence of this type in a late prehistoric component is consistent with data obtained from other late sites in southwestern Oregon. This will be discussed later in the chapter.

The majority of the Basal Notched types occurred in Component IA; however, approximately one third of the collection occurred in the plowzone stratum of Component 1. Due to this occurrence in the plowzone, the possibility exists that they may have been removed from Component IA and secondarily deposited over Component 1 by repeated plowing of the field. As a group, the Basal Notched types all occurred above the 2810±50 date.

In the Side Notched category, one type (Side Notched E) occurred in close association with Components 2 and 3 spanning from roughly 4500 to 6000 BP (with one exception located in Component 1). As a category, the Side Notched types ranged from the plowzone (roughly 2000 BP) to Component 3 (roughly 6000 BP). No Side Notched specimens were recovered below Component 3.

In the Corner Notched category, Type A occurred with regularity from the plowzone to roughly 4500 BP. All Corner Notched types ranged from the plowzone to Component 3.

In the Stemmed/Shouldered category, Type A may represent a well defined temporal type as it spans from roughly 2500 BP to the 5850±120 date with regularity. When its frequency is plotted on a map of the soil stratigraphy it forms a battleship curve (to be discussed later), with the bulge of occurrence

located in Component 2. This indicates that the type was most popular during the time that Component 2 was being utilized.

A distinct elongated stemmed type (F) occurred in both Component 4 and Component 6 and seems to represent an older form of the Stemmed/Shouldered variety.

The majority of the Leafshaped types displayed definite temporal spans. Type A occurred from the plowzone to roughly 3000 BP. Type B (a small leafshaped type often referred to as "Gold Hill" points) spanned from roughly 2500 BP to 7000 BP with a frequency "bulge" occurring in the upper levels of Component 3 (roughly 5500 BP). The significance of finding this type at such an early date (roughly 7000 BP) is discussed later in the chapter.

Leafshaped types C, D, and E span roughly 4500 to 7500 BP (with the exception of one type E point located at the 8560±190 date). This time span for these types is consistent with data gathered from other sites in the region.

Leafshaped Type F spanned from roughly 7000 to 9000 BP, with the majority occurring in or near Component 6. This type represents the oldest style recovered from Marial to date.

As a category, Leafshaped types ranged from the plowzone to the lowest levels excavated.

The formulation of a temporal typology for the Marial site will prove to be a useful tool in the typological cross dating of similar point styles from other sites located in southwestern Oregon. It may also aid in the eventual formulation of a projectile point chronology for the region. As previously discussed, southwestern Oregon is an archaeological region, at present, typified by single component sites lacking C14 dates. Data from these sites, however, have the potential to become the building blocks of a regional chronology, but they must first be synthesized into archaeological "phases."

TABLE 3

Temporal Spans of Projectile Point Types

Type	Sample Size	Temporal Range	Component Association
Concave Base			
A	13	500*-700 BP*	1A
Basal Notched			
A	18	500*-700 BP* 2000 BP*	1A, 1
B	14	500*-700 BP* 2000 BP*	1A, 1
C	2	2000 BP*-2500 BP*	1
D	4	500*-700 BP* 2000 BP*	1A, 1
Side Notched			
A	3	2000*-5850 BP	1, 2, 3
B	2	2000*-2810 BP	1
C	3	2000*-2810 BP	1
D	3	2000*-4000 BP*	1, 2
E	11	2810-6000*BP	1, 2, 3
F	1	4500 BP*	2
Corner Notched			
A	10	2000*-4500 BP*	1, 2
B	8	2000*-4500 BP*	1A, 1, 2
C	2	4500 BP*	2
D	1	6000 BP*	3

*rough approximation

TABLE 3 (Continued)
Temporal Spans of Projectile Point Types

Type	Sample Size	Temporal Range	Component Associations
Stemmed/Shouldered			
A	16	2500*-5500 BP*	1, 2
B	2	2000*-2500 BP*	1
C	1	2500 BP*	1
D	6	2500*-5500 BP*	1, 2, 3
E	2	2810-7000 BP*	1, 4
F	4	7000*-9000 BP*	4, 6
G	3	500*-700 BP* 2000 BP*	1A, 1
H	3	500-700 BP* 2000 BP*	1A, 1
Leafshaped			
A	4	2000*-3000 BP*	1
B	20	2500*-7000 BP*	1, 2, 3, 4
C	10	4500*-7000 BP*	2, 3, 4
D	13	4000*-7000 BP*	2, 3
E	8	4500*-8560 BP	2, 3, 6
F	8	7000*-9000 BP*	4, 6
G	1	2000 BP*	1

*rough approximation

Willey and Phillips (1958) define a "component" as a culturally homogeneous stratigraphic unit within a single site. A "phase" then, consists of similar components manifested at one or more sites within a region. A phase possesses traits "sufficiently characteristic to distinguish it from all other phases" (Willey and Phillips 1958:22). Phases are spatially limited to the archaeological region and are confined to an interval of time. A phase is archaeology's basic unit of areal synthesis (Thomas 1979:233).

Research has shown that projectile point types from Marial are similar to point styles from other sites in the region beyond. It must be noted that the term "type" is being used to refer to a site specific group of artifacts whereas the term "style" refers to artifacts of a similar morphological form used by several different and often unrelated cultural groups (Bryan 1980:77). In the following discussion of point style similarities in the region, it must be noted that it is technological traditions that are being compared and discussed, not the movement or territories of human cultural groups. The term "technological tradition" refers to an artifact form that may have persisted for prolonged periods of time and may have encountered several unrelated cultural groups (Bryan 1980:77). While point style similarities in other areas of the region could indicate the actual movement of peoples, the archaeological evidence only allows us to infer the diffusion of a technological tradition.

Component IA

Excavations in 1983 uncovered a late prehistoric component of the site. It was located on the southern edge of the terrace, 25 meters southwest of the 1984 test units. The undisturbed portions of the component lie directly below the plowzone and are not stratigraphically connected to the older components

on the central terrace (Griffin 1983:25). IA consisted of a single cultural component and yielded an assemblage dominated by basal notched, barbed types (Basal Notched A, B, C, D). Many resemble the so- called "Gunther Barbed" style characteristic of a late cultural phase in southwestern Oregon. This style was first described by Loud in 1918 and was later named by Treganza (1958). The Gunther Barbed variety can be distinguished by barbs that extend down below the basal portion of the point.

Leonhardy (1967) has set a tentative date for Gunther Barbed in southwestern Oregon and northwestern California at roughly AD 1400 to 1600. The earliest reported coastal site containing the Gunther Barbed style is the Gunther Island site (4HUM67) in northern California, radiocarbon dated at AD 900 (Crane & Griffin: 1961). The style is widely distributed throughout southwestern Oregon and northwestern California. Leonhardy (1967:36) feels that the mouth of the Klamath River may be the center of distribution of the Gunther Barbed style. Heizer and Hester (1978) have proposed that the style represents the introduction of the bow and arrow into southwestern Oregon around AD 500.

Pullen (1981) and Ross (1985) note that tanged points are common to coastal, marine resource oriented sites. Draper (1980:78) feels that their presence in southwestern Oregon coastal and interior sites are likely the result of the diffusion of the technology from the center of northwestern California coastal cultures. However, Elsasser (1978:51) feels that due to their wide distribution in Oregon and California, they may have developed elsewhere than the coast.

Similar point types with well defined barbs not extending down below the base of the stem were also found in large numbers in Component IA, and are thought to center near the lower Klamath River as well (Draper 1980:78).

Component IA also yielded a distinct concave based type point with a triangular shaped blade. The presence of the concave base type at Marial is particularly interesting. Thirteen specimens were recovered from the most recent component in 1983 and several were recovered in 1982 (Fig. 12). All were located in association with the barbed, basal notched types. Concave base points are commonly found at shell midden sites along the coast from the Coquille River to Humbolt Bay, California. They rarely occur outside of this area. This distribution may suggest a regional technological development confined predominately to the coast (Pullen 1981:73). The earliest date for the style is AD 900 from the Gunther Island Shellmound (4HUM67) in Humbolt Bay, California. This style predominated through the last prehistoric period well into the twentieth century when the points were often made out of glass or metal (Gould 1964:56).

Pullen (1981:73) notes that concave base points are found in small numbers in interior sites along the Rogue and Umpqua Rivers, perhaps a result of diffusion of technological traits from the coast into the interior during the late prehistoric period.

Three specimens of the concave based style were located at the Blossum Bar site (35CU143) in association with a Gunther Barbed dominated component (Ross et al.:1982). Blossum Bar is three miles downstream from Marial.

Several concave based points were found exclusively in Component 1 at 35J04, approximately 30 miles upriver from Marial (Wilson 1979). They were found in association with Gunther Barbed styles and Component 1 was C14 dated at 460±90 BP. Wilson postulates close affiliations with the coast at 35J04 during this time period due to the presence of this style.

On the basis of typological cross dating, Component IA has been tentatively dated at 500 to 700 BP. A C14 date is forthcoming.

Component 1

The uppermost cultural component of the central terrace lies on the surface and extends down through the plowzone to approximately 80 centimeters below surface. A C14 date of 2810±50 BP was obtained from 60 centimeters below surface in the lower levels of the component. Several basal-notched points were located in the plowzone of this component (Fig 13). Due to their location in these disturbed soils, the possibility exists that these points are intrusions to this component and were originally located in Component IA. Repeated plowing of the field could have carried these points over to this older component. However, it is also possible that they represent an older time frame for the type. Lyman (1985: Fig. 4.3) notes the occurrence of basal notched, barbed varieties in southwestern Oregon as far back as 1500 years BP.

Variation of the projectile point types is highest in this component. A distinctive Leafshaped type (A) and two stemmed/shouldered types (B&C) were found exclusively in this component. The component is characterized by a large variety of small triangular point types, including assorted corner, side and the basal notched types discussed above (Fig. 13).

Davis (1974:52) notes a similar occurrence during what he calls "Phase 3" of the Lost Creek sites on the upper Rogue River. He describes an "efflorescence of triangular stemmed point styles" occurring below a Gunther Barbed dominated component. Davis estimated that Phase 3 had emerged by approximately 3000 BP.

Lyman (1985: Fig. 43) has devised a tentative projectile point chronology for the middle and upper Rogue River area and notes a plethora of small triangular point styles occurring in this area at approximately 2000 BP. This would concur with Davis's data.

Baumhoff (1982:5), in his discussion of projectile point styles from the North Coast Range in California, notes a so-called Rattlesnake Corner Notched type, a local name given to assorted small, triangular, side and corner notched points. Baumhoff noted the variation of notching located in this one type but stated that they are identical in time and space and, therefore, made no attempt to divide them into separate types. Many of these Rattlesnake corner notched points are similar to the points occurring in Component 1 at Marial. The Rattlesnake corner notched type seems to center around Clear Lake, California, and is dated at roughly 400 BP, (Baumhoff 1982). Baumhoff notes that similar styles appear in the Great Basin about 1000 years earlier. If these styles are related, then they are occurring at Marial around 3000 BP, in the Great Basin around 1400 BP, and in northern California around 400 BP. This may imply a diffusion of the style in a southerly direction.

Three specimens of what are commonly called Desert Side Notched (Baumhoff 1957, Baumhoff and Byrne 1959) were located in the upper levels of Component 1 above the 2810 BP date. Desert Side Notched are defined by Lanning (1963:253) as "small triangular points with notches high on the sides" which weigh less than or equal to 1.5 grams. All three of Marial's specimens meet this criteria.

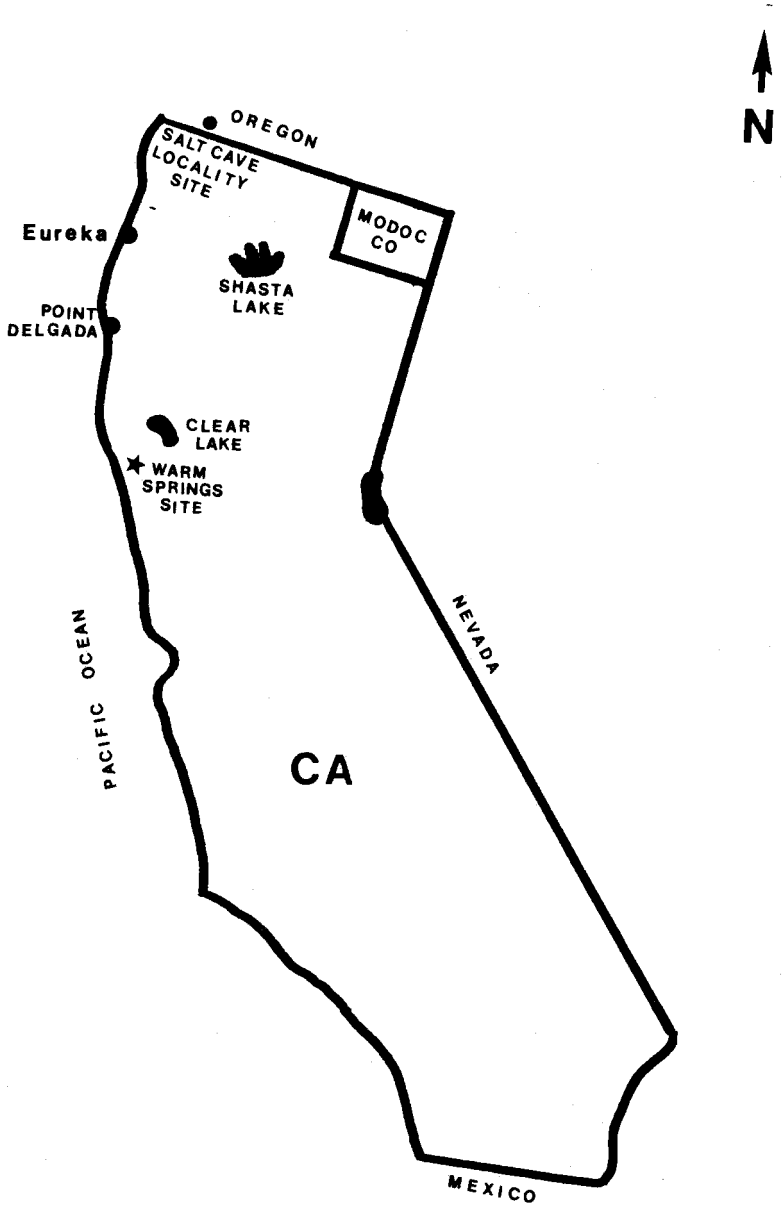

Figure 9. California Areas Noted in Text.

Desert Side Notched projectile points are common to the deserts and arid regions of the western United States (Aikens 1984:12). The style occurs in the Great Basin during a time span of roughly AD 1100-1200 to the historic era (Heizer and Hester 1978; Thomas 1981:18).

This style has been found in small numbers in late prehistoric and protohistoric sites in southwestern Oregon and they are thought to have been imported into the region (Brauner 1983:89). If they are indeed imported, then their presence at Marial represents some form of contact, either direct or indirect, with desert cultures to the east.

Lyman (1985: Fig. 4.3-D) has observed the occurrence of desert side notched styles at sites along the middle and upper Rogue River from roughly 1000 BP to 250 AD. Marial's three specimens occur at levels 2, 3 and 5. Level 2 and possibly 3 are within the plowzone, but level 5 (50 cm below surface) is just above the 2810 BP date.

Component 2

The dominant type in Component 2 was Stemmed/Shouldered type A (Fig. 14). Points within this type varied little morphologically. When Component 2 merged with Component 3 in the northern units, this type occurred only in the uppermost levels of the combined strata. Component 2 lies between the 2810 BP and 5850 BP dates, and a C14 date for the component is forthcoming.

Brauner and Lebow (1983:149-150) located a point very similar to Marial's Stemmed/Shouldered A at 35JA109 at Elk Creek. They note that several similar points were found during the 1979 testing of 35JA104, also at Elk Creek (Brauner & Honey 1979:115). 35JA104 has been tentatively typologically

cross dated from 2000 to 4000 years BP (Brauner and Lebow 1983:171). These dates concur with the evidence from Marial.

It was discovered that when the distribution of Stemmed/Shouldered Type A points were plotted on a map of the stratigraphy they formed what has been termed a "battleship curve" of stylistic trend (Thomas 1979:225). The curve gets its name from the fact that it resembles the hull of a large battleship (Fagan 1978:43). The upper portion of the curve represents the introduction of a new style, the widest portion of the curve depicts the peak in popularity, and the lower portion indicates the decline of the style (Fig. 10). As a new style is introduced and begins to gain popularity, it will begin to superimpose earlier styles. This will show up as overlapping curves within the same time period.

Component 3

Component 3 was the thickest of the seven cultural components and yielded the highest artifact frequency. Two C14 dates were obtained for the component. The first, 5850±120 BP, was acquired from a carbon sample located in the middle of the component. The dominant point types associated with this stratum were Leafshaped types B, C, D and E (Fig. 15). Nisbet (1981) states that artifact assemblages dominated by large lanceolate (leafshaped) projectile points have been found throughout the Pacific Northwest and consistently date between 4000 to 8000 BP. Large leafshaped types occur at Marial between roughly 4000 BP to 8560 BP.

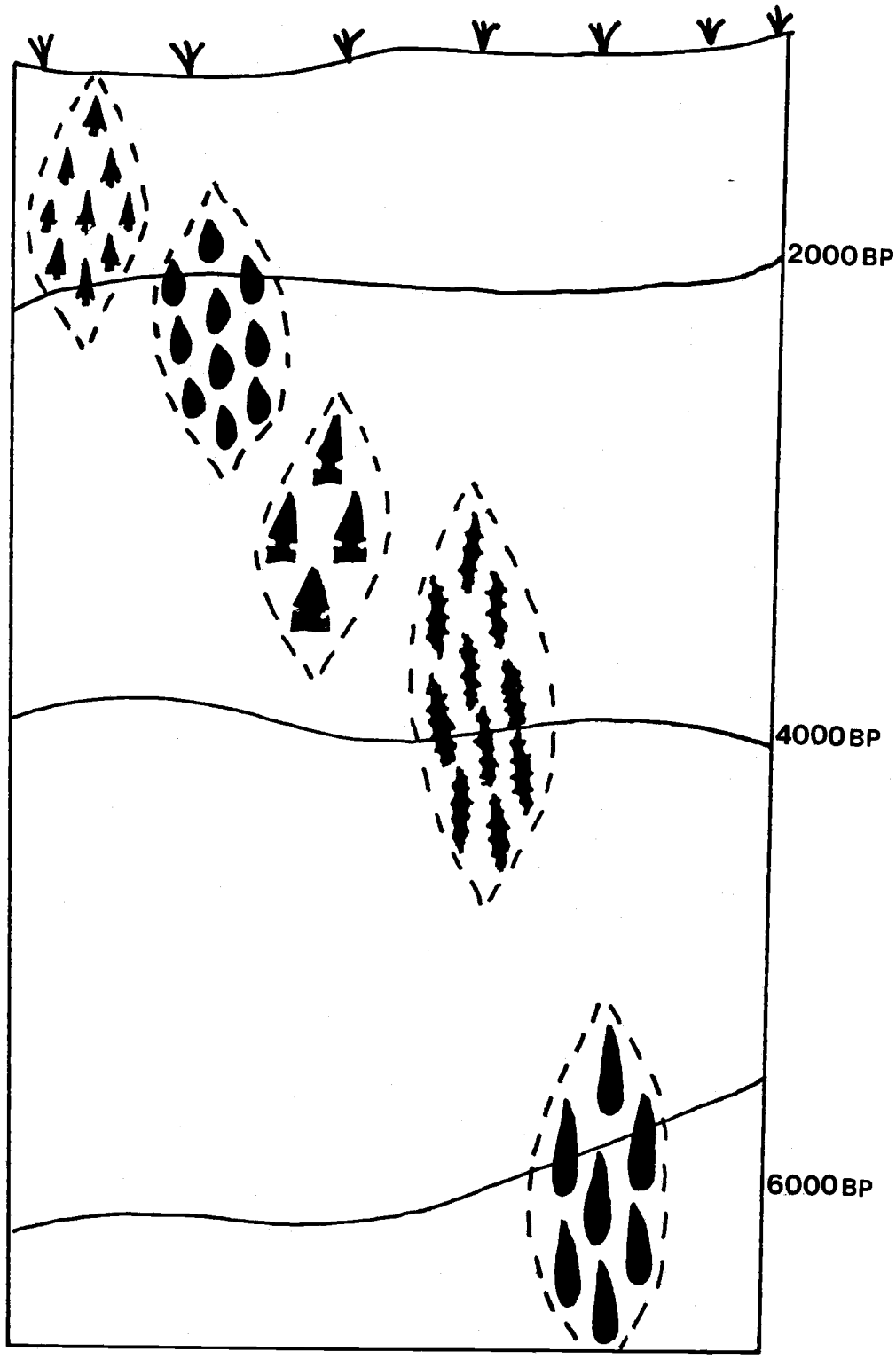

Figure 10. The Battleship Curve of Stylistic Trends.

Leafshaped types C, D and E are very similar to what Nisbet (1981:71) refers to as "large lanceolates" (type 01-06A) found at sites along the Applegate River in the interior of southwestern Oregon. These large lanceolate points represent the earliest lanceolate styles found at the Applegate sites and dominated the assemblage of 35JA52. The age of 35JA52 was estimated at 4000 to 6000 BP on the basis of geological position and typological cross dating (Nisbet 1981:39).

Nisbet (1981:4) observed that the large lanceolate points from 35JA52 are similar to what have been referred to as "Cascade" points located at sites on the southern Columbia Plateau. The term "Cascade Point" was first coined by B. Robert Butler in 1958 to refer to the hallmark artifact of his Old Cordilleran culture (Butler 1958;1961). Derived from data collected along the Lower Columbia River, The Old Cordilleran was described as a cultural tradition extending from the Pacific Mountain Ranges to South America. It was a tradition characterized by a leafshaped point and blade complex, as well as a generalized assortment of cutting, chopping and scraping implements used in a hunting/fishing/gathering economy. The Old Cordilleran was to have been contemporaneous with early lithic traditions such as Clovis and Folsom and arrived in the Pacific Northwest no earlier than 12,000 BP near the end of the Pleistocene era (Butler 1958:11).

This "pan-cordilleran" tradition has met with much criticism and controversy since its inception due to a "less than complete" comparison of the assemblages involved (Carlson 1962; Osborne 1963), as well as the amount of environmental diversity that was to have been covered by a single culture (Osborne 1963; Gruhn 1962).

At present the Cascade projectile point remains one of the hallmark artifacts of a revised Cascade Phase designation pertinent to the Lower Snake

River region. The Cascade Phase occurred from 8000 to 4500 BP (Leonhardy and Rice1980).

A distinctive manufacturing technology for Cascade points was first reported by Leonhardy and Muto (1972). They discovered a Levallois-like technique for blade and blade-like manufacture which was the dominant lithic reduction system during the Cascade Phase. On the basis of these findings, Nisbet (1981: Appendix A) tested for technological similarities between the 35JA52 lanceolates and a collection from the southern Plateau using the statistical T-test. The results determined that the two collections differ technologically and represent two separate populations.

No such statistical test has been conducted on Marial's leafshaped points, however, Types C, D, and E are very similar to the 35JA52 lanceolates. It is likely that they are technologically more similar to the Applegate collection, than they are to the southern Plateau Cascade type.

It is interesting to note that although Marial's Leafshaped types C, D, and E differ morphologically from one another, they occur in association with each other during the same temporal span (roughly 4000 to 7000 BP). When plotted together on a map of the stratigraphy, they form the classic battleship curve with the peak of popularity occurring near the 5850 BP date. This may indicate that types C, D, and E are in actuality one type possessing a high degree of morphological variation within itself.

Radiocarbon dates from Marial concur with Nisbet's assignment of a 4000 to 6000 year BP time span for the "large lanceolates" at 35JA52.

A small Leafshaped type (B) was also found associated with Component 3. This type formed a well defined "battleship curve" when plotted on a map of the stratigraphy (Fig. 15). This small leafshaped type occurs from Component 1 to Component 4 giving it a temporal range of 2000 to 7000 years BP. The highest

frequency of this type occurred 30 centimeters above the 5850 date. The occurrence of a small leafshaped style this early is quite unusual. These small leafshaped points closely resemble what are commonly referred to as Gold Hill points (Davis 1974). Davis has determined the time frame for the Gold Hill style on the upper Rogue River to be 2000 to 3000 years (Nisbet 1981:7l).

This style was first reported by Luther Cressman (1933a; 1933b) who had located the small points at the Gold Hill site on the upper Rogue River near the town of Gold Hill, Oregon. The style was found in the lower levels of the site which Cressman estimated to be 2000 years BP or older (1933a).

While doing salvage work at Elk Creek and Lost Creek sites, some 35 miles upriver from Gold Hill, Davis (1974) observed that a small leafshaped style point dominated the deepest strata of many of the sites. Noting close similarities between this style and the points located at the lower levels of the Gold Hill site, Davis proposed the name "Gold Hill" for the type.

Nisbet (1981) analyzed the Gold Hill collection and found the points to be small (length ranged from 22 to 44 mm) with a thick lenticular cross section, rounded, occasionally pointed bases, and randomly flaked with no edge serrations. With the exception of the nonserrated edges, this description fits Marial's small leafshaped points quite accurately. Serrated edges have been observed on Gold Hill style points from 35JA26 and 35JA27 at Elk Creek (Brauner and Nisbet 1983:84). Fifty percent of Marial's small Leafshaped type B display serrated edges.

Nisbet (1981:68) concluded that the age of the Gold Hill style may extend back as far as 6000 BP, for he has located similar styles at 35JA52 on the Applegate in a geologically dated stratum. Here, however, they were "overwhelmingly subordinate" to the larger leafshaped types. At Marial, the small leafshaped type comprised 29 percent of the point types from Component

3 and were hardly overwhelmingly subordinate. The evidence from Marial, combined with Nisbet's data from the Applegate may well push back the time frame for the occurrence of this Gold Hill style to 7000 BP.

It is interesting to note that Marial's small leafshaped points are predominantly obsidian when the majority of the Gold Hill styles on the upper Rogue River and Applegate are predominantly cryptocrystalline silica (Nisbet 1981:68). However, Nisbet notes the occurrence of the Gold Hill style at a Salt Cave Locality site on the Oregon-California border. Here the points are predominantly obsidian despite the abundance of local cryptocrystalline silica. The site has been dated at 1000 BP (Mack 1979).

A side notched type (E) occurs in both Components 2 and 3 (Fig. 13). The lowest specimen was located just above the 6485 BP date. This may represent the oldest notched type at Marial, as no other notched points were located below Component 3.

Component 4

Cultural Component 4 yielded two Leafshaped type F points which occur with more frequency in Component 6 (Fig. 15). Component 4 also yielded a distinct Stemmed/Shouldered type (F) which occur in Component 6 as well (Fig. 14). The Stemmed/Shouldered type F has a distinctive elongated, rounded base. Styles similar to this are found in central California. Baumhoff (1982:9) refers to this style as Houx Contracting Stem, a style that dominated the Early Horizon of central California from roughly 3000 to 6000 years ago. Marial's elongated stemmed points occur between 6485 and 8560 BP.

Component 5

No diagnostic projectile points were located in Component 5. This may be due to a small sample size, as only two 2 x 2 meter units were excavated through this stratum.

Component 6

The oldest C14 date, 8560±190, was obtained from Component 6, approximately 370 centimeters below surface. Component 6 yielded predominately Leafshaped type F points. They differed morphologically from the other leafshaped types in that their bases were somewhat faceted or "squared off" in shape. They formed a distinct temporal type as well, ranging from near the 6485 BP date down to 50 centimeters below the 8560 BP date (Fig. 15). The type occurs lower than all other leafshaped types and represents the oldest projectile point type located at Marial to date.

At 430 centimeters below ground surface a hard packed clay and gravel bar was located. A basalt leafshaped point (type F), and a small number of waste flakes were recovered from this stratum. This gravel bar may represent the bottom of the site, but this cannot be confirmed until further excavation takes place.

The location of a Leafshaped type F in this dated stratum pushes back the time frame for this type from 8000 BP (Nisbet 1981) to roughly 9000 BP. However, since it is not clear if the bottom of the site has been reached, it is not known if Leafshaped type F represents the oldest point type at Marial. It is

possible that older projectile point types may be recovered during future excavations.

While doing salvage excavations at 35JA53 on the Applegate, Brauner located a pre-lanceolate (leafshaped) style projectile point which he has estimated to be 8000 years or older (Brauner and Nisbet 1983). 35JA53 lies in close proximity to 35JA52 (dated 6000-8000 BP), and Brauner has found evidence suggesting that 35JA53 and 35JA52 were occupied by related people and thus represent a cultural continuum.

The projectile point style that dominated the assemblage from 35JA53 consists of relatively short, thick points with triangular blades and somewhat square stems (Fig. 11). Brauner and Nisbet (1983:46) describe this style as "an enigma," as similar projectile point forms have not been archaeologically recovered in northern California, western Oregon, or the northern Great Basin. Brauner and Nisbet note that the point styles are similar to those associated with the Windust Phase of the southern Plateau (Rice 1972:76, Fig. 19 a-d), however, the similarities end when the total tool assemblages from both areas are compared.

The Windust Phase is the earliest of six cultural phases proposed by Leonhardy and Rice (1970) for the lower Snake River region. It is dated between 10,500 and 8000 BP and was followed by the Cascade Phase dated from 8000 to 4500 BP. Leonhardy and Rice (1970:24) feel that the two represent a cultural continuum.

Brauner and Nisbet concluded that since no cultural correlates could be found in or near the region of southwestern Oregon, the cultural assemblage recovered from 35JA53 "represents a heretofore undescribed cultural manifestation that may represent the pioneering human population in

southwestern Oregon contemporary with Windust cultures to the north and east" (Brauner & Nisbet1983:46).

Research indicated that prior to 8000 years ago the residents of 35JA53 were new arrivals to this environment and had no established trade routes. However, by 6000 to 8000 years BP the occupants of 35JA52 had a well established orientation to the local environment as well as contact with surrounding cultures. At this time they were using a new projectile point style, as well. Brauner and Nisbet (1983:106) conclude that the two sites are culturally related and that:

> In the upper Applegate River drainage a weapon system characterized by lancelolate projectile points, which was perhaps more efficient than preceding systems, was introduced into an indiginous cultural system which had its beginnings several thousand years earlier. An idea, a technological system, moved into the Applegate River drainage, not a new human population.

Although it has been shown that assemblages from the Applegate and the southern Columbia Plateau do not represent identical populations (Brauner and Nisbet 1983; Nisbet 1983), it is interesting to note that the evolution from a triangular-blade, squared stem point style to a large leafshaped style on the Applegate approximately 8000 years BP is similar to the transition from a Windust "proper" to a Cascade "proper" point style on the southern Columbia Plateau at approximately the same time.

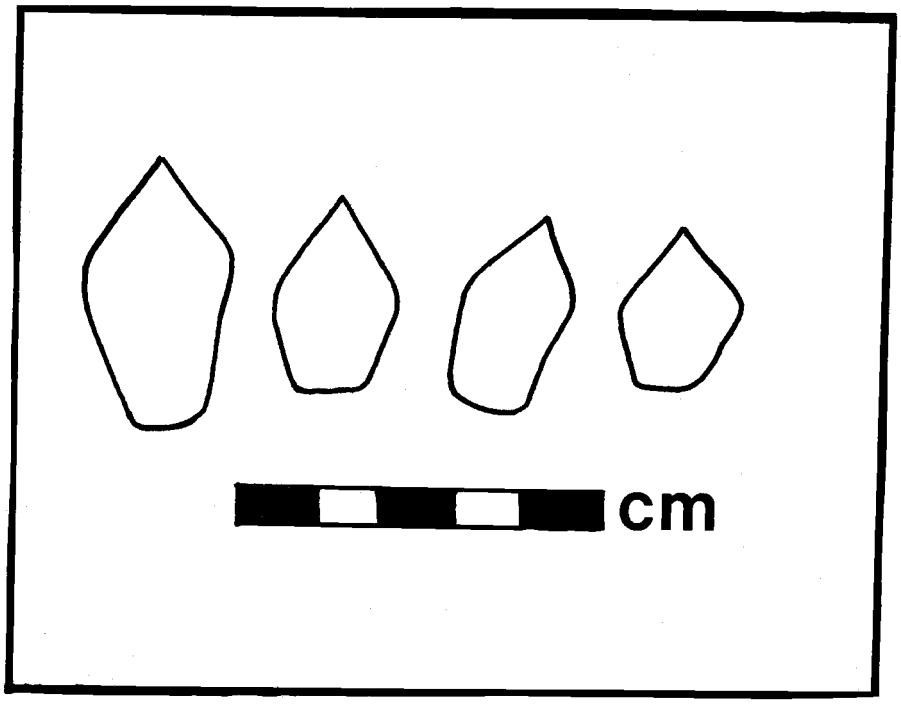

Figure 11. Prelanceolate Point Style from 35JA53 (Brauner & Nisbet 1983)

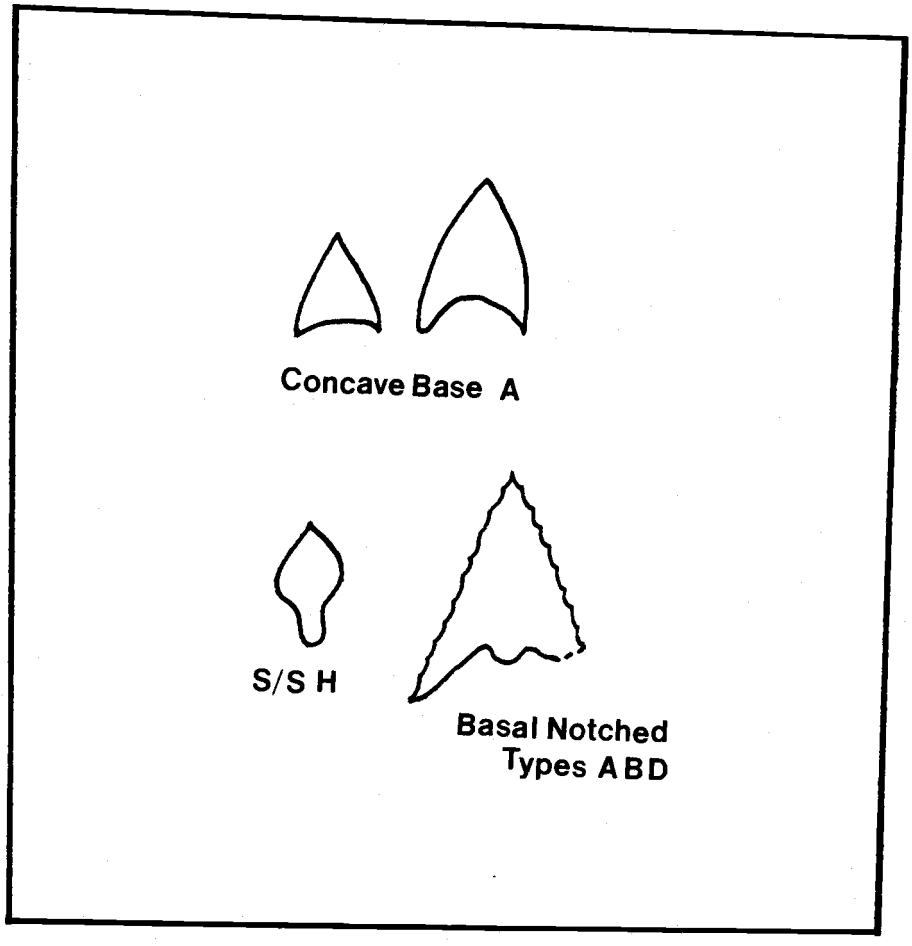

Figure 12. Point Types From Component 1A.

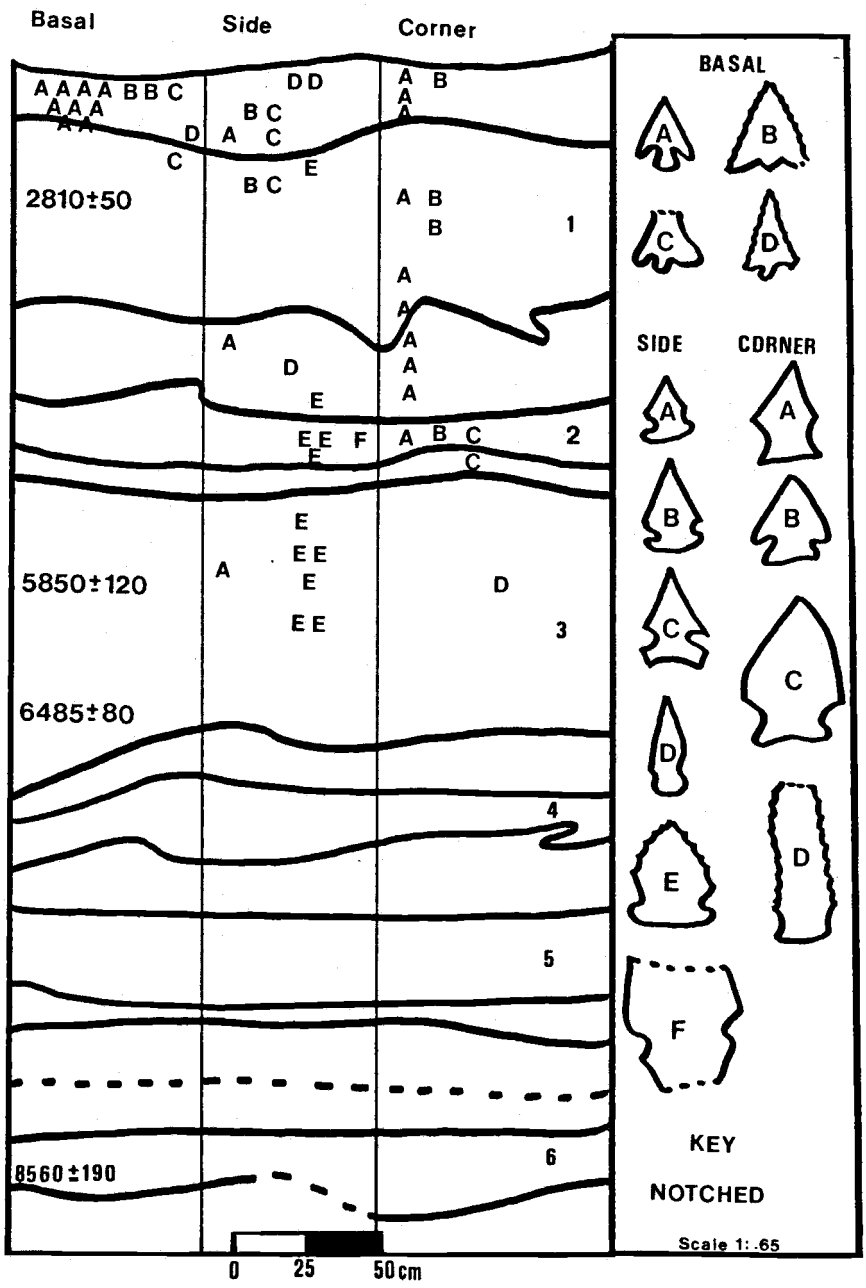

Figure 13. Occurrence of Notched Point Types in Idealized Strata.

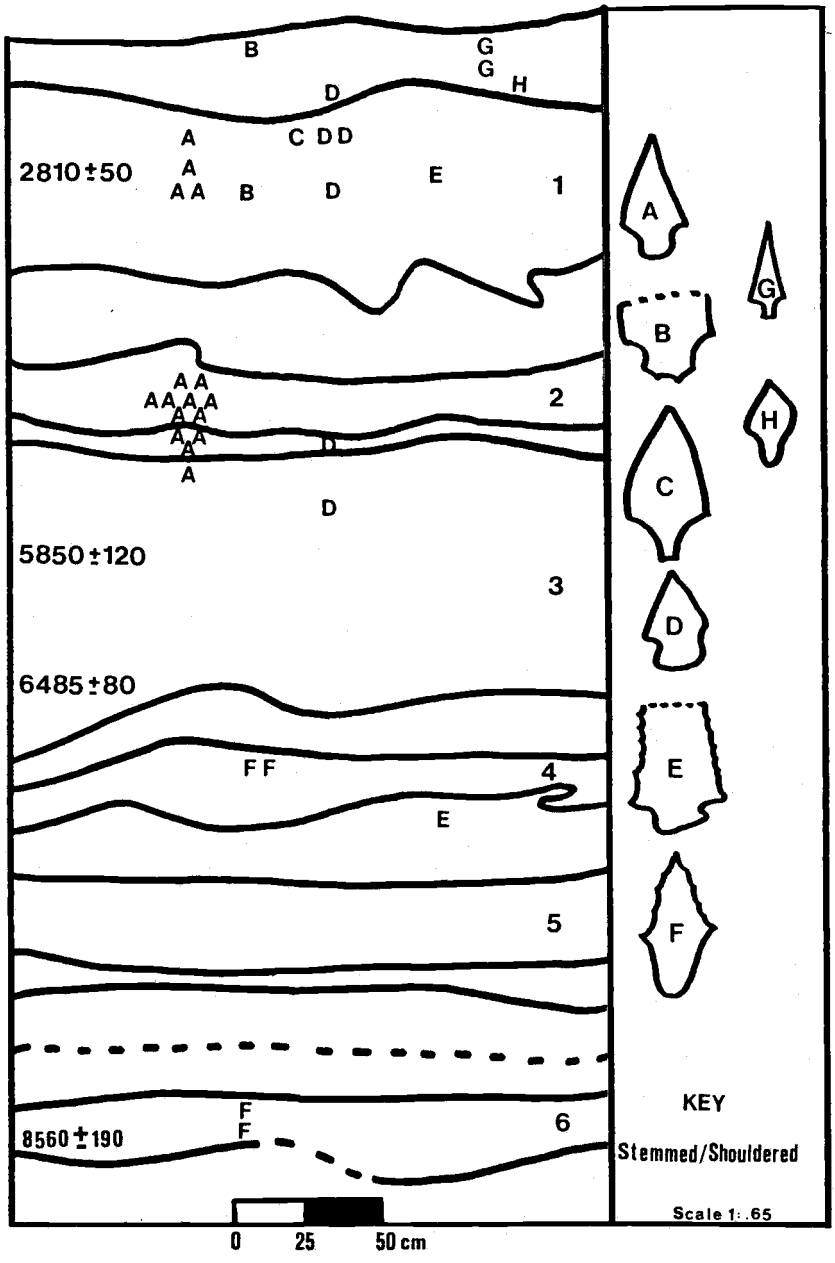

Figure 14. Occurrence of Stemmed/Shouldered Types in Idealized Strata.

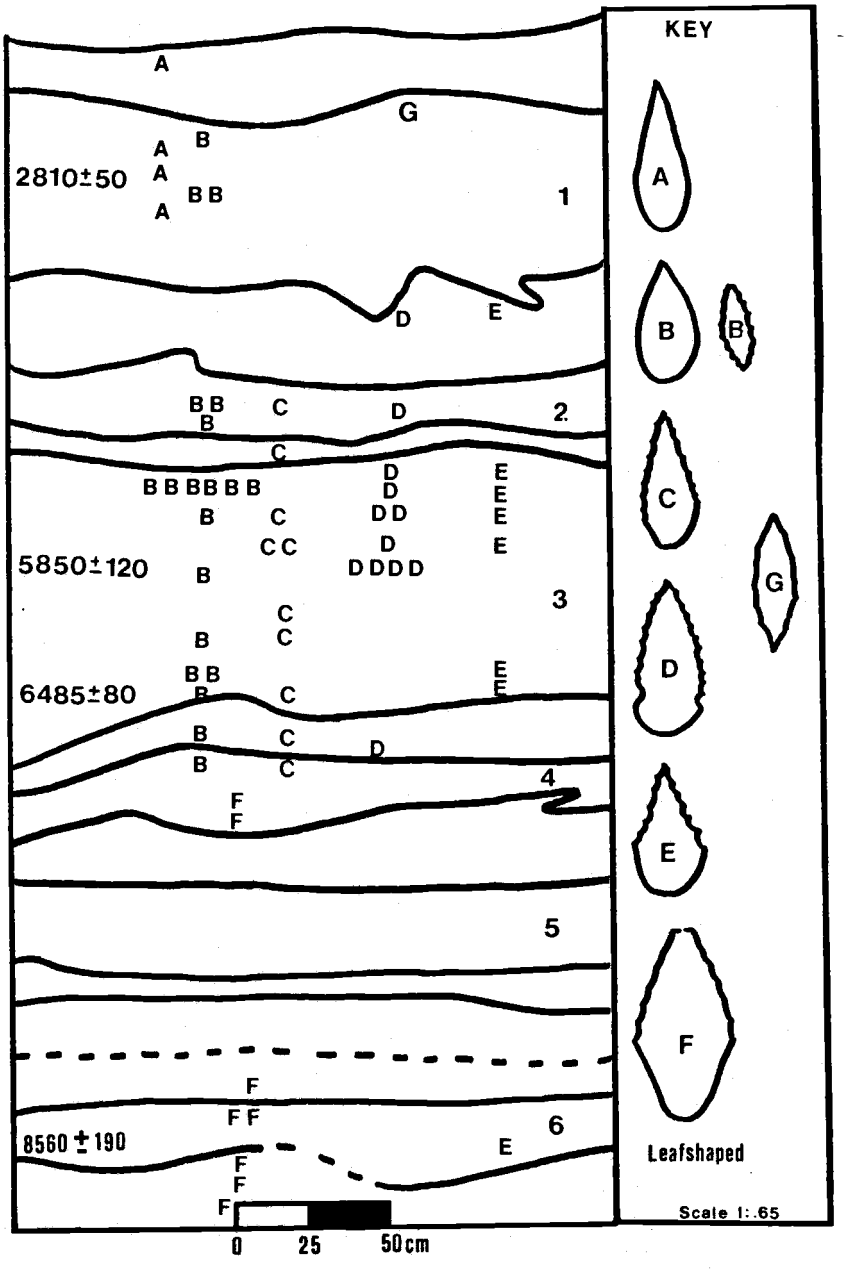

Figure 15. Occurrence of Leafshaped Types in Idealized Strata.

The existence of a "pre-lanceolate" style on the Applegate will guide future research questions being asked of the data from Marial. If a pre-lanceolate type is located it may represent a forerunner to the leafshaped types. However, if one is not found, this will indicate that Marial's initial occupants brought a leafshaped style point with them. These hypothesis can only be tested with data obtained by further excavations down below the point where the 1984 excavations ceased.

Point types found in the lower three cultural zones may provide clues as to coastal-interior connections, as do types from the most recent component of the site which was excavated in 1983.

Ross (1985) has noted the existence of two types of sites on the southern Oregon coast. The first type is a shell midden site characterized by deposits of shell as well as faunal remains of fish and sea mammals. The artifact assemblage from these sites include harpoon heads, composite fish hooks and other bone implements which represent a well adapted marine/riverine/estuarine resource based economy. Point styles include small stemmed and/or notched points. These sites have been dated from 3000 BP to historic times.

Point types from the most recent component at Marial (excavated in 1983) are similar to those found at shell midden sites (Figs.12 and 16). These include the barbed, basal notched varieties and the triangular concave base type as previously discussed. A C14 date has yet to be obtained for this component; however, typological cross-dating of the basal notched varieties has tentatively dated the component from 500 to 700 BP.

The second type of coastal site is what Ross (1985:243) refers to as a "coastal bluff" site. This type has been located as far north as Whiskey Run (35CS18) near the mouth of the Coquille River and as far south as Point St.

George (4DNOll) in California. These sites are characterized by: location on relatively high bluffs overlooking the ocean, a thin layer of soil deposition, and no evidence of a fishing or marine adapted economy.

Artifact assemblages from these sites include scrapers, gravers, and lithic detrius. Projectile point styles common to these sites are large, deeply serrated leafshaped and shouldered, constricting stem, corner notched points. Ross (1985:248) notes that points from coastal bluff sites differ morphologically as well as technologically from those common to shell midden sites.

To date, one C14 date has been obtained from a "bluff" site. Blacklock Point (35CU75) yielded a date of 2750±55 BP, making it contemporary with the earliest dated shell midden sites. This prompted Ross to formulate two hypotheses regarding the existence of two types of sites on the coast 3000 years ago (1985:248): Coastal bluff sites may represent seasonal diversity within a single group of people(s) whereby nonmarine resources were being exploited with a technologically different weapon system than was utilized at marine sites; or 2) the bluff sites were occupied by a different group of people who were not exploiting marine resources. Implicit in this hypothesis is the idea that these people possessed a terrestrial oriented subsistence base and were fairly recent arrivals to the coast as they were not yet exploiting marine resources.

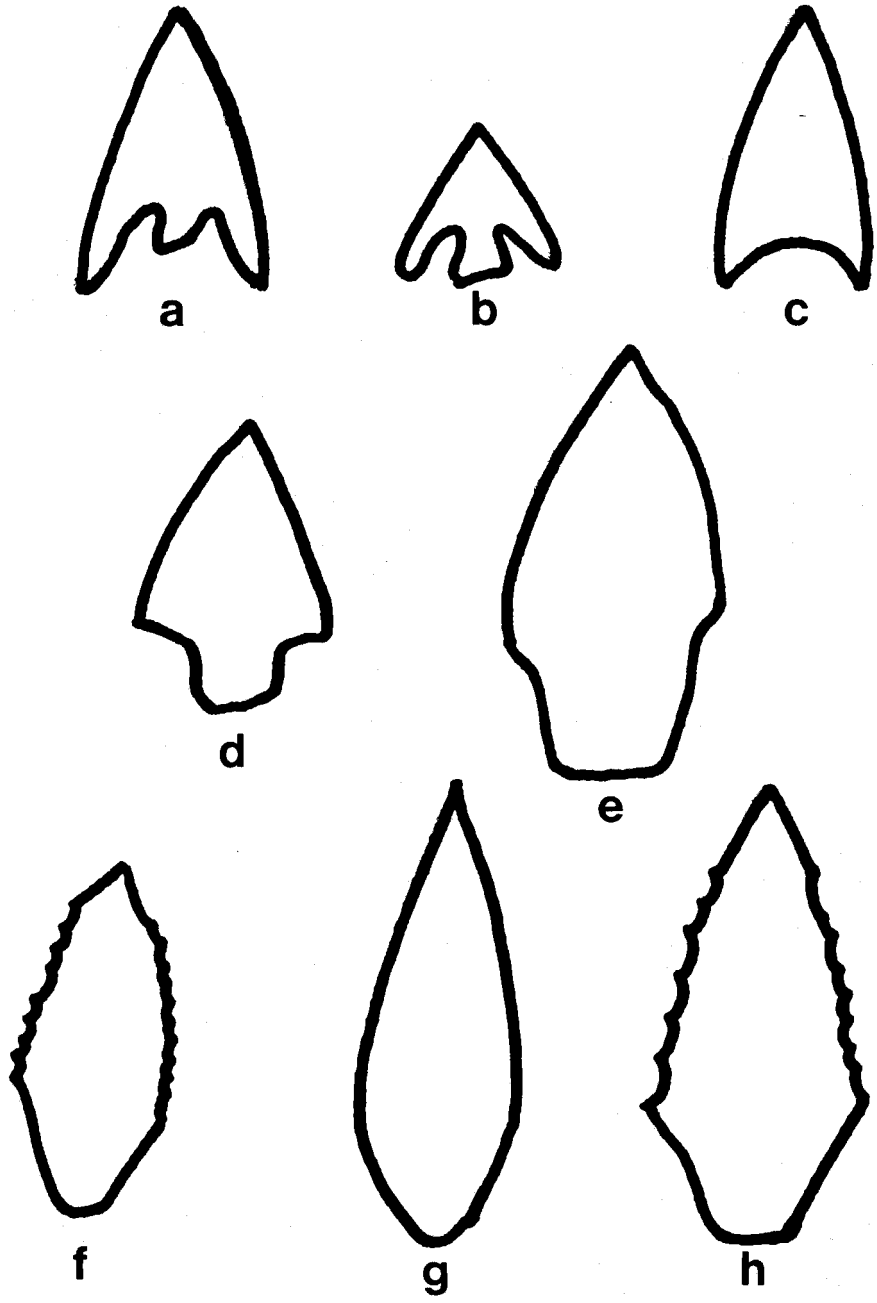

Figure 16. Projectile Point Styles from Coastal Sites.
A-C = Shell Midden Sites
D-H = Coastal Bluff Sites
(after Ross: 1985)

Ross concluded that the latter hypothesis is more plausible due to the significant morphological and technological differences in the artifact assemblages from each type site. Strong supporting evidence for this conclusion exists at older upriver sites where assemblages similar to the "bluff" sites exist. Marial is a good example. Leafshaped types (C, D and F) located in stratum dating from 5000 to 8600 BP are very similar to point styles found at "bluff" sites. Such data supports the hypothesis that coastal bluff sites were occupied by interior peoples.

Cressman et al. (1960:206) postulated that the Oregon Coast was originally populated by people who had traveled down major rivers from the interior to the coast. Pullen (1981:105) observed that the wide canyons of the Rogue River would have provided an abundance of upland game animals and other terrestrial resources as well as provide a suitable travel corridor between the interior and the coast. Evidence from Marial seems to indicate the prehistoric use of the Rogue corridor as a route to the coast.

Additional Artifacts

The excavations in 1984 yielded six leafshaped, unifacially worked (with one exception), planoconvex, cross-sectioned artifacts that resemble projectile points. However, they look as if they would be difficult to haft as the bases have not been thinned. They have a dorsal ridge or "keel" on the dorsal side at which the flake scars terminate. The flat ventral side has not been worked, with one exception.

Baumhoff (1982) has encountered this unusual artifact type in the North Coast Range of California. He refers to them as "McKee Unifaces" despite the fact that some of them are flaked on the flat side. Baumhoff noted (1982:14) that

they have been located throughout northern California, but are often identified as either willow leafed projectile points or keeled scrapers.

Baumhoff has found "McKee Unifaces" occurring from Point Delgada on the coast, through the Shasta Lake region, and onward into Modoc County, all at approximately 4000 BP. Marial's unifaces were located primarily in Component 3 although two occur in the lower levels of Component 1. This gives them a time range of roughly 3000 to 6000 BP.

The projectile points and unifaces mentioned above were the only artifact types to change through time. Scrapers occurred at all levels with little stylistic variation. Out of a total of 165, 149 (90 percent) were cryptocrystalline silica, 14 (9 percent) obsidian, and 2 (1 percent) were basalt.

The frequency of scrapers was highest in the northern units, especially in Component 3; however, this may be due to the fact that artifact frequency in general is highest here. Most of the scrapers are similar in size and style; a few are elaborately worked, but the majority are simply rounded, unifacially worked flakes displaying a concentration of flake scars on the dorsal-distal end.

A total of 34 whole spall scrapers and 9 fragments were recovered from all six cultural components. Spall scrapers consist of a thin, rounded primary cortex flake which has been removed from the flat face of a basalt river cobble. The edges have not been worked but they do display a polish on their edges characteristic of use as a scraping implement. This artifact type provides an excellent example of what has been referred to as an "expediency" tool (Ex. Lyman 1985:5.4). Such tools require a low degree of manufacturing modification and often display little use wear attrition. Inherent in this concept is the premise that such tools were manufactured from readily available local resources, required very little time to manufacture, were used briefly, then

discarded. River cobbles from either Mule Creek or the Rogue River would have provided a readily available source of spall scrapers.

Brauner recovered spall scrapers at several of the Applegate sites ranging in age from pre-8000 to the protohistoric period. At a protohistoric housepit (35JA42) Brauner noted the occurrence of the majority of the spall scrapers outside of the house, while the majority of the smaller obsidian and cryptocrystalline silica scrapers occurred inside of the house. Brauner (1983c:66) concluded that the spall scrapers may have functioned as an outside tool, possibly used for primary hide working, while the smaller scrapers were used for the final stages of hide preparation inside the house. The two scraper types co-occurred at Marial.

Cobble tools did not change morphologically throughout the cultural zones, thus showing little variation through time. Cobble tool frequency is highest in Component 3. Ground stone, pestles and cobble tools usually associated with plant food processing, occurred in Components 1, 2, and 3. None were found located below Component 3, but this may be due in part to a small sample size. The cobble tools that were found below Component 3 were types usually associated with lithic tool manufacture.

Cobble tools were often used for more than one purpose. Of the eight that were classified as hammerstones, four were also edge ground, two were pecked (pecked cobbles display a use wear pattern that resembles pitting and is usually located on the flat face of the cobble), and two displayed pecking in the center of the cobble face on both sides of the same cobble. Of the 12 pecking stones (actually hammerstones that display a wear pattern indicative of a lesser force of percussion), two were also ground, two were edge ground, and three were pecked. One pecking stone was edge ground and, out of five ground cobbles, two were also pecked and three were worked. To simplify

cataloging procedure, cobble tools were classified by predominant use wear patterns only.

Etched stone (predominately shale) occurred as low as Component 4. Shale occurred naturally in abundance at the site. One geometric patterned piece was located, and although exact provenience is not known, it is most likely associated with Component 1.

Five gravers were located, including three very similar teardrop shaped styles, all obsidian, all located in Component 3.

Anomalous artifacts included two elliptical shaped, grooved stones (possible line sinkers), one located in the plowzone and the other in Component 3. A possible pendant fragment was found in Component 1, and a small round baked clay ball was located in Component 3, as well as possible atlatl weight fragment, and a biconically drilled piece of pumice.

A large sandstone cylinder, possibly a pipe bowl, was located in a northern unit at 140 centimeters below surface. This is the area where Component 2 merges with Component 3. The cylinder is etched on the side in a cross hatched pattern and the bottom has been flaked completely around the perimeter. The cultivation of tobacco by ethnographic groups in the area is well documented (Sapir 1907; Kroeber 1942); but what were native peoples smoking 5,000 years ago? Wild tobacco is indigenous to the area, but the custom of smoking it is thought to have been introduced at the time of contact (Munz 1968).

Kroeber (1942:14) states that the occurrence of a pipe may not necessarily be interpreted as evidence of the knowledge of tobacco. The practice of smoking non-Nicotiana herbs, bark and leaves has been documented in the Pacific Northwest (Kroeber 1942). One herb, in particular, seems to have been preferred as smoking material in the Northwest before the introduction of

tobacco; this was bear-berry, commonly called kinnikinnick (Arctostaphylos uva-ursi). The leaves were pulverized and smoked alone. After the introduction of tobacco, kinnikinnick was often mixed with tobacco when supplies were low (Gunther 1973:44)

The inside contents of the pipe will eventually be analyzed in order to determine what exactly was being smoked.

An interesting cobble feature was found in the northwest corner of unit N102-104, E82-84, at approximately 180 centimeters below ground surface, placing it well within Component 3. The feature consisted of a cluster of river cobbles placed contiguous to one another to form a solid round circle (Fig. 17). It was 85 centimeters in diameter and depressed in the center. It was also covered with basalt spalls that appear to have split off from their parent cobbles after exposure to intense heat, however, no charcoal was located in or under the feature. Several serrated leafshaped projectile points (type D) were found near the feature as well as one prominently side notched point. The 5850±120 date was obtained from a charcoal sample near the feature.

A somewhat similar feature was located in 1982 at a level of 90 centimeters below surface, approximately 4 to 5 meters southeast of the 1984 feature. It consisted of a "roughly circular stone platform about a meter in diameter" (Deich 1983:8).

Davis (1983:37) located a similar feature at a Lost Creek site (35JA23). It was found in association with housepits and Gunther barbed style points. Davis described it as a "pavement" feature and speculated that it may have been the floor of a sweathouse.

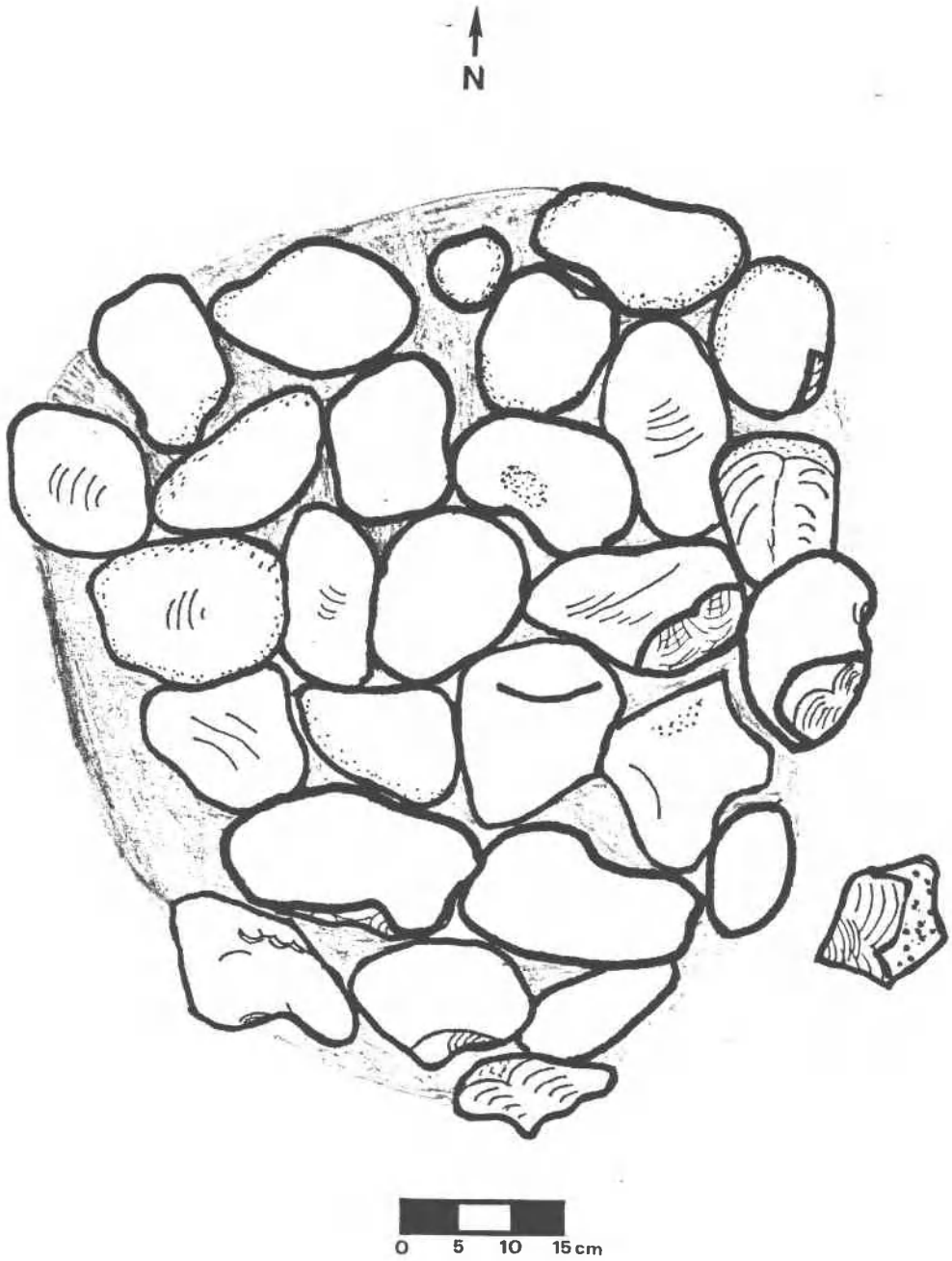

Figure 17. Feature 5.

The cobble feature at Marial may also have functioned as a sweathouse floor. The evidence supporting this speculation is the location of heat spall flakes on and near the feature. Sapir (1907:263) observed that heat for a sweathouse was produced by sprinkling water on hot stones. Such an activity would cause certain river cobbles to fracture into spalls. This may also explain the lack of charcoal in association with the feature.

Activity Areas And Site Function

The artifacts recovered provide clues to activities that were carried out at the site, yet discerning ancient lifeways is difficult when only lithic tools and debris remain.

Ground stone and pestles may indicate the processing of plant foods, while utilized flakes and choppers may indicate butchering activities. The functional wear patterns displayed by the above artifact classes coincide with the inferred use. This applies to the artifact class "scrapers" as well. A functional analysis revealed that 100 percent of the so-called "scrapers" did indeed display use wear indicative of scraping activities. Uses of the above artifacts are documented ethnographically (Sapir 1907).

The most obvious activity occurring at the site was the manufacture of lithic tools as evidenced by the tools themselves, the tools used to manufacture them (e.g., hammerstones, pecking stones), and, most importantly, the diagnostic waste flakes generated in the process. Two separate reduction sequences were found in the northern units. They consisted of pockets of flakes numbering in the hundreds. The flakes were all the same color and presumably all came from the same parent material. In one of these reduction sequences, a projectile point tip of the same material was found providing a clue as to what

was being manufactured. Analysis of these waste flakes found them to display the attributes characteristic of tool manufacture flakes.

Cobble feature #5 may have functioned as the floor of a sweathouse (see Fig. 17) . If it did, then the activities associated with a sweathouse such as ritual purification, sweating, and sleeping may have been carried out at Marial 5000 to 6000 years ago.

The evidence leading to a determination of site function is more obscure than that of the activity areas. As previously mentioned, the site lies near productive fishing and hunting grounds. That fact, combined with the presence of projectile points and over 2000 fragments of animal bone, leads to the inference that the site was used as a seasonal hunting camp. Further evidence supporting this inference is the fact that no permanent structures have been located in the three seasons of excavation at Marial.

The last clue relating to site function is the fact that firecracked rock was found to be strewn about; no areas of concentration or "heaps" were found. Binford (1981:204) discusses methods of refuse disposal and states that at a viable sedentary site such as a village, firecracked rock is cleaned up and disposed of in an area away from main living floors. In hunting camps, however, Binford noted that firecracked rock is simply left or dropped in "the immediate context of use."

By combining the above data, it is possible to infer that Marial functioned as a seasonal hunting camp. This would apply to all seven cultural components. The light, sandy strata separating these zones may represent either long periods of abandonment, excessive flooding of Mule Creek, or both.

Chapter 8 SUMMARY & CONCLUSION

Data retrieved from the Marial site indicates that it may well be one of the most significant sites in the region of southwestern Oregon for several reasons.

First, the actual location of the site is significant in that it is situated in the lower Rogue River corridor where few archaeological sites have been scientifically examined. Data from Marial will shed much light in the prehistoric use of this area for human habitation and resource exploitation, as well as the actual use of the corridor as a travel route between the interior valleys and the coast. The Rogue River is a major transverse stream flowing from the interior of the region through the Klamath Mountains to the coast. In the rugged topography of this region, the corridor created by the Rogue would have provided an important travel route. Evidence obtained from Marial indicates that the diffusion of ideas and possibly the actual movement of people did take place in the corridor during its prehistory.

Second, the Marial site is located on a broad, flat river bar, one of the few habitable areas in an otherwise steep, narrow river canyon environment. The archaeological evidence indicates that this river bar has been utilized by humans for the last 9000 years. The meadows surrounding the mouth of Mule Creek are presently the site of the Rogue River Ranch, an historic complex maintained by the BLM. Many of the original post contact buildings still stand today and the history of this area has been well documented by a local historian (Atwood 1978). The Marial site lies on what is referred to as the "West Field" of the Ranch. Here seven cultural components have been located. They range in age from a relatively dated 500 - 700 year old component on the surface, to the deepest component which yielded a date of 8560±190 BP. The exact location

of the bottom of the site has yet to be determined. The existence of seven prehistoric components in conjunction with a restored historic component offers a rare opportunity to study the past 9000 years, possibly the entire span, of human occupation at the mouth of Mule Creek.

Third, the physical properties of the Marial site are extremely significant. Marial exists as a deep, highly stratified, multicomponent, C14 dated site in an archaeological region where undated single component sites predominate. To date seven discrete cultural components have been identified. Three of them have yielded C14 dates and six of them have one or more distinct projectile point types that cluster in and around them.

Component IA

Component IA was tested in 1983 and is located approximately 25 meters southwest of the older components on the edge of the river terrace. This component lies on and directly below ground surface and is not stratigraphically related to the older components. The artifact assemblage recovered from Component IA was comprised of mostly notched, barbed projectile point types. Many resembled the so-called Gunther Barbed Variety common to late prehistoric sites in southwestern Oregon and northwestern California (Treganza 1958).

Several specimens of a distinct, concave base type point were located exclusively in this component. This style is common to late prehistoric shell midden sites on the coast and may have been imported in from the coast by either trade or actual contact with coastal cultures. This style has been located at other sites along the lower Rogue River and is usually found in association with the barbed varieties indicative of a late prehistoric phase of the region. A

C14 date for Component IA is forthcoming. Until then, the component has been relatively dated 500 to 700 BP by typologically cross dating the basal notched, barbed types.

Component I

Component I lies on the surface of the central portion of the river terrace. A C14 date of 2810±50 BP was obtained from 60 centimeters below surface. The projectile point collection recovered from this component was characterized by a large variety of small variously notched projectile point types. This plethora of notched styles has been previously noted by both Davis (1974) and Lyman (1985), occurring along the Rogue River approximately 2000 to 3000 years ago. Marial's radiocarbon date concurs with this estimated time span.

Three specimens of the so-called Desert Side Notched type (Baumhoff and Byrne 1959) were also found within this component and may have been imported in to the site from desert cultures to the east.

Component 2

Component 2 lies below Component I on the central terrace. The dominant projectile point type located in this component was a morphologically uniform Stemmed/Shouldered type (A). Similar styles have been located at an Elk Creek site tentatively dated from 2000 to 4000 years BP (Brauner and Lebow 1983). Component 2 lies between strata dated 2810 BP and 5850 BP.

Component 3

Component 3 was the thickest cultural component and yielded the highest artifact frequency. Two radiocarbon dates were obtained from this component. In 1982 a date of 6485±80 BP was obtained from 250 centimeters below surface. This was confirmed in 1984 when a 5851±120 BP date was obtained from 190 centimeters below surface in a nearby excavation unit.

The artifact assemblage recovered from this component contained several large leafshaped projectile point types (C, D, E). These types are very similar to styles located at site 35JA52 on the Applegate River in the interior of the region. This site has been tentatively dated from 4000 to 6000 BP (Nisbet 1981). C14 dates from Component 3 at Marial concur with these tentative dates.

Another predominate projectile point type occurring in Component 3 was a small leafshaped type (B). Although this type ranged from Component 1 to Component 4, it occurred with the greatest frequency in Component 3. This style is common to sites along the Rogue River and has been named the "Gold Hill" type by Davis (1974). Prior to research at Marial, the style was assigned a time frame of 2,000 to 3,000; however, the type occurs at Marial well below the 6485 BP date. This may represent the earliest occurrence of this type to date.

Components 4, 5 and 6

Components 4 and 6 yielded a leafshaped type (F). No diagnostic projectile points were located in Component 5, possibly the result of a small sample size.

A C14 date of 8560±190 BP was obtained from directly below Component 6. This date makes Marial the oldest dated site in western Oregon. Since the exact location of the bottom of the site has yet to be determined, the possibility exists that the site may predate 9000 years BP.

The large leafshaped types found in Components 3, 4, and 6 are similar to those located at so-called "coastal bluff" sites along the southwest Oregon Coast (Ross 1985). "Bluff" sites are often located on high coastal bluffs overlooking the ocean. To date, no evidence of a marine oriented economy has been found at any of these sites and the lithic tools recovered differ both morphologically and technologically from those found at marine resource oriented shell midden sites. The oldest C14 date obtained for a coastal bluff site is 2750±55 BP from the Blacklock Point site (35CU75), making it contemporary with the earliest shell midden sites. Due to the similarities of projectile point styles with older upriver sites such as Marial, Ross has postulated that coastal bluff sites represent a pioneering, terrestrial resource oriented population of peoples from the interior who had not yet adapted to a marine resource based economy (Ross 1985:248).

The evidence from three seasons of excavation at Marial indicates that the site was occupied on a seasonal basis and probably functioned as a fishing/hunting campsite. This would concur with the early ethnographic literature regarding the Indians of the area. Both the Lowland Takelma and the Shasta Costa utilized a "seasonal round" subsistence pattern whereby

resources were gathered as they became available. Gray (1985:76) summarized the pattern:

> It is apparent that mobility to exploit a variety of resources, either in the uplands or in the river valleys, was more indicative of the summer settlement pattern, and that the sedentary village life near the major drainages was characteristic of winter life.

In three seasons of excavations at Marial, no evidence of permanent structures indicative of a winter village site has been located. This fact, combined with the presence of mammal and fish bone, hunting and hide processing implements, and the location of the site near productive fishing and hunting grounds has led to the tentative conclusion that the site was utilized on a seasonal basis only. This applies to all seven cultural components.

The primary research goal of this thesis is the establishment of a chronological model of the projectile point types at the site. The physical conditions of the site were nearly ideal for such research goals as each of the seven cultural components were separated from one another by light sandy soil horizons with low artifact frequencies. Such conditions allow for the evaluation of discrete artifact assemblages. The additional data provided by the C14 dates then placed a temporal control upon each cultural component and the assemblage within.

The creation of a projectile point chronology for Marial began by formulating a morphological or descriptive typology whereby similar morphological points were grouped together to form "types". These morphological types were then plotted on a map of the stratigraphy and C14 dates. Those types that occurred with consistency and regularity within a well defined time span were then elevated to the status of "temporal type". The types discussed below met the criteria for inclusion in the temporal type category. It must be stated, however, that the assignment of these types to temporal status is tentative due to the small sample size excavated from Marial to date. At present, only an estimated 5% of the site has actually been excavated.

The most recent types located at Marial were the Basal Notched types. The majority of the Basal Notched types occurred in Component IA tentatively dated 500 to 700 BP. Similar basal notched, barbed styles are a common occurrence in late prehistoric sites in southwestern Oregon and northwestern California and represent a well established time marker for the region (Leonhardy 1967).

Approximately two thirds of the Basal Notched points were recovered from the plowzone over Component I. Two possibilities exist to explain their occurrence in this older stratum. I) They represent secondary deposition as a result of the years of agricultural plowing of the West Field, or 2) they represent older specimens of the basal notched types.

In the Side Notched category types C and E both occurred within well defined time spans. Type C occurred in association with Component I spanning from roughly 2000 to 2810 BP. This type is very similar to what has been referred to as "Desert Side Notched" (Baumhoff and Burns) and may represent contact of some form with desert cultures to the east.

Type E occurred from 2810 to roughly 6000 BP and was associated with Components I and 2.

In the Corner Notched category, type A occurred consistently from the plowzone through Components I and 2 with a time span of roughly 2000 to 4500 BP. Two very similar specimens of type C were located less than 10 centimeters apart in depth from each other and were dated at roughly 4500 BP. The small sample size, however, may not warrant elevating it to a temporal type.

No notched point of any type was located below the 6845 BP date (Component 3).

In the Stemmed/Shouldered category, type A formed a well defined battleship curve of stylistic popularity spanning from roughly 2500 to 5500 BP and encompassing Components I and 2. The sample size and frequency of the occurrence of this type may well deem it one of the best temporal indicators recovered from the Marial site.

Stemmed/Shouldered type F, a distinctive elongated stemmed point, occurred exclusively in Components 4 and 6 and probably represents an earlier form of stemmed point.

In the Leafshaped category, the majority of the types displayed a sensitivity to time. Type A occurred in Component I spanning from roughly 2000 to 3000 BP. Type B commonly referred to as the "Gold Hill" style spanned from Component I to Component 4 and ranged from roughly 2500 to 7000 BP. The early occurrence of this type at Marial pushes back the previously established time frame for the type approximately 1000 to 2000 years.

Types C, D, and E span roughly 4500 to 8560 BP. In an early chapter it was concluded that Types C, D, and E may be a single temporal type which displays a large variety of morphological variation.

Type F occurred only in Components 4 and 6 and spanned from roughly 7000 to 9000 BP. This type represents the oldest projectile point type recovered from Marial to date.

The significance of the above temporal types extends well beyond the site itself to encompass the region of southwestern Oregon. As discussed previously, Lyman (1985) has noted that southwestern Oregon is a region with many single component sites and very few C14 dates. The archaeological research in the region has been most extensive along the middle and upper portions of the Rogue River. Roughly 50 sites have been either excavated or sampled in this area, each consisting of only one cultural component and only five yielding C14 dates (Lyman 1985:4.9).

Lyman (1985:4.9) continues by stating that given such circumstances with no stratigraphic or radiocarbon data, the use of typological cross dating becomes a useful and mandatory technique for formulating a preliminary projectile point chronology for the Rogue River area. Lyman then proposed a general sequence of projectile point types based on the stratigraphic and typological correlations of various sites in the region (Lyman 1985: Fig. 4.3; see Fig 18 in this chapter).

Lyman (1985:4.9) concluded that:

> Subsequent research and the acquisition of detailed stratigraphic and/or multiple radiocarbon dates from the geographic area of concern may result in refinement and modification of this preliminary chronology.

The Marial site offers the type of data needed for the formulation of a well synthesized projectile point chronology for the region. Preliminary research at Marial has shown the projectile point types from the site to be very similar to styles present at other sites in the region. Point types from Marial were also

found to occur within a well defined temporal span or to "sort in time" (Thomas 1979:212). Such conditions allow us to begin building a cultural chronology (as expressed by projectile point types) for the region by combining similar components to form cultural phases, the building blocks of a regional chronology (Willey and Phillips 1958). The creation of a regional chronology is beyond the scope of this thesis, but Marial's dated components will yield much information crucial to the actual formulation of a regional chronology at some point in the future.

Figure 18. Tentative projectile point chronology for the middle and upper Rogue River region. Time ranges of projectile point types are indicated by dotted lines. A, triangular concave base; B, Gunther Barbed; C, Gunther Shouldered (Davis 1983); D, top row--Desert Side Notched, bottom row--"clunky" side notch; E, small (generally less than 29 mm long; Nisbet 1981) unserrated lanceolates ("Gold Hill"); F, large (generally greater than 29 mm long; Nisbet 1981) serrated lanceolates ("Cascade" like); G, various corner notched types; H, pentagonal stemmed (Brauner and Nisbet 1983).

(Lyman 1985:4.16, Figure 4.3. Reprinted with permission from the author.)

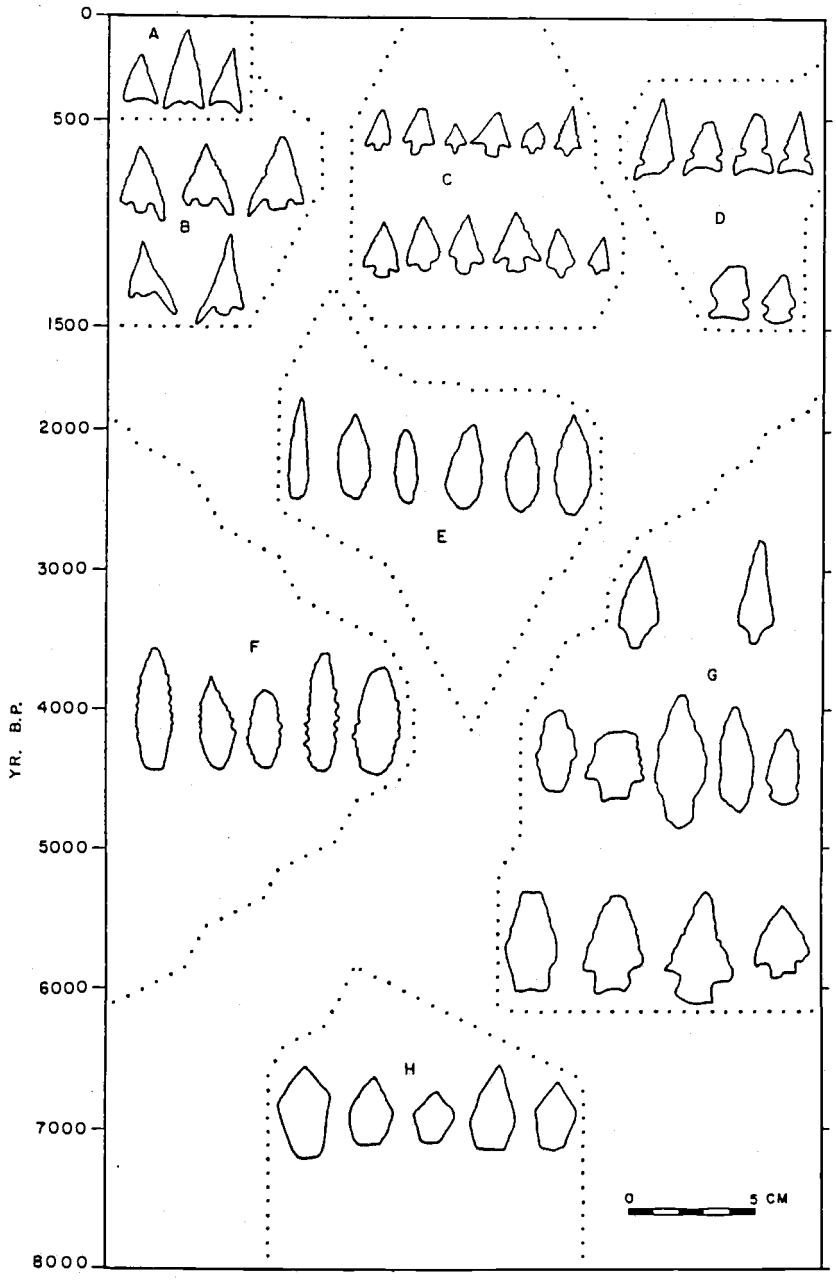

Figure 18. Tentative Projectile Point Chronology for the Middle and Upper Rogue River Region.

UPDATE

Upon completion of this thesis, two additional C14 dates were obtained from the Marial site. The first was obtained from a charcoal sample recovered from Component 1A. The result was a 710±55 BP date (Dicarb 3286). This component had been typologically cross dated from 500 to 700 BP. The absolute date confirmed the typological cross date and reaffirms the generally accepted time frame for basal-notched, barbed projectile point styles in southwestern Oregon.

The second date was obtained from a charcoal sample recovered from Component 2. Our "roughly estimated" age for this component was approximately 4500 BP. The absolute date obtained was 4060±55 BP (Dicarb 3285), thus confirming our original estimate.

Component 2 yielded a morphologically uniform stemmed/shouldered projectile point type (Stemmed/Shouldered A). In the thesis text this type was described as "possibly one of the best temporal indicators recovered from the site" (page 88) due to the large sample size, a battleship curve of occurrence, as well as the morphological uniformity within the type. The addition of an absolute date further enhances the types value as a temporal indicator.

The addition of these two dates is particularly exciting in that five of Marial's seven cultural components are now C14 dated. Each of these cultural horizons contain distinct projectile point types which are now directly dated. The result of a chronological model of projectile points which may be used to typologically cross date similar projectile point types at other as yet undated archaeological sites in the region. The chronological data obtained from the

Marial site may deem it one of the most significant archaeological discoveries located to date in southwestern Oregon

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APPENDICES

APPENDIX A

FIELD AND LABORATORY METHODS

The 1984 test units centered around the 1983 units and the 1982 units which yielded the 6585 BP C14 date (Fig. 19). Backfill dirt was dug out of the earlier units down to previously unexcavated levels. The 1982-83 grid system was reestablished and new units were opened up contiguous to older units, and older units were further excavated.

Test units were 2 by 2 meters square (although some were eventually reduced) and were excavated in 10 centimeter arbitrary levels. Elevations were recorded with a transit and stadia rod.

Soil was screened through 1/4 inch screen except four quarter sections (1x1 meter) in various pits that were sampled with 1/8 inch screen in order to determine how much data is lost in 1/4 inch screen. Ideally, artifacts were found and recorded in situ, but units were excavated one quad (1x1 meter) at a time to insure at least quad provenience. Tools were recorded to the closest horizontal and vertical provenience and waste flakes were collected with quad provenience only. Floral and faunal material were collected at each level. Firecracked rock was counted and recorded at each level.

Features were mapped and photographed and soil profile maps were drawn in order to record the soil stratigraphy. Soil samples were collected and analyzed by Dr. Steven Shade, BLM Soil Scientist. Three cryptocrystalline silica (ccs) samples were analyzed by Dr. David Jones of the U.S. Geological Society in order to determine their sources. All artifacts, including debitage, were analyzed at the Oregon State University Archaeology Laboratory.

Three charcoal samples were obtained in 1984 and were radiocarbon dated by Dicarb Laboratories (2810±50 BP Dicarb 3131, 5850±120 BP Dicarb 3130, 8560±190 BP Dicarb 3129). The 1982 radiocarbon date was also obtained from a charcoal sample and was dated by Washington State University (6485±80 WSU 2731).

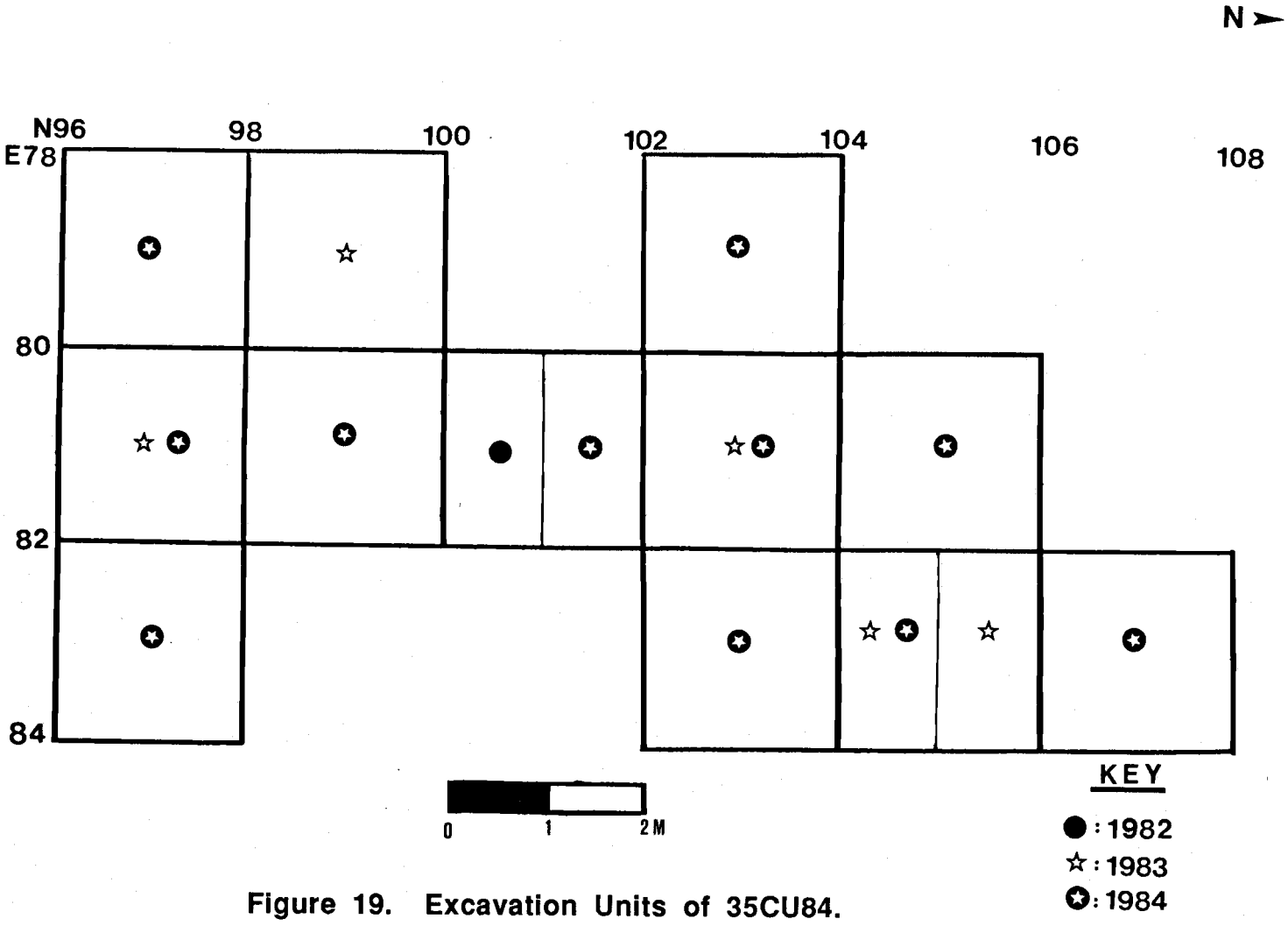


Figure 19. Excavation Units of 35CU84.

FAUNAL AND FLORAL REMAINS

A total of 2327 small fragments of bone was recovered in the 1984 field season. Bone was located at all levels of the site, but quantities diminished rapidly with depth. This may be due to poor preservation in the soils over an extended period of time.

The presence of multiple small fragments of bone may infer the manufacture of soup and/or grease extraction whereby bone was chopped into small bits, then boiled to extract the grease (Leechman 1951).

One fish vertebrae was located at 120 centimeters below surface (Component 2) in a northern unit. Dr. R. Lee Lyman of the Oregon State University Anthropology Department has identified the bone as a vertebrae from the family Salmonidae. A complete faunal analysis has yet to be done on the 1984 bone collection.

The macrobotanical remains were analyzed by Mandy Cole, a graduate student at Oregon State University.

Several small chunks of wood were located in a northeastern unit at 80, 90, and 130 centimeters below surface. This encompasses Components 1 and 2. The wood was identified as Douglas fir (Pseudotsuga menziesii) by Dr. Robert Krahmer of the Forest Product Department at Oregon State University. The chunks may have come from the limb portion of the tree.

Carbonized seed hulls from 100 (Component 2), 310 (Component 5), and 390 (below Component 6) centimeters below surface were identified as hazelnut (Corylus cornuta) by Dr. Ruth Post of the Oregon State University Seed Laboratory.

Use of hazelnuts by the Takelma Indians has been documented (Sapir 1907). Hazelnuts were collected in the late summer and were eaten raw or roasted and stored for later use.

APPENDIX B

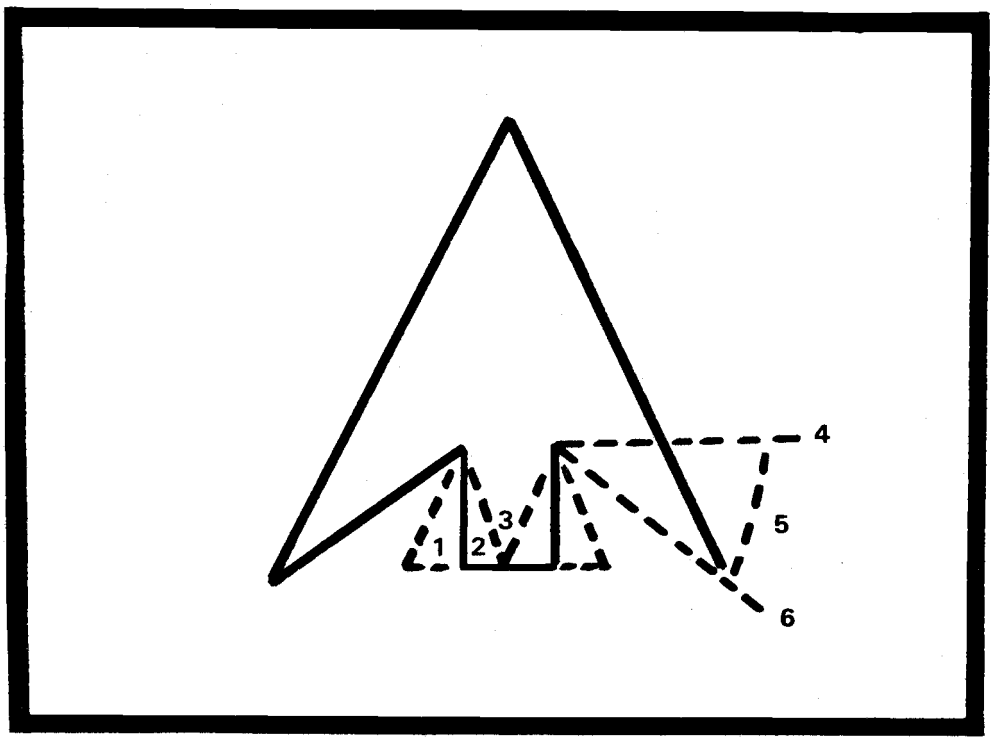
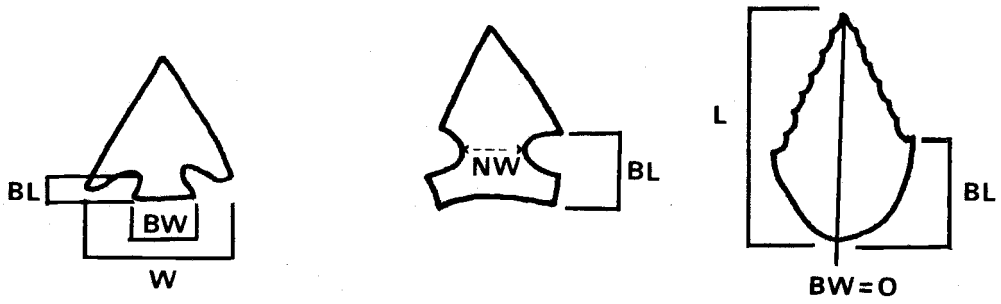


Figure 20. Projectile Point Attribute Definitions.

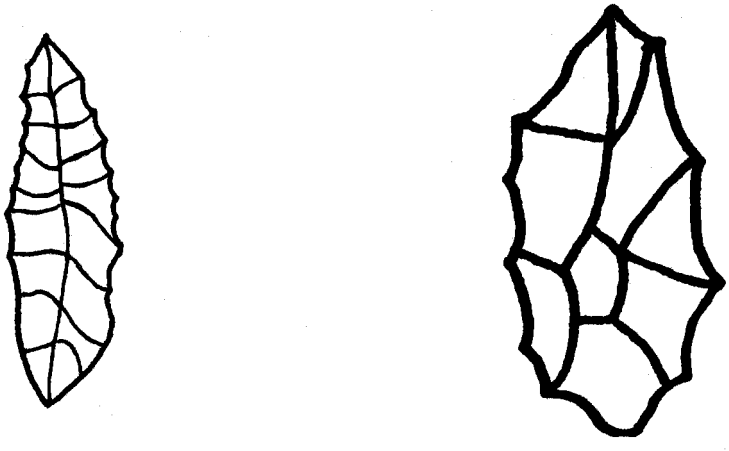
Key

1. Expanding Stem
2. Straight Stem
3. Contracting Stem
4. Shouldered
5. Incipient Barbed
6. Barbed



L = Length
W = Width
NW = Neck Width
BW = Basal Width
BL = Basal Length

Projectile Point Measurements



Collateral

Nonpatterned

Flaking Patterns
(after Crabtree 1982:51)

Figure 21. Illustration of Projectile Point Measurements and Flaking Patterns.

ARTIFACT MEASUREMENTS (mm)*

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Projectile Points								
Concave Base A	TPE/1-6	21	—	3		—		ccs
(1983)	TPE/2-2	33	23	5		21		ccs
	TPE/6-5	—	21	4		21		ccs
	TPE/7-9	21	19	4		19		ccs
	TPG/3-8	25	—	4		—		ccs
	TPG/3-10	—	—	5		—		ccs
	TPG/4-9	16	11	4		11		ccs
	TPG/5-2	19	13	3		13		ccs
	TPG/6-5	30	—	4		—		ccs
	TPG/8-4	—	—	5		—		ccs
	TPI/3-1	—	19	4		18		ccs
	N97 E59/1-6	—	—	4		—		ccs
	N104 E82/11-7	24	17	5		17		obsidian
Basal Notched A	TPE/3-1	23	—	4	5	4	2	ccs
(1983)	TPE/5-4	23	19	4	4	3	2	ccs
	TPE/5-5	28	—	4	5	—	—	ccs
	TPE/6-1	27	—	3	4	4	2	ccs
	TPE/6-6	—	—	4	5	6	3	ccs
	TPE/9-1	22	—	4	5	6	4	ccs
	TPE/18-2	20	—	3	6	7	3	ccs
	TPG/6-1	27	18	3	4	4	2	ccs
	TPI/3-3	—	—	4	4	4	1	ccs
	N98 E78/1-12	—	13	3	4	5	3	ccs
	N98 E78/1-22	23	—	3	4	5	4	ccs
	N98 W78/2-4	21	—	3	4	5	4	ccs
	N102 E80/1-9	19	13	3	5	0	4	ccs
	N102 E80/3-5	18	17	4	5	6	4	ccs
(1984)	N96 E82/2-9	19	15	3	5	5	4	ccs
	N96 E82/3-13	17	16	3	3	4	4	ccs
	N98 E80/1-3	23	14	3	5	3	4	ccs
	N102 E78/2-4	18	15	3	5	5	4	ccs
Basal Notched B	TPE/2-7	—	—	4	4	0	2	ccs
(1983)	TPE/2-4	18	15	4	3	0	1	ccs
	TPE/4-2	21	—	3	4	0	3	ccs
	TPE/7-6	27	17	5	3	0	1	ccs
	TPE/8-1	20	—	3	—	—	—	ccs
	TPE/8-5	48	—	5	4	0	3	ccs
	TPE/8-8	17	15	4	3	0	2	ccs
	TPE/9-2	—	—	3	4	3	2	ccs
	TPE/9-5	—	18	5	4	3	1	ccs

* — = fractured

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Basal Notched B	TPG/1-1	—	—	5	4	0	1	ccs
(1983)	TPG/2-1	21	14	3	6	0	3	ccs
(Continued)	TPI/5-1	31	17	4	3	0	1	ccs
	N96 E80/1-11	16	—	3	3	0	3	ccs
(1984)	N102 E82/1-25	23	18	5	5	0	2	ccs
Basal Notched C	N96 E80/1-4	20	—	3	4	3	2	ccs
(1983)								
(1984)	N102 E82/4-21	—	16	4	4	2	3	ccs
Basal Notched D	TPE/7-3	—	—	3	4	2	2	ccs
(1983)	TPE/8-6	25	—	3	4	2	3	ccs
	TPE/19-1	26	16	3	5	0	4	ccs
	N98 E78/3-3	24	—	3	—	—	4	ccs
Side Notched A	N98 E78/9-1	24	17	7	11	17	10	ccs
(1983)								
(1984)	N98 E80/3-16	18	13	4	7	13	12	obsidian
	N102 E82/18-29	36	16	6	10	15	9	ccs
Side Notched B	N102 E82/5-15	25	14	4	—	—	7	ccs
(1984)	N104 E80/2-14	35	14	5	8	13	6	ccs
Side Notched C	N97E59/2-8	22	17	5	10	17	9	ccs
(1983)	N98 E78/5-1	16	17	5	8	11	6	obsidian
(1984)	N102 E82/3-13	27	18	4	8	18	8	ccs
Side Notched D	N86 E80/1-10	21	9	3	7	8	4	ccs
(1983)								
(1984)	N96 E82/1-32	27	9	4	7	9	6	ccs
	N98 E80/11-10	30	12	5	9	10	7	ccs
Side Notched E	N96 E80/4-4	—	15	5	11	15	7	ccs
(1983)	N102 E80/14-9	—	18	7	14	14	9	ccs
	N102 E80/14-11	48	19	7	15	19	8	ccs
	N102 E80/18-3	32	20	8	15	16	7	ccs
	N104 E82/15-13	23	17	5	13	17	7	ccs
	N104 E82/22-2	—	18	6	15	18	8	obsidian
	N104 E82/22-5	—	17	7	14	17	7	ccs
(1984)	N96 E82/12-11	27	21	5	17	20	8	ccs
	N104 E80/17-38	—	18	9	13	—	6	ccs
	N104 E80/18-30	—	18	7	14	18	7	ccs
	N106 E82/19-34	—	16	7	12	16	8	ccs
Side Notched F	N106 E82/13-27	—	30	9	22	—	—	ccs
(1984)								

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Corner Notched A	N98 E78/11-1	26	15	5	10	13	8	ccs
(1983)	N98 E78/12-3	25	13	4	—	—	5	ccs
	N102 E80/1-5	20	15	5	11	10	5	ccs
	N102 E80/3-5	—	16	6	11	—	—	ccs
	N104 E82/9-2	26	16	5	8	10	8	ccs
	N104 E82/14-9	29	17	7	9	13	8	ccs
(1984)	N96 E78/8-6	24	15	4	9	10	5	ccs
	N98 E80/6-6	26	16	5	9	12	8	ccs
	N102 E82/2-15	—	15	6	15	—	7	ccs
	N106 E82/10-12	33	21	7	10	10	13	ccs
Corner Notched B	TPI/5-2	—	12	4	5	7	5	ccs
(1983)	TPI/5-3	20	13	3	4	5	3	ccs
	TPI/9-1	17	—	3	3	5	4	ccs
	N96 E80/7-1	27	17	4	10	15	7	ccs
	N102 E80/1-10	27	18	5	10	13	7	ccs
(1984)	N98 E80/6-7	24	—	5	—	—	6	ccs
	N104 E80/10-10	—	—	3	6	7	5	ccs
	N106 E82/13-30	26	16	5	8	10	5	ccs
Corner Notched C (1983)	N98 E78/15-2	41	27	9	17	21	9	ccs
(1984)	N106 E82/14-37	40	26	8	16	20	10	ccs
Corner Notched D (1984)	N102 E80/19-15	—	16	8	11	13	11	ccs
Stemmed/ Shouldered A	N98 E78/5-5	—	15	7	10	11	10	ccs
(1983)	N98 E78/12-2	—	14	7	11	10	8	ccs
	N102 E80/11-4	—	22	4	11	12	6	ccs
	N102 E80/15-2	53	20	6	12	8	8	ccs
	N104 E82/13-1	—	21	7	13	—	—	ccs
	N104 E82/6-2	38	12	6	9	0	8	ccs
(1984)	N96 E78/6-11	45	17	8	12	14	9	ccs
	N96 E78/9-6	35	16	6	8	9	8	ccs
	N96 E78/11-8	35	12	7	8	10	5	ccs
	N98 E80/11-11	56	21	7	10	13	9	ccs
	N101 E80/12-14	32	15	6	8	12	9	ccs
	N102 E78/9-4	35	15	5	9	11	10	ccs
	N102 E78/14-22	34	14	6	7	8	5	ccs
	N104 E80/11-21	27	13	6	8	11	10	ccs
	N104 E80/13-25	—	14	6	9	11	9	ccs
	N106 E82/4-15	38	17	7	11	12	10	ccs

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Stemmed/								
Shouldered B	N104 E80/1-15	—	18	8	10	11	9	ccs
(1984)	N106 E82/6-18	—	23	7	13	—	8	ccs
Stemmed/								
Shouldered C	N102 E82/4-22	40	20	6	12	3	8	ccs
(1984)								
Stemmed/								
Shouldered D	N98 E78/6-18	—	18	6	14	0	8	ccs
(1983)	N104 E82/4-1	30	16	7	11	11	8	ccs
(1984)	N102 E78/3-12	33	14	7	10	11	8	ccs
	N102 E78/17-60	36	21	8	15	10	11	ccs
	N106 E82/4-14	25	15	5	10	12	8	ccs
	N106 E82/14-36	35	20	7	13	15	7	ccs
Stemmed/								
Shouldered E	N98 E80/5-2	—	19	6	11	8	5	ccs
(1983)								
(1984)	N102 E80/25-15	—	23	10	13	8	7	ccs
Stemmed/								
Shouldered F	N96 E80/36-6	—	25	10	16	0	16	ccs
(1984)	N102 E80/25-12	—	14	6	10	0	9	ccs
	N102 E80/25-13	—	—	6	—	0	9	ccs
	N102 E80/37-3	37	17	9	12	0	13	ccs
Stemmed/								
Shouldered G	TP1/10-1	14	10	2	4	0	3	ccs
(1983)	N98 E78/1-5	17	12	3	4	0	3	ccs
(1984)	N102 E78/3-10	27	11	4	4	3	3	ccs
Stemmed/								
Shouldered H	TPE/2-1	25	10	5	8	0	7	ccs
(1983)	TP6/1-2	21	10	3	6	0	8	ccs
	N102 E80/3-4	—	12	4	9	0	7	ccs
Leafshaped A	N96 E80/8-1	31	14	6		0		ccs
(1983)								
(1984)	N96 E82/1-34	—	16	7		0		ccs
	N96 E82/6-5	—	13	7		0		ccs
	N102 E78/5-1	40	14	6		0		ccs
Leafshaped B	N96 E80/4-2	22	14	5		0		ccs
(1983)	N96 E80/7-5	26	15	6		0		ccs
	N96 E81/23-1	28	13	8		0		obsidian
	N96 E81/23-4	—	18	7		—		ccs

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Leafshaped B	N96 E80/24-3	31	16	6		0		obsidian
(1983)	N98 E78/14-4	—	16	8		0		obsidian
(Continued)	N104 E82/13-3	23	15	8		0		obsidian
	N104 E82/13-4	34	18	7		0		ccs
	N104 E82/16-11	31	—	9		0		ccs
(1984)	N96 E78/16-7	25	13	6		4		obsidian
	N96 E80/25-23	23	17	8		0		obsidian
	N96 E80/27-18	20	14	6		0		obsidian
	N101 E80/19-16	25	16	7		0		ccs
	N102 E78/7-3	31	15	5		0		ccs
Leafshaped B	N102 E78/16-49	27	19	7		0		obsidian
(1984)	N102 E78/16-51	27	15	7		0		obsidian
(Continued)	N102 E80/21-19	24	13	6		0		obsidian
	N104 E80/16-48	22	14	6		0		obsidian
	N104 E80/16-50	26	15	7		0		obsidian
	N104 E80/17-37	31	14	6		0		ccs
Leafshaped C	N96 E80/24-8	—	19	7		—		basalt
(1983)	N98 E78/21-3	—	14	8		0		obsidian
	N102 E80/15-9	—	19	9		0		ccs
	N104 E82/18-1	35	17	8		0		ccs
	N104 E82/18-2	35	15	8		0		ccs
(1984)	N98 E80/17-15	—	17	6		—		ccs
	N102 E80/20-33	31	15	8		8		ccs
	N102 E80/23-15	34	13	8		0		ccs
	N102 E80/25-16	38	15	6		0		ccs
	N104 E80/13-24	35	17	5		8		ccs
Leafshaped D	N98 E78/10-1	—	15	8		—		ccs
(1983)	N104 E82/15-7	—	15	6		0		ccs
	N104 E82/16-5	—	17	7		0		ccs
	N104 E82/16-9	—	16	7		0		ccs
(1984)	N101 E80/19-18	—	20	8		0		ccs
	N102 E78/18-76	45	18	6		0		ccs
	N102 E80/19-16	—	19	7		0		ccs
	N102 E80/25-14	43	15	8		0		ccs
	N102 E82/17-47	—	19	8		—		ccs
	N104 E82/19-36	—	17	8		0		ccs
	N104 E82/19-40	—	18	10		0		ccs
	N106 E82/13-26	46	14	8		0		ccs
	N106 E82/17-47	—	15	7		0		ccs
Leafshaped E	N96 E78/9-7	25	13	4		0	7	obsidian
(1984)	N101 E80/16-20	40	19	7		0	15	ccs
	N101 E80/23-14	30	16	6		0	8	ccs
	N102 E80/22-22	28	17	7		0	11	obsidian
	N102 E80/38-4	—	18	7		0	14	ccs

Class	Catalog Number	Length	Width	Thickness	Neck Width	Basal Width	Basal Length	Material
Leafshaped E (1984) (Continued)	N102 E82/17-48	31	17	6		0	8	ccs
	N104 E80/15-37	37	18	9		7	12	ccs
	N104 E82/18-18	27	15	10		0	10	ccs
Leafshaped F (1984)	N96 E80/27-17	50	18	7		0	14	obsidian
	N102 E80/28-10	—	19	8		—	—	basalt
	N102 E80/36-14	—	21	8		5	13	basalt
	N102 E80/37-19	—	23	8		11	14	ccs
	N102 E80/37-20	49	25	10		8	16	ccs
	N102 E80/39-1	—	21	6		10	—	ccs
	N102 E80/40-6	—	26	9		0	20	ccs
	N102 E80/41-18	—	22	8		6	19	basalt
Leafshaped G (1983)	N102 E80/2-2	40	12	7		0		ccs
Blanks (1983)	N96 E80/1-6	40	14	9		0		ccs
	N104 E82/17-8	48	14	12		0		ccs
	N105 E82/19-6	—	19	8		—		ccs
(1984)	N96 E78/8-5	33	25	8		8		ccs
	N96 E78/9-5	—	30	12		—		ccs
	N96 E80/37-6	68	41	20		0		basalt
	N96 E82/2-8	28	16	10		0		ccs
	N98 E80/9-11	47	25	9		0		ccs
	N98 E80/15-6	41	24	7		0		ccs
	N101 E80/12-13	33	22	8		13		ccs
	N101 E80/13-10	39	25	10		0		ccs
	N102 E80/41-10	75	35	26		0		basalt
	N104 E80/6-2	27	14	9		0		obsidian
	N104 E80/16-52	—	24	10		—		ccs
	N104 E80/2-13	61	34	19		0		ccs
Uniface A	N98 E80/5-7	30	13	5				ccs
	N102 E82/16-64	51	24	11				ccs
	N104 E80/15-34	39	20	9				obsidian
	N104 E80/16-51	27	9	9				ccs
	N106 E82/7-22	23	9	6				ccs
Uniface B	N102 E80/18-33	46	14	12				ccs
Graver A	N102 E78/17-59	21	22	8		0		obsidian
	N104 E80/11-20	24	22	7		0		obsidian
	N104 E80/15-33	26	24	10		0		obsidian
Graver B	N98 E80/7-3	27	16	8				ccs
	N106 E82/7-25	35	13	4				ccs

Class	Catalog #	Length	Width	Edge Angle	Display Use Wear	Material
Scraper A	N96 E78/2-6	17	15	70	x	ccs
	N96 E78/21-10	18	17	83	x	ccs
	N96 E80/24-6	19	19	89	x	ccs
	N96 E80/24-11	17	15	70	x	ccs
	N96 E80/25-20	20	21	74	x	ccs
	N96 E80/26-18	19	14	85	x	ccs
	N96 E82/17-7	24	18	85	x	ccs
	N98 E80/18-6	19	19	67	x	ccs
	N101 E80/16-17	23	19	88	x	ccs
	N102 E78/17-57	19	19	75	x	ccs
	N102 E80/15-9	18	21	54	x	ccs
	N102 E80/19-14	24	18	73	x	ccs
	N102 E80/23-12	20	18	72	x	ccs
	N102 E80/23-13	19	19	67	x	ccs
	N102 E82/1-22	16	17	64	x	ccs
	N102 E82/15-26	18	19	62	x	ccs
	N102 E82/16-59	19	15	72	x	ccs
	N102 E82/17-39	27	20	84	x	ccs
	N102 E82/17-40	--	16	76	x	ccs
	N102 E82/19-22	21	19	70	x	obsidian
	N104 E80/3-9	14	15	62	x	obsidian
	N104 E80/4-8	15	21	83	x	ccs
	N104 E80/10-9	16	15	77	x	ccs
	N104 E80/11-18	18	15	85	x	ccs
	N104 E80/12-35	23	23	71	x	ccs
	N104 E80/13-23	20	22	67	x	ccs
	N104 E80/15-30	20	21	78	x	ccs
	N104 E80/17-27	14	13	85	x	obsidian
	N104 E80/17-29	20	16	85	x	ccs
	N104 E80/17-31	23	18	89	x	ccs
	N104 E80/18-25	22	17	73	x	ccs
	N104 E80/18-26	17	15	72	x	ccs
	N104 E82/18-13	--	14	70	x	ccs
	N104 E82/18-15	21	18	69	x	ccs
	N106 E82/12-28	21	14	79	x	ccs
	N106 E82/14-32	21	20	81	x	ccs
	N106 E82/17-40	--	19	83	x	ccs
	N106 E82/18-44	19	17	62	x	ccs
	N106 E82/18-46	25	23	65	x	ccs
	N106 E82/18-47	--	25	85	x	ccs
	N106 E82/20-31	25	16	80	x	ccs
	N106 E82/20-32	22	19	76	x	ccs
	N106 E82/Code 4	19	15	80	x	ccs
Scraper B	N96 E78/14-2	--	--	69	x	ccs
	N96 E78/17-4	17	19	70	x	ccs
	N96 E80/24-9	23	20	82	x	ccs
	N96 E80/24-10	24	18	73	x	ccs
	N96 E80/25-19	16	15	70	x	obsidian

Class	Catalog #	Length	Width	Edge Angle	Display Use Wear	Material
Scraper B (Continued)	N96 E80/25-21	17	20	69	x	ccs
	N96 E80/26-14	15	17	80	x	obsidian
	N96 E80/29-10	25	18	80	x	ccs
	N96 E80/30-10	24	27	85	x	ccs
	N96 E80/30-11	--	17	65	x	obsidian
	N96 E82/1-29	17	16	65	x	ccs
	N96 E82/1-30	17	19	60	x	ccs
	N96 E82/3-10	34	33	55	x	ccs
	N96 E82/12-9	--	17	72	x	ccs
	N96 E82/14-2	--	20	75	x	ccs
	N96 E82/17-6	--	21	75	x	ccs
	N96 E82/17-8	--	24	57	x	ccs
	N98 E80/3-4	49	35	57	x	basalt
	N98 E80/10-5	21	21	80	x	ccs
	N98 E80/15-5	16	15	69	x	ccs
	N98 E80/17-10	19	15	90	x	ccs
	N98 E80/19-10	18	17	82	x	ccs
	N101 E80/15-17	21	19	76	x	ccs
	N101 E80/19-12	27	20	72	x	ccs
	N101 E80/19-13	--	24	75	x	ccs
	N101 E80/19-14	28	20	82	x	ccs
	N101 E80/21-7	17	19	79	x	obsidian
	N101 E80/21-8	18	17	52	x	obsidian
	N101 E80/21-10	20	20	79	x	ccs
	N101 E80/21-11	16	17	73	x	ccs
	N101 E80/22-14	14	15	57	x	obsidian
	N102 E78/1-13	17	20	60	x	ccs
	N102 E78/5.7-6	21	21	50	x	ccs
	N102 E78/7-2	25	21	88	x	ccs
	N102 E78/17-58	21	23	58	x	ccs
	N102 E80/16-15	21	21	54	x	ccs
	N102 E80/16-16	19	18	52	x	ccs
	N102 E80/17-23	20	20	57	x	ccs
	N102 E80/18-30	18	20	70	x	ccs
	N102 E80/18-31	20	22	63	x	ccs
	N102 E80/18-32	--	18	72	x	ccs
	N102 E80/20-21	21	22	74	x	ccs
	N102 E80/23-11	25	24	67	x	ccs
	N102 E80/27-8	16	20	55	x	ccs
	N102 E80/29-8	17	19	47	x	ccs
	N102 E80/29-9	22	19	62	x	ccs
	N102 E80/29-25	19	19	54	x	ccs
	N102 E80/36-11	33	27	39	x	ccs
	N102 E82/3-12	35	36	76	x	ccs
	N102 E82/4-13	15	16	55	x	ccs
	N102 E82/6-20	21	17	53	x	ccs
	N102 E82/7-9	--	14	64	x	ccs
	N102 E82/9-3	14	16	62	x	ccs
	N102 E82/15-29	19	15	65	x	ccs

Class	Catalog #	Length	Width	Edge Angle	Display Use Wear	Material
Scraper B (Continued)	N102 E82/16-58	25	19	79	x	ccs
	N102 E82/16-60	26	27	86	x	ccs
	N102 E82/16-61	--	18	80	x	ccs
	N102 E82/16-62	--	18	57	x	ccs
	N102 E82/17-14	21	22	77	x	ccs
	N102 E82/18-25	21	19	74	x	ccs
	N102 E82/19-21	14	10	72	x	obsidian
	N104 E80/1-14	18	20	74	x	ccs
	N104 E80/5-11	21	19	72	x	ccs
	N104 E80/11-15	24	23	78	x	ccs
	N104 E80/11-17	30	23	77	x	ccs
	N104 E80/12-32	44	50	64	x	basalt
	N104 E80/12-34	20	15	62	x	obsidian
	N104 E80/14-19	21	22	75	x	ccs
	N104 E80/15-26	17	17	80	x	ccs
	N104 E80/15-32	24	21	77	x	ccs
	N104 E80/16-40	15	17	81	x	ccs
	N104 E80/16-41	--	18	77	x	ccs
	N104 E80/16-47	25	18	81	x	ccs
	N104 E80/17-28	21	19	67	x	ccs
	N104 E80/17-32	21	26	80	x	ccs
	N104 E82/18-14	20	21	81	x	ccs
	N104 E82/19-34	18	20	75	x	ccs
	N104 E82/19-35	25	20	82	x	ccs
	N106 E82/5-7	23	16	71	x	ccs
	N106 E82/5-13	--	22	60	x	ccs
	N106 E82/6-15	--	18	72	x	ccs
	N106 E82/7-21	20	17	76	x	ccs
	N106 E82/8-8	15	17	74	x	ccs
	N106 E82/8-9	20	17	84	x	ccs
	N106 E82/12-27	28	20	78	x	ccs
	N106 E82/14-34	17	15	85	x	ccs
	N106 E82/15-35	23	17	79	x	ccs
	N106 E82/16-41	20	23	88	x	ccs
	N106 E82/17-39	28	22	80	x	ccs
	N106 E82/17-41	--	23	70	x	ccs
	N106 E82/17-44	23	24	77	x	ccs
	N106 E82/19-26	28	23	67	x	ccs
	N106 E82/20-30	19	13	82	x	obsidian
	N106 E82/Code 4	--	21	79	x	ccs
Scraper C	N98 E78/4-6	27	19	76	x	ccs
	N96 E78/6-10	31	17	89	x	ccs
	N96 E80/33-6	25	20	67	x	ccs
	N96 E80/37-5	39	29	74	x	ccs
	N98 E80/16-8	32	24	76	x	ccs
	N98 E80/19-9	28	19	74	x	ccs
	N101 E80/15-16	22	15	54	x	ccs
	N102 E78/15-19	20	21	67	x	ccs

Class	Catalog #	Length	Width	Edge Angle	Display Use Wear	Material
Scraper C (Continued)	N102 E78/17-56	21	15	78	x	ccs
	N102 E80/27-9	25	18	30	x	ccs
	N102 E82/16-56	25	17	78	x	ccs
	N104 E80/12-33	29	21	85	x	ccs
	N104 E80/12-36	28	18	66	x	ccs
	N104 E80/14-24	23	15	65	x	ccs
	N104 E80/15-29	16	15	75	x	ccs
	N104 E80/16-43	28	18	81	x	ccs
	N104 E80/18-23	18	20	80	x	ccs
	N104 E80/18-24	24	19	85	x	ccs
	N106 E82/6-14	17	16	83	x	ccs
	N106 E82/6-16	—	15	85	x	ccs
	N108 E82/7-20	19	17	70	x	ccs
	N106 E82/14-33	32	19	74	x	ccs
	N106 E82/14-35	—	25	77	x	ccs
	N106 E82/16-42	15	16	83	x	ccs
	N106 E82/17-42	26	22	70	x	ccs
	N106 E82/17-43	17	13	80	x	obsidian
	N106 E82/18-45	24	18	67	x	ccs
	N106 E82/19-28	23	14	77	x	ccs

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ARTIFACT DESCRIPTION: TYPOLOGY

Projectile Points

Concave Base A

Concave base, symmetrically convex sides, biconvex cross section, collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	16 - 33	23.62
Width	11 - 23	17.57
Thickness	3 - 5	4.15
Basal Width	11 - 21	17.14
Material	1 obsidian 12 ccs	
Total	13	

Basal Notched A

Basal notched, straight to expanding stems; straight, slightly convex to concave bases; thin, triangular shaped blade, barbed, barbs extend down to or below base, biconvex cross section, collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	17 - 28	21.86
Width	14 - 19	15.55
Thickness	3 - 4	3.38
Neck Width	3 - 6	4.55
Basal Width	3 - 7	4.47
Basal Length	1 - 4	3.17
Material	18 ccs	
Total	18	

* -- = fractured

Scale 1: .65

Basal Notched B

Basal notched, stem contracts to a point; thin, triangular shaped blade, barbed, barbs extend down below base, biconvex cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	16 - 48	24.2
Width	14 - 18	16.28
Thickness	3 - 5	4
Neck Width	3 - 6	3.84
Basal Width	0 - 3	0.46
Basal Length	1 - 3	1.92
Material	14 ccs	
Total	14	

Basal Notched C

Basal notched, contracting stem, straight to convex base, symmetrically concave sides, barbed, one barb extends down to base, biconvex cross section, nonpatterned flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	20	20
Width	16	16
Thickness	3 - 4	3.5
Neck Width	4	4
Basal Width	2 - 3	2.5
Basal Length	2 - 3	2.5
Material	2 ccs	
Total	2	

Basal Notched D

Basal notched, contracting stem, straight to slightly convex base, symmetrically concave sides, barbed, barbs extend down to base, biconvex cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	24 - 26	25
Width	16	16
Thickness	3	3
Neck Width	4 - 5	4.33
Basal Width	0 - 2	1.33
Basal Length	2 - 4	3.25
Material	4 ccs	
Total	4	

Side Notched A

Side notched, expanding stem, convex base, straight sides, biconvex to planoconvex cross section, nonpatterned to collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	18 - 36	26
Width	13 - 17	15.33
Thickness	4 - 7	5.66
Neck Width	7 - 11	9.33
Basal Width	13 - 17	15
Basal Length	9 - 12	10.33
Material	1 obsidian 2 ccs	
Total	3	

Side Notched B

Side notched, straight base, straight sides, planoconvex to diamond shaped cross section, collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	25 - 35	30
Width	14	14
Thickness	4 - 5	4.5
Neck Width	8	8
Basal Width	13	13
Basal Length	6 - 7	6.5
Material	2 ccs	
Total	2	

Side Notched C

Side notched, concave base, triangular shaped blade, biconvex cross section, collateral flaking, serrated to nonserrated edges. Elsewhere called "desert side notch" (Baumhoff and Byrne 1959).

	Range (mm)	Mean (mm)
Length	16 - 27	21.66
Width	17 - 18	17.33
Thickness	4 - 5	4.66
Neck Width	8 - 10	8.66
Basal Width	11 - 18	15.33
Basal Length	6 - 9	7.66
Material	1 obsidian	
	2 ccs	
Total	3	

Side Notched D

Side notched, convex base, straight sides, planoconvex to diamond shaped cross section, collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	21 - 30	26
Width	9 - 12	10
Thickness	3 - 5	4
Neck Width	7 - 9	7.66
Basal Width	8 - 10	9
Basal Length	4 - 7	5.66
Material	3 ccs	
Total	3	

Side Notched E

Side notched, straight to slightly convex base, symmetrically convex sides, biconvex to planoconvex cross section, collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	23 - 48	32.5
Width	15 - 21	17.9
Thickness	5 - 9	6.63
Neck Width	11 - 17	13.9
Basal Width	14 - 20	17
Basal Length	6 - 9	7.45
Material	1 obsidian 10 ccs	
Total	11	

Side Notched F

Side notched, symmetrically convex edges, biconvex cross section, nonpatterned flaking, slightly serrated edges.

	Range (mm)	Mean (mm)
Length	--	--
Width	30	30
Thickness	9	9
Neck Width	22	22
Basal Width	--	--
Basal Length	--	--
Material	1 ccs	
Total	1	

Corner Notched A

Corner notched, expanding stem, straight base, shouldered, slightly concave or slightly convex, triangular shaped blade, biconvex to planoconvex cross section, collateral to nonpatterned flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	20 - 33	26.12
Width	13 - 21	15.9
Thickness	4 - 7	5.4
Neck Width	8 - 15	10.22
Basal Width	10-13	11.14
Basal Length	5 - 13	7.44
Material	10 ccs	
Total	10	

Corner Notched B

Corner notched, expanding stem, straight base, triangular shaped blade, incipient barbed, biconvex to diamond shaped cross section, nonpatterned to collateral flaking, slightly serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	17 - 27	23.5
Width	12 - 18	15.2
Thickness	3 - 5	4
Neck Width	3 - 10	6.57
Basal Width	5 - 15	8.85
Basal Length	3 - 7	5.25
Material	2 obsidian 6 ccs	
Total	8	

Corner Notched C

Corner notched, expanding stem, slightly concave base, shouldered, symmetrically convex sides, biconvex cross section, collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	40 - 41	40.5
Width	26 - 27	26.5
Thickness	8 - 9	8.5
Neck Width	16 - 17	16.5
Basal Width	20 - 21	20.5
Basal Length	9 - 10	9.5
Material	2 ccs	
Total	2	

Corner Notched D

Corner notched, expanding stem, straight base, straight sides, shouldered, diamond shaped cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	--	--
Width	16	16
Thickness	8	8
Neck Width	11	11
Basal Width	13	13
Basal Length	11	11
Material	1 ccs	
Total	1	

Stemmed/Shouldered A

Shouldered; expanding, straight to contracting stem, straight to slightly convex base, straight to slightly convex edges; biconvex, planoconvex to diamond shaped cross section, nonpatterned to collateral flaking, slightly serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	27 - 56	38.9
Width	12 - 22	16.12
Thickness	4 - 8	6.31
Neck Width	7 - 13	9.75
Basal Width	0 - 14	10.13
Basal Length	5 - 10	8.26
Material	16 ccs	
Total	16	

Stemmed/Shouldered B

Shouldered, expanding stem, convex base, notched in center of base, biconvex to planoconvex cross section, nonpatterned flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	--	--
Width	18 - 23	20.5
Thickness	7 - 8	7.5
Neck Width	10 - 13	11.5
Basal Width	11	11
Basal Length	8 - 9	8.5
Material	2 ccs	
Total	2	

Stemmed/Shouldered C

Shouldered, contracting stem, convex base, symmetrically convex sides, biconvex cross section, collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	40	40
Width	20	20
Thickness	6	6
Neck Width	12	12
Basal Width	3	3
Basal Length	8	8
Material	1 ccs	
Total	1	

Stemmed/Shouldered D

Shouldered, rounded base, symmetrically convex sides, biconvex to planoconvex cross section, nonpatterned to collateral flaking, slightly serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	25 - 36	31.80
Width	14 - 21	17.33
Thickness	5 - 8	6.66
Neck Width	10-15	12.16
Basal Width	10 - 15	9.83
Basal Length	8 - 11	8.33
Material	6 ccs	
Total	6	

Stemmed/Shouldered E

Shouldered, contracting stem, convex base, symmetrically convex sides, planoconvex cross section, collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	--	--
Width	19 - 23	21
Thickness	6 - 10	8
Neck Width	11 - 13	12
Basal Width	8	8
Basal Length	5 - 7	6
Material	2 ccs	
Total	2	

Stemmed/Shouldered F

Shouldered, elongated contracting stem, convex base, symmetrically convex sides; biconvex, planoconvex and diamond shaped cross section, collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	37	37
Width	14 - 25	18.66
Thickness	6 - 10	7.75
Neck Width	10 - 16	12.66
Basal Width	0	0
Basal Length	9 - 16	11.75
Material	4 ccs	
Total	4	

Stemmed/Shouldered G

Shouldered, contracting stem, concave base, straight edges, biconvex to diamond shaped cross section, collateral flaking, slightly serrated edges.

	Range (mm)	Mean (mm)
Length	14 - 27	19.33
Width	10 - 12	11
Thickness	2 - 4	3
Neck Width	4	4
Basal Width	0 - 3	1
Basal Length	3	3
Material	3 ccs	
Total	3	

Stemmed/Shouldered H

Shouldered, elongated contracting stem, convex base, symmetrically convex sides, biconvex to planoconvex cross section, collateral flaking, nonserrated edges.

	Range (mm)	Mean (mm)
Length	21 - 25	23
Width	10 - 12	10.66
Thickness	3 - 5	4
Neck Width	6 - 9	7.66
Basal Width	0	0
Basal Length	7 - 8	7.33
Material	3 ccs	
Total	3	

Leafshaped A

Leafshaped, rounded base, symmetrically convex sides, diamond cross section, collateral flaking, slightly serrated edges.

	Range (mm)	Mean (mm)
Length	31 - 40	35.5
Width	13 - 16	14.25
Thickness	6 - 7	6.5
Basal Width	0	0
Material	4 ccs	
Total	4	

Leafshaped B

Small, leafshaped, rounded to tapered base, symmetrically convex sides, biconvex to planoconvex cross section, nonpatterned to collateral flaking, serrated to nonserrated edges.

	Range (mm)	Mean (mm)
Length	20 - 34	26.44
Width	13 - 19	15.26
Thickness	5 - 9	6.75
Basal Width	0 - 4	.02
Material	12 obsidian	
	8 ccs	
Total	20	

Leafshaped C

Leafshaped, flat to rounded base, symmetrically convex sides, biconvex to diamond shaped cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	31 - 38	34.66
Width	13 - 19	16.1
Thickness	5 - 9	7.3
Basal Width	0 - 8	2
Material	1 obsidian	
	8 ccs	
	I basalt	
Total	10	

Leafshaped D

Leafshaped, rounded base, base narrower than blade after last serration, symmetrically convex sides; biconvex, planoconvex and diamond shaped cross section, collateral flaking, prominent edge serrations.

	Range (mm)	Mean (mm)
Length	43 - 46	44.66
Width	14 - 20	16.76
Thickness	6 - 10	7.53
Basal Width	0	0
Material	13 ccs	
Total	13	

Leafshaped E

Leafshaped, rounded base, base is wider than blade after last serration, straight to symmetrically convex sides; biconvex, planoconvex, and diamond shaped cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	25 - 40	31.14
Width	13 - 19	16.62
Thickness	4 - 10	7
Basal Width	0 - 7	.87
Basal Length	7 - 15	10.62
Material	2 obsidian	
	6 ccs	
Total	8	

Leafshaped F

Leafshaped, flat to rounded base, symmetrically convex sides, biconvex to planoconvex cross section, collateral flaking, serrated edges.

	Range (mm)	Mean (mm)
Length	49 - 50	49.5
Width	18 - 26	21.87
Thickness	6 - 10	8
Basal Width	0 - 11	5.71
Basal Length	13 - 20	16
Material	1 obsidian	
	4 ccs	
	3 basalt	
Total	8	

Leafshaped G

Leafshaped, bipointed, symmetrically convex sides, diamond shaped cross section, collateral flaking, slightly serrated.

	Range (mm)	Mean (mm)
Length	40	40
Width	12	12
Thickness	7	7
Basal Width	0	0
Material	1 ccs	
Total	1 ccs	

Blanks A

Leafshaped bifaces possibly representing the early stages of projectile point manufacture, some display cortex, biconvex to planoconvex cross section, large nonpatterned flake scars, nonserrated edges.

	Range (mm)	Mean (mm)
Length	27 - 75	45
Width	14 - 41	24.13
Thickness	7-26	11.18
Basal Width	0 - 13	1.75
Material	1 obsidian	
	12 ccs	
	2 basalt	
Total	15	

1984 Data

Blanks A

Leafshaped, bifacially worked, may represent early stages of projectile point manufacture, some display cortex, large nonpatterned flake scars, nonserrated edges.

	Range	Mean
Length	27-75	45.2
Width	14-41	26-25
Thickness	7 - 26	12.33
Basal Width	0 - 13	2.1
Material	1 obsidian	
	9 ccs	
	2 basalt	
Total	12	

Projectile Point Fragments

Tips	8 obsidian
	48 ccs
Total	56
Midsections	3 obsidian
	30 ccs
Total	33
Basal Sections	11 obsidian
	50 ccs
Total	70

Unidentifiable Fragments

	2 obsidian
	2 ccs
Total	4

Unifaces A

Leafshaped blade, unifacially worked to a high dorsal ridge, original ventral flake features remain on underside, collateral flaking, slightly serrated.

	Range	Mean
Length	23 - 51	34
Width	9 - 24	15
Thickness	6 - 11	8
Material	1 obsidian	
	4 ccs	
Total	5	

Uniface B

Same as type A except ventral side has been collaterally flaked.

	Range	Mean
Length	46	46
Width	14	14
Thickness	12	12
Material	1 ccs	
Total	1	

Graver A

Teardrop shaped, produced on a thick flake, sides taper to a sharp point, biconvex cross section, collateral flaking, slightly serrated edges.

	Range	Mean
Length	21 - 26	23.66
Width	22 - 24	22.66
Thickness	7 - 10	8.33
Basal Width	0	0
Material	3 obsidian	
Total	3	

Graver B

Unifacially worked, exhibits most ventral flake features, distal end tapers to a sharp point and is bifacially worked.

	Range	Mean
Length	21 - 26	23.66
Width	22 - 24	22.66
Thickness	7 - 10	8.33
Material	2 ccs	
Total	2	

Scraper A

Round to slightly triangular in shape, planoconvex cross section, unifacially worked on dorsal side with a concentration of flake scars on the dorsal distal end of flake, all exhibit original ventral flake features, some retain original striking platform, all retain a dorsal ridge (keel) that runs down the center of the flake from proximal to distal end.

	Range	Mean
Length	14 - 27	19.79
Width	13 - 25	17.88
Edge Angle	54° - 89°	75.27°
Material	3 obsidian	
	40 ccs	
Total	43	

Scraper B

Same as above except the dorsal ridge has been flaked off, leaving a broad, shallow, flake scar on the dorsal side.

	Range	Mean
Length	14 - 49	21.62
Width	13 - 50	20.13
Edge Angle	39° - 90°	78.67°
Material	9 obsidian	
	83 ccs	
	2 basalt	
Total	94	

Scraper C

Triangular to teardrop shaped, planoconvex cross section, unifacially worked on dorsal side with a concentration of flake scars on the dorsal distal end of flake, all exhibit original ventral flake features, one retains original striking platform, all retain a high dorsal ridge (keel) that runs down the center of the flake from proximal to distal end. More elaborately flaked (worked) than Type A.

	Range	Mean
Length	15 - 39	24.38
Width	13 - 29	18.39
Edge Angle	30° - 89°	73.07°
Material	1 obsidian	
	27 ccs	
Total	28	

Spall Scraper

Rounded, primary cortex flakes removed from the face of a river cobble, utilized.

Material	34 basalt
Total	34

Blades A

Small (average length = 10 mm), length at least two times width, parallel edges, triangular cross section, unmodified.

Material	9 obsidian
	4 ccs
	1 basalt
Total	14

Blades B

Same as above except they display use wear patterning; utilized.

Material	84 obsidian
	7 ccs
Total	91

Blades C
Same as above except they are unifacially worked.

Material	2 obsidian
Total	2

Core
Conical shape, unidirectionally flaked from a prepared platform, flakes removed completely around perimeter.

Material	8 ccs 1 basalt
Total	9

Incised Stone
Various sized pieces of etched stone, one has an intricate "geometric" pattern.

Material	5 shale 1 basalt
Total	6

Pipe Bowl
Large sandstone pipe bowl with hole drilled in center, cross-hatched pattern incised on sides, flaked completely around perimeter of bottom.

Length	78
Diameter	59
Material	1 sandstone
Total	1

Line Sinker Fragments
Oval, incised groove along longitudinal axis. Too fragmented to measure.

Material	2 basalt
Total	2

Atlatl Weight Fragment
Intentionally shaped, triangular cross section, notched at the top on one side, striations run parallel down each side.

Length	60 (broken)
Width	11
Thickness	8
Material	1 basalt
Total	1

Pendant Fragment
Intentionally shaped, drilled in upper portion, broken halfway through drilled hole (i.e., may have broken during drilling process).

Length	-- (broken)
Width	18
Thickness	2
Material	1 shale
Total	1

Clay Ball
Round, hardened (possibly baked).

Diameter	23
Material	1 clay
Total	1

Hammerstones
Natural elongated or ovoid river cobbles modified through use, use wear pattern consists of flakes removed through percussion.

Material	32 basalt
	1 sandstone
Total	33

Pecking Stones
Same as above except use wear consists of pitting indicative of a lesser force of percussion.

Material	38 basalt
Total	38

Pecked Stones
Natural ovoid cobbles displaying pitting on the flat face of the cobble indicative of lightly applied percussive forces.

Material	4 basalt
Total	4

Pestles
Naturally elongated river cobbles that have been modified to form a cylindrical shape, circular to oval cross section.

Material	6 basalt
Total	6

Worked Cobbles
Natural river cobbles that display nonpatterned flaking.

Material	75 basalt
Total	75

Cobble Choppers
Natural river cobbles that have been unifacially or bifacially worked along one edge of the cobble.

Material	58 basalt
Total	58

Ground Stone

Natural river cobbles exhibiting a flattened, polished surface indicative of having been ground, polish is located on the flat face of the cobble.

Material	13 basalt
Total	13

Edge-ground Cobble

Similar to ground stone except the polish is located on the edge of the cobble.

Material	3 basalt
Total	3

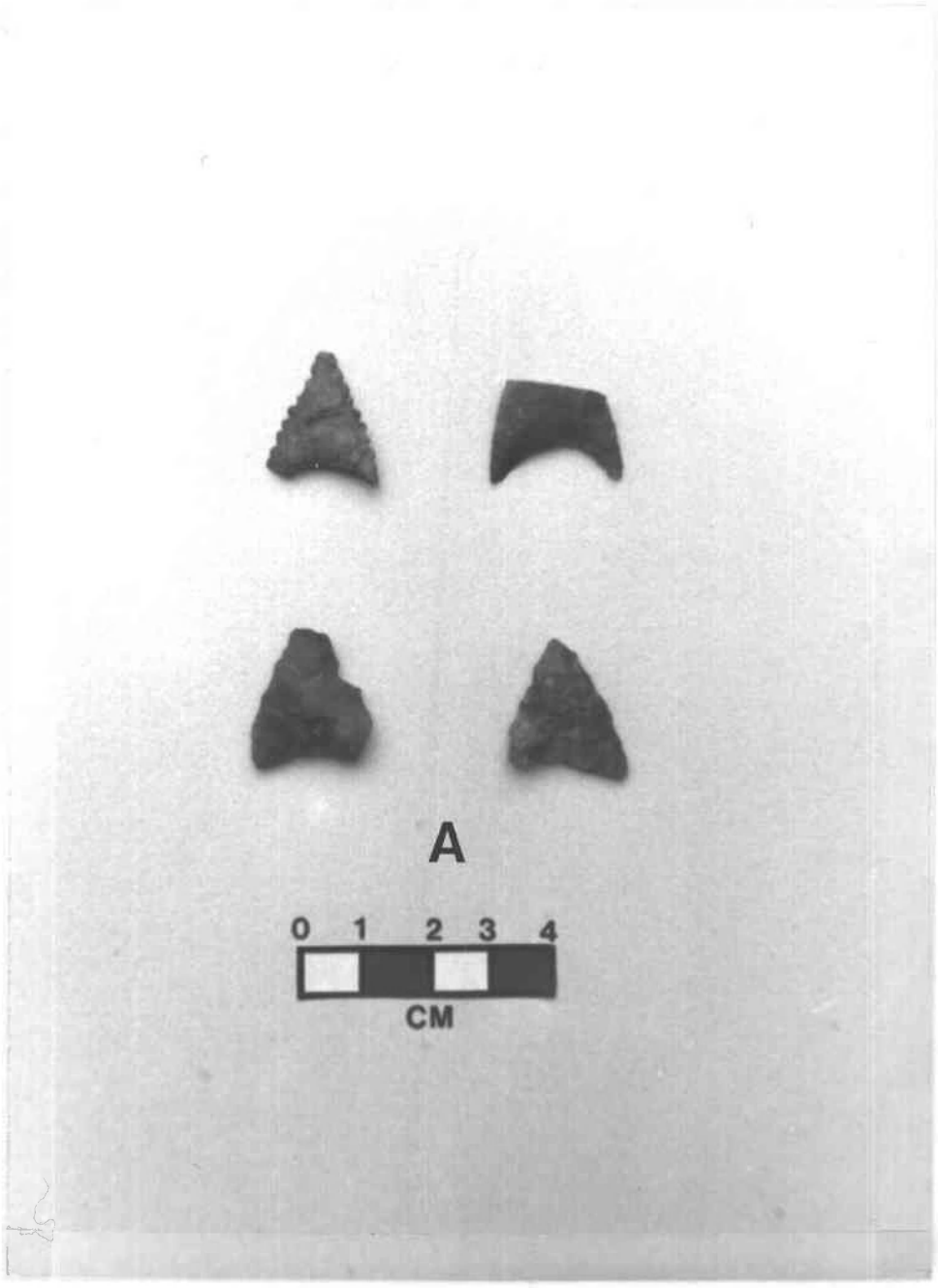

Figure 22. Concave Base Type A Recovered from Component 1A.

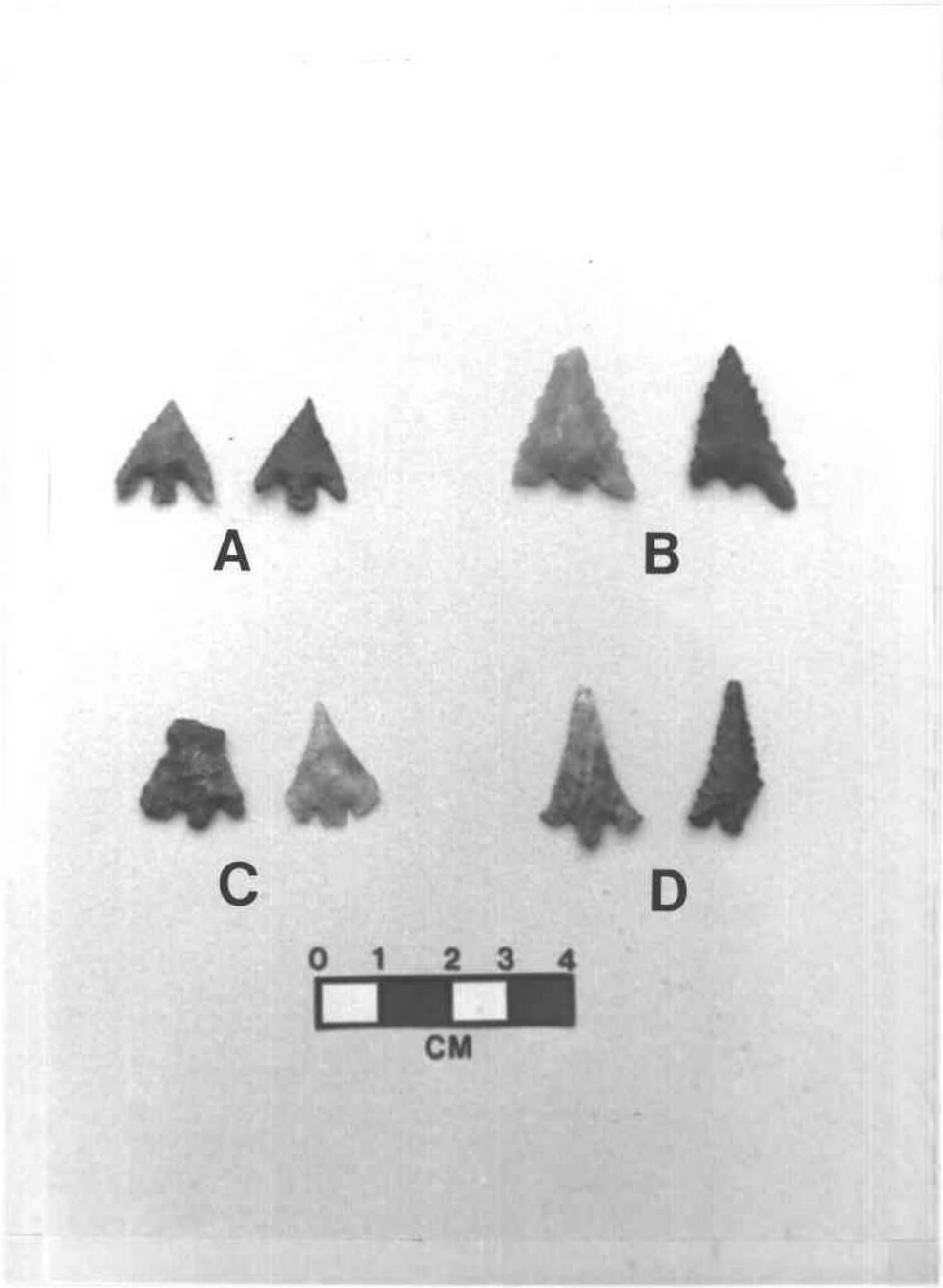

Figure 23. Basal Notched Types.

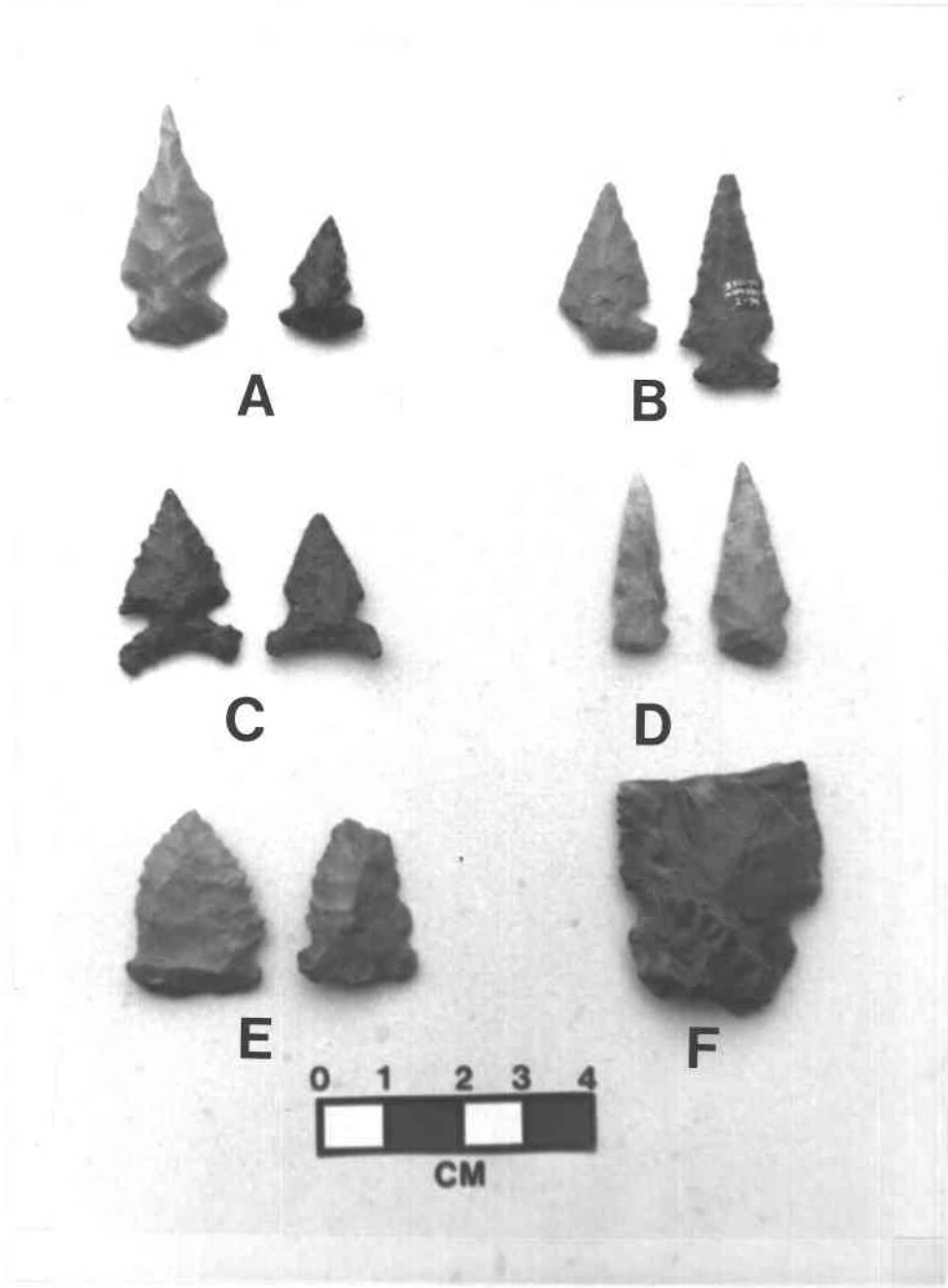

Figure 24. Side Notched Types.

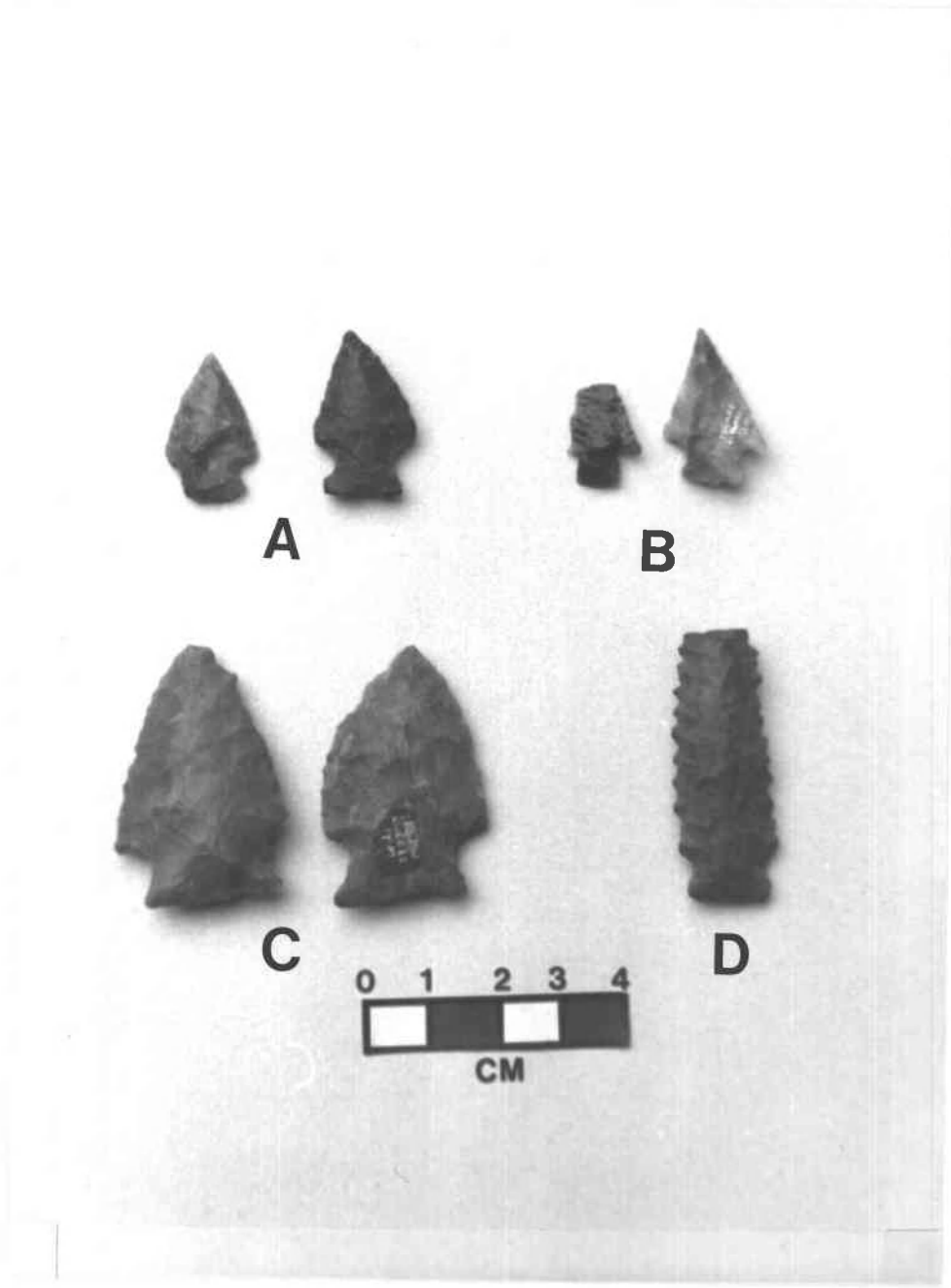

Figure 25. Corner Notched Types.

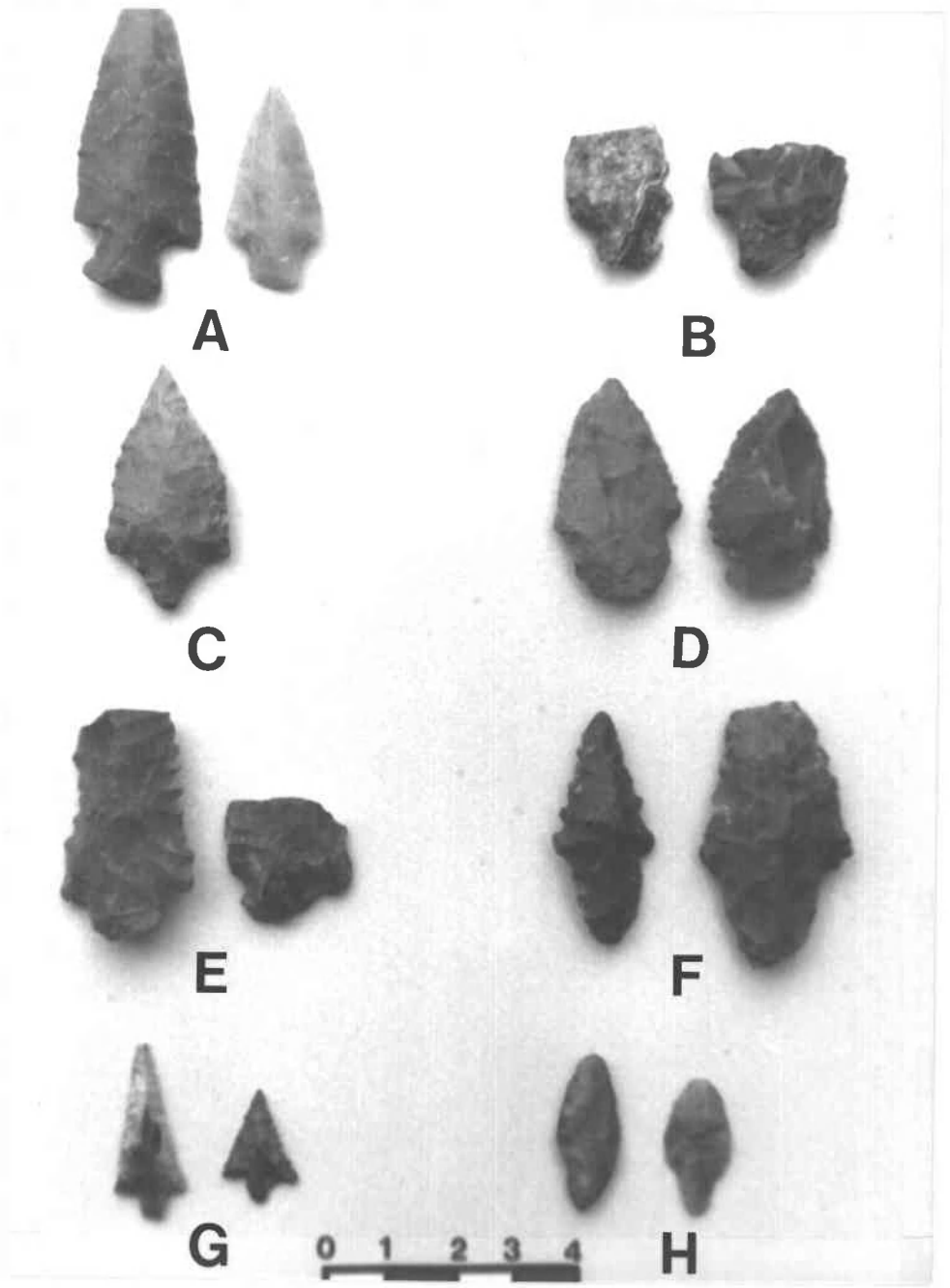

Figure 26. Stemmed/Shouldered Types.

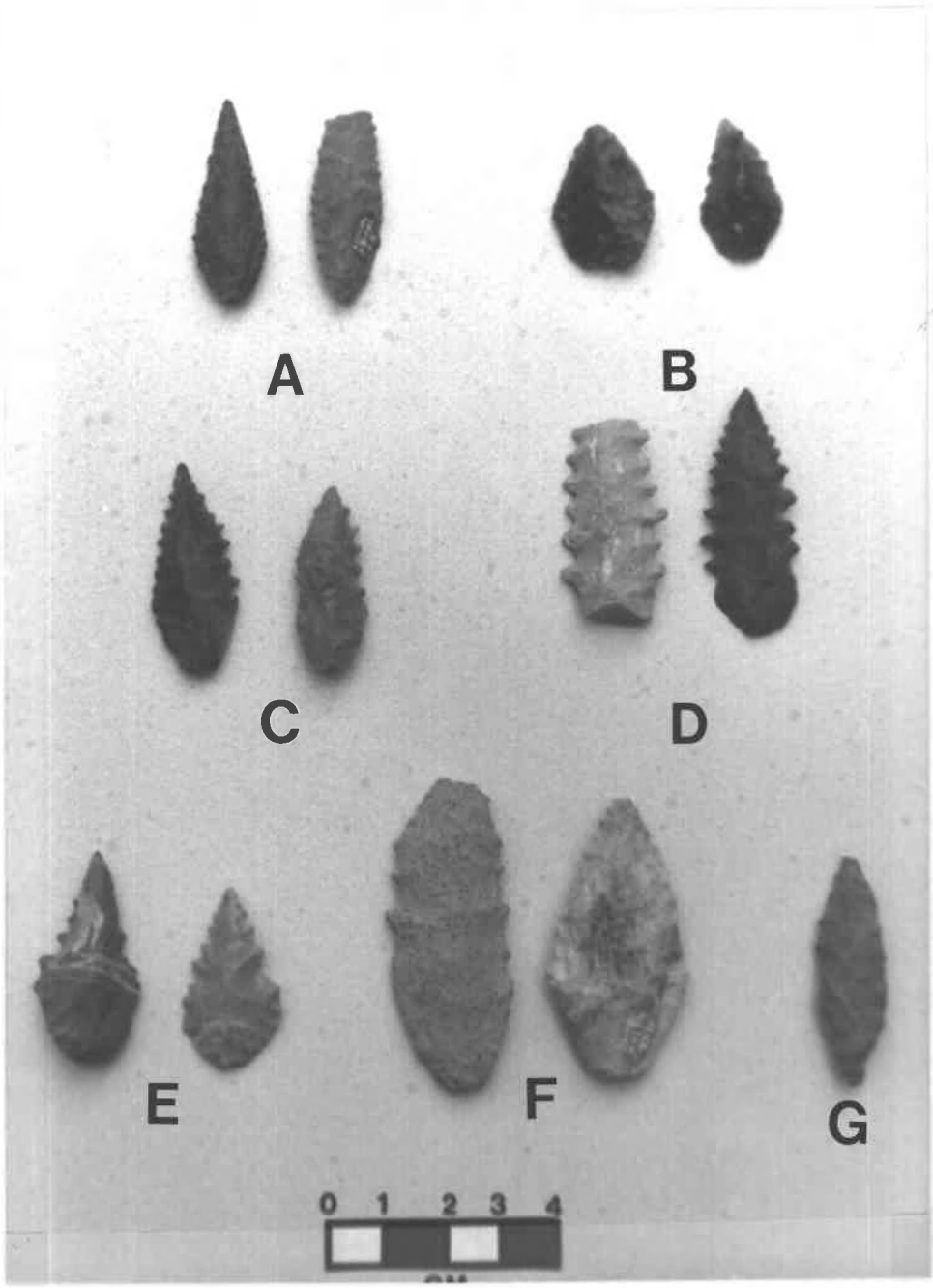

Figure 27. Leafshaped Types.

Figure 28. Older Style Leafshaped Projectile Points from 35CU84.