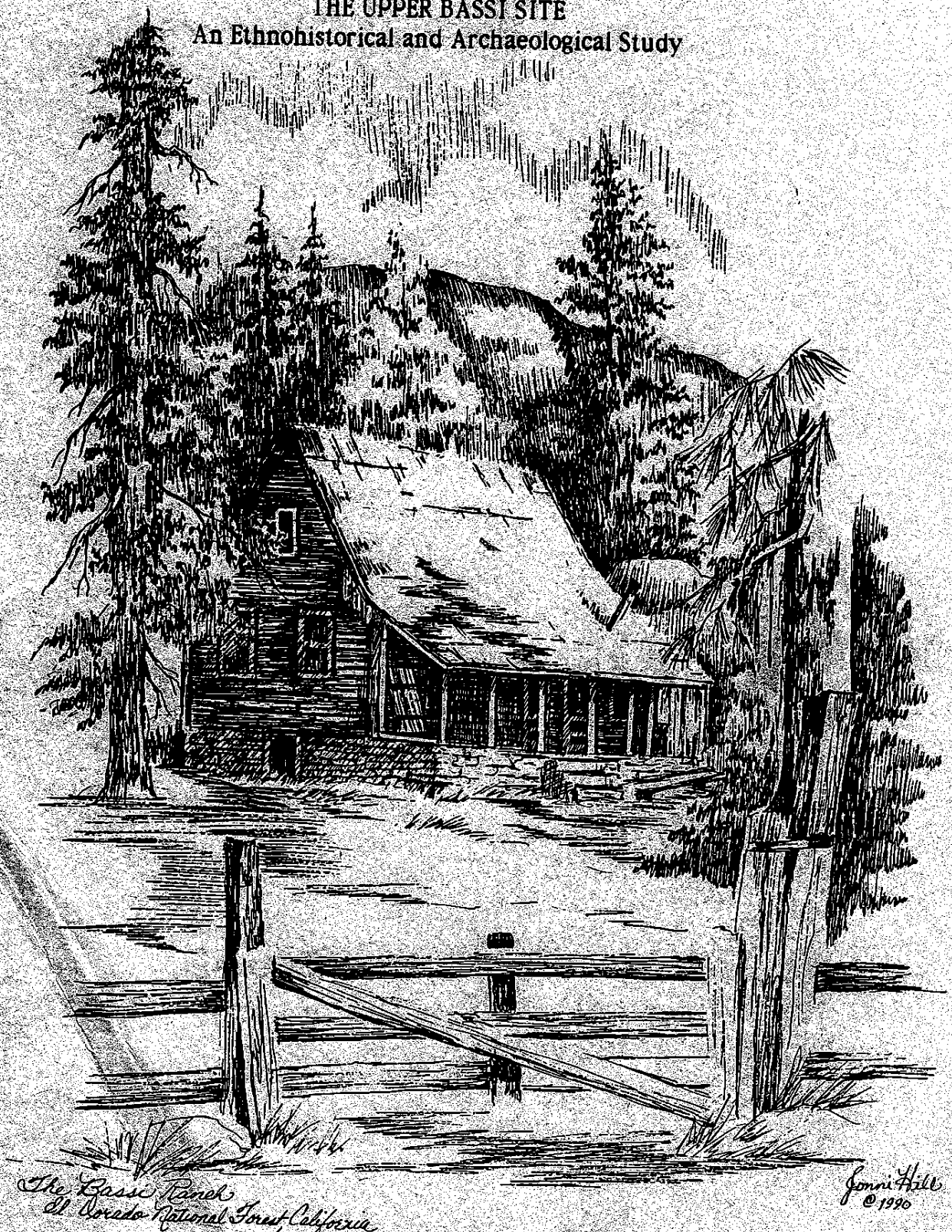
THE UPPER BASSI SITE
An Ethnohistorical and Archaeological Study



THE UPPER BASSI SITE
AN ETHNOHISTORICAL AND ARCHAEOLOGICAL STUDY

Judy E. Rood
B.A., California State University, Sacramento, 1989

THESIS

Submitted in partial satisfaction of
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THE UPPER BASSI SITE
AN ETHNOHISTORICAL AND ARCHAEOLOGICAL STUDY

A Thesis

by

Judy E. Rood

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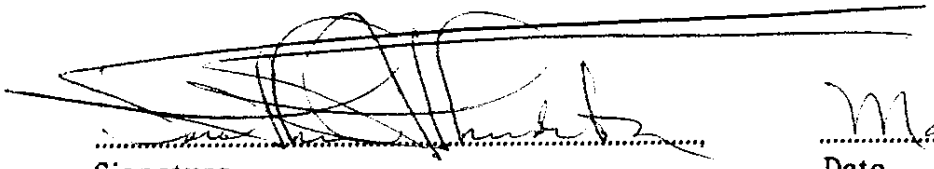

May 18, 1992

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Abstract

of

THE UPPER BASSI SITE
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by

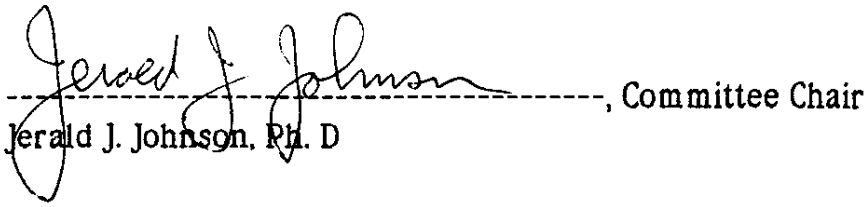
Judy E. Rood

Statement of the Problem: Italian Swiss dairymen of El Dorado County had summer pasture in the Crystal Basin area of the north central Sierra Nevada in the 1800's. The Upper Bassi cabin and barn were built in 1870 by an Italian Swiss dairyman - Giosue Bassi and are representative of the material remains of the Italian Swiss culture. This meadow was also the summer home to groups of Native Americans. Specific problems addressed in this study are: 1) describing material remains specific to Italian Swiss culture 2) cultural patterns of Italian Swiss and old world patterns demonstrated by Italian Swiss of El Dorado County 3) contact between Italian Swiss and Native Americans 4) chronology and cultural affiliation of prehistoric people who used the Upper Bassi Site.

Sources of Data: Archaeological reconnaissance was carried out and all cultural resources recorded on 320 acres known as the Upper Bassi Site. This study includes surface and subsurface materials collected from the meadow and nearby forest. In addition obsidian sourcing and obsidian hydration were conducted on five projectile points. Oral interviews, histories, ethnographies, and comparative data were used for this study.

Conclusions Reached: The masonry found in the cheese cellar under the cabin is characteristic of Italian Swiss occupation. Old world patterns were demonstrated by Italian Swiss immigrants in El Dorado County and by the first generation to a lesser degree. However, assimilation was desired and rapidly achieved. One prehistoric component at the Upper Bassi Site was a tool manufacturing area specializing in Desert Side Notched-Projectile Points. An older prehistoric component was also found characterized by Martis Projectile Points. Obsidian studies show Desert Side Notched-Projectile Points to be late in time with obsidian coming from the East side. Sinter and Chalcedony were also used as stone tool material and also come from the East side of the Sierras. The later components are characteristic of the Late

Kings Beach Phase and are thought to be indicative of ancestors of the Washo. No evidence of contact between Italian Swiss and Native Americans was found at this locality either in the archaeological record or the ethnohistoric record.



----------, Committee Chair

Jerald J. Johnson, Ph. D

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Special thanks to Dr. Jerald Johnson for always making time for his students (even during his sabbatical) and to Dr. Howard Goldfried and Dr. Valerie Wheeler for their recommendations.

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This project could not have been accomplished without the help of the Bassi and Swift families, particularly Marcella Mainwaring, Penny Hocking, Rex Hocking, Dan Mainwaring, Joshua Bassi, and Phyllis Swift Fox.

Thanks to Jonni Hill for allowing me to use her beautiful drawing of the Upper Bassi and her information about the Italian Swiss, to Barry Gorman for his help, and to Kurt Lambert and Brett Meroney for their excellent artifact drawings.

My parents introduced me to the Sierra Nevada when I was a child. I will always be grateful to them (Anne and Ed Brunt) and for their help and support with this project. My children (Erin and Jeff) were wonderful for putting up with a mother who "went back to school" and for being proud of me. Most especially and always special thanks goes to my husband, Robert. He hiked in to the Upper Bassi with me every weekend for two summers carrying whatever was needed, surveying, mapping, digging, fording creeks and making me laugh. This one's for you, Bobby.

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CHAPTER ONE

INTRODUCTION

Purpose and Goals

Historical archaeological studies of California have revolved around important events such as the Spanish and Mexican occupations and the discovery of gold in 1848. However, in order to fully understand the diverse cultural history of California, studies must be conducted "from the bottom up" - "the experience of other social groups, particularly anonymous people who form the mass of society need to be examined" (Kyvig and Marty 1982:9). The Crystal Basin region of the north-central Sierra Nevada was the summer range for groups of Italian Swiss dairymen in the late 1800's. This region was also the summer home to groups of Native Americans who were here thousands of years before the Italian Swiss. Previous archaeological studies have dealt very little with the interaction between Native Americans and the Italian Swiss. This thesis will attempt to discuss both groups individually and then to discuss the possibility of interaction between the two. This was accomplished by examining sources such as oral histories, ethnographies, primary and secondary documents and archaeological information.

The purpose of this thesis is to demonstrate how archaeological data, oral histories, ethnographies, and historic records can be used to identify and interpret archaeological sites of two ethnic groups: the Italian-Swiss and the prehistoric group. By establishing an ethnohistoric model of the past, future work will be enhanced by the ability to identify sites attributed to these two

groups and establish a historic context in which to evaluate these properties (Rucks 1987).

The goal of this thesis was to thoroughly record all cultural resources within 320 acres of private land that is known as the Upper Bassi and compare this information with data found in similar ecological areas in the Sierra Nevada. Included in this study will be a discussion of the appeal of this particular environment first to the Indians and then the immigrants. Also included will be a discussion of the limitations the environment placed on both groups in relation to how they used their environment and how the documented historic use can help interpret the prehistoric use.

The information from this thesis will not only provide an ethnohistoric model but also add to the data base for further comparative studies in the Sierra Nevada and inspire others to save the remains of two cultural groups whose past lifeways have all but disappeared.

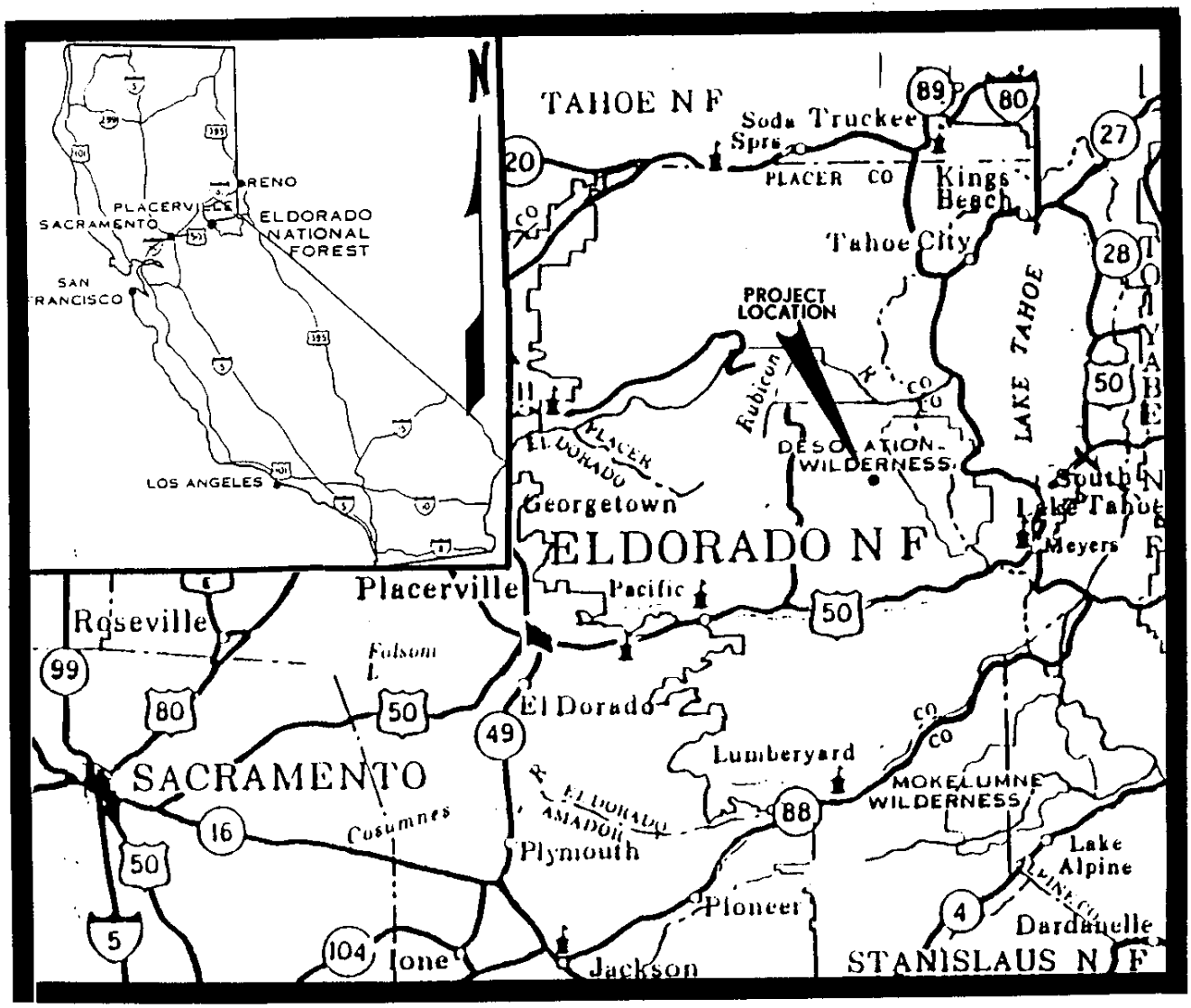
Chapter One in this thesis will describe the project location and environmental setting. In Chapter Two the theoretical perspective, research questions, methodology, and previous archaeological investigations will be discussed. Chapter Three examines previous ethnographic work completed with the Washo and Nisenan. A summary of the historical background of the Italian Swiss in California and El Dorado County is included in Chapter Four as well as a discussion of Giosue Bassi and the patterns of ethnic continuity found in the Italian Swiss groups in the Crystal Basin area. Chapter Five discusses the archaeological findings at the Upper Bassi site. These include site descriptions, descriptions of historic architecture and artifacts, and a description of prehistoric artifacts. Interpretation of the data is presented in Chapter Six with site comparisons and conclusions also given.

Appendices include reports on obsidian hydration and sourcing and a key to projectile point typology.

Project Location and Environmental Setting

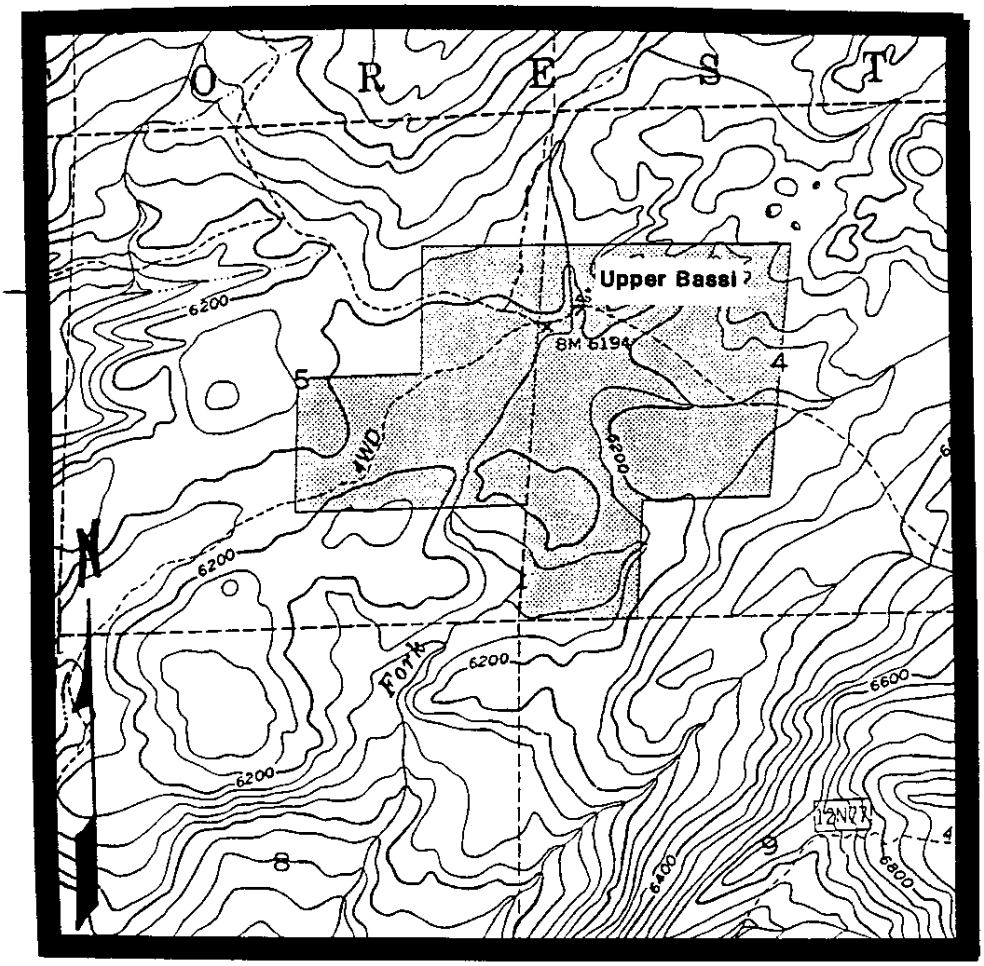
The Upper Bassi Site is located on 320 acres of private property situated in the Crystal Basin area of the Sierra Nevada Mountain Range of California. It is surrounded by land administered by the United States Forest Service, Pacific District, and is approximately three miles from the western edge of the Desolation Wilderness Area of the Eldorado National Forest and 13 air miles south west of Lake Tahoe (see Map 1 and Map 2). The Crystal Range is a granitic series of 8,000 - 10,000 feet peaks situated in the central Sierra Nevada. The Crystal Basin, nestled below these peaks, drains the upper reaches of the Middle and South Forks of the American River.

In the late paleozoic era, the area was covered by an inland sea. The sediments in this sea were later uplifted and intense folding and metamorphism occurred. Deposits of this metamorphosed sediment exist in the Crystal Basin area. During the Mesozoic era granitic and dioriotic type rocks intruded with erosion eventually exposing large areas of granitic batholith. Faulting occurred during Pleistocene times causing a major uplift of the Sierra Nevada range. Glaciation during this time exposed large areas of granitic rock in this area. Glacial deposits are found at the headwaters of the Bassi Fork of Big Silver Creek. Basalt outcrops, of Pleistocene age, are also found in the Crystal Basin area (Bailey 1966; Mitchell and Silverman 1984; Hunt 1985).



Map 1 - Project Location (From Eldorado National Forest 1979)

Map 2: Project Location Map
UPPER BASSI SITE



Quad Name: Loon Lake (portion of)
Mount Diablo Meridian
El Dorado Co., California
7.5 Minute Series

Scale: 1:24,000
Published: 1952
Revised: 1985
T 12 N, R 15 E

The Crystal Basin is in the Lodgepole pine and Red fir belt with elevations ranging from 5,500 - 7,500 feet. Summer temperatures range from 73° to 85° F. and winter temperatures range from 16° to 26° F. Precipitation includes heavy persistent snow with total water measuring 35 to 65 inches and includes some summer showers. Some characteristic plant and animal inhabitants are: lodgepole pine, silver pine, Jeffrey pine, red fir, Sierra juniper, aspen, huckleberry oak, bush chinquapin, snowbrush, green manzanita, goshawk, spotted owl, woodpeckers, Stellar jay, mountain chickadee, chipmunks, raccoon, pocket gopher, mule deer, and black bear (Storer and Usinger 1963).

The Upper Bassi Site is located in one of the many meadow areas of the Crystal Basin. This meadowland provided the early dairymen, and later the ranchers, with natural summer pasture for their cattle. This area is usually free from snow from June through October. However, the environment of the Crystal Basin has changed drastically since the late 1800's. As people's need for electric power increased, several reservoirs were constructed in the area to produce hydroelectric power. In 1957 the Sacramento Municipal Utility District started construction of the Upper American River Project, which has resulted in reservoirs that are heavily used by recreationists. Another major activity in the Crystal Basin is timber harvesting, which has altered the diversity of forest species. Fire suppression has become an accepted norm in today's forests and has drastically affected the ecological landscape. Native Americans used fire in some locations to increase stands of native grasses (Lewis 1973), though it is not known if this practice was used in the Crystal Basin. Ranchers of the 1800's also used fire to increase pasture for grazing. The Upper Bassi was no exception. When dairyman, Giosue Bassi would move his cattle back down to his winter range, he would

set fire to the meadow insuring good pastureland for the next summer (Hocking, personal communication 1990 and Bassi, personal communication 1991). Tree girdling was also a common practice used by Bassi and others in order to control encroaching trees, such as lodgepole pines, in meadow land. During the early 1900's the Forest Service began to prohibit the use of fire by ranchers, again altering the landscape (Supernowicz 1983). Cattle grazing has also altered the landscape and is an important aspect to study when theorizing on simultaneous occupation of the area by Native Americans and Italian Swiss and how this affected the resources.

Archaeological inferences using current vegetational patterns are probably incorrect. Work has been conducted in other areas to try to show what conditions might have been like in previous times (Matson 1972). The Tahoe Reach study conducted by Elston et al. (1977) showed previous climate shifts in that area. That information will be used in this thesis.

CHAPTER TWO

BACKGROUND OF THE STUDY

Theoretical Perspectives

> In point of fact, all archaeologists have some sort of mental framework which encourages thought along certain lines and discourages it from certain others. Often the framework is unconscious or implicit and may consist of little more than a set of personal biases and sometimes conflicting assumptions and ideas. On the other hand, an explicitly formulated theoretical framework attempts to state more clearly and consistently the basic assumptions, concepts, and propositions that guide the researcher in her or his thinking [Kowta 1988:215].

Archaeological theoretical perspectives have evolved throughout the last fifty years from a direct historical approach to a "post-processual approach." All of these perspectives have some merit and it is up to the individual archaeologist to choose and ultimately "use" the ideas that best fit their goal. This study will use various ideas from several "schools" of thought in archaeology.

Though many archaeologists feel a direct historical approach to culture history does not go far enough, most will agree that this is necessary for low-level functional inferences. The "direct historical approach" coined by such archaeologists as Heizer, Strong, and Steward was one of the first attempts to combine archaeology with anthropology. By selecting an area that is historically documented to be occupied by a particular group and describing the material cultural inventory of that group and then sampling other sites

to find assemblages that predate the known assemblages, the archaeologist travels from the known to the unknown (Steward 1942). Though some archaeologists find a problem at the "explanatory level of inference" (White 1988:11), this study will use these inferences to identify ethnic groups with the premise being that the strength of the inference is in the similarity between ethnographic and archaeological fact. Also included in this analogy will be the "similarity of time, space, culture, economy, and environment" (White 1988:11; Willey 1953; Ascher 1961). White feels that "by elevating the approach to the explanatory (systemic or processual) level of inference" the direct historical approach exhibits important weaknesses (1988:11).

In order to avoid a one to one analogy by attempting to make the artifacts "fit" with the ethnography, a hypothetical deductive method will be used when analyzing the data (Binford 1977). This method of "middle range theory" allows for hypothesis testing and model building bringing a more "scientific" approach to the study. However, this study also will try to examine the distortions and transformations that can alter or affect the context (Schiffer 1972). Though, some archaeologists prefer to refer to this concept as a "dynamic flow through" (Binford 1983) rather than a distortion, this idea will be considered for this study.

Cultural ecology is the study of the processes by which a society adapts to its environment.

> Its principal problem is to determine whether these adaptations initiate internal social transformations of evolutionary change. It analyzes these adaptations, however, in conjunction with other processes of change. Its method requires examination of the interaction of societies and social institutions with one another and with the natural environment [Steward 1977:43].

The archaeological record consists of the patterning of human artifacts,

which are a reflection of the adaptation of human societies to their resource bases. This study will record and interpret cultural resources in relation to cultural ecology.

In addition to this, an "optimal foraging" and "optimal locational" strategy to hunting-gathering will be explored (Bettinger 1987; Winterhalder and Smith 1981). This concept also will be applied when examining the historic use of this site. Ethnoarchaeology, which examines a living culture and speculates how this can be translated into the archaeological record, also will be used when investigating the historic and prehistoric use of the site (Binford 1983).

An interdisciplinary approach to addressing questions of the past is an accepted method of analysis used by historical archaeologists. This study will use information gleaned from archaeology, history, and oral history while using the various techniques of data retrieval specific to each of these disciplines. Information from these sources will be used to verify material remains as well as give a better perspective to the examination of cultural change (Tordoff with Seldner 1987:7). By gaining a better understanding of the past we will hopefully better cope with the future.

Research Questions:

One of the objectives of this project was to determine what could be found in the ethnohistorical and archaeological record that was distinctive to Italian Swiss culture. This would provide answers to the questions of how much of the Italian Swiss culture was retained and how much the group assimilated into the new cultural experience. Of particular interest was to compare the Bassi family experience to other Italian Swiss families in the area and in other areas of California. This would add to the knowledge of

early Italian Swiss groups and would help in comparative studies of these groups in California and in other parts of the United States.

Another objective of this study was to answer the following research question through ethnohistorical and archaeological investigation: Was there contact between the Native American group that previously used this site and the Bassi family? Archival research and oral interviews would hopefully provide information about the relationship between the two groups. Of particular interest was whether Giosue Bassi utilized Native Americans as "help" on the Upper Bassi site and what this working relationship may have been. Did Bassi and other Italian Swiss immigrants have any sensitivity toward the Native American plight? How was the Italian Swiss group treated by the English speaking white population of the area? Did they experience any ethnic hostility? And if they did experience hostility, did this make them more sensitive to the local Native American's treatment? Since presumably prehistoric people used this site on a seasonal basis, were they "allowed" to use it after Bassi moved in? And if they did use this site during Bassi's occupation, how did cattle grazing affect the landscape and resources and how did Native American's adapt to these changes?

This study also might add data to help answer the continuing debate of which ethnographic group used this area: Washo or Nisenan? Bennyhoff (1977:82-94) postulates a late expansion of the Nisenan. This expansion could have taken place in the Upper Bassi Site area. However, this area is known to be a "no man's land" between the Nisenan and Washo (Littlejohn 1928:13). Could findings in the ethnohistorical and archaeological record shed light on this debate? For instance, could projectile point type and materials used in the manufacture of these projectile points help distinguish

between the Nisenan and Washo? Or could food processing techniques and materials distinguish between the two groups (Deal 1991)? And could research into ethnohistorical works help answer this continuing perplexing question?

Methodology

Preliminary archival research and oral interviews preceded archaeological reconnaissance at the Upper Bassi site. Specifically, archival research included a search of El Dorado County Records for deeds, liens, and preemptions. The Bureau of Land Management in Sacramento provided homestead patents and GLO plats. The El Dorado County Historical Society was a source for vital statistics as well as dairy implement collections for comparative work. The Folsom museum also contained a dairy implement collection that was used for comparative work. The Great Register for El Dorado County, also available at the Placerville museum, was consulted for naturalization records. Local newspapers, such as the Mountain Democrat and the Georgetown Gazette, provided additional details for this study. The El Dorado County Library provided microfiche copies of the Mountain Democrat and the California State Library, California Room was the keeper for microfiche copies of the Georgetown Gazette.

Old U.S. Geological Survey maps are invaluable sources for discovering Italian Swiss names and locations. These were found at the California Room of the California State Library, El Dorado County Recorders Office, and the Supervisor's Office of the Eldorado National Forest - U.S. Forest Service. Aerial photographs from the Pacific District Office of the Eldorado National Forest were perused in order to verify location of old roads found on the U.S.G.S. maps.

Oral interviews were conducted and proved to be the most valuable source of information concerning the Italian Swiss. Marcella Bassi Mainwaring (Giosue Bassi's granddaughter) was particularly helpful in providing information about her grandfather and the past lifeways of a dairyman. She also provided most of the old photographs of the Upper Bassi site. Dan Mainwaring provided access to his extensive collection of dairy implements and photographs were taken of the "Bassi" collection.

Previous work on the Italian Swiss was researched and used as comparative data for this study. Particularly valuable studies included: "The Historic Archaeology of Italian Swiss Settlement in Sierra Valley: A Preliminary Study" (Rucks 1987) and "Italian Swiss Settlement in Plumas County 1860 to 1920" (Hall and Hall 1973). This information is discussed in detail in Chapter Four.

A search of previous archaeological work in this area was conducted and a detailed account of these findings is presented later in this chapter. Ethnographies were searched for information and a more detailed examination of the information found is discussed in Chapter Three.

A surface survey of the 320 acres of the Upper Bassi was completed (in 1991) by qualified archaeologists. The survey consisted of general coverage (20 to 30 meter transects) and complete coverage (5 to 10 meter transects) in sensitive areas. In areas of heavy duff, surface scrapings were conducted every twenty meters. All cultural resources were noted and all archaeological sites fully recorded. Site boundaries were determined by surface scrapings every five meters from known cultural material until no archaeological data was found. Collected artifacts were given a temporary accession number and will be returned to the owners of the Upper Bassi when this study is completed.

Extensive photographs were taken in the cabin area. Construction techniques distinctive to the Italian Swiss were demonstrated through extensive description, drawings, photographs, and comparison studies. In addition, artifacts distinctive to Italian Swiss use were noted and used in comparison studies.

Tree ring dating, using an increment borer instrument, was attempted but unsuccessful due to the condition of the stumps. It was hoped that tree ring dating could be used as a method of verifying the date of the cabin by matching up logs used in the cabin and barn with stumps on the Bassi property. This information also would verify environmental information, such as when drought years occurred. Unfortunately, stump deterioration made it impossible to distinguish and count tree rings.

Locus A, B, and E were minimally tested to help answer questions of Native American contact. One 50 centimeter x 50 centimeter unit was placed in Locus A, one 50 centimeter x 50 centimeter unit was placed in Locus B, and one 50 centimeter x 50 centimeter unit placed in Locus E. The placement of these test units was determined by the areas of densest surface scatter of prehistoric artifacts. All the material removed through excavation was screened over 1/16 inch wire-mesh with most of the deposit passing through it. This helped catch small flakes to determine stone tool technology and small artifacts such as beads to help answer questions concerning historic contact. In addition, a White's 5900 DI-PRO SL metal detector was used to look for metal Native American artifacts that would be indicative of historic contact.

Each 10 centimeter level was recorded and the material was washed and sorted. Stone tools were separated from lithic debitage and projectile points were typed by comparison studies and the Leventhal key (see Appendix B).

Flakes were analyzed using a combination of studies (Binford 1972; Crabtree 1982; Flenniken 1987; Jackson et. al 1988; Nilsson et. al. 1989).

Three historic trash dumps were also tested for subsurface deposits.

Previous Archaeological Investigations

One of the earliest archaeological investigations in the north-central Sierra Nevada was conducted by Heizer and Elsasser (1953). They reported on 26 sites in the vicinity of Lake Tahoe (ranging in elevation from 5,500 to 7,900 feet) and identified two archaeological complexes: the Martis and the Kings Beach. The Martis complex was characterized by a preference for basalt in tool production, large heavy projectile points, scrapers and expanded base drills, atlatl weights, use of the mano and millingstone, and a hunting and gathering economy. Heizer and Elsasser tentatively dated the Martis Complex "some time in the first two millennia B. C." (1953:21). The Kings Beach complex was characterized by a preference for obsidian and silicate materials in tool production, small projectile points, very few scrapers and drills, use of bedrock mortars, and a fishing and seed gathering economy. Heizer and Elsasser believed the Kings Beach Complex to be ancestral to the Washo with a tentative beginning date of A. D. 1000 (1953:20).

This early chronology has been amended by Elston et. al. (1977) after their work along the Tahoe Reach of the Truckee River. They recognized seven phases that were correlated to climatic variables:

1. Washo-Late Kings Beach (A. D. 1200 - Historic Contact) - This phase is characterized by Desert Side-notched and Cottonwood Series projectile points, chert cores, utilized flakes, and other small chert tools. (Climate: wet

and cool, little summer precipitation)

2. Early Kings Beach (A. D. 500 - 1200) - Eastgate and Rose Springs projectile points, chert cores, utilized flakes and other small chert tools are characteristic of this phase. (Climate: dry)

3. Late Martis (500 B. C. - A. D. 500) - This phase is defined by corner-notched and eared points of the Elko and Martis Series, large side-notched points, large basalt bifaces, and other basalt tools. (Climate: wetter, increased summer precipitation)

4. Middle Martis (1500 B. C. - 500 B. C.) - Steamboat series points and other types in Elko-Martis series, and large bifaces and tools are characteristic of this phase. (Climate: warm, dry interval)

5. Early Martis (2000 B. C. - 1500 B. C.) - Included in this phase are Contracting Stem points of the Elko and Martis Series, large basalt bifaces and tools. (Climate: warmer, increased summer precipitation)

6. Spooner (5000 B. C. - 2000 B. C.) - Projectile points in the Humboldt and Pinto Series characterize this phase, with some tools made from light-colored basalt. (Climate: Altithermal - hot/dry)

7. Tahoe Reach (6000 B. C.) - This phase is marked by Parman Points and other points in the Great Basin Stemmed Series. (Climate: warming trend)

Elston's work has been disputed by Rondeau (1982) who, after

excavations at the Truckee site CA-NEV-199 in Nevada County, has suggested that the Martis complex be abandoned and replaced with a more carefully defined complex. He suggests that basalt is not just indicative of Martis but rather was used throughout the prehistory of that region. Elston has since reevaluated his chronology and suggests that perhaps Late Martis should be included with Kings Beach and that all phases within Martis and Kings Beach should be tested for accuracy (Wirth Environmental Services 1985:22).

An important archaeological investigation on the western slope of the Sierra started in 1953 with Bennyhoff's (1956) work in Yosemite National Park. He identified three complexes:

1. Mariposa Complex (A.D. 1200 to 1850) - This complex consisted of projectile points of obsidian weighing less than one gram, bedrock mortars and cobble pestles, pictographs and steatite artifacts.

2. Tamarack Complex (A.D. 500 - A.D. 1200) - This complex was characterized by intermediate-sized projectile points, bedrock mortars and cobble pestles.

3. Crane Flat Complex (prior to A.D. 500) - Large, heavy projectile points made of obsidian characterized this complex as well as slab metates and manos.

Fitzwater (who conducted excavations in the Yosemite area in 1962) found no evidence for a separate Tamarack complex and suggested that the

Mariposa Complex include projectile points lighter than three grams rather than Bennyhoffs suggested one gram (Fitzwater 1962).

Reservoir construction in the 1960's resulted in various projects in the western Sierra foothills. Among these was the Camanche Reservoir project conducted between 1962 and 1964 by Jerald Johnson. While most of the 129 sites recorded were identified with the Central Valley's Late Horizon, Johnson explained the, "cultural sequence at 5-237 (CA-Cal-237) reflects an offshoot of that found in the Central Valley to the west, with modifications imposed by the environment in the vicinity of the site" (1967:282). He found that technological changes during this sequence paralleled the Central Valley. As Wirth et. al. explain:

> Thus, a parallel development in ground stone technology in the valley proper, in the western foothills and in the high Sierra has been identified: a shift from mano/metates to mortar/pestles. The projectile point assemblage also reflects parallels with the valley and the mountains in a reduction in point size over time and the introduction of Desert Side-notched points in the Late Horizon [Wirth Environmental Services 1985:19].

Starting in the 1970's the United States Forest Service began to initiate archaeological work in the Sierra Nevada in order to comply with federal laws that require all cultural resources be considered before a project can be carried out. This resulted in the U.S.F.S. conducting archaeological surveys of its land for planning purposes. Such surveys have resulted in large amounts of data of which very little has been synthesized. A few studies have revealed interesting results. For instance Lindstrom (1978) conducted a survey of the Pacific Crest Trail in Tahoe National Forest and recorded 38 prehistoric sites, which ranged in elevation from 6,800 to 8,600 feet. Her research centered on constructing and testing a high elevation

settlement/subsistence model. She found larger quantities of Martis type assemblages than Kings Beach assemblages. This seems to confirm Elston's et al. (1977) suggestion that larger populations existed during the Martis period than the Kings Beach period (Wirth Environmental Services 1985:19).

Further surveys conducted by the U.S.F.S. on the Stanislaus National Forest resulted in the recording of eight prehistoric sites that ranged in elevation from 6,200 to 7,300 feet. "Research focused on the relationship between site distributions and environmental conditions. Lake shores in the survey area were not found to correlate with a high frequency of archaeological sites. Rather, well watered meadow areas were found to be favored locations for sites" (Wirth Environmental Services 1985:19).

Surveys of the Emigrant Summit Trail in Eldorado National Forest reported seven prehistoric sites that ranged in elevation from 7,800 to 9,500 feet. "Even though historical and ethnographic sources associate the Washo with this section of the trail, no trade beads or other artifacts from the Protohistoric period (A.D. 1500-1850) were found" (Hunt 1985:21). The Late Prehistoric Period (A.D. 700-1300) and the Middle period (1500 B.C.-A.D. 700) were demonstrated reflecting exploitation of the trail area and extensive trade relations. In contrast to the earlier work of Elston et al. (1977) and Lindstrom (1978), Bennyhoff et al. (1982) found little evidence to reflect largest populations occurring during the Martis period. Of particular interest in the Emigrant Summit Trail study was the results of the obsidian sourcing. All 39 of the obsidian artifacts collected for the project were sourced. Results showed that 92.3% of the obsidian came from Bodie Hills, in ethnographic Mono Paiute territory. Sinter, which was found at two sites, is believed to come from Steamboat Hot Springs, Nevada, in ethnographic Washo territory.

The Mokelumne River Hydroelectric Project (Wirth Environmental Services 1985) has generated extensive information about the prehistoric use of the Mokelumne River canyon. Because of the difficulty in cross-dating cultural materials with either the Tahoe sequence or the Yosemite sequence, Wirth Environmental Services has proposed the following chronology for the Mokelumne River:

1. Blue Lakes Phase (500 B.C. to A.D. 500) - Found in upper elevations this phase is characterized with Elko series points, low frequencies of Martis series points, high frequency of Bodie Hills obsidian, and is believed to be closely related to the Crane Flat phase in Yosemite.

2. Mokelumne Phase (A.D. 500 to A.D. 1200) - This phase is marked by Rose Springs and Eastgate series points, especially the Rose Springs Contracting Stem type; contains a high frequency of chert and quartz that occurs locally, and contains a low frequency of obsidian. Olivella shell beads are present in low frequencies.

3. Amador Phase (A.D. 1200 to A.D. 1830) - Desert Side-notch and Cottonwood series points are prevalent in this phase with a variety of lithic materials being used. Spire-lopped and semi-ground disk Olivella beads, glass trade beads and flaked bottle glass are found late in the phase.

Wirth Environmental Services found that the most intensive period of occupation in the higher elevations was during the time represented by Elko series points. Conversely, in the middle elevations the most intensive period of occupation seems to have occurred during the time represented by Rose

Spring and Eastgate series points. Of particular interest in this study, is that out of the 60 obsidian specimens sourced 59 were from Bodie Hills (Wirth Environmental Services 1985:B-1).

Peak and Associates (1987) conducted a data recovery program at CA-Cal-S343, located on Clarks Flat in Calaveras County, for a hydroelectric development project along the North Fork of the Stanislaus River. These excavations indicated that the prehistoric group at this site abandoned the area sometime between 1848 and 1874 when the first permanent white settlers arrived at Clarks Flat. Peak determined that the site contained a single component that correlated with the Horseshoe Bend Phase (A.D. 1300 to 1848) proposed by Moratto et al. (1984) during their investigations at New Melones. This phase is characterized by, "infrequent manos, steatite artifacts...various small flaked stone tools, and projectile points of the Desert Side-notched, Cottonwood Triangular, and Gunther Barbed types" (Moratto et al. 1984:196).

Work conducted by Olsen and Riddell (1963) in the Oroville area in Butte County was further expanded by Ritter (1970a) who recognized four archaeological complexes:

1. Oroville Complex (A.D. 1500 until the epidemic of 1833) - This complex represents the protohistoric Maidu and is characterized by Bedrock mortars, though manos and millingstones continued to be used unchanged. Other characteristic artifacts during this complex are incised bird bone tubes, gorge hooks, gaming bones, clamshell disk beads, Desert Side-Notched projectile points and triangular points. However, projectile points from earlier times

also are found in this complex. Structures included large circular dance houses and burials were tightly flexed on their sides

2. Sweetwater Complex (A.D. 800 - A.D. 1500) - This complex is characterized by split-punched Olivella beads and banjo-shaped Haliotis ornament forms, a steatite industry consisting of cups, bowls, and platters; small tubular bone beads, bone pins, gorge hooks, awls, ulna flakers, small projectile points of the Eastgate, Rose Spring, and Gunther Barbed types. Mortar and pestle were predominate with wooden mortar pestles found early in the sequence. Manos and millingstones were used sparingly. Burials are either loosely flexed or extended.

3. Bidwell Complex (A.D. 1 - A.D. 800) - This complex represents people who lived in permanent villages with smaller task groups moving out to hunt or fish. Grooved and notched stones, which are thought to be net weights, are part of the fishing tool kit. The mano and millingstone point to a reliance on hard-shelled grass seeds but were also used for acorns. Large slate and basalt projectile points are indicative of this complex with steatite vessels for cooking also found. The dead were buried in flexed, dorsal, or lateral positions.

4. Mesilla Complex (prior to 1,000 B.C. to A.D. 1) - Artifacts characteristic to this complex are the mano and metate, bowl mortars, the atlatl used with darts with large stemmed and side-notched basalt or chert points, Haliotis and Olivella beads, charmstones, and bone pins. Burials are flexed and placed on their sides.

Ritter's work at the Spring Garden Ravine Site (1970b), located on the Foresthill Divide a few miles west of Foresthill, pointed toward a Martis-like tradition occurring from about 1400 B.C. After 1,000 A.D. a decrease in core tools, an increase in projectile points and retouched flakes, a shift from the atlatl to the bow and the increasing use of the mortar and pestle led Ritter to postulate that the site inhabitants put a greater emphasis on hunting at this time and that this was a new group that arrived with a new technology or a series of adaptive responses within the culture (Hunt 1985:20). Pollen studies (Matson 1972:24) from the Spring Garden Ravine Site indicate a vegetation change from 3,000 years of stable open oak-grassland to a pine-oak woodland community within the last 500 years (Hunt 1985:20).

This summary of previous archaeological investigations hopefully demonstrates the complexity of trying to assign cultural affiliation to established archaeological complexes as well as defining a basic chronological and set of cultural relations between areas. As stated by Bennyhoff et al. (1982:79), "the lack of clarity in Sierra Nevada cultural history can be envisioned as a product of a lack of synthesis. The temporal sequences which have been worked out for the various areas are seemingly valid, however the boundaries of the units which make up the sequences are unclear." As further data is analyzed, interpreted, tested, and compared perhaps this perplexing puzzle will be worked out. Until then, studies, whether large or small, can aid in unraveling the complexities of cultural affiliation based on archaeological data and add to further refining cultural chronologies.

CHAPTER THREE

ETHNOGRAPHIC FINDINGS

The Upper Bassi site falls within the ethnographic territory of the Hill Nisenan, or Southern Maidu, and the Washo (see Map 3, Map 4). Ethnographies, which constitute short glimpses of Nisenan and Washo culture, have been written providing a view of these cultures at one point in time. The following is a summary of these ethnographies.

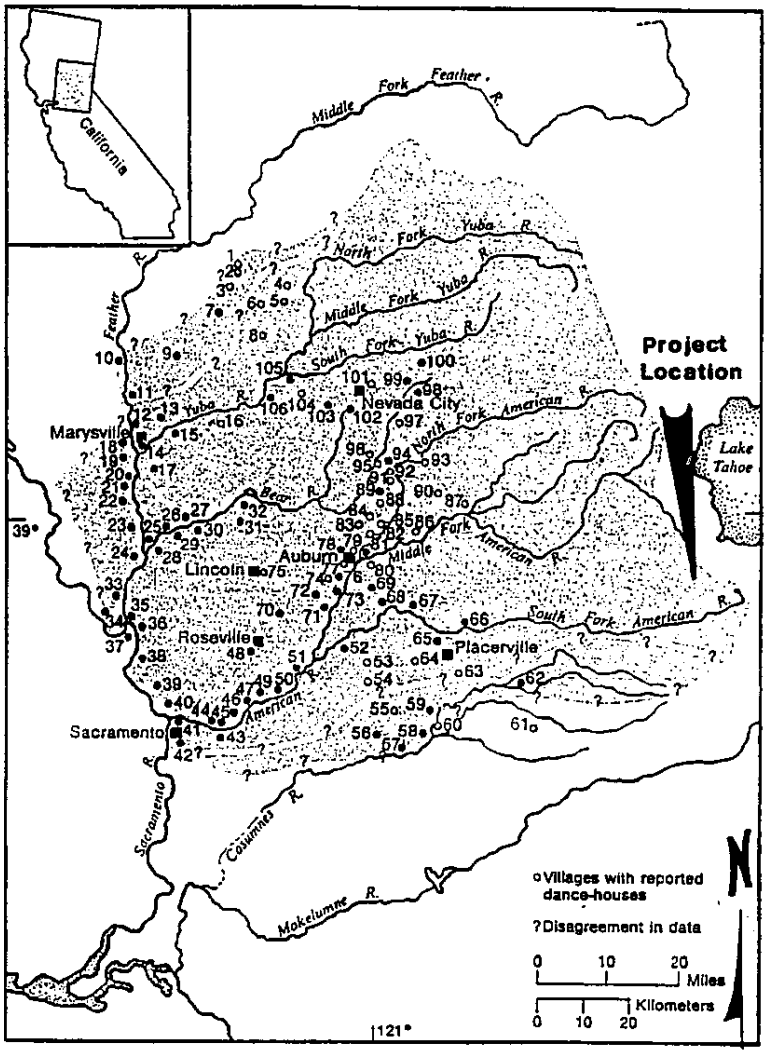
Washo

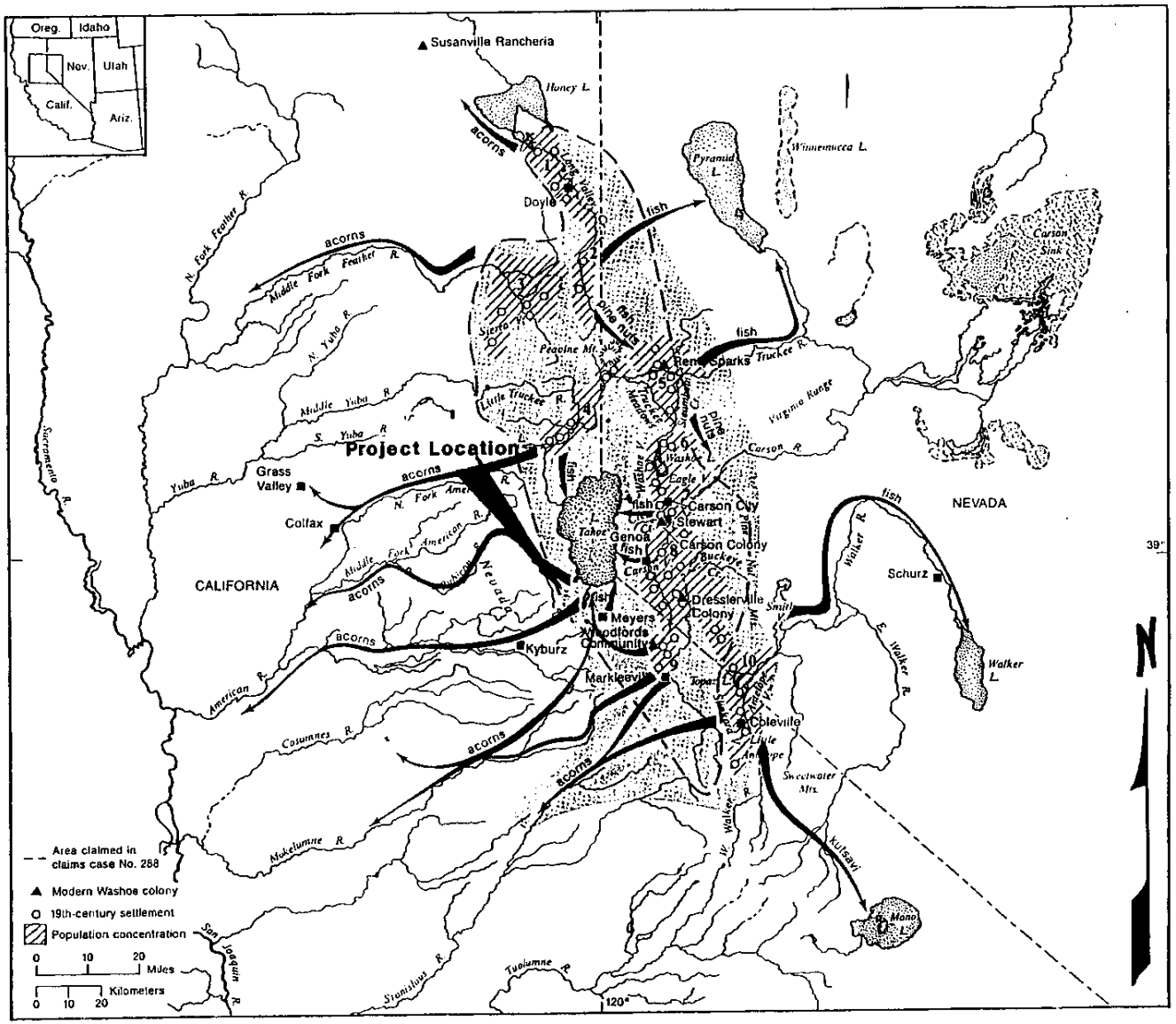
A.L. Kroeber wrote in 1925, "the Washo have been unduly neglected by students of the Indian. What little is on record concerning them makes it difficult to place them." Since that time other ethnographies have been written that take a more detailed look at the Washo.

The center of Washo territory is Lake Tahoe (Downs 1966). This nuclear area's boundary on the west was at Rockbound Valley in the Desolation Wilderness, which is several miles from the Upper Bassi Site. The peripheral area that surrounded the nuclear area of the Washo would include the Upper Bassi Site. But as Downs (1966:5) points out, "if one were interviewing Paiute, Maidu or Miwok consultants, the zones described as peripheral to the Washo would be described as peripheral Paiute or Miwok and so on. Thus each of these peoples tended to occupy a central area that they defended as their own on certain occasions and returned to as to a home port. But between groups were vaguely defined "grey" zones which

Map 3: Territory of the Nisenan

(From Wilson and Towne 1978:388)





Map 4 - Territory of the Washo (From D'Azevedo 1986:468)

were often jointly exploited without undue hostility."

The Washo use a linguistic dialect affiliated with the Hokan language family and are the only people of the Great Basin who are not of a Numic-language background. It is believed that they predate the Numic-speaking groups (d'Azevedo 1986). The Maidu and Miwok speak languages related to the Penutian stock. "One theory proposes that Hokan speakers were early residents of California and that subsequent intrusions of Penutian speakers have dispersed them to their present widely scattered locations" (Hunt 1985:12). The Washo had strong cultural alliance with not only the Great Basin but also their California neighbors (Barrett 1917; Lowie 1939; Kroeber 1925; Downs 1966).

Though their winter residence was in the valleys of western Nevada and eastern California, the Washo often crossed over the ridge of the Sierra to collect acorns (d'Azevedo 1963; Downs 1966). Winters were spent in villages of up to several families; but during the summers, the Washo broke up into individual household groups to exploit small streams for fish and meadows for plant gathering (Downs 1966). The Washo "were compelled by their environment and level of technology to a rigorous and continual search for food"(Downs 1966:37). According to Freed (1966), the Washo camped at Rubicon Springs and Bunker Lake on their way west in the direction of Georgetown and into the acorn country. The Upper Bassi site is approximately 10 miles southwest of Rubicon Springs. The site at Bunker Lake has been verified by U. S. Forest Service archaeological surveys.

Washo men hunted deer in the fall before the heavy snows began. Though hunting usually took place on the eastern edge of the Sierra, some hunting parties would travel into Nisenan territory on the west slope. The purpose of these trips was to accumulate enough dried deer meat for the

winter. A hunting party usually consisted of six to eight men. An older man usually cooked and tended camp for the hunting party (Downs 1966:29). The hunting party would hunt for as long as a month and bring home between 800 and 1000 pounds of dried deer meat and hides if their luck was good.

According to Davis (1961) the Washo traded salt, pine nuts, and rabbitskin blankets to the Miwok in exchange for acorns, manzanita berries, shell beads and shells.

> Inasmuch as they had little that the California tribes could not obtain for themselves, the Washo frequently had to undertake long journeys to obtain trade articles. Tribal tradition recalls long trips during the summer which took families to the shores of the Pacific to gather shell fish. The mollusks were eaten on the spot but great packs of shells were carried back over the Sierra to be made into jewelry and ritual objects and to be traded to the people to the east [Downs 1966:37].

According to Downs:

> During the 1840's and 50's, and perhaps earlier, the Washo abandoned trading or gathering trips much beyond the eastern limit of the oak trees in California. Several unpleasant encounters with white gold washers had made them feel that the entire area was extremely dangerous. However, the lure of Sacramento, where many desirable items of white manufacture, including guns, could be purchased, plus the possibility of work in the fields in post-goldrush California, caused them to begin the trans-Sierran trips again in the last quarter of the 19th century [1963:146].

The Washo did not pursue animal husbandry. In fact they viewed cattle and sheep as competitors and spoke of them with contempt. However, some benefits did befall the Washo from farming practices of the Whites. For instance, the edges of farmland became richer for gathering of certain plants and hunting some birds and small game as these resources were pushed out of the fields into the nearby overgrowth (Downs 1966). However, by the

beginning of the 20th century the Washo became more dependant upon wage labor as they saw the destruction of their resource base.

Nisenan

The Nisenan, also known as the Southern Maidu, occupied the Yuba and American river drainages (Wilson and Towne 1978). They were affiliated with the Penutian language family who differed from the Northern Maidu linguistically and in customs. Hill Nisenan territory included the area between the Cosumnes River and the south fork of the American River and in the ridges along the south fork of the American River (Wilson and Towne 1978). Bennyhoff has speculated a late expansion of the Nisenan. He has documented Hill Nisenan entry into the Cosumnes River drainage in response to labor demands of the gold rush (Bennyhoff 1977:82-94).

The eastern boundary of the Nisenan with the Washo has been discussed by the following. Wilson and Towne (1978:388) place the border of the Nisenan and Washo along the crest of the Sierra Nevada. Littlejohn reports that the eastern boundary of the Nisenan was the line along the crest where snow was present throughout the winter (Littlejohn 1928:13). Beals reports good relations existing between the Nisenan and the Washo during historic times with "big times" held jointly at Kyburz, in the South Fork of the American River and near Myers station in the Lake Tahoe Basin (Hunt 1985, Beals 1933:366).

The Hill Nisenan lived in villages sometimes banding together with other villages for ceremonies, food gathering and decision making (Wilson and Towne 1978). Hill Nisenan villages were located on ridges and large flats along major drainages (Wilson and Towne 1978:389). Nisenan subsistence focused on gathering plant foods (mainly acorns), hunting mammals

(particularly deer), and fishing. Beals reports that only triblets who lived closest to the snow line entered the area, spending four or five days in one spot (Beals 1933).

Though the Hill Nisenan were little affected by the epidemics that destroyed other Nisenan populations, they were overrun in a period of two or three years after the discovery of gold in 1848. Widespread destruction to their villages and persecution by Whites led to their demise as a viable culture (Wilson and Towne 1978). Though there was a resurgence of native culture in the 1870's, the movement ended in dissolution in the 1890's with no living Nisenan remembering "the times before White contact" (Wilson and Towne 1978).

Analysis of Data

Ethnographic literature invariably shows the difficulty in assigning particular ethnicity to an area. The Upper Bassi Site is in the peripheral area known as "no man's land" between the Hill Nisenan and Washo. Since very little information has been forthcoming about this area from either the Nisenan or Washo groups , material culture is one of the few remaining ways to get to the "ethnicity" of the site.

Deal (1991) has proposed a model of the prehistory of the north-central Sierra from her work on the Pacific Ranger District of the Eldorado National Forest. (The Upper Bassi private property is surrounded by the Pacific District of the Eldorado National Forest.) Deal's model proposes that:

> In the foothills, the Penutian population expansion would have gradually pushed Hokan-speaking populations, including the ancestral Yana [Deal 1987] and the ancestral Washo, into higher country until the ethnographic territorial pattern is encountered. An intensified use of fisheries, where available, and of acorns would be noted in Hokan-

> country, although the economies would continue to reflect a more generalized subsistence base than evident among Penutian-speakers [Deal 1991:9].

She proposes that, "the ethnographically described Washo Trek for west-slope acorns (cf. Freed 1966; d'Azevedo 1986), which were relayed back to east-slope camps or cached along trek routes, was a practice begun by their Martis ancestors." She further states that:

> The implications of these assumptions are that the District archaeological resources will be remarkably similar, being initially represented by Martis peoples and later by their Washo descendants. Site types and cultural materials are expected to be somewhat limited, being restricted primarily [and particularly in the higher elevations], to the archaeological manifestations of acorn (and other plant food gathering) parties, and to hunting parties. Activity sites related to the above would include bedrock mortars, manos and millingstones [to a lesser degree], small portable mortars, acorn cache sites, hunting blinds, and tool manufacturing and rejuvenation areas [Deal 1991:12].

Deal's model would also predict that, "the majority of BRM sites will be dominated by "starter" mortars (ie. less than 5.5cm deep; McCarthy et al. 1985), since acorns were primarily being moved easterly across the Sierras, and that initial processing might have taken place as the acorns were being relayed" (Deal 1991:13). She also predicts, "smaller sites having fewer mortar cups (between 1 and 5) will be found in scattered locations where other dispersed resources of the district area were harvested, either by smaller family foraging groups or more particularly, for resources harvested in the district area prior to the fall acorn harvest." In addition, "the only definable Nisenan sites on the District will be located at low elevations in the extreme western portion of the District, and they will all be ethnohistoric. There will be no Miwok sites on the District" (Deal 1991:16).

The above model will be tested when analyzing the prehistoric component of the Upper Bassi Site. Further hypotheses will be proposed regarding the stone tool making assemblages found at the site.

CHAPTER FOUR

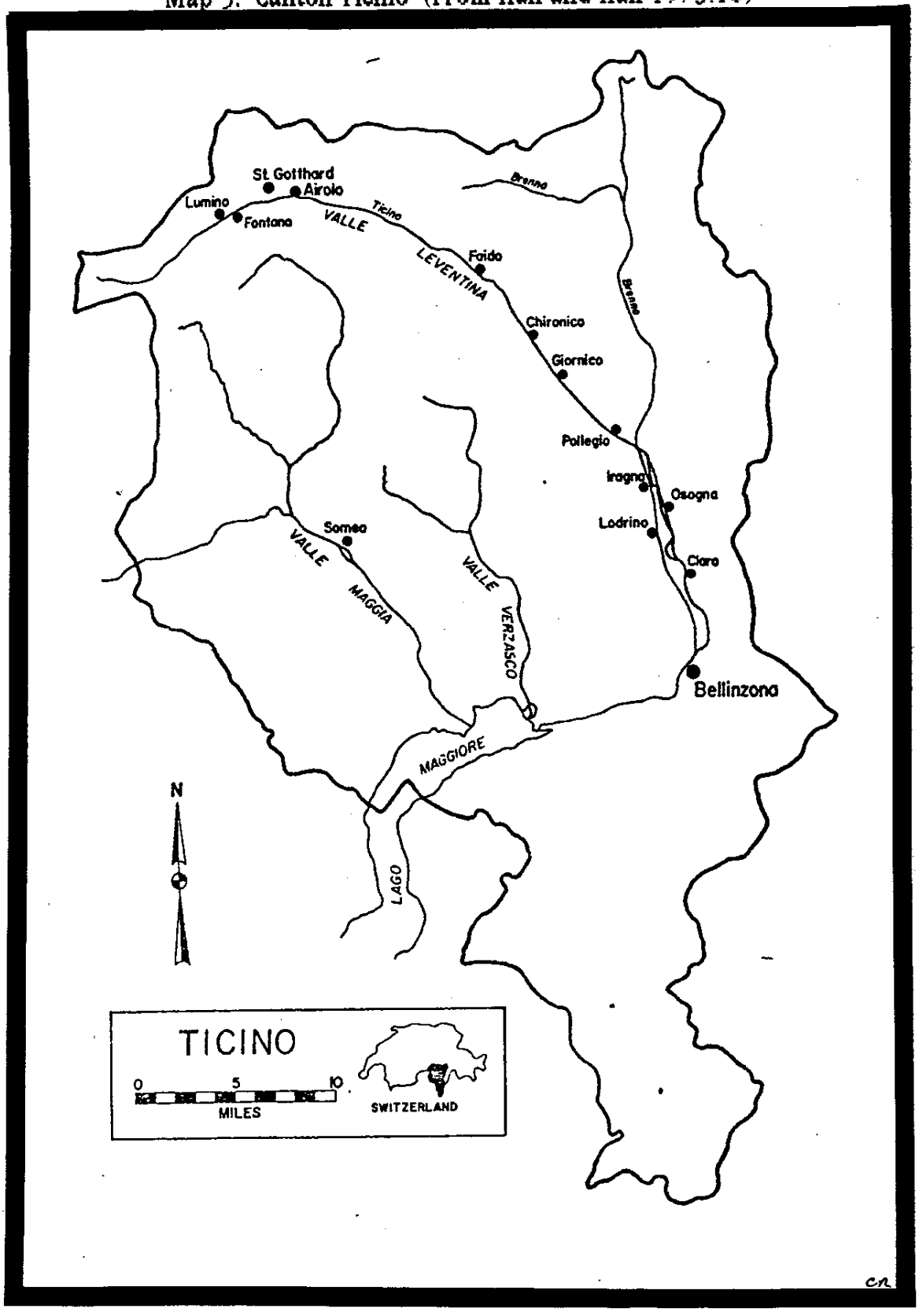
HISTORICAL FINDINGS

The purpose of this section is to provide a cultural history of the Italian Swiss in California specifically El Dorado County and more specifically the Crystal Basin area of the Sierra Nevada. This overview is provided in order to better understand the significance of cultural resources examined at the Upper Bassi Site.

History of Italian Swiss in California

"New Helvetia" was established in 1839 in California by the German-Swiss, John Sutter. The first two Italian-Swiss immigrants to California came to New Helvetia in 1849 from the Swiss canton Ticino (Von Grueningen 1940). (The Swiss from the canton of Ticino speak Italian - and are often referred to as "Italian Swiss.") News of the California gold discovery at Sutter's Mill in 1848 reached the canton of Ticino and thus began the influx of Ticino residents to California. Canton Ticino is 1,085 square miles and is made up of glaciers and mountain valleys that serve as a boundary between Switzerland and Italy (see Map 5). Val Leventina and Val Maggia were two major farm districts in this canton that were the principal source of migration between 1850 and 1930. Between 1850 and 1930, 40% of Val Maggia's population immigrated (Hall and Hall 1973).

Map 5: Canton Ticino (From Hall and Hall 1973:16)



In the 1840's, Switzerland was suffering from a growing population, inadequate agricultural reforms, and crop shortages and failures (Hall and Hall 1973). Out of economic necessity, Swiss began to emigrate. Government aid and canton subsidies to poorer Swiss led to a marked increase in Swiss migration. From 1850 to 1860 there were 40,000 people who migrated from Switzerland (Hall and Hall 1973).

> Of the two large gold countries, Australia and California, we Swiss, at least, should undoubtedly choose the last. The climate of California is agreeable to us and it has a government similar to ours. In addition to gold as a source of income, we will find there the most complete personal freedom and the strongest protection of life and property. Besides, California is much nearer to us than Australia [Wright 1941:70].

This was written in 1852 by a Swiss who formed an emigration society large enough to charter a ship on the society's behalf that would make the trip to California more comfortable and less expensive. He chose the Isthmus route rather than the Cape Horn route from Switzerland to California because it was faster and "because time is more valuable in California than anywhere" (Wright 1941:70).

The 1870 census shows 3,000 Swiss living in California with 854 of these from the Canton Ticino and 253 of these 854 living in the Sierra Nevada (Raup 1951). Most of those from Ticino were dairymen. Only 20 per cent of the California population were engaged in agriculture in 1870 in contrast to 62.8 per cent of the Ticino Swiss (Raup 1951). After 1874, most of those who left Canton Ticino for America went to California because of the positive reports sent to them from earlier migrants (Raup 1951). Estimates of the total number of migrants from Canton Ticino to the United States, from 1850 to 1947 are about 27,000, with about 20,000 in California (Perret 1950).

According to M.E. Perret, who made an extensive study of migrants from Ticino, this group was distinctive in California (1950). They came in groups and remained in groups. The typical immigrant was a young man who had not acquired a trade but had worked in his rural village as a farm worker or dairyman. He came to California with little money because his parents could not help him financially. Motivations for migration included "the wish to obtain agricultural lands as well as by the hope of making a speedy fortune in the gold fields" (Hittell 1879:17). "People emigrate from Switzerland today (1862) neither for religious or political reasons...an emigrant leaves the fatherland today in disgust because he cannot own there enough soil to live reasonably well" (Hall and Hall 1973:13). Land, especially on the Pacific Coast, was believed to be cheap compared to land in Switzerland (Raup 1951). According to the Hall study, which was an analysis of the Italian-Swiss settlement in Plumas county from 1860 to 1920, the letters from California to Switzerland describing a land of great opportunity were very influential in an individual's decision to come to California (Hall and Hall 1973). On reaching California, most young men took jobs as laborers until they could save up enough money to purchase land. It is not surprising that many Italian Swiss became involved in dairy ranching since this was an occupational skill that most brought with them. After establishing themselves as landowners, many dairymen would send for relatives from Switzerland to help them with their dairy. The "second wave" immigrant described by Raup is one, "whose passage is paid by relatives in exchange for work as a dairyman" (Rucks 1987:25). Though not all Italian Swiss in California adhered to this pattern of first becoming a laborer, then a landowner and then a benefactor for other Italian Swiss, many did - including those in El Dorado County.

The Italian Swiss were greatly admired in many areas of California. As Rucks says in her Sierra Valley study, "the Italian Swiss are a much admired ethnic minority in Sierra Valley" (Rucks 1987:13). The Sierra Valley Leader of November 1, 1889 reports, "the Switzers in this Valley, as a rule, are hard workers, good butter makers, good citizens, and are making money" (Hall and Hall 1973:iv). Andrew Ginocchio reports in his oral history:

> Yes, we give them credit, and they were good... And in many cases, they were bringing cheese... we would much rather take the cheese for pay instead of the cash...they were good people. There was no bargaining or arguing about the cost. They pay you whatever you ask for; they lay it on the line [Rucks 1987].

The Italian Swiss settled in Sierra Valley in the 1860's. As in El Dorado County, roads and geographic landmarks retain Italian Swiss names. The Sierra Valley and Plumas County studies are very similar to El Dorado County in that many Italian Swiss settlers amassed property by first becoming partners with a current landowner and then"buying out" the landowner's half at a later date. Sierra Valley contains families that have occupied the same ranches for three generations. (This also holds true in El Dorado County.) "Valley residents and popular histories speak of their work ethic, their trustworthiness, and how they came to out-compete, eventually buying out, earlier, presumably less hardworking settlers" (Rucks 1987:13).

History of Italian Swiss in El Dorado County

Rucks has noted that in Fariss' and Smith's History of Plumas, Lassen, and Sierra Counties (1882) an ethnic bias is apparent by the absence or mention of Chinese, blacks, and Native Americans. Rucks says, "it was somewhat unexpected as well as frustrating to discover this bias also extended to the Italian-Swiss" (Rucks 1987:14).

The ethnic bias against the Italian Swiss that Rucks refers to in her work is not apparent in Sioli's History of El Dorado County, California (1883). There are several Italian Swiss mentioned. However, these "histories" were apparently paid for by the patrons who bought space in the book (Sioli 1883; Owens personal communication, 1990). It would be interesting to investigate the possibility that Sioli himself had better access to the Italian Swiss population if he, as his name insinuates, was Italian or Italian Swiss. This may account for Fariss' and Smith's lack of Italian Swiss in their "history". Or perhaps the Italian Swiss businessmen in El Dorado County were better off financially at this time and could afford to buy space for their "histories". In any case, several Italian Swiss dairymen are mentioned in Sioli's history.

One example of a Swiss biographical sketch in Sioli's History of El Dorado County is Sophary Euer who Sioli says , "is one of the leading dairymen of El Dorado County." According to Sioli, Euer was born in the canton of Swytz, Switzerland, and acquired a "dairy of eighty cows" in 1867. In 1868 he purchased his partners interest and at one point owned 1,500 acres in the Folsom area and 1,000 acres in the mountains. (This 1,000 acres is currently known as Euer Valley in Truckee.) Sioli also says that in the year 1881 "he produced 17,000 pounds of butter."

Nora McGlashan remembers:

> Butter was churned by hand in those early times, and the churn took four men to turn it. [The Folsom museum now owns the old Euer churn and paddles.] Butter was packed into 30-pound kegs; wheels of cheese were wrapped in cheese cloth, and cream was shipped in cans that many of us remember, for even as late as the 1930's little change was made in the style of containers. Butter, however, was wrapped in two-pound blocks when kegs disappeared. We remember seeing the big milk cans - marked Euer, Joerger, Cavitt, Johnson or some other name - lined up daily

> at the railway station. Our grand-parents kept the round kegs of butter and wheels of cheese - before refrigeration - in cool, dark cellars [McGlashan 1982:16].

There are also stories of dairymen selling their butter for "unusual purposes". One account from Martis Valley says:

> A sawmill in the area moved its logs down a steep incline on tracks made of logs laid in parallel rows up the mountainside. The mill used tallow to grease "the skids," as they called the tracks, so the logs would slide more swiftly. When the sawmill owner discovered that butter was cheaper than tallow, he bought Joerger's entire output to grease the tracks that summer. "Pass the skid-grease!" became a lumber-camp joke at mealtimes [McGlashan 1982:15].

One of the earliest known Italian Swiss in El Dorado County was referred to as "Bill Tell". Ciperano Pedrini (a.k.a William Tell) established a store in Garden Valley in 1850. Garden Valley was destroyed by fire in the summer of 1857 but William Tell's store was rebuilt. The remains of this store are still visible in Garden Valley (see Plate 35A, 35B). In 1859 Rinaldo Filippini, Pedrini's young nephew, arrived from Switzerland and was given a job as a clerk in Pedrini's store. At this time, Massimino and Ciperano Pedrini were co-owners of a large ranch west of Garden Valley known as Tell's ranch. In 1862 they built a large three story lath and plaster house costing about $10,000. They also had a large summer ranch in the high Sierras known as Tell's Peak. In 1875, Pedrini's store at Garden Valley was reorganized with Filippini becoming partners with Massimino and Clemente Pedrini. The store became known as "Rinaldo Filippini and Company". At this time the company had one of the largest dairies in the county. Newspaper accounts indicate how well thought of Filippini was: "At Garden Valley we were greeted by that Prince of the Merchants Rinaldo Filippini." Sioli refers to Filippini as "one of the best businessmen in El Dorado county, and as such has been prosperous. Is courteous and kind to all who call at his business

place" (Sioli 1883). Filippini and Company also amassed other properties at this time such as the Rising Sun Mine. In 1881 Filippini had 100 cows in summer pasture in the high Sierra and had made four tons of cheese and three tons of butter at 35 cents a pound. The physical remains of the cheese cellar at Tell's Peak indicate that a large scale cheese making operation was taking place (see plate.30A, 30B). Filippini married Swiss born Josephina Filippini in 1865. They had two daughters: Addie C. and Amelia. He married Pauline Siesnop in 1895 who had been born in Kelsey in 1860. The Filippini store at Garden Valley sold to A.F. Forni in 1909 and later sold to August Siesnop. The Garden Valley store was said to be the oldest store in continuous operation in El Dorado county in the 1930's (Gernes 1979).

Samuel Q. Forni and his brothers Carlo, Angelo and Dennis came to El Dorado County in 1857. There is little information about Angelo and Dennis Forni. Carlo Forni was in the hotel business and operated the historic Pioneer Hotel in Georgetown for ten years. After it was destroyed by fire in 1897, he erected the New Georgetown Hotel on the ground where the old Georgetown Hotel had stood. It is still a Georgetown landmark (Davis and Rambeau 1987). Samuel Forni was born in Villa, Bedretto Valley in Canton Ticino on June 4, 1834. In Georgetown he became a dairy farmer and married Mrs. Florinda Fripps by whom he had five children: Virginia, Louisa, Amillo, Josephine, and Addie. Florinda Marie (Orelli Fripp) Forni was born in Ossasco in Canton Ticino near Bedretto on April 24, 1831. She married J. Fripp in Switzerland and they came to California with Florinda's brother, Augostino Orelli, Sr. and his wife, Maria, in 1858. Apparently Mr. Fripp became very ill on the month long ocean voyage and jumped overboard while delirious with a high fever. Florinda was expecting their first child so she stayed with his relatives in New Jersey until after their son,

Joseph, was born and then came to Georgetown. Later she married Samuel Forni (Mainwaring, personal communication 1990). Samuel Forni built a two story wooden home on the foundations of the old Wells Fargo "Halfway House", which was between Greenwood and Georgetown, in 1874.

In 1869, Samuel and Florinda with Joseph Fripp, Amelio, Jennie and Josephine made a trip back to Switzerland to visit their old home and relatives. Thirteen year old Florinda Forni accompanied them back to Georgetown and she married Alex Francis (Allessandro A. Fransioli) when she was fifteen. Fransioli was also born in Canton Ticino and came to California with his father in 1852. His father later returned to Switzerland while Allessandro continued to mine successfully in the Georgetown area. In 1857, he went to San Francisco where he sold cigars and fruit. In 1858 he returned to Georgetown where he worked as a butcher, eventually purchasing the shop where he was working and turning it into a very successful meat-market for 24 years. He was also proprietor of a saloon and livery stable and owned land near Georgetown and in the "higher mountains" (Mainwaring, personal communication 1990). He and Florinda had seven children: Joseph S, Alexander, Frank, Sartor (Saki), George, Louise, and Beatrice. After the 1897 fire in Georgetown, Francioli went into retirement but later opened another meat market that his son, Sartor, continued to operate after his death. This building is now the Georgetown Library (Davis and Rambeau 1987).

Agostine Orelli was born in Ossasco, Canton Ticino, Switzerland and came to California in 1852. He made three trips back to Switzerland and returned with his bride, Maria in 1858. They had eight children. He had a dairy at Forest Hill but later moved to Georgetown where he operated an undertaking business and a hotel. "A first class funeral could be had for $65.00" (Davis

and Rambeau 1987:A22). After his father's death, Agostino Jr. continued in the undertaking business at Placerville where he also served as coroner.

Other Italian Swiss families that lived in the Georgetown area (which included Garden Valley, Lotus or Uniontown, and Coloma) were the Bassis (history follows), Leonardis, Lombardis, Ramellis, Rossis and Bacchis. Most all had summer pasture in the Crystal Basin region of the Sierra Nevada and they all were from the same area in Switzerland. There were other Italian Swiss families in El Dorado County at this time, but it is interesting to note that for the most part they were from other areas in Switzerland and settled in other areas of El Dorado County. It seems then that groups came over together and stayed together even within a county.

History of Giosue Bassi

Giosue Bassi was born in Valle, a small hamlet of the town of Airolo in the Bedretto Valley, in the canton of Ticino in Switzerland, on May 18, 1840. His parents, Antonio and Orsula Bassi, were unable to help him acquire an education or provide their son with a livelihood because they were poor. In Switzerland, Giosue herded cattle on the steep hillsides (Sioli 1883).

The canton of Ticino is situated on the southern slope of the Alps with the Ticino river running through it. Because of the steep terrain, the agricultural resources are limited (Raup 1951). See Plate 1A of the village in the Bedretto Valley where Giosue Bassi's future father-in-law, Samuel Forni, was from. This was only a few miles from where Giosue Bassi was born (Mainwaring, personal communication 1990).

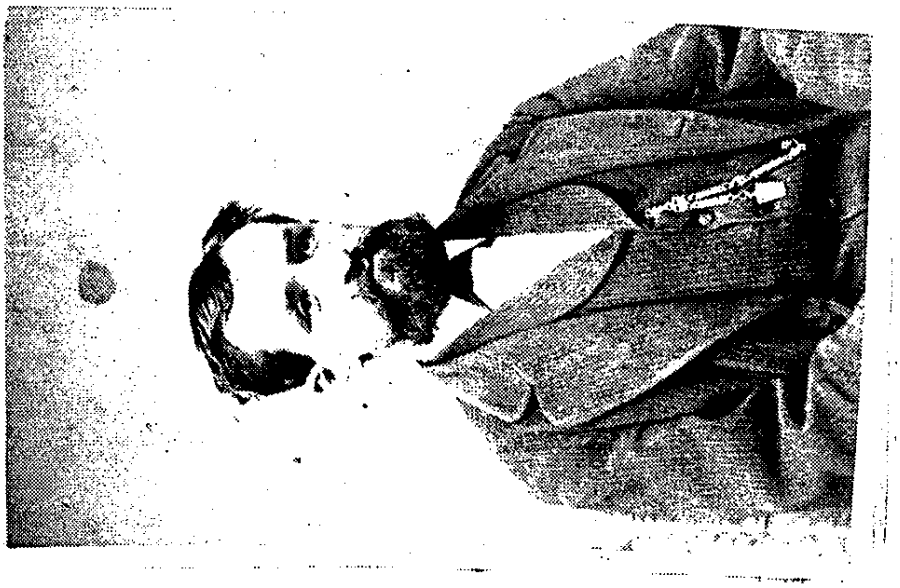
When Giosue Bassi was 18, he decided to come to California to "better his circumstances" (Mainwaring, personal communication 1990). He left Switzerland in 1858 and came via ship across the Atlantic and landed in New

York. He then boarded another ship from New York to Panama: "they crossed the land of Panama to the Pacific Ocean and took another ship up to San Francisco" (Mainwaring, personal communication 1990). Mr. Petter and Mr. Ghirardelli were in his party. Mr. Ghirardelli later became the founder of the Ghirardelli Chocolate Co. in San Francisco. Bassi arrived in San Francisco on January 19, 1859

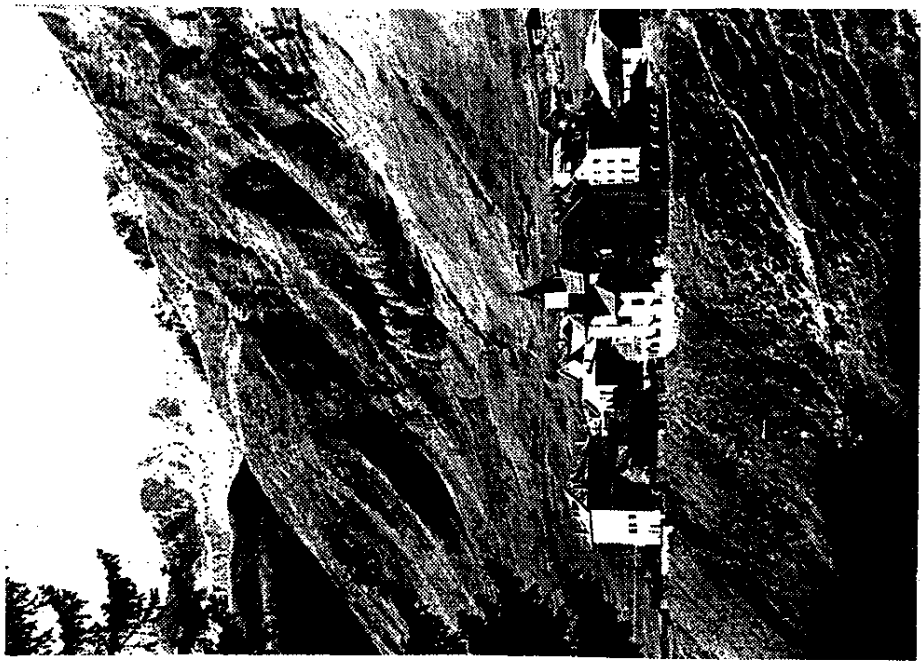
The next five years, from 1859 to 1864, Giosue worked at various jobs in mines and dairy ranches at Garden Valley, Forest Hill, and Dutch Flat and in a store at Greenwood. In the year 1864 he traveled over most of Nevada, but returned to purchase a half interest in the Rockbridge Dairy Ranch, which was located below the town of Lotus. Presumably at this time Giosue Bassi made his decision to locate permanently in El Dorado County and invest his savings in Rockbridge. Thus, at the age of 24, he began his career as a dairy rancher (see Plate 1B).

After purchasing half interest in Rockbridge, Giosue Bassi began acquiring range land in the high Sierra, where he would take his dairy cattle to graze in the summer. In 1867 in partnership with Gadelph Ramelli he purchased 160 acres from John Ramelli. This, along with another adjoining 160 acres purchased in 1889 from Daniel Lombardi, is known today as the Upper Bassi. He also purchased property in the Union Valley area that was known as the Lower Bassi. The Lower Bassi is now covered by Union Valley Reservoir (see Plate 4A). According to the Great Register of El Dorado County - 1867, Giosue Bassi was naturalized on February 12, 1869. In 1870 he bought the remaining interest in Rockbridge.

Plate 1



B - Giosue Bassi, circa 1870



A - Villa, Valle Bedretto, Switzerland

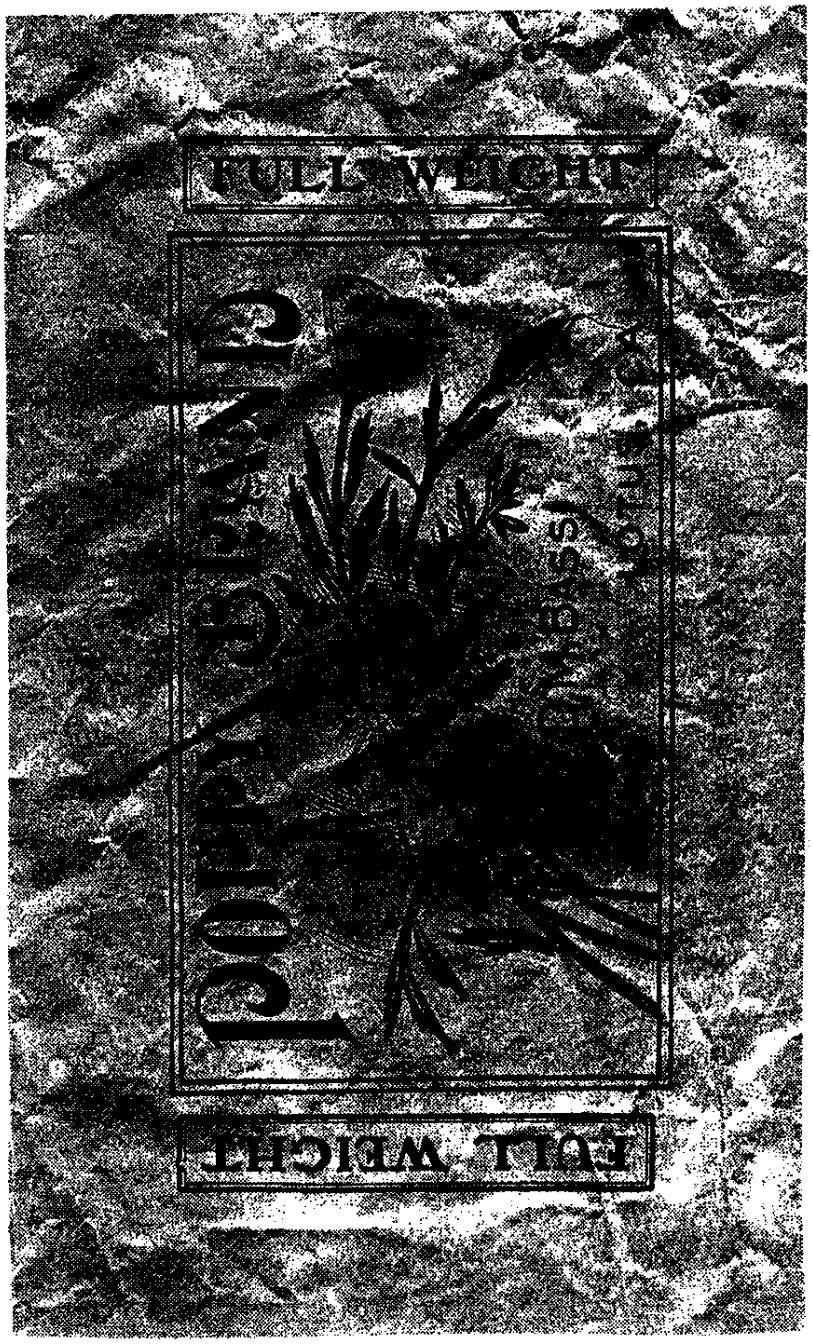


Figure A - Butterwrapper

Rockbridge was situated on the banks of the South fork of the American River (see Figure 1 and Plate 2A & 2B) -- at least 80 cows were kept here in the winter, then moved to the high Sierra grazing land for the summer. Dairy products such as butter and cheese were sold to nearby communities.

On January 6, 1878, Giosue Bassi married Virginia Forni. She was 18 and he was 38 years old. Virginia Forni was the daughter of Samuel Forni who, with his brothers, had come to California in 1857 and settled in the Georgetown area. The Forni brothers and Giosue Bassi came from the same area in Switzerland. Their native villages were only a few miles apart.

The Bassis' son, Daniel Marcellus, was born on January 2, 1879. Their daughter, Josephine Virginia, was born on August 19, 1880, and another daughter, Kitty Angelina, was born on March 9, 1881. Virginia Forni died during childbirth on April 25, 1885, leaving three small children for Giosue Bassi to care for. She was only 24 years old. He never remarried.

After the death of his wife, Giosue Bassi sent his children to live with relatives in Georegetown and Oakland. These must have been very difficult years for him. It appears that he immersed himself in his work. In the late 1800's he changed from an emphasis in dairying to beef production. With the introduction of cold storage and the railroad, emphasis changed from the family farm dairy operation to the factory system of dairying. "The advantages of grazing dairy cattle on abundant and nutritionally superior mountain meadow forage could not economically compensate for the cost of transporting the product to market" (Rucks 1987:40).

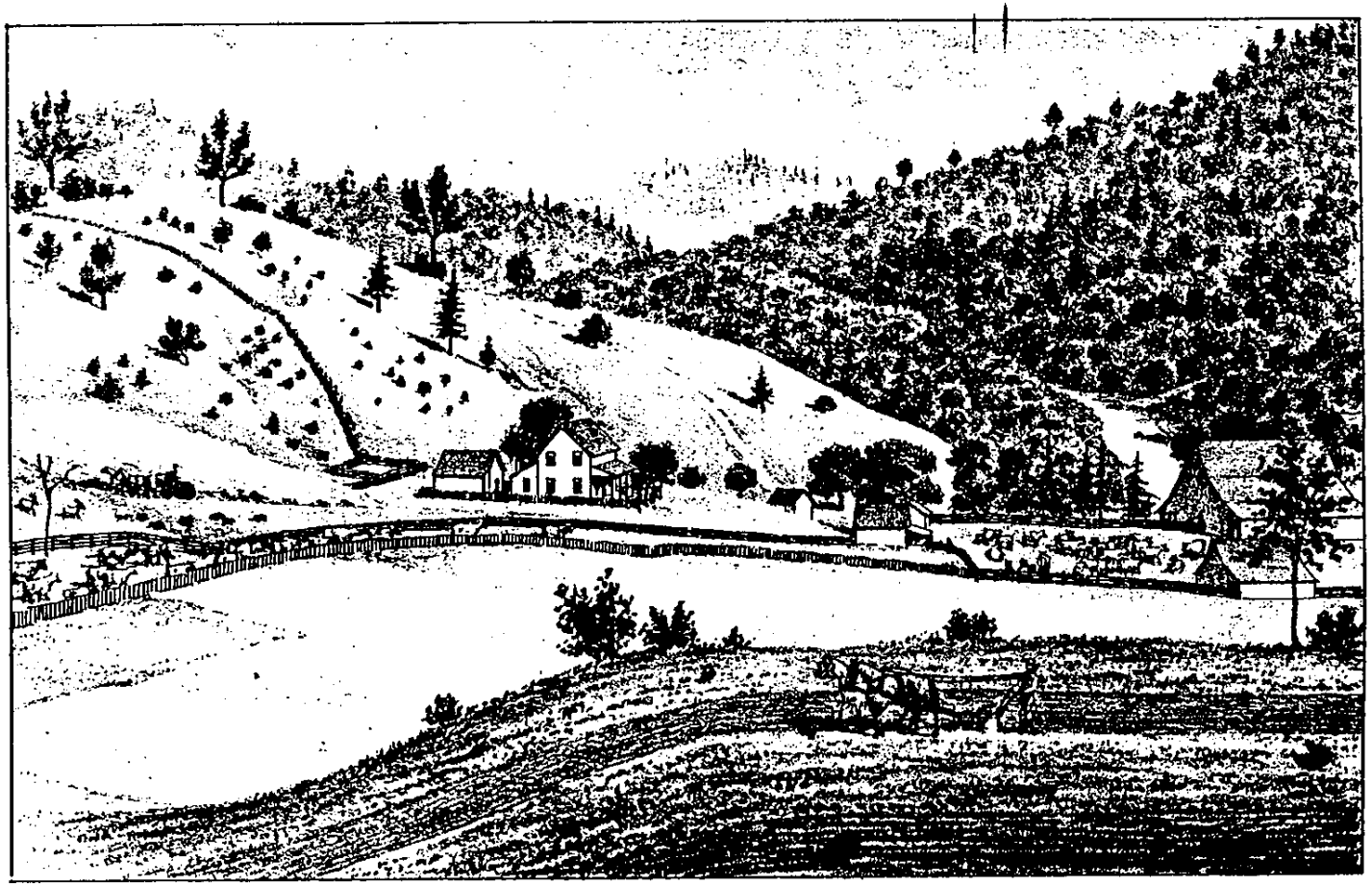
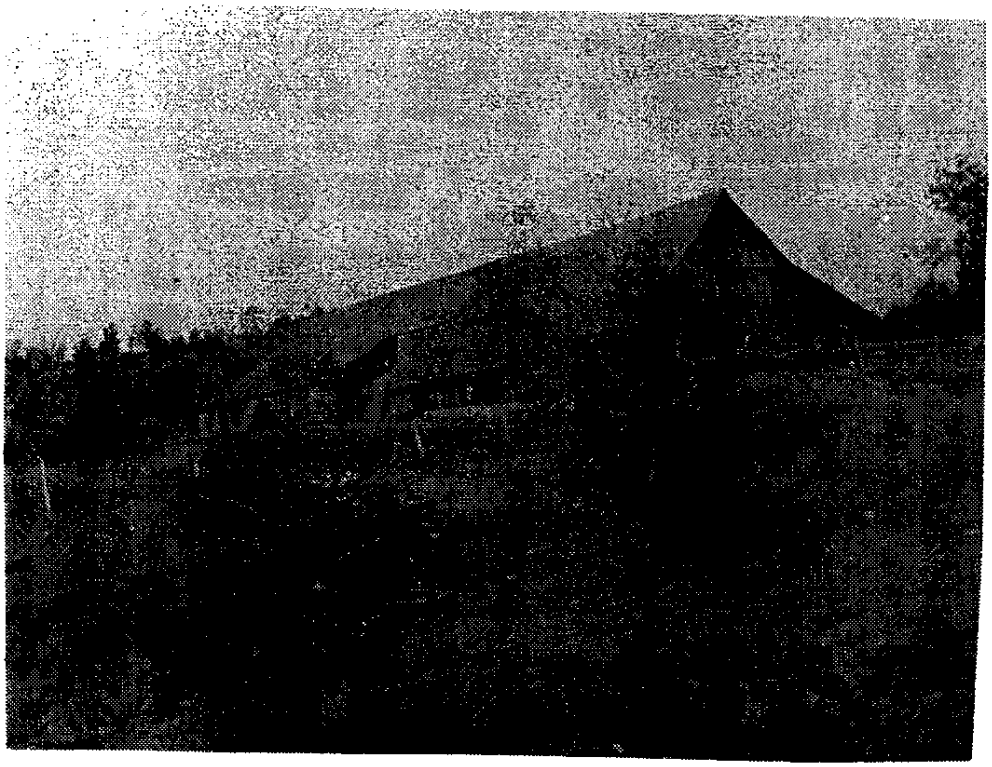


Figure B - (From Sioli 1883:56)

Plate 2

A - Angie and Josie Bassi at Rockbridge, Lotus, CA, circa 1900



B - Rockbridge, Lotus, CA, circa 1900

In addition, "the railroads meant the end of the summer ranch where cheese and butter were produced, since the demand was for raw cream, impractical to transport to the railhead from summer pastures, and easier to supply from milk cows kept on the home ranch" (Rucks 1987:40). Bassi apparently adapted to this change by changing commodities. He converted his dairy ranch into a beef operation. However, he did retain much of his local market for butter. Though he continued making butter and cheese for friends and family, his work emphasis shifted to cattle raising. This adaptability was of prime importance in Giosue Bassi's success. Because he viewed his ranch as a permanent home, he was willing to adapt to changing economic situations. He also had to provide for three young children.

He was very active in organizations such as the Masonic fraternity where he held office. This added dimension of community involvement undoubtedly gave him community support. When he died, his funeral was conducted under the auspices of the Masonic fraternity, of which he had long been a member (Mountain Democrat 1919).

Bassi's two daughters, Josephine (Josie) and Kitty Angelina (Angie) eventually married and both lived their adult lives in Oakland. Neither had children. It is interesting to note that Josie married an Italian-Swiss, Antone Campomenosi, who owned a creamery in Oakland. Angie married Jack Davis, who was not Italian-Swiss. Dan returned to Lotus in his early teens to help his father work the ranches.

In 1906 Daniel bought the Ramsey Orchard in Lotus, which consisted of 160 acres of grazing land and fruit trees. In 1908 a homestead patent for the Upper Bassi was issued to Daniel Bassi. Daniel married Annie Grother in December 15, 1910. Annie's parents owned a cattle ranch on Greenwood

Creek near Lotus. The Grothers were not Italian-Swiss. Daniel and Annie had three children: a daughter, Lillian Virginia -- born November 30, 1911, another daughter, Marcella May -- born December 18, 1912, and a son Joshua Martin -- born March 7, 1915. Daniel and Annie worked their land and helped Giosue Bassi work his for many years.

Giosue Bassi died on January 14, 1919, and was buried in the Georgetown cemetery near his wife. After his death, Daniel bought out his sisters' interest in Rockbridge and the Lower Bassi. Daniel continued in the cattle and dairy business, at one time owning the Rockbridge Ranch, Ramsey Orchard, Upper and Lower Bassi, all of which encompassed over 1,100 acres. The Rockbridge Ranch structures burned down at some point and Daniel sold the land to his daughter Lillian's husband, Joseph Vicini. This land remains in the family and is leased for grazing. In the late 1930's Daniel sold the Lower and Upper Bassi to Michigan California Lumber Co., but later Rufus Swift (Daniel's cousin) made a trade with Michigan Cal for the Upper Bassi. The property (which still has a cabin and barn standing - see plate 3) is still owned by the Swift family and until recently used for grazing. Daniel continued to ranch until his death in 1956. Many of the Bassi and Forni families still live in El Dorado county.

Much of the information concerning Giosue Bassi's history was obtained from his granddaughter - Marcella Bassi Mainwaring. During one of the interviews she explained in great detail how to make butter and cheese. She spoke of her parents and grandparents with great pride. She said Giosue would not allow his children to speak Italian because "they were Americans and must only speak English;" however she pronounced her grandfather's name as "Jisuway," the correct Italian pronunciation rather than the americanized "Joshua." Her son, Dan Mainwaring, still has in his possession

many of his grandfather's and great grandfather's dairy implements (see plates 36-39). Though this Italian Swiss family assimilated into American culture very quickly remnants of the Italian-Swiss culture still survive. The Upper Bassi cabin is one of the few remaining Italian Swiss structures in the Crystal Basin area.

The Swift family (Rufus Swift's mother was Josephine Forni, sister to Virginia Forni Bassi) remained in the cattle business and continued to use the Upper Bassi as summer pasture until quite recently. Rufus Swift remained in the cattle business until his death in 1982. His daughter, Phyllis Swift Fox, carried on the family business until her death in 1991. She used the Upper Bassi as summer grazing land until she moved to Oregon in 1989. Her son, Gary is still in the cattle business in Oregon. Her daughter, Penny Hocking, provided information about the Swift family. Today, Rufus Swift's nine grandchildren are co-owners of the Upper Bassi.

Patterns of Ethnic Continuity

A description of the Bedretto Valley is taken from a newspaper account by Lloyd Swift (Rufus Swift's brother) in 1956 when he visited his Italian-Swiss "homeland" nearly one hundred years after his ancestors had emigrated from the Bedretto Valley in Canton Ticino, Switzerland. He reports:

> Bedretto Valley has no flat land. The slopes are steep; in places, precipitous. Ticino river is a roaring tumbling torrent of white water, and the side streams virtually fall off the mountains. There is one rather narrow road that climbs up the valley. It squeezes through six small villages--Fontana, Ossasco, Villa, Bedretto, Ronco and AllAcqua. The villages are tight little communities; the houses huddled together on sites free of or protected from avalanches. It is a beautiful land, but also one of short summers and harsh winters....This is the land of the large brown

> Swiss cattle and of cheese making. It was haying time while we were there. The hayfields are far too steep for machines, so the wild hay is cut with a scythe. In the evening the villages rang with hammering and sharpening of the scythes. The people carry the cured hay to their barns since they have no work stock. During the summer most of the cattle are in the high alpine meadows, and in the winter are kept in the barns, which sometimes are attached to the house [Rucks 1987:32-33].

Florine Swift Blaker (Lloyd's sister) writes:

> My brother Lloyd and his wife, Clara, my sister Lucetta and my daughter Louise and her daughter, Linda have all made trips to Switzerland and visited with the relatives that are still living in the Bedretto Valley. The nearest close relatives we now have living in Bedretto Valley are: Eligio Forni and his three daughters. Eligio and Teresa live in Villa and Teresa is the postmistress of the village. Emilietta is now Mrs. Engely and she had darling twin girls when Louise and Linda were there. The third daughter, Mrs. Genoveffa [Nini] Leonardi still lives in the valley and spends much of her time during the summer in Villa [Mainwaring, personal communication 1990].

The Swifts, Bassis and many other Italian Swiss descendants speak of their Italian Swiss relatives and their homeland with great pride.

It is interesting to compare the above descriptions and observations of Italian Swiss descendants with a case study in cultural anthropology - "Kippel: A Changing Village in the Alps by Friedl (1974). As Rucks states:

> The applicability of generalities about the Ticinese "homeland" based on an alpine community in a neighboring, French-speaking canton, and statements about "Alpine culture" in general is appropriate not only because it is the only information available on old world patterns for this paper, but also on the grounds that the practice of agro-pastoralism in the limited alpine environment has created a culture that has more in common with other alpine communities from other cultural/linguistic groups, than with non-alpine residents within the same political unit [canton or even country] [Rucks 1987:29].

As Friedl points out, "economic, social, and political institutions have a flavor all their own, conditioned by the ecology of the alpine valley" (Friedl 1974:v).

The people of the Alps have adapted to short growing seasons, poor soil, steep slopes, and long winters by a subsistence strategy of seasonal movement of cattle and winter storage of hay. Though cooperation within the community is common, there exists between communities complete independence. This relates to Switzerland's centuries old tradition of local political independence (Rucks 1987).

This subsistence strategy, which is the only effective means of exploitation of the limited environment, has led to a very conservative culture where new methods are not viewed as beneficial. "Population control was necessary in such a limited environment and achieved via the social and cultural traditions of extensive celibacy, late marriage and temporary or permanent emigration" (Rucks 1987:30).

In Kippel, Friedl explains that an economic shift to dependence on a cash economy eventually made "communal efforts in isolated alpine villages obsolete" (Friedl 1974:vi). "Agriculture today is mainly a symbolic activity that brings security both because it contributes to individual subsistence and because of its traditional meaning for the older members of the community" (Friedl 1974:vi).

However, for hundreds of years Kippel society revolved around communalism. Communal ownership was practiced in Kippel and was necessary for sharing limited resources. This extended to garden plots, cultivated fields, hay fields, grazing land, timber, the sawmill, school, central oven, community hall, and even the stud bull. Residences were sometimes shared by more than one family. However seasonal Alp huts in the higher elevations, that were occupied only in the summers, were usually individually owned. Grazing in these higher elevations was limited to prevent destruction of the valuable resource. By limiting the number of

cattle for grazing to only those that could be supported by locally produced hay that could be stored through the winter, the community was able to effectively maintain their precious grazing land. Friedl calls the individual alpine grazing cycle, practiced during the summer months, a "highly irrational system" compared with the communal interaction practiced during the rest of the year. He points out that it results in wasteful dairying practices such as producing too much milk for the individual and not enough for cheese making, and inefficient use of resources such as timber by using more in individual residences rather than a more efficient use in communal housing. However, it provides a summer vacation for women, children and the elderly and a continuation of a tradition of the "romantic glorification of the time spent on the alp" (Friedl 1974:53). In fact, the Swiss have capitalized on this by building hotels for their summer tourists. As Rucks says, "the evolution of the Alp from a subsistence strategy adopted for pastoralism to a vacation spot is not merely the exploitation of the tourist's desire to peer nostalgically into the past, but is a reflection of the symbolic importance the Alp itself and the time spent there has always had for the culture" (Rucks 1987:32). "If indeed there is an Eden upon Earth, it could be the Alp hut" (Friedl 1974:49).

Amos Rapoport in House Form and Culture explains:

> What finally decides the form of a dwelling, and moulds the spaces and their relationships, is the vision that people have of the ideal life. The environment sought reflects many socio-cultural forces, including religious beliefs, family and clan structure, social organization, way of gaining a livelihood, and social relations between individuals. This is why solutions are much more varied than biological needs, technical devices, and climatic conditions, and also why one aspect may be more dominant in one culture than it is in others [Rapoport 1969:47].

Buildings, then, visually express the importance attached to "different

aspects of life and the varying ways of perceiving reality" (Rapoport 1969:47). The form of vernacular buildings reflect the desire of the group for an ideal environment. Thus the alp hut becomes a symbol of the groups values.

As Rucks has stated:

> The alpine Ticinese, then, came from an extremely conservative culture where a high degree of cooperation within a tight-knit communal village was a way of life, and where independence and autonomy for the community was valued and where individual effort within strictly adhered to standards, stoicism, and hard work were valued characteristics necessary for survival. Alpine Pastoralism was the main subsistence strategy and migration by men and late marriage were cultural adaptations to limited resources [land] and part of their traditional way of life. The Alp and the time spent there during the summer was an annual event with symbolic cultural meaning beyond economic necessity [Rucks 1987:33].

It is interesting to analyze how Bassi and others in El Dorado County fit into this "old world" model. Obviously, migration as a cultural adaptation to limited resources was practiced by the Italian Swiss immigrants of El Dorado County. By leaving their bereft homeland, they found the resources they needed for survival in California. And indeed the immigrant dairymen of El Dorado County followed the seasonal grazing strategy as described by Friedl in Kippel. As early as 1864 Sophary Euer drove his cattle over the mountains into Nevada. According to Sioli this was due to the drought that was being suffered in that year. It may have been because of the drought in the 1870's that many (including non Italian Swiss dairymen) brought their cattle to the higher elevations, but for the Italian Swiss this was an adaptive strategy that they brought with them from their homeland. Giosue Bassi was purportedly the first dairyman to bring his cattle into the Desolation Wilderness area (Bassi, personal communication 1991). This would have

been necessary if their was an inadequate amount of grazing land for his cattle at the lower elevations of the Upper Bassi. Rockbound Pass is a difficult and time consuming trip , so it is doubtful that this trip would have been attempted unless it was absolutely necessary. A very temporary cabin was built by Bassi for residence while in the area (see plate 5A). According to Joshua Bassi "the worst part was getting out of Rockbound." The worst experience Joshua remembered hearing about was when "they lost 75 head of cattle from Larkspur" (Bassi, personal communication 1991). This plant is dreaded by ranchers because it is very poisonous to cattle. The Rockbound Pass Trail was built after an early October snow storm in 1917 almost destroyed a herd of cattle grazing in and above Rockbound Valley. Joe Minghetti, formerly a Swiss stone mason, was commissioned by the U.S. Forest Service to build the trail so that there would be an escape route for the cattle when they had to be quickly evacuated (Schaffer 1980:68).

This seasonal grazing pattern was much more to the Italian Swiss than just finding forage for their cattle. "The summer ranch was where all the good cheese was produced, for as anyone knows, the high mountain meadow grass produces the best cheese" (Rucks 1987:40). Cheesemaking was also a source of pride and ethnic continuity for the Italian Swiss. Marcella Bassi Mainwaring describes cheesemaking with pride and in every detail even though she has not been involved in cheesemaking for 50 years (see page 58). "The summer ranch in the Sierras and its activities including cheese production had the same mystique as the Alp had for the native Ticinese" (Rucks 1987:40). The Upper Bassi cabin has been used continuously since its construction. It has been a source of pleasure and pride to the Bassi and Swift families. It is part of their Italian Swiss heritage.

Late marriage for males is another old world pattern that was practiced

in El Dorado county by Italian Swiss immigrants. Giosue Bassi married Virginia Forni when she was 18 and he was 38 years old. Allessandro A. Fransioli who was a well established businessman married 15 year old Florinda Forni. This union produced seven children. This cultural adaptation to limited resources in Switzerland seems to have been practiced by a major portion of Italian Swiss immigrants in California. However, this pattern quickly died out in the following generation. And though most Italian Swiss immigrants in El Dorado County married within their ethnic group the second generation and beyond followed this pattern less frequently.

One of the old world patterns that was adopted in the new world was communalism. This was practiced in a number of ways. One predominate form of communalism was partnerships to acquire land. As the Hall study points out: the first Italian Swiss did not buy or homestead government land, rather they would buy established farms of 160 or 320 acre homestead parcels when their funds were limited (Hall and Hall 1973:27). Bassi and others in El Dorado county used this method of land acquisition with partnerships used as a way of combining limited funds. Family partnerships were also used as a means to protect family interests. Marriage was sometimes used to unite two prominent land owning families. First generation immigrants would often marry the daughter of another first generation immigrant as a means to "merge" two families. The Italian Swiss also would buy neighboring lands held by different owners in order to establish large dairies.

Group migration also helped the Italian Swiss immigrants build a sense of community before arrival in California. They sustained these communities when they arrived in California by the various means of communalism discussed previously. Along with the immigrant's ability to adapt to his new

environment, he could rely on the support of his community.

After the 1900's the Bassi family as well as other Italian Swiss families were well established in El Dorado County. They recall:

> Everyone raised their own vegetables and all their fruit. We just bought our staples, like flour and sugar, at the stores. We made our own cheese and butter, salami, sauerkraut and wine...we packed meat in lard and smoked all our ham and bacon in the smokehouse. We had beef cattle and milk cows. We hunted for deer, rabbit, squirrels, and sometimes we went fishing for suckers and pike at old Chesapeake. Mostly we went to school and worked when we got home. The chores were lined up and that's all there was to do. In the summer, we put bells on all the cows and herded them up to our property in the Sierra. There were all kinds of meadows for the animals to graze. And when we left in the fall, we stocked food in the cabins and left the places open, just in case hunters or travellers got caught in a storm [Wilderness Conservancy 1989:154].

There is a story of a WWII plane making a crash landing near the Upper Bassi place and the pilot and crew using the cabin for shelter during the winter of 1944. The remains of this plane have been located by Forest Service archaeologists (Deal, personal communication 1991).

Marcella Mainwaring Bassi tells how her relatives made butter and cheese in the following account:

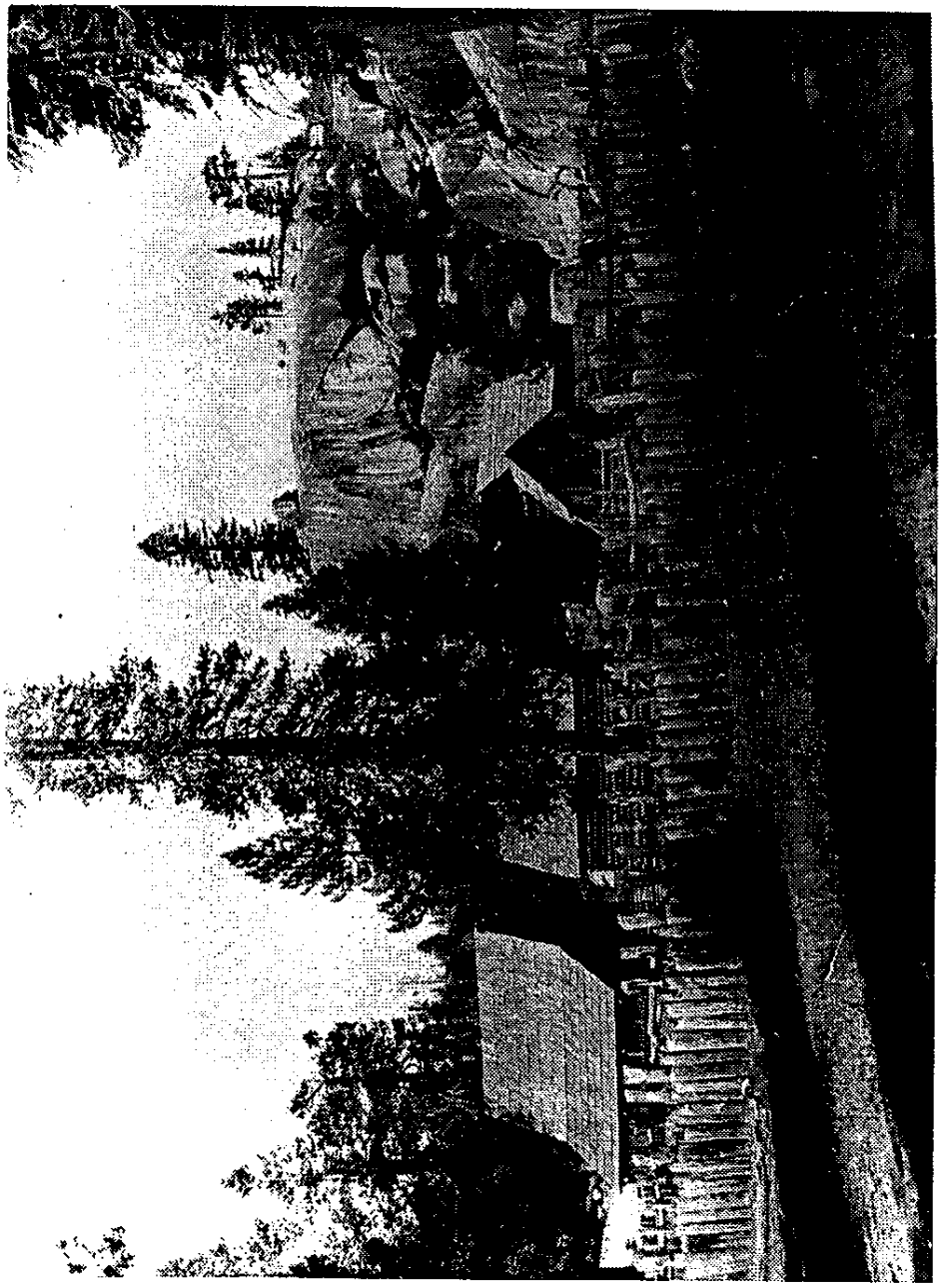
> Butter - "They would pour the milk into circular pans [see plate 22A] and let the cream rise - the cream always came to the top and then they would skim the cream off the top. A fan shaped metal skimmer with perforation holes was used to skim the cream from the milk. The cream would stay in the skimmer and the milk would drain through. Then they would put the cream in a separate container and finally in the churn [see plate 38A] and after much work it would turn to butter. They would use a large trough and roller [see plate 36] to work salt into the butter and to get the moisture out of the butter."
>
> Cheese - "They used the whole milk. Then they would put it in a boiler on the back of the woodstove and let it heat to a certain temperature. Then they would add a rennet tablet to so many gallons of milk. They let that sit until it solidified, then stir and that breaks it up and the whey

> and the curds separate. Then you put the curds in a cheesecloth and let it drain. They cinched up the cheesecloth with a fastener that had a wooden piece with eyes with a little rope to tighten it up with and they would keep cinching this up. Then they put the cheesecloth into metal rings and tighten it every so often and put a heavy weight on the top of it to keep it within the metal band [see plate 36]. After a day they took it out, put salt on the outside and let it sit on the shelf to age. It was called American Swiss. It reminded me of Monterey Jack. It was very good!"

She says they also sold cream "They had a separator - the cream would come out one spout and milk out the other. We had to do alot of things on the ranch when we were kids. We had to irrigate, pull weeds. cut fruit, dry fruit, pick pears, shock hay, rake hay, and bale hay." Hay was cut at the "Big Silver Ranch" - previously Filippinis, a.k.a Forni or Van Vleck which was located a few miles from the Upper Bassi (see plates 6A and 6B).

The Upper Bassi has remained a place of great pleasure for the Bassis and the Swifts as well as for many others who visit the place on a regular basis. The front door, with its many signatures from happy visitors, attests to the sense of well being people have found at the Upper Bassi. This area continues to be a sanctuary to many; whether it be for good fishing, deer hunting, or family gatherings, the Upper Bassi is a special place. Summer home to many families over the centuries, the Upper Bassi continues to nurture tired spirits. The Bassis, Fornis, Filippinis, Swifts and many others used places like the Upper Bassi for more than just summer pasture. It was, as the Alp hut, a place of respite during the busy year - a symbol of the ideal life. The entire family would pack up, "put bells on the cows" and head for the mountains. It has continued to be used in this manner by the survivors of the Italian Swiss immigrants who went from dairying to the cattle business. "How and why they made the transition in their new homeland from the generally tranquil pursuits of dairying and agriculture to the Theseus-in-leather-leggings role of the American cowboy is an unexpected

addition to the history of human adaptability in the American West" (Hall and Hall 1975:v).



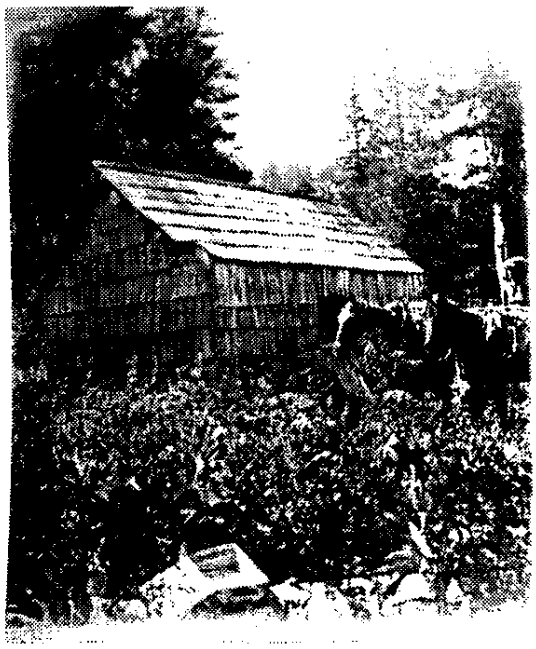
Upper Bassi, circa 1900

Plate 4

A-Florine Swift Blaker at Lower Bassi, 1960

B-Upper Bassi, circa 1900

Plate 5



A - Bassi cabin at Rockbound, Desolation Wilderness, circa 1900

B - Rockbound, Desolation Wilderness, circa 1900

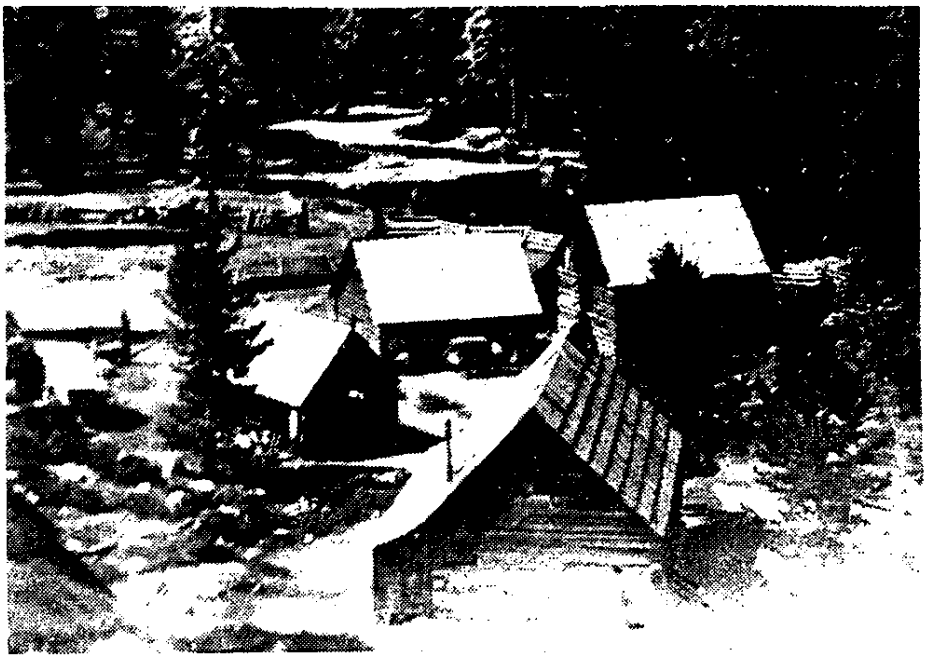
Plate 6

A - Dan Bassi family hauling hay from Forni Ranch, circa 1925

B - Dan Bassi haying at Forni Ranch, circa 1925

Plate 7

A - Josie and Angie at Upper Bassi, circa 1900



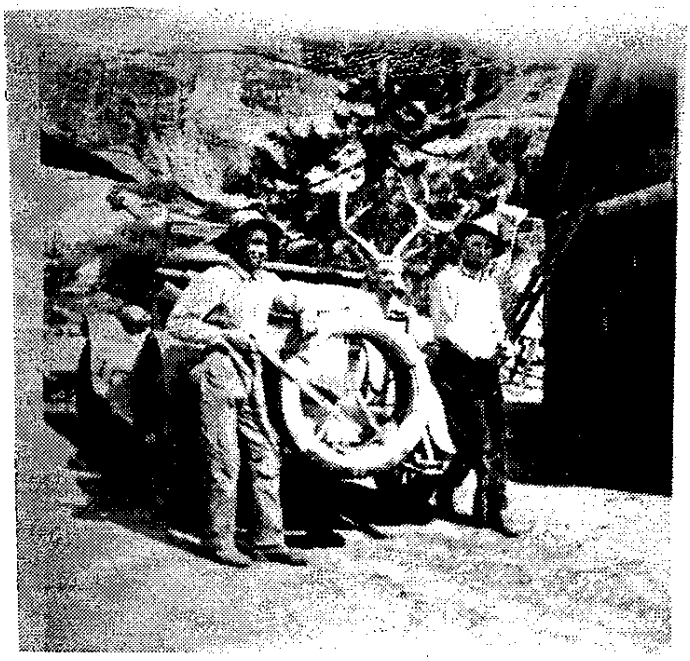
B - Upper Bassi, circa 1900

Plate 8

A - Giosue Bassi at Rockbridge, circa 1900

B - Dan Bassi and "Uncle Angelo" at Upper Bassi, circa 1900

Plate 9



A - Dan Bassi and Rufus Swift at Upper Bassi, circa 1920

B - Dan Bassi at Upper Bassi, circa 1920

CHAPTER FIVE

ARCHAEOLOGICAL FINDINGS

Site Description

The Upper Bassi Site consists of a historic component dating back to the 1870's and prehistoric components which reflect Martis and Late Kings Beach chronologies. The historic component includes a historic cabin and barn, three historic trash dumps, old roads and fence lines, and the cornerstones and remains of other outbuildings. The prehistoric components include bedrock mortars, ground stone, tool manufacturing sites which include numerous projectile points, lithic scatters, and isolated projectile points as well as biface fragments. Both components have been heavily impacted by cattle grazing and recreation activities that have occurred over the years. Encroaching lodgepole pines have caused the meadow area to "shrink" over time. Tree girdling and burning practices were historic methods of keeping the meadow open and the pasture at its peak. Since these practices are no longer feasible, the environment has changed. A more detailed description of each Locus will be given in the following section (see Map 6).

Locus A

Locus A includes the Bassi cabin, barn, and granite cornerstones to the milkhouse and wagonshed - circa 1870 (see plate 3). These buildings will be described in more detail in "Description of Architecture." A modern outhouse is located 30 meters NW of the cabin. A bunkhouse is located 40

meters SE of the cabin. According to Phyllis Swift Fox this bunkhouse was probably moved from the Lower Bassi place when Union Valley Reservoir was constructed. A log corral is located 30 meters south of the cabin. Another rock alignment is located 15 meters SW of the cabin and is thought to be a campfire hearth. Three trash dumps are located in Locus A: two of the dumps contain artifacts dating back to the late 1800's while the third dump is dated to about 1950. Penny Hocking reported that several bottle collectors took many of the old bottles from these dumps years ago. No whole historic bottles were found at these dumps. A prehistoric component is also located in Locus A with two bedrock mortar stations. Each bedrock mortar contain only one mortar. One chert projectile point, one obsidian biface, and one basalt biface were found in this locus. Two sparse lithic scatters are located in Locus A. A test unit was dug in the corral area. Results of this test are found in the "Lithic Debitage" section of this chapter. Locus A is bounded by the Bassi Fork of the Big Silver Creek on the west and a massive granite outcrop on the east. A four-wheel drive road leads across the creek, through the corral area and into the cabin area (see Map 7). A developed spring is located five meters east of the front porch of the cabin. Water runoff from the hillside NE of the cabin runs through the cheese cellar of the cabin in the early spring. The site has been heavily impacted by human use as well as disturbance from cattle and horses.

Locus B

Locus B is located 40 meters to the west of Locus A on the opposite side of the creek (see Map 8). It consists of one bedrock mortar with a lithic scatter located five meters to its north. Six projectile points were found in this locus (see "Projectile Points"). A hiking trail that leads into the

Desolation Wilderness Area runs through the western edge of the locus. The locus has been heavily impacted by recreationists as well as cattle grazing. The eastern boundary of Locus B is the Bassi Fork of the Big Silver Creek. The four-wheel drive road that leads to the Bassi cabin is located 15 meters SE of the locus boundary. Decomposing granite is a major portion of the soil makeup. This locus may have been impacted by the creek overflowing its banks in past years.

Locus C

Locus C is located approximately 1/4 mile downstream from Locus A and Locus B (see Map 9). Three bedrock mortar stations are located 10 to 20 meters south of the Bassi Fork of the Big Silver Creek. These stations contain mortars and grinding slicks. Ground stone was found near one of the bedrock mortars. A total of 19 projectile points were found at this site. This appears to be a tool manufacturing area for Desert Side-notched projectile points. Further discussion of this can be found in "Projectile Points". A gradual slope leading to a level bench is located to the south of the locus. Decomposing granite is found on this slope and in the tool manufacturing area. A barbed wire fence runs through the locus and one solder seamed can was found near the fence.

Locus D

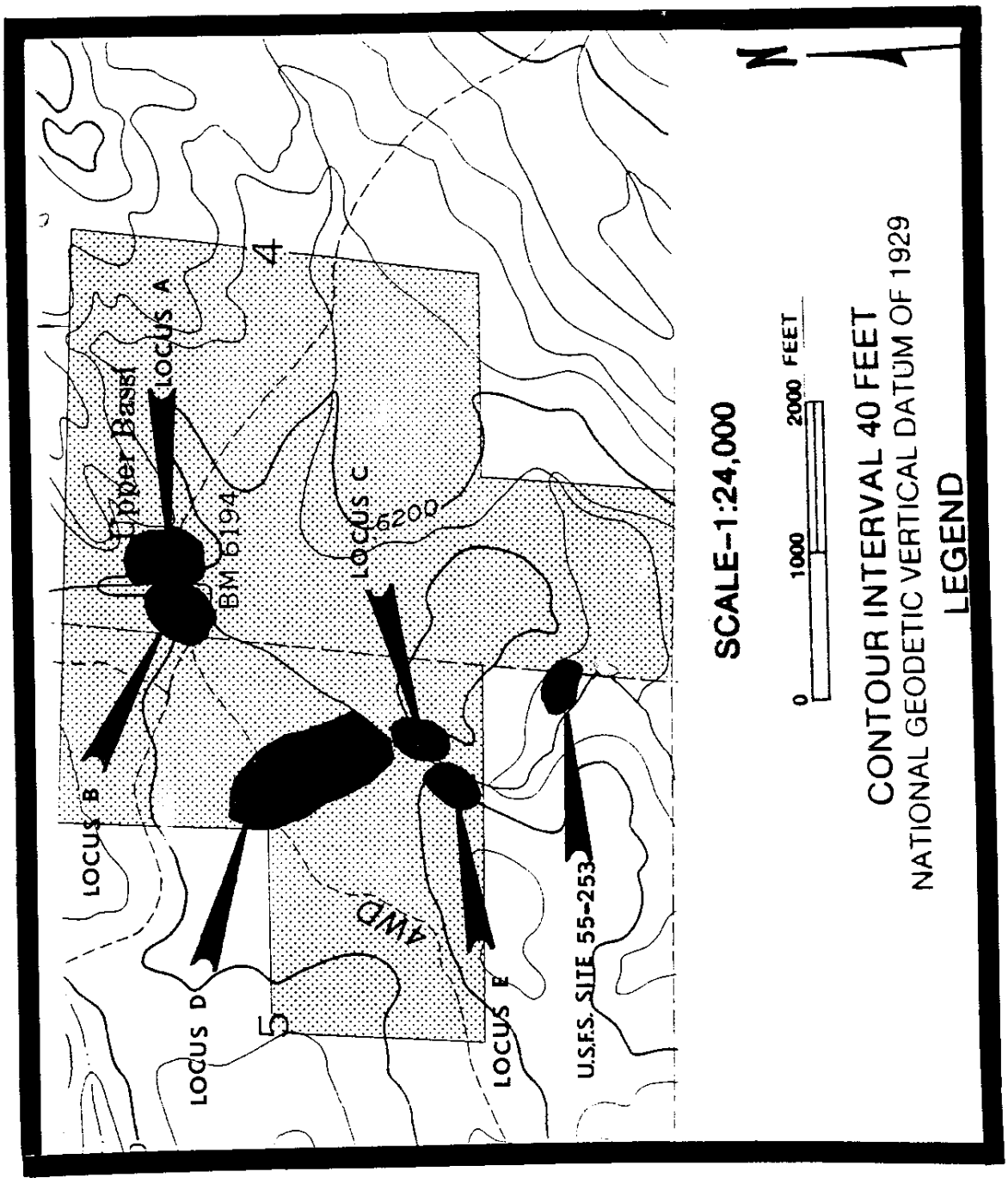
Locus D is located on the north side of the Bassi Fork opposite Locus C (see Map 10). The barbed wire fence that runs through Locus C continues across the creek and runs through Locus D. Several campfire rings are found in Locus D and the area has been heavily impacted by recreationists and cattle grazing. A sparse basalt lithic scatter was found in the locus with

several obsidian flakes found in the area. A historic trash dump dating back to the late 1800's was located on the north side of the four-wheel drive road that runs through the northern part of the locus. The dump has been looted and several broken historic bottle necks were lined up near a tree. No whole historic bottles were found in this dump.

Locus E

Located 140 meters downstream from Locus C, Locus E is on the north side of the Bassi Fork of the Big Silver Creek (see Map 11). This locus consists of three bedrock mortars and a tool manufacturing area. There were a total of 26 projectile points found in this area and one test unit was excavated in the tool manufacturing area. Locus E is the least disturbed area in the Upper Bassi Site. There is very little evidence of recreation use and cattle grazing has not impacted the area. However, the lithic concentration has been disturbed by rodent activity. Evidence of this was found in the test unit that was excavated in the locus. The tool manufacturing area is located in an area with open canopy. However, the area surrounding the locus contains large lodgepole pines. Bracken fern is growing on the site and the soil consistency is sandy with evidence of decomposing granite. On the edge of the locus under the trees heavy duff was scraped to determine locus boundaries.

Map 6
Location of Upper Bassi Site

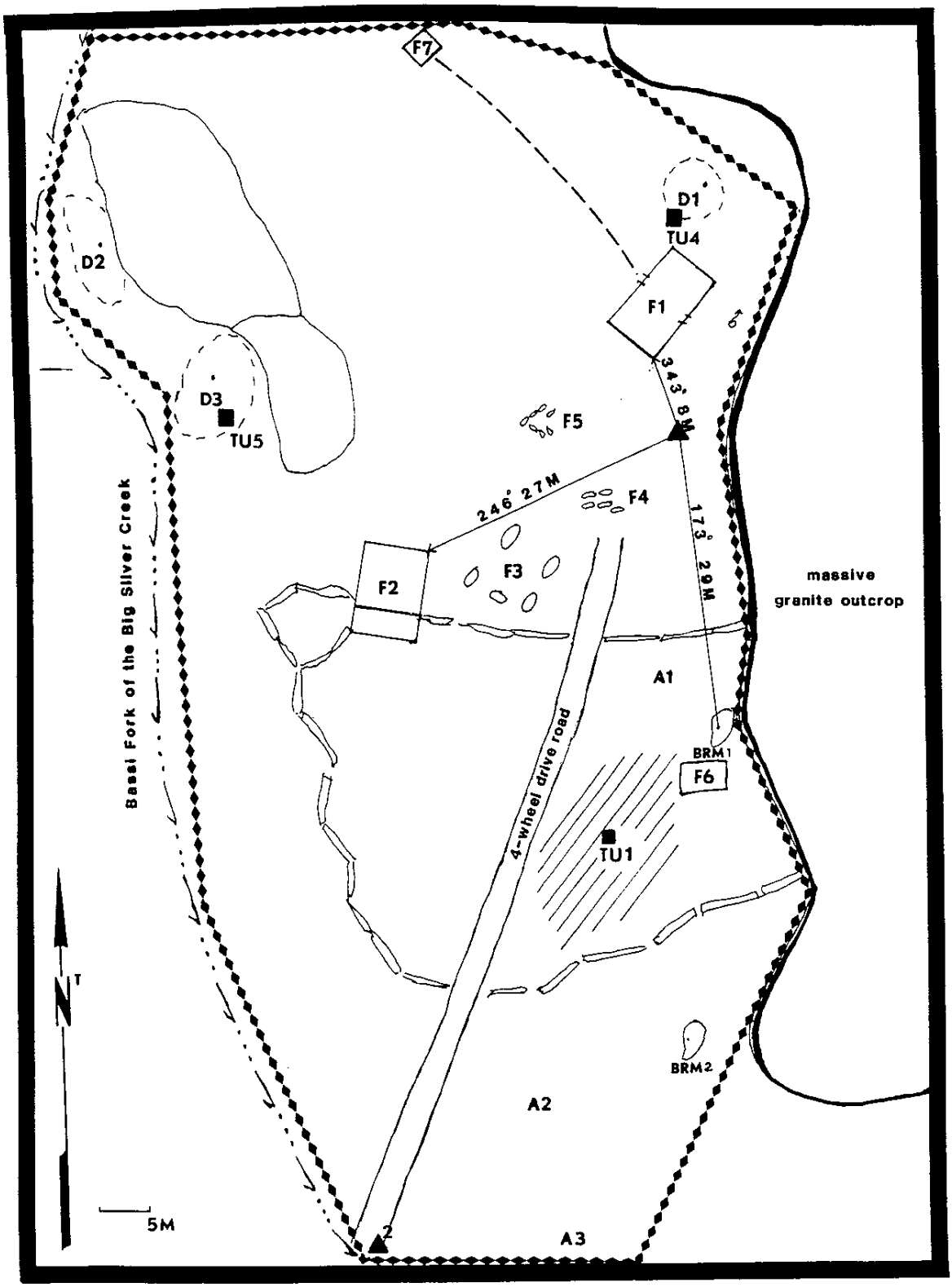


Map 7
Upper Bassi Site - Locus A

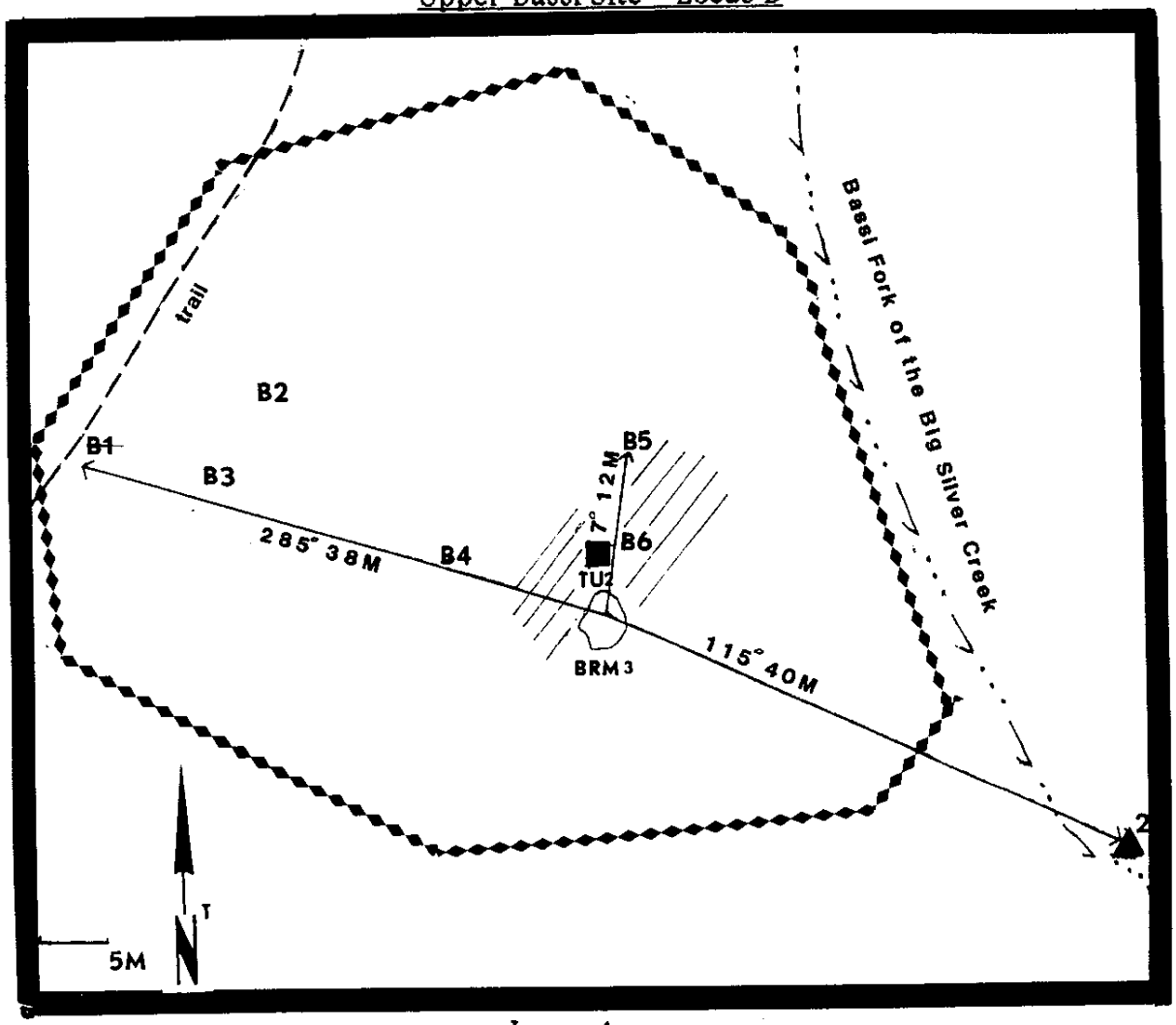
Legend

▲1	Datum 1 - 3' dia. Jeffrey pine
▲2	Datum 2
F1	Bassi Cabin
F2	Barn
F3	Milkhouse foundation - granite cornerstones
F4	Wagonshed foundation - granite cornerstones
F5	Granite rock alignment
F6	Bunkhouse
A1	Obsidian Biface - Acc. #CPP-03
A2	Chert Projectile Point - Acc. #CPP-01
A3	Basalt Biface - Acc. #CPP-04
D1	Historic Trash Dump - circa 1880
D2	Modern Trash Dump - circa 1950's - present
D3	Historic Trash Dump - circa 1880
BRM1	Bedrock Mortar on granite outcropping with , massive wall of granite East of station.
BRM2	Bedrock Mortar on granite outcropping
TU1	Test unit 1 (50 cm x 50 cm)
◆◆◆◆◆	Locus Boundary
	Log fence line for corral
TU4	Test unit 4 (50 cm x 50 cm)
TU5	Test unit 5 (50 cm x 50 cm)
♂	Spring
/////	Lithic Scatter

Map 7
Upper Bassi Site - Locus A



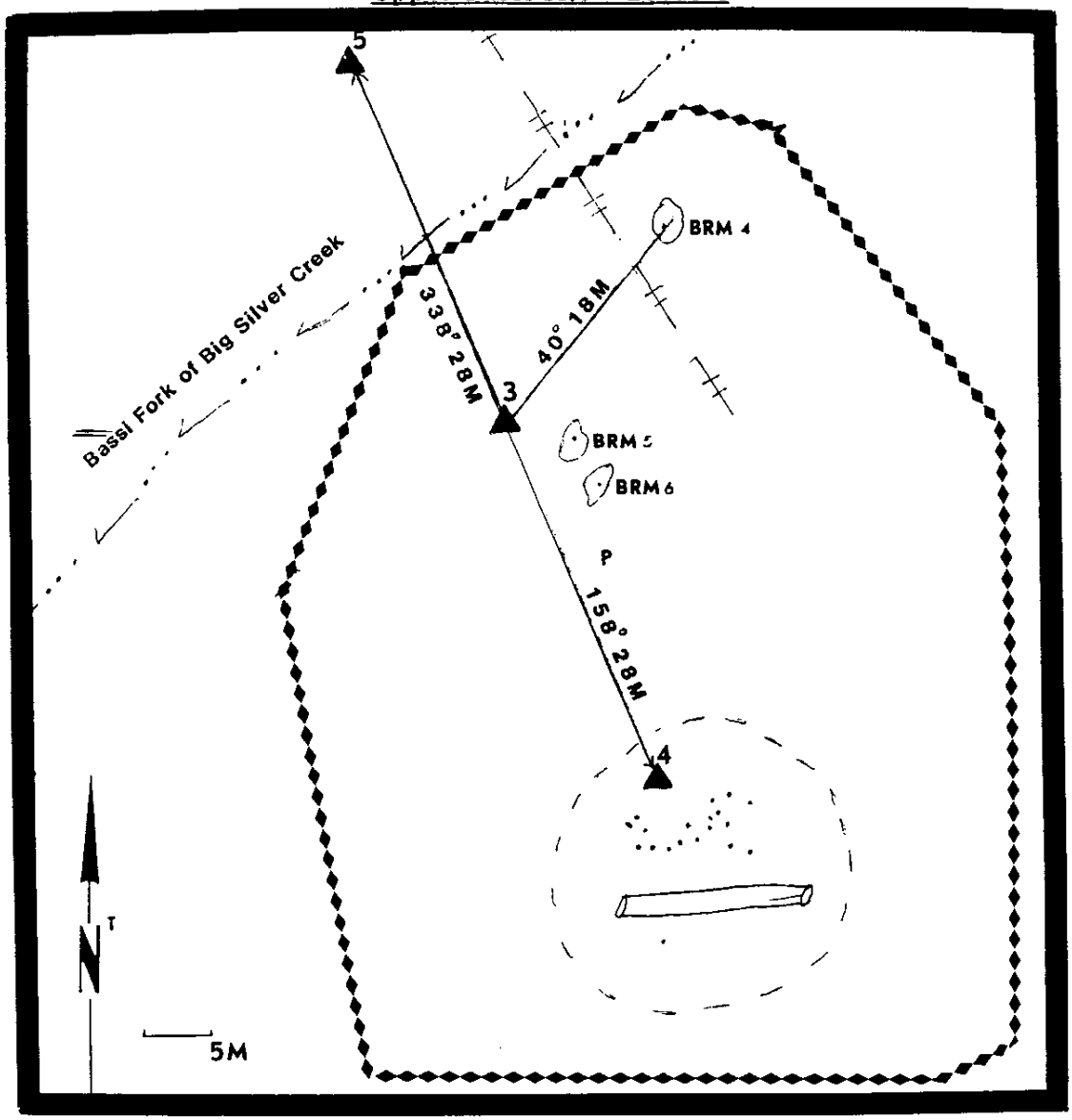
Map 8
Upper Bassi Site - Locus B



Legend

▲2	Datum 2
B1	Basalt Projectile Point - Acc. #CPP-02
B2	Basalt Projectile Point - Acc. #CPP-05
B3	Basalt Projectile Point - Acc. #CPP-06
B4	Basalt Projectile Point - Acc. #CPP-09
B5	Obsidian Biface - Acc. #CPP-08
B6	Chert Projectile Point - Acc. #CPP-07
TU2	Test Unit 2 (50 cm x 50 cm)
BRM3	Bedrock Mortar on granite outcropping
— — — —	Trail
◆◆◆◆◆◆	Locus Boundary
//////	Lithic Scatter

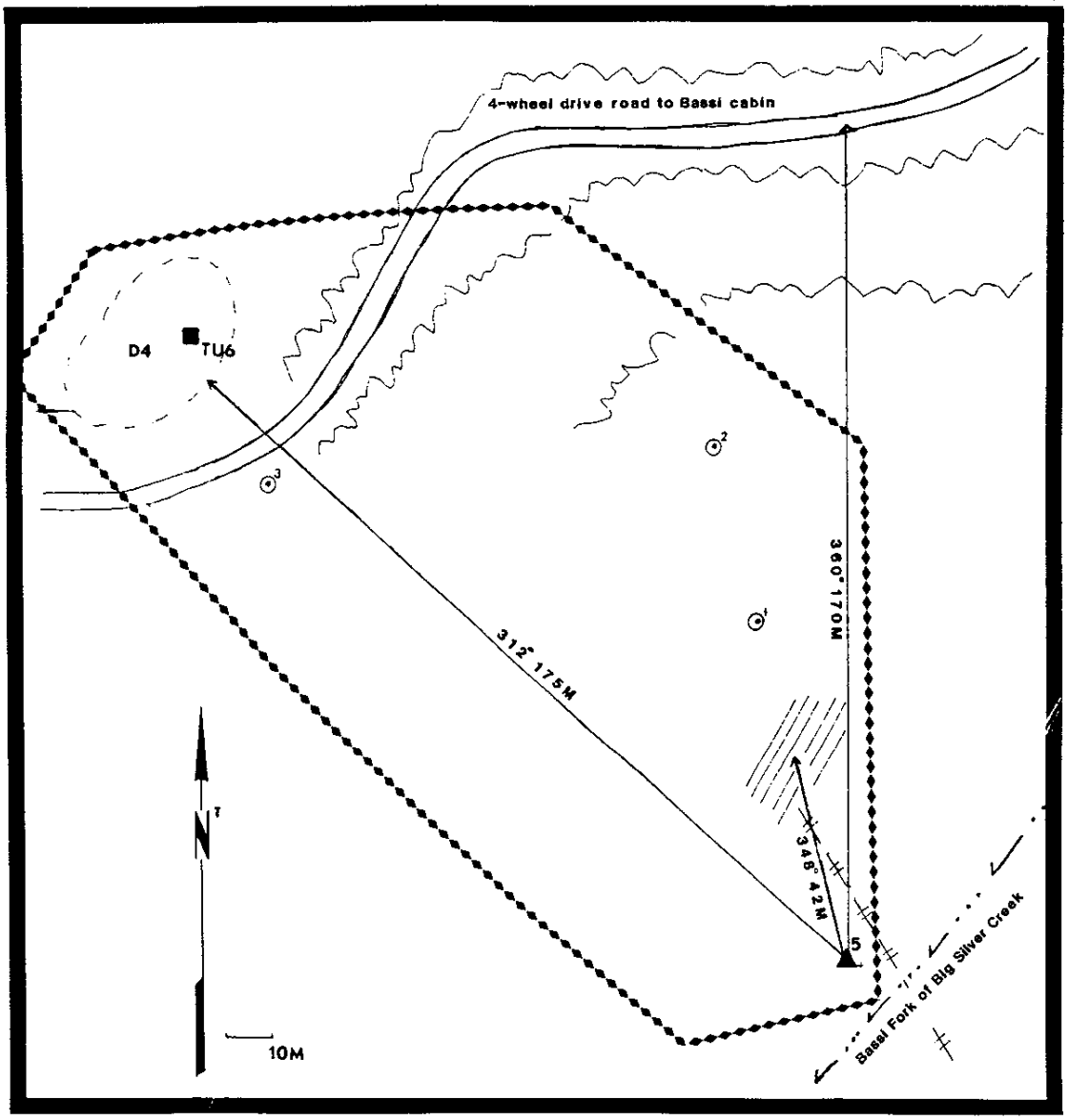
Map 9
Upper Bassi Site - Locus C



Legend

▲3	Datum 3 = 2' dia. lodgepole pine
▲4	Datum 4 = 3' dia. Jeffrey pine
▲5	Datum 5 - 3' dia. lodgepole pine
BRM4	Bedrock Mortar on granite outcropping
BRM5	Bedrock Mortar on granite outcropping
BRM6	Bedrock Mortar on granite outcropping
P	Pestle
	Barbed wire fence line
	Tool Manufacturing Area
	Downed log
	Projectile Points
	Locus Boundary

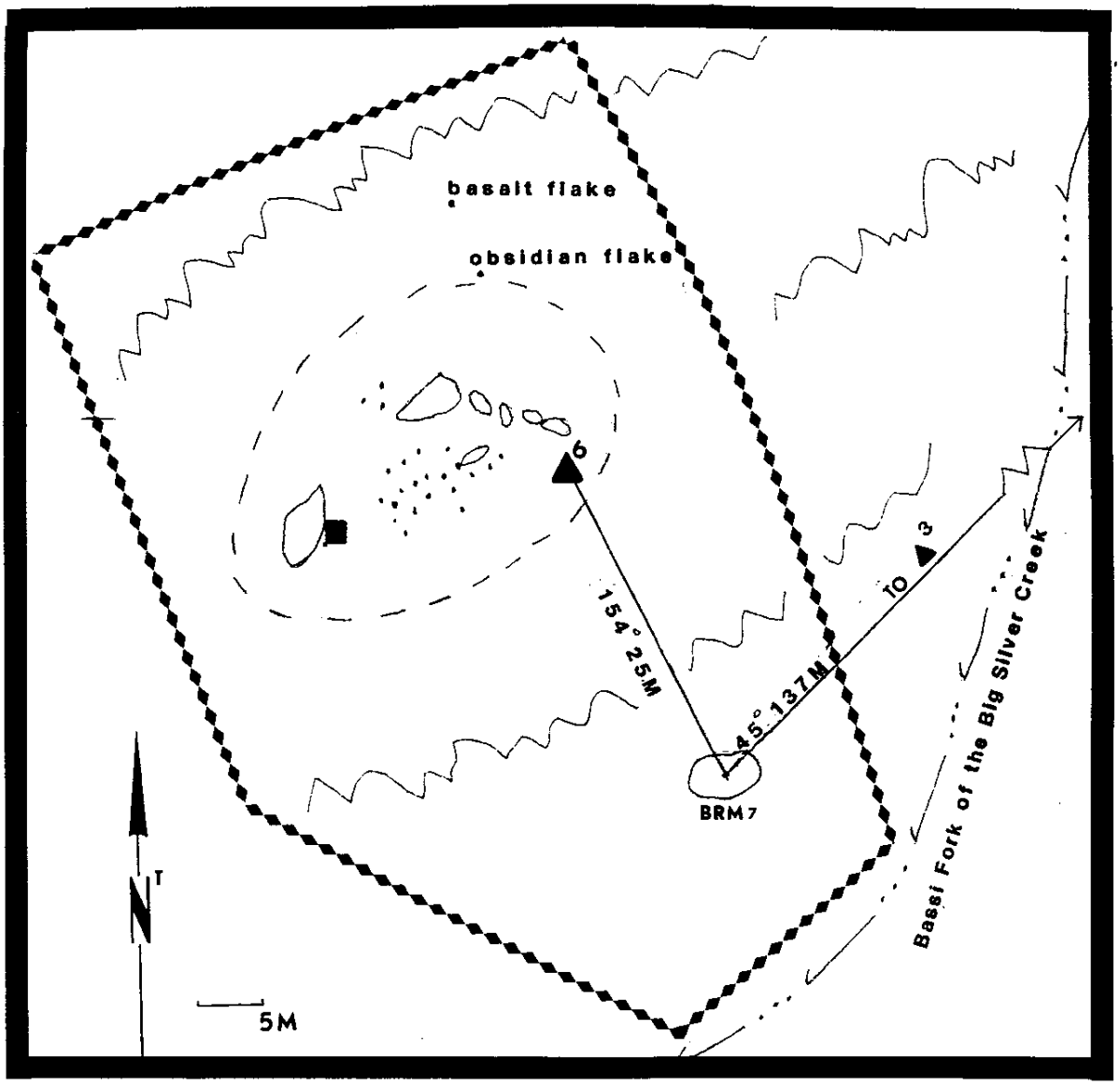
Map 10
Upper Bassi Site - Locus D



Legend

▲5	Datum
-//- -//-	Barbed wire fence line
◆◆◆◆◆	Locus Boundary
∿∿∿	Mixed Conifer
TU6	Test unit 6 (50 cm x 50 cm)
///////	Basalt flake scatter
⊙1	Obsidian flake
⊙2	Obsidian flake
⊙3	Chert flake

Map 11
Upper Bassi Site - Locus E



Legend

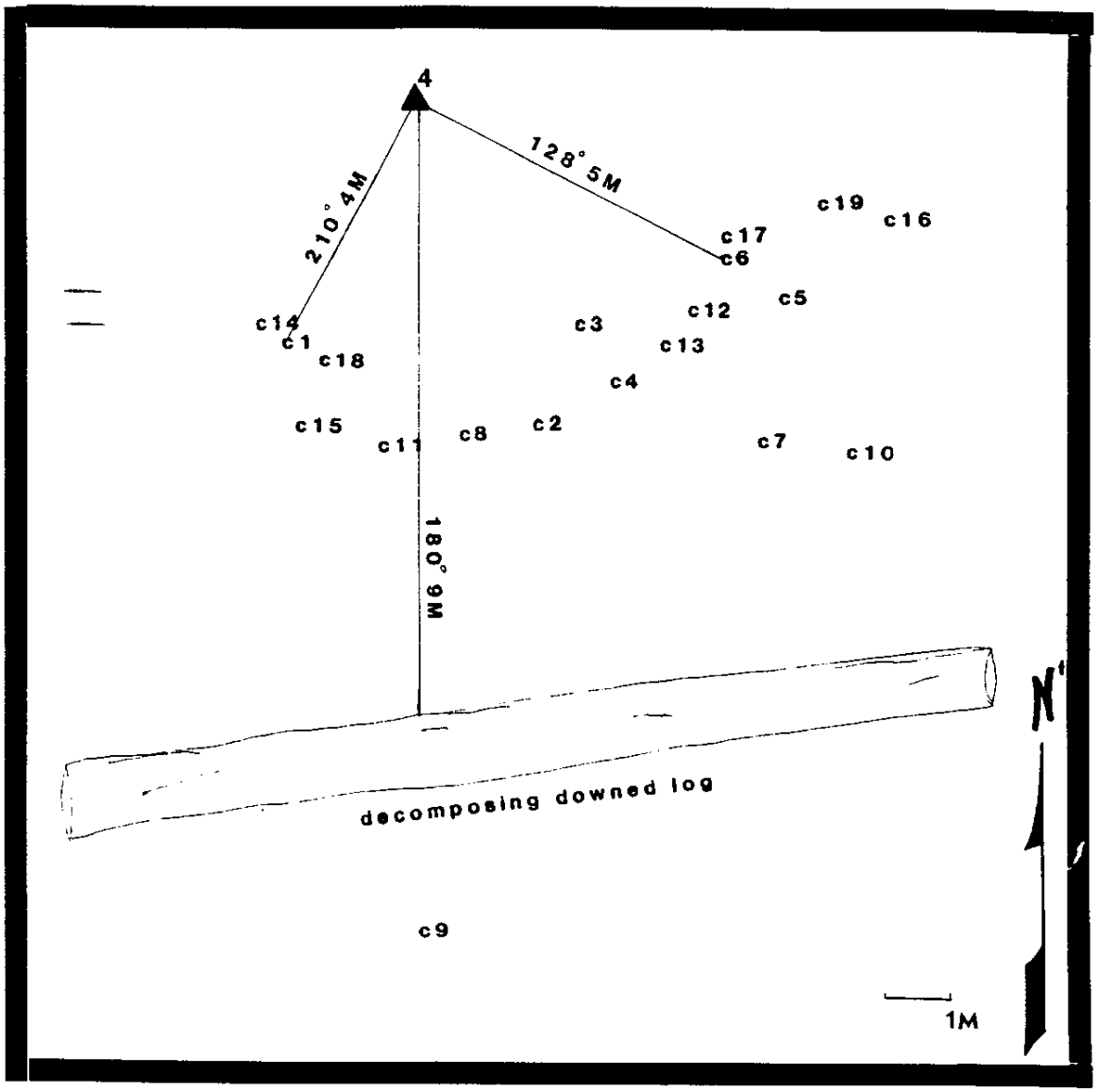
▲6	Datum
BRM7	Bedrock Mortar on granite outcropping
	Tool Manufacturing Area
	Projectile Points
	Granite outcrops
TU3	Test Unit 3 (50 cm x 50 cm)
	Locus Boundary
	Mixed conifer

Map 12
Upper Bassi Site - Close up of Locus C

Legend

▲4	Datum 4 = 3' dia. Jeffrey pine
C1	Chalcedony Desert Side Notched PP - Acc. #10PS-01
C2	Chert Desert Side Notched PP - Acc. #10PS-02
C3	Chert Desert Side Notched PP - Acc. #10PS-03
C4	Sinter Cottonwood Triangular PP - Acc. #10PS-04
C5	Obsidian Desert Side Notched PP base - Acc. #10PS-05
C6	Sinter Desert Side Notched PP - Acc. #10PS-06
C7	Sinter Desert Side Notched PP midsection - Acc. #10PS-07
C8	Sinter Desert Side Notched PP - Acc. #10PS-08
C9	Sinter Desert Side Notched PP - Acc. #10PS-09
C10	Sinter Desert Side Notched PP Tip - Acc. #10PS-10
C11	Sinter Desert Side Notched PP Tip - Acc. #10PS-11
C12	Chert Cottonwood Triangular PP - Acc. #10PS-12
C13	Chert Desert Side Notched PP midsection - Acc. #10PS-13
C14	Chert Desert Side Notched PP - Acc. #10PS-14
C15	Sinter Cottonwood Triangular PP - Acc. #10PS-15
C16	Chert Desert Side Notched PP midsection - Acc. #10PS-16
C17	Chert Desert Side Notched PP - Acc. #10PS-17
C18	Chert Desert Side Notched PP - Acc. #10PS-18
C19	Chert Desert Side Notched PP midsection - Acc. #10PS-19

Map 12
Upper Bassi Site - Close up of Locus C
(see legend on preceding page)

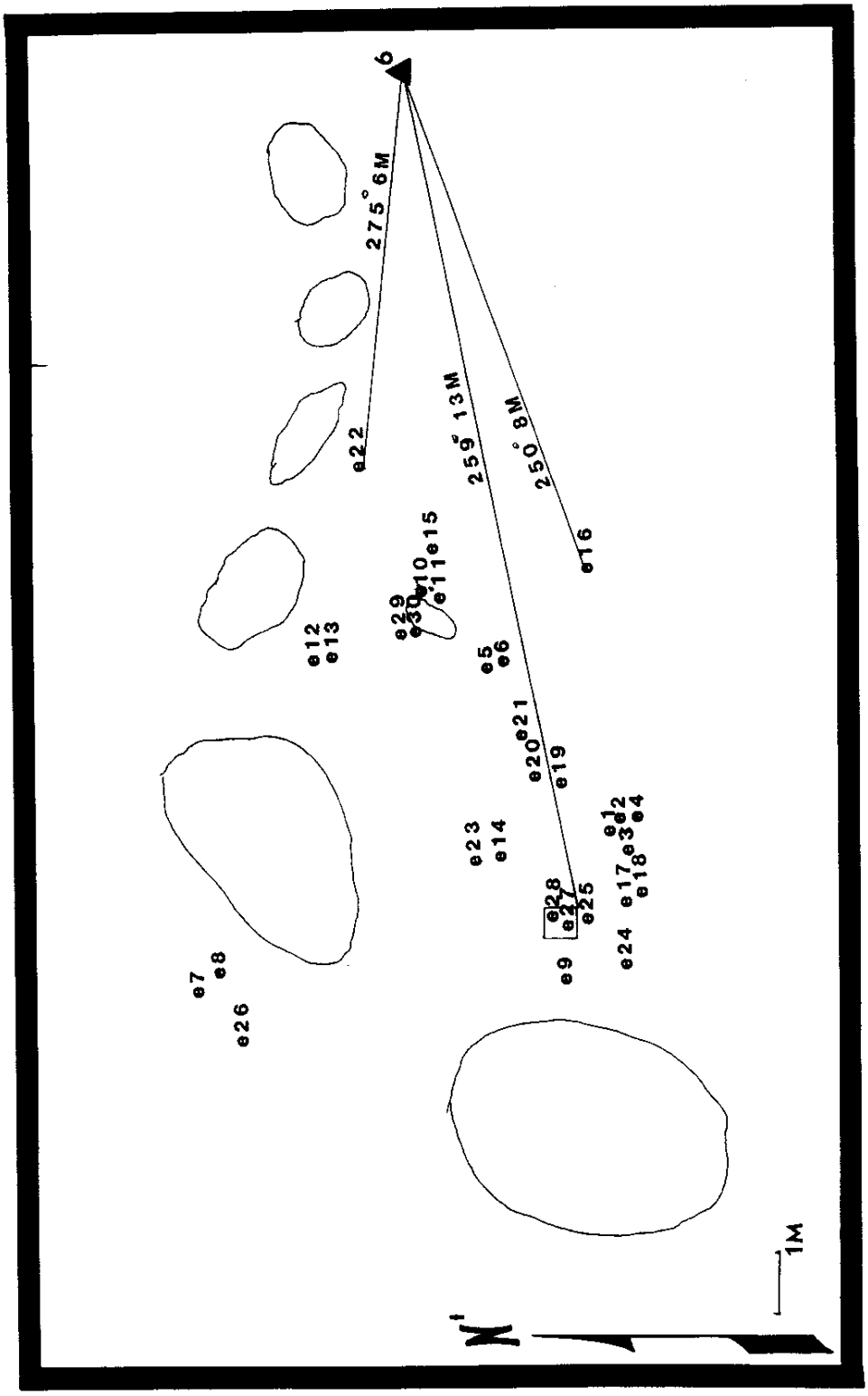


Map 13
Upper Bassi Site - Close up of Locus E
(see map on next page)

Legend

▲6	Datum 6 - 4' dia. Jeffrey pine
	Granite outcrops
E1	Chert Desert Side Notched PP - Acc. #8PS-01
E2	Chert Desert Side Notched PP - Acc. #8PS-02
E3	Obsidian Cottonwood Triangular PP - Acc. #8PS-03
E4	Chert Cottonwood Triangular PP - Acc. #8PS-04
E5	Sinter Desert Side Notched PP - Acc. #8PS-05
E6	Chert Desert Side Notched PP - Acc. #8PS-06
E7	Chert Desert Side Notched PP - Acc. #8PS-07
E8	Obsidian Desert Side Notched PP - Acc. #8PS-08
E9	Chert Cottonwood Triangular PP - Acc. #8PS-09
E10	Sinter Desert Side Notched PP tip - Acc. #8PS-10
E11	Obsidian Cottonwood Triangular PP - Acc. #8PS-11
E12	Sinter Desert Side Notched PP - Acc. #8PS-12
E13	Chert Desert Side Notched PP - Acc. #8PS-13
E14	Obsidian Cottonwood Triangular PP - Acc. #8PS-14
E15	Chert Desert Side Notched PP tip - Acc. #8PS-15
E16	Quartz Crystal Desert Side Notched PP - Acc. #8PS-16
E17	Obsidian Desert Side Notched PP - Acc. #8PS-17
E18	Chert Desert Side Notched PP tip - Acc. #8PS-18
E19	Obsidian Desert Side Notched PP - Acc. #8PS-19
E20	Chert Desert Side Notched PP - Acc. #8PS-20
E21	Chert Desert Side Notched PP base - Acc. #8PS-21
E22	Sinter Desert Side Notched PP - Acc. #8PS-22
E23	Chert Cottonwood Triangular PP - Acc. #8PS-23
E24	Chert Desert Side Notched PP - Acc. #8PS-24
E25	Obsidian Desert Side Notched PP - Acc. #8PS-25
E26	Obsidian Desert Side Notched PP - Acc. #8PS-26
E27	Chert Desert Side Notched PP tip - Acc. #8PS-27
E28	Sinter Desert Side Notched PP - Acc. #8PS-28
E29	Chert Desert Side Notched PP - Acc. #8PS-29
E30	Obsidian biface - Acc. #8PS-30

Map 13
Upper Bassi Site - Close up of Locus E
(see legend on preceding page)



Description of Architecture

The Upper Bassi cabin (circa 1870) is a two bedroom cabin with attic and stone cellar. Dimensions of the cabin are 20 feet by 30 feet with a front porch, that runs across the front of the cabin, measuring six feet by 30 feet (see plate 10B). The cellar is made of massive granite blocks which measure an average of three feet by two feet by one foot. Interior basement measurements are 18 feet by 28 feet and seven feet in height. Massive lodgepole pine logs measuring 2 1/2 feet in diameter are the overhead timbers that make the floor foundation for the cabin. These logs are hand hewn on both sides. The cabin is constructed with hand hewn lodgepole pine logs. The logs are hewn on all four sides. "Rough-hewn logs were often used because a flat inside wall was more serviceable than a wall of rounded logs and the exterior appeared to be more finished and hence offered greater status to the log house's inhabitants. Rough-hewn log walls also could be chinked more easily than walls of round logs" (Noble 1984:110). Square notches have been used with wooden pegs employed for stability. Allen Noble points out:

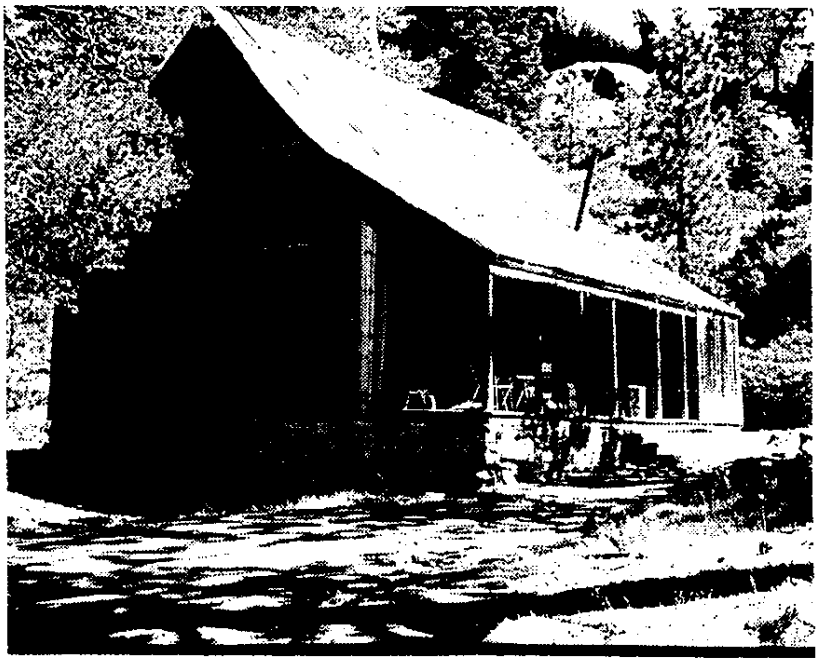
> These, however, are not true notches because they are not self-binding the most common is the square notch in which both the top and the bottom corners of the log are removed. It has been suggested that the square notch is a degenerated form of corner timbering, but it is just as likely that the popularity of square notching is related to the increased use of the saw instead of the axe. The square notch requires only a few straight cuts, but the joint must be secured by wooden pegs or by spikes [Noble 1984:113].

See plates 13A, 13B for a close-up look at the square notching and wooden pegging utilized in the construction of the Bassi cabin. The interior of the cabin utilizes milled lumber for interior walls and doors. Square nails can be

seen in the interior workmanship (see plate 22B). The main room has a window next to the front door, a window next to the back door, and two side windows. One of these windows is not original and was added at a later date (see plate 19A, 19B). Much of the furniture in the cabin is handmade (see plate 19A, 19B). Two bedrooms are off the main room, each with a window. Steep stairs lead from the main room up to the attic. This room has two small windows at both ends (see plate 11A, 11B). A new metal roof was added in 1990 but original logs remain as roof supports. The addition of this new metal roof was a necessity due to the threat of snow buildup which could have caused the collapse of the old roof and possible loss of the structure. The barn collapsed after a heavy winter snow several winters ago (see plate 12A, 12B). The front door of the cabin has been signed by visitors over the years (see plate 17A, 17B, 18B). Sara Swift (Rufus Swift's wife) wrote carefully over all the names in ink many years ago (Hocking, personal communication 1990). The cabin contains a kitchen sink and a woodstove.

The Bassi barn, which has recently collapsed, is constructed of round lodgepole pine logs. The barn measures 21 feet by 26 feet with a lean-to addition measuring 15 1/2 feet by 26 feet. The barn is built on huge granite cornerstones and like the cabin is constructed with logs using square notches secured with spikes (see plate 15B). The granite cornerstones for the milkbarn are located five meters east of the barn The milkbarn probably measured 21 feet by 24 feet judging from the placement of the cornerstones and old photos (see plate 15A).

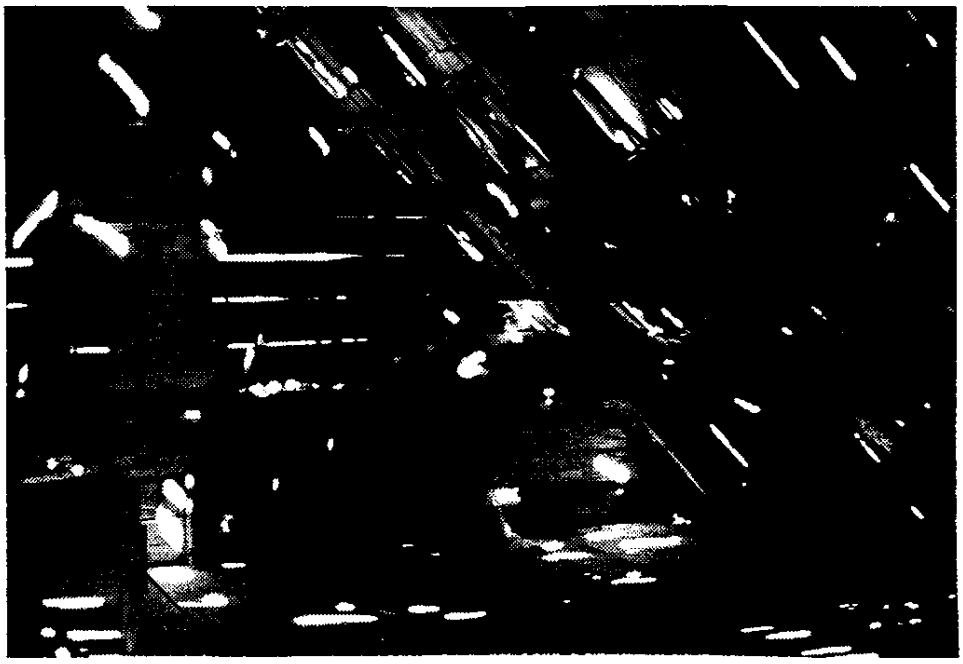
Plate 10



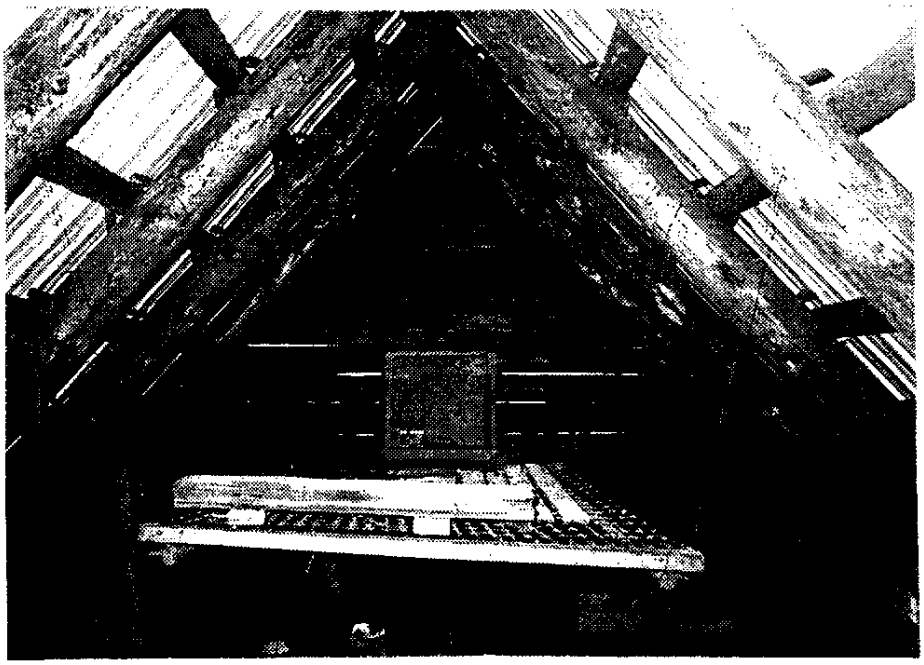
A - Upper Bassi cabin with original shakes, 1978

B - Upper Bassi cabin with new metal roof, 1990

Plate 11



A - Upper Bassi cabin attic with original shakes, 1987



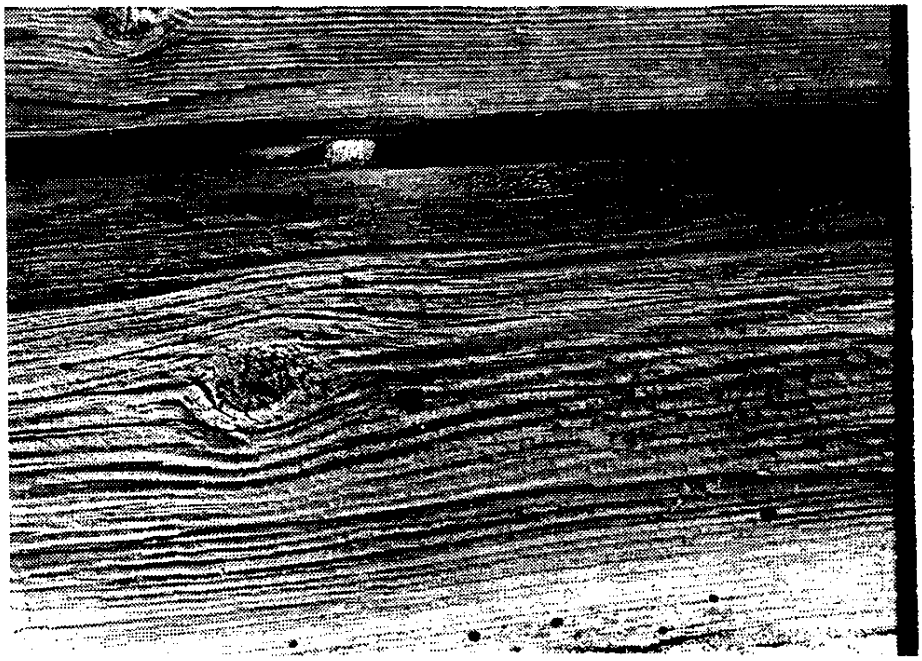
B - Upper Bassi cabin attic with new metal roof, 1990

Plate 12

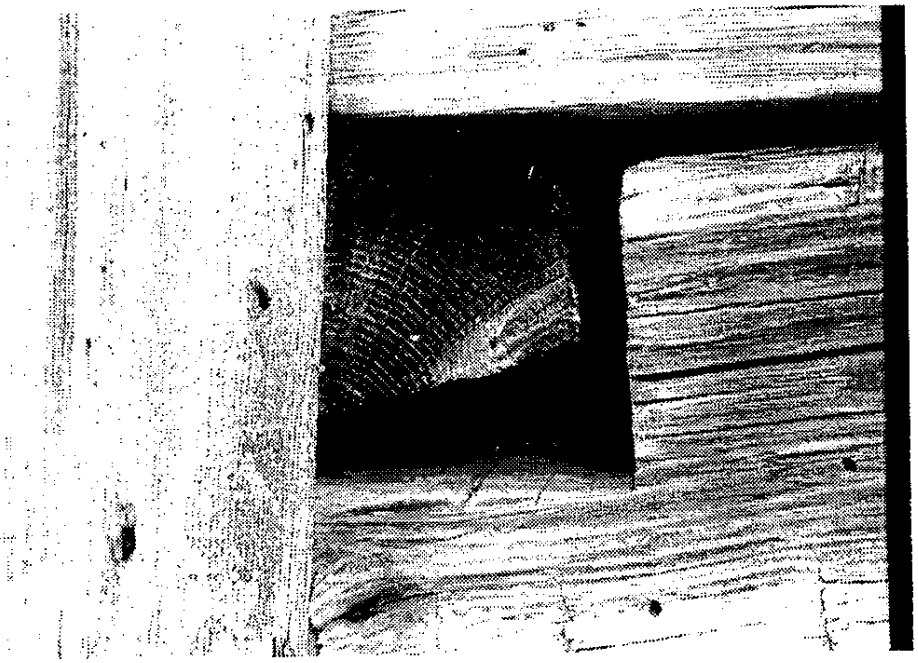
A - Upper Bassi barn, 1978

B - Upper Bassi barn, 1990

Plate 13

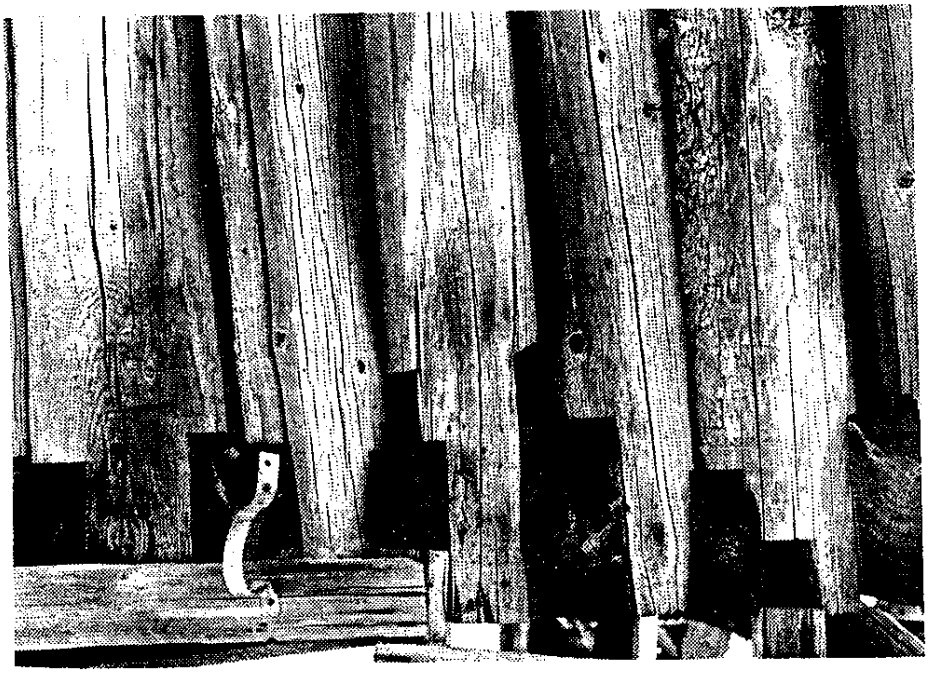


A - Close-up of pegs to align logs in Upper Bassi cabin, 1991



B - Close-up of square notch in Upper Bassi cabin, 1991

Plate 14



B - Corner of Upper Bassi barn, 1991

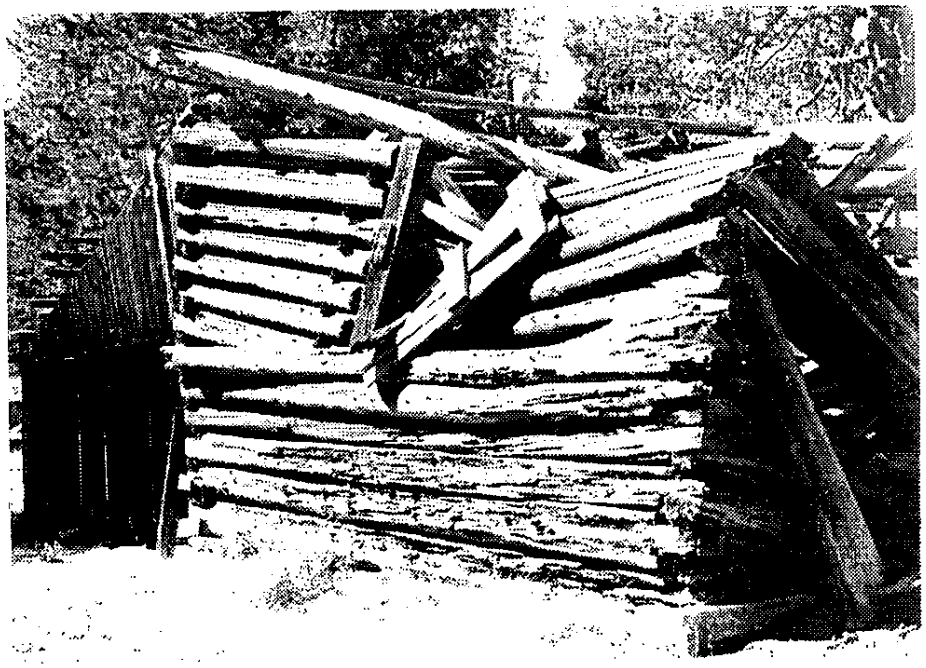
A - Corner of Upper Bassi barn, 1991

Plate 15

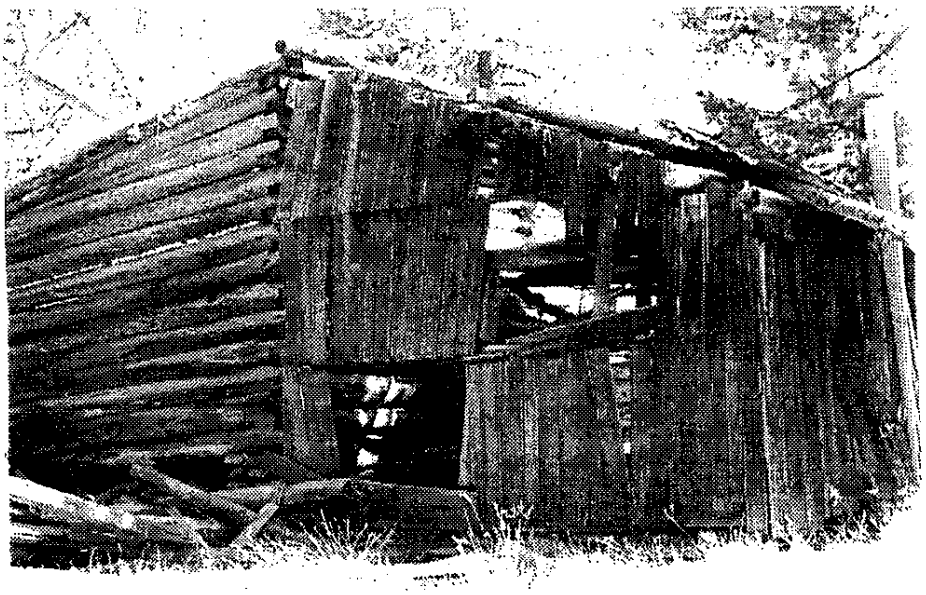
A - Granite cornerstones of milkhouse, Upper Bassi, 1991

B - Close-up of spike to align logs in Upper Bassi barn, 1991

Plate 16

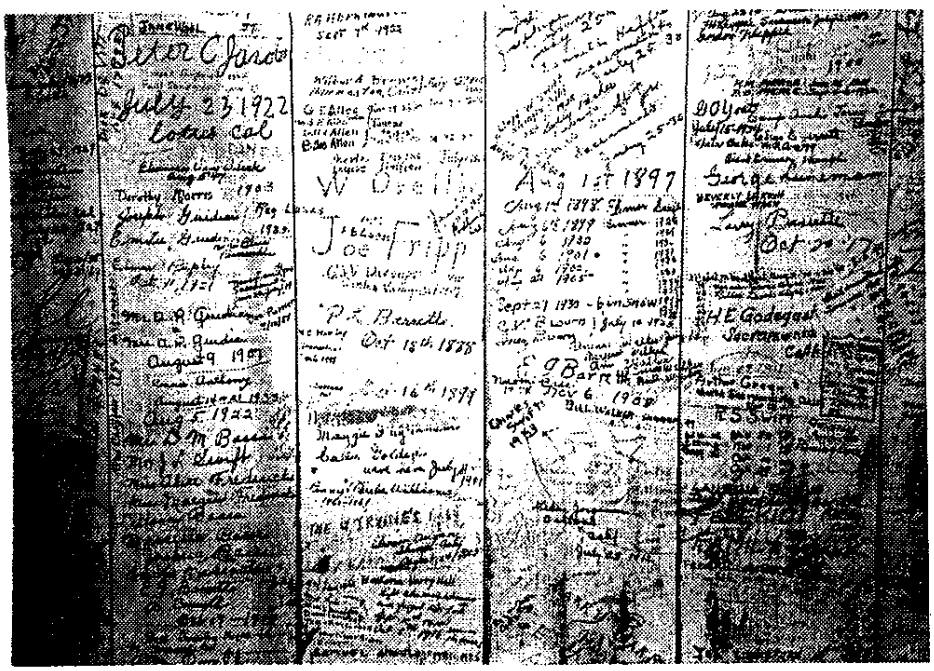


A - Upper Bassi barn, 1991

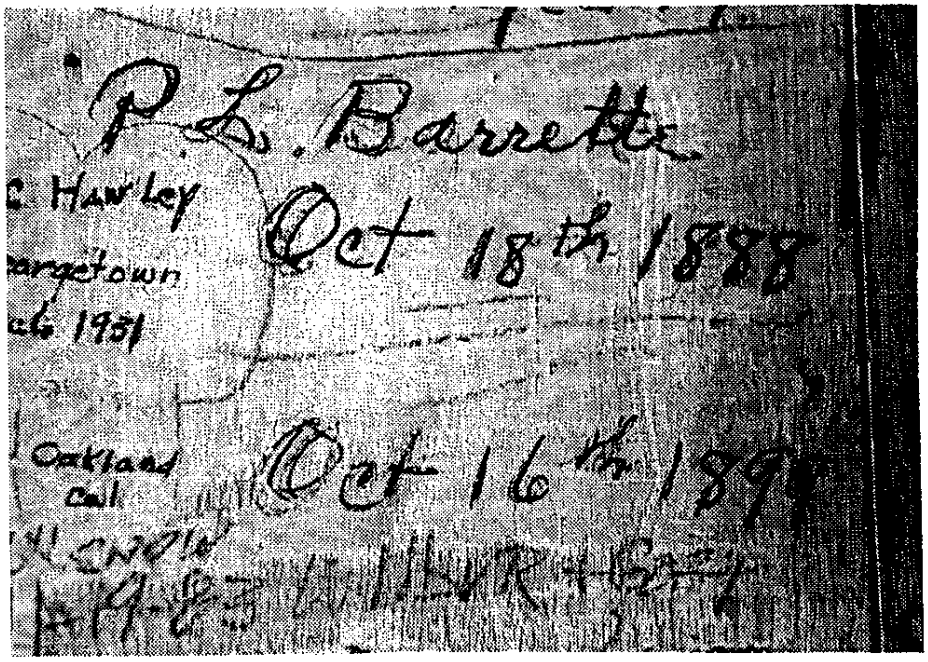


B - Upper Bassi barn, 1991

Plate 17

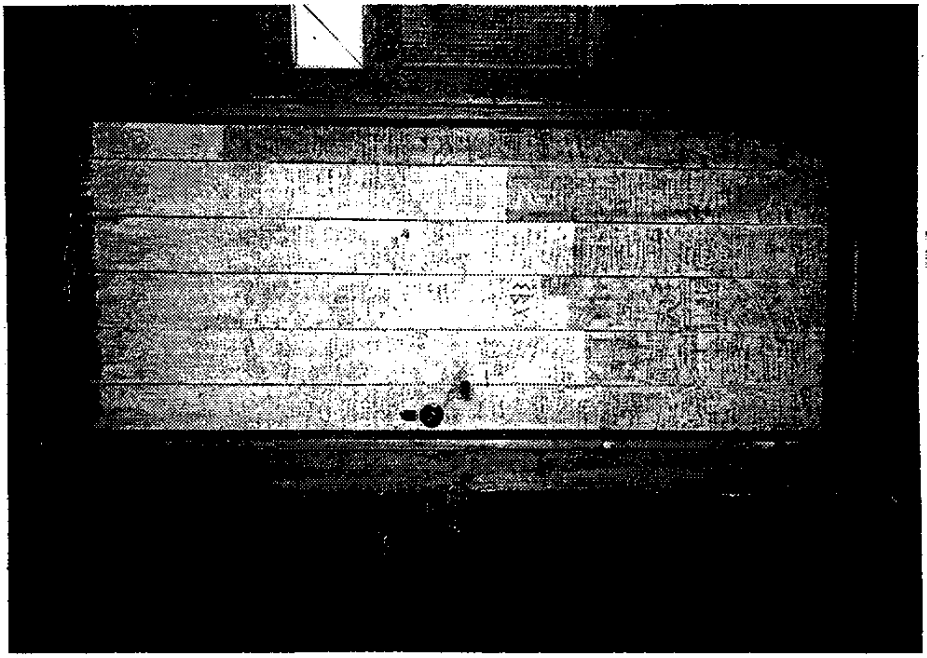


A - Upper Bassi cabin door, 1991



B - Upper Bassi cabin door, 1991

Plate 18



B - Upper Bassi cabin door, 1991

A - Lantern holder in Upper Bassi cabin, 1991

Plate 19

B - Interior of Upper Bassi cabin, 1900

A - Interior of Upper Bassi cabin, 1990

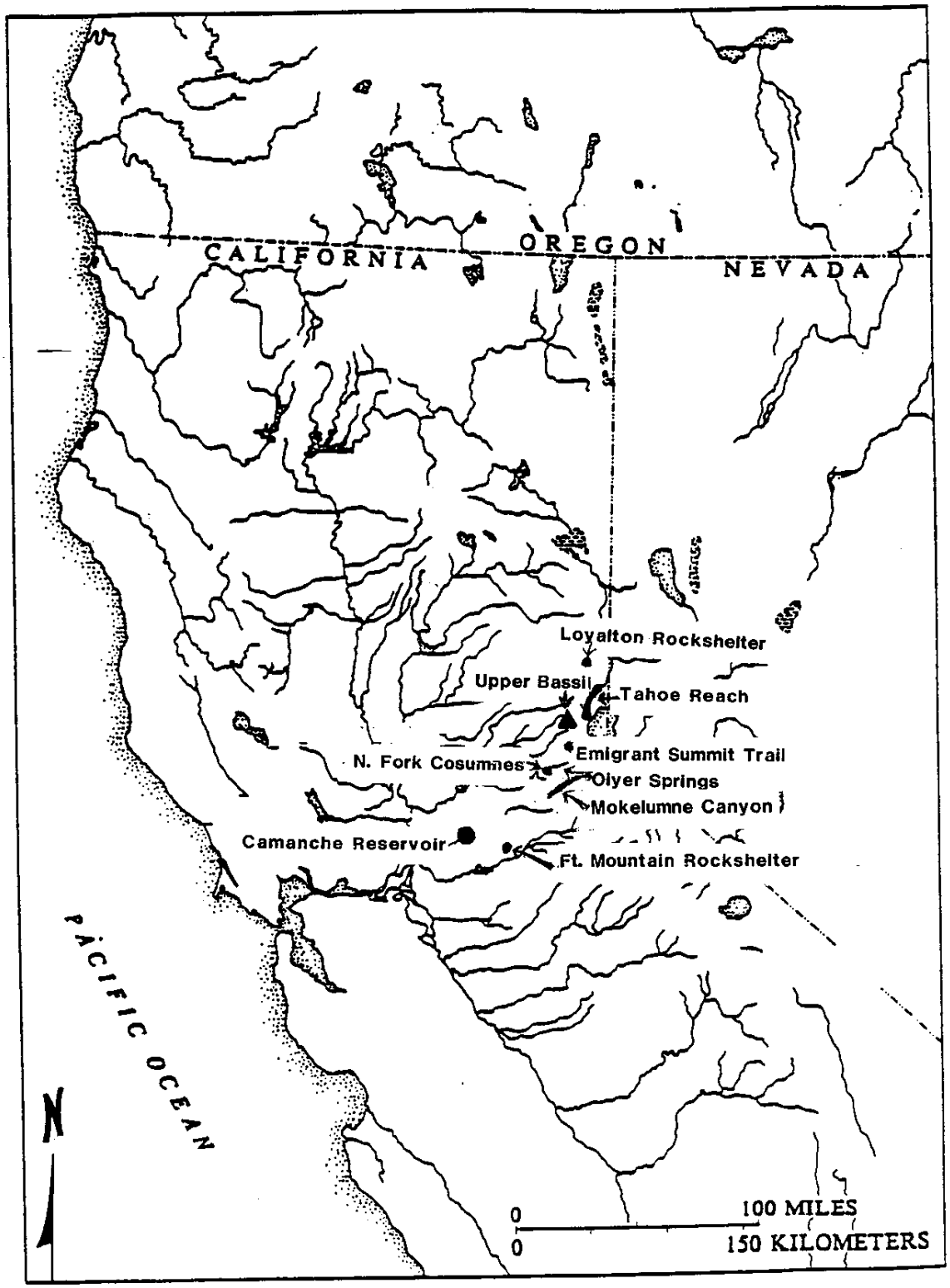
Description of Prehistoric Artifacts

Projectile Points

A total of 62 projectile points, projectile point fragments and biface fragments were collected at the Upper Bassi Site. Of these, 43 were classified as Desert Side-notched, nine as Cottonwood Triangulars, one as Rosespring Contracting Stem, one as Eastgate Expanding Stem, three as Martis Corner-notched, and five as miscellaneous bifaces. These artifacts were measured using a Swiss Precision Instrument (SPI) six inch dial caliper and weighed using an OHaus E-Series E4000 D Electronic Balance scale. They were compared with other projectile points discovered in the north central Sierra Nevada.

Most of the projectile points discovered during survey and test excavation were classified as Desert Side-notched (Thomas 1970; Leventhal in Elston et al. 1977; Baumhoff and Byrne 1959). These were separated using Baumhoff's and Byrne's classifications of Sierra, Delta, General, and Redding subtypes. No Delta or Redding subtypes were found at the Upper Bassi. Projectile points found at the Upper Bassi were classified using an adaptation by Alan Leventhal of David Thomas's projectile point key (Elston et al. 1977). (See Appendix B.) Archaeological reports used for comparison were Elston et al.'s Study of the Tahoe Reach of the Truckee River (1977), White's Archaeological Investigations at Fort Mountain Rockshelter (1988), Wilson's Archaeology of the Loyalton Rock Shelter (1963), Wirth Environmental Services' Mokelumne River Project (1984), Johnson's

Map 14
Location of Comparative Sites
Adapted from Dougherty 1990



Camanche Reservoir Locality (1967), Makansi's North Fork of the Cosumnes River Project (1991), Lindstrom's Test Excavations at Oiyer Springs and Pi Pi Valley (1982), and Bennyhoff et al.'s Emigrant Summit Trail Investigation (1982).

Table 1
Summary of Projectile Points, Projectile Point Fragments and Bifaces

Artifact Type	Chert	Sinter	Basalt	Obsidian	Quartz	Chalcedony	Total
DSN (General)	6	2		3		1	12
DSN (Sierra)	7	5		1	1		14
DSN (unclassified)	2	1		2			5
DSN (tips)	5	3		2			10
DSN (midsections)	1	1					2
Cottonwood	4	2		3			9
Rosespring	1						1
Eastgate	1						1
Martis			3				3
Misc. Bifaces			2	2	1		5
Total							62

The following is a description of Projectile Points found at the Upper Bassi Site. Pressure flaking patterns were described following Crabtree's examples of "Idealized projectile points showing varieties of pressure flaking" (1982). See Figure 1. The terminology used in descriptions of projectile points is illustrated in Figure 2.

Desert Side-Notched Projectile Points

Desert Side-notched projectile points were originally identified by Baumhoff and Byrne in 1959. They proposed that the Desert Side-notched

(DSN) could be used as a time marker in California archaeology. These specimens "are small projectile points, presumably arrow points, with triangular blades and side notches" (Baumhoff and Byrne 1959:32). They tentatively dated the DSN's from 1400 to 1500 A.D. depending upon the location and sub-type. As the name indicates, these points were "characteristic of late archaeological remains throughout the Desert West" (Baumhoff and Byrne 1959:33). Four subtypes were identified within the Desert Side-notched category. The General subtype was the most variable of the subtypes and the most widespread exhibiting a concave base. The Sierra subtype was characteristic of the High Sierra region of California, but was also found in the Great Basin and in the Southwest. The base was notched. The Delta subtype was commonly found in the delta region of the Sacramento-San Joaquin Rivers and displayed a v-shaped base. The Redding subtype was found distributed around the city of Redding and was recognized by the bell-shaped base and the comma-shape of its notches. Twelve General subtypes, fourteen Sierra subtypes, five unclassifiable, ten tips, and two midsections were found at the Upper Bassi. Again, no Redding or Delta subtypes were found.

Desert Side-Notched (General subtype)

Accession #	Metric Dimensions		Location
10PS-01 (Figure 3A)	Length:	21.6 mm	Locus C Surface
	Width:	12.6 mm	
	Thickness:	3.3 mm	
	Weight:	0.51 gm	
	Material:	Chalcedony	

Description: General sub-type (Baumhoff and Byrne 1959) This almost complete specimen exhibits good workmanship, less regular parallel pressure flaking on one side with chevron pressure flaking on the other side.

A small part of the base is broken off (probably occurring during notching).[99]

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

10PS-05 (Figure 3B)

Length:	13.7 mm	Locus C
Width:	12.8 mm	Surface
Thickness:	2.9 mm	
Weight:	0.4 gm	
Material:	Obsidian	

Description: General sub-type (Baumhoff and Byrne 1959) This is a DSN base which exhibits less regular parallel pressure flaking. Obsidian testing revealed the obsidian was from Bodie Hills with a hydration band of 1.4 +- 0.1. A discontinuous or interrupted hydration rind was observed on the thin section.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-02 (Figure 3C)

Length:	16.7 mm	Locus E
Width:	13.7 mm	Surface
Thickness:	3.6 mm	
Weight:	0.7 gm	
Material:	Chert	

Description: General sub-type (Baumhoff and Byrne 1959) This symmetrical designed artifact exhibits good workmanship with random pressure flaking. The tip and a portion of the base is broken off.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-05 (Figure 3D)

Length:	24.4 mm	Locus E
Width:	16.1 mm	Surface
Thickness:	4.1 mm	

Weight: 1.1 gm
Material: Sinter

Description: General sub-type (Baumhoff and Byrne 1959) This specimen exhibits symmetry, very regular parallel pressure flaking, and good workmanship. A small portion of the base is broken off.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-07 (Figure 3E)

Length: 20.4 mm
Width: 11.9 mm
Thickness: 3.5 mm
Weight: 0.5 gm
Material: Chert

Locus E Surface

Description: General sub-type (Baumhoff and Byrne 1959) The tip is broken off this dark red chert artifact. Workmanship is good with random pressure flaking.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-08 (Figure 3F)

Length: 29.3 mm
Width: 13.6 mm
Thickness: 3.1 mm
Weight: 0.9 gm
Material: Obsidian

Locus E Surface

Description: General sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are broken off this artifact. Workmanship is good and exhibits very regular parallel pressure flaking. One side shows a flake being taken off which has left the artifact asymmetrical. Obsidian testing results show the material is from Truman Meadow/Queen with a band of 1.1+-0.1.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-20	Length:	18.0	mm	Locus E
(Figure 3G)	Width:	11.0	mm	Surface
	Thickness:	3.0	mm	
	Weight:	0.5	gm	
	Material:	Chert		

Description: General sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are missing from this specimen. Workmanship is good with diagonal parallel pressure flaking.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-21	Length:	11.0	mm	Locus E
(Figure 3H)	Width:	11.7	mm	Surface
	Thickness:	4.0	mm	
	Weight:	0.5	gm	
	Material:	Chert		

Description: General sub-type (Baumhoff and Byrne 1959) This DSN base is missing a small portion of the base. Workmanship is fair with random pressure flaking. Patination is evident on 50% of the artifact.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-24	Length:	14.8	mm	Locus E
(Figure 4A)	Width:	10.9	mm	Surface
	Thickness:	3.9	mm	
	Weight:	0.6	gm	
	Material:	Chert		

Description: General sub-type (Baumhoff and Byrne 1959) This DSN base has a portion of the base missing. Workmanship is good with random pressure flaking on one side and diagonal parallel pressure flaking on the other side.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)

Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-25	Length:	23.8 mm	Locus E
(Figure 4B)	Width:	11.8 mm	Surface
	Thickness:	3.5 mm	
	Weight:	0.8 gm	
	Material:	Obsidian	

Description: General sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are missing on this specimen. Workmanship is good with random pressure flaking on one side and diagonal parallel pressure flaking on the other side.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-31	Length:	25.6 mm	Locus E
(Figure 4C)	Width:	15.1 mm	Unit 1, 0-10 cm
	Thickness:	3.0 mm	
	Weight:	0.7 gm	
	Material:	Chert	

Description: General sub-type (Baumhoff and Byrne 1959) This complete specimen exhibits symmetry of design and good workmanship with diagonal parallel pressure flaking.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

8PS-32	Length:	14.2 mm	Locus E
(Figure 4D)	Width:	14.1 mm	Unit 1, 1-10 cm
	Thickness:	3.1 mm	
	Weight:	0.4 gm	
	Material:	Sinter	

Description: General sub-type (Baumhoff and Byrne 1959) Artifact may have been reworked. The base is intact but it looks as if tip was reworked

after artifact was broken. Specimen exhibits diagonal parallel pressure flaking.

Comparative: North Fork of the Cosumnes (Makansi 1991: Fig. 7 a-f)
Loyalton Rock Shelter (Wilson 1963: Plate X, Fig 1)
Fort Mountain Rockshelter (White 1988: Plate 1)
Camanche Reservoir (Johnson 1967: Figure 43)
Mokelumne River Project (Wirth 1984: Fig. 23)

Desert Side-Notched (Sierra subtype)

10PS-02 (Figure 4E)

Length:	29.5 mm	Locus C
Width:	13.6 mm	Surface
Thickness:	4.2 mm	
Weight:	1.1 gm	
Material:	Chert	

Description: Sierra sub-type (Baumhoff and Byrne 1959). Complete specimen except for a portion of the base which is broken off. Workmanship is good with diagonal parallel pressure flaking on one side and less regular parallel pressure flaking on the other side.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-03 (Figure 4F)

Length:	30.6 mm	Locus C
Width:	12.1 mm	Surface
Thickness:	2.6 mm	
Weight:	0.8 gm	
Material:	Chert	

Description: Sierra sub-type (Baumhoff and Byrne 1959) Complete specimen except a portion of the base is broken off. Workmanship is good considering poor quality of material with less regular parallel pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-06 (Figure 4G)

Length:	24.6 mm	Locus C
Width:	13.4 mm	Surface
Thickness:	2.8 mm	
Weight:	0.7 gm	

Material: Sinter

Description: Sierra sub-type (Baumhoff and Byrne 1959) A complete specimen exhibiting excellent workmanship with diagonal parallel pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-08	Length:	23.7 mm	Locus C
(Figure 4H)	Width:	13.0 mm	Surface
	Thickness:	4.4 mm	
	Weight:	1.0 gm	
	Material:	Sinter	

Description: Sierra sub-type (Baumhoff and Byrne 1959) A complete specimen which exhibits asymmetrical proportions, random pressure flaking and gross thickness.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-09	Length:	14.2 mm	Locus C
(Figure 5A)	Width:	10.8 mm	Surface
	Thickness:	3.4 mm	
	Weight:	0.4 gm	
	Material:	Sinter	

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are broken off this specimen. Workmanship is fair with random pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-14	Length:	25.4 mm	Locus C
(Figure 5B)	Width:	10.4 mm	Surface
	Thickness:	4.1 mm	
	Weight:	1.0 gm	
	Material:	Chert	

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are broken off this specimen. Workmanship is fair with random pressure flaking and excess thickness.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-17	Length:	20.1	mm	Locus C
(Figure 5C)	Width:	12.1	mm	Surface
	Thickness:	3.4	mm	
	Weight:	0.7	gm	
	Material:	Chert		

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are broken off this specimen. Workmanship is fair with random pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

10PS-18	Length:	26.6	mm	Locus C
(Figure 5D)	Width:	15.4	mm	Surface
	Thickness:	4.0	mm	
	Weight:	1.1	gm	
	Material:	Chert		

Description: Sierra sub-type (Baumhoff and Byrne 1959) A complete specimen which exhibits symmetrical design. Workmanship is good with random pressure flaking. It appears that the artifact was broken in half when thinning was attempted.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-06	Length:	23.8	mm	Locus E
(Figure 5E)	Width:	12.6	mm	Surface
	Thickness:	3.6	mm	
	Weight:	1.0	gm	
	Material:	Chert		

Description: Sierra sub-type (Baumhoff and Byrne 1959) A portion of the base is missing from this specimen. Artifact exhibits good workmanship with diagonal parallel pressure flaking. A vein running through the material has made the artifact difficult to design.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-12	Length:	34.4	mm	Locus E
(Figure 5F)	Width:	14.1	mm	Surface
	Thickness:	3.8	mm	
	Weight:	0.9	gm	

Material: Sinter

Description: Sierra sub-type (Baumhoff and Byrne 1959) A portion of the base is broken off this specimen. Workmanship is good with very regular parallel pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-13	Length:	27.4	mm	Locus E
(Figure 5G)	Width:	12.5	mm	Surface
	Thickness:	3.8	mm	
	Weight:	0.9	gm	
	Material:	Chert		

Description: Sierra sub-type (Baumhoff and Byrne 1959) Portions of both tangs are missing from this specimen. Good workmanship with less regular parallel pressure flaking is exhibited on this artifact.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-16	Length:	18.2	mm	Locus E
(Figure 5H)	Width:	12.7	mm	Surface
	Thickness:	3.9	mm	
	Weight:	0.8	mm	
	Material:	Quartz-crystal		

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and portion of the base are broken off this artifact. Workmanship is good with random pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-17	Length:	24.7	mm	Locus E
(Figure 6A)	Width:	14.3	mm	Surface
	Thickness:	3.1	mm	
	Weight:	0.8	gm	
	Material:	Obsidian		

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and portion of the base are missing from this specimen. Artifact exhibits good workmanship with random pressure flaking. Obsidian testing results showed the obsidian coming from Bodie Hills with a band reading of 1.4+-0.1.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

8PS-28	Length:	19.2	mm	Locus E.
(Figure 6B)	Width:	12.7	mm	Surface
	Thickness:	2.9	mm	
	Weight:	0.6	gm	
	Material:	Sinter		

Description: Sierra sub-type (Baumhoff and Byrne 1959) The tip and a portion of the base are broken off this artifact. Workmanship is good with less regular parallel pressure flaking.

Comparative: Loyalton Rock Shelter (Wilson 1963: Plate X, Figure 1)
Tahoe Reach (Elston et al. 1977: Fig 18 b-f)

Desert Side-Notched (unclassified)

8PS-01	Length:	24.6	mm	Locus E
(Figure 6C)	Width:	9.8	mm	Surface
	Thickness:	3.0	mm	
	Weight:	0.6	gm	
	Material:	Chert		

Description: DSN (Baumhoff and Byrne 1959) Asymmetrical design with both tangs broken off. Workmanship is good with less regular parallel pressure flaking.

8PS-19	Length:	20.2	mm	Locus E
(Figure 6D)	Width:	10.6	mm	Surface
	Thickness:	2.5	mm	
	Weight:	0.4	gm	
	Material:	Obsidian		

Description: DSN (Baumhoff and Byrne 1959) The base is missing from this artifact. Workmanship is good with random pressure flaking. Obsidian testing results showed the obsidian coming from Bodie Hills with a band reading of 1.2+-0.1.

8PS-22	Length:	22.8	mm	Locus E
(Figure 6E)	Width:	12.8	mm	Surface
	Thickness:	2.6	mm	
	Weight:	0.6	gm	
	Material:	Sinter		

Description: DSN (Baumhoff and Byrne 1959) This artifact appears to have

broken while notching on one side was attempted. The other side is not notched. Workmanship is good with random pressure flaking.

8PS-26	Length:	21.9 mm	Locus E
(Figure 6F)	Width:	12.4 mm	Surface
	Thickness:	2.9 mm	
	Weight:	0.5 gm	
	Material:	Obsidian	

Description: DSN (Baumhoff and Byrne 1959) The base is missing on this specimen but workmanship is good and the artifact exhibits very regular parallel pressure flaking.

8PS-29	Length:	27.6 mm	Locus E
(Figure 6G)	Width:	10.0 mm	Surface
	Thickness:	2.7 mm	
	Weight:	0.5 gm	
	Material:	Chert	

Description: DSN (Baumhoff and Byrne 1959) The base is missing from this finely made chert projectile point. Artifact exhibits less regular parallel pressure flaking on both sides.

Tips and Midsections

Six projectile point tips were discovered from surface deposits of Locus E and four from surface deposits of Locus C. Analysis shows that these are probably Desert Side-notched projectile point tips. Two of the ten are made from obsidian, three are made from sinter, with the remaining made from chert. Two midsections (one made from sinter, the other made from chert) were discovered on the surface of Locus C. Again, analysis reveals that these are probably Desert Side-notched projectile point midsections. Flaking patterns reveal that these tips and midsections have similar characteristics to the Desert Side-notched projectile point type rather than the Cottonwood Triangular discussed in the next section.

Cottonwood Triangulars or Blanks

There has been much discussion about Cottonwood Triangular projectile points. Usually found in association with DSN's, some have speculated that these may be preforms for DSN's (Wirth Environmental Services 1985:129). The crude workmanship of most of the Upper Bassi Cottonwoods give credence to this notion.

10PS-04	Length:	5.9 mm	Locus C
(Figure 7A)	Width:	15.8 mm	Surface
	Thickness:	4.5 mm	
	Weight:	1.6 gm	
	Material:	Sinter	

Description: This asymmetrical specimen exhibits poor workmanship. One corner is broken off and the tip is dull. One side exhibits less regular parallel pressure flaking and the other side exhibits random pressure flaking.

Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

10PS-12	Length:	20.8 mm	Locus C
(Figure 7B)	Width:	18.8 mm	Surface
	Thickness:	5.2 mm	
	Weight:	1.8 gm	
	Material	Chert	

Description: This asymmetrical specimen exhibits crude workmanship, random pressure flaking, and the tip is broken off.

Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

10PS-15	Length:	23.8 mm	Locus C
(Figure 7C)	Width:	16.6 mm	Surface
	Thickness:	5.4 mm	
	Weight:	1.9 gm	
	Material:	Sinter	

Description: This artifact is asymmetrical and exhibits fair workmanship with random pressure flaking.
Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-03	Length:	16.2 mm	Locus E
(Figure 7D)	Width:	13.4 mm	Surface
	Thickness:	2.8 mm	
	Weight:	0.5 gm	
	Material:	Obsidian	

Description: A portion of the base and the tip are missing from this specimen. Workmanship is poor with random pressure flaking.
Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-04	Length:	25.7 mm	Locus E
(Figure 7E)	Width:	14.2 mm	Surface
	Thickness:	4.6 mm	
	Weight:	1.1 gm	
	Material:	Chert	

Description: This artifact is asymmetrical and exhibits fair workmanship with random pressure flaking.
Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-09	Length:	19.1 mm	Locus E
(Figure 7F)	Width:	14.9 mm	Surface
	Thickness:	2.9 mm	
	Weight:	0.9 gm	
	Material:	Chert	

Description: The tip is missing from this specimen, workmanship is crude with less regular parallel pressure flaking on one side and random pressure flaking on the other side.
Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-11	Length:	19.0 mm	Locus E
(Figure 7G)	Width:	12.8 mm	Surface
	Thickness:	3.1 mm	
	Weight:	0.6 gm	
	Material:	Obsidian	

Description: Artifact is missing the tip and one side has only a few pressure flakes taken off one edge. The other side has been worked with random pressure flaking.

Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-14	Length:	22.2 mm	Locus E
(Figure 7H)	Width:	13.6 mm	Surface
	Thickness:	2.9 mm	
	Weight:	0.7 gm	
	Material:	Obsidian	

Description: Specimen is missing the tip and exhibits fair workmanship with less regular parallel pressure flaking.

Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

8PS-23	Length:	24.1 mm	Locus E
(Figure 8A)	Width:	14.3 mm	Surface
	Thickness:	4.2 mm	
	Weight:	1.3 gm	
	Material:	Chert	

Description: The tip is missing from this specimen. Workmanship is good with less regular parallel pressure flaking. Red bands run through this brown chert artifact.

Comparative: Fort Mountain Rockshelter (White 1988: Plate 3, a-r)
Tahoe Reach (Elston et al. 1977: Fig 18 l, p)
Camanche Reservoir (Johnson 1967: Fig 44, a-x)

Rose Spring Contracting Stem

The Rose Springs and Eastgate point series are often treated as one "due to repeated co-occurrence and general similarities" (Wirth Environmental

Services 1985:128; Heizer and Hester 1978:160). Thomas (1981) has suggested the term "Rosegate" to include both series. It is generally believed that their appearance corresponds with the introduction of the bow and arrow with a date of between A.D. 600-700 and A.D. 1100 (Wirth Environmental Services 1985:128).

CPP-07	Length:	30.0 mm	Locus B
(Figure 8B)	Width:	15.0 mm	Surface
	Thickness:	5.0 mm	
	Weight:	1.5 gm	
	Material:	Chert	

Description: Asymmetrical design with the tip of one bark broken off. Workmanship is fair with random pressure flaking.
Comparative: Mokelumne River Project (Wirth et al. 1984: Fig. 23)
North Fork of the Cosumnes (Makansi 1991: Fig. 9, a-i)

Eastgate Expanding Stem

CPP-01	Length:	27.7 mm	Locus A
(Figure 8C)	Width:	16.7 mm	surface
	Thickness:	3.7 mm	
	Weight:	1.4 gm	
	Material:	Chert	

Description: Asymmetrical design with tip of one barb broken off. Workmanship is good with less regular parallel pressure flaking. Layer of unidentified yellowish material covers the artifact. This layer has been worked and in several spots dark red chert can be seen.
Comparative: Tahoe Reach (Elston et al. 1977: Fig. 19, d-e)
Loyalton Rock Shelter (Wilson 1963: Pl. VII, 1)

Martis Corner Notched

Originally defined by Heizer and Elsasser (1953), these basalt projectile points may be indicative of the Late Martis phase (500 B.C. - A.D. 500).

CPP-02	Length:	28.5 mm	Locus B
(Figure 8D)	Width:	17.0 mm	Surface
	Thickness:	5.1 mm	
	Weight:	2.7 gm	
	Material:	Basalt	

Description: Black basalt exhibits random pressure flaking.
Comparative: Loyalton Rock Shelter (Wilson 1963: Pl. VII, 1)
Tahoe Reach (Elston et al. 1977: Fig. 20, i-m)

CPP-05	Length:	22.7 mm	Locus B
(Figure 8E)	Width:	16.0 mm	Surface
	Thickness:	6.0 mm	
	Weight:	2.3 gm	
	Material:	Basalt	

Description: Tip is broken off this specimen. It is difficult to identify flaking techniques due to material type.
Comparative: Loyalton Rock Shelter (Wilson 1963: Pl. VII, 1)
Tahoe Reach (Elston et al. 1977: Fig. 20, i-m)

CPP-06	Length:	26.2 mm	Locus B
(Figure 8F)	Width:	19.2 mm	Surface
	Thickness:	6.5 mm	
	Weight:	3.8 gm	
	Material:	Basalt	

Description: Tip is broken off this specimen. It is difficult to identify flaking techniques due to material type.
Comparative: Loyalton Rock Shelter (Wilson 1963: Pl. VII, 1)
Tahoe Reach (Elston et al. 1977: Fig. 20, i-m)

Miscellaneous Bifaces

These bifaces were unclassified. Comparative works did not reveal similar bifaces. Noble has pointed out that bifaces are not just crude tools, but rather unfinished implements and that bifacial reduction is a structured order of steps generally revolving around keeping the piece thin (1983). This point is illustrated by the Upper Bassi specimens.

CPP-03	Length:	28.9 mm	Locus A
(Figure 8G)	Width:	20.0 mm	Surface

	Thickness:	6.3 mm	
	Weight:	2.3 gm	
	Material:	Obsidian	

Description: This biface displays a large amount of patination on its surface and exhibits random pressure flaking. Obsidian x-ray fluorescence testing reveals that the obsidian is from Bodie Hills and the obsidian hydration band measures 2.9+-0.1.
Comparative: N/A

CPP-08	Length:	20.6 mm	Locus B
(Figure 8H)	Width:	16.7 mm	Surface
	Thickness:	4.6 mm	
	Weight:	1.4 gm	
	Material:	Obsidian	

Description: This specimen exhibits random pressure flaking and fair workmanship.
Comparative: N/A

UBI-01	Length:	37.7 mm	Isolate
(Figure 9A)	Width:	23.2 mm	Surface
	Thickness:	7.2 mm	
	Weight:	6.4 gm	
	Material:	Quartzite	

Description: Workmanship is poor on this biface. It is difficult to identify flaking techniques due to material type.

CPP-04	Length:	50.1 mm	Locus A
(Figure 9B)	Width:	26.4 mm	Surface
	Thickness:	11.9 mm	
	Weight:	16.5 gm	
	Material:	Basalt	

Description: This specimen exhibits percussion technique. The size and shape of this artifact suggests that it could have been a preform for the Martis corner notched projectile points.
Comparative: Tahoe Reach (Elston et al. 1977: Fig. 14, h)

CPP-09	Length:	57.8 mm	Locus B
(Figure 9C)	Width:	36.9 mm	Surface
	Thickness:	7.2 mm	
	Weight:	18.1 gm	

Material: Basalt

Description: Workmanship is relatively crude and specimen appears to be waterwashed.

Comparative: N/A

Figure 1
Idealized Projectile Points Showing Varieties of Pressure Flaking
From Crabtree 1982

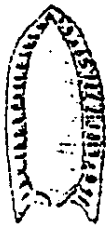
1. Very regular parallel

2. Less regular parallel

3. Diagonal parallel or oblique

4. Collateral

5. Random or non-patterned



6. Flute or channel flake scar

7. Double diagonal or chevron

Figure 2
Terminology in Describing Typology

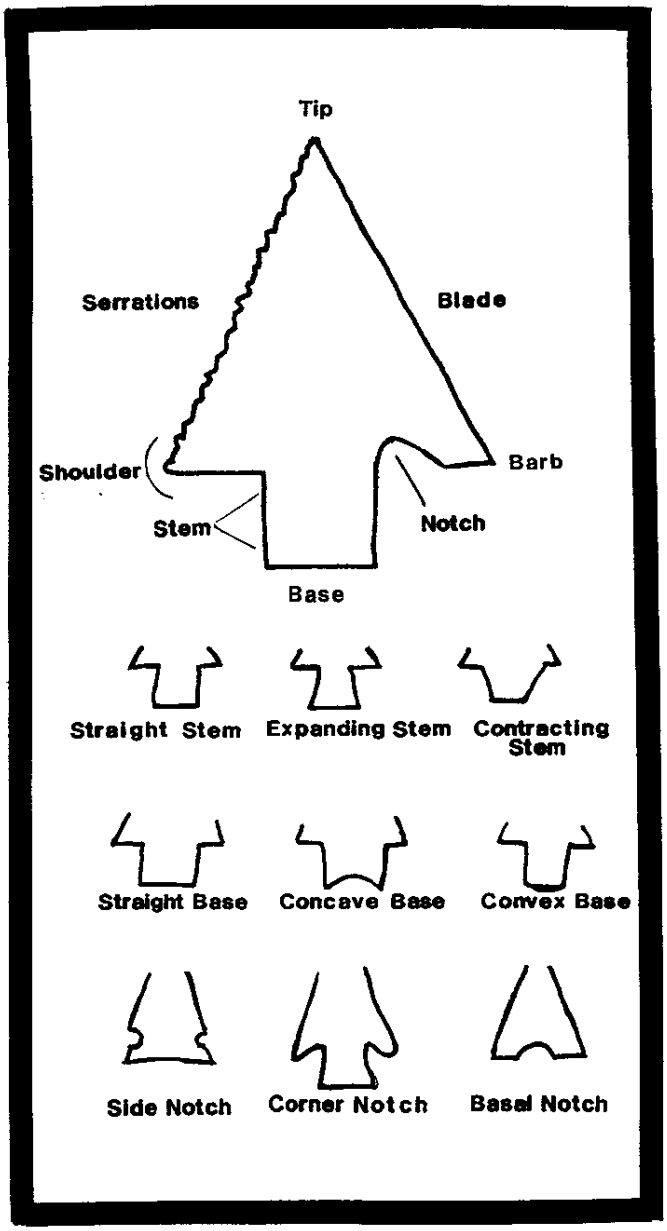


Figure 3
Desert Side-Notched Projectile Points
Scale 1:1

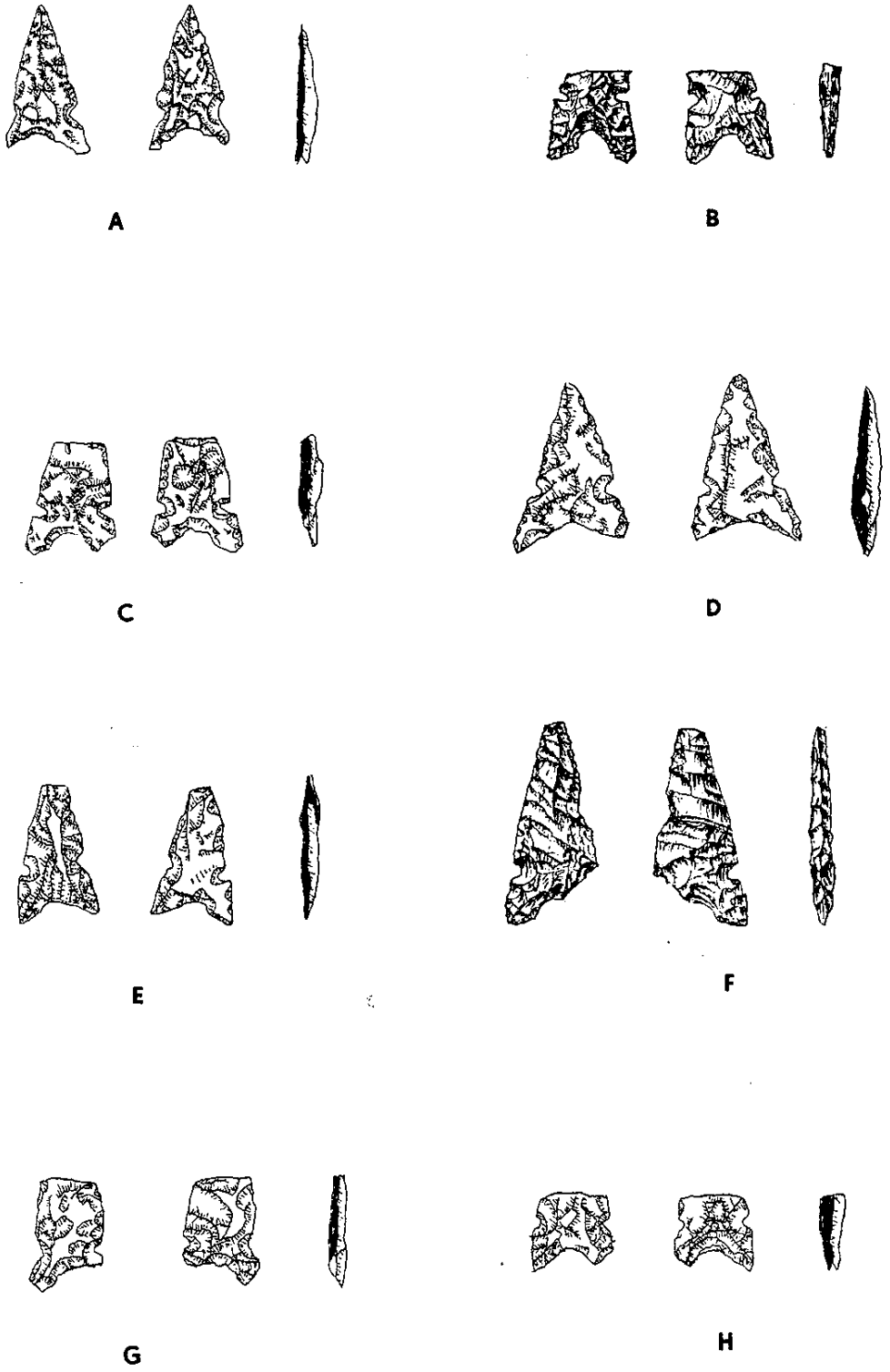


Figure 4
Desert Side-Notched Projectile Points
Scale 1:1

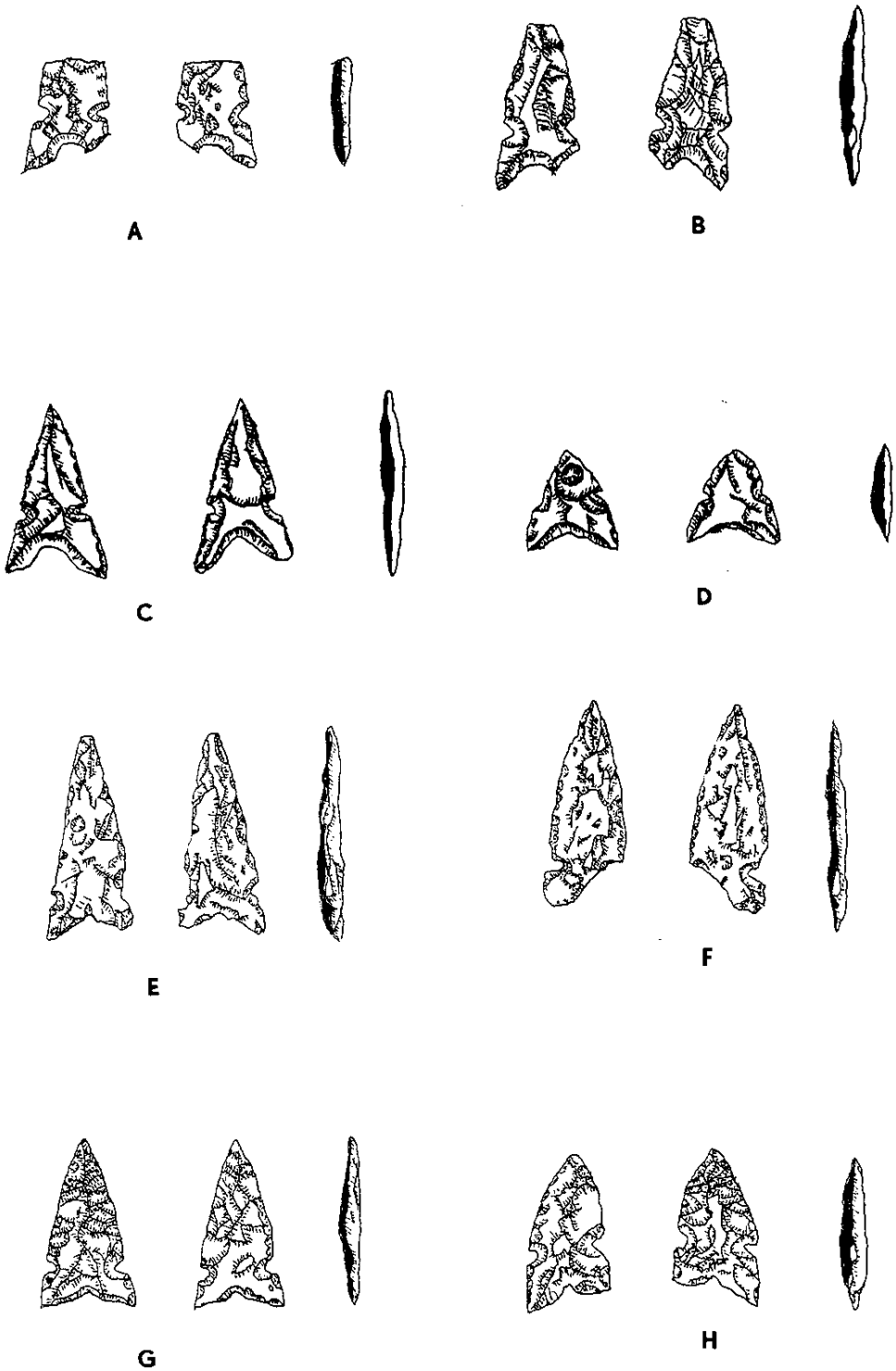


Figure 5
Desert Side-Notched Projectile Points
Scale 1:1

Figure 6
Desert Side-Notched Projectile Points
Scale 1:1

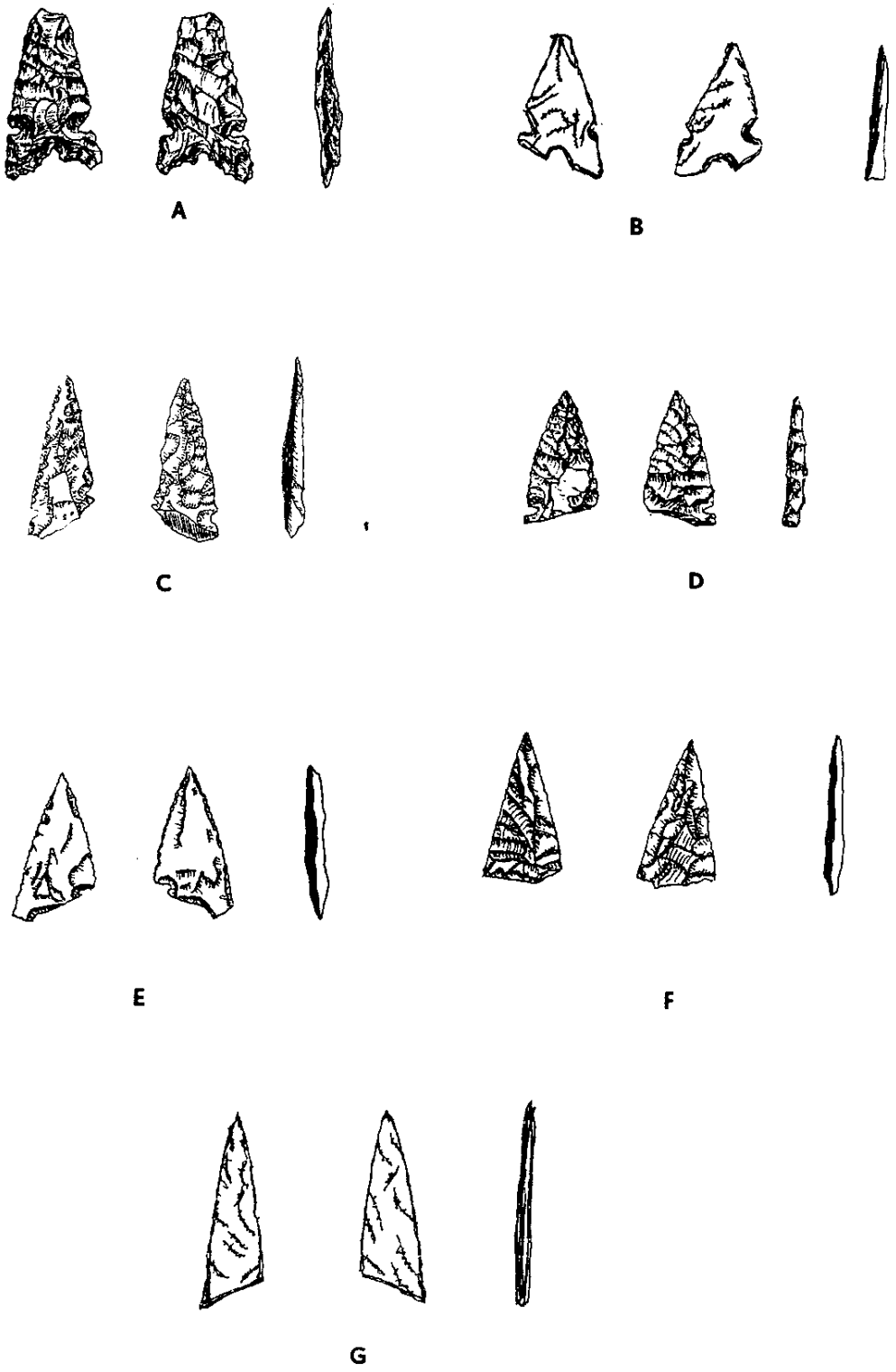
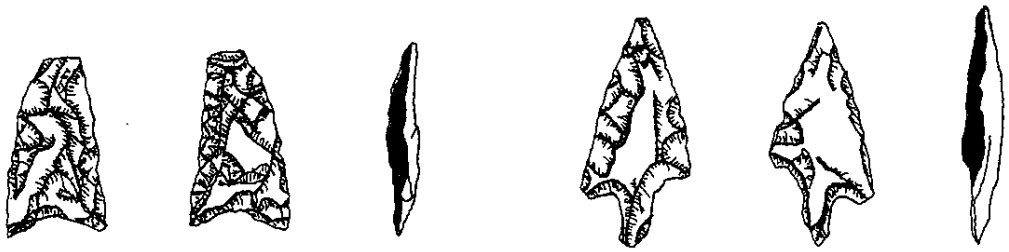


Figure 7
Cottonwood Triangulars or Blanks
Scale 1:1

Figure 8
Scale 1:1

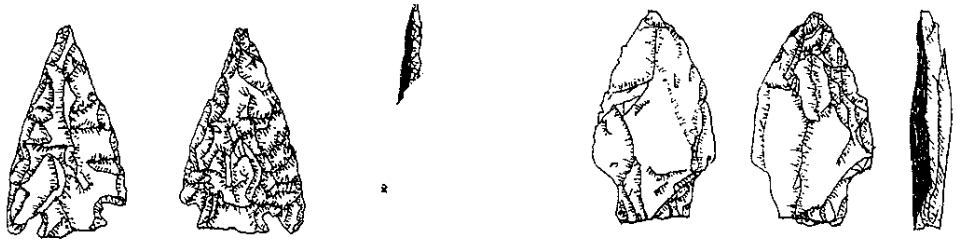
Rose Spring Contracting Stem



A B

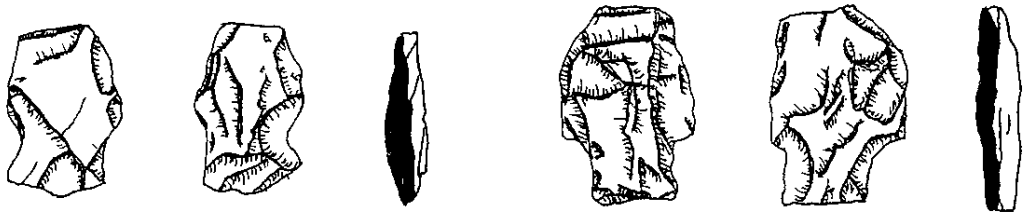
Eastgate Expanding Stem

Martis Corner Notched



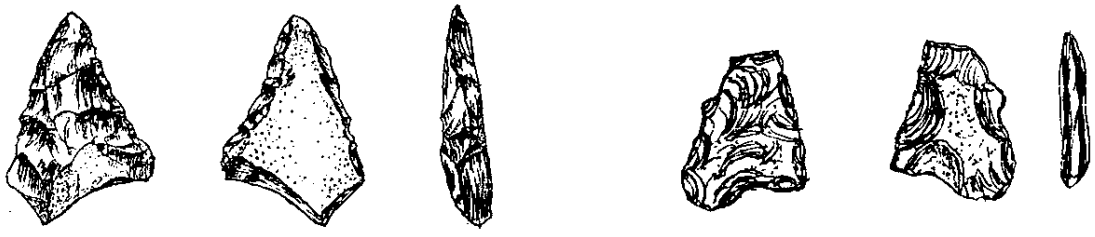
C D

Martis Corner Notched



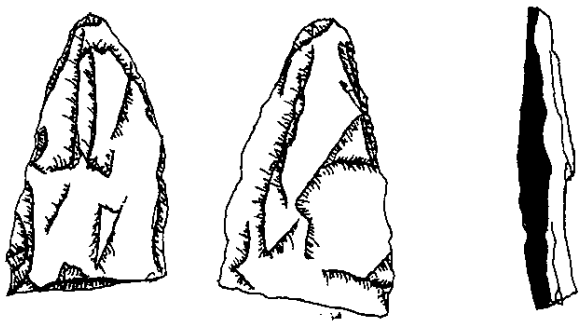
E F

Miscellaneous Bifaces

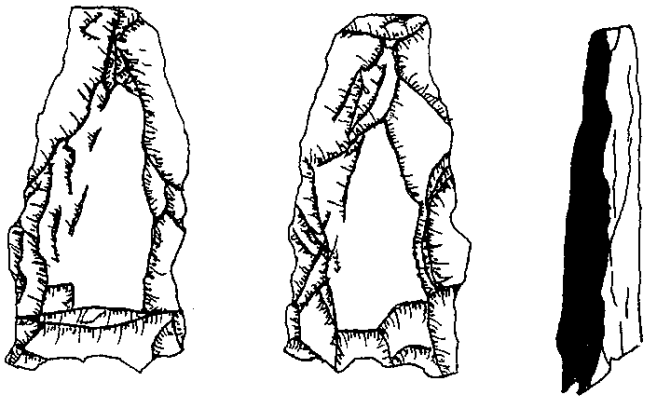


G H

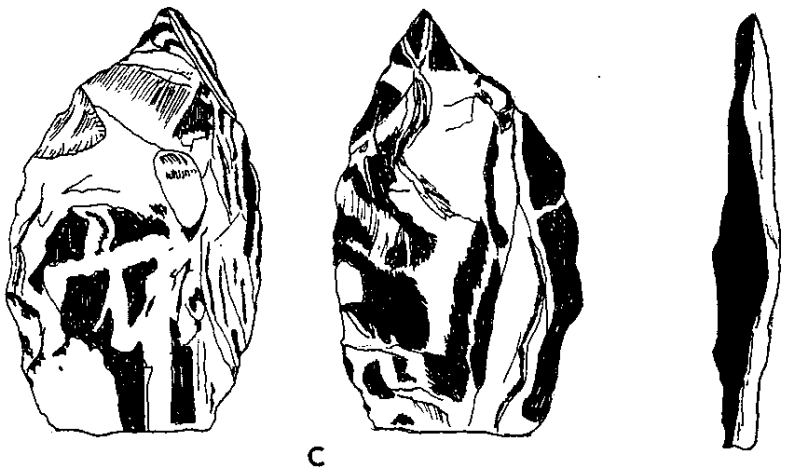
Figure 9
Miscellaneous Biface Fragments
Scale 1:1



A



B



C

Lithic Debitage

All surface debitage found at the Upper Bassi site was examined as well as the debitage gathered from the test excavation units. However, a very limited sample was taken by test excavation since data from this source would probably not be applicable in answering the formulated research design. Due to this, the analysis may not be entirely accurate. Debitage from the Upper Bassi site was analyzed to address the question: were stone tools being made on the site from raw material, cores, or flake blanks? Or were stone tools just being rejuvenated? Debitage was sorted by size, material type, flake type, presence or absence of cortex and characteristics of heat treatment. Flake categories used were: core, cortex, interior flake, biface thinning flake, linear flake, angular shatter, and edge-modified (Jackson et al. 1988). Material type was visually determined by the author. An analysis of material use respective to each locus can be found in Table 2. Various pieces of sinter, collected from Steamboat Hot Springs in Nevada, were compared with material from the Upper Bassi. Based on these samples, sinter was identified and surmised to be from Steamboat Hot Springs. However, further comparison studies should be done to determine if sinter from other sources is similar in appearance to that from Steamboat Hot Springs. Krista Deal, Pacific Ranger District Archaeologist, has also found Desert Side-notched points made from sinter at Red Mountain (CA-ELD-135) which is located approximately five miles northwest of the Upper Bassi (Deal, personal communication 1991). Bill Bloomer, Archaeologist, has noted that Locus C of the Upper Bassi is similar to the Red Mountain site in that it exhibits a single reduction mode and Desert Side-notched projectile points were being manufactured from flake blanks (Bloomer, personal

communication 1992).

There may also be problems in distinguishing other siliceous material, such as petrified wood (which is locally available in the northern Sierra) from sinter (Johnson, personal communication 1992). Archaeologist's obsession with obsidian sources in the last several decades has led to a void in the study of other lithic sources. In particular, better determinate characteristics of silicates such as petrified wood, chert, sinter, and chalcedony are needed as well as a concerted effort on the part of all archaeologists to report locations of lithic sources. This information has the potential to greatly aid in understanding trade relations between prehistoric groups.

Preliminary investigations indicate that stone tools were being manufactured on site.with some rejuvenation being done. (See Table 3 and 4 for an analysis of size grade and flake type.) Several projectile points exhibit retooling from Locus E. Potlidding which was exhibited at Locus C and Locus E is indicative of heat treatment. Most of the chert analyzed appeared to be heat treated due to pot-lids, waxy luster, and color change. Sinter also appeared to be heat treated and exhibited similar characteristics found in the chert. It is not known if the regular burning of the Upper Bassi by the Italian Swiss contributed to the characteristics of pot-lidding found on a few projectile points discovered on the surface. However, the chert and sinter found in the subsurface testing also exhibited characteristics of heat treatment. Locus A and Locus B are much sparser lithic scatters and information is difficult to derive from the flakes analyzed. Locus C and Locus E contain 90 percent of the flakes analyzed. A test excavation unit was placed in Locus E and the debitage from this unit combined with surface debitage made up 75 percent of the flakes analyzed. Because of the large

number of stone tools recovered from Locus C and Locus E, lithic debitage may not be as important to this study as it would be to investigations with very little evidence of a finished product. It is assumed that the group or groups living at Locus C and Locus E were manufacturing Desert Side-notched projectile points from the evidence of the large number of finished, broken, or failed projectile points. The Cottonwood Triangulars found at these two loci are still a puzzle to this author. It appears that these could be preforms for the manufacture of the Desert Side-notched projectile points. Debitage, as a source of potential data, is being pursued more and more by California archaeologists because in many cases this is all the data left at a particular site. In the case of the Upper Bassi, a number of stone tools remain and reveal more about the site than the debitage.

Table 2
Summary of Material Type

Material	%Locus A	%Locus B	%Locus C	%Locus E
Obsidian	30%	27%	5%	24%
Chert	30%	43%	53%	63%
Sinter			36%	7%
Chalcedony			3%	2%
Basalt	40%	30%	1%	1%
Petrified Wood			1%	
Quartz Crystal			1%	3%

Table 3
Summary of Debitage by Size Grade

Size Grade	%Locus A	%Locus B	%Locus C	%Locus E
1 inch	0%	0%	1%	.5%
3/4 inch	1%	0%	2%	.5%
1/2 inch	32%	18%	4%	1%
1/4 inch	23%	32%	15%	18%
1/8 inch	34%	48%	40%	43%
1/16 inch	10%	2%	38%	37%

Table 4
Summary of Debitage by Flake Category

Flake Type	%Locus A	%Locus B	%Locus C	%Locus E
core	0%	0%	3%	4%
cortex	0%	0%	9%	9%
interior	41%	43%	31%	35%
biface thinning	26%	32%	30%	43%
linear flake	0%	0%	1%	2%
angular shatter	31%	24%	17%	3%
edge-modified	2%	1%	9%	4%

Ground Stone

One piece of ground stone, fashioned from a granite streambed cobble, was found in Locus C (see Figure 9). It weighs 3,061 grams, measures 17.7 centimeters long, 13.3 centimeters wide, and 8.7 centimeters thick. It is battered on both ends with one end measuring 9.8 centimeters by 4.6 centimeters. The other end measures 9.3 centimeters by 7.0 centimeters and has an oval shape. Three pieces of ground stone were also found at U.S.F.S. Site #05-03-55-253. Measurements of this ground stone are not available but all are unshaped granite streambed cobbles and similar in appearance to the ground stone found in Locus C. One piece exhibits a flat end with an oval shape like the Locus C specimen.

Kathy Makansi found 97 unique flat-ended ground stone during her investigations along the North Fork of the Cosumnes River (1991). These specimens were too wide for use in the surrounding bedrock mortars. Her study found these to be "specifically shaped, but for what purpose is unclear" (Makansi 1991:133). Jerry Johnson explained the rough textured ends of these ground stone as having, "not been used extensively or perhaps not against a hard surface" (Makansi 1991:134). Though the ground stone at the Upper Bassi is similar in appearance to Makansi's examples, it does fit into the associated bedrock mortars. However, like Makansi's samples, the extreme weight of the specimen found in Locus C seems unusual. Price reports that the modern Washo use as a pestle, "a boulder of 3 to 5 lbs., with a rounded end" (1963:89). However, modern day acorn preparers, such as Julia Parker, use streambed cobbles that range in weight from four pounds to fourteen pounds. "The heavier the pestle, the quicker the flour forms" (Ortiz 1991). If the Upper Bassi is indeed the summer home of the Washo

and Deals hypothesis (that initial processing might have taken place as the acorns were being relayed) is correct, then these ground stone and associated bedrock mortars could have been related to initial acorn processing.

Bedrock Mortar Comparisons

The following table shows measurements of the various bedrock mortars found at the Upper Bassi site and the U.S. Forest Service site. BRM1, BRM2, and BRM3 are all found in the cabin area of the Upper Bassi site and are slightly deeper than the cups found at the tool manufacturing sites downstream. This may coincide with different resources being utilized and also different time periods. The cabin area is a much older prehistoric component than the tool manufacturing areas located downstream. This is surmised from the evidence found in the typologies of the projectile points found at those areas and the obsidian hydration results. Two grinding slicks are located on the granite outcrops containing the bedrock mortars in Locus C. The U.S. Forest Service site has an incipient cup as well as a deeper cup. However, all cups are relatively shallow with none being deeper than one inch. If initial acorn processing was going on at the Upper Bassi shallow mortars may have been preferred. According to Julia Parker her husband's Grandmother, Lucy Tom Parker Telles (Yosemite Miwok/Paiute), "preferred shallow mortars because they were the same as those she'd seen her elders use. Such mortars work well with the stout, river rounded rock pestles the ladies used. Deeper holes require the lean, elongated pestles used in other areas and, in Julia's experience, cause the oily black oak acorns to become packed together in the bottom of the mortar during pounding" (Ortiz 1991:35).

Deal has pointed out that:

> It should be remembered here that bedrock mortars are certainly not exclusively used to process acorns (the Washo processed berries, seeds, fish, and dried meat in mortars), nor was the processing of acorns dependent on the exclusive use of bedrock mortars, although it seems that the initial processing was usually accomplished with the use of the mortar and pestle, once this tool kit was adopted [Deal 1991:14].

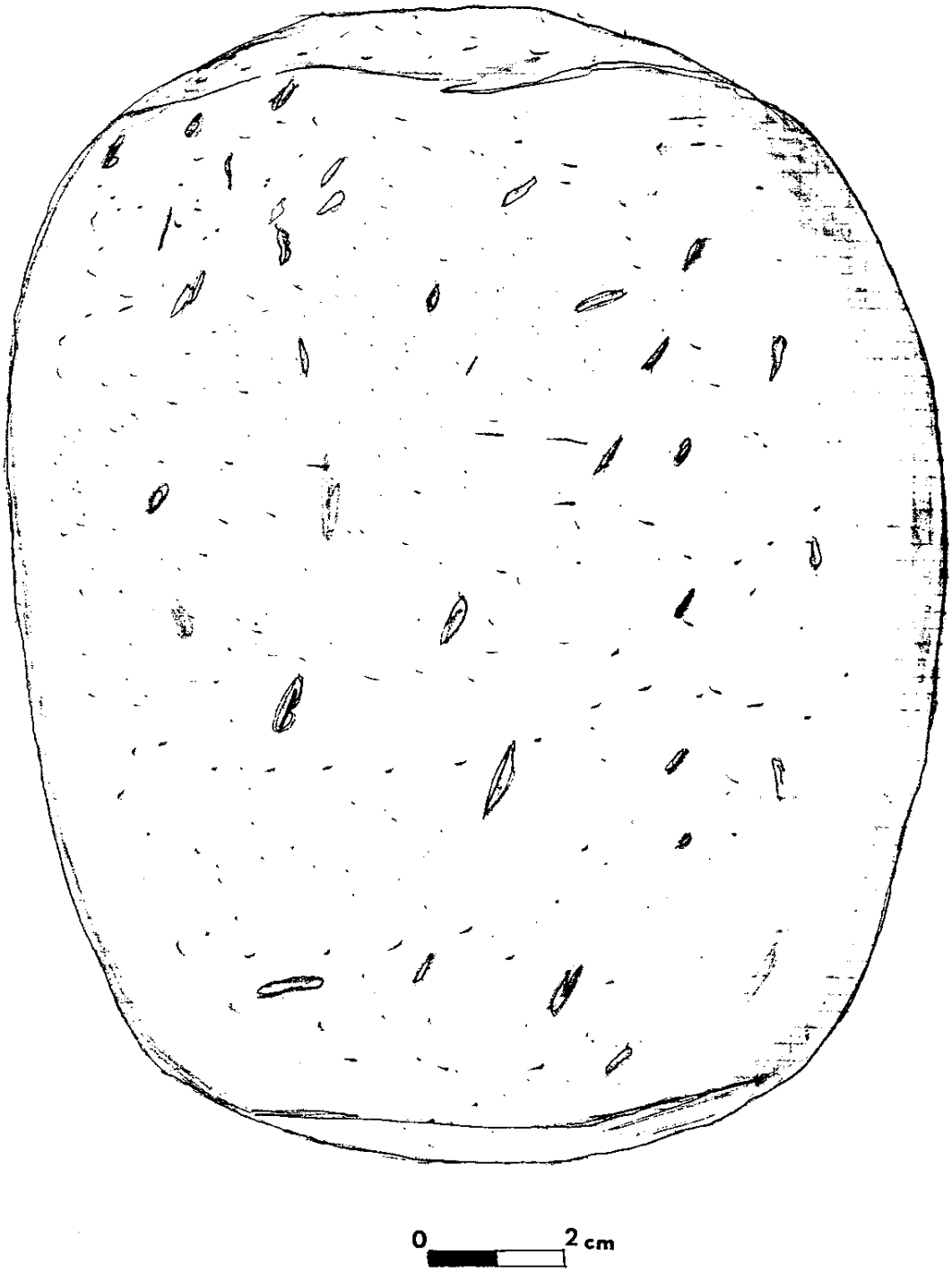
If, as Price (1962) and d'Azevedo (1986) contend, acorns were a staple component of the Washo diet and acorns were being obtained through travel to west-slope oak groves, then some initial processing may have occurred on the trip back to the east side.

Table 5
Summary of Bedrock Mortars

	N/S (cm.)	E/W (cm.)	Depth (cm.)
BRM1-one cup	12.5	13	2
BRM2-one cup	10	10	1.5
BRM3-one cup	10	10	2
BRM4-cup 1	12	12	1
cup 2	8	10	1
BRM5-cup 1	8	9	1
slick	30	15	.5-1
BRM6-slick	12	9	.5
BRM7-cup 1	8	8	.7
cup 2	8	8	.6
cup 3	8	8	.7
U.S.F.S. site 05-03-55-253			
cup 1	10	10.5	2.5
cup 2	10	10.5	.5

Figure 10

Groundstone



Description of Historic Artifacts

A functional classification of artifacts allows for a more complete picture of the kinds of activities that have occurred at a site. However, items are sometimes used in contexts unrelated to their original function. Tordoff contends that this is probably the result of one or more of the following conditions: 1) modification or reuse of an item due to lack of funds, or a lack of available goods; 2) "the proliferation of industrial output in the nineteenth century" which resulted in more variations of an item than has been identified; 3) "the convenience factor" - if it's not available something else will do just as well (Tordoff 1987:65).

Historic artifacts will be classified using a system proposed by Tordoff (1987) but adapted for this analysis. Those items that have been used in other contexts unrelated to their original function will be noted.

I. Personal Items
    A. Clothing
    B. Footwear
    C. Adornment
    D. Grooming and Health
    E. Indulgences/Recreation
        1. Tobacco
        2. Alcohol
        3. Drugs
        4. Gambling/Games
    F. Personal Accoutrements
    G. Infant Care
    H. Toys

II. Domestic Items
    A. Furnishings
        1. Furniture

2. Decorations

B. Housewares and Appliances
   1. Food Preparation and Consumption
   2. Cleaning and Laundry
   3. Sewing
   4. Illumination
   5. Heating and Cooling
   6. Waste Disposal and Sanitation
   7. Pest Control

III. Structural Items
   A. Construction Materials
   B. Hardware

IV. Activities
   A. Dairying
   B. Hunting
   C. Fishing
   D. Trapping
   E. Collecting
   F. Logging
   G. Mining and Quarrying
   H. Tools and Machinery
   I. Transportation/Animals

The historic trash dumps of the Upper Bassi Site have been looted over the years. At this point in time the evidence gathered from the trash dumps may not give a complete picture of the activities that took place at the Upper Bassi Site. Oral interviews and historic records show that the Upper Bassi was used only in the summer months (June to September). The Bassi family, and later the Swift family, would spend the summer at the Upper Bassi returning to their winter pasture in September. Because the Upper Bassi was mainly used by families, the trash dumps should reflect domestic activities. Evidence of early dairying activities should be found, as well as artifacts relating to cattle grazing and animal husbandry. The Upper Bassi has been used by fishermen and hunters and the material remains may also

reflect these activities.

The Italian Swiss were known for their viticulture expertise. According to Dan Mainwaring, his grandparents and great grandparents would take homemade wine up to the Upper Bassi in large glass bottles encased in wicker and secured in wooden boxes (see Plate 38B). These bottles would be reused each summer. In addition to looting, this may account for the lack of bottles found at the Upper Bassi.

The following accounting of the material remains found in the trash dumps should be viewed as an incomplete listing of artifacts.

I. Personal

B. Footwear

1 portion of a hobnail boot	(1) D4 - surface

E. Indulgences and Recreation

1. Tobacco

3 "Prince Albert" tins	(3) D4 - surface

2. Alcohol

16 black glass bottle fragments-	(9) D1 - surface
(5 of these are kick-up bases)	(3) D2 - surface
(5 of these are bottle necks)	(4) D3 - surface
10 amber glass bottle fragments-	(4) D1 - surface
(5 of these are ale bottle fragments)	(4) D2 - surface
(3 of these are a bitters bottle frag.)	(2) D3 - surface

3. Drugs

.....1 aqua prescription bottle fragment	(1) D1 - surface

II. Domestic

B. Housewares and Appliances

1. Food Preparation and Consumption

1 baking powder tin top	(1) D3 - surface
53 hole-in-top cans	(10) D1 - surface
	(5) D2 - surface
	(38) D3 - surface
1 amethyst milk bottle neck	(1) D3 - surface

1 clear milk bottle neck	(1) D2 - surface
1 clear milk bottle base	(1) D2 - surface
1 aqua milk bottle neck	(1) D1 - surface
15 sherds British/American ceramics	(1) D1 - surface
	(6) D2 - surface
	(8) D3 - surface
1 coffee pot	(1) D1 - surface
1 cast iron stove part	(1) D3 - surface
1 gal. crockery fragment	(1) D3 - surface
1 tin teapot w/copper bottom	(1) D3 - surface
13 coffee cans	(4) D2 - surface
	(9) D3 - surface
2 aqua canning jar fragments	(2) D2 - surface
1 clear canning jar base	(1) D3 - surface

2. Cleaning and Laundry

1 amber glass Clorox bottle neck	(1) D3 - surface
1 ten gal. washtub w/copper bottom	(1) D3 - surface

III. Structural

B. Hardware

126 machine cut nails (square)	(15) D1 - surface
	(11) D1 - 0-10 cm.
	(34) D2 - surface
	(5) D2 - 0-10 cm.
	(55) D3 - surface
	(6) D3 - 0-10 cm.

IV. Activities

A. Dairying

10 circular dairy pans	(3) D1 - surface
	(4) D2 - surface
	(3) D3 - surface
2 8" circular pieces metal w/ perforations (possibly used as separator)	(2) D3 - surface

B. Hunting

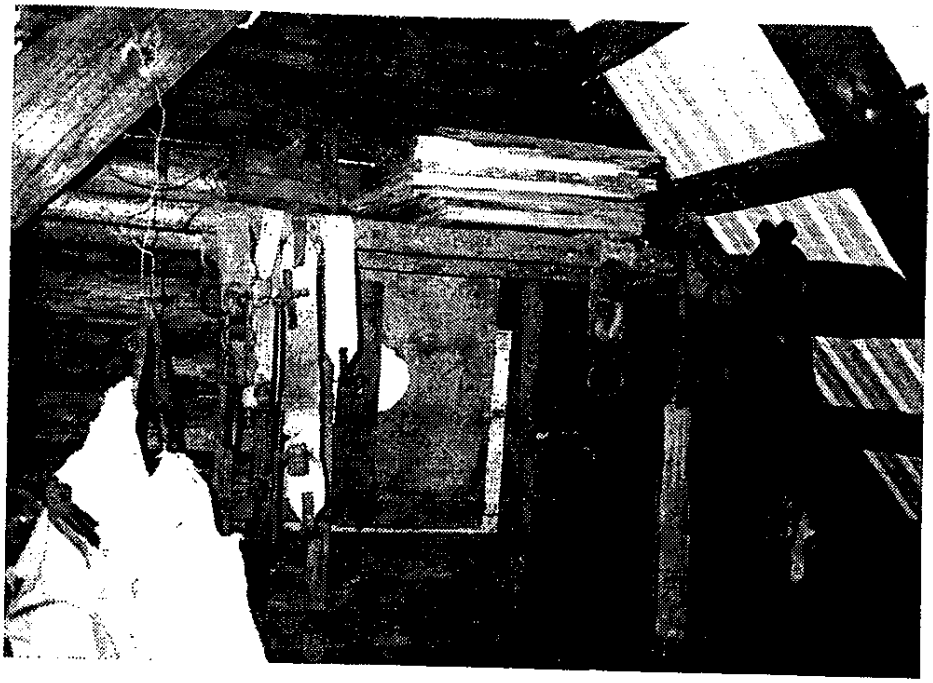
1 Winchester 38-56 cartridge (circa 1887-1936)	(1) D2 - surface

I. Transportation/Animals

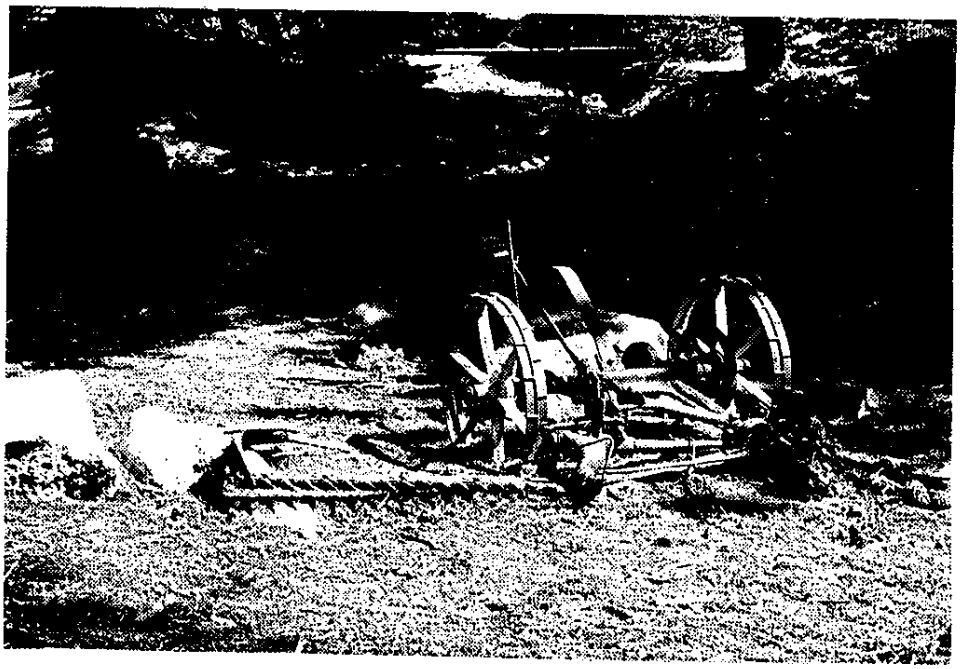
3 wagon wheel rims	(3) D2 - surface
1 mule shoe	(1) D2 - surface

The artifacts from the historic trash dumps of the Upper Bassi reflect a time period as early as the 1850's/1860's and as late as the 1890's into the twentieth century. The circular dairy pans reflect early dairying practices. The early dairies were called "pan dairies" and the cows were milked into these circular pans that were stored "by the hundreds in racks" (McGlashan 1982). These pans have the same dimensions as historic gold pans found at the El Dorado County Historical Society. Though constructed somewhat differently than historic gold pans, these dairy pans may be an example of an item used in a new context unrelated to its original function. Due to the proliferation of gold pans during the 19th century it is very likely that the local dairymen used the available source. Gold pans were probably a very cost efficient item for dairy use. A more detailed description and photos of various artifacts can be seen on the following pages.

Plate 20



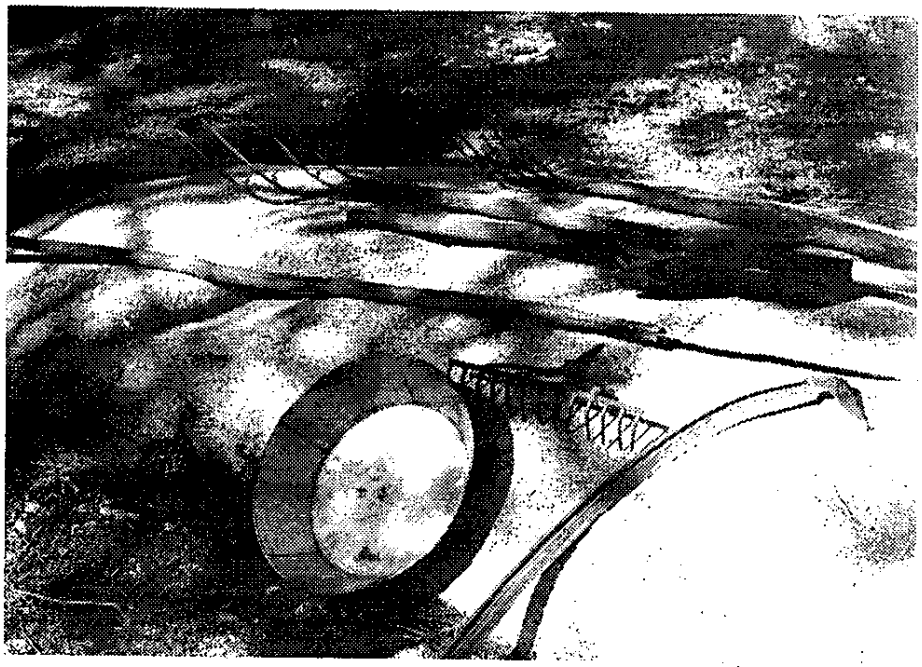
A - Harnesses in Upper Bassi cabin attic, 1990



B - Mower at Upper Bassi, 1979

Plate 21

A - Scythe ("...BLOOD.....STON, N.Y.") at Upper Bassi cabin, 1991

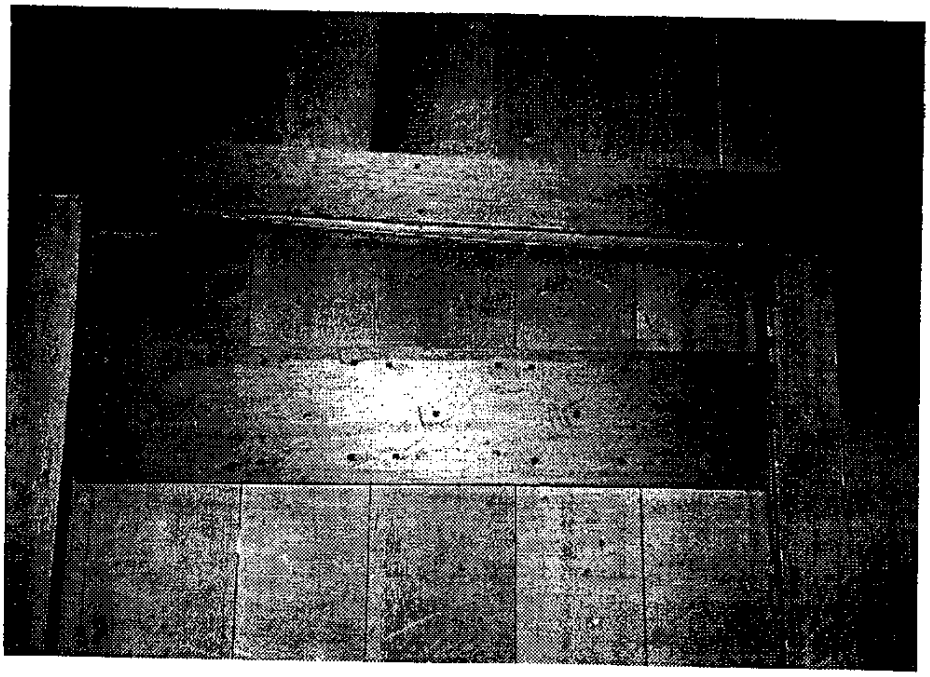


B - Farm implements at Upper Bassi cabin, 1991

Dairy pan in foreground

Plate 22

A - Historic dairy pan found at Upper Bassi site, 1991



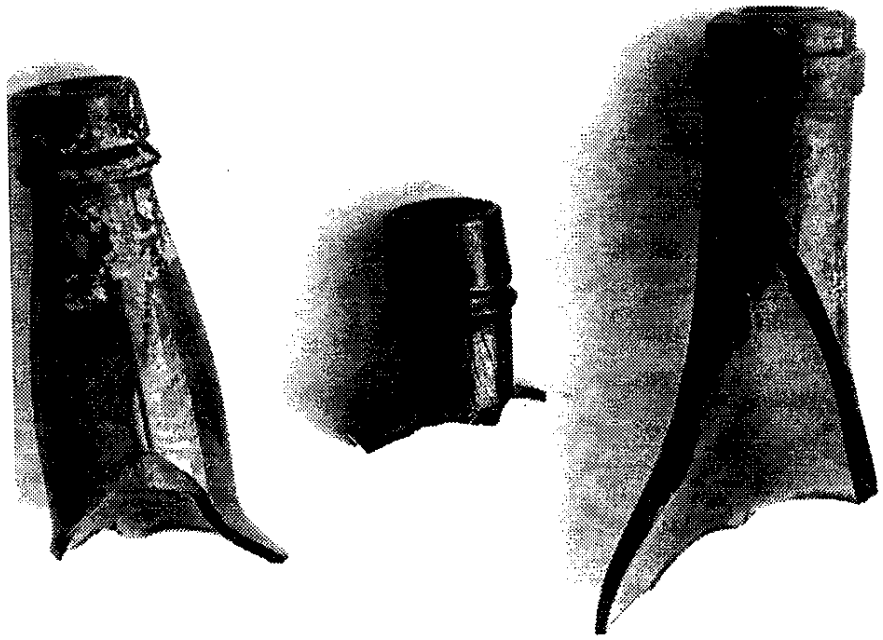
B - Door jamb inside Upper Bassi cabin, 1990

Plate 23

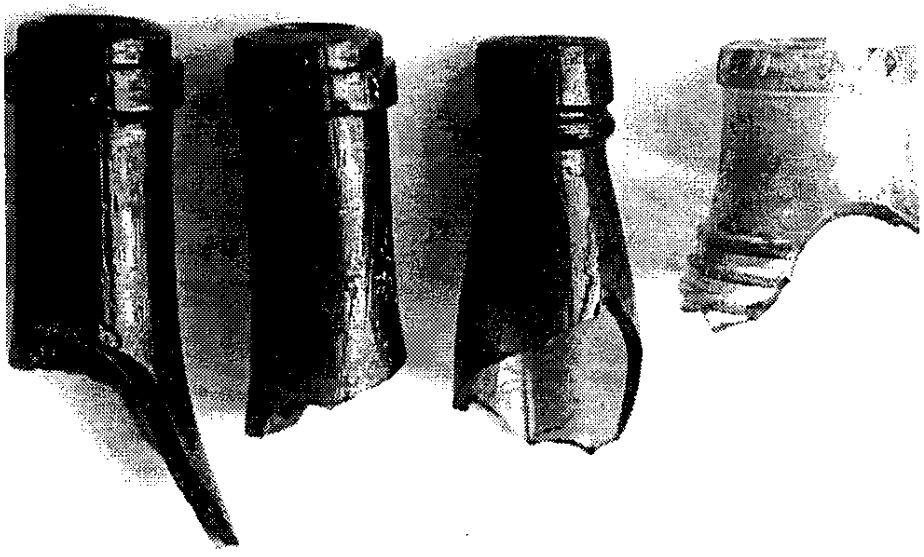
A - Historic bottle necks from the Upper Bassi

B - Historic bottle bases from the Upper Bassi

Plate 24



A - Historic bottle necks from the Upper Bassi



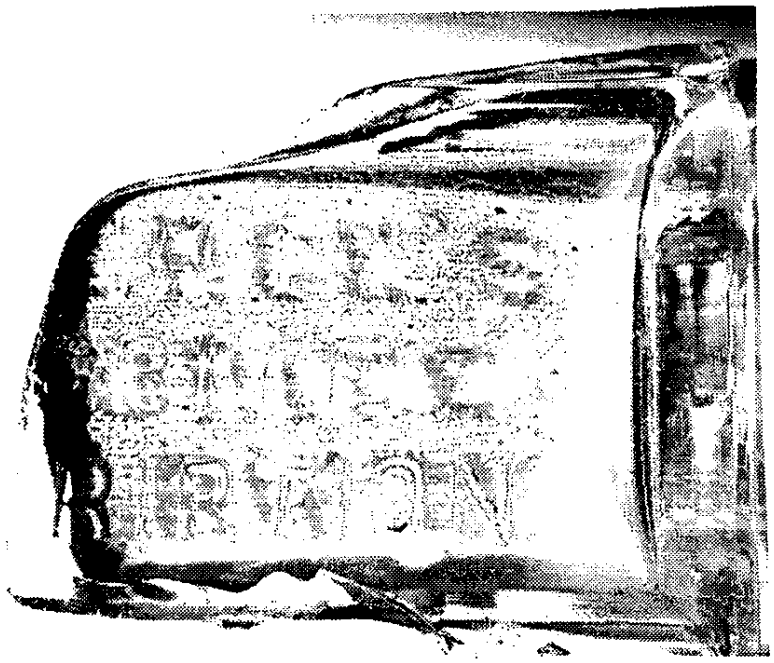
B - Historic bottle necks from the Upper Bassi

Plate 25

A - Calumet Baking Powder tin top from Upper Bassi

B - Hole-in-top cans from the Upper Bassi

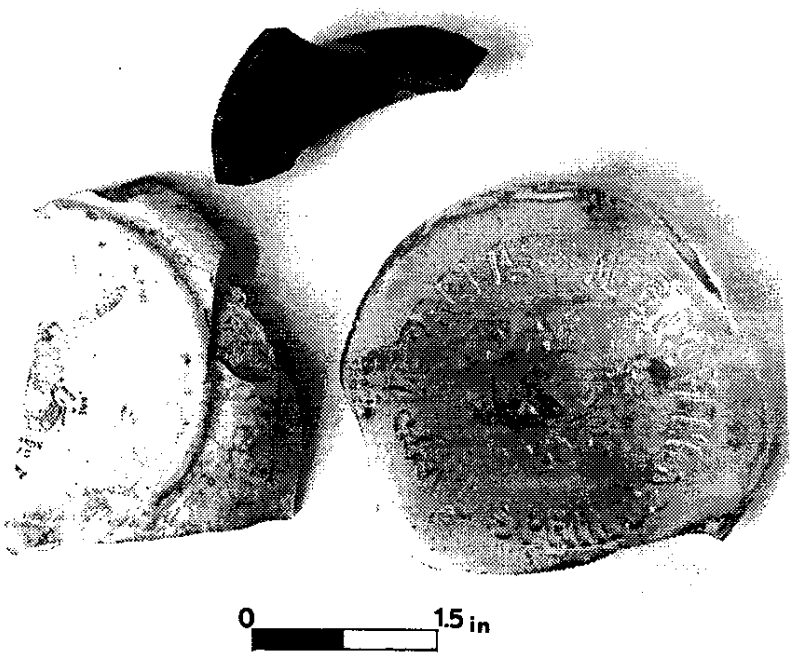
Plate 26



A - Aqua prescription bottle fragment from Upper Bassi

B - Amethyst bottle fragment from Upper Bassi

Plate 27



A - Historic stoneware, black glass, and canning jar remnants

B - Amber bitters bottle fragment

Plate 28

Mule shoe from Upper Bassi

CHAPTER SIX

INTERPRETATION OF THE DATA

Intersite Comparisons

The historic component of the Upper Bassi Site will be compared to other known Italian Swiss sites in the area. By comparing the masonry of various Italian Swiss sites, specific ethnicity can be assigned to the workmanship found in the stonework of these sites. Description and photographs will be used to examine this unique craftsmanship.

The remains of Filippini's summer dairy ranch have been recorded by the U.S. Forest Service. Terry Tenley of the U.S. Forest Service interviewed Stan Van Vleck, previous owner of the Van Vleck ranch, in 1984. Van Vleck said he first saw the site in 1930 when he was ten years old and that "old man Forni" called them "the old buildings." Van Vleck said the buildings were used to store butter and cheese made on the site. The buildings had racks built into the walls inside for letting cheese cure. He said that there were special pans or trays for curing cheese laying about in the meadow, but doesn't know where they are now (Tenley 1984). The most substantial remain is a cheese cellar measuring twenty feet by twenty feet, six feet high, and constructed of mostly basalt blocks interspersed with a few granite blocks. These blocks measure an average of three feet by three feet and are ten inches thick. (See plate 30A, 30B.) The Filippini cheese cellar, like the Bassi cellar, is located opposite a spring. Rucks has noted that storing butter and cheese was necessary until the fall when the produce was transported to

market. "This may have involved a subterranean cellar and may have included a spring house adaptation. Spring houses were used on the home ranch. They were dug into the side hill above a seep or spring which would keep produce water-cooled" (Rucks 1987:38).

The predominance of basalt used in the construction of this cellar is an example of using the most available building material. A basalt ridge is located just a few hundred feet above the cellar (see plate 29A). By contrast, in the meadow area, granite has been used as the sole building material and is found in the remains of the building foundations. The technology used in breaking apart the granite that was found in the meadow area is exhibited in plate 29B. Drill holes left in this granite outcrop measure as deep as twenty inches. The pickax that remains in the granite is made by "J.HERRINS" and has as yet not been dated. This granite was probably being prepared to be blasted. Smaller blocks were cut using a technique called "feathering". A Star drill was used to drill a series of holes in a linear arrangement. After this was accomplished, wedges were dropped into the holes and pounded with a hammer until the granite broke apart. This technique is still practiced in some quarries (Mainwaring, personal communication 1992).

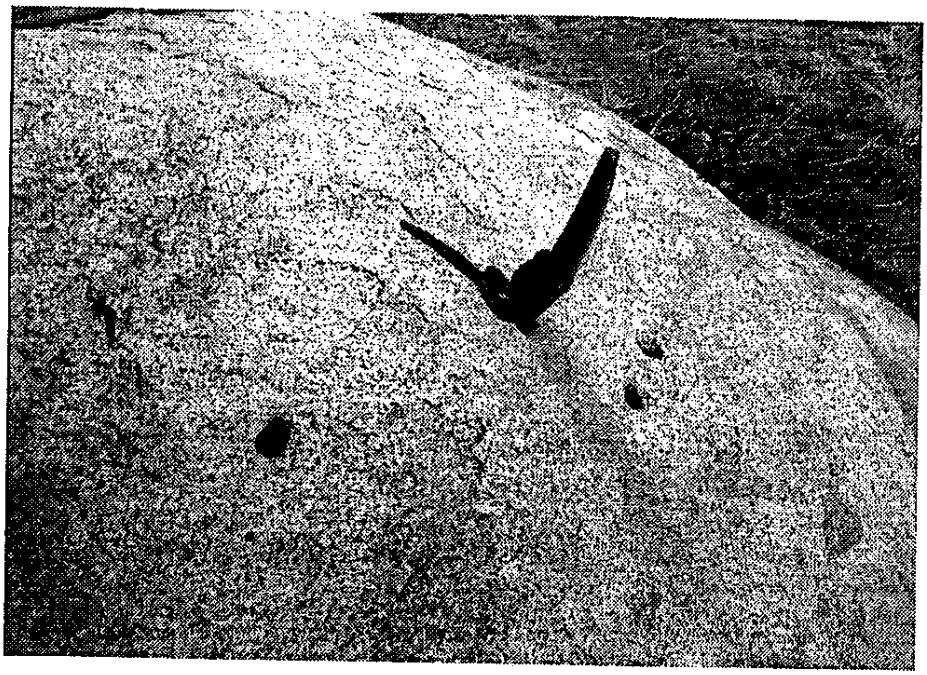
Comparisons with the Bassi site reveal similar technology was being used. However, granite blocks found in the Bassi cellar are substantially larger than the basalt blocks found in the Filippini cellar. This is best explained by the material being used. The columnar basalt found at the Filippini site is easier to work into smaller pieces than the granite. The Filippini store at Garden Valley also exhibits smaller blocks made from local slate and granite used in the construction of the walls that are over twelve feet high. Other stone types have been used but the predominant material is again the most available - slate. (See plate 35A, 35B of the Filippini store at Garden Valley.)

The Leonardi cabin also displays Italian Swiss craftsmanship in the construction of the cellar (photo unavailable). Like the Bassi cheese cellar, the Leonardi cellar is under the house. The cheese cellar at the Van Vleck Ranch was probably built by Amelio Forni and exhibits the same construction as the cheese cellars found at the Bassi and Filippini sites. However, this cellar is built into the side of a hill. (See plate 31B.)

All of the above cheese cellars described are documented Italian Swiss structures. Further work should be done in El Dorado county and other parts of California (such as Plumas county) to compare these structures and masonry techniques.

Plate 29

A - Basalt ridge near Filippini site, 1991



B - Pick-ax in granite at Filippini site, 1991

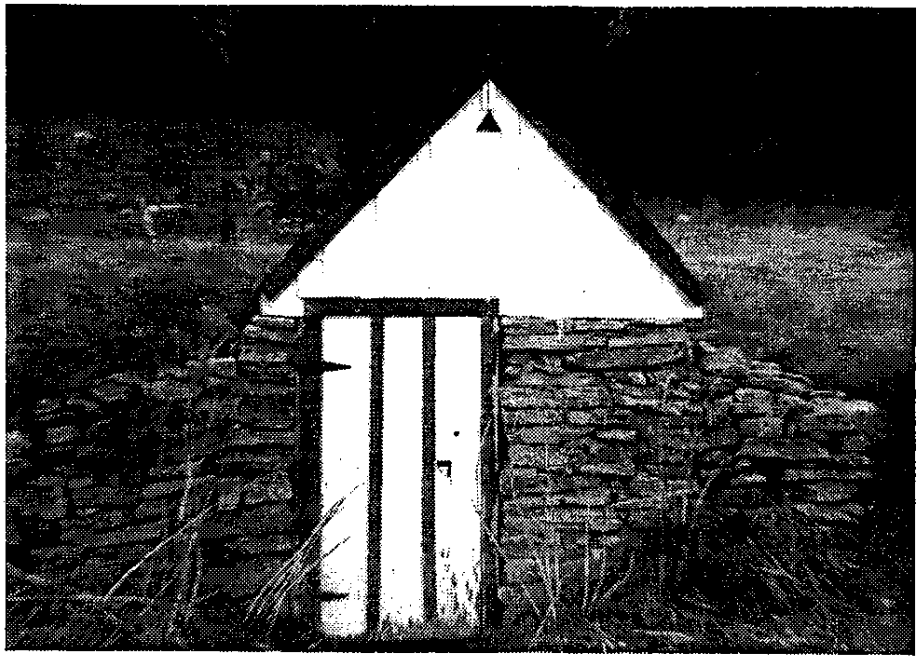
Plate 30

A - Filippini cheese cellar, 1991

B - Filippini cheese cellar, 1991

Plate 31

A - Filippini cheese cellar, 1991

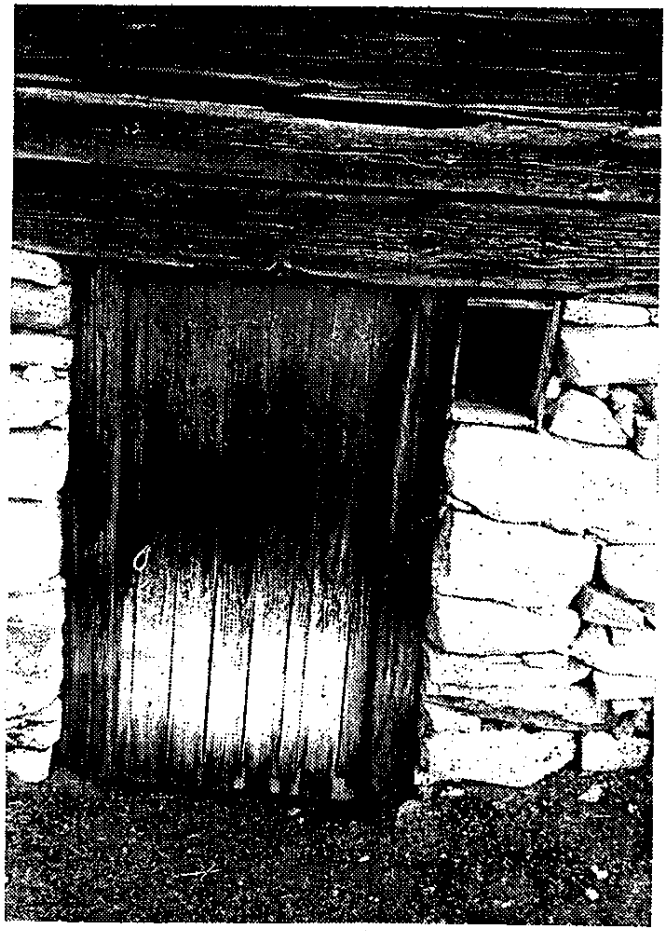


B - Forni (Van Vleck) springhouse, 1991

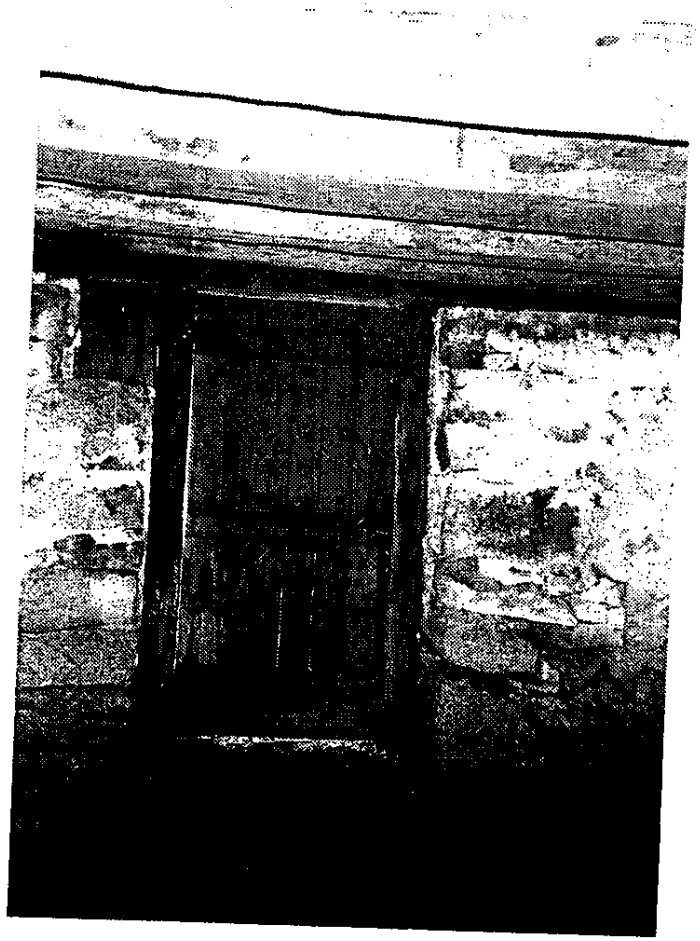
Plate 32

A - Upper Bassi cabin, 1991

B - Upper Bassi cabin cheese cellar, 1991



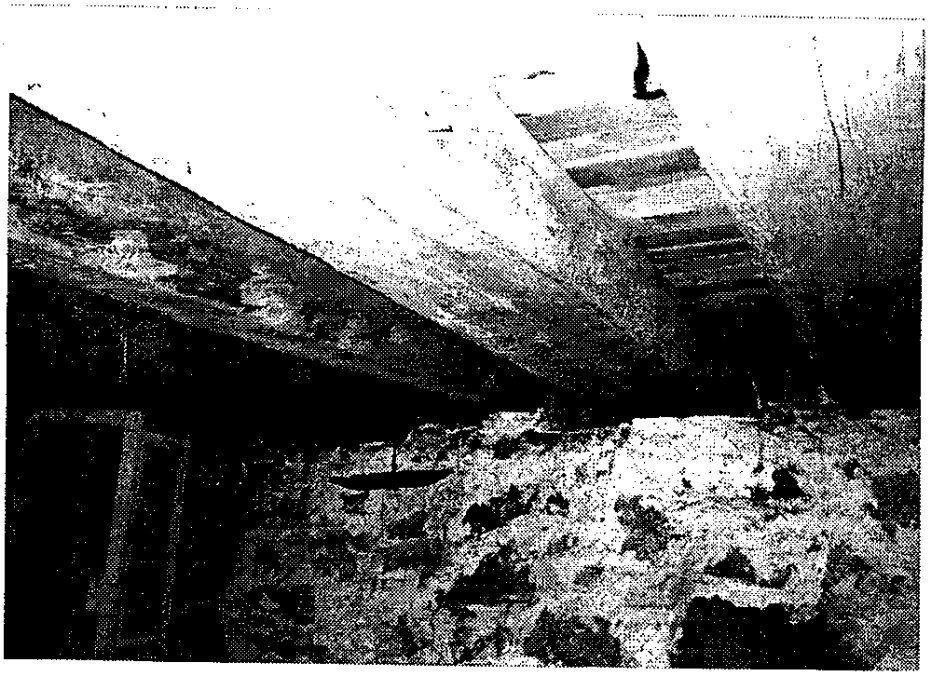
A - Upper Bassi cabin cheese cellar door (exterior), 1991



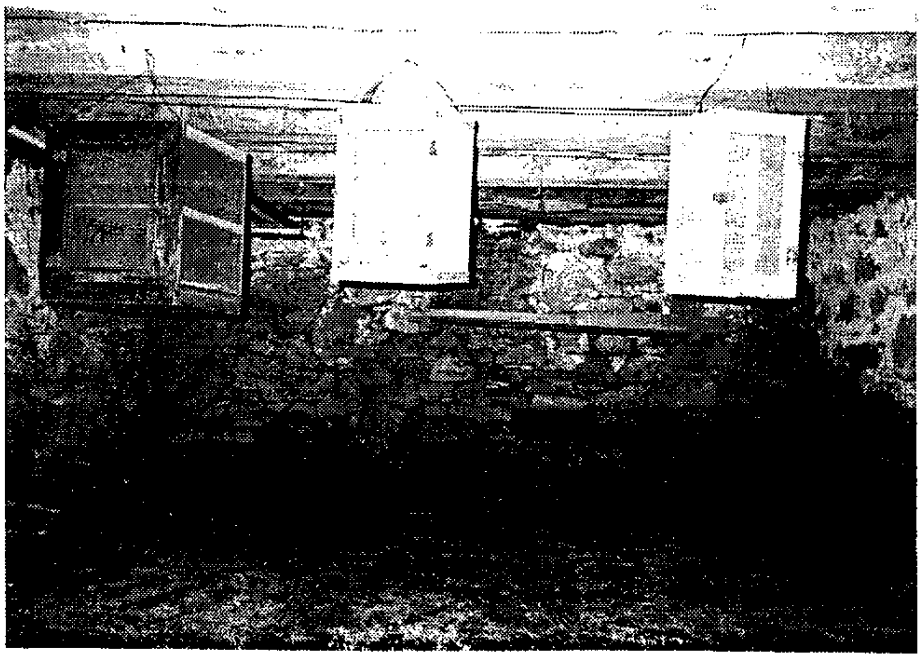
B - Upper Bassi cabin cheese cellar door (interior), 1991

Plate 33

Plate 34



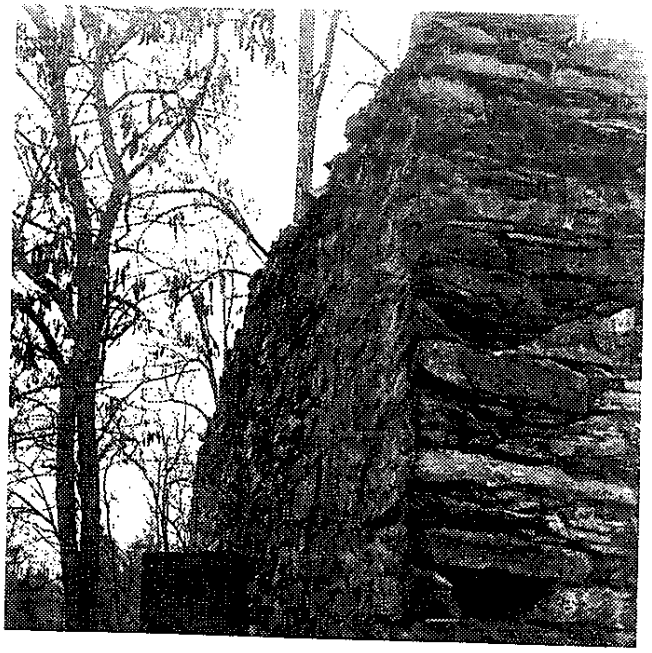
A - View of massive timbers supporting cabin in Upper Bassi cheese cellar, 1991



B - View of interior of Upper Bassi cabin cheese cellar, 1991

Plate 35

A - Filippini store at Garden Valley, 1992



B - Filippini store at Garden Valley, 1992

Discussion of Research Questions

One of the questions of this project was to determine if anything could be found in the ethnohistorical and archaeological record that was indicative of Italian Swiss culture. This would add to the knowledge of early Italian Swiss groups and help in comparison studies of these groups in California and in other parts of the United States. The study revealed several distinctive patterns found among the Italian Swiss. It appears that the masonry skills that the Italian Swiss immigrants brought with them from the Old World were used in the New World. Dairying practices were also brought from the old country and used in the new, although no Italian Swiss material remains specific to dairying were found. Several old world practices were continued among the immigrants and some were carried on by succeeding generations. Late marriages, family partnerships, and communal land ownership were among these along with utilization of the summer ranch symbolizing a sense of tradition and family unity. Although dairying was not an activity solely confined to the Italian Swiss, it was for them a feeling of tradition. Cheesemaking and buttermaking were skills wrought with tradition that had been passed down from generation to generation.

As to the question of whether or not there was contact between the Native American group that used the Upper Bassi and the Bassi family, there is no archaeological or ethnohistorical evidence. An interview done by Bev Ortiz with Rosie Walker of Plumas County revealed that Rosie's father was Italian-Swiss and her mother was Maidu. When asked what tribe she belonged to, Rosie said Italian because all the Piazzoni children were called "the little Italian kids" (Ortiz 1976). However, this appears to be an isolated case of intermarriage. There are cases of the Washo working for ranchers in

Alpine county (Downs 1963). However, evidence of contact could not be found at the Upper Bassi. The archaeological evidence revealed projectile point forms that are associated with the protohistoric period but no evidence of contact was found in the material remains. No historic artifacts or modified historic artifacts were found in the archaeological record.

It appears that the Italian Swiss immigrants of El Dorado County stayed within their cultural groups. However, they seemed to have been highly regarded by the rest of the community. They were considered hard workers and honest businessmen. Assimilation was desired and rapidly achieved by the first generation of Italian Swiss. Marcella Bassi Mainwaring explains that her grandfather, Giosue Bassi, would not allow Italian to be spoken in his household. He said that "they were Americans now and must only speak English" (Mainwaring, personal communication 1990).

If, as preliminary investigations tentatively exhibit, the ancestors of the Washo previously used the Upper Bassi during the summer as a place for hunting and gathering how would the Washo have effectively co-existed with the Bassi family? Cattle grazing would certainly have changed the ecological balance, but how would this have affected the hunter-gatherers? As pointed out by Downs, "From the point of view of the gatherer and the hunter, livestock are competitors. Cattle and horses graze in the best collecting grounds, stamping and spoiling what they do not eat. Their grazing reduces not only the plant food available for man but drives off game animals such as the deer and antelope" (Downs 1966:76). It seems unlikely that the Native American group that had previously spent summers at the Upper Bassi would have been able to successfully live off the land with cattle as their competitors. It does seem likely that they could have lived off the new resource found at the Upper Bassi -- that of the "white

man." As Downs points out, "the greatest new resource was the white man himself. Few in number, bent on success and fortune, there was more work than he could do" (1966:78). Downs goes on to say, "the traditional cycle had to be altered only slightly in order to adjust to a new resource. In addition to earning food or money the Washo found the habitation of the whites a treasure trove. The whites soon accumulated refuse piles and garbage heaps. What was waste to the newcomers was a bonanza to the Indians" (Downs 1966:78). It seems likely then that the Washo could have adapted to the Bassi way of life. However, no evidence of their co-existence is exhibited at the Upper Bassi.

In regard to the perplexing question of which group used the Upper Bassi and the Crystal Basin Region -- Washo or Nisenan? There is ethnographic evidence that the Washo did in fact cross through the Crystal Basin area. Rubicon Springs has been reported to be a yearly camping spot. Archaeological evidence at the Upper Bassi reveals that ancestors of the Washo may have inhabited the site at some point. Desert Side-notched projectile points found at Locus C and Locus E are typed as Sierra and General with Sierra the most prominent form. Elsasser claims that the Sierran DSN occurs throughout the Sierra Nevada at altitudes of 5,000 ft. and above (Elsasser 1960). However, Price claims that these were probably not made by recent Washo flint knappers (Price 1963:88-89). This fits in nicely with what was found at the Upper Bassi. The group that occupied Locus C and Locus E are most likely a late Kings Beach group just previous to historic contact. In addition, stone tool material types being used point to an East side influence. Obsidian from Bodie Hills and Truman Meadows/Queens, sinter from Steamboat Hot Springs, and chalcedony from hot springs found on the East side all give credence to this notion. However, as stated before,

more work should be done by archaeologists to clearly identify lithic sources other than obsidian.

Analysis of food processing techniques show that Locus C and Locus E have very shallow mortars and grinding surfaces were found on the bedrock in Locus C. This could be indicative of a Washo adaptation. Price claims that a survey of historic and prehistoric bedrock mortar sites indicated that recent Washo prefer a more shallow basin mortar than was previously used. Price goes on to say that a Washo woman, Bertha Holbrook, verified this saying that the California Indians used much deeper bedrock mortars (Price 1966:89). As Deal points out in her predictive model for the Pacific District:

> The mano and metate were evidently NOT used by the Nisenan, at least not ethnographically, nor were they by the Miwok to the south [Barrett and Gifford 1933:210; Beals 1933:352]. One curiosity is that in 1902, William Henry Holmes reportedly observed Nisenan and Miwok using handstones, although he is the only person to report such use [Barrett and Gifford 1933:210]. However, Barrett and Gifford [1933:210] suggest the post-Gold Rush introduction of the mano and metate into Miwok culture [Deal 1991:3].

On the other hand the Washo purportedly used both the mortar (portable and bedrock) and pestle and the mano and metate. As Deal points out, "bedrock mortars were used for acorns, pine nuts and other seeds, roots, fish eggs, berries and dried meat" (Downs 1966; Barrett 1917; Lowie 1939; Freed 1966). In addition, one of the major resources exploited by the Washo were the vast amounts of Wyethia found in the Tahoe Basin and in the surrounding higher elevations. These native sunflower seeds were supposedly processed with manos and metates (Johnson, personal communication 1992). The Northern Paiute were reported to have roasted these seeds before grinding (Fowler 1989:47). Manos were often used at the bedrock mortars as part of the acorn processing technology, where they

were used in the final grinding stages to make a fine flour (D'Azevedo 1986:475).

It is also interesting to note that these two later components (Locus C and Locus E) were not found near the older components of Locus A and Locus B. Heizer and Elsasser have explained the lack of stratified sites in their survey as based on "a tendency for people to settle in a spot which has not before been used" (Heizer and Elsasser 1953). Price explains, "their evidence is mainly that the sites are in open areas and that local supernatural beliefs indicate a fear of previously occupied spots" (Price 1963:82). This may explain why no later component was found at Locus A and Locus B. However, it does not explain the high incidence of Kings Beach components mixed with Martis deposits that most researchers have discovered.

Conclusions

As demonstrated in the preceding paragraphs, further insight into prehistory may often only be gleaned through archaeological investigation. Inadequate ethnographies and histories have made research in the area of prehistory very perplexing. Actualistic studies may be one of the ways to better understand food processing techniques and stone tool technologies. These studies taken together with studies of previous environments may help us gain some insight into the fascinating area of prehistory in California. The integration of information from all disciplines should be strived for and in doing so an understanding and respect for a holistic approach to prehistory, as well as history, may be achieved.

The importance of conducting an ethnohistoric as well as an archaeological study is demonstrated at the Upper Bassi site. Information, and the valuable perspective of the descendents of the family, is lost if

ethnohistory is not conducted. "Their perspectives and memories comprise a totally unique resource unavailable by any other means and can be considered among the most unique, threatened and fragile..." (Rucks 1987:22).

The cheese cellar and dairy pans at the Upper Bassi are representative of early Italian Swiss dairying. However, the dairy implement collection that remains with the family is something that would not be available to the archaeologist if ethnohistory had not been pursued. The huge copper cauldron for heating the milk for cheese-making, the cheese trays on which the cheese was molded in metal rings, the huge butter trough and roller, the butter molds, butter shapers, and the butter "box" churn are all glimpses into the past tradition of dairying (see plate 36A, 36B, 37A, 37B.). The light-colored hardwoods used in the construction of these implements were favoured because of their clean appearance (Blandford 1976) and, in fact, when viewing these artifacts the immaculate condition gives a sense of the care that went into the dairy enterprise. The memories of Giosue Bassi's granddaughter, relating the art of cheese making and butter making, are also not found in the material remains of the Italian Swiss site. These traditions are now part of the oral history of the Bassi family. This oral history, combined with the family's collections, the archaeological remains, and comparisons with other verified Italian Swiss sites give this study and others like it a much better understanding of the past lifeways of the Italian Swiss.

Plate 36

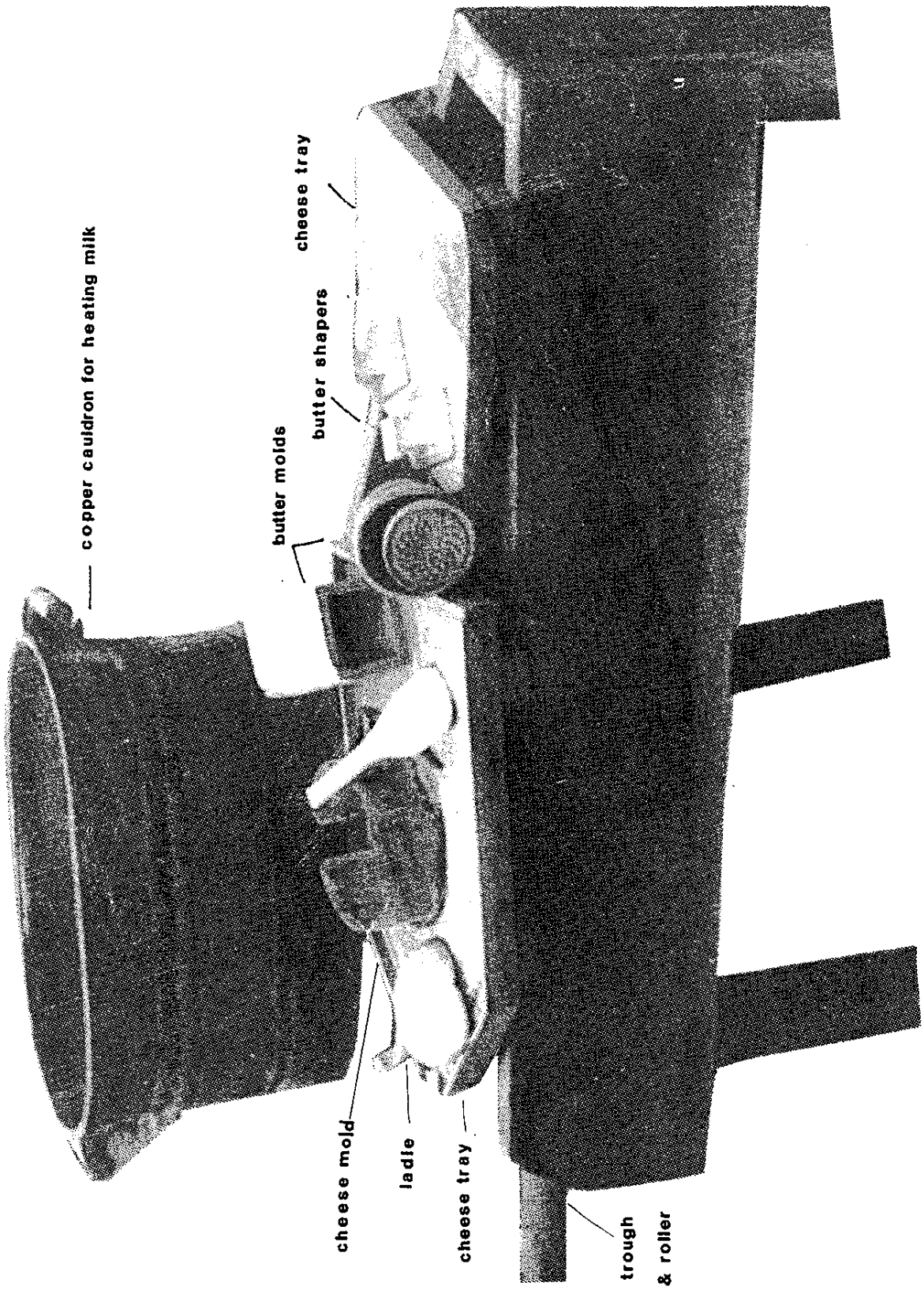
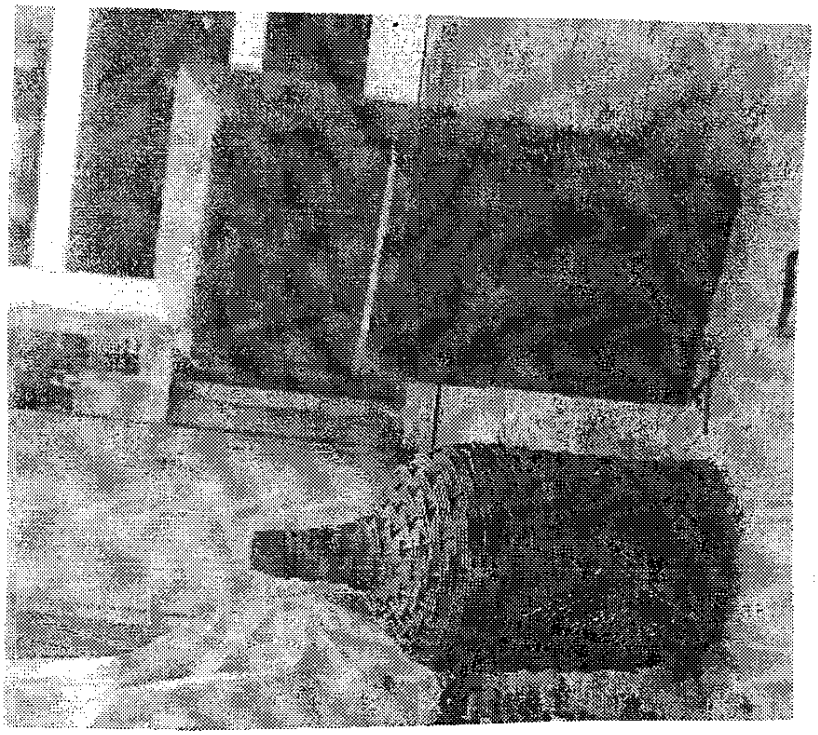
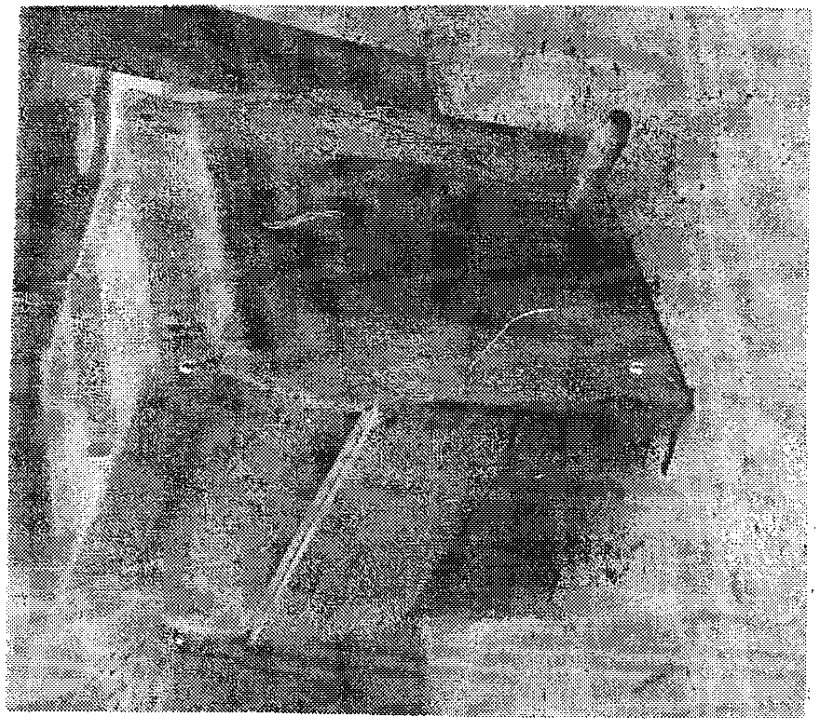

copper cauldron for heating milk
cheese tray
butter shapers
butter molds
cheese mold
ladle
cheese tray
trough
& roller

Plate 37

Plate 38

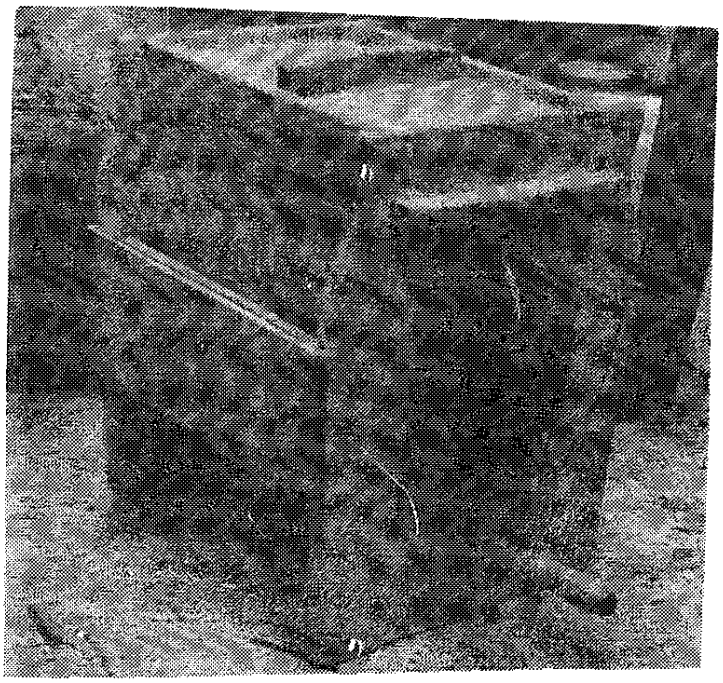


B - Wine bottle encased in wicker and box for transporting

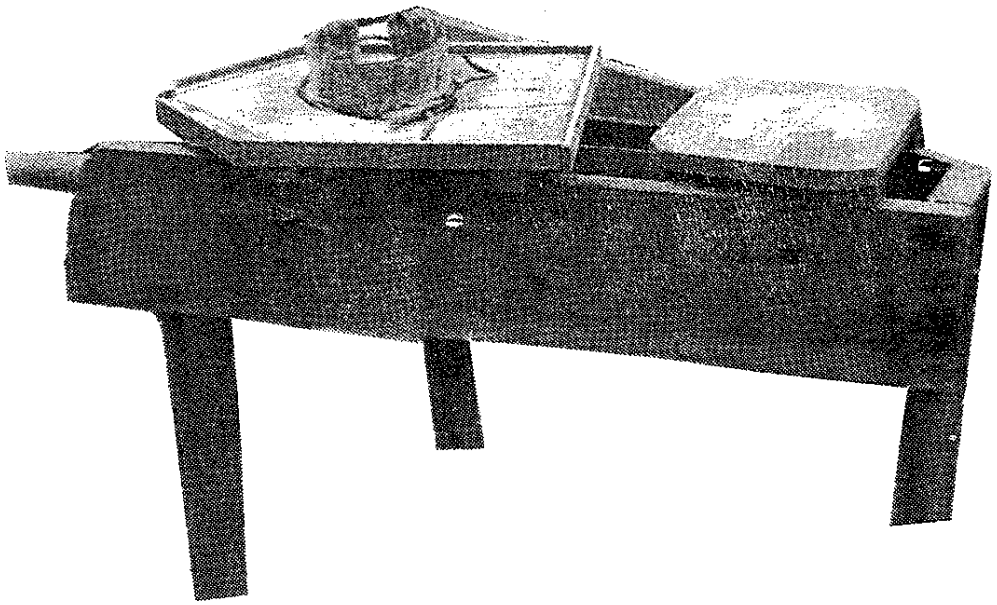


A - Butter "box" Churn

Plate 39



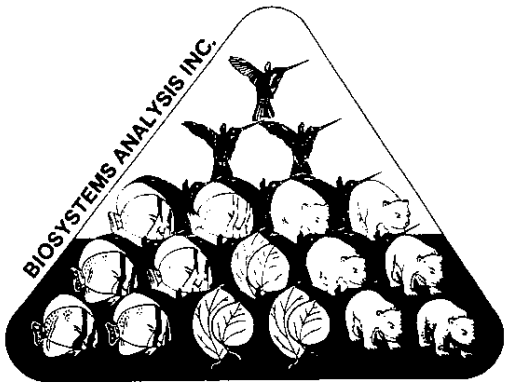
A - Butter "box" Churn



B - Dairy implements

Appendix A

Obsidian Analysis



January 17, 1992

Judy Rood
2855 Gardella Lane
Camino, CA 95709

Dear Judy:

SUBJECT: Results of Obsidian Analysis for Upper Bassi Site
(Accession Number BH-92-1)

Enclosed are the results of the obsidian hydration and source analysis of specimens from the Upper Bassi site, accompanied by a standard description of methods and explanation of the data report form.

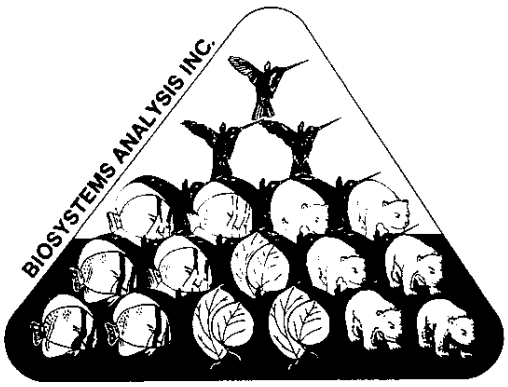
I have also enclosed copies of a modified version of an obsidian site environment and specimen data form created by the International Association for Obsidian Studies (IAOS). As members of this organization, we are attempting to establish "industry" standards and quality control, and hope that this form, or one similar to it, will see widespread use. The obsidian artifact and specimen catalogue form, if filled out and submitted with your next collection, should facilitate future analysis of the data.

Thank you for the opportunity to perform the analysis. If you have any questions or detect errors in the data sheets, do not hesitate to call me.

Sincerely,

Robert J. Jackson
Senior Archaeologist

Enclosures
gjf



REPORT OF X-RAY FLUORESCENCE ANALYSIS AND OBSIDIAN HYDRATION RIM MEASUREMENT OF ARTIFACT OBSIDIAN FROM UPPER BASSI SITE

Thomas L. Jackson
and
Robert J. Jackson

17 January 1992

Five pieces of artifact obsidian from the Upper Bassi site were submitted for determination of the original geological source of the raw material using energy dispersive X-ray fluorescence trace-element analysis. These same samples were also submitted for measurement of the hydration rind.

X-RAY FLUORESCENCE METHODS

Analyses were completed using a Spectrace 5000 energy dispersive X-ray fluorescence system. The system is equipped with a Si(Li) detector with a resolution of 155 eV FHWM for 5.9keV X-rays (at 1000 cps) in an area 30mm^2. The X-ray tube employed is a Bremsstrahlung type, with a Rh target, and 5 mil Be window.

For analysis of the elements (k-alpha) zinc (Zn), gallium (Ga), lead (Pb), thorium (Th), rubidium (Rb), strontium (Sr), yttrium (Y), zirconium (Zr), and niobium (Nb), the Rh X-ray tube is operated at 30 kV, .30 mA (pulsed), with a .127 mm Pd filter. Scanning period is 300 seconds live-time. Analytical results for the Zn-Nb series elements are reported as parts-per-million (ppm) by weight. Ppm values may vary according to specimen mass and nature of the surface of the sample. All samples are scanned as unmodified rock specimens (not powder).

X-RAY FLUORESCENCE RESULTS

Analytical results are given in the following table. Four of the five samples are characteristic of the Bodie Hills chemical group. Specimen 8pt-PP8 is characteristic of the Queen chemical group.

Trace-Element Concentration Values For Upper Bassi Site

Sample #	ZN	GA	PB	TH	RB	SR	Y	ZR	NB	Location
CS PP3	58.5	14.4	28.9	18.1	177.0	97.4	11.6	83.5	14.2	BOD
+/-	4.5	2.3	2.4	2.3	1.7	5.4	1.3	4.2	1.5	
10PT PP5	43.4	13.9	41.0	31.7	184.2	102.5	12.3	101.9	16.1	BOD
+/-	4.8	2.3	2.6	2.4	1.9	5.4	1.4	4.3	1.6	
8PT PP8	63.3	20.7	33.1	27.0	189.8	20.6	28.1	131.2	38.7	QUE
+/-	4.3	2.2	2.1	2.2	1.8	5.3	1.3	4.3	1.5	
8PT PP17	43.1	11.2	33.3	27.5	185.9	101.6	13.6	106.9	18.5	BOD
+/-	4.3	2.0	2.3	2.2	1.8	5.4	1.3	4.3	1.5	
8 PT PP19	35.4	18.6	34.5	26.7	179.1	101.2	14.5	95.2	12.6	BOD
+/-	4.7	2.1	2.3	2.3	1.9	5.4	1.3	4.3	1.6	
RGM-1	40.6	11.1	20.5	17.9	147.7	105.0	24.6	214.4	9.2	reference
+/-	3.5	1.5	1.6	1.8	1.3	5.3	1.0	4.2	1.3	standard

Abbreviations: BOD = Bodie Hills; QUE = Queen (Truman Meadows)

SUBMITTED BY: JUDY ROOD, CSU AT SACRAMENTO
PREPARED BY: BioSystems Analysis, Inc. Obsidian Hydration

JANUARY 1992
MAGNIFIED 500X - 750X

ACCESSION DATA		PROVENIENCE		DESCRIPTION	HYDRATION (microns)		COMMENTS	OBSIDIAN
ohl#	catalog #	unit	depth(cm)	name - type	band 1	band 2	(see text)	SOURCE
1	CABIN-PP 3	CABIN	SURFACE	BIFACE	2.9+-0.1	1.3+-0.1	DIS PAT	BODIE HILLS
2	10 PT - PP 5	10 PT	SURFACE	POINT - DSN	1.4+-0.1	--------	DIS	BODIE HILLS
3	8 PT - PP 19	8 PT	SURFACE	POINT - DSN	1.2+-0.1	--------	---	BODIE HILLS
4	8 PT - PP 17	8 PT	SURFACE	POINT - DSN	1.4+-0.1	--------	ISO	BODIE HILLS
5	8 PT - PP 8	8 PT	SURFACE	POINT - DSN	1.1+-0.1	--------	---	TRUMAN MDW/QUEEN

Explanation of Obsidian Hydration Catalogue Information

Accesion Data - The *"ohl#"* represents the Obsidian Hydration Laboratory Number assigned to each obsidian specimen. Correspondence or questions concerning specific specimens should refer to the ohl#. The *"catalogue #"* refers to the original reference number or designation assigned to each artifact.

Description - Artifacts submitted for obsidian hydration analysis are briefly described in this column. The first category, *"name"*, represents a general morphological description of the item. In other words, functional names are avoided with the exception of projectile points. A second category, *"type"*, allows a more specific description of the item's shape, condition, form, or prominent attribute (e.g. side-notched). Note: In order to create standard references, allowing for database searches, the description provided may differ from the client's.

Hydration Data - The *"band one"* column serves either to: 1) list the mean and standard deviation for all eight hydration measurements if the two sets of four measurements per artifact surface are not significantly different (i.e., the measurements represent a single hydration band); or alternatively 2) list the mean value and standard deviation of four measurements recorded for an artifact surface that exhibits distinctly different hydration values than the other surface, as determined by a difference-of-means t-test. The *"band two"* column serves to list the mean and standard deviation of a second hydration rind, when present. In other words, if no value is listed in the "band two" column, the specimen exhibits a single hydration rind only.

Comments - Not all obsidian hydration thin sections are "textbook" examples. An artifact's environmental history may include tumbling, abrasion, patination, mineral coating, exposure to heat, etc. Such factors can obscure or otherwise render hydration difficult to measure. In addition, the nature of the obsidian itself or the surface topography of the artifact can affect the optical clarity of the hydration rind and hence its ease of measurement. For instance, highly opaque obsidians can restrict the passage of light through a thin section, limiting the birefringent effect (differentiation between hydrated and unhydrated obsidian). The "Comments" columns are designed to supplement the hydration measurements by identifying attributes of the thin section that either presented some measurement problem or limitation in the type, number, or location of recorded measurements. Definitions for the abbreviations follow below.

Source - The geographic/geological origin of obsidian is important to determine in understanding the rate of hydration, as hydration rates vary by obsidian source. The source of obsidian specimens subjected to hydration analysis is listed when source has been determined by established, tested methods, such as x-ray fluorescence spectroscopy. Some geographic regions also contain obsidian(s) that exhibit distinctive and exclusive visual qualities that have been characterized and tested through geochemical analysis. If obsidian has been visually identified through such means, the results will be listed in the "Source" column. Speculation regarding source is not accepted for listing in the database, and therefore will not appear on the catalogue.

Abbreviations and Definitions Used in the Catalogue

BRE - (BREak). The thin section cut was made across a broken edge of the artifact. Resulting hydration measurements may reveal when the artifact was broken, relative to its time of manufacture.

BUR - (BURned). The characteristics of the magnified visual image of the obsidian hydration rind suggest that the artifact was exposed to high temperature at some time in the past. The range of burning effects are poorly understood, but burning can destroy or obscure the diffusion front of a hydration band.

DES - (DEStroyed). The artifact was destroyed in the process of thin section preparation. This may occur, for example, with extremely small items such as pressure flakes.

DFV - (Diffusion Front Vague). The diffusion front, or boundary between the hydrated and unhydrated portions of the specimen, is poorly defined. The boundary may appear as a relatively thick dark line or a gradation in color or brightness. Thus a less precise measurement is obtained than from that of a specimen exhibiting a sharply demarcated diffusion front.

DIS - (DIScontinuous). A discontinuous or interrupted hydration rind was observed on the thin section.

HV - (Highly Variable). The hydration rind exhibits variable thickness along continuous surfaces. This variability can occur with very well- defined bands as well as those with irregular or vague diffusion fronts.

IRR - (IRRegular). The surfaces of the thin section (the outer surfaces of the artifact) are uneven and measurement is difficult.

1SO - (1 Surface Only). Hydration was observed on only one surface or side of the thin section.

NOT - (NOT obsidian). Petrographic characteristics of the obsidian specimen indicate that the specimen is not obsidian, rendering hydration analysis unfeasible.

NVH - (No Visible Hydration). No hydration rind was observed. This does not mean that hydration is absent, only that hydration was not observed. Hydration rinds smaller than one micron often are not birefringent and thus cannot be seen by optical microscopy.

PAT - (PATinated). This description is usually noted when there is a problem in measuring the thickness of the hydration rind, and refers to the unmagnified surface characteristics of the artifact, possibly indicating the source of the measurement problem. Only extreme patination is normally noted.

REC - (RECut). More than one thin section was prepared from an archaeological specimen. This occurs if preparation quality on the initial specimen is suspect or obviously poor.

THR - (THRee different hydrated surfaces). While rarely observed, it is possible that an artifact can have a complex history of manufacture, use, reuse, and breakage. Such complex histories can produce specimens that exhibit more than two differently hydrated surfaces.

UNR - (UNReadable). The optical quality of the hydration rind is so poor that accurate measurement is not possible. Poor thin section preparation is not a cause.

Selected obsidian artifacts (n = 5) recovered from the Upper Bassi archaeological site were subjected to obsidian hydration analysis during the month of January 1992. The prepared specimen slides are curated at BioSystems Analysis, Inc. Sacramento, California under specimen accession number BH-92-1.

During the initial phase of obsidian hydration specimen preparation, an appropriate section of each artifact is selected for examination. The location of this section is determined by the morphology and the perceived potential of the location for yielding a maximum amount of archaeological data concerning the manufacture, use, and discard of an artifact. Two parallel cuts are made into the edge of each specimen, using a 0.12 mm-thick, diamond impregnated, lapidary saw blade, powered by a motor turning at approximately 3600 rpm. These cuts isolate a wedge which is approximately one millimeter thick. The wedge is then removed from the artifact and the freshly cut, exposed faces of the wedge are manually ground in a slurry of 600 grade, optical-quality corundum abrasive on flat plate glass. Initial grinding of the wedge is designed to reduce the thickness of the wedge by approximately one half and remove saw nicks from the faces of the artifact potentially containing an hydration layer. The obsidian wedge is then affixed to a microscope specimen slide with thermoplastic cement, ground to a final thickness of 30-50 microns, and protected with a coverslip. The end product is a thin cross-section of the outer faces of the artifact.

The prepared slide is mounted on an Olympus BHT custom petrographic microscope fitted with cross-polarizing filters and gypsum quarter wave filter. The filters maximize the visual contrast between the hydrated layer and non-hydrated glass, providing valuable confirmation that no optical aberration is being construed as hydration. The edge of the obsidian thin-section is scanned under a magnification of either 500X, 750x, or 1250X. The measurement magnification is generally selected with regard to the opacity of the obsidian and the size of the hydration rind. Narrow rinds (i.e., those under approximately 2.0 microns) are usually examined under a magnification of 750X or 1250X, which produce larger images. Hydration rinds smaller than one micron often cannot be detected by optical magnification, although hydration may be present.

When a clearly defined hydration band is identified, the section is centered in the optical field to minimize the parallax effect that might be manifested with the filar screw micrometer eyepiece. This eyepiece is used to measure the thickness of the hydration band to the nearest 0.1 micron. A minimum of eight readings are taken (four each from two sides of the artifact thin-section).

Resulting values are entered into a dBase III Plus computer program designed to calculate the mean and standard deviation for each edge of the specimen, based on four readings each. The program then performs a two-tailed, difference-of-means t-test on readings from two sides and determines the probability that the two values

(sets of micron readings) represent the same or different hydration thicknesses. The t-test should be regarded as an objective means of decision-making in reporting hydration measurement results rather than a statistically valid means of discriminating one from two hydration thicknesses, due to the relatively small number of measurements involved in the test.

OBSIDIAN HYDRATION RESULTS

Obsidian hydration data are presented in the following catalogue. Hydration thicknesses are reported to the nearest 0.1 micron. Standard deviation figures represent the variation for hydration thickness measurements recorded for each specimen. They do not reflect the resolution limitations associated with the optical microscope, generally accepted as no smaller than 0.2 microns.

Reliable, absolute, chronological dates based on obsidian hydration rind thicknesses depends upon the derivation of formulae for source-specific rates of hydration. The development of such formulae should take into account many factors, including past and present environmental and archaeological variables. It is unlikely that archaeologists or physical scientists will obtain an adequate understanding of the variables affecting hydration in the near future. Therefore, obsidian hydration analysis has not yet "come of age" as an absolute dating technique, and is more confidently and productively applied as a tool for relative dating.

Appendix B

Modified Thomas' Key (Leventhal 1977)

MODIFIED THOMAS' KEY

This phenomenon was extremely intersting because it meant that while the formal variability of late points is about the same in the project area as in the cultural Great Basin, the formal variability of Martis points is outside that of points used in the central Great Basin during the same period. In order to describe and measure that variability, Leventhal modified Thomas' (1970) Key so that it would separate the points characteristic of the project area from those typical of the Central Great Basin.

The operation of the modified key is not difficult, although several measurements and observations have to be made and recorded for each point. These measurements and the methods of making them are exactly the same as the ones originally devised by Thomas (1970). The equipment used to make the measurements and observations are a triple beam balance, a metric caliper, and a polar coordinate graph. Measurements and observations are recorded on 5 x 8 edge punched cards stamped with the list of attributes used. A simple pocket calculator is useful for calculating certain ratios.

It is easier to work with an outline drawing of a point than the object itself, so the first step of analysis is to place the point on the record card and very carefully draw its outline. If some relatively small portion of the point is missing such as the tip or a corner, this should be reconstructed or estimated on the outline drawing by a dotted line. The following attributes are recorded for each point (See also Fig. 68 and 69).

1) Length Maximum or Total (LM or LT) - the measurement from the apex of the tip to the farthest point on the base. If the tip or part of the base is missing, the length can be estimated from the reconstruction on the card. This and all other linear measurements are made to the nearest tenth of a millimeter.

2) Length Axial (LA) - the distance from the tip to the very center of the base.

3) Maximum Width (WMax or WM) - the distance across the widest part of the point.

4) Basal Width (WB) - the measurement taken at the lowest part of the base. For many side-notched points WB and WM can be equal.

5) Thickness (T) - measured where the point is thickest.

6) Weight actual - the actual weight of the object to the nearest tenth of a gram.

7) Weight estimated - if the point is not complete, the weight is estimated.

8) Neck Width (NW) - the width of the stem where it joins the body of the point, generally measured at the side or corner notches. This attribute cannot be recorded for stemless points, and is not a distinctive feature used in the Key. It was recorded so that correlations could be sought between certain points and drills as explained in a later section.

9) Distal Soulder Angle (DSA) - is that angle formed by the intersection of a line perpendicular to the long axis of the point and the line formed by the edge of the shoulder. DSA can range from 90° to 270° and is measured to nearest 5°. If the point is assymetrical, the smaller value of DSA is used. DSA reflects the degree to which a point is barbed.

10) Proximal Shoulder Angle (PSA) - is the angle formed by the intersection of a line perpendicular to the long axis of the point and the line formed by the edge of the stem. PSA can range from 0° to 270° and is measured to nearest 5°. If the point is assymetrical, the smaller value of PSA is recorded. PSA reflects the degree to which the point stem expands or contracts.

11) Notch Opening Index (NOI) - is the radius of the arch of the notch opening. NOI is obtained by finding the difference between DSA and PSA.

12) Basal Indentation Ratio (BIR) - is the ratio of the axial length to the total length, or LA/LT.

13) Length/Width Ratio (L/W) - is the ratio of the total or maximum length to the maximum width.

14) Basal Width/Maximum Width Ratio (WB/WM) - is the ratio between the maximum width of the base or stem and the maximum width of the specimen. WB/WM ranges from 0 to about 90.

15) Maximum Width Position (MaxWPos) - is the percentage of the total or maximum length of the specimen represented by the distance from the proximal (basal) end to the point of maximum width. MaxWPos is used only to distinguish between biface and points and between varieties of lanceolate and triangular points. Consequently, this attribute was not recorded for stemmed or notched specimens.

16) Material type is not a distinctive feature used in the Key but was recorded nevertheless, as basalt, obsidian, chert, sinter, schist, quartz or pertrified wood. These materials are defined in the discussion of flaked stone artifacts.

Blade Curvature Index (BC) - is an attributed used in Thomas' original Key to distinguish between projectile points and drills. Since drills are distinguished in the present study on the basis of wear patterns, this attribute was not recorded.

The use of the Key presented in Appendix 4 is simple: in the order given, one compares the recorded attributes of the specimen with the limits stated at each level in the Key. By going through the Key in this way, the specimen will eventually be classified as a biface (not a projectile point) or will fall into one of the point types.

A KEY TO GREAT BASIN AND SIERRAN PROJECTILE POINT TYPES

1 DSA and PSA not applicable one or both sides, i.e., point unshouldered.

2 Basal Width-Maximum Width Ratio exceeds .90.

3 Weight exceeds or equal to 2.5 grams.

4 Basal Indention Ratio less than .96.....HUMBOLDT BASAL NOTCHED

4' Basal Indention Ratio greater than or equal to .96; Maximum Width Position less than 25%.....MARTIS TRIANGULAR

4'' MaxWPos greater than or equal to 25%.....BIFACE

3' Weight less than 2.5 grams.

5 MaxWPos less than 25%.....COTTONWOOD TRIANGULAR

5' MaxWPos greater than or equal to 25%.....COTTONWOOD BIPOINTED

2' Basal Width-Maximum Width less than or equal to .90.

6 Weight exceeds 2.5 grams.

7 Basal Indention Ratio less than .98.....HUMBOLDT CONCAVE BASE A

7' Basal Indention Ratio greater than or equal to .98; MaxWPos less than 25%.....MARTIS LEAF-SHAPED

7'' MaxWPos greater than or equal to 25% and less than or equal to 40%.....STEAMBOAT

7''' MaxWPos greater than 40%.....MARTIS STEMMED LEAF

6' Weight less than or equal to 2.5 grams.

8 Basal Indention Ratio less than or equal to .98.....HUMBOLDT CONCAVE BASE B

8' Basal Indention Ratio greater than .98; Basal Width-Maximum Width greater than .50 COTTONWOOD LEAF SHAPED

8'' Basal Width-Maximum Width Ratio less than or equal to .50 and MaxWPos greater than 25%.....RESHARPENED STEAMBOAT

1' DSA and PSA measurable on both sides, i.e., point shouldered.

9 Notch Opening Index greater than 60°, Basal Indention Ratio less than .97; Weight greater than 2.0 grams.....PINTO SERIES

9' Other.

10 PSA greater than or equal to 120; Basal Width-Maximum

11 Weight less than 2.0 grams; Basal Indention Ratio less than .98.....DESERT SIDE-NOTCHED

12 Concave-V shaped base.....GENERAL SUBTYPE

12' Basally Notched.....SIERRAN SUBTYPE

11' Basal Indention Ratio greater than or equal to .98...DAPHNE CREEK SIDE-NOTCHED, STRAIGHT BASE

11''Weight greater than 2.0 grams.

13 Notch Opening Index less than 20°; Basal Indention Ratio less than .99.....NORTHERN SIDE-NOTCHED

13' Other.

14 Notch Opening Index greater than 20°; Basal Indention Ratio greater than or equal to .98.....ELKO SIDE-NOTCHED

14' Basal Indention Ratio less than .98 and greater than .93.....MARTIS SIDE-NOTCHED

10' PSA less than 130° or Basal Width-Maximum Width Ratio less than .90.

15 PSA less than or equal to 100°.

16 Weight greater than 3.0 grams.

17 Basal Indention Ratio less than or equal to .89.....BARE CREEK EARED

17' Basal Indention Ratio greater than .89; Basal Width-Maximum Width Ratio less than or equal to .35.....ELKO CONTRACTING STEM

17'' Basal Width-Maximum Width Ratio greater than .35.....MARTIS CONTRACTING STEM

17''' Other.

16' Weight less than or equal to 3.0 grams.

18 Basal Indention Ratio less than .90.

19 DSA less than or equal to 160°.....GUNTHER BARBED

18' Basal Indention Ratio greater than .90.

20 Basal Indention Ratio less than .96....EASTGATE SPLIT STEM

20' Basal Indention Ratio greater than or equal to .96.

21 DSA less than or equal to 140°.....EASTGATE EXPANDING STEM

21' DSA greater than 140°.....ROSE SPRING CONTRACTING STEM

15' PSA greater than 100°.

22 DSA greater than 195°.

23 Weight less than or equal to 3.0 grams.....ROSE SPRING SIDE-NOTCHED

23' Weight greater than 3.0 grams.....MARTIS CORNER NOTCHED

22' DSA less than or equal to 195°.

24 Weight less than or equal to 3.0 grams.....ROSE SPRING CORNER NOTCHED AND SURPRISE VALLEY SPLIT STEM

25 Weight greater than 3.0 grams.

26 Basal Indention Ratio less than or equal to .93.ELKO EARED

26' Basal Indention Ratio greater than .93.

27 DSA less than or equal to 195°.....ELKO CORNER NOTCHED

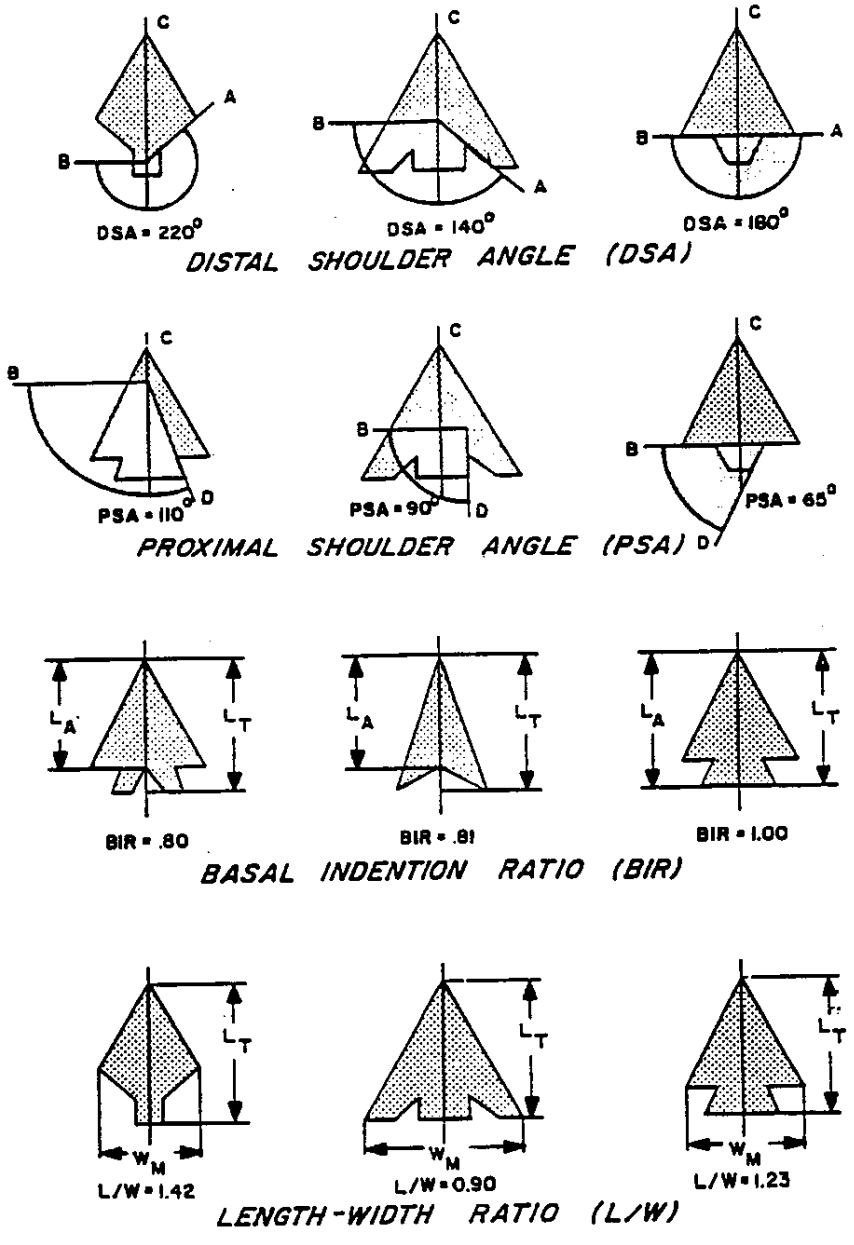


FIGURE 68. Projectile Point Measurements for use with the modified Thomas point key (after Thomas 1970).

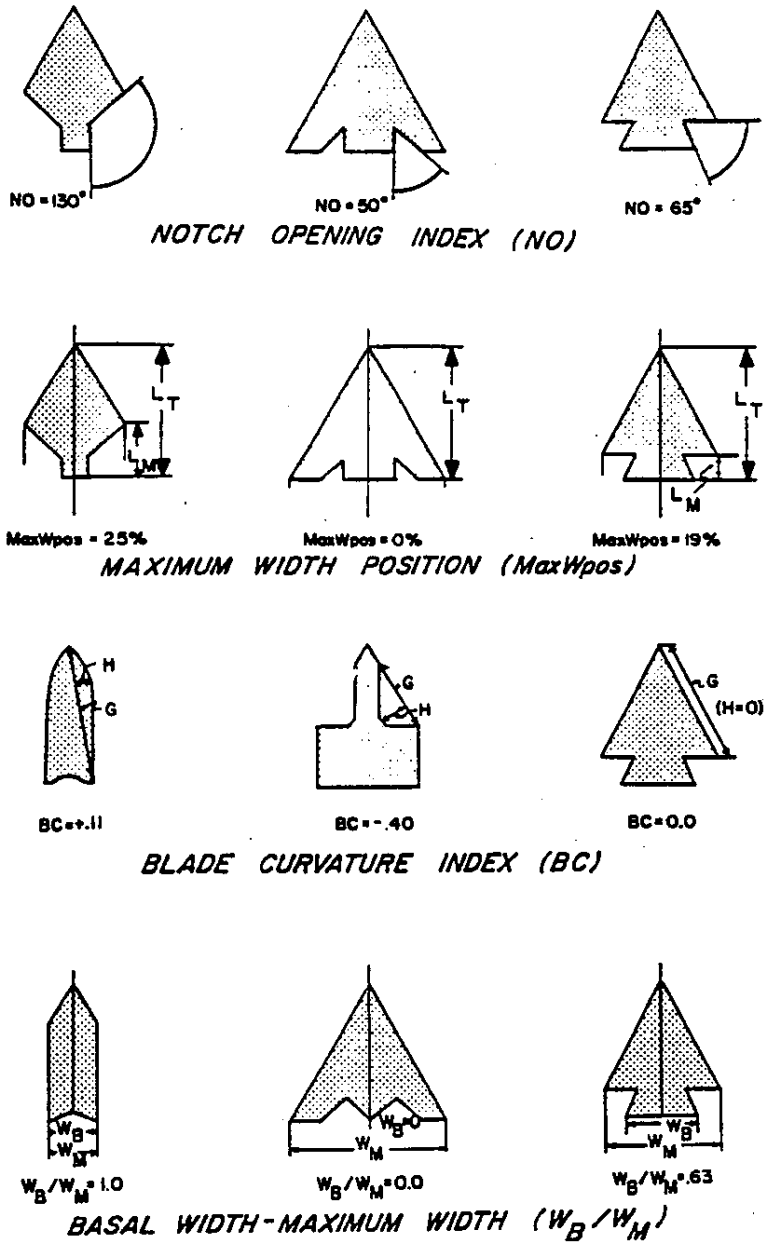


FIGURE 69. Projectile Point Measurements for use with the modified Thomas point key (after Thomas 1970).

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