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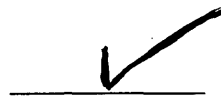
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ROCK BAKE OVENS: MATERIAL CULTURE  
USED TO PRESERVE SOCIAL HERITAGE

by

William Stacy Culpepper

M. A. The University of Montana, 1998

presented in partial fulfillment of the requirements

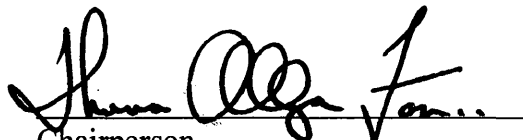
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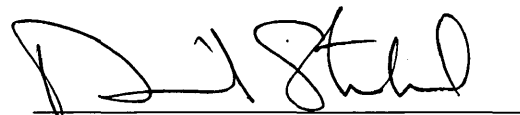
Master of Arts

The University of Montana

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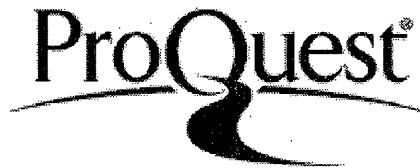


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14

Rock ovens in America West are highly recognized and studied features. Aside from legal compliance, the reason for their increased attention is the aspiration to understand those who toiled in mining, railroading, and other industries in the United States. Still, the ovens' significance remains somewhat shrouded. Folklore refers to them as Chinese ovens, coolie huts, or doghouses; however, these names are gradually fading. Some scholars and private contractors have convincingly argued that Italians built many of them. They offer these hypotheses regarding their function(s): baking bread, maintaining ancestral ties with their homelands and articulating differences between strangers. This paper evaluates several ovens throughout the western United States. It shows how this piece of material culture; evaluated by its architectural style, location, and function, aides in understanding the assimilation of cultures of late nineteenth-century European immigrants. Finally, it shows that the construction designs of ovens differ among immigrants of various nationalities and in the regions that they inhabited.

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## CHAPTER 1

### INTRODUCTION

Italians, French, Greeks and Spaniards, along with other smaller Southern and Eastern European nationalities, used rock ovens in their native countries. Evidence, both written and photographic, of various styles of rock ovens in numerous European countries exist (Kniffen 1960; Rossillon 1984; Wegars 1991, citing Scheuermeier 1956; White 1997). In the United States, ovens were found as far south as Louisiana, Florida and Mexico, westward to California and Washington, distributed in the northeast around Pennsylvania, and into Quebec, Canada. The possible ethnic identities of builders in these areas vary as much as the geographic locations where they are found. In Florida and Mexico, they may be attributed to the Spanish and the French in the mid-sixteenth century colonialization period (Kniffen 1960). In Louisiana, descendants of French colonists, a few Italians, and Hungarian immigrants built them for centuries. In California, Washington, Idaho, Montana, Nevada, and Colorado, their architects were, for the most part, Italians, Greeks, and possibly Turk or other Eastern European immigrants (Costello 1981; Kniffen 1960; Rossillon 1984; Wegars 1991; White 1997).

In California and Nevada, exhausted mining claims are often the sites where rock ovens are found. These mining claims have no uniform historical ownership with common ethnicity. In fact, the same claim often passes through many hands of ownership such as: Anglo-American, Chinese, Italians, etc. Past debate centered around whether the ovens found in certain California mining claims were built by the early inhabitants, some of which were Chinese, or by later owners, namely the Italians (Wegars 1991:45, citing Costello 1981:26; and Greenwood and Shoup 1983:229-232).

The Chinese began mining in California in the 1840s, however, Costello used oral histories and census schedules to support her findings of Italian origins for ovens in those mining camps where such records existed (Costello 1981, 1998). Moreover, recent survey work conducted on mining claims in Nevada, documented as being owned by a group of Italians, have located several preserved rock ovens (Reno 1994).

In Washington, Colorado, Nevada, Idaho, and Montana, rock ovens have been found along major railroad grades, more specifically, railroad construction camp sites. These railways include the Great Northern, Northern Pacific, Spokane International, Denver and Rio Grande, and Denver South Park and Pacific.

In Val Verde County, Texas, Briggs (1974) found that after the first and second transcontinental railroads were completed, laborers hired-on with newer railroads that were just beginning, becoming migrant workers, so to speak. Briggs found that of the workers on the Southern Pacific, the Chinese and Irish participated in this transient pattern more often than the Germans or English. When these and other ethnic groups worked together on railroads, they borrowed certain material cultural items from one another and adapted them for different purposes. However, an obvious language barrier

arrested this diffusion between the Chinese and European immigrants, where it did not do so with the Irish, English, and to a lesser extent, Italians and Greeks.

### THE PADRONE SYSTEM

Toward the end of the nineteenth century, the United States made efforts to encourage and even assist immigrants to settle in rural areas as opposed to urban cities where enormous ethnic ghettos existed. This was done to alleviate the problems common to overcrowding, to help weaken the political corruption that overcrowded immigrant communities fostered, and to hasten the end of the exploitative Padrone System (Iorizzo 1970). In 1890, the Italian government created a division to assist directly with placement of Italian emigrants in jobs and lower population areas. This group was later accused of being corrupt, and having padroni within its ranks (Iorizzo 1970). It was eradicated in 1899. In 1907, the United States established the Federal Bureau of Information to monitor and aid immigration officials with distributing new immigrants to various areas in need of laborers. Each state was supposed to have provided agents to represent its labor needs and appropriate the number of immigrant laborers it was allowed to have. These agents remained inactive for most years of the bureau's operation. From 1908 to 1915, the Federal Information Bureau placed approximately 5,000 emigrants per year in new locations and jobs. However, after World War I, the Bureau was abolished.

According to Iorizzo (1970), the Padrone System was a widespread entity. It not only contracted Italian laborers, it contracted and placed laborers from all of southern and eastern Europe. It was the Italians, however, who benefited most, financially, for their involvement of the padrone. To understand this benefit one must understand how the padrone made its profit.

Padroni did not charge the contractor seeking the laborer, a fee, instead they retained a portion of the inflated commissary prices, which the workers utilized frequently. When the laborers purchased staples and other goods from company store or mercantile at greatly inflated prices, a large percent went directly to the padrone. This ensured a continual return on the labor supplied by the padroni to the contractor. However, the Italian emigrant did not consume or purchase, in the same proportion, as many commissary goods as other ethnic group immigrants. They demanded their own kitchen, preferring to cook foods to suit their individual tastes. Because of this, they were able to eat cheaper than other (Iorizzo 1970: 59). For instance, the non-Italian worker would spend \$18.00 per month on room and board –usually the railroad boxcars– this included three full meals a day provided by the company. Whereas, Italians bought and prepared their own food, including baking their own bread. This would cost \$11.10 per month, saving \$6.90 over the other non-Italian workers (Iorizzo 1970: 57).

The padroni used Chicago as a supply center of laborers for western demands. Some of the contractors utilized labor only seasonally, some used it throughout the year. Whatever the demand, Chicago possessed a huge Italian immigrant population, many of whom lived in slums and ghettos. Being on the edge of the western labor market, some western contractors would send agents to Chicago to seek out labor. The padroni then recruited and sent thousands of Italians, and to a lesser extent non-Italians, westward on jobs. This was another method for the new immigrant to escape from the dreaded slum life of metropolitan cities to squalid rural communities (Iorizzo 1970: 61).

## HISTORICAL BACKGROUND

Historically, the settlers of Montana and the Western United States, were from numerous ethnic groups seeking a place where their lives would be better than what they left behind. Some groups formed strong cohesive bonds amongst each other, while others such as African-Americans, Russians, Italians, Irish, and the Chinese, were alienated and discriminated against, to a greater or lesser degree.

During this time, the country was going through the Second Manifest Destiny. The public at large believed it was their “divine right” to expand and rule over the uncolonized western world. The industrial revolution, partly an effect of Manifest Destiny, created an unprecedented demand for more workers and laborers (DeSantis 1989: 131). Immigrants flowed into the country looking for work and other forms of economic opportunity, and created an enormous labor supply. The supply, in turn, fed the industries. This pattern of immigration, industrial and economic growth, and expansion appeared endless, and the railroad was one industrial force providing economic opportunity that attracted immigrants.

The first transcontinental railroad constructed through the Pacific Northwest was the Northern Pacific. Construction began in 1880, -grading for track that would connect the Oregon Railway & Navigation Company line west of Walla Walla, Washington, to points east. By 1882, the graded line reached Pend Oreille Lake, Idaho. The following year construction crews began working steadily westward from the Flathead River in order to meet the crews working eastward from the Clark Fork (Smalley 1883: 413-417).

In 1892, only 12 farms existed in the Kootenai Valley. Large parcels of agricultural land in the valley were not available at this time. However, by 1910 nearly

300 farms and homesteads had been established (Isch 1950: 24). Troy, once known only as Lake Creek, was a town largely founded by railroad construction workers.

E. L. Preston, a surveyor for the Great Northern Railroad, laid out the townsite and named the town after a boy named Troy Morrow from Bonners Ferry. Bonners Ferry, another town on the Great Northern line, had actually been two separate towns, Fry and Eatonville. Later, these were united under the name Bonners Ferry, named for E. L. Bonner who operated the ferry (Choquette 1980:74).

According to one source, Bonners Ferry did have a considerable Chinese population, most of whom worked on the railroad and lived in shanties outside of town. Like many other communities of its time, Bonners Ferry had little to no tolerance for east Asians. Residents of town rallied together one night in June 1892, and sent the Chinese out of town in boxcars (Choquette and Holstine 1980, citing an anonymous source n.d., 796). Choquette (1980) describes many nationalities that worked on railroads in Montana and Idaho; Irish, Italians, and Greeks were the most prevalent in number. Once construction was completed on the Northern Pacific line, some of the Italian workers hired out to the Great Northern, and later many of them settled along the route or bought railroad land around Priest River, Idaho (Cork 1974: 12).

The Great Northern and the Northern Pacific Railways, with their enormous land grants, were the catalysts of settlement in the interior Pacific Northwest. Their planning inadvertently determined who settled where and which towns would and would not survive. They also dictated what the subsistence base of settlements would be. Since the railroads owned one-fifth of Montana, they profited from the sale of the land grants to ranchers, farmers, and railroad workers (DeSantis 1989: 23). With the discovery of

mineral wealth throughout the west, such as the discovery in 1860 on the Nez Perce Reservation, miners occupied every location of reported gold findings. Later, they mined for silver and copper. Each time the process began anew but lasted much longer with silver and copper.

The railroad was necessary to ship the ores to smelters or other processing facilities. Because of the heavy traffic volume of rail cars, maintenance of track sections was always a concern. The demands of maintenance on certain sections enabled some workers to settle in one place. The activities in the Pacific Northwest mirrored those that had taken place just a few years earlier in Nevada, Utah and Colorado, and earlier in California. This meant heavy construction through the difficult terrain of the intermountain west.

On January 1, 1892, the first Great Northern train arrived in Kalispell from the east. Later that same year, the Great Northern Railroad chose Kalispell as the dividing point where helper engines for the steep graded passes would be staged. Many towns organized to win the railroads' approval so that they would be the chosen location. One town competing for that honor was Whitefish, Montana. The stakes were high, since the town chosen would see a substantial increase in its economy, settlement size, and business sectors. This was not the only time these railroad towns were to compete. In 1904, the Great Northern shifted the division point from Kalispell to Whitefish in order to lessen the grade. Kalispell developed numerous farmsteads and did not depend so heavily on the lumber industry, thus shifting of the division point to Whitefish did not have the devastating impact on Kalispell that its residents and business operators had feared.



Spur lines were constructed off the mainline of the Great Northern Railroad. Some of these lines would attempt to tap into the Canadian passenger and freight market, and others were designed to bring coal and timber back to the main railway in a more expedient manner "...there was another railroad further south branching from the Great Northern to pick up the products from the Roberts-Boorman mill west of Fortine, Montana" (Shea 1977: 151). Still others would serve as first-class passenger trains. Five months later the trains were passing through Libby, an area known mostly to prospectors with placer mines because of past inaccessibility. At this time, the economy of Libby began to grow and diversify.

The Great Northern Railroad's construction began in Troy in 1891, yet the rapid growth so commonly associated with railroad towns did not begin in earnest there until after the turn of the century. In 1906, Congress passed the Forest Homestead Act allowing potential homesteaders to claim 160 acres of land within recently created National Forests. The Kootenai National Forest opened to homesteaders in compliance with the Forest Homestead Act until 1922. According to homesteading patents, it appears that most homesteaders arrived in the area between 1911-1917. Rexford, Stryker, Trego, Fortine, and other railroad dependent towns organized later (Zweifel 1993: 20).

Once the creation of Glacier National Park, in northwestern Montana, was official on May 11, 1910, the Great Northern Railroad grew increasingly interested in promoting the tourist value gained by having the railroad pass tangentially to the southern boundary of the park. Louis W. Hill, President of the Great Northern Railroad, was active in much of the construction planning of motels and helped finance their construction (Bellefleur

1950). The railroads needed construction through rough terrain and the harsh winter weather. Consequently, they hired many new immigrants to complete the task and remain as section gangs for continuing maintenance. Therefore, numerous railroad construction labor camps existed in northern Idaho and northwestern Montana.

### IMMIGRATION BACKGROUND

From Lincoln's 1860 victorious election to 1910, immigration issues were in the forefront of the American disposition. Rises in sheer volume, fluctuations in the numbers from specific countries of origin, to mass congregations of solid and united ethnic groups in metropolitan cities; these patterns of immigration have been studied rigorously since their beginnings (Dinnerstein and Reimer 1975; Dominic 1916; Iorizzo 1966, 1970; Jones 1960; Nelli 1964).

From 1860 to 1900, nearly 14 million people immigrated to America, roughly the same amount followed in the first 15 years of the twentieth century. This second group, referred to by researchers as the "new" immigrants, was composed mostly of Italians, Russians, Greeks, Hungarians, and Poles. These various ethnic groups represented 70 % of the "new" immigrants. Their settlement preferences were largely in the big cities such as New York and Chicago (DeSantis 1989). However, some chose to settle in the more remote and rural parts of the United States, including much of the west. Some argue it was the Padrone System that brought many Italians to the Midwest and western United States. This system reached its peak during the new immigration (Nelli 1964).

## “FOLKLORE”

Margaret Shea (1977) describes how she and friends visited a site in 1975, “...near Eureka close to the railroad.” Here they found several log houses and “...a beehive shaped rock structure located behind it, built of shale.” The dimensions she provides for this structure are much larger than most recorded rock ovens. The measurements are 10 or 12 feet in diameter and nearly six feet high, yet the only opening which was located in the front, was so small that only a small person could crawl through. She states that numerous round powder cans were found in and around all the buildings. Other artifacts include barrel bands, and some wire fence holders. It had been built partially into an excavated hillside which is characteristic of many rock ovens (Shea 1977: 84).

In her writings of the Chinese contributions and their lifestyles in Kalispell, Shea describes M. M. Hori, who was actually Japanese, as the senior servant over six other Japanese servants in the Conrad mansion when it was built in 1895 (Shea 1977). The fact that he was Japanese and was incorrectly labeled as Chinese is evidence that Asians, in general, were lumped together as Chinese, disregarding their true nationality.

## OBJECTIVE OF THIS RESEARCH

Currently, historical archaeology is searching for its proper role as a viable discipline, not playing handmaiden to history, yet striving to be anthropological in its theoretical foundation (Little 1996: 44). There is a need for strong material culture studies juxtaposed with supporting historical documentation such as: oral history, folklore, oral tradition, and written documentation. The strengths of this method will affirm the legitimacy of the discipline and provide for future alternative interpretations of the data.

The importance of this study is to determine how modifications to material cultural can be manifested in rock baking ovens. The interactions of immigrant groups credited with oven construction have been the focus of many studies (Buckles 1983; Calvi 1990; Choquette and Holstine 1980; Costello 1981, 1998; Kniffen 1960; Reno 1994; Rossillon 1984; Wegars 1991; White 1997). But, what accounts for the style changes of construction, size and intrasite frequency on a temporal scale. Interaction intensification between and among different immigrant groups. This work will demonstrate that rock ovens in the western United States, through time, became smaller and more numerous at individual sites, partly because construction camps became more integrated than before. Styles also changed, beehive and domed shapes transformed into partially earthen and some stand-alone structures with no definable shape. These modifications described in archaeological literature, combined with oral history descriptions of first generation immigrant railroad workers' lifestyles in the beginning of the twentieth-century, make evident the transformation that took place in construction groups.

## CHAPTER 2

### METHODS AND THEORY

Discussed below are the methods used in interpreting rock ovens found in association with railroad construction and mining sites. Since archaeologists and historians have been studying the cultural dynamics of the American frontier, ethnic groups have received much attention. However, unanswered questions remain. The reasons for questions include: not enough documentation, data sets not large enough to warrant definitive and statistically significant conclusions, and some resources have yet to be evaluated. This study examines another reason these questions have not been answered. It is my belief that some questions are answered by an alternative objection, one used to interpret the dynamics between material culture, in the form of vernacular architecture, assimilation that affects its construction, and the people who built them. Rather than attempting to assign ethnicity or nationality to the architects of ovens, the intent here is to show how that idea and knowledge was transformed or modified by external stimuli. Others embraced the technology, imposing changes and consequently modified the overall design to accommodate their individual needs. Likewise, it is

important to understand how the identity of these peoples changed through time, i.e., from immigrants to indigenes.

In order to comprehend the complexity of these associations and to view them in their proper historical context, some alternative approaches are examined. The objective is not to focus on the possibilities of establishing diagnostic classifications for ethnicity. Instead, research should focus on how social and cultural context modified the construction of material culture. Subsequently, I describe the diverse spatial context within sites and, how a pattern of lesser scale emerges through time. A few of the contexts and their relationships include: environmental constraints, more socio-cultural than natural, imposed upon immigrants in their new surroundings, the effect these constraints had on the construction design of ovens, and what was the motive for maintaining this piece of material culture away from the old country? This is not an encompassing solution for the complete understanding of rock ovens as material culture. It is simply an effort to gain insight into the proper placement of outdoor rock bake ovens within the material culture record of the Eastern European immigrants.

Immigrants arrived in the late nineteenth-century United States to an unfriendly environment. They left behind all that was familiar to them except memories and knowledge of their native land. Rock ovens on the western United States landscape are undoubtedly the concept and creation of these immigrant peoples. Most likely they continued to build their ovens to circumscribe themselves from all others, imparting their differences from those around them. However, others began to imitate their technology, modifying or changing various elements of design to fit their needs and desires. Therefore, using site reports, journal articles, theme publications, contemporary historical

accounts, oral histories, and feedback from various archaeologists well-acquainted with sites containing rock ovens, I anticipated finding evidence to support the following hypothesis: Immigrants working on the railroad in the western United States adapted technology, namely rock ovens, imported by a single group, most likely eastern Mediterranean Europeans, and modified its design and plan to the degree that an ethnic label can not be assigned to them. Reconstruction of cultural heritage is found in various forms. The styles of ovens constructed in areas where these conditions manifest themselves are but one form of this material culture heritage. Using vernacular architecture as a lens through which to view this phenomenon will provide a clearer understanding of the significance their creators imparted upon them.

This is a qualitative study. The author conducted no field excavations, no artifacts were physically analyzed, and no new data sets were generated. Oral histories are significant in this research because of their first-hand descriptions of events, times and people. Recognizing that these descriptions are subjective has proven to be very useful in reconstructing historic environments and aiding researchers to acquire information previously unachievable without this valuable resource. The expedience of using oral histories is knowing how to interpret them: who conducted the interviews? How the questions were constructed? and, How the informants formulated their answers? Despite the nature of the research questions posited in this paper, only a limited number of the oral histories in the state archives are applicable to this study. The fact that oral histories did not address such questions implies that among oral historians, ethnohistorians, and archaeologists, research agendas were different at that time. Therefore, the oral histories provide only circumstantial and indirect evidence in support

of the hypothesis. No oral history interviews specifically or definitively answer the question posed here. However, they do provide information on various railroad workers and immigrant families, their lifestyles, their socio-cultural behavior, behaviors toward outsiders, and their adaptation to a foreign land and climate. Using these narrative, first person accounts, one can make certain assumptions and inferences as to how the cultural heritage of immigrants was perpetuated in their new environment. Furthermore, these oral accounts provide the observer with conceptions of what was important to those people at that time.

### THEORETICAL APPROACH

Schiffer (1976) defines C-transforms as the haphazard means that groups of people(s) use to create the context in which material culture is deposited. The material culture created by individuals conveys social meaning. Material culture is symbolic, whether its manufacture is for decorative purposes, practical purposes, or both. Symbols convey meaning explicitly such as language, or implicitly through architectural style. This implicitness can convey socio-economic status, group identity or affiliation. These implicit meanings are culturally constructed and can be interpreted in different forms.

Hodder (1994) asserts that to assume individuals are pawns in a society which they live; not having the power to change, alter, or manipulate that society would neglect the “free will” of the individual. Societies change and evolve because of environmental and technological forces, and by changing social relations of production (Hodder 1994). Ideal and material are so deeply embedded that they are dialectically opposing forces in human culture, both contribute equally to this condition. The dichotomous relationship between ideal and material is the theoretical basis for examining how these Eastern



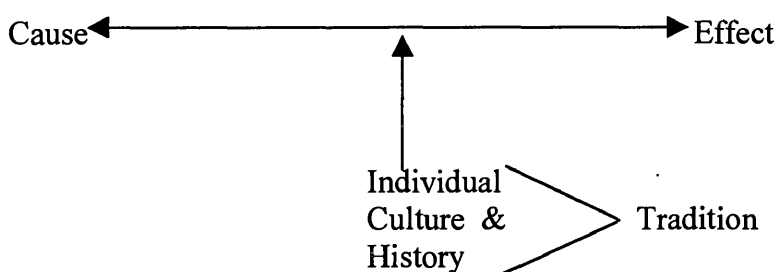
European immigrants construct their culture in western America. Use of this theoretical approach will demonstrate how railroad and mining crews modified or adapted material culture they procured from the original designers who imported it, to accommodate new uses. This use of material culture created social meaning to perpetuate cultural tradition within one group, the importers, and created for utilitarian uses in a separate group. Cultural tradition is the amalgamation of the individual, culture, and history (Hodder 1994: 12).

It is also important that archaeologists and historians not measure the societies and time periods they study with their own contemporary standards of logic. More appropriately stated, they must absorb themselves in antiquity to the degree that their own sense of logic is constrained within clearly defined parameters that do not extend into contemporaneity (Hodder 1994). This can be only partially accomplished, theory and method are constructed in the present therefore, they simply can not be suspended impulsively. Yet, there are useful measures to be taken that can gravitate toward a more objective examination of past lifeways. These measures include; ethnohistoric accounts, historic food customs and their influence on the concept of heritage or tradition, and comprehensive understanding of the environmental history of the area and the people under examination, namely, available natural resources and how they were used.

I believe this is an archaeological manifestation of the cultural anthropologists decades old argument of etic verses emic. An example of this in the field of archaeology is the debate over tool use and their classification. Classes such as primary, secondary, or tertiary that are used to group lithic flakes are arbitrary classifications. However, knife blades, scrapers, drills, or punches are present-day constructed categories, the

contemporary meanings implied by those names are not necessarily how the creators conceptualized the tools when they constructed them. Another example of this would be Leone's interpretation of William Paca's gardens (Leone 1984). Leone interprets the gardens as a design with an ideological expression of events taking place in the life of William Paca and the world as he saw it.

Kniffen (1960) provides a thorough interdisciplinary study of how geography, history and culture account for the intermittent distribution of Louisiana outdoor stone bake ovens. Apparently, the unavailability of wheat in the western part of French Louisiana, accompanied by the historical influence of Anglo-Americans, precluded the use of outdoor ovens. Furthermore, the French on the western prairie of Louisiana, adopted gabled chimneys in the architecture of their homes to use for preparation of corn based breads (Kniffen 1960: 34). With the possible exception of substituting geography for the individual, this is a textbook example of the model Hodder (1994) described:



(Fig. 1) Diagram of Cause and Effect with Tradition vector.

This model illustrates how tradition, a combination of the individual, their culture and their history, influences cause and effect relationships. Hence, if any variable in tradition changes, then the relationship of cause and effect are affected. This still leaves unanswered the question of what the relationship is between the individual and society.

Debate on whether ethnic identity is attainable in the archaeological record has gone on for over two decades, and the methods used to test that information is nearly as dated. Various approaches were attempted, either with questionable results or with only site specific applicability (Schuyler 1978). There appears to be an earnest desire to assign ethnic affiliation to certain artifactual data. Conclusions based on this methodology can be strengthened with further documentary evidence.

A part of this debate is the question of whether we can ascribe ethnicity to the construction of unique architectural features usually associated with small mining camps and railroad labor camps. One small feature is the outdoor bake ovens used by numerous groups across the country to prepare foodstuffs. The locations of these groups vary greatly; from the Mid-Atlantic to the Gulf Coastal Plain (Kniffen 1960, Glassie 1968), from some small southeastern farms to California mines (Costello 1981), from the Northern Rocky Mountains to the desert southwest of Nevada (Wegars 1991, Calvi 1997, White 1997). Yet for the purpose of brevity and erudition, this study will focus only on bake ovens found in the Pacific Northwest, Great Basin, and Sierra Nevada Mountains of California.

One issue in understanding the significance of the rock oven and its cultural context, is its tacit symbolic meaning in the minds of those that built and altered them. As of yet, there are no artifactual remains to conclusively determine that a particular oven construction style can be tied to a specific ethnicity exclusive of another. Consequently, no ethnic ideology can be employed to interpret it. Equally significant, no historical documentation has definitively answered this question either.

According to Hodder, independent instruments of measurement can not be used to measure the relationship between material culture and the society that produced it. This is because what one measures is based on current perception and categorization, and there can be no “independent” instruments of measurement since methodology is theory dependent itself (Hodder, 1994). Yet, a group of methods may be used to obtain this measurement, checking one against another to insure impartiality and objectivity.

Trigger (1980) shows how changing interpretations of the past depend on changing social and cultural contexts in the present. Ethnic groups are not set entities. They are more fluid over time; brought about by overpowering or enslavement, immigration, or other means (Horvath 1982; citing Trigger 1980).

Hicks (1977) defines ethnicity as referenced to a common origin, in addition to, conception of a distinctiveness, and finally, existing only when two or more categories of people live in the same social system (Horvath 1982, citing Hicks 1977). According to Barth, without having cultural actors to tell us what traits they think best signify their ethnic identity, we cannot analyze interactions that take place across those bounded differences because they simply do not exist. These differences are social constructions and abstractions that are exceedingly difficult to discern in the archaeological record. To complicate matters further, material culture characteristics prove these boundaries are not necessarily absolutes, as is the case with some rock ovens. They were reconstructed by people of different nationalities sometimes with the same design and architectural style (Wegars 1991).

## CHAPTER 3

### SITE DESCRIPTIONS AND LITERATURE REVIEW

Discussed in detail below are twelve recorded archaeological sites containing rock oven. They are located in western states that were part of the intensive railroad construction era from 1869 to 1910. The sites are also representative of the wide range of architectural methods and styles used to design the ovens. The descriptions show how dimensions, as well as the intrasite frequency, changed through time; the ovens generally becoming smaller, shapes became less uniform and more expedient. Photographic evidence and contemporary literature reviewed indicate the diversity of nationalities and ethnicities represented by the immigrants in the work crews. Emphasizing these sites and summarizing the literature will illustrate how the individual, in the generic sense, and the history of a mass immigration movement, modified material culture, in turn affecting tradition.

#### 44VV586 VAL VERDE COUNTY, TEXAS

The Southern Pacific Line's Chinese and European immigrant workers in Briggs (1974) study were segregated into two different camps; the Langtry camp, and Upper Rio

Grande Tunnel Number One camp, respectively. Through meticulous surveying, mapping, and surface collection, the archaeological remains provide a reliable database in which to test the documentary records and fill many of the existing historical gaps. What is significant in the Langtry camp is the absence of rock ovens assumed the signature Chinese occupation. Since there were no foodstuffs that required oven baking, the Chinese had no necessity for rock ovens. Briggs determined that the diet of Chinese laborers consisted of dried oysters, dried cuttle fish, dried fish, sweet rice, crackers, dried bamboo, salted cabbage, Chinese sugar, dried fruits and vegetables, vermicelli, dried seaweed, bacon, abalone, dried mushrooms, tea, rice, pork, and poultry (Briggs 1974: 94). Artifacts in the Langtry camp such as opium paraphernalia, ceramics manufactured in China, coins, and clothing articles found separate from European cultural deposits create a basis to argue for a degree of ethnic segregation in construction camps. Although construction gangs were segregated ethnically, each ones behavior and cultural traits were observed by all because segregation was not absolute. If some cultural traits did recipricate across ethnic or nationality boundaries, it is quite possible that rock ovens were one of these traits.

Census reports stated that by 1880 there were over 100,000 Chinese living and working in the United States. Briggs describeing the “credit ticket” system used to import laborers; states that Chinese were pawns of labor contractors, just as newly arriving Italian immigrants were pawns of the Padrone System. For instance, the Chinese headman was responsible for deducting debts from each man’s paycheck, any man defaulting on his debts would not be allowed to leave the United States and return to

China. As with the Padrone System, corruption riddled the credit ticket system of Chinese labor (Briggs 1974).

Mexicans, Germans, and Italians were employed in the Eastern Division of the Southern Pacific but very little is written about them. It is known however, that Mexicans were recruited by the railroad out of San Antonio, Texas (Briggs 1974). Briggs mentions that one tunnel construction group was divided between Germans on one side of the tunnel and Italians on the other side, but there is no mention of Mexicans, Blacks, or Chinese.

#### TUNNEL 7 LINCOLN COUNTY, MONTANA

Jim Calvi conducted a survey of Tunnel 7 along the Kootenai River Canyon section of the Great Northern Railway in 1993. This survey is unpublished, and is not in manuscript form (Jim Calvi, per. comm.). This section of track was first laid in 1891-1892 along the riverbank. The railroad later raised the grade when the river flooded in 1894 covering the tracks with nine feet of water. The old Tunnel 7 was closed and sealed and a new tunnel was constructed on the new raised grade.

During his survey, Calvi located three rock ovens and possibly a fourth. During this time, the railroad would hire men to live at tunnel entrances to clear snow and rock slides, or other obstructions to the tunnel, or to signal oncoming trains if those obstructions were not cleared in time for them to pass. These ovens are located only on one site and occur in conjunction with different structural features. They are not unique to any one particular feature. Calvi determined that features 2, 7, 11, and 19 are ovens. They are located up-slope from the railroad grade and placed a great distance from feature 20 (probably a watchman's shack) and feature 22; the four-wheeled speeder

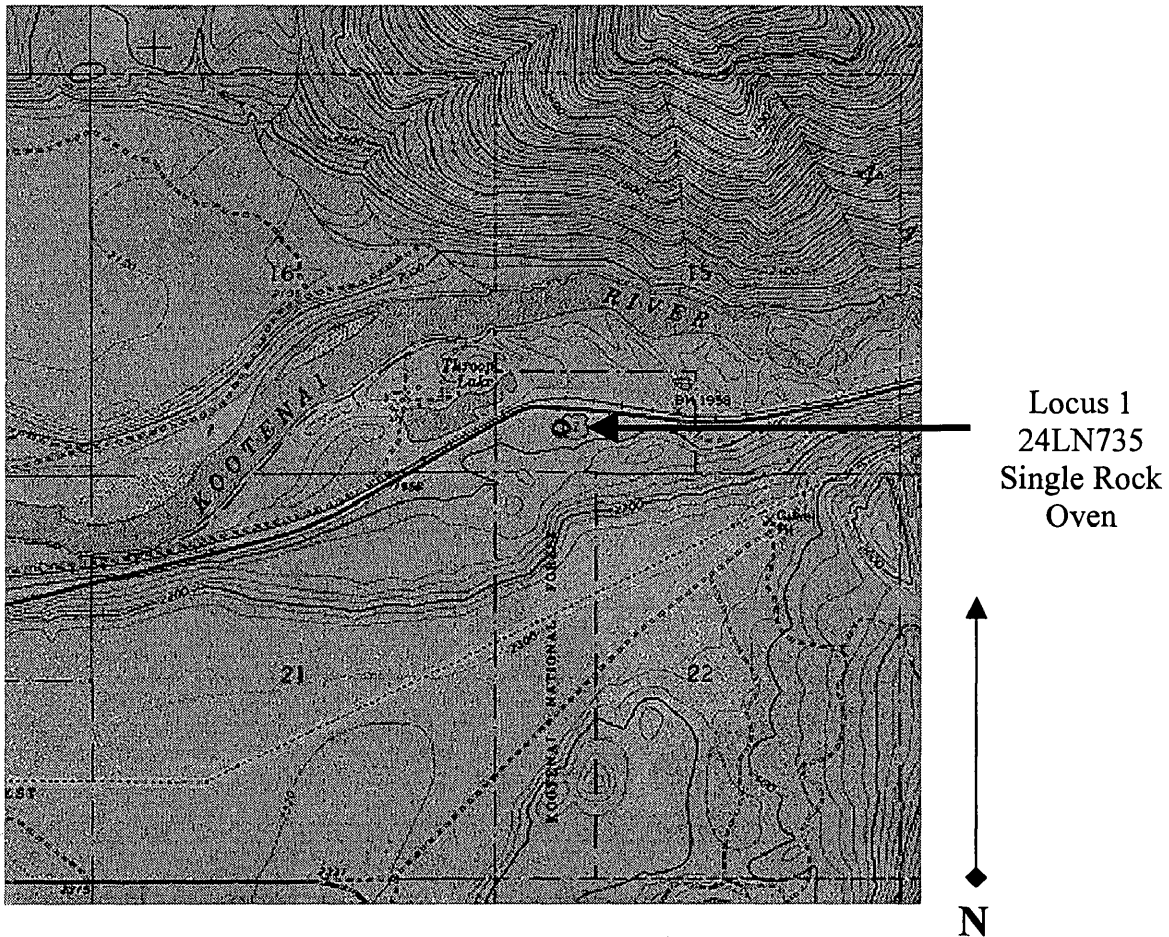
housing. Features 20 and 22 are located adjacent to the track and down the slope from the ovens. Excavations of feature 13 revealed two lard pales, one dated to circa. 1890, the other dated to circa. 1891; discernible by the single crimp and double crimp seams, respectively. The method used to seal the pales in which lard was sold, changed beginning in 1891, from single crimped to double-crimped seams. The distance of feature 13 to the closest oven, feature 19 is 59 feet (18m).

The significance of this site, although work is incomplete, is the tight chronology provided by the datable cans. In the future, archival research may provide pertinent information on the identity of these workers; because this was a sizable construction venture, detailed railroad company records most likely exist.

#### 24LN918 LINCOLN COUNTY, MONTANA

The Ferrel Creek Cabin site, 24LN918, is significant for what it exposes about inaccuracies in the folklore surrounding Chinese inhabitants. According to local lore and contemporary newspaper accounts, Chinese miners allegedly lived in this cabin. On the contrary, there is no artifactual evidence to support Chinese occupation such as those artifacts found by Briggs (1975), i.e. fragments of opium bowls, buttons from Chinese clothing, or any type of Chinese cooking utensils or bowls (Calvi 1990). In addition, Calvi did not locate any outdoor rock ovens or their remnants on or near the site. Lincoln County, Montana, the location of the Ferrel Creek Cabin site, is also the location of other recorded ovens along United States Highway 2.





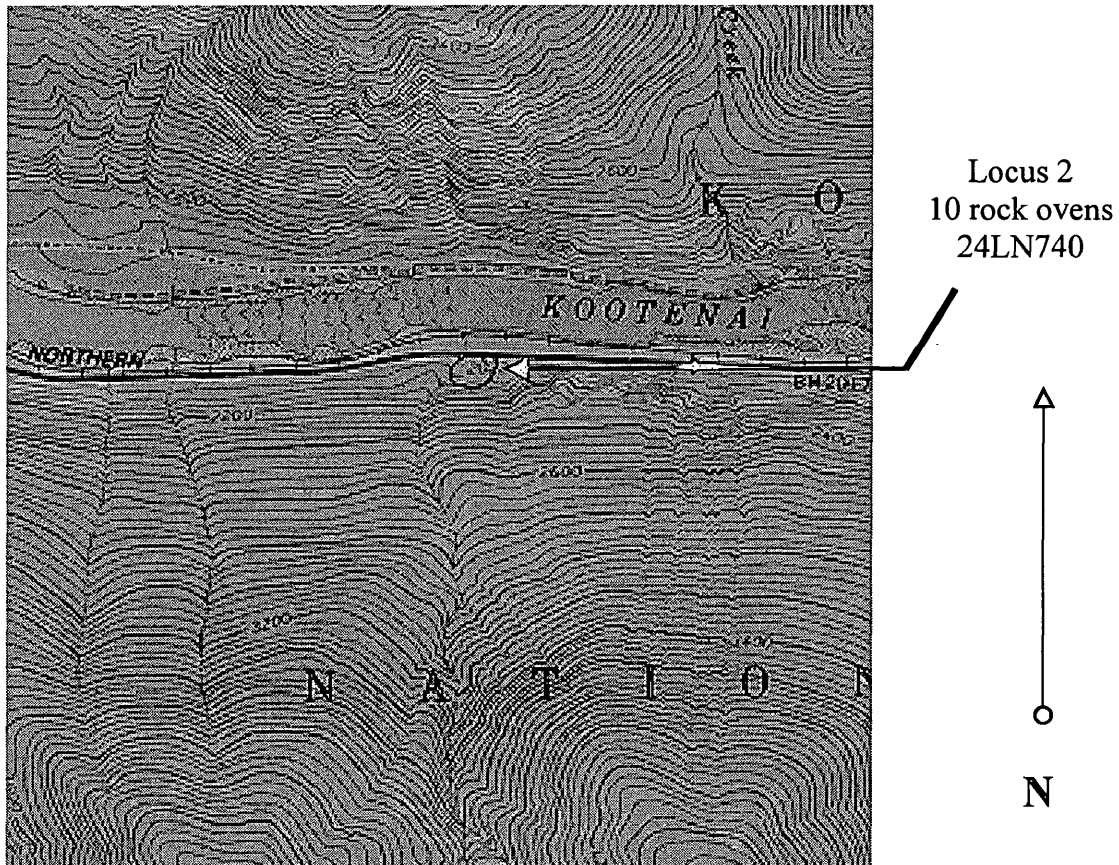
(Fig. 2) USGS Quadrangle Section 17, T31N, R32W.

#### LIBBY-TROY HIGHWAY IMPROVEMENT PROJECT, MONTANA (F 1-1 [18] 14)

Investigations by the Heritage Research Center found two rock oven sites, 24LN735 has one oven, and 24LN740 contains 10 ovens. These sites are located on the south side of Federal Highway 2 between Troy and Libby, Montana (see Figures 1 & 2).

It is believed that Greeks, and to a lesser extent Italians, constructed these ovens (Heritage Research Center 1984). The authors use historical photographs with captions depicting the activities at hand, some secondary sources and oral history interviews (Heritage Research Center 1984: 74, 166). The photographs are not of the actual site in question, rather they are from Yoho National Park, British Columbia, and Lester,

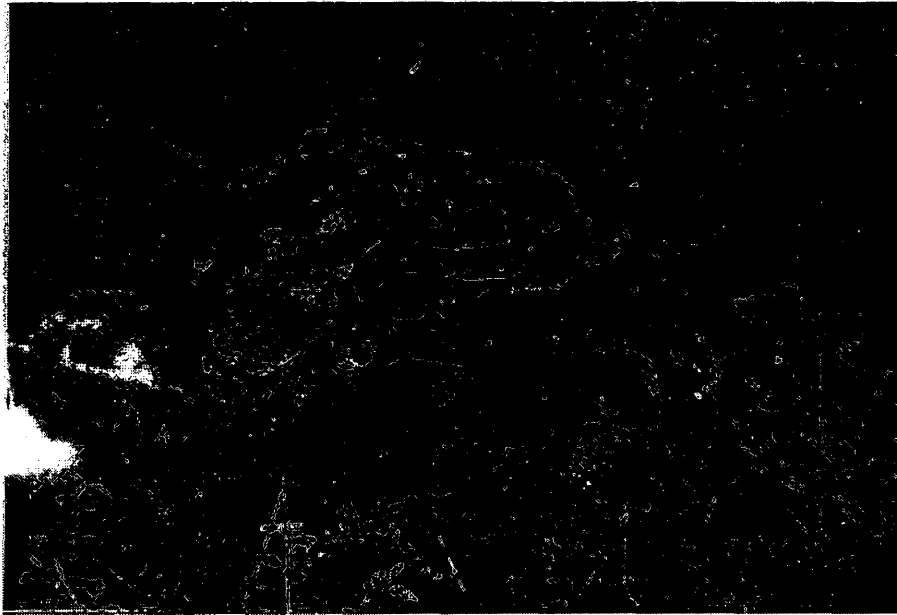
Washington. The authorities on these photographs state that workers along the Canadian Pacific Railroad built them.



(Fig. 3) USGS Quadrangle Section 15, T31N, R33W

The two locus where these ovens are located are less than 300 meters away from the Great Northern Railroad another probable indication of their association with construction of that line. The distance between the two locus is four miles. HRC describes much of the physical characteristics of each oven and that there are many shapes and designs. Also, there seems to be no unified direction that they face. The physical integrity of each differs; some are 90% intact while others are less than 25% intact. Feature 1, at 24LN740, is described as, "...consisting of a roughly square foundation with one side formed by a rock outcrop...54 centimeters wide." (Heritage

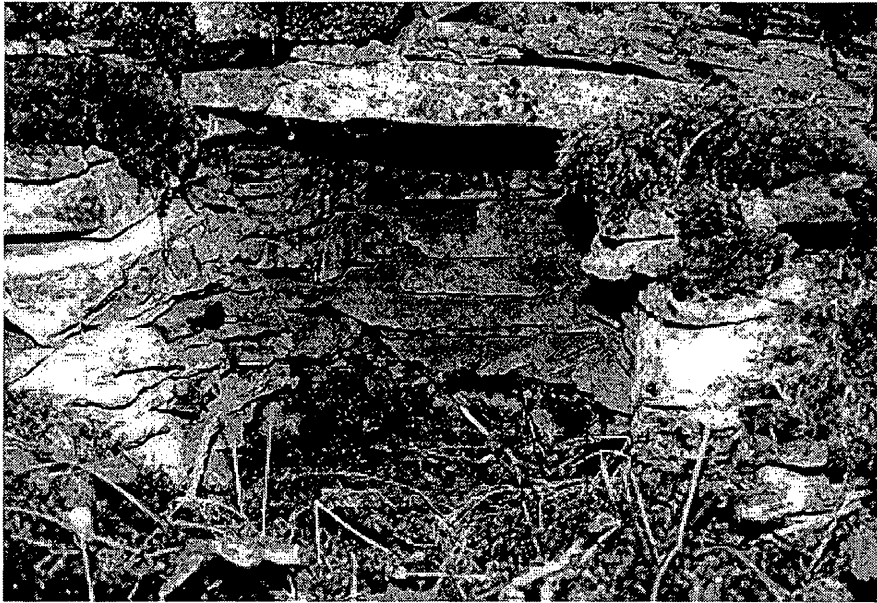
Research Center 1986: 73) This is seen in Figure 3 below. Assuming Feature 1 is the foundation of a structure, why would nine detached rock ovens be built in conjunction with a possible habitation structure that appears to have some sort of hearth associated with it? Moreover, of the nine outdoor ovens described there are five variations of style or architectural design.



(Fig. 4) Photograph of Feature 1, note low rock foundation extending laterally.



(Fig. 5) Rock oven not attached to structural walls.



(Fig. 6) Interior chamber of oven shown in figure 4. Note the stone lintel above the door. This characteristic is very common among most ovens worldwide.

Feature Number	Height, Long & Short Axes	Geometric Shape
1	120cm, 140cm, 110cm	Rectangular (structure unit)
2	117cm, 157cm, 157cm	Square
3	93cm, 240cm (diam.)	Circular
4	80cm, 194cm, 156cm	Rectangular
5	90cm, 186cm (diam.)	Circular
6	155cm, 260cm, 246cm	Beehive (Dome)
7	Badly deteriorated, roof collapsed; L=2m, W=1.6m	Rectangular outline
8	70cm, 140cm, 125cm	Oval shaped
9	100cm, 180cm (diam.)	Circular
10	(Collapsed) 45cm, 170cm, 145cm	Although shape is not given, judging from dimensions plan is probably rectangular

Table 1. Dimensions of each feature found at loci 2 (24LN740).

#### 5GN1664: THE HISTORIC RAILROAD CAMP OF MARION, COLORADO

The Curecanti Project in the Lake Fork Canyon, Colorado, consisted of many abandoned railroad labor camps; Marion is one of these camps. According to the literature, all but one of the railroad labor camps included rock ovens. Marion had four, all in different stages of preservation. Excavations were not carried out on these features. Features 25 and 27 are built into hillsides, while features 26 and 28 were constructed on top of flat stone platforms.

Feature Numbers	English Units	Metric Units
25	5 ½ feet	1.68 m
27	4 ½ feet	1.37 m

Table 2. Diameter measurements of ovens from the Marion railroad camp. Measurements for features 26 and 28 are not cited.

All four features are built using dry-laid masonry and located adjacent to habitation structures. The most intact and well-preserved oven was excavated into a talus

hillside with the door opening facing the stream. The second oven is built on a stone platform providing it with a level foundation; it is only somewhat preserved. Artifacts found in association with this oven are purple bottle glass and an evaporated milk can. The third and fourth ovens were completely collapsed. Most likely the proximity to water was not a prerequisite to location as that particular drainage carried only spring run-off.

The rock ovens found at Marion are concluded to be Italian since Italians are known in other areas for having built such structures. In addition, "...during the 1889 phase of construction most of the unskilled laborers in the canyon were Italian." (Rossillon 1984, citing Vandenbusche 1980: 159) yet, no diagnostic artifacts exist. One structure found in Marion, believed to be a commissary, contained nine evaporated milk cans, among other things. Commissaries are found in other camps in the Lake Fork Canyon area. Determining differences in inventories of those commissaries would perhaps show a relationship between camps separated into Italians and non-Italians.

Rossillon tested the hypothesis that, "Segregation by feature type in Lake Fork Canyon would be related somehow to activity areas." (Rossillon 1984: 32) She argues that it was more efficient and economical, in given circumstances, to divide construction camps into separate camps. One camp was responsible for housing certain activities, primarily those of the specialists such as blacksmiths, payroll clerks, cooking tents, and superiors. Another designation was satellite camps; these would contain personal maintenance duties, unskilled laborers, rock blasters, and livestock tenders. These camps would be located at least a mile away from main camps, but not so far that return trips would be disadvantageous. Rossillon states three criteria for such arrangements. First,

accessible living space for people in a construction caravan could be restrictive in certain terrain. Second, the problematic nature of grade construction could limit camp size. Finally, if any of these conditions appeared to be probable, the contractor could have made arrangements for separate camps to limit travel time between living space and work site (Rossillon 1984: 101). But, Buckles asserts that camps varied in size according to nature of the work being done, the policies of the contractor or that particular railroad, and backgrounds of the section crews (Buckles 1983: 214). Rossillon concludes that segregation by feature type may be related to not one but three different factors: special activities, health and hygiene, or ethnicity (Rossillon 1984: 102).

#### BONNEVILLE POWER SURVEY

Choquette and Holstine's survey for the Bonneville Power transmission line located seven rock ovens off of Highway 2 approximately 14 miles west of Libby, Montana. Most of these ovens are: dome shaped, have circular bodies, mostly made of shale or schist slabs, and have mean measurements of 1.2 meters in height, and 1.8 - 2.4 meters in width. One of the seven is unique in its construction; it has no roof. The burned logs lying around the outside of it possibly indicate that the burned timbers were once the roof of this oven (Choquette and Holstine 1980: 115).

Their conclusions on the origin and use of these rock ovens are puzzling. Stating that, "The common belief is that the structures were built by the railroad workers and used for baking bread. Some knowledgeable informants believe that the Chinese workers built the structures; an account in the Bonner County Historical Society Museum claims that a Greek man baked bread for the railroad crews in a similar structure near Carewood, south of Sandpoint, [Idaho]." (Choquette and Holstine 1980: 116)

A discrepancy arises from this analysis. Of the explanations offered above, one is given by “knowledgeable informants,” the other is not. First, what qualifies these informants as knowledgeable? Second, there are no photographs, oral interviews, nor any other form of documentation offering conclusive evidence that these structures were ever built by Chinese. On the contrary, oral interviews and photographs exist that convincingly argue for non-Asian construction. In addition, ethnographic work strongly argues against Chinese construction (Buckles 1975; Carbone 1980; Cameron 1980; Costello 1998; Hansen 1982; Rossillon 1984; Sathers 1980; Wegars 1991; White 1997) .

#### 10IH1865 SOUTHWESTERN IDAHO COUNTY, IDAHO

This site is adjacent to the railroad and inside a rockshelter. The Clearwater River lies below the site. The oven inside the rockshelter is constructed differently from all others. The materials used to build it are tin, railroad ties, rock, and dirt. The lintel, which is usually stone, is wooden with a hinged door and latch used to seal the opening. The latch is attached to the door by a nail or screw. The sides are constructed of two railroad ties lain on top of one another, the exterior of those ties is covered with dirt. Horizontally placed beams, smaller than rail ties, with a tin and dirt covering, provide the level cooking surface inside the oven. The oven is 170 centimeters in depth, 70 centimeters in height, and 190 centimeters in breadth. This oven is only recorded in a state site form with no contextual background provided.

#### 26EU1431 ROBERTS MOUNTAINS, EUREKA COUNTY, NEVADA

In 1994, Archaeological Research Services, Inc., conducted excavations to mitigate the adverse affects that would result from the Gold Bar II Mining Project in the



Roberts Mountains district of Eureka County, Nevada. In the project area, there are three styles of stone cooking features: ovens, smokers or dryers, and cook houses. The only rock oven found did conform to the description outlined by Wegars (1991), however, it was not corbel like most. It was D-shaped with the long axis running parallel to the slope of the embankment in which it was constructed. Artifacts found in association with this oven were small charcoal fragments and five bone fragments. The bone was determined to be that of *Bos Taurus* with one piece appearing to have butcher marks on it. All bone fragments were unburned. Should this be evidence of cooking any material other than baking bread, it would contradict previous interpretations of probable oven use.

However, this is a mining camp and charcoal production facility in Nevada, not a railroad construction camp in the Pacific Northwest. Clearly, diagnostic characteristics of ethnicity exist and are common to numerous archaeological sites notwithstanding, the ovens found in the Robert Mountains cannot be classified as such (Reno 1994: 17-11).

Reno asks several questions in regards to rock ovens. First, are ovens used simply as part of the 'cultural baggage' brought with individuals to a new location versus ovens used in a positive sense to construct and maintain ethnicity (Reno per. comm.)? Are railroad ovens more easily identified as 'cultural baggage' while ovens at places like ranches in the communities of Washoe County, Nevada, largely associated with reconstruction of ethnic heritage? Yet, the most significant issues discussed by Reno are the food preparations taking place at Robert Mountains. The discovery of bone fragments and buckets, with altered handles designed to be suspended above ground, question the premise that rock ovens are only used to bake bread. In retrospect, Reno

wonders whether controlled excavations located slightly further down the slope from the oven door opening may have provided the data to answer such questions.

The ovens examined and analyzed in the Robert Mountains consisted of smokers or dryers, and cook houses. These cooking features are not designed the same way that dome rock ovens are designed. Does this indicate that the group occupying the camp was of mixed ethnicity or nationality? This heterogeneous mixture of cooking features is not common with other rock ovens sites. That is not to say that they do not occur together elsewhere. On the contrary, in Colorado they are known to occur with additional cooking and habitation structures (Buckles 1983).

Some railroad camps provided a full time cook or at least the food for workers while they are working on the railway. So, why would these workers take time at the end of a very long and difficult work day to build a stone oven(s) and bake their own bread (Reno pers. comm., Wegars pers. comm.)? The following account provides one of possibly many explanations to that question.

In 1916 a medical student, who took a summer job working for the railroad in the Midwest, provided a first hand account of his summer job with the railroad. He describes the end of the workday at 4 p.m. for his section gang. They returned to the boxcars that served as bunk houses, knowing that much of the food that was provided was either covered with bugs, mold or was stale. He describes food cooked in, "blackened kettles, and devouring more soot than food." (Ciolli, 1916) However, Ciolli made no mention of rock ovens during his 1916 summer experience. On the contrary, he writes, "On both sides of the cars, on the ground, were rusty, perforated tin boxes, propped up by stones. These were stoves." (Ciolli 1916, 61) It can only be speculated that by 1916 when the

author wrote of his experiences, industrial waste and scrap metal were more easily accessible than rock. His work with the railroad was in Indiana and Michigan. My research for documented rock ovens in these states produced negative results. Although his employment on the section gang took place in 1916; all references to rock ovens appear to have been made prior to 1909. In addition, this one particular case spans of period of only six months and, therefore, cannot adequately represent most or all railroad work crews. Furthermore, one could use this written account to test whether oven use/construction was borne out of a groups collective desire to have better prepared foods.

#### GLACIER NATIONAL PARK (SOUTHERN BOUNDARY)

This site was recorded by Thomas F. Kehoe, in 1957, at the request of Harry B. Robinson, Chief Park Naturalist of Glacier National Park. On this site, there are three features, which are most likely rock ovens. They are located approximately 19.3 kilometers west of Marias Pass along the southern edge of Glacier National Park.

There are features are significant for several reasons. First, structures 1 and 2 are relatively close to one another. Moreover, the construction design of each employs similar shape and form, whereas, the third structure was completely different in shape and form. Finally, the distance of the third, westerly structure is nine times the distance between the first two structures. The contrasts of differences and the relationship of similarities can be more discernible from Table 3.3 below. The column providing the state of preservation primarily concerns the tops of each oven with the floor plan of each remaining relatively intact.

Considering the age of this reference, knowledge of rock ovens was nearly non-existent. At that time, the author had no relevant literature from other archaeologists or historians in the United States from which to formulate a concrete conclusion as to what these structures truly were, who built them, and to a lesser extent, their function.

	<b>Preservation State</b>	<b>Dimensions</b>	<b>Distance from adjacent structure</b>
<b>Structure 1</b>	40% destruction	S.A.= 55 in. L.A. = destroyed H = 19 in.	149 feet
<b>Structure 2</b>	70-80% destruction	S.A. = 96 in. L. A. = 119 in. H = collapsed (N/A)	149 feet
<b>Structure 3</b>	10 ≤ Destruction	Diameter = 51 in. H = 25 in.	1,318 feet

Table 3. (L.A.= Long Axis, S.A.= Short Axis, H = Height) Characteristics of southern Glacier National Park rock ovens.

#### CA-CCO-470H, VASCO ADOBE SITE (Contra Costa County, California)

The information from this site is significant because the features' date, its builders' origin, their settlement type, and because its design are dissimilar to those sites found in the Pacific Northwest in railroad and mining communities. It is also significant in that the archaeologist attributes the ovens to Native American origin as opposed to any European design.

Ziesing (1997) provides a background survey of outdoor rock ovens found in numerous cultural contexts around the world, including those relative to this study. Referring to Hodder's definition of tradition (1994), Ziesing incorporates tradition, but also includes innovation as an equal force in building and maintaining ovens in cultural

settings. Putting aside the argument of ethnic identity or affiliation with certain known construction techniques, she asserts that these debates have been mixed at best. Rather, the inhabitants of Vasco Adobe continued to build and use ovens because of their applicability in numerous day-to-day activities, such as: drying clothing, herbs or woods, or as a means of disinfecting feather stuffings and dishes, and even as a possible smokehouse (Zeising 1997: 190). Zeising recorded only one outdoor oven at this site. It was D-shaped and abutted a wall of another structure. Again, similarities between the oven found on this site and those described above are notably absent. The historic inhabitants of this area were Basque herders. They brought the technology of outdoor oven construction with them from the Basques Provinces of the western Pyrenees Mountains to Argentina and from there migrated north arriving in California (Zeising 1997: 189, 211). Zeising surmises that through their travels and contact with the Spanish in Argentina and Mexico, the oven technology was altered or modified to meet the demands of the resources available to them. This is roughly the same hypothesis offered in this paper, simply transposed on the western United States and applied to Greeks, Italians, and other Eastern European nationalities.

#### 5ST2 - TEN MILE CANYON, COLORADO

This site, described by Buckles (1975), appeared to be a community of former railroad workmen who had become miners during the litigation that took place between the Denver, South Park Railroad, and Pacific and the Denver, Rio Grande and Western Railroad. Three small communities were documented, however, only one, 5ST2, had rock ovens. Buckles describes how these were commonly known as “coolie huts,” yet he found no documentation to support Chinese inhabitants nor was there any source

identifying Chinese workers on that section of the railroad. He did locate sources that recognized "...200 laborers recruited from Italy were working on the construction somewhere in the canyon." (Buckles 1975: 8) Buckles does not conclude that these were in fact, the builders of the noted ovens. His brief paper describing these sites does not provide details from excavations, it is only a summary of recommendations prior to construction.

#### 26CK4842 - A RAILROAD CONSTRUCTION CAMP IN SOUTHERN NEVADA

This is the most recent site recorded containing rock ovens and it contains a wealth of information, including artifact classifications. It is an historic railroad construction camp and siding occupied during the winter of 1904-1905. The camp's workers were to contribute to construction of the San Pedro, Los Angeles and Salt Lake Railroad (SP, LA & SL). White (1997) conducted thorough archival researches of local contemporary newspapers, SP, LA & SL company records (including: freight lists, accounting reports, invoices, etc.), and the Union Pacific Museum special collections. The significance of this research is that it provides insight into camp activities, workmen identity and housing, and consumer preferences. For example, contemporary newspaper accounts describe how the postmaster of Caliente, the closest town, was aghast with all the mail from Greece, Austria, Italy, and Finland for railroad workers at the new construction camp. The same source describes "several carloads of Spaniards" brought in as laborers for the railroad (White 1997:12, citing *Lincoln County Record* 9/18/1903:1).

White located and recorded five rock ovens in this camp; they are features 4, 6, 12, 40, and 43. He describes them as circular, beehive-like structures, relatively equally

spaced upon the landscape within the camp. All structures are constructed of locally acquired limestone and "...dry-laid in a tiered, circular fashion with each successive course tilted slightly inward to form the dome or vault..." (White 1997:29). Four of the five features utilized rock slabs as floors whereas, the fifth simply used dirt. Again, three of the five are excavated into an embankment and the other two are completely freestanding. The table below (Table 4) lists the dimensions of each oven and provides a mean for each measurement.

Table 4. Dimensions of Features 4, 6, 12, 40, and 43. Rock ovens found at 26CK4842.

Dimension/ Feature No.	Feature 4	Feature 6	Feature12	Feature40	Feature43	Means
Exterior (A)	96 in.	105 in.	132 in.	132 in.	132 in.	119 in.
Exterior (B)	116 in.	115 in.	108 in.	144 in.	180 in.	132.6in.
Interior (C)	40 in.	43 in.	42 in.	52 in.	50 in.	45.4 in.
Interior (D)	45 in.	46 in.	45 in.	52 in.	55 in.	48.6 in.
Opening Width (E)	16 in.	18 in.	18 in.	31 in.	26 in.	21.8 in.
Opening Width (F)	UND.	15 in.	UND.	UND.	UND.	15 in.
Internal Height (G)*	19 in.	21 in.	24 in.	20 in.	24 in.	N/A
External Height (H)*	32 in.	30 in.	29 in.	36 in.	30 in.	N/A

\* Note: Due to the collapsed nature of each oven, the external and internal heights represent the measurements of standing portions of the ovens taken from the floor.

These measurements, compared with those in Table 3, illustrate the smaller dimensions of these ovens, the higher frequency of their occurrence within sites, and the closer proximity in relation to each other. Although the size is not known of the group that built those in Table 3, clearly, the implication of functional differences is evident. In

addition, the ovens in White's study are not uniform in shape as the ones in Glacier National Park. This suggests builders that had alternative uses in mind.

Table 5. Internal oven Capacities and Floor Area.

Category/ Feature	4	6	12	40	43	Mean
Volume	11.63 cu. ft.	13.35 cu. ft.	12.47 cu. ft.	21.3 cu. ft.	21.92 cu. ft.	16.13 cu. ft.
Floor Area	9.81sq. ft.	10.78 sq. ft.	10.30 sq. ft.	14.74 sq. ft.	14.99 sq. ft.	12.12 sq. ft.

The variables in table 3.4 the following measurements: *A* being the exterior axis from front to back, *B* is the exterior axis laterally, *C* being the interior lateral axis, *D* is the exterior axis front to back, and *E* is the horizontal measurement of the hatchway opening. The vertical measurement variables *F*, *G*, and *H*, are as follows: height of the hatchway opening, height from floor to interior dome, and height from the base to the exterior dome, respectively. The averages of these measurements are converted to metrics in the table (6) below. These measurements are similar to those of other ovens previously listed. Table (5) provides measurements for the chamber volume, floor area, and their averages.

Table 6. Mean measurements converted to metrics of ovens located at 26K4842

Measurement Vector	Variable	Mean
Exterior Sagittal Plane	<i>A</i>	3.02 meters
Exterior Lateral Plane	<i>B</i>	3.36 meters
Interior Lateral Plane	<i>C</i>	1.15 meters
Interior Sagittal Plane	<i>D</i>	1.23 meters
Horizontal Opening Width	<i>E</i>	55.3 meters
Vertical Opening Height	<i>F</i>	38.1 meters
Internal Height	<i>G</i>	N/A
External Overall Height	<i>H</i>	N/A

Of the five ovens described, one (features 40) has a unique roof system not previously described. The roof is supported by strips of sheet metal measuring 1 ft. X 5



ft. and 3/8 of an inch in thickness. They are placed across the chamber top in an "X" form (White 1997: 58). The rear flue or chimney of this oven also differs from the others. It is constructed by placing metal plates side-by-side between the stones forming the oven's roof. Some of the stone used to construct this oven had cracked, apparently from the intense heat of the fires created within it.

An important discovery on this site was large charred mammal bones. This suggests the apparent activity in and around the ovens was food preparation and consumption of meat. This is different from most of the other sites described in this paper. The most commonly accepted activity and use of dome rock ovens, regardless of ethnic affiliation, has been bread-baking (Wegars 1991: 39).

The enormous amount of data collected from 26CK4842 is significant because most domed rock ovens, whether tied to the railroad, domestic habitation, or mining do not have the high artifact concentrations seen here. In addition, the percentage of animal by-products relating to food preparation at 26CK4842 is very unusual. Rock ovens excavations yield very few artifacts of the food classification, and rarely are those charred mammal bones.

Furthermore, the volume of excavation conducted on 26CK4842 will provide the means to later test the hypothesis offered by Rossillon (1984) on the segregation of activity areas. This, in turn, will afford another opportunity to re-examine the phenomena of rock ovens associated with railroad construction camps and their inhabitants.

Table 7. Artifact count/classification of features 4, 6, 12, 40, and 43.

<b>Class/Type &amp; Feature</b>	<b>4</b>	<b>6</b>	<b>12</b>	<b>40</b>	<b>43</b>	<b>TOTAL S</b>
<b>Beverage</b>						
<i>Amber</i>	5	1		8	8	<b>22</b>
<i>Amethyst</i>				1		<b>1</b>
<i>Clear/Light Green</i>	8			4	7	<b>19</b>
<i>Cap/Wire Closure</i>				1		<b>1</b>
<b>Clothing</b>						
<i>Glass/Pearl Button</i>				1		<b>1</b>
<i>Metal Button</i>			1	1		<b>2</b>
<i>Pant Rivet</i>			1			<b>1</b>
<i>Shoe Eyelet/Hook</i>			4	1		<b>5</b>
<i>Shoe Leather</i>		3	4	2	1	<b>10</b>
<i>Suspender</i>			1			<b>1</b>
<b>Construction</b>						
<i>Hose</i>		1				<b>1</b>
<i>Milled Lumber</i>	2	2				<b>4</b>
<i>Wire Nail</i>		1				<b>1</b>
<i>Cut Nail</i>	1					<b>1</b>
<i>Thick Wire</i>				1		<b>1</b>
<b>Food &amp; Food Storage</b>						
<i>Bone, Large Mammal</i>	16	26	3	129	10	<b>184</b>
<i>Can Fragment</i>		1		1	1	<b>3</b>
<b>Household/Domestic</b>						
<i>Furniture Hardware</i>	1					<b>1</b>
<i>Medical/Health Prod.</i>			2			<b>2</b>
<b>Personal</b>						
<i>Weapon Casting</i>				1		<b>1</b>
<i>Watch</i>				1		<b>1</b>
<b>Unknown</b>						
<i>Bone/ Cuticle</i>					1	<b>1</b>
<b>TOTALS</b>	<b>33</b>	<b>35</b>	<b>16</b>	<b>152</b>	<b>28</b>	<b>264</b>

## CHAPTER 4

### ORAL HISTORIES AND ETHNOGRAPHIC STATISTICS

The previous chapter showed a significant difference in size, shape, and feature frequency within sites during the very late nineteenth and early twentieth centuries. These differences are evidence of modified construction camp size, alternative use of available technologies, and the efficiency of that technology. All attributes point to the modification of rock oven material culture. Following are oral histories that provide first-person, contemporary accounts of life in the construction camps and on the section gangs; the place where these changes in material culture were expressed. Their use here is necessary to document both the degree of significance these rock ovens occupied in the heritage of those who brought the technology with them, and the others who appreciated their usefulness. Some of the subjects are important in that they debunk folklore by summarily excluding Oriental origins of construction.

#### Oral Histories

**Victor Sathers-** Victor Sathers was a railroad agent and telegrapher for the Great Northern Railroad. He was born in Duluth, Minnesota, in 1889, and arrived in Montana

in 1908. He started with the Great Northern Railroad in Clancy and Boulder, Montana, with tunnel operations. In 1909, he moved to Troy, and stated that there were just 200-300 people on main street, and a locomotive roundhouse with 12 stalls. He described a Japanese community that cleaned numerous businesses and worked in the coal chutes. He estimated that possibly 25 Japanese formed their own separate colony, saying that they, “kept to themselves”. However, he claims to have known some of them quite well. In 1926, the railroad took the roundhouse and terminal out, and from that point on the train ran straight through (Sathers 1980, Interview). Because of the anti-Asian sentiment of the period, it is plausible to conclude that many people would have, and did, associate all Asians as Chinese. The colony of Asians living in northwestern Montana, along with those few that did work on the railroad, and the nature of their closed society could be connected with specific local myths, domicile structures being one of those myths.

**Hilmar Hansen-** Hilmar Hansen was born in Norway and raised in Lincoln County, Montana. His father worked as a section gang chief with the Great Northern in 1912, in Fortine, Montana, north of Kalispell. In 1928, his family moved to Kalispell. At that time, a section gang tended 40 miles of track, an increase from the past 16 to 20 miles of track. The section gang quarters were located in the midpoint of this distance with two crews; one tending 20 miles of track eastward, and the others tending 20 miles westward. He had pictures of his father’s track gang members, pointing out that some were Armenian and others were Turks. Their quarters consisted of boxcars provided by the railroad or at other times bunkhouses. In the summer, he recalled Mexicans would also be employed by the railroad (Hansen 1981, Interview). Hansen’s experience in Montana

with Mexicans is important because, as discussed earlier, Mexicans were also skilled and proficient in the use of building and using rock and/or mud mortared outdoor ovens, many shaped very similar to beehives (Kniffen, 1960).

**Charles Carbone-** Charles Carbone's railroad career began in Livingston, Montana. He discussed the harshness of the winters and adjusting to that type of weather. Each winter he would travel back to the larger cities to work in the winter. He talked of baking bread, kitchen duties that each worker had, and the lack of fellow Italians. Mr. Carbone told how some men would bring pasta back from St. Paul, Minnesota, to use for meals. He did not state the method used to cook the pasta, only that bread was prepared in the ovens. In 1910, Carbone asserted that Montana contained less than 6,000 Italians, 90% of whom worked for a railroad in one capacity or another (Carbone 1980, Interview).

**Mary Kanduch-** Mary Kanduch was born in Austria. She worked in logging camps in western Montana with other Eastern European immigrants and some Finns as well. She described her duties as cooking and childcare. She cooked in the logging and sawmill camps around Georgetown Lake and explained that some of the women were also loggers, primarily assisting their husbands. However, she did not allude to rock ovens being built outdoors for food preparations (Kanduch 1981, Interview).

**Walter Cameron-** Walter Cameron remembered immigrants who had recently arrived in the United States, coming from Minnesota to work on the railroad being built in the west. "There were Scotch, Irish, Swedes, Norwegians, Dutch, and others all headed for

Montana to help in the construction work of the railway.” He went on to say that Germans were also present but not African-Americans (Cameron 1983:75). This is another example of the large variety of nationalities and ethnic groups that worked on the railroad in Montana and other areas.

## ETHNOGRAPHIC STATISTICS AND ANALYSIS

### Chinese

Wegars cites numerous accounts where dome rock ovens are frequently called “Chinese ovens”, “coolie huts”, and “coolie houses” (Wegars 1991: 42). In her research, she states that the Chinese have never been documented as users of ovens solely for food preparation (Wegars 1991: 43). Ovens were built as kilns for porcelain and pottery in China, yet rarely were they used for food preparation (Wegars 1991: 43, citing Hommel 1937: 105). Even when the Chinese prepared wheat, used for making buns, it was prepared by steaming not baking methods (Wegars 1991: 43 citing Anderson and Anderson 1977: 337).

### Scandinavians

Glassie states that ovens known to be built by Scandinavians are square with timbered roofs (Glassie 1968). He identified numerous ovens in Pennsylvania as Dutch bake ovens, and argued that they are very similar to those found in Switzerland. Scandinavians were not heavily represented in railroad construction groups. However, there is a single reference to railroad-related ovens constructed by Scandinavians in British Columbia, yet there is no documentation, oral or written, to support this claim (Wegars 1991: 43).

Rossillon (1984) cites an interview conducted in 1976 of William Romek, a resident of Billings, Montana, who took part in building ovens with his section crew. He states that Greeks were assigned the task of bread baking in the track gangs. "I was assigned to a gang of nearly 70 Turks, Greeks, and Armenians.... We were assigned a Greek member to the crew to cook our meals. The first thing that the crew did at any location was the construction of their earthen and rock ovens and we had delicious bread, fresh every day, in round thick crusted loaves." (Rossillon 1984:4)

Wegars (1991) also provides photographic evidence to support Greek construction in the same area. Her research resulted in photographs identifying both Italians and Greeks using, or claiming to have built, ovens in the northwestern United States, along the Great Northern line, and southwestern Montana, along the Northern Pacific line (Wegars 1991). She supplied photographic documentation to accompany both groups of workmen on each line.

### Italians

Many archaeologists and historians argue the case of crediting Italians with the construction of rock ovens (Buckles 1980, Choquette and Holstine 1980, Costello 1981, Rossillon 1984). Julia Costello conducted excavations at New Melones' Angels Creek, California, on rock ovens located in that particular mining area. Those ovens, she argues, are the result of Italian occupation. This conclusion is based upon census documentation and oral histories that were collected from local Italian-American informants. However, there was one feature that was more likely to be of Mexican origin because of its earlier date of 1850 (Costello 1981). Later, Greenwood and Shoup (cited by Wegars 1991: 45) disputed the Italian origin argued by Costello. They stated that ovens in Italy were

barrel-vaulted and that no dome shaped ovens had been documented in Italy. Therefore, these ovens are associated with Sonorans and Chilenos who occupied the area long before the Italians settled there. Ovens that post-date 1880 could be associated with Italian settlers and viewed as a modification of the previous inhabitants' *horno*, according to Greenwood and Shoup (Wegars 1991: 45). Ethnographer, Paul Scheuermeier's work on peasants in Italy does not substantiate Greenwood and Shoup's claim that Italians never constructed dome shape ovens. Most of the ones he describes are barrel-vaulted, however, he does not say corbelled or dome structures do not exist. Some illustrations Scheuermeier uses do, in fact, resemble dome shape ovens. Agricultural day shelters in the Apulia region of Italy do implement techniques of corbelled domes, and most have stone lintels above their openings (Wegars 1991: 48, citing Allen 1969).

Wegars uses three other references to Italian built ovens with substantial documentation. A newspaper account of Italians rioting along the Spokane International extension into Canada does not describe ovens but is important for its accurate placement of Italian workers, the name of their camp, and the dimensions of their living space. Only later were ovens found there and tied directly to them (Wegars 1991:39, citing Spokesman-Review 23(98): 1). According to the Spokesman-Review, it was common for camps to be within one half-hours walk from one another.

Another site in Cheney, Washington, affiliated with the Spokane, Portland, and Seattle Railroads, has two ovens that are documented by oral history interviews as being the work of Italian section gangs (Wegars 1991). These oral accounts and contemporary newspaper mentions are significant because of the absence of artifactual data to directly identify the ethnic origin of each site. Wegars does acknowledge a "trend" where rock



ovens, constructed by railroad laborers living in construction camps, were camps of Italian workers and some Greek workers.

Women in Italy baked once or twice a week (Wegars 1991: 46, citing Williams 1969). The ovens these women used were built by Italian men, quite possibly from the blueprint of agricultural day shelters. These shelters were originally built by men in Italy's farm fields to escape harsh weather conditions. There is a possibility that when these men came to the United States, most of them being either single or married but alone, they modified the design and construction methods of agricultural day shelters to create rock ovens for food preparation. Perhaps the difference in available raw materials between Italy and the western United States can explain some of the modifications seen in the United States. Conversely, their alterations and modifications could also be the result of influences by others known to construct ovens, such as Greeks, Mexicans, or other ethnic groups, who sometimes worked with the Italian immigrants in the same camp. This argument applies to other groups, assuming modifications and adaptations or alterations are not unique to one but apply overall.

Wegars (1991) concludes that with the various arguments of ethnic affiliation and origin of ovens, it may be likely that those found in the United States on railroad lines are a combination of native Italian design and some Greek; each being affected by time constraints in construction and differing purposes.

Reports conducted by United States Immigration Service personnel documented Italian bread baking in railroad construction camps. A 1911 report specifically states that groups were divided into "racial units," and lived in separate boxcars and segregated camps (United States Immigration Commission 1911). This appears to weaken the

argument that oven design is the result of cultural diffusion, but when these groups were actually working, they worked together, not segregated in most areas. Also, the degree to which the camp sites were segregated is another issue altogether (Briggs 1974, Buckles 1975, Rossillon 1984, Reno 1994). The above cited government document does not state specific locations of work sites documented nor does it provide details of “segregated camps.”

### IMMIGRATION PATTERNS OF ITALIAN IMMIGRANTS

Italian immigrants coming into the United States between 1820 and 1962 numbered 5 million; of this amount, 3.3 million entered the United States in the first two decades of the twentieth century. This is more than any other two decades in the history of European habitation of the western hemisphere. Beginning in 1850, census data was recorded detailing what countries foreign-born citizens emigrated.

Using data collected in Iorizzo’s dissertation (1966), several phenomena can be shown between 1850 and 1930: settlement patterns, what states immigrants chose to settle, the number who settled there, and the year of that census. Using this data, several patterns emerge.

In the first decade of detailed record keeping, Louisiana had more Italian-born immigrants than all other states. From 1860 to 1880, California gained first place while Louisiana fell to third; however, more southern states remained in the top 10 than any other geographic section of the United States. By 1880, there was a geographic shift. California had fallen to second place and New York headed the Census Bureau’s list of habitation for Italian-born immigrants. The shift, however, was that the southern states

all but dropped out of the top 10 and another western state entered the top 10, Nevada. The percentage of Italians in the Nevada census was nearly 3%, outranking all other foreign-born immigrants living in that state.

New York remained the top destination for Italian-born immigrants coming to the United States throughout the remainder of this period. Still, another western state, Colorado, broke into the ranks of the top 10 states of Italian immigrant settlement. Louisiana fell to eighth place although there was a gain of more than 8,900 Italians in that state. Louisiana was the last remaining southern state in the top 10 during the 1900 decade.

In 1910, there were several dynamics at work. In this census, every state in the nation showed an increase in Italian residents with the highest movers being Washington, a western state, with 617%, and West Virginia following along with 591%. Among other statistics were the dramatic increases of Italian immigrants to the “wheat and corn belt states west of the Mississippi River (Iorizzo 1966: 35).” These states had enormous Italian immigrant population increases of the 10-year period. The top five states and the percentage of population growth among Italian immigrants are: Oklahoma- 915%, Indiana-520%, Nebraska- 505%, Iowa- 487%, and Minnesota with 435%.

The 1920 census reflected a decline of Italian-born immigrants in nearly half of all states, yet the top eight states from the previous decade retained their respective positions. Iorizzo cited the 1920 United States Census pointing out that Italian immigrants represented 11.6% of the foreign-born population in the United States. Louisiana ranked first with 35% of its residents being foreign-born Italians.

In Texas, Italians began settling following the Civil War. When the railroad began construction, many took those jobs saving money to start their own businesses or buy land. In some areas of Texas, this started a trend of small tightly knit colonies of Italians developing. This can be comparable to other geographic locations where Italians found the same opportunity and environment to settle, although Texas has a disproportionately large number of these types of rural communities.

All of the statistics and data taken together as a whole reveal a more subtle pattern forming over this 70 year period. In states where rock ovens have been more prevalent in the archaeological record, there is also a noteworthy increase in Italian-born immigrants. The beginning of Italian populations in each western state corresponds directly to the dates assigned to the majority of datable rock ovens found in those states. For example, California, whose Italian immigrant population doubled every decade between 1860 and 1900, also reflects an increase in rock ovens that were constructed during this same period. This did not happen to every state that grew because of Italian immigrants. In fact, Idaho, whose peak Italian population was only moderate between 1900 and 1910, and then steadily declined, has numerous rock ovens documented in the State Archaeological Office. Most states where rock oven structures are found also coincide with an increase in population growth of Italians immigrants. Another example of this phenomenon is the large number of Italian rural communities found in Texas. This is another state where rock ovens have been found (Briggs 1974).

Many of the rural communities settled by Italians in western states were made possible by land purchases from the railroads, for agricultural occupations and some mining claims. These Italians worked for mining railroad companies, or large operation

farms. Once they saved enough money from these contracted jobs they migrated to a particular rural area and bought land or started small businesses (Iorizzo 1966: 37). Priest River, Idaho, is an appropriate example of this pattern (Cork 1974: 11). This community began as a result of the Great Northern Railroad that operated very close to the actual town. Most of the Italians who settled there worked for the railroad and then bought land from it to hew timbers for railroad ties further down the track and for continued maintenance of the track. Apparently, no work has been conducted with the intent of connecting rock ovens on railroad sites along the Great Northern and other area railroads, with some of the original habitation sites in Priest River, Idaho.

The statistics are not conclusive on whether immigrant Italians are responsible for the various forms of rock ovens found in all corresponding states. What is inferred from such statistics is that there appears to be a strong correlation between population figures and those archaeological sites. I believe that the correlation is strong enough to warrant further testing using a more complete and detailed listing of those census statistics, along with a larger sample size of archaeological sites from each state in the domain. Naturally, the archaeological record of such structures becomes increasingly more scant as contemporary development increases.

These population statistics cited above do not reflect a comprehensive coverage of all Mediterranean eastern European nationalities of the period. Therefore, the future use of population statistics should be inclusive of all immigrant groups. This would enable researchers to test the same hypothesis, discussed above, to other ethnic groups or one group individually in a comparison study, and to possibly exclude other groups that rock ovens are sometimes improperly ascribed.

## CHAPTER 5

### DISCUSSION AND CONCLUSIONS

Rock ovens found throughout the United States and other countries, represent a distinctive archaeological feature class. The background information provided in the introduction creates the context of the relevant social and geographical history in the western United States. Through the combination of numerous people immigrating into the expanses of western North America, coupled with the intense anti-immigration movement, many subtleties and traditions of their culture were either lost or absorbed to the point of only the most salient traits being distinguishable.

In the last couple of decades, there has been a strong push to re-evaluate the “unherald” people that contributed greatly to the United States during its developmental industrial period. This emphasis is seen in; history, historical archaeology, geography, and other social science fields. Using an interdisciplinary approach to study those individuals provides a clearer interpretation of what elements of their cultural heritage fell into disuse or abandonment, and which were improved. However, it sometimes creates more questions than it does answers, such is the case with this paper.

The hypothesis tested in this paper shows how material culture that probably originated from some form of social or cultural heritage, developed into a commonly used technology with universal applications in the realm of food preparation among pluralistic groups with no single ethnicity or nationality. Here, material culture has been defined as vernacular architecture, instruments used in food preparation, and food remains. Using population statistics and census data, there is a likely correlation between Italian immigrant settlement in each area and the increased occurrence of rock ovens found on historic site hence, it is known that Italian workers occupied some, if not a majority, of those historic sites. The photographic evidence, contemporary accounts, and company records attest to their presence. On the other hand, Greeks, Turks, Armenians, Hungarians, and Mexicans also worked and lived at some of those same sites. In the event that population and census data analysis, such as that discussed in chapter 4, is conducted using the other nationalities, it would unveil whether or not these same patterns exist for them, as in the case of the Italians.

Another issue raised in this paper is the distinction between nationality and ethnicity: Assuming there is evidence to tie oven features at one site to a specific group, what characteristics would distinguish a nationality, identified by common affiliation with a state society, and an ethnicity, a shared belief in a common heritage? Should it be determined that oven use in the Mediterranean region originated before state-level society, would ethnic association become a mute point? Assigning one feature of material culture to a single nationality originating in the Mediterranean, when that same feature can be traced through time and found to occur in neighboring provinces at differing times in history, would be misguided.

One of the more important aspects of the analysis in this paper is the use of vernacular architecture to examine stylistic change in construction techniques of rock ovens. I believe that the variation seen in construction methods is a result of cultural diffusion amongst Italians, Greeks, Armenians, Hungarians, Mexicans, and Spaniards. Two or more of these groups are known historically to have worked and lived in close association with one another. They also received relatively the same treatment from Anglo-Americans in regards to compiling an immigrant labor force.



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