2-1-1997

Contributions to Anthropology, Number 10: The Historical Archaeology of Garnet Mining Town

Daniel S. Hall
Garren J. Meyer
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THE HISTORICAL ARCHAEOLOGY OF GARNET MINING TOWN

By

Daniel S. Hall
Garren J. Meyer
Tammy Howser
Jennifer K. Spencer

Preface by
Thomas A. Foor
THE HISTORICAL ARCHAEOLOGY OF
GARNET MINING TOWN

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Thomas A. Poor

University of Montana
Contributions to Anthropology Number 10

Department of Anthropology
University of Montana
Missoula, Montana
1997
This is dedicated to Jerry Clark, one of Garnet's many friends.

Edited by

Katherine M. Weist
Thomas A. Foor
Linda Salas-McLean
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*Daniel S. Hall*

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Thanks in large part to Indiana Jones, most of us think of archaeologists as swashbuckling adventurers. In reality, most are careful, methodical scientists who apply their trade to serve any number of constituencies. Government agencies, museum professionals, educators, and other archaeologists use the information these professionals provide. More importantly, members of the public use this information to satisfy their curiosity about the world they live in.

This collection of works tells the story of archaeological investigations at a western Montana nineteenth and twentieth century mining community. The tale begins as Euro-Americans moved into and settled western Montana. They were attracted by promises of a successful life and their activities rearranged the landscape, leaving traces visible today. Precious metal markets and production fluctuated and people came and went over the years. Today there are still residents in Garnet, but most of the buildings there bear silent testimony to the mining past.

A variety of readers will identify with the experiences detailed in these pages. For one thing, some are direct descendants of the people leaving Garnet’s archaeological materials. For another, there are a few who remember their own early lives as residents of Garnet. Students of mining camps will learn more about the "archaeology of everyday life." Students of American culture will appreciate the accounts of changes in American culture and how it has influenced the environment.

These four theses draw mainly from anthropology and history. The contents are not often the subject of "Great Civilizations" archaeology. They are more usually studied as examples of vernacular culture. Each helps us to understand the lives of people living in the recent past and the archaeology they report helps us to understand the centuries of materials concealed beneath our feet. The picture revealed is viewed in the light of written records and remembrances of people that lived in the once-thriving ghost town.

Under the guidance of Carling Malouf, the University of Montana began offering courses in Historical Archaeology in the early 1950s. Over the years, Dr. Malouf conducted excavations at Saleesh House, St. Mary’s Mission, Bearmouth (near Garnet Ghost Town), Lt. Mullan’s Cantonment Jordan, Fort Owen, Fort Missoula, and Fort Shaw.
The University’s involvement with Garnet began in 1987. Jerry Clark, then the Bureau of Land Management Butte District Archaeologist, contacted me and asked if we were interested in developing a partnership. My field class excavated in and around the townsite over the next eight years. Seventeen students from the K. R. Schwanke Honors Institute for High School Juniors conducted additional excavations during the summer of 1992. This program was sponsored by the Davidson Honors College of the University of Montana. Finally, each author conducted their own field research while completing their theses.

The Department of Anthropology faculty thank Jerry Clark, Darrell Sanders, Gary Smith and the Bureau of Land Management Missoula Resource Area staff for their kind support and encouragement during the life of this project. We believe that their vision in proposing and executing the Cooperative Agreement was instrumental in helping these four students develop and pursue their careers in the profession of cultural resource management. To the many students who participated in the fieldwork, the faculty hopes you found the experience not only educational, but fun as well. Finally, to Tammy, Jennifer, Garren and Dan we wish you the best with your careers and thank you for making our days brighter.
HISTORICAL ARCHAEOLOGY AND THE
GARNET MINING CAMP: 1865 - 1912

Daniel S. Hall
CHAPTER ONE

THE RUSH TO GARNET BEGINS

The history of Garnet is similar to other mining camps across the mining frontier, and yet it is remarkably different in several aspects. Commonalities that Garnet shared with other mining camps include the following: placer mining of free floating gold in the district led to the discovery of Garnet’s mother lodes, problems with gold recovery during the smelting process, the transporting of the ore, and troublesome geology of the Garnet area. Garnet experienced the boom and bust cycles so common for mining camps across the West. Mining and milling of Garnet’s ore bodies depended on expertise and equipment developed in other parts of the mining frontier. Capital had to be imported from beyond the region. Labor for the mines of Garnet depended on outside factors.

The one basic difference that sets Garnet apart from mining camps with similar tales is the element of time. The mother lodes of Garnet were not discovered until the mid-1890s even though the placers of the Garnet area had been worked for nearly three decades. The thirty year hiatus between Garnet’s origins as a rich placer district and its boom as a hardrock mining camp distinguishes Garnet’s history from that of all other mining camps in the Rocky Mountain West.

Between the 1860s and the 1890s the mining industry throughout the West experienced rapid industrialization, Montana achieved statehood, nearby Butte grew to be the preeminent mining center in the West, and the opening salvos in the famous war of the copper kings had been exchanged. The phenomenal growth of Butte and the battles of its capitalists shaped the development of Montana’s economic, political, and labor structures for decades. These factors, likewise, influenced the pattern of development at Garnet in the 1890s (see Map 1).

The effects of the Panic of ’93 and the subsequent repeal of the Sherman Silver Purchase Act rippled across the mining frontier, through the state of Montana, and into Garnet. As a result, countless mining camps witnessed the end of their glory days and faded into obscurity, while other camps moved beyond the singularity of mining to become transportation or financial centers. The very timing of the discovery of the mother lodes in Garnet ensured that its story would differ.

The discovery of the first gold in Montana has received considerable ink and while some may view this as an important event, the result of the discovery of gold should take center stage. Of far more importance than the question of who actually
found the first gold is the fact that there were a considerable number of miners in the area, especially in the Salmon River country in Idaho, ready to rush to Montana’s diggings. In 1862, Montana’s first real gold strike of magnitude occurred in Grasshopper Creek and Bannack sprung into existence. By the spring of 1863, there were nearly a thousand people in Bannack (Toole, K. Ross 1959). In the course of several months, discoveries were made across Montana and cities like Virginia City, Nevada City, Circle City, and Diamond City appeared overnight. News of other strikes in the territory reached miners resulting in rushes across the country. Some of the rushes were profitable for the miners, but the great majority proved fruitless.

In 1865 a party of three men, Jack Reynolds, Joe Booth, and Charles Hickey, discovered gold on Elk Creek and the rush to the Garnet Mountain Range started (Daley and Mohler 1973). The same year witnessed the discovery of gold on Bear Creek across the range from Elk Creek. The following spring Colonel G.W. Morse and three partners travelled to a new strike at Blackfoot City, where they found thirty to forty miners working the gulch and turned aside to Bilk Gulch. At Bilk Gulch the Morse party struck a rich deposit that, combined with the other strikes, focused attention on the Garnet Range (Historical Research Associates [HRA] ms. 1982).

The Garnet Range quickly disgorged a considerable wealth of placer gold. Gold bearing gravels were found in Douglas Creek, Weasel Creek, Deep Creek, Bear Creek, Elk Creek, and Day, Bilk, Jonathan, Oliver, Harris, McManus, McGinnis, Melhorn, Cayuse, Cave, First Chance, Williams, Bivins, Kearns, and Chicken Run Gulches. A number of camps sprung up around these placer deposits, including Yreka, Reynolds City, Springtown, Top O’Deep, Coloma, Mitchell (later Garnet), and Beartown.

It has been argued that no region had more placer streams or miles of placer streams than the stretch across the top of the Garnet Range (Cushman 1973). The placers of Elk Creek and its tributary, Day Gulch, flow north; the placers of Bear Creek and its tributary Cayuse Gulch flow south; and both join at Stone’s Flat on top of the Garnet Range. This continuous deposit is over twenty miles long, longer than Alder Gulch (ibid). The placers of Bear and Elk Creek have been described as among the more productive localities in Montana (Pardee 1917).

The gold strikes in the Garnet Range were early, widespread, and exceptionally rich. In 1869, placers at Bear Creek and Deep Gulch, a tributary of the Bear, produced an excess of $2,000,000 in gold (Raymond 1870). Later estimates pegged the yield at Bear Creek at $5,000,000 and Elk Creek at between $6,000,000 and $10,000,000 (Pardee 1917).
The rushes to the various camps in the Garnet Range were no different from rushes to other camps across the mining frontier. The populations of the placer camps were fluid in location and predominantly male in nature. In the spring of 1866, Reynolds City, a camp in Elk Creek, consisted of a stretch of tents and a sprinkle of log cabins. One of the individuals in the rush to Elk Creek was William Andrews Clark, a future Copper King and U.S. Senator from Montana. Clark opened a store in Reynolds City when he arrived and within a year had moved his store across the Garnet Range to Beartown (Daley and Mohler 1973).

The prices merchants charged for goods in Reynolds City were similar to prices charged elsewhere on the mining frontier. A Reynolds City storekeeper’s account for May 4, 1866 listed prices charged for goods, including potatoes at 12 1/2 cents, salt 50 cents, sugar 50 cents, nails 25 cents, and bacon 80 cents (Pardee 1917). Pardee (ibid) cites as his source for these prices accounts located in a safe at Larabie’s bank in Deer Lodge. Considering that W. A. Clark went into partnership with Mr. Larabie and formed one of the first banks in the territory (Daley and Mohler 1973), the possibility that the source material Pardee cites was Clark’s account book has to be deemed strong.

By 1867, Reynolds City consisted of over a hundred houses with new structures going up daily (Montana Post 1867). Within a matter of a few years, however, the deposit played out and as quickly as they arrived, the miners left. In 1873, Reynolds City had only one resident, William Kelley. Kelley helped build Reynolds City and reportedly derived a perverse pleasure from burning the town down, building by building (Daley and Mohler 1973). Reynolds City had burst on the scene rapidly and then figuratively and literally flamed out just as quickly.

Other placer camps in the Garnet Range experienced similar fates, with one notable exception. Beartown, located at the junction of Deep Creek and Bear Creek, became "celebrated as one of the wildest of the wild" early-day mining camps (Pardee 1917). Beartown’s rich placer deposits, its proximity to the Mullan Road, and its geographic location at the mouth of Deep Creek allowed it to develop not only into a sizeable camp, but also as a regional trading center.

The population of the camps in the Garnet Range in 1867 numbered over 5,000, and it is estimated that this represented one third of Montana’s white and Oriental population (Pardee 1917; Cushman 1973). Population estimates for mining camps are usually suspect and Beartown is no exception. Mary J. Pardee states in a newspaper article that five thousand men were camped in Beartown within weeks of its initial discovery. She further claims that by 1865 there were seventeen saloons, several blacksmith shops, and numerous other commercial establishments at Beartown (Great Falls Tribune 9/6/1931). This simply does not
reconcile with the 1870 population figures for Montana.

Merrill G. Burlingame indicates that only 20,595 people lived in the entire territory and the majority lived in Bannack, Diamond City, Fort Benton, the Deer Lodge Valley, and elsewhere (Burlingame 1973). Unfortunately, the U.S. Census Bureau records will not help with population estimates for the area. The schedule sheets list the major precincts, including Philipsburg, Drummond and other major cities, but the rest of the county is one precinct, regardless of location. Notwithstanding the exact population numbers, there is no denying Beartown's role in the historical development of the Garnet Range.

Several accounts illustrate the colorful and wild lifestyle on the Bear. During the battle over where the state capital would be located, Deer Lodge emerged as an early contender. When Deer Lodge advanced ambitions towards grabbing the capital, other capital-happy camps jokingly referred to Deer Lodge as "the little town on the road to Bear" (Cushman 1973). A correspondent for the New Northwest, a Deer Lodge newspaper, penned his dateline from "Notorious Beartown" and stated that the nine saloons in town were doing "a lively business" (New Northwest 9/10/69).

The gold deposits on Bear Creek were deep, rich, and narrow. The deposit of gold concentrated along the bottom two feet of gravel above bedrock and ran 15 feet wide. Several sources describe the mining of these gravels and all agree on the specifics of the deposit. These same accounts of the Bear agree on what can only be described as one of the more bizarre stories of placer mining.

The deposits of Bear Creek proved to be well suited for drift mining. A miner would sink a shaft to the bed rock and proceed to mine the bottom two feet of gravel by driving a drift along the bedrock, occasionally shoring the roof of the drift with timbers. Buckets of gravel were winched out leaving smooth-walled shafts and drifts. The walls of the shaft and the resulting drift required little timbering to prevent cave-ins, and the miner quickly raced to the end of his claim before the miner on the adjoining claim arrived. Eventually the drifts grew so intermingled that an intrepid adventurer could walk 8 to 10 miles underground without having to come to the surface (Pardee 1917; Cushman 1973, Ellingson, ms. 1972). One colorful source describes a safe mid-winter journey through the Bear drifts while a blizzard raged above (Cushman 1973).

The above anecdote notwithstanding, there is a plausible explanation for the development of an extensive complex of interconnected drifts and tunnels at the Bear. The miners needed to keep the drift open to move the gold bearing gravel to the shaft and then to the surface. More importantly, a cave-in left
unattended would serve as a dam that would eventually back up water. The bedrock served as an impermeable barrier to the ground water flow. The ground water combined with the flow of the former Bear Creek to form a considerable subsurface stream. A passage for draining water had to be kept open and this passage served as the underground route (Cushman 1973).

The men who drove the Bear Creek drifts rank among some of the mining frontier’s more colorful characters. They have been referred to as Beartown Toughs and their description leaves little to the imagination. They gained their name, in part, due to the conditions under which they labored. Hemmed in by the narrow confines of the drifts, it was said that they "assumed one and all a bear-like appearance, with thickened shoulders, spread feet and bowed legs." This bear-like appearance was further heightened by the miners’ "habit of holding the head low because of the roof; and squinting because of the drip of muddy waters into the eyes." The miners’ outward appearance alone, however, was not responsible for their ursine appellation. Indeed, the term Beartown Tough grew to be synonymous with:

...all Montana’s massive, truculent, brawling, saloon-wrecking men of subhuman appearance, and Beartown, which grew at the forks of the Deep and First Chance, a "Y" in the canyon, was renowned as the toughest camp on the gold frontier. Not necessarily the one where you would most likely be shot, but where you were most likely to suffer bruised sensibilities and broken bones (Cushman 1973).

In the winter of 1870, Mike Flynn died in Beartown. Mike had secured a promise from his partners that he would be buried by a priest in consecrated ground. However, the nearest priest and church were several miles away in Deer Lodge. The resulting funeral procession can only be described as a comedy of errors. The body was placed into a hastily made coffin, loaded onto a wagon and the procession took off for Deer Lodge. Henry J. Bose, an early day placer miner later described the events.

Well, we put the corpse in the coffin, and placed it in the wagon in the back. Next morning when we got ready to pull out for Deer Lodge we had another circus getting the horses started, but after breakfast the procession started, those on horseback going ahead. It was quite a procession. We travelled until we got to Gold Creek. At Pioneer bar there was some ground sluice and we found there was a saloon. As it was late in the afternoon some of the boys went in and
had a drink, and pretty soon they went in and had another drink. Then we concluded that as poor Micky had never had a wake we should bring him in and hold a real Irish Wake. We got some candles and brought the coffin in and sat it on two beer kegs. We took off the lid and lighted the candles and there was poor Micky a layin' in there. We had some real good singing and drinking all night.

In the afternoon the storekeeper said to me and Jim to ride on ahead and see the Priest and tell him we were coming and to dig the grave for Micky. So the two of us spurred up our horses and got to Deer Lodge and saw the Father, and told him to show us the proper place to dig the grave. He was very kind to us and gave us some supper.

As we were waiting for the procession we finally saw it coming down the valley. All of us stood in respectful position for the burial of poor Micky. And finally as the wagon pulled up, Lord and behold the corpse was gone. I tell you we sure felt badly. The two drivers said that coming down the hill the wagon had run up on the horse's hind quarters and of course they reared around acting as though they wanted to shake hands with the driver. We all felt pretty bad and were ashamed of ourselves. The next morning Jim and I and two more started out from Deer Lodge in the wagon. At the top of the hill we found the place where the horses had acted up and after a long search we finally found the coffin down in the creek bed where it rolled. And there was poor Micky standing on his head (Montana Historical Society 1976).

Beartown clearly had its share of colorful characters and events. During its height of activity Beartown reportedly contained 17 saloons, several blacksmith shops, a brewery, livery stable, jail, slaughter house, drugstore, restaurant, Balls Hotel, Abscal's General store, and Gee Lee's wash house (Wolle 1963).

By the early to mid 1870s, placer miners became aware that the gold was playing out and their lifestyle was also playing out. There was still gold in the mountains, but it was locked into hard-rock deposits which the placer miners could not reach. Future mining in the Garnet Range, and in Montana, would require extensive infusions of capital to extract the ore and to
process the gold.

The miners obviously knew where the gold was located since they had started staking lode claims in the region in the mid-1860s. Quartz veins were uncovered by placer operations in Deep Creek in 1866 (Pardee 1917). The Shamrock, Lead King, and Grant & Hartford were located at the head of First Chance Gulch in 1867 (Ellingson, ms. 1972). Yet once the easily worked placer deposits played out, the miners left. By 1869, there were only 450 people in Bear Creek and Deep Gulch and another 100 on Elk Creek (Raymond 1870).

The development of these and other lode claims across Montana had to wait for the evolution of other elements to occur. The original mining boom in Montana ended and would "never thrive again until railroads and outside investors came to develop the quartz mines which clearly held the area's future" (Malone 1981). Another factor in the development of quartz mines in Montana which Malone does not include is the development of the technology to extract and reduce the ores. This technology would have to mature elsewhere before entering Montana.

In the 1870s Montana's mining economy fell into decline, mirroring a nationwide economic depression. The Panic of '73, following a period characterized by rapid industrialization, unregulated speculation, rampant inflation of the credit system, and growth of a massive foreign debt, was sparked by the failure of the banking system owned by Jay Cooke and Company (Nevins 1971). The depression turned out to be sharp but short-lived. It was, however, in 1873 that the seeds of a later crisis wereinnocently sown--a crisis that would rack the mining industry's very foundations. This was the problem of the nation's money supply.

Although silver mining flourished during the 1880s and early 1890s in Montana and across the West, economic factors were at work which would eventually wither the industry. The nation's monetary policy, bi-metallism, was evolving during this period. Debate over the silver question raged through the nation's economic and political establishments. In 1893, as yet another economic depression throttled the nation, the money supply and the silver question returned to the center of the national debate. The Panic of '93 and the repeal of the Sherman Silver Purchase Act swept silver mining camps in front of the wind like so many tumbleweeds. Thousands of hardrock miners suddenly found themselves unemployed.

The silver districts caved in, their towns abandoned. On the morning of August 1, the whistle at the Granite Mine was tied down, screaming until no more steam remained: the silver era had ended. A.L. Stone witnessed
the leave-taking at Philipsburg and said 'it was the most complete desertion I have ever seen. Down the roadway on August 1 came the queerest, most incongruous procession ever seen. No one had stopped to pack. Everything was thrown helter skelter... a continual stream of almost panic-stricken people leaving, perhaps forever, their home in the mountains' (Smith 1992).

In one day, more than 3,000 employees were idle at the Granite Bi-Metallic. Shutdowns in mines occurred across the state and by December over 20,000 workers were unemployed. This represented nearly one-third of Montana’s entire work force and impacted all areas of the state’s economy as banks failed, businesses laid employees off or closed altogether (HRA ms. 1982). Hardrock mining had hit the bottom of the shaft.

The winds of change blew across the West as the 1880s and early 1890s witnessed the rise and triumph of hardrock mining across the West and in Montana. Large scale silver mining operations in Montana sprang up at Castle, Elkhorn, and Granite. Miners were no longer independent operators; they labored below ground for large corporations that were centered in places like San Francisco, Boston, New York, and London. The era of the prospector and the small miner had passed, to be replaced by industrial operations funded by outside capital.

Only a persistent Pollyanna among the miners could fail to see that mining had passed its high tide and the miners profession was changing. Even the miners who flocked to Cripple Creek began to think of themselves as the last of their era. They found a new world awaiting them, one that many of them wished had never came. For a generation and until the 1890s, new districts had opened fairly regularly, allowing the dissatisfied and the hopeful to try their luck elsewhere. Now, the miners faced the brutal reality of being a hard-working daily laborer for someone else, who risked his money rather than his life (Smith 1992).

The mining camps underwent great transition as the effects of urbanization arrived. One author writes that "the mining camp, the cutting edge of the frontier, the island of permanent settlement, the base for continued growth and transformation, symbolized a development new to the expansion of America. Nowhere else did the frontier become so widespread and universally urbanized" (Smith 1967).
Smith (1992) continues his discussion by noting that by the close of the 1880s, Montana mining communities were tamed and became respectable—"except for Butte". The winds of change which swept the mining communities included the appearance of the railroad, telegraph, the educated mining engineer, the arrival of women and families, the rise of education, religion, and the gentility of Victorian American (ibid).

The sudden urbanization of the mining frontier meant that communities now found themselves grappling with problems which, until now, had been avoided or ignored. Problems the community faced included municipal government, revenue, streets, sanitation and more. Communities which would prosper and survive into the next century would have to expand beyond the single facet of mining and incorporate transportation, communication, and more into their economies.

Mark Wyman, in his study of the hardrock mining industry, noted this great shift from pioneer to an industrial lifestyle. He wrote about the miners and the change they faced.

They were first of all pioneers who helped settle a vast frontier and exploit its riches; and at the same time, they were caught up in the dislocations which industrialism forced upon the work place. Old ways of life and work were strained - both by the migration westward and by employment in one of the most completely transformed occupations of the new industrial era. (Wyman 1979).

In short, the world of the hardrock miner changed under his feet. The technology of mining, the capitalization of mining, and even the labor force of mining changed with the appearance of hardrock mining. It is during these sweeping changes that Garnet appears.
CHAPTER TWO

THE BOOM DAYS OF GARNET

Even as the district’s placer deposits played out, enterprising prospectors were locating on lode claims in the hills surrounding Garnet. By 1867, several hardrock claims at Garnet, most notably the Shamrock, Lead King, and the Grant & Hartford, had been located. Seven years later Samuel Ritchey located what would eventually become the largest producing mine in Garnet, the Nancy Hanks. For three decades Garnet lay in slumber as other mining centers on the Upper Clark Fork, Elliston, Philipsburg, and most notably Butte, roared to life. Despite early signs of promise, hardrock activity in Garnet began very slowly, almost imperceptibly, it was not until the late 1890s that Garnet matured into a full fledged mining community.

Although placer deposits had attracted miners to Garnet since the mid-1860s, the historical record for the era stretching from placer days to boom-times at the hardrock camps is scanty. In 1865, placer miners first worked the Garnet area and the camp was known as First Chance Gulch. That same year witnessed construction of the first log cabin in Garnet (Ellingson, ms. 1972). The survey plats for the early claims at Garnet refer to the region as the First Chance district. By 1872, this small camp had a population large enough to warrant its own justice of the peace. A local newspaper noted that "Judge Woodlock is the resident J.P. of this camp and deals out justice to the boys" (New Northwest 6/22/1872). Slowly but surely, signs of mining camp life were beginning to appear.

In the spring of 1895, The Silver State reported at least 200 miners working in the young town of Mitchell (The Silver State 5/19/85). In addition to the usual assortment of miners cabins and tents, there were two saloons, a livery stable, a general store, and Woods Hotel. The Weekly Missoulian reported that the camp of Mitchell consisted of about ten buildings, the Mitchell mill and surroundings, Owsleys livery stable, and E.S. Woods hotel and saloon and a number of private residences (Weekly Missoulian 10/2/95). The following summer Samuel Ritchey finally discovered the rich ore in the Nancy Hanks which would start the boom days of Mitchell. The next summer, 1897, Ritchey changed the name of the camp to Garnet (Drummond Call 9/22/1905).

One source argues that the delay in Garnet’s development was due to a combination of national and local events. As previously mentioned, the economic depression of 1893 idled a great many of Montana’s hardrock miners. The closure of the Granite Bi-Metallic mine near Philipsburg sent thousands of miners into previously idled gold-mining regions. The Garnet area would not
boom until unemployed silver miners turned their attention to low-grade gold claims (HRA, ms. 1982).

While this presents a plausible explanation for Garnet's thirty year gestation, a closer examination reveals two additional factors: a persistent troublesome geology and the appearance of the entrepreneurial mining engineer. The one constant that runs through the story of the mines in Garnet is the geology. A bewildering array of geological conditions made location of the paying ore bodies difficult. The early location of the claims reveals that the miners were aware of the possibilities, however, finding the paying ore body proved difficult, to say the least. The possibility that there were a considerable number of miners working in the area during the silent thirty years trying to solve the geological puzzles appears rational.

Although Ritchey staked his claim in 1874, it took another 12 years to find the mother lode. Other miners worked hardrock claims in the surrounding area before the depression of 1893, some of them quite successfully. In 1890 W.P. Shipler discovered the Copper Cliff lode, which lies a few miles southwest of Garnet. Shipler's claims were later purchased by an English company that did most of the development work (Pardee 1917). The results from Copper Cliff were sporadic and the total production ran about 150,000 pounds of copper and small amounts of gold and silver. In 1886, B.A.C. Stone located the Haparanda lode on the top of the Garnet Range above Deep Creek which became known as Stone's Flat. Stone, a geologist, even attempted to mill the ores recovered from the mine (Cushman 1973). Map 2 shows the location of Copper Cliff, Stone's Flat and other mining properties in and around Garnet.

In the early 1890s, Dr. Peter Mussigbrod purchased claims in the Bear Gulch and Garnet areas. Mussigbrod represented the third leg of the tripod supporting Garnet's boom, the idle silver miners, the troublesome geology, and the arrival of the mining engineer. Mussigbrod was one of the more enigmatic individuals in the cast of characters who roamed the Garnet Range. His education covered a wide range, beginning with Latin at Goerlitz, Germany, natural science and philosophy at Helle and Koenigsberg, followed by a doctor of philosophy from the University of Berlin. He then studied mining at the Mansfield Copper Works at Eisleben, and at the mining academies at Clausthal and Freiberg, Saxony. His search for practical experience took him to the mines in Austria and Hungary, and after his arrival in the United States, to the assay office of the Poorman Mine in Burke, Idaho (Progressive Men of Montana 1900).

Something in the geology of Garnet attracted Mussigbrod's attention. In 1889, Mussigbrod and Dr. A.H. Mitchell, also of Deer Lodge, purchased the Lehso and Kroger Placer, Mineral Survey
GARNET REGION

Legend
- gold bearing gravels, mined
- gold bearing gravels, not mined
- placers operated - 1916
- hardrock mine
- claims
1 Shamrock
2 Dewey
3 Nancy Hanks
4 Cascade
5 Lowery
6 Grant & Hartford
7 Mogone & Anderson
8 Lead King
9 Red Cloud
10 Fairview
11 Lynn
12 Dandy
13 Haparonda

Source: Pardee 1915

Map 2. Garnet region showing the location of placer deposits, mines and mining camps
751, which ran through what became the center of Garnet. In 1891, the two located the International Lode which would become one of the leading producers in Garnet. (GLO Survey Plats). In 1894 Mussigbrod erected a ten-stamp mill in Bear Gulch to refine gold ore from the claims he owned in the area (HRA, ms. 1982).

Dr. Mussigbrod penned an article for the *Engineering and Mining Journal* (EMJ) describing the addition of a canvas table to his mill for increasing the savings of gold during processing. The low cost of installation combined with low labor cost made the table an attractive addition. In writing this article, Mussigbrod tips his hat towards his formative education and experience in the old country. "The canvas table is the old German 'Keherd' [sweeping table] as it is still used in some of the small stamp mills of the Harz Mountains for the concentration of galena ores" (This article is located in HRA, ms. 1982, Appendix C, and is acknowledged as an EMJ article. It cannot be determined if this is indeed an article from EMJ).

An even more revealing window on Mussigbrod's opinion of his role in Garnet can be found in the 1900 Census. In the Garnet district schedules, he listed his occupation as "Capitalist" (U. S. Census Bureau 1900). It is possible that the presence of a noted mining engineer, such as Dr. Peter S. Mussigbrod, the self-avowed "Capitalist", triggered a surge in mining activity at Garnet as others followed his lead.

Clearly there was some level of activity in Garnet before Samuel Ritchey located the rich ore which led to the boom of Garnet. The Garnet Miner’s Union Number 16, a branch of the Granite Bi-Metallic miners union was formed in September 1883 (*The Drummond Call* 9/22/1905). The location of hard-rock claims in Garnet, the discovery and development of nearby Copper Cliff, the formation of a union in Garnet, the presence and activity of Mussigbrod and Mitchell indicate a considerable amount of activity in Garnet before 1896. Garnet’s thirty years of slumber may not have been a period of inactivity, however, as a persistent population armed with a considerable education tried to solve the troublesome geology of Garnet. As will be explored later, one of the key factors in the death of Garnet is also related to the puzzling geology, the mines failed because the paying ore bodies mysteriously ended at faults.

Garnet began its formal boom cycle in 1897 and 1898 when construction activity began in earnest. The heydays of construction heralded the arrival of a new camp, yet the construction activity proved to be tied inexorably to the life of the mines. When the mines were discovered, the town boomed. When the mines foundered, the town of Garnet foundered, and when the mines closed, Garnet went along in silence.

Ritchey, a loyal son of Illinois, named the crown jewel of
Garnet's claims after Abe Lincoln's mother, Nancy Hanks. Ritchey located the claim based on two shrewd observations. To Ritchey, the presence of likely-looking quartz float in combination with the color yielded at the site during the placer era seemed a definite indication of paydirt. Ritchey later told J.T. Pardee, a geologist with the U.S. Geological Survey, that the placer mine had been worked by a Mexican and that these workings drew him to the site (Pardee, ms. 1915).

During the month of August in 1897, the Nancy Hanks shipped ore to the Colorado smelter at Butte, producing nearly $10,000 worth of ore. The Shamrock mine produced a single carload of ore to Butte netting over $2,700 (Anaconda Standard 9/29/1897). The following summer the Nancy Hanks shipped 19 carloads of ore to the Colorado smelter in August and again in September (Engineering and Mining Journal 10/22/1898; 12/18/1898). The mines in Garnet hit their stride and became steady producers. In fact, they would produce steadily for three years followed by seven years of intermittent production (Pardee 1917).

Construction activity in Garnet followed the lead of the mining activity. The construction of the schoolhouse in Garnet was completed in the fall of 1897 and 41 students were enrolled in class (HRA, ms. 1982). The Bearmountain News reported in January 1898, that

eight months ago there were only two houses, now it can boast of four stores, four hotels, with two more in the course of construction, two barber shops, three livery stables, seven saloons, an assay office, and a butcher shop. J.K. Wells has nearly completed his two and one-half story hotel and the Garnet, Woods, and Ritchey Hotels were owned by D.A. McDonald, E.S. Woods, and Henry Schoenfeldt respectively. Judson and Blaisdell and Renner and Schoenfeldt owned general merchandise stores and Joe Sturgeon ran the butcher shop (Bearmountain News 1/27/1898).

On June 20, 1898, construction of the Miners Union Hall was completed and this building would soon become the focal center for community activity in Garnet (HRA, ms. 1982). The Anaconda Standard reported on conditions in Garnet during what could be described as the peak of construction activity.

Less than 15 months ago it [Garnet] practically consisted of a half dozen log shacks in the heart of a dense forest on the backbone of a rugged mountain range. But the discovery of a magnificent ore body in the Ritchey Mine demonstrated something of the mineral
possibilities of the region and the development of the district and the upbuilding of the camp speedily began until at the present we find a thriving town of nearly 1,200 people with graded streets and a complete system of sewerage and sanitary conditions worthy of a city tenfold its size (The Anaconda Standard 8/21/1898).

It is during this same time period that the death knell of Garnet began to toll. In 1896, J.K. Wells commented that many of the mines were not being worked by any means, particularly the quartz mines which as a rule are idle. some of them, on account of the ore being low grade and the distance to haul the ore is too far from the railroad which eats up the profit. Other mines are owned by several co-owners who have their own differences which sometimes result in common everyday freeze out games, and of course the property which they own lies idle until the matter is settled (HRA, ms. 1982).

Even the discovery of the rich ore in the Nancy Hanks carried omens for the future. Samuel Ritchey had leased the Nancy Hanks mine to Al Lowry after locating the claim. Lowry worked the mine and provided a percentage of the gold to Ritchey. Al Lowry actually found the rich ore of the Nancy Hanks, a vein which assayed out to $500 per ton (Daley and Mohler 1973).

Other signs appeared during Garnet’s boom that presaged the future. In 1897, L.C. Parker and several others bonded the International Mine for $65,000. Parker had a crew of miners sinking a shaft to 700 feet looking for the mother lode. At this same time the Grant & Hartford mine was idle (The Anaconda Standard 9/29/1897). The Engineering and Mining Journal reported 250 men working in the mines in Garnet and that "the permanency of the camp is not assured, though several claims show good ore in considerable quantities" (EMJ 12/18/1897). But the most ominous event occurred in the following spring.

Fires were the bane of every mining camp and Garnet proved to be no exception. Fires started for every reason imaginable and the results were routine. Balloon frame structures packed closely together quickly became tinder and the force of fire was dealt a free hand. In April of 1898, Mr. Renner departed Garnet on a trip to Missoula and left a fire lit in his stove. The Renner and Schoenfeldt Store promptly - and predictably - burned to the ground (Daley and Mohler 1973). The historical accounts from this event do not indicate if any other structures burned.
It is at this moment that one of the more colorful and enduring characters in Garnet’s story appears. During the summer of 1898, Frank Davey opened Davey’s General Merchandise. One source follows the succession of newspaper advertisements in the Bearmountain News (later the Garnet Mining News) and surmises that Davey must have purchased Judson and Blaisdell’s store (HRA, ms. 1982).

That the general mercantile business thrived in Garnet is evidenced by numerous accounts in regional newspapers. The November 24, 1898 issue of the Garnet Mining News carries advertisements for F.A. Davey’s General Merchandise Store and for S.E. Adams General Merchandise and Mining Supplies Store. The March 9, 1899 issue of the paper contains ads for the Garnet Cash Store and Stringham’s Grocery Store. These same papers carry advertisement for other merchants in Garnet as well, including Joe Sturgeon’s Butcher shop, Dashley & Curns in West Garnet, and W.C. Taber’s also of West Garnet. The two former businesses advertised the finest in candies and tobaccos.

The Northern Pacific Railroad maintained-depot at Bearmouth provided the merchants of Garnet access to the national marketplace. Invoice books from Davey’s store indicate that he ordered goods from Missoula, Helena, and Butte as well as St. Paul, Chicago, Detroit, Walla Walla, San Francisco, Omaha, and Minneapolis. Clearly the merchants at Garnet were involved in an economy that can be characterized as national (see Appendix A).

On November 21, 1902, Davey received from R.C. Cobb, Wholesalers of Fruits, Vegetable, Poultry, Game, Butter, and Eggs, St. Paul, 161 pounds of turkey, 24 pounds of duck, 49 pounds of geese, shipped NP Express to Bearmouth, Montana. During that same year Davey ordered 10 cases of fresh eggs every month from Cobb (Davey, ms. 1900).

The invoices listed in Davey’s Day Books for the years 1900 through 1902 provide insight into the diet of the miners at Garnet. Davey ordered honey, figs, broccoli, oysters, grapes, bananas, apples, and bacon from Lindsay & Co. of Helena. Mentrum Briggs Co. of Missoula supplied cases of Ushers Scotch and bottles of Charles Cornell Port along with playing cards and chalk. A. Schilling & Co., San Francisco sold Davey baking powder by the barrel and spices such as nutmeg, mace, cinnamon, allspice, cayenne, ginger, and cloves. Davey purchased cucumbers, tomatoes, peaches, prunes, and grapes from the Walla Walla Produce Company. Butler Brothers, Wholesalers of General Merchandise, Chicago, shipped books, vases, toys, mirrors, suspenders, cups, saucers, plates, harmonicas, and even a telescope case to Davey (Davey, ms. 1900).

The Missoula Mercantile represented the largest supplier of goods to Davey’s store during this time period. However, the
goods from Missoula were primarily dry goods such as clothes, fabric, hardware, pots and pans, and other household items. The presence of perishable items from far-flung places such as Helena, Butte, Walla Walla, and St. Paul provides evidence of the degree of urbanization that Garnet experienced. Smith (1992) notes that the railroad provided the catalyst for the rapid urbanization of mining camps and Garnet, Frank Davey, and the Northern Pacific Railroad substantiate this theory.

The picture of Frank Davey, as described by several historians working with Garnet, is a confusing one. John Ellingson interviewed former Garnet residents Agnes Davis, Walter Moore, and Frank Fitzgerald in preparation of his work on Garnet and their accounts provide a measure of insight into the nature of this complicated man. Davey kept a supply of essentials such as flour, sugar, and bacon stashed in his store to feed people in the event the camp was marooned by weather. This emergency cache was not for sale, which angered some of the townspeople during a pinch. Davey evidently thought about the good of the community in a crisis. However, the children in Garnet were frightened by Davey and gave wide berth to the short man belching smoke from his pipe as he scurried through town (Ellingson, ms. 1970).

Mrs. Elizabeth Farmer Smith recalled her childhood days in Garnet and her memories of Frank Davey. She felt the only reason Mr. Davey tolerated her and her family was because they bought things at the store. She liked going into his store although "he was not very friendly" (Smith, ms. n.d).

John H. Toole worked placer mines in the Garnet area in the mid 1930s and recalled Davey fondly.

F. A. Davey was a man who had obviously been exposed to the finer things of life in his native England. Even forty years in Garnet couldn't disguise this. He sported a flowing, white mustache and had a shock of thick, well-combed white hair. He might have been a butler in an English country estate; his English was flawless (Toole, J. 1984).

Frank Davey remained in Garnet until his death in 1947. Frank Fitzgerald, a Garnet native, returned from World War II to find Davey living in the kitchen of the Wells hotel, renting hotel rooms and running his store. Fitzgerald recalled Davey was terrified of fire and never burned more than one stick of wood in the stove at one time (Ellingson, ms. 1970).

Davey, as one of the leading businessmen in Garnet, played a central role in the community's development. Davey grubstaked many a needy miner, maintained a cache of emergency food stores, and presented a terrifying image to the town's tots. As Ritchey
and Mussigbrod provided Garnet with the mines that supported the community’s local economy, Davey provided the mercantile conduit that linked Garnet to the larger outside world and the national economy.

Organized labor in Montana began in Butte and quickly spread to other mining camps across the state. The war of the copper kings provided several advantages to the union movement in its early phases of development. Clark, Daly, and later Heinze, all realized the benefits of a compliant and content work force and realized the union represented one means of placating labor. Later, as their rivalry grew more intense, wage and labor concession were used by the big three to curry favor among the union members. These and other factors served to insure that Butte’s unions would grow strong and prosperous. From its stronghold in Butte, the union spread out across the Upper Clark Fork Basin, organizing such mining camps as Philipsburg and Garnet. The organized labor movement arrived during an early stage in Garnet’s development and the unions played a significant role in the lives of the miners and the camps social life.

In September 1883 the Garnet Miner’s Union Number 16, a branch of the Granite Bi-Metallic miners union, formed (The Drummond Call 9/22/1905). In January of 1898, the Bearmountain News reported "that Garnet has two lodges in good working order. The Miner’s Union, which is under the control of the Granite Union, and the other lodge is the Federation of Labor" (Bearmountain News 1/27/1898). The Federation of Labor met every Tuesday night and the officers included the following: M.E. Ward, President; S. Sibeck, Vice President; W.C. Taber, Financial Secretary; Al Locke, Treasurer; and R. Crowell, Recording Secretary (ibid). The Federation of Labor quickly disappeared from the historical record and no other mention of this union is available.

The Garnet Miner’s Union, on the other hand, thrived and prospered for over seventeen years and played a significant role in the lives of the miner. The Garnet Miner’s Union did not elect officers like the Federation. Instead each mine formed its own committees to deal with the important issues of the day. For example, the Nancy Hanks mine, the Shamrock Mine and the International Mine each had a Non-union Committee and a Sick Committee. Other officers included the Committee-at-large and the Local Secretary (Bearmountain News 1/27/1898).

The Garnet Miner’s Union dealt effectively with the owners and operators of the major mines in and around Garnet for several reasons. The Union actively lobbied for closed shop regulations, enforcement of health and safety rules, closure of the company boarding houses, and a strict adherence to accepted pay scales and working hours.
Ultimately the Garnet Miner's Union succeeded in its efforts due to the timing of Garnet's boom. The tenor of union relations in the mining industry in Montana had been previously set by the unions and companies in Butte; cooperation rather than conflict was the order of the day. It is no coincidence that the Garnet Miner's Union was a branch of the Granite Bi-metallic Union. The idled miners from Philipsburg flooded surrounding camps and brought their cultural baggage along.

Another reason for the success of the Garnet Miner's Union can be found in the local newspaper's declaration of the type of camp Garnet had become.

Garnet is a poor man's mining paradise. This means that the mines will in all probability never be held and jointly controlled by any one company and on this fact rests the safety of all business interests incident and necessary to mining towns. Whatever in disparagement of Garnet may be said, it will never be true that it is a one man town (Garnet Mining News 10/6/1898).

The issue of the timing of Garnet's boom becomes important again. Montana mining camps in 1898 included Butte, Anaconda, Philipsburg, Marysville and more. Many of the miners in Garnet had, in all probability, experienced the trials of living and working in a company-owned or a one-man town. It is not unreasonable to expect the miners to attempt everything they knew to avoid a repeat, and unionization would represent one such avenue.

If the Garnet Miner's Union succeeded in their demands, part of the credit for avoiding strikes and lockouts must be given to the mine owners. Dr. Peter Mussigbrod, one of the early capitalists in Garnet, has been previously mentioned. His partner, Dr. Armistead H. Mitchell, also came from Deer Lodge and both men were instrumental in the early days of the Warm Springs Hospital. Undoubtedly they had witnessed firsthand the effects of a one-man or a company town and they had seen the effectiveness of unions in Butte.

Dr. Mussigbrod's background and education, studying natural science, Latin, and philosophy followed by a doctorate in philosophy, also played a role in the successful union negotiations. He was a man who had travelled the world, studied at some of the finer institutions of higher learning and received a thoroughly Renaissance education, and he represented a factor in Garnet's development which cannot be overlooked.

The Garnet Miner's Union moved quickly to eradicate the practice of company boarding houses. The mining companies
erected large bunk houses and for a fee, fed and sheltered the men. To the Union this represented one of the most egregious practices of corporate control. Conlin (1986) studied the diet and associated lifestyle of the miners and explains the refusal of the boarding house succinctly.

With the occasional exception of an isolated mine... gold and silver miners shunned the practice of eating and sleeping at the same address, and particularly at company-operated cookhouses. Even at the very small mines, employees expected to find their own dining accommodations.

The miners lived in cities, however small, where private entrepreneurs offered competitive prices, variety, and in the case of the finer houses, some extraordinary meals. A company cookhouse, particularly if eating there was compulsory, would have been an unacceptable imposition (Conlin 1986).

The concept of urbanization played a role in the Garnet Miner’s Union’s demands over boarding houses. The issue of the timing of Garnet’s boom enters the picture again. By the late 1890s the miners at Garnet had learned their roles as miners as they had experienced life in other camps. Equally important, Garnet participated in the national economy.

The minutes of the meetings of the Garnet Miner’s Union reveal that the Union was serious about the boarding houses, but also that the Union had other concerns. Highlights of the minutes are illuminating;

March 14, 1898, 'Moved + sec’d that Secy Duffy be instructed to see the various managements of the camp in reference to have a stop put to the compulsory boarding house system, so ordered.’

April 19, 1898, 'Secy reported having an interview with Mr. Ritchey + Mr. Dermott in reference to compulsory boarding houses with results favorable as regards the Union demands. Reported International mine compelled their men to board at Co. boarding house. Moved and sec’d that bro Duffy be authorized to see Mr. Parker of said company.’

January 5, 1899, 'A motion moved and sec’d that a committee meet with Mr. Mussigbrod
with regard the union scale wages.’

June 15, 1899, 'A motion moved and seconded that a committee of five members be appointed to collect subscriptions in Garnet and vicinity for the benefit of the Cour D Alene miners now incarcerated in the wardner Bull Pen.'

June 22, 1899, 'A motion moved and seconded that the Hall be donated, gratis, to Miss Biggs the school teacher for the purpose of school entertainment.'

July 20, 1899, 'A motion moved and seconded that the secy record the amount sent to Butte for the Cour D Alene miners. The amount was $131.50' (Garnet Miner’s Union, ms. 1898).

The Garnet Miner’s Union clearly believed in more than the issues related only to the working conditions in Garnet. Sending money to Coeur d’Alene to help striking miners and donating the use of the Miners Union Hall to the school teacher are humanitarian acts. The move to send money to the aid of the miners in Idaho indicates the miners were participating in a regional, if not national, society. They were clearly aware of the ramifications of the Coeur d’Alene strike and chose to show solidarity.

The Drummond Call reported on the Miner’s Union several years later and noted the success of the union demands were due to the miners and their employers.

Garnet Miner’s Union No. 16 is now in the seventeenth year of a very successful career, enjoying the confidence and good will of the employers and the esteem of the community. From the date of its organization in September 1883, the union has never had a serious dispute with the employers of the camp. This gratifying history has been due to the ability and conservatism of its officers and the sound good sense displayed by the membership. It is also due the employers to state that they have shown a commendable spirit of fairness toward the union, thus doing their full share in the maintenance of amicable relations with the union. The organization now numbers 75 members in good standing. Harry Abbott and R.A. Estey are respectively president and secretary and are capable and popular
officials. The union owns a large and excellently arranged hall, which has a fine floor for the dances which are one of the chief features of social life in the camp (Drummond Call 9/22/1905).

The Miner's Union Hall also served as a community center with a large variety of social activities held on a regular basis. Community dances were held weekly, usually on Saturday nights, on the main floor of the Hall. The floor of the Hall was made of maple, a construction detail which showed foresight, and there was a grand piano and an Edison cylinder phonograph.

The dances at the Union Hall included the annual Hard Times Ball, where the miners donned their scruffiest attire and danced til dawn.

The hard times ball, given at the Miner's Union Hall on last Tuesday evening, by the Mandolin Club, was in every way a success. Everybody danced, everybody had a good time, and everybody seemed to be pretty hard up. At 11:30 two sets of judges were appointed, five ladies and five gentlemen, to award the prizes. The dance continued until late in the morning and all departed, having had a good night's amusement. There was certainly a hot time in the old town that night (Garnet Mining News 3/9/1899).

The Bearmountain News regularly reported on the social events at the Miner's Union Hall. "Last Thursday evening there was a social dance in Miner's Union Hall, the music being furnished by two colored gentlemen who have been playing here during the past week. All present enjoyed a pleasant evening" (Bearmountain News 1/27/1898). The regular reporting of these events would serve to inform the local citizens of social activities, reinforce community values, and serve as community booster notices.

Another social event was the St. Patrick's Day Calico Social and Dance held at the Miner's Union Hall. C. O. Reid, from neighboring Coloma, took flashlight pictures of the social. The ladies of Garnet made a calico necktie of the same material as their dress and placed it in a sealed envelope. The men drew envelopes when they arrived and had to find the lady wearing the dress matching the necktie. This lady would be his dance and dinner partner for the evening (Garnet Mining News 3/9/1899). It should be noted that socials such as calico dances often involved married women as well as single ones.

One of the elements that distinguishes Garnet from countless
other mining camps was the presence of women and families. Earlier mining camps were predominately male but Garnet had a large number of families and family oriented activities were the order of the day. Many social functions, organizations, and changes have been attributed to the presence of women in mining camps.

An impressive amount has been written about the experience of women on the mining frontier, and while the female segment of the population does not frequent the historical record of Garnet, there is ample material for drawing comparisons. Petrik (1987) presents the idea that the daughters of the frontier, the middling women, or women who matured on the urban mining frontier, were less likely to suffer an unhappy marriage, more likely to work, more likely to remain single, more likely to assume leadership positions in the community, and more likely to eschew traditional lifestyles. With the boom of Garnet occurring in the late 1890s, it is not unreasonable to assume the presence of Petrik’s middling women in Garnet.

It has been argued that the women in Garnet were largely responsible for the establishment of the first school house in Garnet (HRA, ms. 1982). Construction of the school house during the summer of 1897 was finished in time for enrollment in the fall and the following year witnessed the enrollment of forty-one students in grades one through eight (Garnet Mining News 10/6/1898).

Women have been attributed as the backbone of religion in mining camps for several reasons, chiefly because it offered them the opportunity denied elsewhere in their lives, the opportunity to participate as equals and even to govern and lead (Smith 1992). It has been shown that women influenced and were influenced by the social life, education, drinking, gambling, prostitution, and more in mining camps (Limerick, 1987; Petrik, 1987; Smith 1992; Limerick, Milner & Rankin eds, 1991). In short, women were responsible for the spread of Victorian values throughout the mining camps of the West, and it is reasonable to assume that Garnet proved no exception to the rule.

One of the locations for family activities was Warren Park. Mr. Warren has been described as a Civil War veteran who was quite old even during the heyday of Garnet (Ellingson, ms. 1970). Warren built a park overlooking the Blackfoot Valley on land several miles from Garnet. Mr. Warren built tables, benches, and a set of swings and gliders for the children. The gliders were elaborate swings made of lodgepole and iron parts where two couples could sit facing each other gliding back and forth (Daley and Mohler 1973). Warren’s Park quickly became a popular spot for picnics and social gatherings and became a favorite for the 4th of July celebrations.
Prostitution and mining camps have received considerable attention from historians, and Garnet, like countless other mining camps, had a red light district, although former residents of Garnet disagree as to whether or not Garnet had a one. Two female and one male former resident believe Garnet did not have a red light district, while two male former residents agree on the existence of the demimonde. Myrtle (Dahlberg) Hamilton, Mary Jane (Adams) Morin, and Frank Fitzgerald denied that there were houses of ill repute in Garnet (HRA, ms. 1982; Fitzgerald, personal communication 1988). These three were young when living in town and probably were never told of the existence of the houses.

Harry Hannifen, however, recalled taking buckets of beer from one of the saloons to the "women's house" and was always impressed by the number of single women at the house and also the large tip he was given for his delivery (HRA, ms. 1982). Another former resident, Walter Moore, indicated that not only was there a red light district, he remembered its location on the edge of town (Moore, personal communication 1988). Archaeological investigations undertaken for this project at this site may support Moore's memory.

A more compelling argument for the red-light district of Garnet can be drawn from Petrik’s (1987) work on the demimonde of Helena. Prostitution offered a financial avenue into the world of the capitalist on the mining frontier. Petrik (1987) presents a convincing argument for a higher financial status of the demimonde than had been previously imagined. The quantitative statistical analysis Petrik prepared for Helena should be considered as a database for comparative analysis. However, such a comparative analysis is beyond the scope of this work.

The saloon on the mining frontier can be considered an institution and Garnet had its share of watering holes. The number of saloons in Garnet has been debated for years, and the exact number may never be known given the nature of the historical record for Garnet. Popular literature provided by the Bureau of Land Management states there were thirteen saloons in Garnet at one time. This may seem a little high at first glance, however, it may be partially correct.

Early newspaper accounts of Garnet often list the number of saloons in town. For example, the Silver State Post reported three saloons in Garnet in 1897 (Silver State Post 9/1/1897). Four months later the Bearmountain News described the town of Garnet and counted seven saloons (Bearmountain News 1/27/1898). Newspaper advertisements from the period marking Garnet’s boom do not approach the figure of thirteen. The October 6, 1898, issue of the Garnet Mining News carried ads for "Dashley and Curns", "Robert Moore’s Saloon," and "Nellie Phelps."
January 25, 1900, edition carries ads for "Kelley and Fraser," "The Resort," Connors and Harwood," and "The Mascot." It must be noted, however, that not all the saloons in town would necessarily advertise in the local paper.

In 1982, Historical Research Associates prepared a report for the Bureau of Land Management and spent a considerable amount of time researching records at the Granite County Courthouse and encountered problems. After visiting with the historians who conducted the research, it was deemed futile to try and follow up their research. The public records will not provide answers on businesses in Garnet. This is unfortunate since the question of saloons and alcohol consumption in Garnet deserves study.

Regardless of the historical record, residents in Garnet had access to alcohol and the indications are that plenty of imbibing occurred. While there may or may not have been thirteen saloons, the number of places where a drink could be ordered certainly was impressive. Restaurants and hotels with dining rooms offered alcohol with a meal, and the merchandise and grocery stores sold alcohol by the bottle. As noted previously, Davey’s Mercantile sold all sorts of liquor, including high priced imported scotch and port (Davey, ms. 1900).

E. A. Evans visited Garnet in the winter of 1898 and described the mines and town in an article for The Northwest Magazine. Evans toured the Nancy Hanks and the International mines below surface and penned an excellent description of the tour as well as the men who owned the mines, Dr. Mussigbrod and Col. L. C. Parker. The article closed with a description of the town and a warning of the presence of alcohol.

The miners have brought their families to the scene of action, and from the abundant pine and tamarack have built cozy little homes on the mountain’s brow. With nothing above them but the blue sky, and only precious things beneath their feet, they think that theirs is the noblest calling on earth. But here, as elsewhere, are the sharks that follow the workers to reap the harvest of gold by deadening the intellect with their poisonous drinks, and offering gaming-tables for recreation after the hard labor of the day (Evans 1899).

Gambling represented another form of recreation available to the miners in Garnet. Elliott West studied the role the saloon played in mining camps and even advances the idea that the very design and layout of the saloon included gambling (West 1979). Upon entering the saloon the patron would find the bar along one wall and the front room filled with chairs and tables for
lounging and conversation. This section was separated by a wall
and a door from a rear room devoted to gambling and
entertainment. Kelley's Saloon in Garnet has this type of floor
plan, a large well-lit front room separated from a rear room by a
wall and door. The pattern of saloons and gambling West
describes is evident in Garnet.

Evidence of gambling in Garnet appears in several places in
the historical record. The invoices from F.A. Davey's Mercantile
provide some of the insight into the extent of gambling in
Garnet. On November 12, 1901, Frank Davey ordered six dozen
packages of cards from Mentrum Briggs Company, Wine and Liquor
Merchants, Missoula. On November 11, 1902, Davey ordered six
dozen packages of playing cards from the John Leslie Paper
Company, Minneapolis, and on December 1, 1902, he ordered a dozen
dice and two game boards from Butler Brothers, Chicago. Again on
March 26, 1903, Davey ordered four dozen decks of cards from
Garden City Bottling & Liquor Company, Missoula (Davey, ms.
1900). It is interesting to note the invoices for alcohol often
carried requests for cards, dice, and gaming boards.

The presence of gold, miners, and gambling in Garnet
attracted the eye of card sharks from Butte. The Drummond Call
published an article in October, 1905, submitted by a Garnet
resident condemning gambling. The article had been previously
printed by the newspaper in Basin, Montana, and the Garnet
resident believed that it could be applied to Garnet. The
article read:

Of late a number of gamblers have been coming
every payday from Butte, and opened up games,
gathered in all the available money in the
city, and carried it away with them.
Gambling among our town people is bad enough,
but to allow this bunch of tinhorn gamblers
to take the money away from them is putting
it on a little strong, and it is time the
whole business of gambling was stopped (The
Drummond Call 10/27/1905).

The Granite County attorney, George A. Maynard, reacted to
the complaint with a reply in the paper saying that:

if any more Butte gamblers come to Garnet and
the local authorities will not arrest them, I
will personally undertake to prosecute them
to the full extent of the law and will go to
Garnet for that purpose, if necessary (The
Drummond Call 11/10/1905).

Laws prohibiting gambling were passed in Montana as early as
1897 and the Seventh Regular Session of the Legislature in 1901
listed the types of games banned and included "any game of chance played with cards, dice, or any device whatever (Seventh Regular Session of the Montana Legislature 1901).

Laws notwithstanding, Davey ordered cards, dice, and gaming boards for the gamblers at Garnet. It is interesting to note, however, that Evans, the anonymous Garnet citizen, and the Granite County attorney, all denounced gambling, a predictable response in Victorian America.

The mining and commercial activity that characterized the initial boom in Garnet began to die almost as quickly as it began. In the summer of 1900, Samuel Ritchey lost the vein of gold ore in the Nancy Hanks. The vein ended abruptly at a fault and Ritchey could not relocate the ore body. He then leased the mine to Col. L.C. Parker in August (HRA, ms. 1982). In March of that same year, Dr. A.H. Mitchell sold his interest in the Red Cloud and Lead King claims to his partner, Dr. Mussigbrod (EMJ 3/10/1900). The following spring the Montana & Denver Reduction Company mill at Beartown closed due to a lack of ore from Garnet and Coloma (EMJ 4/13/1901).

As early as January 1900, Garnet’s principal mines were either closed or operated under lease. The Engineering and Mining Journal reported that the Mammoth Mine and mill at Coloma had been sold by the sheriff under a mortgage foreclosure, that there were thirty lessors working in the Garnet district, and that Samuel Ritchey had closed the Nancy Hanks mine (EMJ 1/13/1900). Mining activity after 1901 was done by men who leased the mines, paying a percentage of the profits to the owners. By this time Ritchey and Mussigbrod, two of the leading developers in Garnet, had leased their extensive holdings in Garnet (HRA, ms. 1982). In 1902 Parker dropped his lease on the Nancy Hanks and secured a lease on the Shamrock mine from Peter McDermott and the Lannon brothers (ibid). The lessee usually worked alone or with one or two assistants and extracted only enough gold to support themselves and their families. The rich strike that Samuel Ritchey made in the Nancy Hanks would not be duplicated.

There were numerous attempts to revive interest in Garnet after the turn of the century, often by local newspapers trumpeting recent developments or describing the pleasant life in Garnet. The construction of a sawmill in Garnet in 1905 received prominent attention in the Drummond Call, the mill had been put together from all kinds of old machinery by mere ingenuity and without any capital, and can hardly supply the camp with the lumber needed. All of this certainly speaks well for Garnet, perhaps the only mining camp of the west which makes its
way without boon, without outside capital, only and alone with steel and pick and shovel handled by her brave and enterprising and often sacrificing miners (The Drummond Call, 9/22/1905).

This same issue of the paper also carried another article on the quality of life in Garnet. The story described the public water supply system for the town and noted that "pipes leading from the reservoir to the various residences and places of business distribute a supply ample for the needs of all, and the quality if of the very best" (ibid). The story ended with an announcement of the new owners of the water works, Sam Ritchey and Gus Dahlberg, and an amusing ditty on the demand for beer while building a new reservoir.

Yet the future for Garnet would not improve, for the mines were, for all practical purposes, played out. In 1905, the Mining World published an article stating that due to a lack of capital, the mines in the Garnet region were no longer being worked (Staff Correspondent, The Mining World 1905). The increasing depth of the mine required heavier machinery and the necessary capital was lacking.

J. K. Wells' complaints in 1896 about the mines in Garnet can be considered something of a prophesy. The Garnet Mining News' description of the town as a poor man's mining paradise rang true. In 1908, William B. Drew, the Deputy State Mine Inspector, reported on the mining industry in Montana, noting that a low price for metals and a scarcity of money had the industry at a standstill with development work suspended and the output of producing properties curtailed (Orem 1908).

Garnet could not keep and attract a population and the numbers in the camp quickly dwindled. From 1905 until 1912, there were just over 200 residents (HRA, ms. 1982). In the fall of 1912, a fire swept through the downtown, destroying most of the commercial district. The cause or origin of the fire or even the exact number of buildings that burned is not known. The only thing of importance is the result, Garnet became a virtual ghost town overnight.
The history of Garnet after the closure of the mines and the destruction of much of the downtown area by the fire of 1912, is a story largely tied to national and international events. Garnet experienced the effects of World War I, prohibition, a resurgence of mining in the 1920s, the Great Depression, World War II, the increasing march of logging activities, and finally, the social activism of the 1960s.

Garnet was not entirely abandoned following the fire of 1912, for a few die-hard miners and their families remained. The estimated population of Garnet in 1915 consisted of the Fitzgerald family, the Oxford’s, the Davis family, Frank Davey, Billy Liberty, the Dahlberg family, and a few miners (Ellingson, ms. 1970).

World War I played a role in the decline of Garnet for two main reasons. Employment opportunities in the high-paying jobs of the nascent defense industry on both coasts attracted many people who might otherwise have formed a labor pool in the Garnet area. Secondly, war-time demands for explosives limited the availability of dynamite necessary for hardrock mining. As a result of this one-two punch, mining in Garnet, and in many of the smaller mining camps of Montana, sharply tapered off.

The roots of prohibition germinated in the later part of the 1800s, gained momentum during the progressive era, sweeping across the nation until the "great experiment" even reached Montana. As early as 1896, local chapters of the Women’s Christian Temperance Union began organizing throughout Montana. The Anti-Saloon League led the prohibition charge during the 1915 legislative session, demanding that a referendum on prohibition be placed on the ballot. Voters approved the prohibition of alcohol by an overwhelming margin and Montana officially went "dry" at the end of 1918 (Malone, Roeder & Lang 1991). Two years later prohibition became the law of the land with the Eighteenth Amendment to the United States Constitution.

Despite the hopes of its backers, prohibition failed nationwide, "and nowhere more spectacularly than in Montana. By the 1920s prohibition was an obvious failure in the hard-drinking Treasure State" (ibid). Garnet played a role in this failure, serving as a local gathering center for those who did not care for the new "dry" atmosphere. Ole Dahl and his wife opened a speakeasy in Garnet during prohibition and people drove from as far away as Missoula to sample the goods (Ellingson, ms. 1970).
In 1923, the Pra-Fa-Po Mine Company leased Dr. Mussigbrod’s claims and stampmill. The Mussigbrod & Mitchell mill, a combined amalgamation and floatation plant, operated with a 10-ton stamp battery, two Wifley tables, one Frue table and two Woodbury tables (U. S. Dept of Commerce, Bureau of Mines 1927). The three partners in the venture were Andrew Prader, G. I. Porter, and Charles Farmer and they operated the mine and mill for three years.

Farmer’s daughter, Elizabeth, later recalled her experiences in Garnet. Her home had running water, electricity from the generator at the mill, and a phone system that did not work (Smith, ms. nd). The playtime activities of the children centered around exploring their wonderfully strange environment. They did not dare enter the dark mines alone, but did when accompanied by the men working in the mines. Pieces of tin substituted for sleds and in the winter the tailings piles scattered all around served as snowy hills. Fourth of July picnics were celebrated at Warren Park, followed later in the evening by a dance at the Miner’s Union Hall. Watching the operation of the mill as it processed the gold ore, however, was the main source of amusement for the children (ibid).

The Great Depression which gripped the nation in 1929 had a significant effect on Garnet. Throngs of unemployed people sought out mining camps and attempted a meager living by scratching for pay dirt. The most significant impact of the Depression on Garnet, however, came with the recovery measures implemented by President Roosevelt. In 1934, FDR raised the price of gold to $35 an ounce and this single move made the mines in and around Garnet economically viable once again.

The effects of FDR’s policy on the mining activity in Garnet is best illustrated by the following table.
Table 1. Metal Production of the Garnet Mining District.

The figures reveal a staggering increase in Garnet's mineral production from 1933 to 1934, and reflect the price increase for gold. Not all of the increased dollar amount of metals produced, however, can be attributed to the doubling in price of gold. The combined production of gold, silver, and copper ounces increased by 266.1% in one year. Obviously, an incredible increase in mining activity occurred in Garnet.

In 1934, John H. Toole (later the mayor of Missoula) worked for his uncle Brice at a mining operation on Douglas Creek above Top O'Deep, three miles east of Garnet. Every Saturday night Toole, his uncle Brice, and his co-workers headed for Garnet for a dance and John and Brice played in the band.

Garnet had everything: a two-story hotel, a large dance hall, a post office, and a saloon. All thumped to life in 1934. In place of skinners cracking their whips over the rumps of their horse and ox teams, there was now the roar of Model A Ford pickups (Toole, J. 1984).

While John played the accordion or guitar, Brice played the

<table>
<thead>
<tr>
<th>YEAR</th>
<th>GOLD (oz.)</th>
<th>SILVER (oz.)</th>
<th>COPPER (oz.)</th>
<th>LEAD (lb.)</th>
<th>VALUE $</th>
</tr>
</thead>
<tbody>
<tr>
<td>1931</td>
<td>64</td>
<td>443</td>
<td>818</td>
<td>0</td>
<td>3,425</td>
</tr>
<tr>
<td>1932</td>
<td>312</td>
<td>188</td>
<td>1,000</td>
<td>0</td>
<td>6,578</td>
</tr>
<tr>
<td>1933</td>
<td>799</td>
<td>948</td>
<td>2,984</td>
<td>54</td>
<td>17,053</td>
</tr>
<tr>
<td>1934</td>
<td>3,468</td>
<td>4,302</td>
<td>9,550</td>
<td>108</td>
<td>124,750</td>
</tr>
<tr>
<td>1935</td>
<td>3,579</td>
<td>6,016</td>
<td>904</td>
<td>700</td>
<td>129,696</td>
</tr>
<tr>
<td>1936</td>
<td>3,738</td>
<td>4,718</td>
<td>424</td>
<td>1,870</td>
<td>134,609</td>
</tr>
<tr>
<td>1937</td>
<td>3,804</td>
<td>4,750</td>
<td>4,000</td>
<td>0</td>
<td>137,298</td>
</tr>
<tr>
<td>1938</td>
<td>2,875</td>
<td>3,216</td>
<td>6,735</td>
<td>218</td>
<td>103,374</td>
</tr>
<tr>
<td>1939</td>
<td>3,578</td>
<td>2,958</td>
<td>1,827</td>
<td>489</td>
<td>127,451</td>
</tr>
<tr>
<td>1940</td>
<td>8,675</td>
<td>3,735</td>
<td>1,717</td>
<td>400</td>
<td>306,495</td>
</tr>
<tr>
<td>1941</td>
<td>7,524</td>
<td>2,607</td>
<td>2,000</td>
<td>0</td>
<td>265,430</td>
</tr>
<tr>
<td>1942</td>
<td>2,928</td>
<td>571</td>
<td>0</td>
<td>0</td>
<td>102,886</td>
</tr>
<tr>
<td>1943</td>
<td>41</td>
<td>0</td>
<td>500</td>
<td>0</td>
<td>1,500</td>
</tr>
</tbody>
</table>

(Kaufman 1963)
banjo, and one of the miners played a fiddle, the miners danced till dawn. After the dance the miners passed a hat around taking collections to pay the band (ibid).

By 1936, the population of Garnet reached nearly 250 people; Ms. Jennie McDonald was hired to teach school, F.A. Davey had the only store in town, and Ole Dahl built a new saloon, "the Joint" (HRA, ms. 1982). But the boom of the mid-1930s proved to be short-lived and the mines began to play out once again.

Toole revisited Garnet in the fall of 1936, and later recalled that

Garnet was beginning a new relapse into a long sleep. Upon our entry into town, Mr. Davey came out in the street and greeted us, but the throngs of miners had diminished; the mines had proved to be poorer than anticipated, and jobs were more plentiful in the country (Toole, J. 1984).

Toole recalled that the Nancy Hanks had closed and the Dandy mine had reduced its crew, "but a new breed had started to arrive, the loggers. Little did I know then how these people would change the landscape" (ibid).

As the table above clearly shows, production of metals from Garnet underwent a sharp decrease during the World War II era. From 1940 to 1943 the production of gold, silver, and copper show a decrease of 96.175%. By the late 1930s, the high paying defense industry jobs attracted workers to the coasts again. Combined with restrictions on the sale and use of dynamite and other necessary items such as gas and rubber, mining became almost impossible and Garnet did indeed fall into a long sleep.

In 1946, after serving a tour in the Navy, Frank Fitzgerald returned to his parents' home in Garnet. He found a family living in his parents' house, another family living in the main floor of Kelly's Saloon, and several new cabins in town. Frank Davey lived in the hotel and still ran his store, but Davey would not live another year as he died in the spring of 1947 (Ellingson, ms. 1970). Fitzgerald continues to spend his summers living in his parents' home to this day.

In 1954, the sole year-round resident of Garnet was Frank Kreiger. Kreiger had decided to try his luck at prospecting and chose Garnet as the place. Kreiger has been credited with preventing much theft and vandalism of Garnet, a bane of ghost towns across the west. "Since Frank Kreiger was made a deputy sheriff, he prevented tourists from taking Garnet apart quite as fast as they did in other ghost towns" (ibid:1970).
Since 1969, the Bureau of Land Management has been involved with the preservation of the Garnet Ghost Town. In 1969, Don Melgren, BLM District Manager, conducted a study of abandoned mining camps which could possibly be preserved and as a result of this study, Garnet was selected for preservation. In 1970, John Crouch and John Ellingson became the first caretakers at Garnet; they volunteered the entire summer and the Garnet Preservation Project began. The initial participants in the project included the Bureau of Land Management, the Montana Historical Society, the Montana University System, with assistance from the Montana Fish and Game Department.

Early work at Garnet consisted of volunteers collecting and cataloging artifacts and drawing original construction methods (HRA, ms. 1982). In addition, the Youth Conservation Corps and Green Thumb programs participated in the early 1970s, cleaned the area and reconstructed important structures, such as Davey’s Mercantile which had partially collapsed.

In 1973, construction activity included a new foundation and drainage system for the J.K. Wells Hotel and the repair of its chimney. Installation of a new shake roof and the siding on the hotel followed three years later. Over the years numerous structures in Garnet have been preserved through an aggressive stabilization effort. Today Garnet is visited annually by thousands of visitors from all over the world and the entire townsite has been declared eligible for listing on the National Register of Historic Places.
Several questions were posed before field work began concerning the cultural deposits in Garnet and what they could reveal about the presence of a Victorian society. The questions began with one of the cornerstones of historical archaeology, patterned human behavior. Studying the cultural deposits produced by the society should reveal patterned behavior. One of the goals of pattern recognition is the testing and refinement of ideas about the behavior that produced the archaeological record (South 1977). The material deposits of Garnet, therefore, should reflect a culture firmly rooted in the Victorian Era.

The questions posed attempt to consider the distinct and diverse elements of time, cultural values, and the deposits in and around Garnet. What time period would the artifacts need to be from in order to reflect a Victorian Era culture? Would all segments of society in Garnet participate in this Victorian culture? What cultural values would be present in a society rooted in the Victorian Era? What types of sites should be excavated in order to determine the presence of the culture in question?

Several parameters were defined in order to simplify the selection process for locating appropriate excavation sites. A cross representation of the community was examined to ensure that any evidence of Victorian culture would be discovered. In chronological terms, the sites covered the era from the 1860s (the establishment of the community) to the end of the second boom in Garnet in 1912. The choice of 1912 as a terminal date is appropriate for two reasons. First, in 1912 a fire destroyed the downtown area, an event which greatly impacted the community's entire population. Second, the onset of World War I in 1914 serves as an effective date to mark the end of the Victorian era.

In order to gain a comprehensive understanding of the extent of Victorian influence in Garnet, it was considered necessary to excavate deposits located in the town as well as outside of the town. Deposits representing communal living as well as those from single habitation sites were deemed of importance to this investigation. Another factor included the attempt to tie specific sites and therefore specific deposits to known people.

A total of twenty-two excavation units from seven different sites were eventually excavated in and around Garnet. The deposits represent known individuals, single miners living outside of the town, the corporate bunkhouse for the miners on the edge of town, and community dump areas in town. The
selection of sites for excavation thus became a crucial component
in the recognition of the Victorian culture.

After excavation began, questions about site formation
processes in Garnet surfaced. These questions included
correlation of the surface expression of the deposit with the
subsurface extent. Consideration of the extent of previous
bottle collecting activity in Garnet became necessary. Would the
"Arlo Guthrie Effect" be evident in Garnet (Schiffer 1987)
"Alice’s Restaurant" provides an excellent example of people
throwing trash where they see trash. A complete discussion of
site formation processes is presented in the following chapter.

With these factors and questions in mind, several trips were
made to Garnet to preview as many different sites as possible.
Two archaeologists from the Bureau of Land Management provided a
tour of sites they had mapped over the previous years. A class
of students from the University of Montana, under the supervision
of Professor T. A. Foor, walked the townsite and flagged various
cultural features. The last step in the initial survey consisted
of a personal survey by the author.

Consultation with the State Historic Preservation Office
(SHPO) occurred after the initial survey had been completed.
SHPO officials provided information and insight into historical
archaeology of mining camps around the state. Our lengthy
discussion centered around possible avenues of exploration,
methods of excavation, various outcomes of the project, and the
results of excavations at other historical sites in Montana. A
search of the library and the literature in the SHPO office
proved marginally successful.

By the time the initial survey had been completed, the
number of sites located that met the basic criteria became
exceedingly high. Sites that initially proved promising were
eliminated from consideration for a variety of reasons. One
especially promising site was dropped from consideration when it
became apparent that high ground water levels in the area would
make excavation difficult. Another promising site outside of
town was dropped from consideration because the deposit straddled
private and public property.

One interesting site near McManus Gulch was eliminated after
Professor Foor expressed an interest in having a University class
map and excavate the entire site, an undertaking beyond the
purposes here. Another site had been identified as promising.
The time period seemed right; it was located outside of town; and
the presence of intact glass bottles on the surface of the
deposit indicated bottle hunters had missed this deposit. By the
time the excavation team returned, however, bottle hunters had
effectively and systematically destroyed the deposit and
eliminated the site from consideration. Thus, the sites to be
considered for excavation quickly fell into place.

The results of the excavations from individual sites as well as the entire project will be discussed later. Description of site features and excavation techniques are presented here, along with the full account of the foils and foibles of diggin’ in Garnet.

All of the sites were mapped, photographed, and described using standardized field methods including pedestrian transects, marking cultural features with red pin flags, and black and white photography of each site and at each excavation level. Brass caps marking the corners of mining claims served as datum points for mapping while compass and tape were used to map the sites. A set of blue-line maps, compiled by the BLM, provided reference for previously recorded cultural resources, and the excavation units were plotted on them. Field notes described the sites, the individual features, the methodology applied for site excavation, and any general observations about the site.

The general observations included the presence or absence of square hand-wrought nails, the presence of hole in top cans, the degree of effort put into the construction of the cabins. The technology to mass produce wire cut nails appeared in the 1880s, making square nails found in situ an excellent time indicator. The technology for producing food cans evolved rapidly, and in the 1880s machines mass produced cans, replacing the hand-soldered hole in top cans, thus making hole in tops with hand-soldered side seams an excellent time indicator. The degree of effort put into the construction of buildings is an indication of many factors, including community stability, the social status of the occupant, and even the ‘cultural baggage’ of the builder.

Professor Foor provided a homemade contraption that allowed for quick and efficient layout of the pits. The device is a set of one-half inch plastic tubing and elbows that snap together to form a one meter square. Due to the fragile nature and shallow depth of the deposits, trowels were used for excavation. All of the material collected from the pits was screened with a quarter inch screen, and the artifacts were bagged and labeled according to site name, feature number, level, date, and crew member’s name. All of the pits were refilled after excavation.

The first site excavated was the Wasp Site (see Map 3), named after a particularly persistent hornet that repeatedly attacked the crew. The site consists of a dilapidated log cabin, a scatter of trash, the remains of two wagons, with no other visible cultural features. The cabin measures 16 feet by 14 feet and contains square and wire nails. There is no foundation evident, the logs are double saddle notched and hand hewn on the interior. The logs are chinked inside and out with quarter round poles and mud daubing. The trash deposit measures approximately
Map 3. Site Map, the Wasp Site
55 inches by 48 inches and casual surface examination reveals hole-in-top cans, condensed milk cans, cut beef bones, clear and brown glass bottle shards, and ceramic dinnerware shards.

Pedestrian transects across the site spotted a small wooden box with a metal can inside. Pine needles buried most of the can but part of the raised lettering on the top was still visible. The words "DuPont Blasting" were partially legible. The BLM was contacted and they in turn contacted the Granite County Sheriff's Office. The resulting conference decided the can could be intact and therefore explosive. The Sheriff "properly" disposed of the artifact by attempting to blow it up.

The site appears to have been potted by bottle collectors because the surface expression of the dump reveals a heavy disturbance. Pine needles scattered across the deposit do not lay horizontal, the needles are mixed throughout the top layer of artifacts. Accumulation of needles in the deposit would be possible only through disturbance.

There is no visible evidence of a privy in the vicinity. It has either melted into the ground or did not exist. The site is located a short distance south of the Cleveland and Sierra Claims, near the corner monument marking both claims that were used for datum points.

The standard field methodology was applied to this site with a couple of exceptions. Before laying out the pits, the area was swept with a metal detector and the resulting anomalies were flagged. Two 1 meter by 1 meter pits were laid out, side by side, in an area where there appeared to be surface as well as subsurface deposits. The material exposed to the surface was collected and subsequent levels were established every 5 cm. The pits were excavated to a depth of 10 cm before sterile horizon was encountered.

The next site excavated, the Yahtzee Site (see Map 4), is located near the edge of town on the Mary Anderson claim. The name came from a crew member who seemed particularly interested in games and gambling in mining camps. The site is located on the edge of the townsite and establishing the site boundaries was difficult due to the high concentration of features in the area. There are four trash deposits, three cabins, three sheds, two foundations, and numerous adits in the immediate vicinity. The possibility that all inhabitants in the immediate vicinity deposited material in any of the four dumps must be considered.

Feature 1 is a collapsed balloon-frame structure made of milled wood and wire cut nails. The dilapidated condition precluded measurement of the structure. Feature 2 is a collapsed balloon-frame structure that measures 20 feet by 10 feet. It is made of milled wood and wire cut nails. Features 3 and 4 are
Map 4. Site Map, the Yahtzee Site
collapsed adits. Feature 5 is a log cabin that measures 20 feet by 16 feet. The logs are double saddle notched and there are windows on the east and west sides and a door on the north. No square nails are evident, only wire cut nails. There is no evidence of a foundation. Feature 6 is a foundation of a structure which measures approximately 20 feet by 16 feet. Feature 7 is a collapsed log cabin that measures 20 feet by 18 feet. No square nails are evident, and the collapsed condition hides the foundation.

Application of the standard field methodology to the site included a few additional steps. The site was compared with a General Land Office Mineral Survey Plat provided by the Bureau of Land Management. The comparison arose from questions about what cultural features would appear on the Mineral Survey Plats. Would it be possible to locate features from the Plats? The results from this site and several others proved inconclusive.

One of the dilapidated log cabins, Feature 7, is the former home of Mr. & Mrs. J. K. Wells, the proprietors of the Wells Hotel (Fitzgerald, personal communication 1991). With the possibility of establishing a name to a specific site, the trash deposit closest to the Wells home was selected for excavation.

A surface examination of the trash deposit revealed barrel hoops, shoe parts, ceramic shards, wire, tin cans, and brown glass. Some of the condensed milk cans show evidence of having been opened with a square nail. Two 1 meter by 1 meter pits were laid out side by side and excavated.

The next site is located in town behind Davey’s Mercantile on the Garnet Lode mining claim (see Map 5). The standard field methodology was applied to the Blankstare Site, aptly named for the brown bottle flue that the crew members suffered. A comparison of the features located with the GLO Mineral Survey Plat revealed little information. The metal detector swept the area and all hits were flagged.

A historic photo supplied by the BLM showed the vicinity of the site. From the vantage point of the photographer, a crew member was directed to the vicinity of a foundation visible on the ground. The photograph also revealed the location of an outhouse near the foundation. Hand signals directed the crew member to the location of a depression that had been overlooked. The depression correlated with the location of the outhouse in the photograph.

The site consists of a rock-lined trash deposit, a privy, a foundation, all located in the center of four log cabins. There is the possibility that this site represents communal deposition, also known as the "Arlo Guthrie Effect" (Schiffer 1987).
Map 5. Site Map, the Blankstare and Hippie sites
foundation measures approximately 51 feet by 23 feet with the west side raised approximately 6 inches and the east side cut into the hillside approximately 3 inches. The privy appears to have been burned as there is a lens of charcoal and fire cracked rock across the depression and foundation. The foundation of the privy consists of a series of bricks that are fire cracked and rotten, making measurements of the bricks impossible. The privy foundation measures 3.2 feet by 3.7 feet. The four log cabins in the vicinity are typical miner's cabins, short, stout, and hastily constructed.

The metal detector sweep of the area revealed the location of the foundation with a very strong signal centered over the location of the outhouse. At this point the decision was made to set up two excavation units at this site. The first excavation unit centered over the outhouse and the second excavation unit centered over the rock-lined trash deposit.

Two parallel trenches were laid out over the depression, 8 inches wide, 3 inches deep, and 3 feet long in order to determine if surface expression of the privy walls could be located. The trenches revealed the walls of the outhouse, the surrounding country rock consisted of poorly sorted, angular to sub-angular, yellow, heavily mineralized pebbles and rocks. The matrix inside the privy consisted of brown to tan organic soil, well sorted, with little or no pebbles and rocks. The privy walls measure 2 feet 1 inch by 1 foot 11 inches, about the right size for a pit.

Excavation occurred in arbitrary 12 inch levels following the walls of the privy. Excavation proceeded to a depth of 3 feet where a lining of rock was encountered. Removal of the rock lining and a sweep by the metal detector revealed the sterile horizon had been encountered. At precisely twelve inches, five modern aluminum pop cans were unearthed. They were arranged in "six-pac" fashion, top side up and surrounded by aluminum foil. No other cultural material was located in the excavation unit. The possibility that bottle collectors had preceded the excavation of this unit is strong, to say the least.

The second excavation unit at the Blankstare Site occurred at the rock-lined trash deposit. Surface examination of the deposit revealed hole in top cans and other artifacts indicating a possible turn of the century time period. Two 1 meter by 1 meter pits were laid out over the pit and excavation began. After the first 10 cm the walls of the pit became apparent. The semi-arid environment combined with heavily mineralized soils preserved the pit walls very well so they were followed to depth.

Arbitrary 12 inch levels were established and the center of Level 2 revealed plastic. When styrofoam appeared in the screen all excavation immediately ceased. A meeting with Professor T. A. Poor discussed all possibilities for the presence of plastic
and styrofoam, concluding that bottle hunters had effectively rototilled the deposit, in effect causing a reverse stratigraphy with older material on top of much more recent material. The question then became whether or not the original stratigraphy would reappear with depth. Excavation reluctantly resumed and the sterile horizon was encountered at a depth of 2 feet 3 inches. The original stratigraphy never re-materialized.

As word of the excavations began to circulate around Garnet, stories began to appear about the behavior of tourists in Garnet before the BLM began to provide protection for the resources. The acts ranged from blatant theft to acts of vandalism to outrageous bottle collection. One source describes the removal of the ornate front doors of the Wells Hotel. Mrs. Ole Dahl spotted a man tying the door to the top of his car and tried to stop him. He laughed and drove off while she noted the car's license plate number and the fact it was from California. When she contacted the local sheriff's office to report the theft they laughed (Ellingson, ms. 1970). Bottle hunters roamed Garnet with impunity and struck not only the trash deposits, they also dug the outhouses and collected what they could find (Fitzgerald, personal communication 1991). The impact of collectors and vandals on the cultural features in Garnet became painfully clear to the excavation crew.

The next site excavated, the Hippie Site, received its name from two elk hunters from South Carolina (see Map 5). These inveterate hunters were convinced that hippies had destroyed the town and that it would have been "neat to see the place before the long-hairs got their dang hands on it." The site is located on the hill towards the southern edge of town and lies on the Garnet Lode. The trash deposit is located nearly 60 feet from the nearest cabin and possibly represents a communal dumping site. Surface examination of the deposit revealed hole in top cans, ceramic dinnerware shards, brown bottle shards, and leather shoe parts. The deposit appears to have been heavily disturbed as pine needles have been well-sifted through the top layer of artifacts.

Application of the standard field methodology to the site occurred along with a comparison of the features present to the GLO Plat for the Garnet Lode. The comparison revealed no information on the cultural features present. A metal detector then swept the site and the signals were flagged.

No corner stakes for the Garnet Lode are located in the immediate vicinity, which made establishment of the datum difficult. A 12 inch piece of rebar was driven in the ground and its location was resolved by triangulation from three adjacent buildings, the rebar served as the datum for mapping. The buildings have been precisely located on a series of blue line maps the BLM prepared. Two 1 meter by 1 meter pits were laid out.
on a north-south axis. Excavation proceeded in the south pit to 15 cm and the north pit to 10 cm before encountering the sterile horizon. Snows arrived shortly after completion of this unit, effectively finishing the excavation season.

In the spring, the Anthropology Department’s field course spent two weeks excavating sites in Garnet. Three additional sites with a total of 12 excavation units were completed with student help over two consecutive weekends.

The first site excavated, the Sullivan Site (see Map 6), is located north of town on private property belonging to Frank Fitzgerald, a Garnet native. The site consists of three log cabins and a trash deposit. Feature 1 is a log cabin that measures 18 feet by 10 feet. The front 8 feet of the cabin is an enclosed board and batten porch. There are two windows on the porch and only one in the cabin. The logs are double saddle notched with woodsman’s angle ends. The center beam of the roof is approximately 7 feet high. The roof is board and batten and shows no evidence of a stove pipe. The notching, angle ends, and enclosed porch show considerable effort in construction, well beyond the typical miner’s cabin.

Feature 2 is a log cabin that measures 10 feet by 14 feet and has completely collapsed. The roofing is milled wood and has wire cut nails. There is no evidence of a foundation or flooring. Frank Fitzgerald, the owner of the property, states that the cabin was occupied by miners when he returned to Garnet from World War II and had been rehabilitated (Fitzgerald, personal communication 1991).

Feature 3 is a log cabin that measures 34 feet by 12 feet and has partially collapsed. The front six feet of the structure is an enclosed porch with board and batten siding. The back 12 feet of the cabin appears to be an addition to the original structure, making two rooms inside. The logs have been dovetailed at the seam and the addition has completely collapsed leaving the main part of the cabin standing. The roof shows two stove pipe holes, one stove in each room, and is made of milled wood and wire cut nails.

The anthropology class walked pedestrian transects through the area to locate corner monuments and mark cultural deposits. Professor Foor and the author then located those deposits believed to represent turn of the century material. Application of the standard field methodology proceeded with one exception, a section of rebar driven into the ground served as the datum point. Two excavation units were completed, and each excavation unit consisted of two 1 meter by 1 meter pits laid out side by side with no geographic orientation.

Frank Fitzgerald states that the cabins located at the site
Map 6. Site Map, the Sullivan Site
are the oldest structures in Garnet. They were reportedly built in the 1860s by placer miners working the gulches in and around the area that would become Garnet. Mr. Fitzgerald claims his mother knew who the three men were but he could only recall the names of two, Riley and Sullivan (Fitzgerald, personal communication 1991). Historical research has not been able to confirm this.

This locality was chosen for several reasons. It provides an opportunity to connect a name with a site; it is on the edge of town; it represents possibly the oldest habitation in Garnet; and the close proximity of the Fitzgerald home helped to control the activity of bottle hunters. Surface examination of one of the excavation units, XU-1, revealed material from the 1930s while the other unit appears to date from the turn of the century.

The next site excavated, the Sierra Site, is located near the road to the Mountain View Mine on the Sierra Lode (see Map 6). The site consists of two log structures and two large trash deposits. Application of the standard field methodology occurred before excavation. Students walked pedestrian transects through the area and established a datum point from a corner monument. A comparison with the GLO Mineral Survey Plat for the Sierra Lode revealed no information.

Feature 1 is the remains of a large log structure that has collapsed. The structure measures approximately 35 feet by 20 feet and the standing walls show evidence of two stories. There are the remains of what appear to be floor joists halfway up the walls. The logs are double saddle notched, hand hewn on the inside, and chinked with quarter round poles and mud. Newspapers apparently covered the inside walls and a few sections are still legible. The roofing has completely collapsed inside the structure. A considerable amount of energy was expended during construction of this structure.

Feature 2 is a small log structure situated 50 feet northeast of F-1. The logs are barely notched and no chinking is evident. The roof has completely collapsed and there is a considerable earthen foundation, measuring approximately 2 feet high and 3 feet wide. The notching, lack of chinking, and foundation indicate that the structure may have been a powder house, storing blasting material for the nearby Mountain View mine.

Excavation of the Sierra site occurred for three reasons. It is located on the edge of town and appears to date from the turn of the century. The structure may possibly represent a boarding house for miners working at the Mountain View mine and mill.

Three excavation units were laid out on a north-south axis
Map 7. Site Map, the Sierra Site
and consist of two 1 by 1 meter pits, two 1 by 1 meter pits, and four 1 by 1 meter pits. The sterile horizon was encountered at 15 cm for all units.

The last site excavated, Glenn's Body Shop, is located on the Homestake Lode near its junction with the Sierra Lode (see Map 8). The site was chosen for three principle reasons. The site is located on the edge of town, and possibly represents turn of the century occupation. The third reason is pure serendipity. A former resident of Garnet believes this is the location of Garnet's demimonde (Moore, personal communication 1988).

The site consists of a collapsed log structure, the foundation for two other structures, and two trash deposits. The area has been heavily disturbed by recent activity, including heavy machinery removing nearby tailings piles. Application of the standard field methodology preceded excavation. The excavation unit consisted of two 1 by 1 meter pits laid out in a small gulch, which is the larger of the two deposits located on the site.

The log structure measures 30 feet by 21 feet, the logs are double saddle notched with woodsman's angles. The roof has collapsed and the doors and windows have been removed. The logs have a diameter of more than 12 inches, some of the largest logs used for cabins in Garnet. Located in the northwest corner of the structure is what appears to be the remains of an indoor lavatory. The construction effort put into this structure is considerably more than the miners' cabins seen in town, but does not have the finish apparent on company boarding houses. Its purpose is unknown, but it does not fit the pattern of male housing, either single or group habitation.

It is estimated that nearly thirty sites were initially surveyed for possible excavation. Through application of the factors previously discussed, this number shrank to seven sites. Excavation of these seven sites produced a total of twenty-two excavation units. A conservative estimate places the number of artifacts recovered from the excavations at over 3,000. The analysis of the artifacts recovered is presented below.

After completion of the excavations, research into various repositories began. The repositories included the University of Montana Mansfield Library, the archaeology files at the U of M Anthropology Department, the World Museum of Mining in Butte, the Montana State Historical Society in Helena, the Bureau of Land Management Library in Billings, and the U.S. Geological Survey Library in Denver.

Research took full advantage of the Mansfield Library holdings, which proved especially fruitful. The Archives and Special Collections provided manuscripts, photographs, oral
Map 8. Site Map, the Glenn’s Body Shop Site
history interviews, and invaluable information about material located elsewhere. The data bases at the Mansfield Library provided source material and located materials in other libraries which were then obtained through interlibrary loan. The regular collections of the library searched included government documents, maps, periodicals, and books.

A research trip to the Montana Historical Society in Helena, uncovered useful manuscript collections and historical maps as well as resulting in a long discussion over other possible sources. The archaeologist at the Butte District Office of the BLM provided access to the BLM State Office Library in Billings and to reports in their possession in other offices. A chance visit to Denver resulted in a quick investigation of the U.S. Geological Survey Library where more useful sources were encountered. The results of the research are presented in the previous historical chapters as well as in later sections.
CHAPTER FIVE
ARTIFACT PREDICTIONS & PATTERNED HUMAN BEHAVIOR

Historical archaeology, which can provide a thorough examination of peoples, arose as a discipline around the turn of the century. One of the cornerstones of historical archaeology is the belief that human behavior is patterned and that this patterned behavior is reflected and recognized in cultural remains. The goal of pattern recognition is the testing and refinement of ideas about the behavior processes that produced the archaeological record (South 1977). An examination of both the archaeological and historical record of Garnet will reveal patterned human behavior. If the Victorian culture is present in Garnet, it will be present and apparent in the archaeological and historical records.

If historical archaeology is to contribute towards a more inclusive and realistic conception of western history, then the approach must be interdisciplinary in nature. The historical archaeologist, among other things, must be able to study a society as an anthropologist, use the tools and technology of an archaeologist, and equally important, devise an historical methodology based on sound research. The historical archaeologist must wear many hats, with no single hat more important than the rest.

In the keynote address to the Society for Historical Archaeology’s 1993 convention, Alison Wylie spoke of the contributions historical archaeology can make to western history. She drew heavily from the works of Limerick and West in stating that:

In fact, archaeology has an absolutely critical role to play in these revisionist exercises, committed, as they are, to rigorous empirical reassessment of extant myths and presuppositions. To borrow from West’s [1991] figure for describing the contributions of the ‘new western history,’ historical archaeology has the potential, already realized in many areas, to expand very substantially the ‘who’ and the ‘when’ and also, I would add, the ‘where’ and the ‘how’ of western history (Wylie 1993).

It appears at times that there are as many different theoretical uses of the historical record as there are people working in historical archaeology. Historical archaeology has an advantage over prehistoric archaeology with the addition of the

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historical record. Much has been written about the use of the historical record in historical archaeology, but a complete review of these approaches is beyond the scope of this work. Several of the more salient approaches, however, are briefly presented here.

It has been argued that using historical documentation as a control is a great value in delineating patterns in the archaeological record (South 1977). This approach has great merit and deserves further recognition, and it is, in essence, used in this work as a key component in recognizing the Victorian culture of Garnet.

Deagan (1988) notes that historical archaeology has access to the spoken word, the written word, observed behavior, and preserved behavior. The most successful contributions of historical archaeology are to those historical issues that are poorly documented, and the concepts of the new social history provide an excellent example. Ordinary people and everyday lives are aspects of social history that historical archaeology can address. In addition, many aspects of the new western history can be successfully examined by historical archaeology. The stories of women, Chinese and other ethnic groups, historic Native Americans, along with the ideas of change, adaptation, and complexity, are all ripe fields for the application of historical archaeology.

One of the more compelling indictments leveled against the use of the historical record is the assertion that prehistorical archaeologists use a more sophisticated methodology and they have successfully made processual statements, while historical archaeologist do neither (Schuyler 1988). Perhaps the greatest obstacle confronted by the historical archaeologist in the use of the historical record is the perceived or real necessity of kissing "the derriere of historians" (ibid). Historians are not infallible and there is no need to fear the historical record. It is important to note, however, that solid historical methodology is as sophisticated as the methodology of archaeology.

Calling out in the midst of this cacophony is one voice that strikes a pleasing chord. Leone (1988) believes that the relationship between the archaeologic and documentary records will prove most profitable to the historical archaeologist. The historical record can be combined with the archaeological record to illuminate the culture in question, and it can be used to test the validity of the archaeological record. It is important to keep in mind that artifacts and written records were used and produced by different people, for different purposes, at different times, and survived for different reasons (ibid).

Artifacts recovered from sites in and around Garnet will
tell much about the culture that produced them. Likewise, the historical record of Garnet will tell much about the culture that appeared in this mining camp. It is here that the use of the historical record provides the historical archaeologist with an immensely valuable resource that is simply not available to the prehistoric archaeologist.

A complete analysis of the Victorian culture is beyond the scope of this work. However, it is important to discuss the dominant traits of the Victorian era. If the dominant traits are noted, predictions can be made concerning the type and frequency of artifacts in the archaeological record as well as the contents of the historical record. The presence of the Victorian culture in Garnet can be discerned from the historical and the archaeological records.

It is important to note what other historical archaeologists encounter while studying Victorian culture. Historical archaeologists have been studying mining camps across the West for decades and the Victorian culture is described in these camps (Baker 1978). These studies suggest a suite of attributes expected to lead to recognition of the Victorian culture.

Historical archaeologists working with the remains of mining camps in the western United States point to Victorian culture as one of the most potentially lucrative areas of study (Baker 1978). This study provides insight into the relationship between cultural behavior, social structure, and class relationships within mining camps and towns.

The study and examination of Victorian culture is not new, for it has been examined by historians for decades. For historians, the Victorian era is loosely defined as the time period from 1830 to 1912, or the beginning of World War I (Houghton 1957). This time period spans the mining frontier and the lifetime of Garnet, making the study of Victorian culture on the mining frontier particularly well-suited for my archaeological history of Garnet.

The Victorian age has been described as an era not given to understatement. Victorian society in mid-19th century America partook of heavy meals, strong drink, elaborate clothes, ornate furnishings, flamboyant art, melodramatic plays, loud music, flowery speech, and thundering sermons (Maas 1957). There was a faith in material progress through applied science, "an excited tribute to the power of man to conquer nature: to the human mind that could discover the secrets and transform her material resources into productive usefulness" (Houghton 1963).

The quote above jumps out at the reader when placed in the context of the mining frontier. By changing a few words the meaning remains the same, but the phrase paints a more forceful
Other attributes of the Victorian era include Protestant religious beliefs, literacy, compulsive behavior, stressing an ethic of steady work and punctuality, Whig/Republican political orientation, temperance, and an emphasis on rational order in individual and society behavior. Also included are humanistic self-cultivation, an emphasis on efficient use of time, conspicuous consumption, individual self-righteousness, an emphasis on natural laws of moral principles, and didacticism (Baker 1978).

The Victorian emphasis on home life and love seems at odds with prurient ideals where sexuality is concerned. The Victorian life centered around the home and much has been written about Victorian love. However, attitudes towards sex are, to put it quite bluntly, rather Victorian. Houghton (1963) writes "that in the Victorian home swarming with children sex was a secret. It was the skeleton in the parental closet". Victorian ideas on sexuality are especially apparent in regard to prostitution. Women were considered the passive and naturally virtuous guardians of the home. Once seduced into illicit sexual relations, women might become depraved (West 1981).

Much has been written about soiled doves and the red light districts of mining camps. The entrepreneurs of the demimonde often congregated in sections of camps and towns and, in addition, often represented a considerable economic force. For example, in Helena, Montana, it has been estimated that between 1865 and 1886, prostitutes constituted the second largest female occupation behind housekeeping. Granted, a distant second, but the U.S. Census figures are quite revealing (Petrik 1981).

During the Victorian era, American society underwent great transitions. Houghton (1963) argues that transition is the one distinguishing element of the era. This is the age of industrialization, the workers response to industrialization, urbanization, and the principles of manifest destiny. These elements, and more, occurred in the same time span as the settling of the mining frontier.

Contrary to the image of the pioneer breaking with the past, strong evidence exists regarding the desire of westerners to share in the prevailing values of eastern society (West 1981). The key to understanding the frontier lies not with the individual pioneer, but rather, with his family. The family is responsible for the economic transition, and the social and political change (West 1991). West argues for a "cross-fertilization" of customs, ideas, material culture, language, and world views that occurred on the frontier.
pioneering family brought their cultural baggage with them and the resulting cross-fertilization with the existing culture produced a new story.

One of the goals of those who initiated settlement of the Rocky Mountain West was to recreate the society that had been left behind. In less than a half a century, circa 1859 to 1900, this goal had been achieved, in a manner which would exceed any possible expectation (Smith 1992).

Smith (ibid) presents an excellent discussion on the spread of the Victorian culture across the Rocky Mountain mining frontier. He provides a compelling argument for the development of camps and towns into centers of politics, business, education, and transportation, "as would be expected in Victorian America" (ibid). Smith also argues that women were the main force for the appearance of Victorian culture.

Victorian society was allaying itself with middle-class standards - the women saw to that. Law and order came into favor, with vigilantism relegated to a fading past. The red-light district, too, was being limited by ordinance to a certain area or two within the community, a nineteenth century form of zoning. The accoutrements of society surfaced in the form of the 'right' club, church, neighborhoods, friends, and so forth, just as they had back home. Newspapers did not headline the wild side of life, featuring instead the church social, the literary society meeting, the banker's dinner party, the school news, and the fortunes of the town's baseball team. (ibid).

By selecting several of the traits previously described, predictions can be made concerning the archaeological and historical record, from which patterned human behavior can be determined. This patterned human behavior will lead to the presence of the Victorian culture. These select traits include heavy meals, strong drink, ornate furnishings, elaborate clothes, sexual behavior, conspicuous consumption, efficient use of time, Protestant religious beliefs, and literacy. Two other traits to consider include urbanization and the belief in material progress through applied science.

The presence of heavy meals should produce artifact assemblages that include a variety of tableware and utensils for food preparation as well as dining. In addition, food remains in the archaeological record should consist of high value meat cuts, evidence of fruit and vegetables, and fish bones.
Historical archaeologists have studied meat cuts and their socio-economic significance. Measures of edible meat yield as they relate to cost per pound tend to more clearly reflect cost-efficiency of meat purchases (Lyman 1987). In this instance high value meat cuts refers to steaks rather than roasts. The trait of heavy meals should be apparent through the presence of steak rather than roast bones.

The Victorian ideals of sexuality should appear in the archaeological record of Garnet. While sexuality was not discussed in the Victorian household, prostitution was an accepted fact. The presence and, equally as important, the location of prostitution in Garnet bolsters the argument of the Victorian culture. The presence of prostitution should be discernable in the archaeological record, and in addition, in the architecture of structures in Garnet. Artifact assemblages should reflect the activity taking place, and conversely, it should reflect activities not taking place. In other words, cosmetics, contraceptives, lubricants, and women’s clothing in abundance with a paucity of artifacts related to food preparation and consumption.

Conspicuous consumption is related to three or more of the other traits under consideration. Conspicuous consumption would permeate meals, drink, household furnishings, and more. Ornate furnishings should appear in the archaeological record in the form of what are referred to as knick-knacks and household do-dads. Elaborate clothes, as seen by fancy buttons, should appear in the archaeological record along with a wide range of variability and types of cloth that reflect clothes for activities other than mining or daily business. Shoes that are not for use in mining activities should also be apparent.

Efficient use of time should be apparent in the archaeological record by the presence of clocks, watches, or time pieces. The trait of religious beliefs is potentially invisible in the archaeological record. Aside from the presence of religious icons, little or nothing should appear in the archaeological record. Religious icons and artifacts would not likely enter the archaeological record as they would be preserved.

The ideas of urbanization should be readily apparent in the archaeological record through artifacts that have a wide range of place of manufacture and place of wholesale. An example of this would include goods manufactured on the East Coast, sold wholesale in the Midwest or West and eventually purchased and consumed in Garnet.

The belief in material progress through applied science should be articulated in the archaeological record of Garnet. An example of this would include the use of electricity in the home,
workplace, or business.

These same traits that should appear in the archaeological record of Garnet should also appear in the historical record. The warning sounded by Leone (1988) needs to be kept in mind. The archaeological and historical records are different, they were produced by different people, for different reasons, at different times and they survived for different reasons. But they are both reflections of the culture that created them. Those traits used to predict the artifact assemblage can also be used to predict the nuggets in the historical record.

The historical record should provide evidence of a belief in material progress through applied science, urbanization, an efficient use of time, Protestant religious beliefs, conspicuous consumption, prostitution, heavy meals, ornate furnishings, literacy, an efficient use of time, elaborate clothes, strong drink, and the Victorian ideas of sexuality.

While the actual archaeological record in Garnet needs to be examined in order to identify the factors that produced the archaeological and historical record, formation processes may introduce bias into the archaeological or historical record and their recognition is important. A complete description of the formation processes is not necessary at this point. It is only necessary to list those processes that may have had some effect on the archaeological record at Garnet. After the discussion of the archaeological record of Garnet, a complete examination of the formation process will be necessary. This discussion will greatly reduce the presence of any cultural or biological bias that could effect the discussion of Garnet.

There are two types of formation processes, cultural and environmental. Cultural formation processes are the processes of human behavior that affect or transform artifacts after their initial use. They are responsible for deposition of artifacts, and any subsequent cultural modifications of either historical or archaeological record. Environmental formation processes are simply any and all events and processes of the physical environment that impinge upon artifacts and archaeological deposits (Schiffer 1987). The historical archaeologist must be able to examine the historical and archaeological record, investigate the formation processes which may or may not have been present, and assess and correct for their effects (ibid).

Environmental formation processes can be separated into two types: 1) those which would affect the artifacts themselves and, 2) the site formation processes. There are a number of chemical, physical, and biological agents that could greatly affect the artifacts at Garnet. To further complicate the situation, an agent that would have great effect on one artifact class may have no effect on another class or type. The agents that effect
metals might not necessarily have an effect on wood or bone. Site formation processes would include pedoturbation and faunalturbation.

The cultural formation processes that could possibly affected the archaeological record of Garnet are even more extensive. The cultural formation processes include reuse, discard, loss, abandonment, reclamation, and disturbance. The effects of reuse would have to consider recycling and conservatory actions in Garnet. The discard process would have to consider what is discarded, the path the artifact follows, and even the effects of child’s play on the archaeological record.

Abandonment processes are especially relevant in the setting of a ghost town and the effects of reclamation, including scavenging and bottle hunting, are always prevalent at ghost towns. Disturbance processes include earth moving and construction activities. Both of these can be expected in an environment where preservation and resumption of mining activities occur.

An examination of the cultural and environmental formation processes at Garnet is necessary. This examination will help to explain what the archaeological and historical record reveal.
CHAPTER SIX

THE ARCHAEOLOGICAL AND HISTORICAL RECORDS

The archaeological and historical record of Garnet revealed the presence of the Victorian culture. Table 2 provides a breakdown of the sites excavated and the selected traits of the Victorian culture. The artifacts recovered during excavation, the results of previous investigations, and the historical record all paint a compelling picture of the men, women, and children who lived in Garnet.

The previous chapter identified cultural traits that would be reflected in a Victorian society. These select traits coincided with the proper time period, 1865-1912, and include heavy meals, strong drink, ornate furnishings, elaborate clothes, sexual behavior, conspicuous consumption, efficient use of time, Protestant religious beliefs, literacy, urbanization, and the belief in material progress through applied science.

All of the sites excavated contain evidence of occupation during the Victorian era. Condensed milk cans from the Wasp, Yahtzee, Hippie, Sullivan, Sierra, and Glenn’s Site’s measure 2 15/16" by 3 5/16" and represent dates of manufacture of 1885-1903 (Simonis nd). In addition, sites contained artifacts that further refine the dates of occupation for each individual site.

Artifacts recovered from the Wasp Site suggest dates indicating occupation during the 1880s. A broken brown whiskey bottle retrieved bears a maker’s mark that reads "R & Co." This mark is from Roth & Company, a San Francisco whiskey and liquor distributing company, and dates from 1879 to 1888 (Toulouse 1972). Several hole-in-top cans recovered from the site exhibit side seams that had been hand soldered. Hole in top cans were manually produced until 1880, machines then replaced manual labor and the new technology is evinced in the side seam. The manually produced can has a thick bead of solder smeared over the seam while machine produced cans have a neat small bead of solder (Gillio, Levine, & Scott 1980). The condensed milk can from the time period 1885-1903, combined with the two above dates place occupation of the Wasp site in the 1880s.

Artifacts recovered from the Yahtzee Site demonstrated a long period of occupation, from pre-1880s to the 1950s. Condensed milk cans date 1885-1903 and also date 1950 + (Simonis nd). Side seam, hand-soldered, hole in top cans indicated a manufacture date of pre 1880 (Gillio, Levine, & Scott 1980). More precisely, a brown whiskey bottle fragment has a maker’s mark "C.G.W." which is from the Campbell Glass Works and date to 1884-1885 (Hudgeons 1983). Given the location of the site, in a
Table 2. Artifacts recovered at Garnet

<table>
<thead>
<tr>
<th>Category</th>
<th>Wasp</th>
<th>Blank</th>
<th>Glen</th>
<th>Sierra</th>
<th>Sullivan</th>
<th>Hippie</th>
<th>Yatzee</th>
<th>Historical Record</th>
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<td>HEAVY MEALS:</td>
<td></td>
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gully located on the edge of town, a long period of deposition would be expected.

Artifacts from the Hippie Site indicated occupation of the site ranging from pre-1880 to 1913. Hole in top cans with hand soldered side seams and condensed milk cans were recovered. In addition, a clear glass bottle neck with side seams that end within 1/4 inch of the top was recovered during excavation. This indicated manufacture of the bottle by a semi-automatic bottle machine, a machine used in the bottling industry from 1880 to 1913 (Gillio, Levine & Scott 1980).

The artifacts recovered at the Sullivan Site also revealed a long period of occupation. Cut square nails were produced until the early 1890s when wire nails were introduced (Gillio, Levine, & Scott 1980). The cut square nails retrieved at the Sullivan Site were not in situ and therefore their use as a time marker is suspect. The presence of hand-soldered side seams hole in top cans and condensed milk cans place occupation of the site from 1880 to 1903. In addition, the presence of plastic in the artifact assemblage indicated recent deposition.

Artifacts recovered from the Sierra Site placed the site within the proper time period for the Victorian era. Condensed milk cans recovered dated from 1875 to 1885 and 1885 to 1903 (Simonis nd). Calico buttons with inverted face and striations dated from 1848 to 1865 and one-piece cast metal buttons dated from 1800 to 1860 (Gillio, Levine, & Scott 1980). In addition, three brown whiskey bottles do not exhibit mold seams or scars, instead they have horizontal striations throughout the body of the glass. This meant that the bottles were produced by turn paste mold methods, indicative of manufacture in the period of 1880 to 1920. There is a strong possibility that this site represented occupation from the 1860s to the turn of the century.

Artifacts recovered from Glenn’s Body Shop Site also dated from the Victorian era. Condensed milk cans and hand-soldered side seam hole in top cans placed occupation of the site in the 1880s. In addition, a Schilling spice bottle bore a maker’s mark on the bottom that dates from 1881 (Toulouse 1972).

The presence of a variety of tableware and utensils, high value meat cuts, fish, eggs, fruits, and vegetables exposed the presence of the Victorian trait of heavy meals in Garnet. All of the sites excavated exhibited a wide variety of tableware. All of the sites except for the Wasp and Blankstare Sites contained high value meat cuts, that is steaks instead of roasts. All of the sites provided evidence of fruits and vegetables in the miners’ diets. Hole in top cans, which appeared in every site excavated, were primarily used for canning of fruits and vegetables (Rock 1987). Egg shells appeared in the Blankstare, Yahtzee, and Sierra Sites, and their appearance in the
The archaeological record helped to determine the presence of heavy meals.

The historical record for Garnet also exposed the presence of heavy meals. Invoices from Frank A. Davey's Mercantile divulged much about the diet of the citizens of Garnet. Produce ordered by the box, versus cases of cans, indicated fresh produce, and Davey constantly ordered a staggering variety of fresh produce including bananas, figs, muscat grapes, concord grapes, apples, navel oranges, gourds, cucumbers, tomatoes, peaches, and cantaloupes. Mr. Davey also ordered hams, bacon, oysters, lobsters, turkeys, ducks, and goose by the pound. In 1902, Davey placed an order every month for 10 cases of fresh eggs from R.C. Cobb, St. Paul, Minnesota. The addition of spices to Davey's invoices fits the pattern of heavy meals, as he ordered nutmeg, mace, cinnamon, allspice, cayenne, ginger, and cloves by the case directly from Schilling's of San Francisco (Davey, ms. 1900).

The trait of strong drink, or alcoholic consumption was one of the more prevalent traits, as it was present in every site excavated. No intact whisky, beer, or other alcoholic beverage bottles were recovered. Enough sizeable bottle fragments, however, were retrieved to allow for identification of whiskey, beer, wine, and champagne bottles, including whiskey bottles from Roth & Company, San Francisco, and beer bottles from Adolph Busch Company (Toulouse 1972).

The historical record also provided ample evidence of the consumption of alcohol in Garnet. The stories of the saloons in Garnet has been previously described. In addition, the invoices from Davey’s Mercantile revealed evidence of alcohol use. Davey’s customers not only drank, they had a taste for high octane liquor as evidenced by the orders for Usher’s Scotch, Usher’s Special Reserve Scotch, and Charles Cornell Port.

The Victorian trait of ornate household furnishings also appeared in the archaeological and historical records. All of the sites excavated, except for the Blankstare Site, demonstrated the presence of ornate household furnishings. Artifacts recovered included parts from a wide variety of kerosene lamps, shards of a Japanese vase from the Sullivan Site, floral design wallpaper remnants from the Hippie Site, the remains of a metal suitcase from the Hippie Site, and shards of Zenith leaded glass from the Sierra Site. The invoices from Davey’s included orders for curtains, carpets, dolls, toys, games, and even ice cream freezers (Davey, ms. 1900).

The Victorian trait of elaborate clothes appeared in the archaeological record through the recovery of a variety of buttons, shoes, and cloth. Remains of shoes emerged from the deposits of the Yahtzee, Hippie, Sullivan, Sierra, and Glenn’s
Sites. They represented women’s, children’s, and men’s shoes as well as work boots, however, the advanced state of decay prevented any further analysis. In addition, artifacts recovered during excavation included a variety of remains of belts, suspenders, and buckles, indicating a range of fashions.

Buttons recovered during excavation included copper studs/rivets; rubber buttons measuring 28 lines with no marks, an inverted center, and 4 holes; one piece cast metal button measuring 24 lines with a round shank, and lettering that read "BOSS OF THE ROAD" along the outer edge; metal buttons measuring 24 lines, with a round shank, and no lettering; and calico buttons measuring 12 lines, with an inverted face with striations. The "BOSS OF THE ROAD" buttons were the most common button recovered.

The Yahtzee and Sierra Site both produced samples of cloth during excavation. The sample from the Sierra Site was a fine single ply wool that possibly had a cotton binder thread wrapped around it and with an 8 harness twill variation for the weave. The edge of one specimen showed evidence of being cut and possibly represented a seam from a jacket or vest. This may have been good piece of clothing at one time. The window pane checking lends weight to this interpretation (Johnson, personal communication 1994).

The historical record for Garnet supported the presence of the trait of elaborate clothing. Various recollections of Davey’s Mercantile mentioned the prominent display of women’s shoes in the front of the store, primarily assorted button high-tops (Ellingson, ms. 1970; Toole, J. 1984). The invoices from Davey’s included Kangaroo Bluchers, a German dress shoe; baby shoes, red lace; Lea Top Rubbers; Hanan shoes; and various boots ordered from W. B. & W. G. Jordan Co., Wholesale Manufacturers of Boots and Shoes, St. Paul. Davey ordered a variety of cloth for those who made their own clothes, including cambric, Pacific tubing, Louisdale beach, Lockhart LL Brown, American indigo, English flannel, as well as lace and silk ribbons. In addition, he ordered custom made suits on a frequent basis from Edward Rose & Co., Custom Tailors, Chicago (Davey, ms. 1900).

As previously mentioned, human sexuality in the Victorian era was something of a conundrum. The historical and archaeological record supported the presence of the demimonde in Garnet. As noted above, a former Garnet resident believed that the red light district used to be in the vicinity of Glenn’s Body Shop, which is located on the outskirts of town near the Shamrock mine. Investigations into the red-light district of nearby Helena, Montana, provided a comparative database, especially in terms of the location of the soiled doves in relation to the town. The architecture of the structure at Glenn’s, previously
described, was unlike any other structure in and around Garnet. These elements, combined with the artifacts recovered from Glenn’s Body Shop supported the premise that this site represented Garnet’s red light district.

The artifact assemblage recovered from Glenn’s Body Shop included women’s leather high-top shoes, various parts of different kerosene lanterns, large 4 to 6" springs/coils suggestive of bed springs, small friction-cap copper tins which may have contained cosmetics, intact and broken patent medicine bottles, intact Cheseborough Vaseline jars, shards of broken Cheseborough jars, wash basins, pails, and marbles. The artifact assemblage indicated activities other than those which occur at family housing, single miner’s cabins, and company boarding houses.

In addition, the nearby Sierra Site, a company boarding house, provided a sarsaparilla patent medicine bottle. Sarsaparilla cured, among other wild claims, "Syphilitic Symptoms" and various venereal diseases (McKearin & Wilson 1978). Future archaeological investigations at Glenn’s Body Shop should further support the theory that this was, indeed, Garnet’s red light district.

Conspicuous consumption is related to several of the Victorian traits previously discussed, including meals, drink, clothing, and household furnishings. The presence of these traits in the archaeological and historical record serves to buttress the trait of conspicuous consumption. Further evidence can be found in the invoices from Davey’s Mercantile, especially the orders placed just before the Christmas season. One current and common complaint of the Christmas season surrounds the crass consumerism that has pervaded the holiday. The orders Frank Davey placed before Christmas at the turn of the century indicate that this is not a new phenomena.

The Victorian trait of efficient use of time predicted the presence of clocks, watches, or time pieces in the archaeological record. Pieces of pocket watches and clocks were recovered from the Hippie and Yahtzee Sites during excavation. Further evidence of this trait was indicated by the invoices from Davey’s Mercantile in the form of clocks, watches, monthly time books, and payroll sheets (Davey, ms. 1900).

Protestant religious beliefs was a Victorian trait that did not translate well in the archaeological record, and surprisingly, did not appear in the historical record. Previous historical reports and period newspaper articles do not mention religious activity in Garnet. There are only two circumstantial pieces of evidence supporting religion in Garnet and they are, to say the least, tenuous pieces of evidence.
The day books from Davey’s Mercantile recorded the daily transactions of the store and they indicated that for several years Frank Davey only worked six days a week, possibly observing the Sabbath. This is not unusual as mining camps often took the Sabbath and used the day off to wash clothes, mend equipment, and take care of other personal matters.

The other item comes from the ledgers of the blacksmith’s shop. In 1894, Charles Bradshaw ran the smithy and recorded his daily work and fees in a ledger. Nestled between accounts of shoe repairs, wagon repairs, and welding of brakes is a separate page with a quote from the Bible (Bradshaw, ms. 1894). Granted, these represent tenuous evidence of religious activity, but they do suggest some awareness of religion.

Literacy, another Victorian trait, is not well represented in the archaeological record. A single intact Carter’s ink bottle recovered from Glenn’s Body Shop Site represented the only archaeological evidence. The historical record, however, provided ample evidence of the literacy of Garnet’s citizens.

The schoolhouse and education of Garnet’s children has been previously discussed. In addition, the invoices from Davey’s Mercantile included orders from the John Leslie Paper Company, Minneapolis, for tablets of writing paper in various sizes and amounts, various types of envelopes, including foreign mail, and penholders, penholders assistants, and pens (Davey, ms. 1900). The denizens of Garnet supported a library, educated their children, and wrote and received a considerable amount of mail. Literacy obviously factored high in the priorities of the day.

The ideas of urbanization have been previously discussed and the urbanization of Garnet is readily apparent. Goods manufactured from across the country appeared in the archaeological and historical records. Items manufactured in Chicago, Minneapolis, and San Francisco, along with produce from Washington State, were shipped to the Northern Pacific depot at Bearmouth. Garnet’s participation in a national economy, combined with other evidence previously presented, proved the urbanization of the camp.

The Victorian belief in material progress through applied science was visible in the archaeological and historical record. Patent medicine bottles recovered during excavation revealed the charming belief in the curative powers of medicinal liquors. The presence of battery cells recovered from the Yahtzee, Hippie, and Sierra Sites also supported this idea. Historical photographs located at the U.S. Geological Survey Library showed electrical or phone wires running through town. Elizabeth Farmer’s recollection of a non-working phone system in Garnet is suggestive of applied science for practical purposes.
The selected dominant traits of the Victorian culture were all present in the archaeological and historical records in different strengths. The presence of all the traits suggests patterned human behavior, and in this instance the patterned human behavior was participation in the Victorian culture.

A wide range of formation processes have shaped the archaeological and historical records for Garnet. The environmental formation processes that shaped the archaeological record in Garnet centered around chemical and biological agents. Organic materials introduced into the archaeological record were affected by several agents. The presence of water, ultraviolet light, and the acidic nature of the soils aided the decay of organic matter. The physical condition of shoes recovered during excavation provided evidence of the decay of organic matter in the archaeological record. The only part of the shoe that remained was the sole, the leather having long disappeared.

Another environmental formation process that affected the archaeological record of Garnet proved to be faunalturbation. Black bears, rodents, and other animals were, perhaps, attracted to the garbage deposits in and around Garnet. Taylor (1987) documented the presence of pack rat nests under the Dahl house, while personal observations by the author attested to the peripatic obstinate behavior of these "damn" creatures.

The cultural formation processes that affected the archaeological record were even more pronounced, and some of these processes had a greater effect than others. Recycling was apparent in a few artifacts recovered during excavation, as large tin cans showed evidence of recycling as pails. Disturbance processes also had minor impacts to the archaeological record. Heavy machinery that recently operated in the vicinity of Glenn's Site impacted the site to an unknown extent.

Cultural deposition and reclamation processes, however, had the greatest effect on the archaeological record at Garnet. Cultural deposition includes what was deposited, where it was deposited, and even the effects of child’s play on the refuse. The setting of a mining camp during the later days of the mining frontier would greatly influence the discard of objects. Miners and their families, having been through the boom and bust of mining camps before, knew Garnet would not be a permanent home. Breakage, use-wear, and deterioration of artifacts would be accelerated in a mining camp.

The place of deposition in a mining camp also had an effect on the archaeological record in Garnet. Sites located out of town or on the edge of town evinced haphazard depositional patterns, while sites located in town proved the Arlo Guthrie effect. A small gully on the southeast side of the townsite, for example, was full of material that possibly represented communal
The topic of children and the frontier is beginning to receive study from historians and children’s play represents a cultural formation process that affected the archaeological record. Elliott West (1989) provided an excellent study of childhood on the western frontier, describing the types of child’s play: exploration, the making of work into play, the play of formal games, and play that imitated their elders. The first and last types of play presented by West would have had the greatest effect on the archaeological record in Garnet.

Mining camps presented a wondrously strange environment for children to explore. In fact, Elizabeth Farmer’s childhood recollections of Garnet, presented earlier, described exploration as a source of amusement. This exploration emphasized the role of children as disturbance agents, dispersing the fragments of artifacts, enlarging scatters, and transporting artifacts from one refuse area to another (Schiffer 1987).

The imitation of elders by children would have had a significant impact on the archaeological record. West (1989) described several instances of children recreating events and scenes they had witnessed from items that had been discarded.

A South Dakota daughter constructed a tiny farmhouse and barn with a well made from a three-quart can, a spool for a pulley, and a shotgun shell for a bucket. A Texas boy’s toy ranch had popcorn sheep and pecan cattle. The larger the children, the bigger the mock-ups: a reporter in Virginia City, Nevada, ran across a company of ‘juvenile firemen’ pulling around a ten-foot outfit, complete with diminutive hooks and ladders. (West 1989).

Children’s play of this variety in Garnet had a potentially large impact on the archaeological record. The size of the impact would be limited only by the limits of the children’s imagination.

Reclamation processes, however, had the largest impact upon the archaeological record in Garnet. These processes included the activities of reoccupation, salvage, scavenging, and collecting and pothunting. Garnet experienced several periods of reoccupation that were documented by the historical record. The resurgence of mining in the mid-1930s and Frank Fitzgerald’s personal experience with his family home after World War II are prime examples of reoccupation. Schiffer (1987) argued that variability in temporally sensitive artifact types was one result of reoccupation.
Mining camps present a particularly unique case for the study of salvage and scavenging processes. The abandonment of a home or mine enticed those who stayed or those who followed to salvage useful artifacts. In addition, scrap metal drives during war time resulted in the loss of machinery and other large metal artifacts from mining camps. Another type of salvage occurred several decades ago when weathered wood became fashionable for interior decoration.

Collecting and pothunting in Garnet is an unfortunate fact of life for a ghost town. The Bureau of Land Management initially placed a caretaker in Garnet for, among other reasons, the purpose of controlling pothunting. The effects of bottle hunters on the archaeological record at Garnet has been previously discussed. Personal observations of the author while employed as caretaker at Garnet attest to the determined effort of bottle hunters and to the ignorance of the casual tourist who collected bottles out of curiosity or the desire for the BLM to curate artifacts they found.

Another formation process that Schiffer does not consider, but one that affected the archaeological record at Garnet is the management of the site by the BLM. The first summer of preservation activity in Garnet witnessed the removal of over fifty pickup truck loads of trash from the town (Ellingson, ms. 1970). Early preservation activity in Garnet also included Green Thumb volunteers and Young Adult Conservation Crews cleaning up the townsite (Ellingson, ms. 1970, HRA, ms. 1982; Kingsbury 1988). Stabilization of structures in Garnet has also impacted the archaeological record. Kingsbury (1988) described impact to archaeological resources in Garnet, and the author’s personal experience further documented loss of archaeological resources during stabilization efforts. In addition, previous archaeological excavations at Garnet recovered thousands of artifacts that were not retained, thereby diminishing the archaeological record (Taylor 1987).

Formation processes had an affect on the archaeological record in Garnet and conclusions and inferences drawn from the archaeological record must consider them. The presence of the Victorian culture is discernable from the archaeological record. The degree of certainty of this observation, however, is a reflection of the processes which have influenced the archaeological record. Even with the cumulative effect of these formation processes, the Victorian culture is still evident in the archaeological record of Garnet.

Similarly, examination of the historical record revealed a wealth of information. Historians from Historical Research Associates (HRA, ms. 1982) lamented the condition of the records at the Granite County Courthouse. This is unfortunate, for county records often provide an incredible source of diverse
information. In addition, historical records from Garnet were sold at the auction of Frank Davey’s estate and other documents were carted off by collectors over the years.

Regardless of the effects of formation processes on the historical and archaeological records of Garnet, an abundance of information can be assimilated. The artifact record and historical sources revealed that the society that thrived and prospered, however briefly, in Garnet participated in the Victorian culture.
CHAPTER SEVEN

CONCLUSION

Historical archaeology provides compelling evidence of Garnet’s participation in the prevailing culture of the day, the culture of the Victorian era. The basic assumption underlying this statement lies in the theory of patterned human behavior. By employing the theories of patterned human behavior, it should be possible to predict, in advance of excavation, the general nature of the artifacts at Garnet. Given that Garnet flourished during the Victorian era, the artifacts should fall into the period circa 1860-1912.

Garnet began as a small placer mining camp, originally known as Mitchell, and grew to become the principal camp in the Garnet Range. Nearby Beartown marked the serious rush to the Garnet Range and a series of small camps quickly emerged in the region. With the exception of Beartown, these camps quickly cycled through the boom and bust pattern so typical of the mining frontier. Beartown’s geographic location allowed the camp to survive briefly as a regional supply center, but with the end of the placer gold came the end of Beartown.

Garnet lay in hibernation for nearly thirty years for several reasons. The patient miners tried to solve the complex geological problems and to locate the paying hardrock ore bodies. In 1874 Samuel Ritchey located the Nancy Hanks, but it took him twelve years to find the rich ore body that would make his mine the largest producer in Garnet.

Dr. Peter S. Mussigbrod, a German-born mining engineer, received a considerable education before immigrating to the Hope Mine in Idaho. His presence in Garnet attracted the attention of mining engineers and capitalists and Mussigbrod quickly became one of the leading citizens of Garnet.

The third leg of the tripod explaining Garnet’s thirty year hiatus is closely tied to the silver issue. When the bottom fell out of hardrock silver mining, thousands of unemployed miners left nearby Philipsburg and centered their attention on gold mines and Garnet roared to life.

The timing of Garnet’s ascension assured that the story of the camp would differ from countless other hardrock mining camps. By 1894, the year in which Ritchey finally located the paying ore body, the mining frontier had been thoroughly transformed. Garnet strode into the frontier already connected to the national economy and reliant upon capitalization from far-flung cities such as San Francisco, Boston, and London. Labor underwent
transformation from the small independent operator into the individual miner working underground for absentee owners and distant corporations. The miners who came to Garnet brought their families with them, and these miners and their families brought their cultural baggage with them. This baggage included the values of the Victorian era.

The community of Garnet built a school house, held frequent social affairs at the Miner’s Union Hall, and built homes and businesses -- all of which reflected the prevailing values of contemporary society. The commodities these people purchased at Frank Davey’s Mercantile came from Minneapolis, Chicago, St. Paul, San Francisco, Walla Walla, Helena, Butte, and Missoula.

The diet of the community included high value meats such as steaks, hams, and lobsters. Davey supplied fresh vegetables, fruits, eggs, and imported liquor for the insatiable miners and their families. Household furnishings included the latest in fashion ordered directly from the manufacturers in far-flung cities. The children of the mining camp received an incredibly diverse assortment of toys and games, and the Christmas season meant a surge in business for Mr. Davey.

Juxtaposed to these factors lay the seedier side of Garnet’s social life. The miners partook of libations from a large drinking establishment. Gambling proved to be a popular form of diversion, as did visits to the red light district located on the edge of town.

As word began to spread about this new camp, signs appeared foretelling the certain death of the mines. The Nancy Hanks produced ore steadily for two years before producing intermittently. Leasing of the mines quickly followed and eventually the mines played out as veins ended abruptly at faults. In 1912, a fire swept the downtown business district and Garnet became a ghost town.

The Great Depression witnessed a rebirth of mining activity in gold camps across the West and Garnet experienced a brief resurgence in activity. The advent of World War II ended the second boom at Garnet and the town quickly reverted to life as a ghost town.

Archaeological excavation of seven sites in and around Garnet consisted of twenty two 1 meter by 1 meter pits and exposed over 3,500 artifacts. A set of dominant traits typical of the Victorian culture were selected and used as the basis for a series of predictions. The presence of these traits in Garnet’s society would produce a predictable artifact assemblage, and a review of the artifact collection validated these predictions.
Examination of the formation process that affected the archaeological record at Garnet disclosed a mixed effect on the quantity and quality of information available. The most extreme effects of formation processes centered around the activity of bottle hunters in Garnet. Intact glass bottles proved to be a rare commodity in the archaeological record; however, this does not diminish the available archaeological information. Fragments and shards from a wide variety of bottles provided ample evidence of behavioral traits.

The archaeological and historical records from Garnet provided evidence that the community of this small, short-lived hardrock mining camp participated in the Victorian culture. The timing of Garnet’s emergence, the presence of families, and participation in a national economy ensured that the community would partake in the dominant values of the time period and these values were firmly rooted in the Victorian society.
APPENDIX

Frank A. Davey Mercantile Collection
Day Books, Invoices
Vol. 4

Note: The invoices contained in the volumes of the F.A. Davey Mercantile collection are not paginated. They appear to be arranged with some regard to date and alphabetization of the company name. The spelling and abbreviations used in the original invoices have been reproduced here. See appendix in Howser for many items referring to foods.

W.B. & W.G Jordan
Wholesale Manufacturers of Boots and Shoes
St. Paul, Minnesota
Nov 7, 1900

12 prs Ms. Oil Grain 7in 2
Buckle Creed
12 prs Ms. A Calf 7in Creeds
12 prs Ms. Kangaroo Bals
12 prs Ms. Kangaroo 8in Bluchers
12 prs Ms. Black Chrome Bals. shipped via NP to Bearmouth

Menrum Briggs Co.
Wine and Liquor Merchants
Missoula, MT
Nov 12, 1901

1 cs Ushers Scotch
100 Chas Cornell Port
3 boxes Chalk
6 dozen Cards

C.T. Perry & Co.
Helena, MT
Nov 13, 1901

25 Boxes stearic wax mining candles

Missoula Mercantile
Missoula, MT
Dec 5, 1901

31 yds Carpet sewed
3 pr Cheap Curtains

Missoula Mercantile
Missoula, MT
Dec 7, 1901

1 Coles Heater
1 dz 1/2 Spring Shovels
5# Blk Ger Kntg Yarn
2 dz Banner Mantles
1 Larsen E.J. Peas
1 Pearline
1 dz Lobster 1’s Tall B & M
1 tank WW Oil
1 Oil Tank
5 WW Oil
1/2 dz 6” Dampers

Missoula Mercantile
Missoula, MT
Dec 9, 1901

1/2 dz Boys Caps
1/2 dz Ger Sox
1 dz Wool Gloves
1 dz Unlined Saranac Gloves
1 pr Leggings
1 pr Mens Duck Short Boots
4 pr GS Short Boots
1 Gen Squash 2 1/2’s
1/2 dz Hammer handles

Missoula Mercantile
Missoula, MT
Dec 10, 1901

31 yds Carpet rm 17’ x 14’
1 Oil Tank
1 dz Boys Knit Mitts
1 pr Boys Artics
4 pr Lea Top Rubbers
3 pr Duck Rubbers
1 Lard 10s
2 2# Par Matches
5# Seal of NC 3 1/3 Foil
1 McDonald Saw Tool
1/6 dz #9 Coppe Btm Tea Kettles
1 14" Hrs Rasp
2 dz DP Tacks
1/2 dz Saw Handles

**Missoula Mercantile**
Missoula, MT
Dec 11, 1901

1 dz Pay Roll Sheets
1 dz Monthly Time Books
1 pr Ladies Empress
1 pr Lea Top Rubbers
1 pr Baby Shoes, red lace
1 crt GB Ham
1 sk Lge Ham
1/2 gross Blue Chalk
2 tin Stew Kettles
1 GI Stew Kettle
4 Flat Irons

**Missoula Mercantile**
Missoula, MT
Dec 12, 1901

2 Boys Suits
1/2 dz Honey Tins
1 But Bt Jack
1 Oys 2's
2 sks G H Flour
1/2 dz Buck Saws
1/2 dz Buhl Lanterns
25# 8# T Rail Bolts 3/8

**Missoula Mercantile**
Missoula, MT
Dec 13, 1901

1 pc Cretonna H Col Neat Patt
4 yds Hvy Stram Serge
1 pc Blue Braid

2 pc Dk Oil Cloth
1 pc Braid 1/4 Navy
3 pr Lea Top Rubbers
1 Box Citron Peel
5# Peerless
1 1/2 dz Spring Shovels

**Missoula Mercantile**
Missoula, MT
Dec 16, 1901

3 sks D & G Sugar, 300#
1 pr Hanan Shoes
1 pr Corsets
1 pc 1/2" Silk Ribbon
1 Gilt Paper
1 Diamond Dust
1# Tab Lights
20# Steel Cut Oatmeal
2 kgs Syrup
4 sks G H Flour
1 But H Shoe
1 But Star Shoe
1 Cold Cream
1 Seal of NC 16oz Cans
5 Seal of NC 16oz Foil
1 Red Bell 16oz
1 Lge Ham
1 Arb Coffee
1 Honey 1's
1 Banner Oats
1 #24 Coles Heater
3 pot Covers
1/2 dz Ivory DP Handles
1 dz Ivory Sledge Handles
1 dz axe handles
4 dz Strap Hinges
3 gross FH Screws
12 1/2 X 10 Car Bolts
12 1/2" Cut Washers
1 Miss DH Sq Pt Shovel
1 doz Cmn Mop Sticks
1/2 dz 4 1/2" Hky Whip Stocks
2 jts 6" stove pipe w/slide damper
1/2 dz padlock keys
1 doz 5# Skg Needles

**Edward Rose & Co.**
Custom Tailors
Chicago, Illinois
Dec 17, 1901
Missoula Mercantile
Missoula, MT
Dec 19, 1901
1 Suit
1 Suit
1 Vest

Missoula Mercantile
Missoula, MT
Dec 19, 1901
1 Tin Bar Sugar, 40#
1 Lasson Oil
1 suit Knee Pants
4 yds Goods
1 pr Baby Soft Sole Shoes
1 dz Mica Chimneys
1 dz Glass Chimneys
2 Cold Cream

Missoula Mercantile
Missoula, MT
Dec 20, 1901
1/4 Gross Black Velvet Binding
2 dz pins
1 pr Childs Queen Alaska
1 dz Banner Mantles
50 sq ft Oil Cloth
3 Chairs
2 Col Cream
2 1 1/4" Washers, 4 1/2" diam
2 7/8" Washers, 4 1/2" diam
12 Buck saw rivets
1/2 dz Galvanized pails
1 8 X 10 drip pan

Missoula Mercantile
Missoula, MT
Dec 21, 1901
5 WW Oil

Missoula Mercantile
Missoula, MT
Dec 23, 1901
1 Invoice Book
6 dz sweaters
1 Box Cartoon Hair Pins
1 Pc Cheese Cloth
1/2 dz Phosphorous Gilt Paper
6 yds Carpet
1 pl Swede Herring
2# Crs Fruit
2 sks G H Flour
1 L H Sq Pt Shovel

Missoula Mercantile
Missoula, MT
Dec 24, 1901
2 sks D & G Sugar, 200#
1 Pearl Starch
1 dz SM Oil
2# Crist Fruits

Missoula Mercantile
Missoula, MT
Dec 28, 1901
12 1/2 yds 8/4 Oil Cloth
1 pr Lea Top Ruubber
1 pr Shoes, soled
1 Queen 2-qt Ice Cream Freezer
1 dz 8" Hasps & Staples
6 papers hobnails
10 jts 6" Stove Pipe

Missoula Mercantile
Dec 30, 1901
1 ledger and invoice book
1 oil tank

Edward Rose & Co.,
Custom Tailors
Chicago, Illinois
March 13, 1902
1 suit

Globe Tobacco Co.,
Detroit, Michigan
May 5, 1902
(entry illegible)

A. Schilling & Co.,
San Francisco, California
Aug 26, 1902
1 bbl Schillings Best Baking Powder
less freight allowance on
325 lbs/cwt
1 assorted case Schillings
Best Spice
1 dz Nutmeg
1/2 dz Mace
1 dz Cinnamon
1 dz Allspice
1 dz Cayenne
1 dz Ginger
1 dz Cloves

The John Leslie Paper Co.
Wholesale Paper and Stationery
Minneapolis, Minnesota
Nov 11, 1902

50 3612 Tablets
100 2120 Tablets
100 3125 Tablets
1 gross Penny Tablets Pkt.
50 100 Tablets
50 794 Tablets Letter
50 2063 Tablets Pkt.
25 Cranes Tabs/ Let. Ruled
50 6907 Tabs, Cairo, lttr
50 134 Tabs Viceroy Letter
50 196 1/2 tabs, O I Bond
50 1241 Tabs. F Mail, foreign
6 bxs Cranes Asst. Pae.
6 bxs Cranes White Wove
1/2 M 2206-4 Bar. Envs. Cream
1/2 M 2206-4 Bar. Envs. White
3 Doz 308 Penholders
1 17 Penholders Asst.
1 gross 048 pens
1 gross 3 Leslie's Pens
1 gross 391 1/2 Pass Books
6 dozen Playing Cards, Outing
1 doz 34 B Harmonicas
1/4 gross 1896 1/2 Harmonicas
1 doz pkg Toilet Paper

Butler Brothers
Wholesalers of General
Merchandise, By Catalog Only
Chicago, Illinois
Dec 1, 1902

1/2 doz Top
1/2 doz Top
1 on Game Board
1 on Game Board
1 dz Dice
1 on Ping Pong

1/2 Doz Blocks
1 on Flute
1 bx Pipestem
1 doz Pipes
1 doz Pipes
1 doz Can Openers
2 on Alarm
2 on Alarm
1 doz Kid Body Doll
1/3 doz Lantern
2 on 9 PC Set
1 doz Cup & Saucer
3/4 doz Bread & Milk
1/2 doz Table Pitcher
1/4 doz Jug
1 doz Pistol
1/2 doz Tea Set
2 doz Vase Basket
1/2 doz Tea Set
1 doz Doll
1/2 doz Doll
1 doz Doll
1 on Doll
1 doz Tin Trumpets
1/2 Doz Trumpet
1/2 doz Baby Rattle
1 doz Baloons
1 dz Baloons
1 doz Baloons
1/2 doz Toy
1 doz Toy
1/2 Doz Rubber Ball
1/2 doz Rubber Ball
1 doz Rattle
1/2 doz Doll
1/2 doz Toys
1 doz Toys
5 On Sensation Mantles
6 on Day Books
2 dz Red Hkfs
5 doz Blue Hkfs
1 doz Silk Hkfs
1 doz Silk Hkfs
1 doz Binding
1/2 doz Knives
1 doz Scissors
1 doz Oil Cans
1/2 doz Knives
1/2 doz Hammers

Garden City Bottling & Liquor Co.
Wholesalers of Wines, Liquors, and Cigars
Missoula, MT
March 26, 1903

4 dz FFW Cards
1 case Special Reserve Ushers
Scotch

W.B. & W.G. Jordan Co.
Wholesale Manufacturers of
Boots and Shoes
June 12, 1903

12 prs Ms. Chrome cf lace
12 prs Ms. Velour cf lace
12 pr Ms. Kang lace
12 pr Ms. Kang lace

W.B. & W.G. Jordan Co.
Wholesale Manufacturers of
Boots and Shoes
June 23, 1903

12 prs Ms. Oil gr creeds
18 prs Ms. Kang bluchers
12 prs Bs. Kang lace

W.B. & W.G. Jordan Co.
Wholesale Manufacturers of
Boots and Shoes
St. Paul, Minnesota
July 21, 1903

12 prs Ms. Miner creeds
12 prs Ms. Tan bluch
12 prs Ms. Tan Bluch
shipped via NP

Lindeke, Warner, & Schurmeier
Jobbers of Dry Goods and
Nations
St. Paul, Minnesota
Nov 5, 1903

1 cambric
1 Pacific Tubing
1 Louisdale Beach
3 Lockhart LL Brown
1 American Indigo
3 English Plannel
3 Towels

Butler Brothers
Wholesalers of General
Merchandise, by Catalog Only
Chicago, Illinois
Dec 2, 1903

1 on Toy Tea Sets
1 on Toy Tea Sets
1 on Toy Tea Sets
1/2 dz Toy Tea Sets
1 set Steins
1/2 doz Vases
1/2 doz Rose Bowls
1/4 doz Rose Bowls
1/4 doz Water Set
1 on Beet Set
1 on Water Set
1 on Water Set
1 on Water Set
1/2 doz Vases
1/2 doz Hot Air Toys
1/2 doz Trans Plates
1/2 doz Paints
1/2 doz Toy Guns
1/2 doz Bellows Toys
1 doz Cl Balls
2 on Shak Figures
1 on Mechanical Train
1 doz Roam Toys
1/2 Doz Rub Balls
1/2 Doz Dolls
1 doz C. Rattles
1/3 doz Horns
1/2 doz Trumpets
1/2 doz Targets
1 on HD Circus
1/4 doz Cube Blocks
1 doz Skirt Bindings
1 doz Sew Silk
1 doz Sew Silk
1 doz Sew Silk
1 doz Sew Silk
4 Spcl Ribbon
1 doz Hdkfs
1 doz Mitts
6 On Day Books
1 doz Memos
1/2 doz Shears
1 doz Thimbles
1/2 doz Dolls of the Future
1/6 doz Dolls of the Future
1 on Dolls of the Future
1/2 doz Negro Dolls
1/6 doz Asst. Characters
1/4 doz Dolls
2 on Dolls
1 doz Glass Birds
1/2 doz Cups and Saucers
1/3 doz Cups & Saucers
1/3 doz Cups & Saucers
1 on Cracker Jar
1/3 doz Bread & Milk Sets
3 on Cracker Jars
1 doz Cr. Pitchers
1 doz T. Pck. Holders
2/3 doz Shav Mugs
1 on Tea Set
1 on Tea Set
2 on Tea Set
1 on 4 Pc Tea Set
1 on Berry Set
2 doz Egg Cups
1 doz Banks
1/2 doz Slippers
1 doz Farm Yard Asst.
1 doz Babies Bisque
1/2 doz China Ornaments

J.L. Gatzert & Co.
220 Adams St
Chicago, Illinois
May 20, 1904

1 custom suit McGuire
shipped per NP

J.L. Gatzert & Co.
220 Adams St
Chicago, Illinois
June 23, 1904

1 custom suit J. McMasters
shipped per NP

Coast Manufacturing & Supply Co.
Manufacturers of Safety Fuse,
Taped Fuses for Mining
July 22, 1904

2 cs Metro Triple Taped Fuse,
@ 6 ft.

J.L. Gatzert & Co.
220 Adams St
Chicago, Illinois
Aug 12, 1904

1 custom suit H. Ross
shipped per NP via Bearmouth

Bemis Omaha Bag Co.
Omaha, Nebraska
Aug 19, 1904

1,00 Jute Ore Bags
9# Rolled Oat Bags

AF Bray
Wholesale Grocer
Butte, MT
Sept 17, 1904

1 cs Lobsters, 4 dz, @ 2.40$
1 case Gal Blueberries

Coast Manufacturing & Supply Co.
Manufacturers of Safety Fuse,
Taped Fuses for Mining
Oct 24, 1904

1 cs Metro Triple Taped Fuse, @ 6 ft.

Lutey Brothers
Grocers
Butte, MT
Oct 24, 1904

(entry illegible)

Coast Manufacturing & Supply Co.
Manufacturers of Safety Fuse,
Taped Fuses for Mining
Nov 18, 1904

1 cs Metro Triple Taped Fuse 6 ft.

Davidson Grocery Co.
Wholesale Grocers and Coffee Roasters
Butte, MT
Nov 20, 1904
(entry illegible)

Guiterman Brothers
Importers and Jobbers of Men’s Furnishing Goods
St. Paul, Minnesota
Nov 22, 1904
2 Shirts
2 1/2 Shirts & drs
1 1/2 Drs
4 Sox

Butler Brothers
Wholesalers of General Merchandise, By Catalog Only
Chicago, Illinois
Dec 7, 1904
1 Juvenile Book
2 Vases
1/2 Tea Sets
1 Rattles
13 Iron Toys
12 Trains
1/2 doz Wood Toys
1/2 doz Wash Boilers
3 doz Hair Pins
1 Box Pencils, Asst.
1 doz Mirrors
1 Doz Towels
1 Doz Mitts
3 Doz Shield Bow, Asst.
1/2 Doz Suspenders
1/2 Doz Suspenders
1/2 Doz Suspenders
1/2 Doz Suspenders
1/2 Doz Suspenders
1 on nest Telescope cases
1 doz Machine Oil
1 doz Soap
1 doz Day Books
2/3 Doz Cup, Saucer, & Plate Set
1/2 Doz Cup, Saucer, & Plate Set
1/2 Doz Cup, Saucer, & Plate Set
1 Doz Cup, Saucer, & Plate Set

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A CULTURE HISTORY OF THE GARNET MINING DISTRICT
AND ANALYSIS OF THE MOUNTAIN VIEW MILL SITE
(24 GN 355)

Garren J. Meyer
CHAPTER ONE

A HISTORY OF MINING IN THE UNITED STATES

The history of mining in the United States is, in many respects, the history of the country itself. The gold rushes of the nineteenth century provided the foundations for the industrialization of the western regions, and aided in the phenomenal growth of economic and political power which resulted in this country's present status as a superpower. In the process "modern civilization" was introduced, for good or ill, into a former wilderness with unprecedented speed and with profound social consequences.

The European quest for precious metals in North America began in earnest soon after Columbus' rediscovery of the New World. Throughout the sixteenth and seventeenth centuries, the Spanish exploited the gold and silver of their possessions in Mexico and South America and established missions and outposts in the southern tier of the present United States. Meanwhile, the English, under Elizabeth I, sought a similar foothold in the northern latitudes. Martin Frobisher's first expedition to the Arctic in 1576 returned to England with a sample of worthless Baffin Island "ore" (probably iron pyrite or "fool's gold"), prompting formation of the Cathay Company with the dual purposes of obtaining gold and locating a Northwest Passage to Asia (Morison 1971:496-7, 510, 550).

The colonization of Massachusetts and Virginia was spurred in large part by the belief that these areas were rich in mineral wealth. As a matter of common practice, the 1606 charters of the Plymouth and London Companies earmarked one fifth of all metal discoveries for the Crown. To the considerable dismay of many, no gold and silver and little ore of any type was found. A small iron mine was supposedly worked in 1622 on a tributary of the James River in Virginia, and Governor John Winthrop of Connecticut, after being granted a mining license in 1657, apparently sank a mine to a depth of 125 feet with unconfirmed results. Agriculture, fishing and trade remained the economic mainstays of British America (Rickard 1932:2; Shinn 1948:36-7).

In the 1700s, copper mining ensued on a small scale in New Jersey and Connecticut; an initial attempt at commercial copper mining near Lake Superior folded after three years in 1774, amid labor shortages and transportation difficulties. Efforts by the French in the first half of the eighteenth century to mine Mississippi Valley lead deposits failed for similar reasons. The discovery of gold in North Carolina in 1799 and Georgia in 1829 led to the first significant precious metals mining in the United States. Between 1804 and 1866, miners in the Appalachian region
produced $19,375,890 in gold and other minerals, utilizing placer and open pit mining techniques (Rickard 1932:7, 18-20, 154, 228-9).

The limited scope of early mining activities in Anglo-America during this time underscores the logistical and other difficulties which needed to be overcome for sustained economic development to be realized. In the case of Appalachia, proximity to east coast trade centers and the presence of precious ore no doubt facilitated development. In contrast, large-scale exploitation of the Lake Superior copper and Mississippi Valley lead deposits was delayed until the 1840s and beyond until development of the area had progressed sufficiently to allow profitable mining. In these cases, minimal requirements for growth included a ready labor force, a system of roads and railroads, and land. The last necessity was brought about (in theory) by the Louisiana Purchase and treaties with Native American groups. The others awaited agricultural development (Rickard 1932:229-31, 170; Smith, D 1967:243-44).

Commercial mining in the western United States began with the 1849 California gold rush and the subsequent growth of San Francisco as a trade center. Again, agrarian settlement preceded mining, as illustrated by the location of the first gold discovery, Sutter's flour mill, in January, 1848 on the American River. By June of that year three-fourths of the male population in San Francisco and, by autumn, two-thirds of the men in Oregon had left for the diggings. Word reached the East via personal correspondence, prompting newspaper articles and deepening excitement, especially after President James K. Polk extolled the mineral wealth of California in his annual address to Congress in December 1848. In the flurry of emigration that followed, San Francisco grew in population from three thousand in early 1849 to twenty thousand by the year’s end (Greever 1963:8, 10-11, 36).

Many of the overland travelers prospected for gold in the numerous small streams they encountered on the way, including those in present-day Nevada. In 1849 a party of emigrants found gold in the Carson Valley, a popular resting spot, but the ore proved too scant to justify delaying their journey to the California fields, a comparatively short distance away. Various parties and individuals, both Mexican and American, began to prospect and mine the placer gravels of the area during the next several years. By 1851 Mormons began farming in the valley to supply the placer miners in the district, which by this time numbered around 130 at the height of the season. The district produced around $100,000 per year until the late 1850s, when most of the placer gravels were exhausted, and the few small settlements that had come into existence were in serious decline. The situation changed drastically after a rich body of silver ore was located in 1859. Known as the Comstock Lode, its mineral wealth required sophisticated technology and heavy capitalization.
to mine profitably. The reasons for this are related to the geology of silver ore that is almost never found in sufficient concentrations to allow the use of inexpensive placer techniques, and so must be exploited by hard rock methods (Rickard 1932:83-4, 95).

In 1850, another party of forty-niners camped on a creek near the present site of Denver and discovered a small quantity of gold. Here, as in the Carson Valley, the travellers scurried on to California. Mining development in the region would not occur for several years and followed a financial panic in 1857, when parties of individuals became interested in the possibility of mineral wealth in the area. A few modest discoveries in the summer of 1858 spurred a rush to the area by spring 1859. Many of the "fifty-niners" were farmers and unemployed bachelors from Kansas, Missouri and other midwestern locales, unskilled in prospecting or placer mining techniques. Unemployment, naivety, and the relative closeness of what was to become Colorado fueled the general excitement, however short lived. Most of the miners could not cover expenses, which were quite high for a variety of reasons, one of which included the distances to supply centers. One rough estimate is that 100,000 men left for the gold fields, but only about one-fourth stayed for any appreciable time in Colorado. The remainder either went back home or sought their fortunes elsewhere (Greever 1963:157).

Shortly after the Colorado rush in 1860, gold was discovered on tributaries of the Clearwater River in Idaho, prompting the formation of the Orofino district in 1861. Further discoveries on the Salmon River in July 1861 sparked a rush by the summer of 1862. Many came to the region from Oregon and California (Greever 1963:257-60), but quite a number of others originated from the east as greenhorns and from the south as refugees of the Colorado rush (Stuart 1957:212-14).

Some of these wayfarers travelled through the mining camp of American Fork in present-day Montana in July 1862. A resident of this Deer Lodge Valley settlement, Granville Stuart, is usually credited with the initial discovery of gold in the area. One reason for this may be that Stuart kept a diary, leaving a record of the activities of himself and those he encountered. In any case, Stuart’s journal entries lend insight into population movements during mining rushes. Stuart first mentions "emigrants" on 5 July numbering "about forty-five":

11 July: "Many emigrants arriving every day now."
13 July: "Many emigrants arriving some going back to the States and some . . . are going to Salmon river, others to Walla Walla" (p.213).
20 July: ". . . . emigrants are still leaving for Salmon river mines and some are returning to the States" (p. 214).
4 August: "... emigrants arriving from Pike's Peak"
(p. 216).

The above sequence of events is highly reminiscent of the
1859 rush to Colorado, where would-be miners invaded the locale
in large numbers only to promptly depart when their expectations
failed to materialize. Whether the newcomers originally intended
to travel to American River (renamed Gold Creek on 14 July,
1862), or had merely been directed to the site by news learned
along the way, is unclear. Some of the migrants may have
journeyed to the region aboard a steamship bound for Fort Benton,
some 150 miles to the northeast. Stuart had heard a report on 25
June of the arrival of a steamship laden with mining supplies.
Then again, American Fork would have been a natural stopover for
any party bound for the Idaho diggings from Fort Benton. In any
event, American Fork (Gold Creek) never became an important
mining settlement. Stuart departed in November 1862 for the
Beaverhead Valley, the site of another gold rush (Stuart 1957:
212-31).

In July 1862 a party of prospectors discovered gold on
Grasshopper Creek, a tributary of the Beaverhead River. By fall
of that year, the wealth of the area was fully realized and the
settlement of Bannack was established. An estimated five hundred
people resided there in the winter of 1862-63 and one thousand by
spring. A subsequent flurry of prospecting led to new findings
in the Ruby Valley, seventy miles to the east. Several
communities soon appeared along the course of Alder Gulch and by
the close of 1863, probably six thousand people dwelled there.
Further discoveries in the Prickly Pear Valley on 14 July, 1864
led to a rush for Last Chance Gulch and subsequent founding of
Helena (Toole 1959:69-71).

Developments in the separate districts exhibited marked
similarities. Soon after moving into an area, the miners would
organize a district and adopt a code governing the means of
locating and working a claim. Informal miner’s courts, a
necessity with the lack of any recognized legal authority, tried
disputes between individuals over water rights, claim ownership
and other matters related to mining operations. Often these were
decided by a majority vote of any persons who cared to attend the
proceedings (Shinn 1948:112-13, 118-19). Sometimes these courts
decided criminal cases, but the system was more effective at
regulating mining than dealing with crime. Many of its central
tenets regarding mining law were later adopted and standardized,
first by territorial legislatures and ultimately the federal
government (Greever 1963:165). However, in the absence of jails
and prisons, punishments for serious crimes were limited largely
to banishment, whipping or hanging. Horse thieves in American
Fork were alternately hanged or given a few hours to leave town
(Stuart 1957:212-231).
Nearly instantaneous urbanization resulted when an area was invaded by miners, distinguishing the mining frontier from earlier agrarian settlements. In the Mississippi Valley, for example, general urbanization resulted only after farmers had colonized the region. In contrast, towns usually existed in western mining districts before farmers moved in to supply the population. The camps thus served as nuclei around which later settlement was based (Smith, Duane 1967:242-44). The sequence of events for Bannack and Alder Gulch, cited above, serve as appropriate examples for the rapidity of the process. Almost overnight, a sparsely populated region was transformed into an urban center with most of the trappings and conveniences of western culture.

Developments in the mining districts, directly or indirectly, spurred growth in the main supply centers, such as San Francisco or Chicago. The various needs of the mining camp inhabitants were furnished via trade between local merchants and distant suppliers, maintaining a lucrative commodities market. In general, west coast cities dominated trade west of the Continental Divide, while midwestern cities conducted the majority of trade on the east side of the Rockies (ibid:140).

The initial pattern of historical developments on the western mining frontier was characterized by the 1849 California rush followed by a decade in which nearly all precious metals exploitation was confined to the west coast. However, by the late 1850s, trained and experienced miners from California were looking for new opportunities in the Great Basin and Rocky Mountain regions, prompting the diffusion of knowledge, expertise and customs adopted and developed in the California fields (Greever 1963:87). The swiftness in which mining activity moved into new areas is testimony to the ability of a group of humans, armed with relevant technology, to exploit an elusive and scattered source of livelihood. The period 1859-1864 saw gold rushes in Nevada, Colorado, Idaho and Montana and, ultimately, the inclusion of these areas into national and international culture systems.

SOCIETY AND ETHNICITY

The mining excitement drew people from diverse areas of the globe. The 1849 California gold fields included natives of Cornwall, Wales, Germany, Spain, France, Italy, Chile, Mexico and China (at one point, nearly one-fifth of California’s population was Chinese). The Klondike rush, half a century later, brought immigrants from such places as Australia, New Zealand, South Africa, and Samoa (ibid: 47, 71, 338). A reasonable assumption would be that, at one time or another, most of these ethnic groups contributed to the overall cultural configuration of the settlements.
Society in the early placer camps has generally been described as relatively egalitarian with ample chance for social mobility to occur. Often residents of the mining camps stressed cooperation to maintain law and order in the absence of immediate, recognized authority (Shinn 1948:110). Moreover, the precarious business of mining meant that the poor could quickly become rich and vice versa. In one historian’s assessment of the early California camps, "[the residents] did not...think that any honest occupation, however menial, affected a man’s social standing. Theirs was a very democratic country where strokes of fortune often placed many in far different positions than they had previously occupied" (Greever 1963:57).

When the inevitable transition to hard rock mining occurred in a particular district, the basis of social relationships in the community changed concomitantly. Suddenly, men who had been self-employed placer miners became employees of companies since capital requirements for sustained, large scale mining were simply beyond the means of individuals. Probably less than one percent of those who attempted it became owners of profitable mines. Meanwhile, unskilled workers increasingly faced unemployment (Greever 1963:86, 386; Smith, Duane 1967:199-201).

In the face of increasing concentration of wealth, economic uncertainty and a variety of other concerns, miners in most districts found it advantageous to organize. The unions usually occupied themselves with maintaining wages, which typically declined (even while costs remained high) as transportation improved, communities became less isolated, and labor became more abundant (Brown 1979:99). Other times the miners struck to resist new technologies (dynamite, for example) that they perceived to be dangerous or that threatened their jobs (Wells 1973:19-20).

By the 1890s, labor relations nationwide were becoming increasingly strained, leading to bloody confrontations in some areas. Non-mining examples include the 1892 Carnegie and 1894 Pullman strikes. Similarly, strikes in the mining districts often led to violence, property loss, and martial law. An outstanding example is the 1899 Coeur d’ Alene, Idaho conflict, where martial law was declared following a train hijacking and the demolition of the Bunker Hill and Sullivan Company’s concentrating plant. The miners were angry over the company’s refusal to recognize the Western Federation of Miners (W.F.M.). This organization had been gaining influence (and a Marxist ideology) since its inception in 1893. Mineowners used a variety of tactics to suppress the unions, including the use of Pinkerton agents to infiltrate and spy on union activities (Greever 1963:278-81; Dubofsky 1966:132-33; Lingenfelter 1974:199).

By the turn of the century, the majority of mining areas appear to have become firmly incorporated into a worldwide
cultural system manifested in such traits as industrial
technology, participation in global economic trends, and the
influence of international ideologies like Marxism. Loosely
organized districts of placer miners gave way to the hegemony of
state and federal governments and the control of the company.
Increasingly, mining districts were influenced more by national
and international events than by local occurrences or
environmental conditions.
CHAPTER TWO

THE EVOLUTION OF MINING TECHNOLOGY

The evolution of mining technology took place over a period of thousands of years. Indeed, simple mining technologies arose thousands of years before cities, writing and complex political organizations came into being. From its humble origins, mining came ultimately to fuel and be fueled by the vast industrial political entities of the modern era. In the process, many techniques remained surprisingly unchanged, while others radically influenced allied technologies and helped to transform the very fabric of human society.

Much of the mining technology employed in western North America was preceded by ancient antecedents. For example, European Mesolithic peoples had ventured underground in search of flint and other raw materials for tool making. Beginning with shallow holes and progressing to trenches and convex sided "bell" pits, prehistoric miners extracted chert using stone hand axes and antler picks, often after weakening the strata by setting fires and dousing the rock face with water (Shepard 1980:12-13).

The earliest New World metal mining activity occurred in the Upper Great Lakes Region between six and seven thousand years ago during the span of the Old Copper culture. Most activity centered on the Upper Peninsula of Michigan and the northern shore of Lake Superior. Miners dug pits along veins of pure or "native" copper using heat and quick cooling like their European counterparts. This process made the rock brittle enough to be broken and pried loose with hammer stones and wooden bars. The copper was then fashioned into tools, weapons, and ornaments by cold hammering and annealing (to keep the material from becoming too brittle) as smelting and casting methods were unknown (Quimby 1960:52-53).

In Europe, placer mining of gold was practiced before 4,000 B.C.; gold bearing veins were exploited by ca. 2,400 B.C. In Greece, silver-lead ore was milled by the third century B.C. using a combination of hand sorting, crushing (using mortar and pestles and horizontally aligned "burrstones") and water concentration. The earliest attempts to amalgamate gold with mercury occurred in classical Roman times. In the Renaissance, silver was mined in the Harz Mountains of Saxony and milled by a combination of hand sorting, cobbing (breaking with hammers), water powered stamp mills, jigging and water concentration (Taggart 1947:83).

The first Europeans to mine on a large scale in the New World were the Spanish, who inherited a tradition of mining
technology from classical Rome and earlier Mediterranean civilizations. Many ancient inventions continued in use until the twentieth century, including arrastres and "Chilean" mills for ore grinding, and blankets and sluices for collecting gold particles. The Incas and Aztecs utilized placer techniques to obtain gold in their respective domains, a fact not lost on their conquerors, who soon scrambled to locate placer deposits and quartz lodes in Mexico and Peru. In their eagerness to exploit this new-found wealth, the Spanish recruited Saxon silver mining expertise that had developed since Medieval times. Simultaneously, mining texts began to appear in Europe, including de re metallica (1555) by Georg Bauer (a.k.a. Georgius Agricola), a Saxon mining engineer. The Spaniards, in turn, adapted and applied this accumulated knowledge to New World locales (Young 1970:55-58).

Many Saxon inventions of the Renaissance survived, in modified form, well into the twentieth century. Woodcuts in de re metallica (1555) depict a water-powered stamp mill and an amalgamation and retort facility. Mechanical devices such as stamp mills were often powered by mules or other animals in the arid regions in which the Spanish worked (Young 1970:66-74). By the early twentieth century, steam, oil and electrically powered stamp mills were in use (Taggart 1927:1302).

In the decade following 1543, silver lodes were discovered on Spanish lands, including the Espiritu Santo, Zacatecas, Guanajuato, Real del Monte, and San Luis Potosi lodes. Mineral lodes were claimed much as they would be at a later date in the American West, with the exception that one-fifth of the gross output was pledged to the Spanish crown. If wood was available in sufficient quantities, fires were started to weaken the rock, much as prehistoric miners had done. In general, however, fuel was scarce, and the Indian slaves or "barreteros" chiseled their way through the rock using heavy crowbars without aid of explosives. Once removed from the face, the ore was loaded into baskets and ported up the shafts by laborers, who often climbed several hundred feet on crude ladders. The workers usually drifted along the ore veins without regard for drainage, efficiency or other engineering concerns, creating a twisted labyrinth of narrow passages. Called El Sistema del Rato ("pragmatic" or "empirical" system), the method was ridiculed by visiting nineteenth century British and American mining engineers, who mistranslated the phrase as "rat hole mining" (Young 1970:59-64, 79).

Actually, the system was well adapted to the geological, economic, and technological conditions of the time and area. The basic theoretical principles of mining geology were not set forth until the late eighteenth century, a circumstance perpetuated by a lack of trained mining engineers in Mexico. Mining endeavors therefore tended to be a matter of trial, error and human sweat.
In addition, the silver ore had precipitated in a complex network of unpredictable faults. The use of gunpowder for blasting, a Saxon innovation, was largely unfeasible for lack of steel drills and safety fuse in Mexico. In sum, other methods would likely have been prohibitively expensive (ibid:79-83).

On the surface, the ore was dressed by hammering the worthless gangue rock from the mineral-bearing segments, which were sorted according to relative tenor. The richest portion was sent immediately to the smelter while the remainder was kept for further treatment, which generally involved roasting and patio processing, invented in 1554 by Bartolome de Medina, a Spanish merchant. Otis Young weighs Medina’s silver treatment innovation, which would persist in modified versions until the 1890s, equally with Bessemer’s contribution to steel manufacturing. The process had been necessitated by the tendency for the lodes to depreciate in value below the water table and change in chemical composition from chlorides to sulphurets of silver, which were extremely costly to treat. (ibid:66, 74-5).

The ore was first ground in arrastres or Chilean mills to sand size and then spread on a stone platform. An azoguero ("mercurist") oversaw the next steps, in which heavy doses of salt and copper sulphate were added and trampled in using laborers and, later on, mules. After several days, mercury was added in like manner and the mixture was subjected to raking, mixing and exposure to sunlight. After a time (15-45 days), the material turned gray and was placed in wind-powered churning vats to separate the remaining gangue from the amalgam, which was then retorted to separate the silver and mercury (ibid:75).

When the first big gold strikes occurred in California in 1849, the gold seekers had at their disposal the accumulated knowledge of centuries. The Spanish in the Americas, and the Saxons, Cornish and other Europeans had first borrowed and then developed and refined mining technology to fit areal and time specific geologic and economic conditions, a pattern repeated often throughout the nineteenth century. A great deal of the engineering talent utilized by American-based firms during the period stemmed from European mining schools like Freiburg Academy in Germany. In addition, favorable opportunities in the United States prompted the emigration of skilled personnel from the mining regions of Europe, especially Cornwall and Ireland (Spence 1958:2, 238; Rickard 1932:237, 146; Lingenfelter 1974:6-7; Brown 1979:8; Young 1970:33, 86, 244).

The California gold fields, like gold-bearing regions before and after, were first subjected to placer mining techniques to obtain the gold that had eroded out of igneous rock formations. The 49er’s methods and devices originated in ancient times. Hand picking of nuggets and panning soon gave way to rockers, sluices and similar devices, which utilized gravity and water to separate
the heavier gold from the waste rock. Riffles or coarse blankets caught the free gold as the mixture of water and sediment descended the apparatus. Sluices had been operated in ancient Egypt; the legend of the "Golden Fleece" supposedly stems from the use of sheep fleeces to catch free gold in ancient times. Much of this knowledge was diffused to the California "greenhorns" by savvy Mexicans and Chileans who had also migrated to the region (Young 1970:57-58, 108, 116-117; Rickard 1932:29-30).

In the following decade, California served as a testing and training ground for American mining expertise. New methods were devised and old ones improved, while thousands of miners gained skills and knowledge which were ultimately transported to the gold fields of the Rockies. Advanced California placer methods included "river mining," in which whole sections of stream bed were dried up with the use of flumes and diversion channels in order to work the exposed gravels, and innovations like dredging and hydraulic mining, which utilized water pressure to erode banks of sediment into long sluices. Increasingly, the placer operations incorporated mercury to amalgamate with the gold and silver (Young 1970:125-136).

Inevitably, placer gravels throughout the West became all but exhausted, necessitating a switch to hardrock techniques. Operations ranged in complexity from drifting along ore veins (much like El Sistema del Rato) to state of the art methods geared for efficiency. Sometimes, as in the Comstock, the country rock was too unstable to permit drifting. In standard practice, miners built cribs (crude log pillars) or simply left columns of rock in place to support the workings. Neither would suffice in the Comstock mines. In response, Philip Deidesheimer, a Freiburg graduate, introduced square-set timbering--a system of interlocking wood beams formed into cubicles (ibid:244).

Mines utilizing scientific methods were designed with concern for efficiency, drainage, ventilation and access. Gravity was used as often as possible to remove ore and water, and care was taken to systematically mine the ore body so as to facilitate later development. This implied, among other things, careful surveying and mapmaking by highly trained mining engineers. Part of the ridicule lavished on Mexican mining methods stemmed from engineers' discouragement over failed attempt to improve the workings that had been "rat hole" mined (Eaton 1934:43-79; Young 1970:79).

In most cases, miners employed a level of technology suitable to geologic conditions and available resources. Consequently, the most primitive (and often, the most economical) techniques continued in use until quite late, despite the availability of more advanced means and devices. After 1853, water or steam powered stamp mills and Blake jaw crushers.
dominated ore processing, being simple, reliable and cost-effective. Often, "custom" mills processed the ore from several mines after purchasing the material at its assay value minus operating expenses. Large outfits typically built their own "integrated" mills to handle on-the-spot production (Young 1970:193-5).

Taggart (1947:84-87) generalized the sequence of operations at a typical 1870s era gold mill thus:

1. Hand sorting in the mine.
2. Crushing with a jaw crusher.
3. Further crushing in gravity stamps.
4. Amalgamation on mercury coated plates.
5. Concentration on blanket tables.
6. Shipment of concentrate to the smelter.

The initial phase in metallic ore dressing involved crushing the material to a fineness sufficient to separate the valuable minerals from the worthless gangue. This involved as many as three steps--coarse, intermediate, and fine crushing--and could be achieved with a wide variety of machinery by the early twentieth century (Taggart 1947:2-3, 246-496).

Stamp mill attributes varied with such factors as the tenor of the ore and prevailing economic conditions. Mills were invariably situated on a slope to take full advantage of gravity in ore transport and processing. The mining engineer T. A. Rickard advised that "the first axiom of successful milling is that the process which is the best adapted to the ore and the cheapest under any conditions is the one which should be chosen" (1897:6-7). To make his point, Rickard compared California and Colorado stamp mills. The former processed relatively simple ores in which large flakes of gold were suspended within a matrix of quartz, while the latter dealt with minute particles of gold in association with pyrite, diffusely dispersed throughout the parent rock. California mills thus utilized rapid crushing with heavy stamps and shallow mortars, while their counterparts in the southern Rockies employed slow crushing with light stamps and deep mortars. In both cases, discharge from the mortars was regulated through the use of screens and by the relationship between mortar depth and the oscillations created by the stamp motion. The Colorado method was necessitated by the need for the ore to be more thoroughly crushed and amalgamated within the mortars:

This excessive pulverization is desired by the Colorado millman because it enables him to break the close intimacy between the finely divided gold and its associated pyrite. He therefore has combined the features of a long and slow drop with a deep
discharge... Then, having obtained conditions enabling him to separate the gold from the pyrite in the ore, he catches it upon amalgamated copper plates which are arranged along the front and back of the mortar. To sum up, he makes the crushing feature of his mill subservient to amalgamation. Now turn to the Californian. His ore does not require such pulverization... He, therefore, has made his battery primarily a fast-crushing machine, and only incidently an amalgamator (Rickard 1897:5-6).

Despite the successful adaptation of these two variations, Rickard bemoans the absence in many districts of appropriate technologies due to a general lack of knowledge in many operators. One of whom "was as deliciously ignorant of what the stamp mill can do and how it does it as the dog that bays at the moon is of astronomy" (ibid:248). To a significant degree, then, the efficiency of individual mills was dependent on the expertise of the operator.

Throughout the process, the ore was sorted using hand picking, grizzlies, screens and meshes of diverse size. Larger pieces had to be sorted by grizzlies before entering the stamps, while fine meshes and screens regulated discharge from whatever grinding apparatus was employed. After thorough crushing and screening, the ore was sometimes ejected out onto concentrating devices such as Frue vanners and Wilfley tables. These appliances were mounted at a slight angle and utilized a combination of vibration and water currents to wash the gangue from the amalgam (Taggart 1927:498-778).

Two inventions of the 1870s--the pneumatic drill and high explosives--brought hard rock mining firmly into the Industrial Age. Both significantly increased production as well as mortality rates. Power drills caused the old method of double and single jacking with hammers to pass into obsolescence. Unfortunately, the new devices caused airborne particles of silica to enter the lungs of miners, causing silicosis and premature death. The hazard was partially remedied around 1890 when water flushed drills were introduced. Originally intended to clear the drillhole of debris, the machine incidentally prevented deadly clouds of silica dust from forming. Another dangerous but potentially useful invention was nitro glycerin, which was made infinitely safer when Alfred Nobel added inert ingredients to create dynamite. These two developments made mining operations feasible in lodes formerly considered too poor to be worked profitably except on a massive scale. Between 1875 and 1893, thousands of small lode mining communities appeared throughout California, the Great Basin, the Southwest, and the northern Rockies. Technological developments created economic and social consequences (Young 1970:204-214).
A new crushing device, the tube mill, was introduced around 1905, gradually replacing the less efficient stamp mill. Inspired by the cement mixer, which it resembled, the tube mill utilized metal balls or rods in a tumbling action to crush the ore (Taggart 1947:93). The apparatus was especially popular in operations using flotation where finely and uniformly crushed ore was desired.

The process of flotation arose as a result of attempts to turn a previous obstacle, that is the unwanted flotation and consequent loss of "slime" sized ore particles, into an advantage. Flotation was tried as early as 1877 on graphite ore, but was not employed commercially until 1912 by the Butte and Superior Mining Company of Butte, Montana. From 1900 to 1920, hundreds of new patents dealing with flotation processes and devices were granted. By 1917, the method accounted for twenty million tons of annual U.S. production (Taggart 1947:102-3; Simons 1924:182).

Flotation depends on the surface tension in air bubbles to float desired minerals above unwanted gangue materials. In practice, a mixture of water, finely ground ore and usually oil or other agents were entered into a vat where air bubbles were created by agitation, boiling and the like. The oil served to make the bubble surfaces stronger, which would then adhere to the surfaces of minerals with a metallic, adamantine or resinous luster. The resultant buoyancy caused them to float above minerals with an earthy luster, like most gangue materials. The valuable concentrate could then be skimmed off, and the gangue discarded or treated further with another process. Freshly skimmed concentrate often contained up to 80% water and had to be dehydrated in order to be profitably shipped. A number of devices were used to deal with this problem, including various settling tanks, thickeners and filters. In essence, the process is the polar opposite of other types of mineral concentration, which rely on the high specific gravity of metals to cause them to sink below the lighter gangue minerals (Taggart 1921:1; Simons 1924:191).

Though all flotation processes had most of the above elements in common, a multitude of machines and variant processes were invented to bring about desired results. Sometimes acid was added instead of oil, and the pulp was often heated. In general, various components of the process had to be modified to suit the variable qualities of the ore, and alternate methods were sometimes employed within the same operation (Simons 1924:192-3).

Increasingly, hard rock mining became more productive and efficient, in large part as a result of adversity. Improvements in planning, engineering and equipment often came about as a result of the exhaustion of rich surface ores and periods of depression and low prices. Advances in power, lighting, mucking
DISCUSSION

Despite overall advances, mining technology did not evolve in a linear fashion over wide areas but developed to fit economic, environmental, and social conditions in particular locales. Some innovations, such as power drills and dynamite, produced significant, abrupt change over vast areas. Other improvements, like Comstock square-set timbering, were important only in districts with special needs. Indeed, many techniques survived largely unaltered, prompting one historian to comment that, "American frontier mining before 1870 can hardly be called much of an improvement upon the Saxon methods described by Bauer three centuries earlier" (Young 1970:204). In fact, when mining technology is viewed in its totality, one might legitimately extend the 1870 date much further. As a case in point, stamp mills survived virtually unchanged (with the exception of power plant type and various other details) from Renaissance times to the Great Depression.

Increasingly, however, their use was limited to small, isolated gold mills (see, for example, Timmons 1986:108; Taggart 1947:95). Despite some continuities in mining technology over time, one cannot ignore the affects of technological advances and the widespread flow of information and knowledge that increasingly influenced the U. S. mining industry. These advances helped spread lode mining into areas formerly considered too remote or lacking sufficient mineral wealth to warrant investment. Improvements in transportation, communication and education contributed in profound ways to the flourishing (however short-lived) of North American mining activity by strengthening links between isolated locales and the outside world.
CHAPTER THREE

THE GARNET DISTRICT: 1865-1941

The commencement of mining activity in the Garnet district followed a pattern which emerged out of the California gold rush, as did other Rocky Mountain mining districts. Once the nature of the mineral deposits became known, would-be millionaires immediately rushed into the area and colonized it, hoping to substantially improve their lot. After a period of a few years, the placer gravels became played out, most of the population left, and the district awaited technological or economic fortune to exploit the gold-bearing quartz veins.

EARLY PLACER MINING

As in other times and places, placering preceded lode mining in the Garnet district. Miners travelling the recently completed Mullan Road discovered gold in Bear Creek by autumn, 1865. Soon afterward, the camps of Beartown, Yreka, Springtown, Reynold’s city, Top O’ Deep, and Elk city arose. The placers at Beartown proved richer, and its position near major supply routes aided its rise to prominence among the tiny settlements. By 1868, Beartown could boast of a flourishing business district comprising several stores, saloons, gambling houses, a blacksmith shop and, one may speculate, brothels. Reports, though likely exaggerated, attribute a population of over 2,000 to the area in 1866, which was nevertheless reduced to 550 by 1870, when most of the easily recovered gold was depleted (Babcock, Gallacher and Liggett 1982:23).

Everyday life in the early Garnet Range camps was representative of its time and place. The lifestyle reflected the makeup of the population; diversions included drinking, gambling and other male-oriented activities. Occasionally, travelling shows visited the area and provided entertainment, including Shakespearean plays. Father Anthony Ravalli sometimes journeyed from the Bitterroot Valley to hold Mass. By the late 1870s, the population began to take on a different character as families became more common. The construction of a schoolhouse in Beartown in 1881 exemplified the trend toward increasing domesticity in everyday life, not only in the Garnet Range, but also in the entire region (ibid:25-26).

The miners and their families faced problems typical of frontier communities. Difficulties with sanitation (which almost certainly increased with time) and lack of adequate medical care meant a high incidence of disease and death. Polluted water systems and assorted vermin and disease, plus the threat of fire and accidents, were hazards common to most early Western mining settlements and were no doubt present in Beartown and surrounding camps. Moreover, geographic isolation meant highly inflated
prices for necessary commodities—merchants typically fared better than the miners. W. A. Clark, later famous as a Butte "Copper King", once brought a load of goods to Reynold's City which reportedly commanded exorbitant prices (Babcock, Gallacher and Liggett 1982:26-7; Smith, Duane 1967:148-9, 196; Greever 1963:57-8, 177, 190).

In the realm of placer mining technology, the Garnet Mountain miners again followed a pattern repeated time and again along the Western mining frontier. Simple panning of river sediments soon gave way to rockers, sluices and hydraulic mining. In 1910 miles of sluice boxes and flumes could still be seen running the course of Bear Creek. At one point in the gulch, a tunnel was driven about one hundred yards through a ridge in order to save nearly one-half mile of flume construction (Rowe 1910:704).

Placering required large amounts of water, which became scarce as streams dried up during the summer. To combat the problem, enterprising individuals constructed reservoirs at the heads of gulches, but the measures proved inadequate when dry weather desiccated the impoundments (Babcock, Gallacher and Liggett 1982:278). Compounding the hardship was the fact that much of the surface gravel was too lean in gold content, making it necessary to employ drift methods, such as tunneling down to bedrock and then hoisting the lower, richer sediments to the surface for treatment in sluices. In the 1930s, a dredging operation encountered many of these old workings along the west side of Bear Creek (Mining World 1940:7). Despite the various difficulties, production of the early placers on the Garnet Range (to c. 1880) was said to total between eight and ten million dollars with nearly three million from Bear Gulch alone (Rowe: 704-5; Mining World 1905:325).

By around 1870, most of the easily recovered placer gold in the Garnet Range and throughout Montana and the western United states was depleted. The next two decades saw a general decline in gold production and, with the aid of capital from the eastern United States and Great Britain, increased emphasis on silver and other metals. In addition, the completion of the Northern Pacific railroad in 1883 provided much-needed transportation links. Western Montana communities like Butte and Helena became important silver mining locales, accelerating growth in the Montana mineral industry (Greever 1963:222-3; Toole 1959:158-9). While nearby Philipsburg and Marysville profited from the new trend, the lodes in the Garnet Range were too isolated and poor in silver content to warrant the large-scale capitalization and development necessary. Though a few small claims were worked during the 1880s, the gold camps were largely abandoned (Babcock, Gallacher and Liggett 1982:31-2).
The late 1880s and early 1890s witnessed a steady decline in the value of silver because of overproduction worldwide. In the wake of this decline, silver interests from the western states lobbied successfully for passage of the Sherman Silver Purchase Act in 1890, which required the federal government to nearly double the amount of silver purchased annually to back the currency. Though the U.S. economy operated on a bimetallic system, currency could only be redeemed in gold. After 1890, the federal reserve of gold plummeted due to decreases in Federal revenue and hoarding by investors. The situation became critical by early 1893, creating a financial panic. A special session of Congress was called in the summer by President Grover Cleveland and the Sherman Act was repealed in October 1893.

The silver crisis affected Montana severely, creating widespread shutdowns and layoffs in nearly every sector of the economy. By December 1893 over one-third of the state’s workforce was unemployed (Babcock, Gallacher and Liggett 1982:33). The Montana Inspector of Mines report for 1895 noted renewed interest in gold mining as a result of the silver plunge, "very many gold mines and small mines are being worked now that silver is so low. Old gold mines that have lain idle or been abandoned for years are now being developed and many of them with good results" (Shoemaker 1896:3). Laid-off miners were apparently responsible for the increased activity in the gold areas, including the Garnet Range. In fact, the trend was region wide, with similar developments elsewhere (Rickard 1896:476-479).

By the early autumn of 1894, Dr. Peter Mussigbrod, a German immigrant trained at the prestigious Freiburg Academy, announced plans to erect a ten stamp mill and road near the site of the future town of Garnet to handle the ores of his ten claims and those of the other miners in the area (Progressive Men of the State of Montana, n.d.: 1168; Phillipsburg Mail: 13 September, 1894). By October 1895, a new community called Mitchell had sprung to existence, containing some ten buildings, including a stamp mill, livery stable, combination hotel and saloon and a number of private residences. A local news correspondent reported that "an unusual amount of work is going on among the quartz as well as the placer mining interests" and furthermore that "the camp of Mitchell has grown to considerable importance this season" (Daily Missoulian: 2 October 1895). That same month, the Phillipsburg Mail (17 October 1895) related that several mines in the district were making regular ore shipments and "the mill (was) running steadily." By November service was resumed at the Bearmouth post office after a two year hiatus (Phillipsburg Mail: 21 November 1895).

A story in The Silver State (12 February 1896) underlined the role of cooperative efforts to develop the area, "Through the
united action of our leading citizens the cannon ball road from Coloma to Bearmouth is completed." Containing three and one-half miles of grade and nine bridges, the road was capable, initially, of handling only sleighs, requiring a further outlay of hundreds of dollars to widen the route for wagons.

Despite these initial efforts, by June 1896 several of the properties were idle. Difficulties stemmed from the low quality of the ore, coupled with prohibitive transportation expenses. Moreover, certain unspecified disputes over the operation of Mussigbrod’s and A. H. Mitchell’s ten stamp mill, together with the shortage of ore, caused a halt in production. Despite a certain amount of discord, cooperation remained the order of the day, with several mines operated under multiple owners. A few miles away, in Top O’ Deep, at least thirty-five men were engaged in placer mining after construction of a one million gallon tank to deal with the chronic problem of water shortages (Daily Missoulian: 23 June 18963).

As in other times and places in the early mining era, rosy assessments fueled optimism for the region’s prospects. An article entitled, "Missoula Riches" by A. E. Street (Daily Missoulian: 8 July 1896) extolled the mineral potential of the region, deeming it as worthy of promotion as the agricultural lands of the Bitterroot Valley:

It is a hard matter to impress upon the people of Missoula, the fact that they are living in the richest gold bearing quartz and placer mining district in the Rocky Mountains.

In the absence of speedy progress in mine development, eastern and foreign capital was often seen as the solution to problems in Montana and throughout the West; outside investment was therefore openly courted. A local example of the usefulness of imported wealth could be seen in the Drumlummon mine in Marysville (once predicted to last a century), owned by Montana Company Ltd., one of the most successful British mining firms in the western United States (Spence 1958:60). Similarly, capital from Philadelphia and other eastern cities was largely responsible for the development of the mines at Coloma, three miles northwest of Garnet (Pardee 1918:195). By late summer 1897, a resident could report "improvements of a substantial nature" and a workforce of forty men at Coloma’s Mammoth mine and mill (The Silver State: 1 September 1897).

Meanwhile, a combination of local efforts and strokes of good fortune enlivened activity around Garnet. It was during the summer of 1896 that Samuel Ritchie discovered an extremely rich deposit of "red ore" in the Nancy Hanks mine, an event that was to become famous in the history of the town. The property, owned by Ritchie and J. S. Auchinvole, employed two shifts of twelve
men who had extended the main shaft to a depth of one hundred feet. Concurrently, the nearby Magone and Anderson workings, owned by Mitchell and Mussigbrod and praised as "one of the best leads in the camp," produced shipments of ore valued at $72-$120 per ton. Matching the bustle in these enterprises, several lesser claims, including the Shamrock Tiger, and Cascade exhibited progress largely through the industry of lessees. Aiding these successes was the excellent condition of the roads in the district, "largely due to the enterprise of property owners" (Pardee 1918:182; The Silver State: 1 September 1897; Byrne 1897: n.p.).

Success in the mines was reflected in the growth of the town. The Silver State: 11 September 1897) reported "three saloons, several boarding houses, two laundries; besides other requisite business concerns" and "a number of families, in well kept homes" with plans to construct a schoolhouse. The stamp mill of Mitchell and Mussigbrod was being remodeled and was expected to be "a great benefit to small owners in the camp" who lacked the means to construct their own mill. Moreover, local ranchers supplied the community with milk and butter daily and beef twice-weekly. One hundred people now received their mail in Garnet, "a busy and promising little town".

LABOR-MANAGEMENT RELATIONS AND SOCIETY

By February of 1898, a miner's union was present and holding regular meetings in the town. Affiliated with the W. F. M. (Western Federation of Miners), the local was a branch of the Granite Miner’s Union. The chapter elected officers, provided sick benefits to members, and organized dances and other celebrations to commemorate union anniversaries and other holidays. In addition, and most importantly, the local negotiated with mine owners over wages and other grievances and actively recruited new members. In a meeting of 14 March 1898, the chapter endeavored to bring about the end of compulsory company boarding houses. On 5 January 1899, a motion was passed to appoint a committee to persuade Mussigbrod to increase wages in his operations to "union scale"; by 12 January, the committee, apparently successful, was discharged with thanks from the local (Garnet Miner’s Union Minutes: 1898-1901).

In sharp contrast to many western mining regions at the turn of the century, relations between the mine owners and the labor force remained relatively amicable throughout the district’s productive period. While bloody confrontations occurred in Idaho, Colorado and other locales, the unions in Montana were largely successful in securing their demands, at least until the rise of the Anaconda Company in the early 1900s (Wyman 1979:160). An article in Engineering and Mining Journal (7 January 1899: 6-7) proclaimed that "the (Montana) operations have been entirely free from the disturbances of strikes." Possible sources for the
relative calm included political motives on the part of mine owners (ala Clark, Daly, and Heinze) or the mere fact that many bosses had begun as ordinary miners and thus understood more clearly the plight of their employees (Peterson 1973:11-13, 15-16). A further reason that seems to apply to the Garnet district is the fact that the miners were often more organized than the owners. The nature of control and production of the district's resources was decidedly diffuse, i.e. the mines in the area were operated by several small companies instead of a single large corporation. In consequence, the union could negotiate with each company in isolation rather than deal with the vast economic and political clout of a monopoly. Faced with the prospect of confrontation with a well organized local backed by a powerful parent organization, owners probably had little choice but to deal with the union on its own terms.

One method of circumventing the potential problems of labor costs was leasing. Utilized widely throughout western mining districts, this type of arrangement lessened the financial risks of mine owners and afforded an opportunity for the average working man to improve his lot. Usually a mine owner leased a portion of a property in return for a percentage of the profits, which could vary dramatically, depending on the flats of nature. Occasionally, an unscrupulous owner would lease a piece of ground he knew to be worthless in order to secure development work free of charge. Other times, an owner would let a mine for a short period only to later discover, to his horror, that most of the valuable minerals had been removed during the term of the lease. Proprietors usually guarded against the latter possibility by the use of a sliding scale in which the owner's cut would increase as richer pockets of ore were encountered.

Leasing was increasingly employed over time in the Garnet district, adding to an already complex web of business relationships. Mines or even portions of mines typically underwent numerous changes of ownership and at any one time might be owned and/or leased by several individuals. Likewise, one person could have an interest in several properties, some of which might be operated by himself, others by lessees. The result of all this was that owners were allowed a certain amount of financial protection while lessees gained a chance to move up the economic ladder.

Another by-product of this pattern of development was that control of the means of production remained relatively diffuse throughout the settlement’s history. As an example, the Nancy Hanks mine, by all accounts the most substantial producer in the district, changed hands several times. Though initially discovered by Samuel Ritchie, by 1897 the mine was controlled by a partnership consisting of Ritchie and J. S. Auchinvole (Byrne 1897: n.p.). Three years later, the mine was leased to L. C. Parker, who confidently assessed the ore bodies as "permanent"
but nonetheless met with "indifferent success" by 1902 (Byrne 1902: 66).

Operation of the property changed again in 1905 when it was leased to a partnership of two people (The Drummond Call: 6 October 1905). One of these, A1 Lowry, apparently fared well enough to purchase the Crawford Hotel and convert it into a residence for his family. The Drummond Call (8 September 1905) confidently predicted "it will be the nicest residence in Garnet" and commented "A1 can afford to have it." In 1910, the mine was operated under the Nancy Hanks Mining and Milling Co. with Ritchie and several Butte men in control (Rowe 1910:706). By 1916, when the community was all but a ghost town, the mine had fallen under the ownership of J. L. Templeman and Co., which by then owned a number of claims in the area (Pardee 1918:171). Of all the owners and lessees, only Ritchie reportedly made a substantial amount of money on the holding.

In the relative absence of centralized control of the district’s properties, society retained an egalitarian flavor, much like earlier placer camps. According to the editor of the Garnet Mining News (6 October 1898), the town was:

a poor man’s mining paradise.... This means that the mines will in all probability never be held and jointly controlled by any one company and on this fact rests the safety of all business interests incident and necessary to mining towns. Whatever in disparagement of Garnet may be said, it will never be true that it is a one man town.

In like manner, a staff correspondent for The Mining World (1905 v.23 no. 11:326) speculated that Garnet was:

perhaps the only mining camp of the west, which makes its way without boom, without outside capital, only and alone with steel and pick and shovel handled by her brave and enterprising, and often sacrificing miners.

PROSPERITY AND STABILITY

Meanwhile, work progressed routinely in the period surrounding the turn of the century. In 1900, the Nancy Hanks, Shamrock, and Red Cloud mines continued to be the major producers. Fifty men were employed in the Red Cloud, owned by Mitchell and Mussigbrod, and twenty in the Shamrock, owned by McDermott and Lannon. L. C. Parker was busy developing the Nancy Hanks under bond. The best equipped operation was the Red Cloud, which could boast of a ten stamp concentrating mill plus a steam-powered cable and car apparatus to hoist the ore. Both the Shamrock and the Nancy Hanks employed steam hoisting plants. The
Red Cloud workings included three tunnels of 450, 500, and 950 feet in length; the Shamrock consisted of a single shaft with stoping fifty feet around, and the Nancy Hanks was comprised of two shafts, one vertical and one incline, with depths of 100 and 160 feet respectively. All the mines produced gold, with varying amounts of silver, copper and lead as byproducts (Byrne 1900:34-5).

Between 1900 and 1902, the Mitchell and Mussigbrod group conducted extensive development work on its Robert Emmett claim, driving an incline shaft 200 feet deep and drifting 500 feet along a vein. Ore from the Robert Emmett as well as the Red Cloud continued to be treated in the company's stamp mill before shipment to the Butte smelter. In 1902 lessees commenced work in the Grant and Hartford mine after a several year hiatus, and activity ensued on the adjacent McGone and Anderson workings, composed of three tunnels of between 150 and 400 feet in length. Meanwhile, the Shamrock and Nancy Hanks, both under lease, had become idle owing to a lack of capital for machinery and development work, which had become necessary as depths exceeded 250 feet (Byrne 1902:65-6; The Mining World 1905:325).

By 1905 prospects again brightened in the Nancy Hanks as a lessee encountered an ore body that yielded $45,000 within six months, employing only ten miners. Concurrently, the Mitchell-Mussigbrod group, besides undergoing extensive development work, shipped $10,000 worth of ore per month with a forty man crew. The Crescent, Lead King, Robert Emmett, San Fare, Fourth of July and Shamrock claims were likewise producing; the Goff brothers constructed a concentrating operation to work the tailings of the Shamrock. Total output of the district, smelted in Butte and East Helena, now reached $20,000 monthly. Phil Newman’s sawmill, newly built from odd pieces of machinery, was having difficulty supplying the bustling settlement with lumber. Samuel Ritchey and Gus Dahlberg purchased and expanded the town’s reservoir, thereby enhancing the quality and availability of water. Supplied by "a never failing spring of pure, cold mountain water" and situated on a nearby hilltop, the system was furnished with pipes to distribute the vital fluid to the various residences and businesses (The Mining World 1905:326; Orem 1906:76-77; The Drummond Call: 8 September 1905).

SEASONALITY AND SUBSISTENCE

To augment the winter food supply, housewives busily gathered and canned the wild fruits and berries said to be abundant in the autumn of 1905, while some of the men hunted deer. The end of September saw a "general rustling to get in a supply of wood"; six inches of snow fell in a two day period in mid-October.

Despite the typically early and heavy snowfall, ore
extraction and shipment continued unabated. A correspondent for The Drummond Call (29 December 1905) was moved to comment at year’s end that “in tonnages December was the biggest month in the recent history of the camp in ore shipments.” The geologist J. T. Pardee commented in his 1918 report that “mining operations are seldom interrupted” (p. 172), in spite of three to four feet deep snow. Ironically, an absence of snow could actually inhibit ore transport, presumably because of the use of sleighs in the winter. The February 23, 1906 edition of The Drummond Call reported that “February has maintained a good volume of shipments, though the disappearance of the snow at the Bearmouth end of the road put the teamsters out of business for several days.” Apparently, deep snow posed little or no obstacle but could actually facilitate ore shipping in the district.

An examination of business records of the F. A. Davey store in Garnet reveals a somewhat surprising variety of foodstuffs available to the turn of the century inhabitants of the town. One could purchase fresh or canned fruit, including bananas, peaches, plums, lemons and apples. Vegetables included spinach, tomatoes, onions, cabbage, asparagus, carrots and peas. Various kinds of seafood were available in abundance, among them oysters, sardines, and salmon. Also available were various prepared foods such as "Grape Nuts", "Nabiscoes" and "Y.C. Meal." A plethora of meats could be purchased, among others were ham, sausage, beef, bologna, and pork. Of course, all the traditional staples could be bought as well, for example potatoes, beans, bacon, lard, sugar and flour. In light of the above, one would not expect the availability of food to have been a problem, unless heavy snows or other problems impeded the flow of commodities into the town (Davey: n.p.)

**DECLINE AND REVITALIZATION**

Gradually, most of the mines around Garnet became idle, especially as the mines became deeper, necessitating increased capital. A fire in 1911 or 1912 (no one knows for sure) destroyed much of the business district, undoubtedly discouraging many store owners and contributing to the demise of the town. By 1916, when J. T. Pardee visited the region, only one mine, the Dewey, was operating. Pardee attributed much of the inactivity to litigation, the perpetual curse of mining endeavors. World War I drew much of the population to the larger urban centers, where good wages could be had in various defense industries. By the 1920s, the town was virtually deserted (The Mining World 1905:325; Babcock, Gallacher, and Liggett 1982:50-51; Pardee 1918:172).

Not everyone left, however, and mining activity continued in a limited way for the next decade or so. In 1931, seven placers and six lode mines were in operation, including the Grant and Hartford, Homestake, Climax, Lady Jane, Tiger and Mountain View
lode mines and the Cayuse, Hilltop, Potlatch and Tenmile placers. Lode mine production reached $3,425, all of it high grade and requiring no milling to be shipped profitably (U. S. Bureau of Mines, *Mineral Resources of the U. S.*, 1931: 498). The Great Depression had hit by this time; probably many destitute people were attempting to earn a living by mining, helping to increase activity in many mining regions, Garnet included.

One event that was to have important implications for Garnet and other gold bearing districts was President Franklin Roosevelt’s decision in 1934 to raise the price of gold to thirty-four dollars per ounce, almost double that paid previously. By 1935, 711 small-scale placer miners were operating in the gulches of western Montana, especially in Powell, Mineral, Lewis and Clark, and Silver Bow counties. Most were one man operations, earning an average of $2.24 per day (Merrill, Henderson and Kiessling 1937:33-34). The lode mines around Garnet also experienced a resurgence, experiencing a new influx of population and a minor recovery of the business district. In short order, a new school, several residences, and two saloons were constructed (Babcock, Gallacher and Liggett 1982:53). In addition, a new mill was constructed in 1935 near the Mountain View mine by its owner, W. P. Shipler. Shipler was a miner from the early days or the town who had remained during the slow period of the 1920s, acquiring ownership or partial interests of several claims, usually at a premium (in some cases, the purchase price was one dollar). Meanwhile, he had worked sporadically on his Mountain View and Majestic claims, located east of Garnet (Granite County Clerk and Recorder Miscellaneous Records Book 11: 104-106; Granite County Clerk and Recorder Mining Deeds Book 10:528).

The Mountain View and other mines flourished for a short time in the 1930s, and a large dredge commenced operating along Bear Creek in 1939, however, with the onset of U. S. involvement in World War II, the population declined. Again, defense industries drew people away, and wartime restrictions on the use of dynamite effectively ended mining activity in the district. The two saloons and the mercantile store stayed open until the late 1940s, but most of the people were gone by that time, and the community became a ghost town (The Mining World 1940:2-7; Garnet Ghost Town Preservation Society, Interview with Fran Fitzgerald, 1983).

**DISCUSSION**

The picture that emerges from all this is one of relative stability, at least in the first few stages of the community’s growth. Decline, when it inevitably came, was more a result of overpowering influences of wide magnitude than of any inherent weaknesses in the local system. Various adaptive strategies are apparent, including the pooling of resources to overcome a lack
of capital, and a diversification of activities to expand the subsistence base. The whole system was primarily based on mining, but within this realm, ordinary individuals could cooperate with each other to transcend difficulties. This is in stark contrast to many other lode mining communities, where economic prosperity could be subject to the decisions of stockholders many hundreds or even thousands of miles away and where a handful of people controlled the means of production. One bad investment decision and the whole system could fall like a house of cards, causing impoverishment and chaos. (The reader is referred to the numerous accounts of financial manipulations, bloody labor confrontations, and massive layoffs in western mining literature.)

In comparison, the many small mines in Garnet put the life of the inhabitants on a more even footing. Life had a more egalitarian flavor; widespread leasing tended to level out risk and opportunity, making it possible for individuals to improve their economic status with minimum capital. In this respect, Garnet resembled earlier placer mining camps, where economic stratification tended to be less pronounced than in later lode communities.

This situation owed much to the geological realities of the area; the gold-bearing veins were usually small and subject to faulting, but rich nonetheless, making it possible for the small entrepreneur to show a profit without access to huge amounts of capital and the increased risk that this entailed. Again, this is analogous to placer mining and in contrast to many other lode mining districts, where the ore tended to be rather voluminous but widely disseminated, requiring large capital investments in development work and other prerequisites. This is not to say that environmental factors absolutely determined the configuration of the particular cultural variant, but only that the environment encouraged such a configuration.

In other ways however, Garnet was subject to the same influences as other locales. National and often international events made themselves felt, sometimes to a high degree. One national event the plunge in silver prices, was in large part responsible for the emergence of the town. An international event, the first World War, very nearly killed the town. The Great Depression partly accounted for the district’s resurgence in the 1930s. World War II essentially brought the community’s existence to an end, as the population was siphoned off to war industries. However, among all these eventualities, none was more influential than the realities of the environment (i.e. bodies). It would be quite difficult to earn a living in the Garnet Range without mining.

There is evidence that the story is not yet finished. Mining still continues; entrepreneurs are presently reworking the
old tailings dumps of the Nancy Hanks. Occasionally small
timers, hobbyists really, try their hand at mining in the lower
reaches of the gulches. Given the erratic rise in the price of
gold, radical new technologies or severe economic hardship, the
gulches of the district may yet spring to life.
CHAPTER FOUR

THE MOUNTAIN VIEW SITE (24 GN 355): 1909-1939

From documentary and archaeological evidence, a general picture emerges of activities at the Mountain View site. Most buildings at the site are relatively intact, though very few items of equipment remain. Features still extant, including concrete footings and several bins and chutes in the mill building, indicate various activity loci and their interrelationships. In addition, shafts, adits, roads, a reservoir, a trash dump and miscellaneous artifact clusters point to activity in and around the mill complex itself. The documentary evidence, besides establishing chronological boundaries, provides insight into the scope and nature of control of the operation through time.

DOCUMENTARY EVIDENCE

The sequence of development of the Mountain View group of properties followed a pattern that was characteristic of many mining operations in the Garnet district. The initial claiming was followed by a twenty year period in which work was attempted haltingly and on limited scale, coinciding roughly with the decline of the Garnet community in the period 1910-1930. For example, the Nancy Hanks and others, located in the 1860s, were not extensively worked until the 1890s.

On 28 June 1909, W. P. Shipler and S. E. Adams located the Mountain View and Majestic Lodes. Situated three-fourths of a mile east of Garnet, each claim measured 1700 X 600 feet, the corners marked by blazed trees. At least 150 cubic feet of material had been removed from the discovery shafts at the time of filing with the clerk of court. The Mountain View was bounded on the west by the Majestic; the Majestic lay between the Mountain View to the east and the Iida to the west. North of these three plots lay the Alps, Frisco, Frisco and Day, and Mountain View fraction, the last claimed by Shipler and Adams in May, 1910 (Granite County Clerk and Recorder Miscellaneous Records Book 11:99-106).

The 1920s saw renewed development work on the Mountain View and Majestic, which intensified late in the decade. In 1922, Shipler excavated three open cuts on the Mountain View claim measuring 4 X 22 X 11, 4 X 18 X 11, and 5 X 12 X 8 feet respectively. Between 1928 and 1930, Shipler worked four open cuts and four adits on the two properties with a combined surface area of 2,324 square feet and depth of 73 feet. Mean adit size measured 5 feet wide, 7 feet high and 9 running feet deep. The average open cut measured 14 by 7 feet with the same depth as the
adits. After his partner, S. E. Adams, died in 1928, Shipler acquired Adams' interest in the partnership from his widow, Jennie (Granite County Clerk and Recorder Miscellaneous Records Book 11:104).

Sometime between 1929 and 1931, production began in earnest. In Mineral Resources of the United States (U. S. Bureau of Mines 1931:498), the U. S. Bureau of Mines listed the Mountain View group as a significant contributor to the district's annual output of $3,425 in metals, primarily gold of smelting grade (i.e., not requiring milling).

On 28 May 1934, Shipler filed a location and claim for a mill site measuring 210 X 210 X 1000 X 1,050 feet which he dubbed the "Majestic Mill Site." The decision was no doubt made easier by Roosevelt's 1934 decision to double the price of gold. He described its location as one-half mile east of Garnet with the purpose of treating the ores extracted from the "Mountain View group lodes" (Granite County Clerk and Recorder Miscellaneous Records Book 11:106). By the spring of 1935, the 25 ton amalgamation mill was completed and in operation under the auspices of the Lackawanna Gold Mining Company, Inc., capitalized by mining interests in New York and California. Shipler reported that the enterprise employed seven men and recovered 95% of the metal values (The Mining Journal April 30, 1935:24).

In 1936, Shipler's association with Lackawanna ended after the concern folded. The operation was subsequently leased to Thomas Gordon and C. G. Cameron of Neihart, Montana. The new management continued to operate the mill while commencing development work on the White Tail tunnel and continued drifting on the Mountain View vein with the aid of a newly installed air compressor (The Mining Journal September 15, 1936:19).

One year later, the property was leased again to V. W. Haylett of Walla Walla, Washington who installed a larger power plant and additional, unspecified equipment in order to add flotation to the amalgamation and concentration process already in use. Haylett meanwhile drove a crosscut tunnel to intercept the Mountain View vein at a depth of 300 feet. The modifications allowed an increased production of from fifteen to between thirty-five and forty tons of ore per day (The Mining Journal June 15, 1937:27; July 30, 1937:28; June 15, 1938:31).

By the summer of 1938, the enterprise underwent further economic restructuring and acquired a new name, the Mountain View Mining Company. Dr. J. W. Ingram of Walla Walla was president; Reginald Rowand and Edward N. Johnson of Garnet served as general manager and foreman, respectively. The "flotation-amalgamation-gravity concentration plant" employed a crew of sixteen (The Mining Journal June 15, 1938:31).
By spring 1939 the firm, since incorporated, had leased the mining complex again. Shipler reported a 96% recovery in gold values with a reduced crew of twelve (The Mining Journal March 30, 1939:26).

The Mountain View mill was shut down on September 1, 1939, ironically, on the same day that German Panzer divisions commenced their "blitzkrieg" into Poland, precipitating World War II. In all, some 2,000 feet of tunnels, drifts and stopes were excavated during the life of the operation. No production figures are known to exist, and no activity was reported after 1939, except for an unknown amount of development work undertaken by John Khor and Tim Colver of Drummond in the mid-1960s (Anderson and Decco 1988:13).

In 1944 Shipler died, leaving his wife several mining properties and their equipment. In all Pearl Shipler inherited nine claims or partial claims in the Garnet district, including the Mountain View mine and mill complex. Mill equipment included one Eimco 3' x 3' ball mill, a Dorr rake classifier, an amalgamation plate, a ten inch jaw crusher, line shaft and pulleys, and an ore fender. Also included were several items associated with ore extraction: two mining cars with rails, and an air pipe in the Mountain View adit (Granite County Clerk and Recorder Miscellaneous Records Book 30:515).

DISCUSSION

Though details are sketchy, a general pattern can be discerned in the lifespan of the Mountain View operation, including at least three phases. The initial phase began in 1909 when Shipler and Adams claimed the ground and started exploration work, and ended when more intensive capitalization and production began after Adams' death in the late 1920s. The next phase saw the introduction of outside capital with concomitant investment in the mill and related infrastructure. The final phase, encompassing the latter half of the 1930s, included attempts to increase efficiency and productivity as the property was leased, modified and expanded, presumably in an attempt to maximize returns in the face of declining ore values.

Based upon Hardesty's (1988) evolutionary terms, it is apparent that various coping strategies were implemented in order to deal with ecological variables impinging on the Mountain View site. The earlier period (1909-ca. 1930) was characterized by low capitalization and a rather limited investment of labor, consisting primarily of Shipler and Adams excavating shallow open cuts and then shipping the product, apparently without treating it further. This first phase lasted the longest and involved the fewest people. The second phase (1931-1935) involved a dramatic increase in capital investment in an effort to derive more value from the ore, culminating in the construction of the Majestic
mill. In this case, a unique historical event, Roosevelt's decision to increase the price of gold, was no doubt instrumental. The third and final phase (1936-1939) included attempts to share risk by leasing, and then to increase productivity by adding extra equipment and a new process, flotation. The strategy appears to have had some success, but dramatic, global events associated with World War II coupled, apparently, with an increasingly inferior product, conspired to bring the lifespan of the site to a close.

ENVIRONMENTAL SETTING

The elevation of the Mountain View site, 6,120 feet, insures that winters are long and summers short with a very limited growing season. Vegetation consists mostly of lodgepole pine and Douglas fir. The mean annual temperature is 42 degrees; summer temperatures range from 32-85 degrees and in winter from -30 to 40 degrees fahrenheit. Annual precipitation averages 15 inches (Kaufman 1960: 7).

Geographically, J. T. Pardee described the vicinity as "a rather flat but extensively dissected upland." Many parts of the upland include old stream valleys; in fact, placer deposits were found quite high in the mountains, including around Stone's Flat at an elevation of approximately 6,300 feet. In general, the whole area is quite rugged with an average relief of 2,000 feet, with three-fourths of the land is composed of steep ridges (Pardee 1918:162).

The Garnet Range is bordered on the south by the Clark Fork Valley, on the north by the Blackfoot Valley and on the east by the Nevada Valley. Garnet is situated near the divide between the Bear and Elk Creek drainages, tributaries of the Clark Fork and Blackfoot rivers respectively. The Mountain View site is directly south of McManus Gulch, which drains into Elk Creek.

Geologically, the Garnet Range consists mostly of limestone intruded by younger granodiorite, with various metamorphic rocks (quartzite and schist) near the contact zones. The valuable mineral deposits were precipitated out of heated solutions when the igneous intrusion occurred. The ore veins are narrow but rich and consist of auriferous pyrite, chalcopyrite, tetrahedrite and galena. Minerals of economic importance include gold and, to a lesser degree, silver, copper and lead (Pardee 1918:160-161, 177).

SPATIAL RELATIONSHIPS AND GRAVITY

A coupling of documentary evidence and archaeological features and their interrelationships lend insight into various aspects of daily operations at the mine and mill complex. The most fundamental evidence concerns the geographical relation-
ships, both large and small scale, operant at the site. For convenience, these are divided into three inclusive and interconnected levels, namely: a) a macro level, consisting of regional, national, and international geographic nodes and surrounding terrain; b) an intermediate level, including archaeological features and their associated topography at the Mountain View site; and c) a micro level, composed of spatial relationships within a feature.

Large scale geographical relationships relate primarily to the transport of various commodities into the district and concentrated ore products outward to the smelters in East Helena and Anaconda. At this level the thoroughly modern features of the logistical system are most pronounced, made possible primarily by large ocean-going vessels, a network of railroads, and internal combustion vehicles. Foodstuffs, especially, were transported immense distances; salient examples include seafood from northern Europe and bananas from Latin America. This information, though derived from sources that significantly pre-date the mill complex, i.e. the Davy Mercantile Records, are assumed to be valid in this case. In addition, acquisition of mining and milling equipment, unless purchased second-hand, necessitated shipment from more industrialized centers of the United States. On a more local scale, commodities required transport from distribution nodes in Missoula, Deer Lodge and other Montana communities.

The most difficult barrier to overcome was the steepness of the terrain in the district, especially in the last mile or so of the road to Garnet. Fortunately, the generally lighter cargo (foodstuffs and equipment) traveled in an uphill direction while the heavier cargo (ore concentrates proceeded downhill. The energy expenditure (translated into money) required for these activities necessarily imposed limits on the system, dictating that the ore be concentrated to a sufficient degree to allow a profit. Thus, one would expect transportation costs to warrant great consideration in the management of the Mountain View complex.

The realm of intermediate geographical relationships is more site-specific but involves many of the same factors as large-scale elements, including transportation and its relationship to the constituent features of the site and surrounding topography. Efficient mine and mill complexes utilized gravity to the fullest extent possible, in both surface and underground endeavors, and were designed in such a way as to minimize energy expenditure in ore removal, transportation, and concentration. In summary, this meant that ore progressed in a downhill direction wherever feasible. This concern with gravity is expressed at the Mountain View site by the relative positions of the mines and mill building, that is the mines are uphill from the mill, which is itself constructed on a slope. In practice,
then, ore carts proceeded downhill when loaded and uphill when empty.

On the smallest scale of spatial relationships, gravity played an important role in the design of the mill building, in keeping with standard milling practice at small operations. Constructed on the edge of a bench on Anderson Hill, the mill was situated in such a way that ore could be easily unloaded, conveyed and processed, utilizing the ore's own weight. A loading ramp was constructed so that ore carts could be wheeled directly from the bench to the edge of a hopper on the southeast corner of the mill building. The ore then slid downward through the hopper and into a room where the material was crushed. From there ore passed into what was likely a chain and bucket elevator, which hoisted it upward into another hopper adjacent to the first one. The ore again slid downhill through a chute and into a section of the building where the ore was processed further with a ball mill. The material was then conveyed on a slight downhill grade to the area of final processing, involving amalgamation, gravity concentration, and/or flotation. From there the finished product could be put into ore sacks, loaded onto trucks and transported to the railroad terminal.

One apparent anomaly exists with regard to the design and placement of the second hopper and, by extension, to the layout of the entire mill building vis-a-vis gravity utilization. That is, it would seem more logical on first consideration to situate the ball mill downhill from the crushing area and obviate the need for elevating the ore into the second hopper. An explanation for this may lie in the topography of the hillside which, in the area of the mill, does not course long enough at a steep enough angle to allow such an arrangement. It follows from this that other, overriding concerns dictated the geographical placement of the mill building. These could include a desire for the mill to be in close proximity to the mines or simply the fact that other parcels of land were unavailable due to mining claims.

The spatial relationships of the various structures at the site suggest a concern with convenience and/or the necessity of management to oversee operations. The assayer's shop was located immediately to the southeast of the mill building so that samples could be efficiently analyzed without subjecting delicate instruments to undue vibrations from the mill machinery. The repair shop likewise stood in close proximity to the southwest of the mill building, facilitating removal of damaged machines and providing ready access to spare parts and tools. The location of the office building afforded a clear view of the other structures as well as the roads serving the facility, thus aiding managerial oversight. The reservoir at the extreme western end of the site seems to have been located to minimize the hazards of flooding; any overflow would proceed downhill and away from the mill complex but could nevertheless damage the road and impede
The site is crisscrossed with roads and trails laid out in such a way as to suggest a concern with an efficient flow of ore in all stages of the mining and milling process. Again, gravity was a primary consideration; roads pass on the downhill side of the adits and on the uphill and downhill sides of the mill building. The office is positioned near the junction of two roads, one leading to Garnet and the other heading around Anderson Hill to a link-up with the road over Stone’s Flat, enabling oversight of transportation activities.

**FEATURE ANALYSIS**

Of prime importance to the interpretation of activity at the site is a determination of the functions of its constituent features (see Map 1). Many of the features display attributes or contain artifacts which render a highly reliable interpretation of function, while others are more problematic either because of a lack of diagnostic attributes or because alternative explanations are possible. In the latter case, consideration of a feature’s relative position at the site may shed light on the matter.

Features 2 through 4 can be readily identified as adits, shafts or open cuts, while features 5 and 21 present somewhat more difficulty in interpretation. Also problematic, however, is the relationship of these features to the mill complex or the correlation between a mine and an historically derived name (e.g. the "Mountain View" or "Majestic" mines.) Feature 2, at the far northeast corner of the site, is an adit with an associated ventilation shaft 35 meters to the southeast and a spoil pile 26 meters northwest of the entrance. Features 4 and 4b at the extreme southeastern corner of the site are open cuts. Feature 3 is a portion of a collapsed adit with an associated spoil pile at the entrance on the west end. Feature 5 may be either an adit or an access tunnel; its entrance was used as a temporary datum for the purpose of mapping the site. Feature 21 appears to be an open cut of 14 X 14 meters, but may have been an adit in the past; at present a culvert protrudes from the head of the cut and a stream flows through the feature and out of the mouth, suggesting a breach of the water table.

Two of Shipler’s mines were given names in the records of the Granite County Clerk and Recorder, the Mountain View and Majestic, while an access tunnel, the White Tail, is named in *The Mining Journal* (September 15, 1936: 193.) In addition, the relative positions of the mines to one another were described in the court records, i.e., the Majestic was located between the Mountain View on the east and the Lida to the west. The Lida belongs to a group of patented claims southwest of Shipler’s Mountain View group (personal communication, Billings BLM).
Map 1. Mountain View Mine and Mill Features
Furthermore, Shipler named his mill site claim after the Majestic mine, suggesting a close proximity of the mill to the said claim. From this information, it follows that feature 2 corresponds to the Mountain View and feature 3 corresponds to the Majestic mine because of: a) the relative positions of the features vis a vis the historical record; b) the proximity of feature 3 to the mill site and c) the extent of past activity at the two features, pointing to their primary role in production at the site, thus warranting the assignment of names in the county records.

Feature 7 is the least extant of the structures at the site, consisting of a rectangular depression of approximately 6 X 4 meters in area and 1 meter in depth. A small wooden stairway at the northwest corner and a few scattered board fragments are all that remain of the original building. Luckily, a determination of the structure’s function is possible because of the presence of crucible fragments on the northern edge of the feature, pointing to its use as an assay shop.

Feature 8 is a log structure measuring 6 X 9.5 meters situated approximately ten meters southwest of the mill building. At the southern end of the structure is what appears to be a workbench. A door lies towards the northeast corner with a dugout area immediately outside. Another door is located just east of the workbench. The building was well furnished with windows. The presence of the workbench and the proximity of the feature to the mill suggest use as a workshop, though alternative explanations are feasible; one study identifies the feature as a boarding house (Anderson and Decco 1988:13). The dugout area may have been used for food storage, pointing to a domestic function. Another possible explanation is that the building was utilized for a variety of purposes, either over time or simultaneously.

Feature 9 is a well constructed frame building with three rooms, several windows, and a door on both the southern and northern ends. Like feature 8, a dugout area is located outside the northern door. A structure resembling a kennel is connected to the west side of the building and a dump lies approximately five meters to the east. Its location and general appearance suggest use as an office building, but it may have doubled as living quarters in a manner similar to feature 8. The dugout, kennel, and nearby dump strongly suggest the latter possibility.

Feature 22 is a refuse dump about five meters east of feature 9. At least four types of cans are represented including hole-in-top, sanitary, beer, and tobacco cans. Brands of beer include Great Falls Select, Highlander, and Rainier; the presence of beer and tobacco cans may emphasize a strong male presence at the site. The can assemblage points to a post-1904 time frame for the dump; hole-in-top cans have been correlated with evaporated milk containment, suggesting food preparation and a domestic function for feature 9 (Rock 1984:104-110).
Feature 10 is an oval shaped reservoir 29 meters long and 8 meters wide approximately 22 meters northwest of feature 9. The feature’s western side consists of an embankment 1.6 meters high; the eastern side is approximately level with the adjoining ground. The center portion of the reservoir is about 50 centimeters deep. The embankment includes several lodgepole pine trees of 9-27 centimeters in diameter. The general long axis orientation of the feature is northwest. The reservoir’s likely function was to store reserves of water for milling use during periods of dry weather.

Feature 11 is a frame structure of 1.8 X 1.8 meters in dimension, 8 meters southeast of feature 10. Its location suggests use as a pumphouse serving the reservoir. The necessary piping likely commenced from the pumphouse toward a point immediately uphill from the mill building where feature 14 is located. Such a routing of the pipe would have avoided the main access-way to the south entrance of the mill building.

Feature 14 is a frame structure 1.8 X 1.8 meters in dimension and 8 meters east of the mill building in an uphill direction. Steel support rods fastened to the top of the structure suggest that a piece of machinery was supported within; it is postulated that the device in question was a pump delivering water to the mill. Water could have been pumped from at least three locations, including: a) a stream (feature 20) to the north containing a small wooden dam (feature 16); b) a stream to the south with remains of piping in place (feature 19); and c) the pumphouse near the reservoir (feature 11). In addition to the features described above, a segment of pipe protrudes from the ground and enters the mill building on the southeast side, roughly in line with feature 14. Thus it appears that features 10, 11, 14, 16, 19, and 20 form a complex that once provided water for use in milling at the site.

Features 12 and 13 are frame structures, each measuring 1.6 X 1.5 meters. Anyone conducting a cursory examination of the features would readily identify them as latrines. The presence of two of these structures at any one time could probably be explained by the necessity to provide facilities for a large number of employees on meal or coffee breaks. An alternative explanation could be that one latrine became unusable over time, requiring a new one. A further possibility is that feature 12 served the residents of feature 9, while feature 13 served the mill workers or the residents of feature 8 (or vice-versa.)

Feature 18 is an earthen foundation with assorted building rubbish piled in the middle. A conversation with the ghost town caretaker revealed that the feature is not associated with mining activity, but is the remains of a shelter built by a squatter sometime after the site was abandoned. This is consistent with the structure’s location, as it would probably have been an
obstruction to tailings disposal.

Feature 18-A, situated northeast of the mill building atop the tailings pile, appears to be the remains of a windlass and possible shaft, presently filled with concrete. Though establishing a time frame for the structure is problematic, a sensible inference is that the feature was constructed in the mid-1960s in order to process the old tailings, an activity which is presently pursued in the district.

Of the structures at the site, feature 6, the mill building, appears to have had the most obvious function. The structure displays many attributes indicative of an ore processing mill, including its hillside position and the presence of tailings in close vicinity. The presence of ore hoppers, concrete machine pads and remains of artifacts within or part of the structure provide further evidence of its function.

THE MILLING PROCESS

Less certain is the purpose of the mill building's constituent parts, since most of the machinery has been removed. In this case, a coupling of the available records and the physical attributes of the building, along with an examination of milling methods chronologically and methodologically appropriate, lend insight into the ore dressing process employed at the site as well the purpose each area of the feature served within that process.

For convenience, various areas of the mill building have been assigned lettered designations, A through G (see Figure 1). Area A consists of the unloading ramp at the northeast corner of the building. Area B is the hopper immediately adjacent to the ramp. Area C is the room below the hopper, which includes a concrete platform, wooden shelves, and a vertical structure of heavy wooden planking. Area D consists of the hopper adjacent to the south boundary of Area B. Included within this area is a center wooden beam with an attached platform, and a "crow's nest" in the southwest corner.

Area E, directly west of Area D, includes a catwalk (in the upper reaches of the east side) leading to the crow's nest and connected by a ladder which courses up the wall from a platform below. Approximately level with the top of the platform is a chute protruding from the hopper. Southeast of the hopper are three rectangular concrete foundation segments with threaded bolts.
Figure 1. Plan View of Mountain View Mill

KEY
w = window
D = door

PLAN VIEW OF MILL
SHOWING SUB-FEATURES AND
POSTULATED MACHINE LOCATIONS

ONE METER

TO ASSAY OFFICE
ENLARGED OPENING
ELECTRICAL INSULATOR (In wall)

N (MAG)
Immediately south of the concrete segments is Area F, within which are two adjacent concrete pads, one large and rectangular, the other considerably smaller and square. Both include threaded bolts. On the west wall of Area F is a long workbench, and on the south end is an opening which was once smaller and served as a door but was subsequently enlarged, probably to remove and salvage equipment. The floors of both Area E and F are constructed of concrete.

Area G, immediately west of Area E, is separated from the rest of the building by a low retaining wall. The area includes the only intact piece of machinery left in the building, an amalgamation pan located in the southeast corner (Jerry Clark, B.L.M. archaeologist, personal communication 1990). Approximately three meters north of the pan are the remains of a canvas drive belt. West of the pan and drive belt is a large open area with scattered debris, but with no permanent features save for the remains of the walls and a low retaining on the west side. The roof on this part of the building has been removed, portions of which are strewn about the area and on top of the pan; there is no floor.

The first stage in ore concentration at the Mountain View complex involved coarse crushing in a Blake jaw crusher (see Figure 2). Taggart describes the machine thus:

Jaw crushers consist essentially of two crushing surfaces set nearly vertically, one fixed, the other movable and caused to alternately approach and recede from the fixed surface (1927:246).

There were two sizes of Blake crushers available, a 7 X 10 inch and a 10 X 20 inch. The entry in the Granite County Clerk and Recorder records indicates only one dimension, namely a "ten inch" model; clearly this could refer to either of the two sizes. However, considering the quoted daily tonnage of the operation, (25-40 tons) the smaller model would have been adequate. Below is a table of data for the two models from Taggart (1927: 248).
The Blake crusher was almost certainly located in Area C, below the first hopper. A concrete platform is situated between the chute of Hopper B and a chute-like structure immediately to the south. The latter leads up to a small slide which inclines directly to Hopper D. It therefore appears probable that the structure served as the housing for a chain and bucket elevator or some similar device. After crushing, the ore passed up the elevator and into Hopper D, which lies directly above Area E.

The next stage in the process entailed grinding in the hall mill. Taggart states that ball mills "consist essentially of hollow containers of circular cross-section, mounted with the axis substantially horizontal, and partially filled with crushing bodies that are caused to tumble...by revolution of the container" (1927:344). Simons (1924:191-192) affirms the appropriateness of this particular machine for flotation processes, (which requires finely ground ore) by noting that "tube and ball mills are now universally used in flotation plants." In a similar vein, Taggart (1927:344) asserts that ball mills accounted for the "great bulk of fine grinding" in contrast to pan-type grinders which "never had wide use and have been supplanted by more modern machines in practically all places." The Granite county clerk of court records specify that the Mountain View facility employed a 3’ X 3’ (diameter X length) ball mill. The capacity of such a machine indicates that a single unit would have been adequate to handle daily production at the mill. Below is a table of data from Taggart (1927:345).

### Table 1. Blake Crusher Size

<table>
<thead>
<tr>
<th>Size of Product</th>
<th>7 X 10 Inch Model-Capacity</th>
<th>10 X 20 Inch Model-Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tons Per Hour</td>
<td>.75&quot; 1.0&quot; 1.5&quot; 2.0&quot;</td>
<td>1.5&quot; 2.0&quot; 2.5&quot; 3.0&quot;</td>
</tr>
<tr>
<td></td>
<td>1.5-2 2.5 4 5-6</td>
<td>10-15 15-17 17.5-22 20</td>
</tr>
</tbody>
</table>

### Power Data- Both Models

<table>
<thead>
<tr>
<th>Size of Product</th>
<th>Mean R.P.M.</th>
<th>Mean H.P.</th>
<th>Tons / H, P. Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 X 10&quot;</td>
<td>275</td>
<td>7.5</td>
<td>.33</td>
</tr>
<tr>
<td>10 X 10&quot;</td>
<td>275</td>
<td>16</td>
<td>.81</td>
</tr>
</tbody>
</table>
3' x 3' Ball Mill Data

<table>
<thead>
<tr>
<th>Balls (in lbs.)</th>
<th>R.P.M.</th>
<th>H.P.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>875-1200</td>
<td>32-40</td>
<td>15</td>
<td>13400 lbs</td>
</tr>
</tbody>
</table>

Grinding Capacity

<table>
<thead>
<tr>
<th>From</th>
<th>To Mesh</th>
<th>Tons/Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 &quot;</td>
<td>14</td>
<td>15-30</td>
</tr>
<tr>
<td>2&quot;</td>
<td>48</td>
<td>10-20</td>
</tr>
</tbody>
</table>

*Table 2. Ball Mill Data and Grinding Capacity*

The most probable location for the ball mill is Area E, by reason of its proximity to Hopper D and because of the arrangement of the concrete footings, which closely resemble those seen in illustrations of ball mills in mining textbooks and magazines. (The reader is referred to the mining texts researched for this paper and old copies of The Engineering and Mining Journal.) The northernmost footing, set off from the other two, probably supported a belt-driven pulley, while the other two supported the braces which held the rotating cylinder of the ball mill.

In line with Taggart's recommendations, the next likely stage in ore milling at the Mountain View complex involved concentration in a Dorr rake classifier. According to Taggart, such a device consists of... a rectangular tank with sloping bottom closed at the lower end... , open at the upper end, and having suspended therein a mechanically operated raking mechanism.... The classifying action... is the result of currents set up by the movement of the rakes and by the entrance and flow of liquid pulp through the machine (1927:595-6).
Figure 2: Movement of Ore
The movement of the pulp kept the fine particles in suspension, causing them to overflow while the coarser material remained inside; the more vigorous the action, the coarser the overflow. Factors that affect overflow and concentration include the speed of the rakes, the slope of the machine, the height of the tail board, rake height, and the volume and physical characteristics of the ore. The millman could thus tailor the concentrate to meet specific needs, diverting the coarse material for further crushing and sending the fines to the next stage in the process.

The Dorr classifier is postulated to have been bolted to the large rectangular concrete pad in Area F. Flow sheets typically illustrate the devices in close proximity to the ball mill, presumably for reasons of practicality and efficiency. This fact, combined with the relatively large surface area expected of such a machine in light of the available space in the mill building, led to the above conclusion. Also compelling is the proximity of Area F to the assayer's office, which would have facilitated sampling and analysis of the concentrate. The small square concrete pad to the east likely supported the mechanical apparatus required to operate the rakes in the classifier.

For reasons of efficiency, Taggart (1927: 391) recommends multi-stage concentration with Dorr rake classifiers in plants where tonnage is sufficient to warrant the use of more than one crushing unit. In other words, a relationship can be said to exist between daily tonnage, the number of crushing machines, and the number of classifiers vis a vis the efficiency of milling operations. Assuming the court house records provide a relatively complete accounting of the mill equipment, such a relationship existed at the Mountain View complex, i.e., one ball mill was used in conjunction with a single classifier, in line the relatively small daily tonnage figures. Thus, at least in this aspect of the process, efficiency of operation is suggested.

Subsequent to concentration, the next stage in the process (corresponding to Area G) is less certain, requiring a certain amount of conjecture. Complicating matters is the fact that modifications in both equipment and processes occurred over time. One possibility is that Area G is the result of modifications relating to the addition of the flotation process in 1937. The area, in general, seems to have been more shoddily built than the rest of the building and lacks a floor. The area is also the only section of the building spacious enough to accommodate bulky flotation cells and dehydration devices. It follows that prior to the introduction of the finished concentrate passed out the southern end of Area F. In spite of the difficulties mentioned, the sequence of operation can be broadly (and vaguely) outlined.

In 1937, the Mountain View was converted to a "flotation-amalgamation-gravity concentration mill," implying a multi-process system. Further, the geologist J. T. Pardee
(1918:161) states that the ore of the area contained gold in association with pyrite. Since flotation operates on any mineral with a metallic luster, pyrite would probably have been floated along with the gold. Thus some of the ore would not have been amenable to flotation alone, necessitating a combination of processes. It seems reasonable that, subsequent to classifying, the ore was entered into the amalgamation pan to remove the pyrite, then introduced into flotation cells where it could be treated further. The position of the amalgamation pan, directly below Areas E and 7, seems to lend support to this argument. The large empty area west of the amalgamation pan seems adequate to accommodate the flotation cells and dehydration machines needed to complete the process. It therefore appears plausible that this area once included a battery of the machines described above. If pockets of rich ore were encountered, the flotation step could be skipped entirely. In any event, close monitoring by the assayer would aid in determining the proper course of action.

The final stage in the flotation process involved the removal of water, which could comprise up to 80% of the bulk product. A variety of devices were available for this purpose including in order, settling tanks, thickeners and filters (Simons 1924:197). Unfortunately, no reference to any of these machines could be found in the records pertaining to the Majestic mill complex. If the argument put forth above is essentially correct, such devices were probably once located in the easternmost section of Area G.

The next step, after milling, was to bag the concentrate, load it on trucks, and transport it to the railroad at Bearmouth. Modern trucks are assumed to have been used, despite a lack of direct evidence, because of their wide availability at the time the mill was in operation. Winter operation might have proved a problem, especially on the return trip when the trucks were empty; anyone who has driven an unladen truck knows the problems one can encounter with regard to traction. Mule or horse drawn sledges might have been resorted in such circumstances. Alternately, stocks of concentrate could have been stock piled or production halted, resulting in a loss of profit with disruption of the employees livelihoods.

One final problem remains to be resolved regarding operations at the mill—the source and distribution of power. Unfortunately, no references could be located that would conclusively solve the dilemma. There are two broken electrical insulators attached to upper beams in the mill building, but these are of lightweight quality, and do not seem adequate to deal with the rather large volumes of power that would be necessary to power the various machines. A plausible explanation is that a small internal combustion generator was used to power lighting in the plant. Electrical power was apparently never
routed into the district (Babcock, Gallacher and Liggett 1982:53).

The canvas drive belt in the northeast corner of Area G points to the presence of either steam or internal combustion engine for providing power to the various machines. Also, the records in the Granite County Clerk and Recorder office specifically mention lineshafts and pulleys. Lineshafts are segments of steel rods analogous to the drive shaft on a car that transfers power from its source to its destination. These could have been attached to beams in the building and routed to the various areas in the plant, then attached to pulleys and drive belts that were in turn connected to the machines.

**DISCUSSION**

It is evident that the Mountain View (Majestic) mill was in many ways quite different from the mills in the Garnet district which preceded it, probably because it had to contend with a product that was inferior to that encountered by the earlier operations. The process that the management of the mill ultimately adopted was more complex than the old stamp mills of the district. In particular, the use of the ball mill and the flotation process represent departures from earlier practice. The passage of time and a new set of environmental realities dictated that Shipler would have to adapt or give up the game. Because Shipler and the others concerned at least attempted to adapt to the new situation, they were (presumably) able to support themselves and their employees and help to insure that the community of Garnet would last that much longer. Whether or not those concerned made a profit or not is secondary (from the writer's standpoint) to the fact of earning a living where none could be had otherwise.
APPENDIX

A Glossary of Selected Mining Terms*

adit- a nearly horizontal passage from the surface by which a mine is entered and unwatered. In the United States an adit is usually called a tunnel, though the latter, strictly speaking, passes entirely through a hill and is open at both ends. Frequently also called Drift or Adit level.

amalgamation- 1. The production of an amalgam or alloy of mercury. 2. The process in which gold and silver are extracted from pulverized ores by producing an amalgam, from which the mercury is afterward expelled.

annealing- The process by which glass and certain metals are heated and then slowly cooled to make them more tenacious and less brittle.

arrastre- An apparatus for grinding and mixing ores by means of a heavy stone dragged around upon a circular bed. The arrastre is chiefly used for ores containing free gold, and amalgamation is combined with the grinding.

ball mill- A short tube mill of relatively large diameter in which grinding is done by steel balls instead of pebbles. The discharge is usually through a screen.

chilean mill- A mill having vertical rollers running in a circular enclosure with a stone or iron base or die.

classifier- 1. A machine for separating ore from gangue or for cleaning coal from slack. 2. A machine for grading the feed to concentrators so that each individual concentrator will receive its proper feed. Classifiers may be hydraulic or surface-current box classifiers (spitzkasten). Classifiers are also used to separate sand from slime, water from sand and water from slime.

concentrator- An apparatus in which, by the aid of water or air and specific gravity, mechanical concentration of ores is performed. Also applied to the entire plant containing the various concentrating devices, or machinery.

crosscut- 1. A small passageway driven at right angles to the main entry to connect it with a parallel entry or air course. 2. A level, driven across the course of a vein or in general across the direction of the main workings.

crusher- A machine for crushing rock or other materials. As a gyratory crusher, jaw crusher, stamp mill, etc.
cyanide process- A process for the extraction of gold from finely crushed ores, concentrates and tailings by means of cyanide of potassium used in dilute solutions. The gold is dissolved by the solution and subsequently deposited upon metallic zinc or by other means.

drift- A horizontal passage underground. A drift follows the vein, as distinguished from a crosscut, which intersects it, or a level or gallery, which may do either.

flotation process- A concentration process that takes advantage of the principles of surface tensions and colloid chemistry, with whatever allied principles may be involved, to separate mineral from gangue by means of floating it upon the surface of water or other solutions, while the gangue is induced to sink through the surface and settle separately.

Frue vanner- An ore-dressing apparatus consisting essentially of a rubber belt traveling up a slight inclination. The material is washed by a constant flow of water while the entire belt is meanwhile shaken from side to side.

gangue- The non-metalliferous or non-valuable metalliferous minerals in the ore.

grizzly- A grating of iron or steel bars for screening ore, etc.

hydraulic mining- A method of mining in which a bank of gold bearing earth or gravel is washed away by a powerful jet of water and carried into sluices, where the gold separates from the earth by its specific gravity.

lode- Strictly a fissure in the country rock filled with mineral; usually applied to metalliferous lodes. In general miner's usage, a lode, vein, or ledge is a tabular deposit of valuable mineral between definite boundaries (other than a placer).

mill- By common usage, any establishment for reducing ores by other means than smelting. More strictly, a place or a machine, in which ore'or rock is crushed.

mortar box- The large, deep, cast iron box into which the stamps fall and the ore is fed in a gold or silver stamp mill.

placer- A place where gold is obtained by washing; an alluvial or glacial deposit, as of sand or gravel, containing particles of gold or other valuable mineral.

pneumatic drill- A drill of either the reciprocating or hammer type operated by compressed air.
retorting - Removing the mercury from an amalgam by volatilizing it in an iron retort, conducting it away, and condensing it.

rocker - A short trough in which auriferous sands are agitated by oscillation, in water, to collect their gold.

slime - A product of wet crushing containing valuable ore in particles so fine as to be carried in suspension by water.

sluice - A long, inclined trough, launder or flume, usually on the ground, for washing auriferous earth, floating down logs, etc. In gold mining such a contrivance is paved with riffles, etc., to hold the mercury for catching the gold.

smelt - To reduce metals from their ores by a process that includes fusion. In its general sense it includes the entire treatment of the material from the crude ore to the finished metal.

stamp mill - An apparatus (also the building containing the apparatus) in which rock is crushed by descending pestles (stamps), operated by water or steam power.

tenor - The percentage or average metallic content of an ore, matte, or impure metal.

tailings - The parts, or a part, of any incoherent or fluid material separated as refuse, or separately treated as inferior in quality or value; leavings; remainders; dregs. In metallurgy, the part rejected in washing an ore that has passed through the screens of a stamp mill; the worthless slimes left after the valuable portion has been separated by dressing or concentration.

tube mill - A revolving cylinder, usually lined with silex, nearly half filled with glacial or water-worn flints, used for fine grinding of certain ores, preliminary to further treatment. The material to be ground, mixed with water, is fed through a trunnion at one end, and passes out of the opposite trunnion, as a slime.

vanner - A machine for dressing ore; an ore-separator; a vanning machine. The name is given to various patented devices in which the peculiar motions of the shovel in the miner's hands in the operation of making a van are, or are supposed to be, successfully imitated.
**Wilfley table** - A side-jerk table used in ore-dressing. It has a riffled surface which separates the light and heavy grains into layers by agitation, and the jerking action then throws the heavy grains toward the head end, which the light grains are washed down over the cleats into the tailings box. The table tapers toward the head end, and the riffles are progressively longer toward the tailings side.

* Extracted from *A Glossary of the Mining and Mineral Industry* (1920) by Albert H. Fay.*
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AN ASSESSMENT OF THE SUBSISTENCE PATTERNS
OF THE GARNET PEOPLE

Tammy Howser
CHAPTER ONE
INTRODUCTION

Objectives of the Garnet Ghost Town Study

In this thesis I present the results of my study of the subsistence patterns followed by the people of Garnet approximately 100 years ago. The period investigated begins in 1896, and ends in 1912 and includes the founding of Garnet and the burning of numerous commercial buildings. After analyzing the excavated faunal resources and artifact resources from the Mountain View Mill dump and the Sierra dump, I attempted to infer patterns of use and consumption of food. I used archaeological materials, supplemented with the written and oral record, from the two dumps to examine subsistence patterns. I conclude that the most important factors influencing subsistence patterns are availability of animal and plant resources, and proximity to transportation routes and major population centers.

METHODS AND MATERIALS

I assessed and synthesized the faunal remains, artifacts, written, and oral record to produce hypotheses about the subsistence pattern of the Garnet people. "Successful subsistence strategies are essential to any cultural system and to understand patterns of human behavior, subsistence practices must be studied" (Reitz and Scarry 1985:1). Ideally, a combination of written records, faunal resources, and archaeological material will produce a clearer pattern of diet. It is important to note that the excavated and analyzed data are not complete. The two dumps do not represent all resources consumed or discarded at Garnet. There are cultural and natural processes that influence the archaeological record and a discussion of these processes will follow in chapter six.

Data Inventory and Archaeological Record

The artifacts and faunal material collected from the Mountain View dump and Sierra dump were used to gain information about human subsistence patterns. I identified the archaeological material using trade books, pictorial faunal guides, the faunal comparative collection at the University of Montana, and written documents. A second task was classifying the material into functional categories called classes and types (Hardesty 1981:6).

Hardesty (1981:6) states that type is, "made up of artifacts having the same or similar design or technology." The two major classes of materials in the sample from Garnet are food refuse and food containers. The food refuse class includes the faunal
material, and the type is the species as identified from anatomical elements. The class food container includes tin cans. I measured the top dimension and height to determine type. I also noted can-opening techniques, although these are not as reliable in determining can type.

The 1987, 1988, and 1989 Archaeological Survey Classes supervised by Dr. Thomas Poor excavated artifacts and faunal material from the Mountain View Mill dump and Sierra dump. The Mountain View Mill site is located on a north facing slope covered with duff. The material was partially buried with larger material exposed and the smaller material below the duff and surface soil. Trees protected the surface material from ultraviolet exposure and both the surface and buried refuse were in a good state of preservation (Howser, Mountain View Mill Fieldnotes 1988 and 1989, Sierra Dump Fieldnotes 1987; T. A. Poor, personal communication 1994).

The Sierra dump is a single component and single level site (Sierra Dump Fieldnotes 1987; Dr. Poor, personal communication 1994). The 1987 class placed nine excavation units in the areas where materials were visible. Students excavated the dump site using trowels and dustpans to remove the soil. They used a 1/8 mesh screen and mapped the larger material before removing it from the pits. The material was partially exposed and subjected to ultraviolet rays as well as animal and human disturbances.

This dump contained tin cans, butchered faunal material, a few buttons, glass, shoe leather, and cloth. The glass, buttons, shoe leather, and cloth did not reveal any clues about diet, therefore, they will not be discussed at this time.

The 1988 class collected the materials on the surface and the 1989 survey class under Dr. Poor’s direction place two 1x2 meter test pits at the Mountain View Mill site to recover buried material. It is unknown which residents discarded the trash at the Mountain View dump. The dump contained tin cans, butchered faunal material, glass, a few buttons and ceramics. The identified faunal material included cattle, pig, sheep, and turkey bones. Unidentified fowl, glass, and ceramic material will not be discussed in this thesis.

The class laid out the first test pit on the top of the slope. The second was near the bottom of the slope. The class used trowels to expose the deposits and screened the soil. They used 1/8 inch mesh and the larger material was mapped and photographed before collection.

The Survey classes collected a small sample of tin cans from both dumps including 102 complete or identifiable cans and 1008 fragments. The fragments and non-food containers are recorded but not analyzed. Cans are sorted into types with the
determination of type by dimension and shape. I focused on the dietary implications of the Garnet tin cans.

I analyzed the artifacts recovered from both dump sites to determine can type and chronology. Then I constructed a table for each dump identifying the following: can type, top dimension, weight of content, content, and total number for each can type. I noted opening techniques, which to a degree, are a factor useful in distinguishing can content.

**Documentary Evidence**

Historical archaeologists recognize the importance of written records. Documentary records provide information on mining history, the layout and nature of mining towns, and the lives of the people living in these communities. The documentary research has produced useful evidence about foodways of the Garnet residents, but significant gaps still exist in understanding their subsistence practices.

The sources used in analyzing historic dietary patterns are very similar to those used in analyzing prehistoric subsistence patterns. The difference is the additional information available from written documents. The clues provided by the written records are found in a number of sources, including: local histories of Garnet, the Day Logs from various stores, and inventory records from Davey’s store. Documentary records such as local histories are not abundant and these records generally do not provide complete details.

The information available for mining is ample. I divided the mining history into two categories. The first includes general information on western mining. I compiled sources for this category by examining the bibliographies of mining documents, dissertations, talking with professional archaeologists, and professors at the University of Montana. The second category is the local history of the Garnet Range and specifically Garnet Ghost Town. Local histories, professional papers, and BLM reports furnished this information.

**Oral Record**

The oral record is another data source employed by historical archaeologists. Information presented by local residents can help corroborate written local histories and possibly clarify the archaeological material. An informant can supply information that is not available in local histories and provides insight into the lifeways of his or her community.

The written history of Garnet is insufficient, therefore, oral interviews with past residences provided another link to their dietary patterns. I sent a directed questionnaire to
fifteen people who either lived at Garnet or had relatives living at Garnet to assist me in the interviewing process. I received nine responses but only two of the respondents lived at Garnet during the time period under study. Mrs. Mary Jane Adams Morin was the only informant who could be contacted directly. I conducted an open ended discussion with her seeking information about her family’s subsistence pattern.

**RESEARCH QUESTIONS**

Artifacts and faunal remains can provide evidence about the diet of the people at Garnet. I formulated a list of research questions using faunal remains, artifacts, and both written and oral records to address questions about diet. The following list of questions is neither final nor exhaustive.

1. What information can the written record provide on the dietary patterns of the Garnet people?

2. Did isolation and high cost limit the choice of food resources at Garnet?

3. Can social status be inferred from the faunal resources given that large quantities of meat are traditionally associated with high social status?

**SKETCH OF THE STUDY AREA**

After the first big placer gold strikes in California (1849), and Nevada (late 1850s), men went east and north prospecting the territories of Idaho and Montana. Prospectors traveled light, only packing the items that would help them survive their passage from one strike to the next. Most miners packed their belongings and moved on when the deposits were no longer productive. The reports of placer deposits in Montana attracted prospectors from the other gold producing areas.

Prospectors explored the mountains and the deserts searching for any sign of gold and inspecting every stream bed they encountered. These explorers penetrated the remote mountainous areas of Montana. The Stuart brothers, in 1858, were the first men recorded to discover gold in Montana. By 1863, miners found placer deposits at Grasshopper Creek (Bannack) and a year later they discovered gold at Last Chance Gulch, later named Helena. A few years later, in the 1860s, prospectors discovered placer deposits in the Garnet Range.

Mining activity increased in Bear Gulch as prospectors searched the drainages for the "mother lode." In 1867, miners discovered buried deposits, sunk shafts, and adits to extract the
ore. Hardrock mining was not economically feasible at that time, for two reasons. Once the ore was extracted it needed processing and there was no stamp mill within wagon transport. Second, the trails leading out of the range were nothing more than narrow passages.

Although mining activity had in general decreased by the 1870s, escalating silver prices in 1883, and a railroad spur at Bear Mouth stimulated miners' interest in the Garnet Range. Eleven years after the railroad spur was built both Dr. Mussigbrod and the Mammoth Mining Company each built a ten stamp mill to process the ore from their mines. In 1896, miners established the mining camp of Mitchell, later renamed Garnet (Hammond 1983; Historical Research Associates [HRA] 1982).

Garnet (see Map 1) began as a typical mining camp but the camp did not remain typical for long for it soon took on the characteristics of a town. The cabins and commercial buildings were typical of most mining towns but here, the miners brought their wives to live. They built a school, a post office, and attended social functions. They raised their families at Garnet and many of them tried to keep the town alive even when mining activity slowed (HRA 1982).

There were four major national and local incidents that influenced the town and the people of Garnet. A fire destroyed a large part of the commercial district in 1912. A short time later job openings in the World War I defense industry drew numerous people away from the town, as did the Great Depression and World War II. By the mid-1940s there were very few people living at Garnet and the town ceased to be a settlement when the last resident died in 1947.

At present, the Bureau of Land Management (BLM) administers much of the ghost town. There are a few cabins (primarily summer cottages) owned by private individuals. The BLM’s policy is to leave Garnet in a "state of arrested decay." The BLM began administering the town in the 1970s; before that time, and for a short period afterwards, the town was unprotected. Former residents, relatives, and families returned to collect the bottles and tin cans from the exposed dump areas, thus distorting the archaeological record (Mary Jane Adams Morin, personal communication 1994).
Map 1. Sketch map of Garnet. Garnet Preservation Association
CHAPTER TWO

GENERAL MINING HISTORY OF THE WEST

"Such stuff dreams are made of" ..... R. Asprin

Miners and prospectors were instrumental in expanding the Far West and elsewhere (Paul 1963). The mining expansion west began with the California gold rush. Men moved away from the eastern states believing they could strike it rich. They left their jobs, gave up the security and comfort of their homes, and believed their fortunes were in the gold fields of California. After the 1849 strike in California prospectors moved north into Idaho and Montana and eastward into Nevada and Colorado exploring new areas for precious metals. These groups were very mobile and willing to explore remote deserts and mountain ranges for any trace of gold. They traveled from strike to strike, taking with them only the supplies they needed.

The first prospectors searched for shallow placer deposits in stream beds. A single individual could mine placer deposits without sophisticated equipment. Prospectors employed more elaborate devices, if the deposits were bountiful. These devices such as rockers and sluices increased the efficiency of extracting the gold from the soil. Hydraulic mining was another method used if there was an abundant water supply as the water washed away the soil from the hillside and miners channeled the deposits into a sluice box to extract the gold. All placer mining methods worked only if there was "free" gold eroding from an exposed vein, and when the deposits were depleted the miners usually left their claims.

Those who stayed and found a vein of ore used hard rock mining methods. Hard rock mining was more complex and time consuming since the veins of ore had to be removed and processed. Adits or shafts were dug to extract the gold. Stamp mills processed the metal freeing it from the other minerals. Transportation was another consideration that hard rock miners needed to address. The isolated regions were harder to access until there were feasible routes to those areas. The freight teams, stage coaches, and the first transcontinental railroad connected the western territories to one another and to the East. Supplies and new technology could reach regions that were inaccessible. Advances in transportation gave hard rock miners the opportunity to exploit remote mining sites.

A discussion of western mining history usually begins with the California gold rush. It started in 1847 when John Sutter hired a carpenter, James Marshall, to help him construct a lumber mill along the American River, in California. Nearing the
completion of the mill in 1848, James Marshall discovered gold in the stream bed. At first, the discovery was dismissed as untrue by people back east. Eventually, people believed the story and the gold rush began (Billington 1956; Lingenfelter 1974; Paul 1963; Riegel and Athearn 1971; Spence 1966).

Tens of thousands of people (mostly men) from around the country headed to Sutter’s mill and other areas in California to stake a claim. A San Francisco editor stated the following in his announcement of the termination of his newspaper due to the lack of readers.

From San Francisco to Los Angeles, and from the sea shore to the base of the Sierra Nevadas, resounds with the sordid cry of ‘gold! Gold! GOLD!’ While the field is left half planted, the house half built, and everything neglected but the manufacture of shovels and pickaxes (Billington 1956:220).

Placer mining predominated in California until around 1852. At that time, placer deposits decreased and miners switched to more expensive and time intensive mining (shafts and adits). By the 1890s, hard rock mining was the dominant method of extracting gold (Paul 1963). This mining change and the fact that it was more difficult for an individual miner to make a living prompted many to leave the area. Most of these disheartened California miners headed northeast toward Colorado, Idaho, Nevada, and Montana, joining other prospectors from the eastern and midwestern regions (Billington 1956; Paul 1963).

In 1859, a gold discovery in Colorado started another mad rush for gold (Riegel and Athearn 1971). The Colorado miners headed to Pike’s Peak, but the shallow placer deposits were scarce. Most miners left Colorado dissatisfied with the lack of free gold (Billington 1956). In the late 1860s and early 1870s, a depression affected the nation. Gold prices dropped and the Colorado miners responded by developing the silver deposits they had ignored earlier. By the late 1870s, a silver boom occurred and the silver-lead deposits became an important commercial product. After twenty years, Colorado no longer relied solely on gold or silver. They developed other metals and the mining camps continued to prosper and grow into towns (Paul 1963).

California miners also moved into Nevada searching for placer deposits. The experienced miners preferred placer mining but they were not unwilling to use hard rock mining techniques. In the late 1850s, the miners found great silver deposits, in Nevada near the Washoe Mountains. Months later, the miners called the deposits the Comstock Lode (Billington 1956; Paul 1963; Riegel and Athearn 1971). The mining techniques refined in California were used at the Comstock lode and miners removed approximately $300,000,000 in silver and gold over a twenty year
period (Billington 1956).

GROWTH AND DEVELOPMENT OF MINING CAMPS

Smith (1967:43) suggests that there is a general pattern of growth for Rocky Mountain mining camps. The first step is the discovery of gold. The news spreads, enticing men from all over, and the rush begins. Merchants and others follow and immediately build and open their saloons and stores. "On the heels of the original rush came freighters who kept the supply lines open and gave the impetus to the development of the budding settlement" (ibid:45). At the beginning of the rush, organization of the camp was not a concern, but later miners and merchants desired organization to regulate camp proceedings. Occasionally, local governments developed or a community consensus would begin for the purpose of levying taxes. The rate of camp growth depended on the productivity of the mines. If the mine was depleted and the camp did not have some other economic base, the population declined.

The cost of camp living was very high compared to the east. Many people visiting and living in the camps complained that the prices of food and lodging were much too high. "In 1866, a visitor to Central City, Colorado thought it was the most outrageously expensive place to live in the State" (ibid:196). The reasons for high prices were transportation cost, isolation, and the miner's dependence on the local stores.

Camps were generally isolated because of the terrain, distance from a major population center, and climatic conditions. Miners did not want to spend much time acquiring food or housing since they were too busy searching and mining for gold. The miner however was not self-sufficient, and he found it easier to buy his food resources and equipment from the general store. "The merchant, on the other hand, knew he could profit greatly by supplying the commercial and outfitting needs of the new settlement" (Heath 1989:203). This was especially true during the winter months. The merchant gathered inexpensive supplies, such as flour, beans, and coffee which he sold at very high prices (Heath 1989; Smith 1967).

MONTANA MINING HISTORY

By mid-1862, the productivity of the dominant gold producing areas--California, Nevada, and Colorado--started declining. Miners packed up their belongings and prospected the southern and central portions of southern Montana and the south central areas of Idaho. In the early 1860s, these prospectors made major gold discoveries. This news of gold prompted other prospectors from California, Nevada, and Colorado to explore the western Rocky Mountains of Idaho and Montana (Malone, Roeder, and Lang 1991). Hubert Howe Bancroft, a historian, summarizes the behavior of
Idaho miners,

They are like quick silver. A mass of them dropped in any locality, broke up into individual globules, and ran off after any atom of gold in their vicinity. They stayed nowhere longer than the gold attracted them (Paul 1963:138).

Montana boomed around the mid-1860s, and like other Montana mining regions, lost momentum after only a few years (Malone, Roeder and Lang 1991; Paul 1963:38).

James and Granville Stuart and Reece Anderson were the first men on record to discover gold in Montana (Davis 1963; HRA 1982, Leeson 1885, Malone, Roeder and Lang 1991; Paul 1963; Riegel and Athearn 1971; Inventory of Public Archives 1939; Winser 1889). In 1858, they found shallow gold deposits at Gold Creek which they continued to mine. By 1862, other men interested in free gold flocked to the area. They established a small settlement, but the deposits were not abundant and miners departed quickly.

Five years after the Stuart’s discovery, miners began heading toward Idaho passing through portions of southwest Montana. John White and his party left Colorado to join the Idaho gold rush. They hoped to find an easier route through the Bitterroot Mountains that took them into Montana. They reached Grasshopper Creek in the Beaverhead Valley and discovered substantial placer deposits in the summer of 1862 (Billington 1949; Davis 1963; Malone, Roeder, and Lang 1991; Paul 1988; Spence 1978; Young 1970). Their discovery marked the beginning of Montana’s gold rush and laid the foundation for the first boomtown.

The boomtown, later called Bannack, reached an approximate population of four hundred people by the fall of 1862 (Malone, Roeder, and Lang 1991). By the spring of that year, the shallow deposits were already declining so that late comers did not stay long at Bannack. They found that the only claims left were either unproductive or very poor. Most moved on, exploring the surrounding areas and in 1863, prospectors located gold east of Bannack. They discovered a rich deposit along a creekbed at Alder Gulch that attracted numerous miners (Riegel and Athearn 1971). This discovery was detrimental to Bannack, and the decline marked the end of Bannack, Montana’s first territorial capital.

Alder Gulch, later named Virginia City, contained the richest placer deposits of gold in Montana (Paul 1988). Thousands of people moved to the area and small boomtowns appeared with Virginia City and Nevada City being the best known (Malone, Roeder, and Lang 1991). Most miners who arrived later
were discouraged by the lack of rich claims. They continued exploring the area and many discovered new deposits worth developing.

In the spring of 1864, four miners left Virginia City to explore regions farther north. They found gold in what is now Helena but they decided not to stop searching (Davis 1963; Paul 1988; Riegel and Athearn 1971). They continued panning up and down the river but they did not discover major placer deposits. The four men, nicknamed "The Georgians," returned that summer to the area where they first found gold and determined to mine. Before they could mine in earnest, two members returned to Virginia city to gather supplies. The news of their discovery prompted hundreds of discouraged Virginia City miners to follow them back to their camp at Last Chance Gulch (Malone, Roeder, and Lang 1991).

The camp continued to thrive and the extensive deposits produced approximately $19 million in four years. However as with many other mining camps, the deposits quickly dwindled (ibid:1991). Unlike most camps it was not dependent on the extraction of gold for its survival. The town of Helena served as a supply center that received goods from Fort Benton and supplied the surrounding areas (HRA 1982).
CHAPTER THREE

THE GARNET RANGE

The western Montana Territory gold boom began in the 1860s with the first strike in the Garnet Range occurring in 1865. The prospectors discovered gold bearing deposits north of the Clark Fork River. Colonel G. W. Morse and his partners, traveling through the area on Mullan Road, noted that a number of men were working in an area called Bear Gulch (Clark 1990; Davis 1963; HRA 1982). Morse decided to search the other drainages and discovered deposits in a seasonal stream he named Bilk Creek. Other prospectors were moving into the area and began panning for gold in every drainage they came across. They followed the steep drainages continually searching for gold deposits that were accessible and establishing small mining camps wherever there was a wide spot in the gulches (Clark 1990 and HRA 1982).

Miners established mining camps as places to sleep and eat throughout Bear Gulch. Occasionally, the larger camps had one or more saloons where a miner could play cards and have a break from mining activity. Bear Town, located along Bear Creek, was one of many camps in the Garnet Range and differed from the other camps because it was closer to Mullan Road and thus received supplies more easily (HRA 1982).

The road up the gulch was very rough, making it difficult for supply wagons to reach the small isolated camps. These camps depended on Bear Town merchants for supplies. Individual miners would go to Bear Town for supplies or occasionally a merchant from Bear Town would deliver supplies to the small camps of Elk Creek, Reynolds, Yreka or Springtown. The merchants generally charged inflated prices (ibid:1982).

By 1868, Bear Town had a number of stores, saloons, and a blacksmith shop serving the miners. One-story log structures were the norm in the community; the only two-story buildings in Bear Town were a saloon and a hotel. The miners built structures as quickly as they could to provide some shelter. Generally, the homes were drafty and it was very difficult for the miners to keep themselves warm. The log cabins were also fire hazards, and if one caught on fire a number of cabins near it would burn, sometimes destroying a whole camp (ibid:1982). These cabins, like those at every other mining camp, were only temporary lodges which served the miners’ needs until they moved on to the next gold strike. This abandonment process occurred at Bear Town as the placer deposits diminished and the miners began leaving to search further up the gulch. By 1871, the population declined rapidly, and eventually businesses were forced to close.
Prospectors continued to discover gold in the Garnet Ranges throughout the 1860s and 1870s. Jack Reynolds discovered gold at Elk Creek in 1865 and the small camp of Reynolds City soon developed. Top’O’Deep, Yreka, and Springtown were other areas of mining activity in the Range. They each had small camps built in association with mining activity (Hammond 1983; HRA 1982). Helen Hammond states that:

In 1867, it was estimated that about 5,000 persons (mostly men) or one third of all whites and Orientals in Montana lived in the Gulches between and including Yreka and Bear Town... As the placer deposits became depleted, miners left the area so that by the early 1870s only about 450 to 550 persons remained, but Bear Creek, Deep Creek, and Elk Creek continued to produce" (1983:12).

As the Garnet Range placer deposits decreased, placer miners began applying hard rock mining techniques. In 1867, miners began exploring the Shamrock, Lead King, and the Grant lodes. Six years later, Sam Ritchey discovered a gold producing lode he called the Nancy Hanks (Hammond 1983; HRA 1982). Even though all these lodes could be productive, they were not developed fully until the 1890s when transportation and refined hard rock mining methods reached Montana.

The only ore grinding facility in the area was in Bear Town. An arrastras was used to crush the ore but this device was mainly used for ore containing free gold (Meyer 1992) and this device was not suitable for the type of ore that the miners were extracting from the Lead King, Grant, and Shamrock. It was during the 1890s that Montanans made refinements to hard rock mining and smelting techniques to reduce complex ores (HRA 1982).

The lack of suitable transportation was a problem for the early hard rock miner as well. Wagons were the only means of transportation in the 1870s and it was not feasible to transport the ore very far with them. The Northern Pacific railroad completed in 1883 a spur to Bearmouth near the Clark Fork River, providing a more efficient link to communities outside the Garnet Range (Clark 1990). The miners then had a way to transport the ore to the mills and smelting facilities in Helena and Great Falls. The railroad also benefitted the miners for mine production increase as railcars were able to transport large equipment for the construction of private mills.

By the 1890s, the Garnet Range was again an area of mining activity. The repeal of the Sherman Silver Act changed the United States economy from a bi-metallic to a single metal economy. In 1893, this gold based economy resulted in a panic for the silver industry, especially in Montana (Clark 1990; HRA 1982). Many large silver mines closed soon after the repeal and
gold mining resumed in remote areas. By this time the Garnet Range had access to the railroad and in 1895, they had two ten-stamp mills to crush the ore (Hammond 1983; HRA 1982).

Dr. Peter Mussigbrod constructed the first mill to crush the ore from his numerous mining claims in Bear Gulch. The Mammoth Gold Mining Company built a second mill a few miles from the Mussigbrod mill to process the ore from the company’s mining claims (HRA 1982). The ten-stamp mill did not crush the ore efficiently enough to extract all the gold so the mill owners shipped the ore to Great Falls, Helena, or Butte for further processing. The railroad spur was operational during this time, but there was not a suitable route from the mills to the railroad at Bearmouth. Dr. Mussigbrod and Dr. Armistead Mitchell, his partner, financed the building of a narrow and difficult road that connected their mill to the Bearmouth spur (ibid:1982). Even though it was hazardous, the road was the link to the area, thus fostering further mining development.

Miners continued searching for new claims and developing old claims abandoned during the 1860s and 1870s in the Garnet Range. By 1895, there were two new communities in the area, Coloma and Mitchell (Clark 1990; Hammond 1983; HRA 1982; Meyer 1992). Coloma was near the Mammoth mill, but it never developed to the extent of Mitchell (renamed Garnet) because the Mammoth Gold Mining Company had financial difficulties that slowed down both mining activity and Coloma’s commercial growth. Meanwhile, Garnet was blooming. It was closer to the Mussigbrod and Mitchell road, and consequently closer to the railroad at Bearmouth.

Sam Ritchey’s discovery of a rich vein in the Nancy Hanks caused a stir in the mining camp. More prospectors moved to the area, staking claims throughout the camp. They built cabins wherever they had a claim. Generally they built them with little concern for construction methods so that the camps were a jumble of buildings without any overall plan.

The Garnet mining camp flourished from 1896 until the early 1900s. During this time, miners began bringing their families and the camp became a community. The people attended social functions such as dances, fishing trips and picnics (HRA 1982); women spent most of their time caring for the home and the family. Helen Hammond states that, "quilting bees, canning, 'fancy work,' and gathering berries brought the women together for work and companionship" (1987:15). The children attended school up to eighth grade, and if they wanted to continue their education, they went to school in Deer Lodge or Missoula.

The community boasted numerous stores and saloons. Women did not enter the saloons, but frequently shopped at the mercantiles. Helen Hammond states “an enterprising person named
Matthias Peterson, who owned a ranch near Helmville, Montana, established the Peterson Meat Market on the right side of the main road through Garnet leading up the hill" (1983:16). Peterson brought up beef from his ranch, and he obtained pork and chickens from other ranchers, selling them in his store. Later, Joe Sturgeon’s meat market replaced Peterson (Hammond 1983; HRA 1982).

Riley Ritchey, Sam Ritchey’s nephew, lived near the Anderson and Magone mine and he raised fryers (chickens) for his family (Hammond 1987). He also raised milk cows and sold the butter and milk to the Garnet people. He later moved to Drummond but continued to sell milk, butter, eggs, and vegetables to the people at Garnet. The Dalbergs kept their own chickens and cows. After 1911, the Dalbergs moved to Bear Gulch and raised cows and vegetables. He delivered fresh butter, milk, and vegetable to Garnet people (Hammond 1983:38).

Fresh meat, milk, butter, eggs were available throughout the year and during the summer, fresh vegetables were available also. The mercantiles carried a variety of food items and non-food goods. Davey had canned goods and staple grocery items which included such items as dry beans, peas, rice, apples and pickles (Hammond 1983). It was impossible for these stores to carry a large inventory. In order to buy items not sold at Garnet, the women often traveled to Bearmouth where they took the train to either Missoula or Deer Lodge. They would make several trips in the summer to stock up for the winter months (Hammond 1983; HRA 1982). Most women planted small gardens, gathered berries, and bought fruit. They canned the berries, vegetables, and fruit for winter when the road down to Bearmouth was hazardous.

After 1900, mining activity decreased. Sam Ritchey was unable to locate the rest of a faulted vein in the Nancy Hanks and rather than continue searching for it, he leased the mine. The Nancy Hanks and the Shamrock changed hands many times. There were numerous attempts to revive mining activity at Garnet. Investors from Colorado built a 20 stamp mill at Bear Town that rejuvenated mining at Garnet for a short time. "The mill consisted of an automatic sampling works, 20 stamp mill, with concentrators and cyanide tailing plant" (HRA 1982:49). The mill did not operate long however since the investors had financial troubles and the mill closed. The closure had a detrimental effect on mining activity at Garnet.

There were very few mines still in operation by 1905. The population of Garnet declined, leaving 200 or so residents by 1912 (ibid:1982). A fire that year destroyed a good portion of the commercial buildings and since no one rebuilt, this marked the end of Garnet’s commercial growth (ibid:1982). World War I drew numerous people away from the town, leaving Garnet and heading east and west to work in the defense industry. A few
persistent miners remained working small claims. The saloons were forced to close in 1919 because of the Prohibition Act. By 1920, Frank Davey had the only mercantile in town. The post office closed in 1928. The Depression did not adversely affect mining activity and the town was again revitalized in the 1930s. When President Roosevelt raised the price of gold in 1934 unemployed people moved to Garnet, thus increasing mining activity for a while (HRA 1982).

In 1936, the population increased to 250 people (ibid:1982). The post office reopened and the Garnet people hired a new school teacher (Hammond 1983). The repeal of the Prohibition Act attracted entrepreneurial men to Garnet and two saloons were back in business. This period of slow growth came to an end at the end of the decade. The preparation for World War II was underway and people left Garnet seeking jobs in the defense industry. By 1940, once again there were very few people left at Garnet. F. A. Davey remained at Garnet until his death in 1947 and the auctioning of his possessions in 1948 marked the end of Garnet’s permanent occupation.

The town was left unattended until 1970, at which time the Bureau of Land Management (BLM) began managing the Garnet Mining District (Clark 1990). The BLM’s objectives are: "(1) to preserve historic sites from destruction through deterioration and vandalism; (2) to present the historic resource to the public as a unique historical mining site" (HRA 1982: 54).
CHAPTER FOUR
TRANSPORTATION AND FOOD PRESERVATION

The question of why people eat what they eat is far from simple. It is a complex one involving a myriad of factors, ranging from traditional foods, and individual preferences caused by childhood experiences to problems of technology, availability of food in a particular area, and social and economical considerations (Sanjur 1982:46).

Transportation Routes

By the late 1870s and early 1880s, the availability of transportation to remote regions brought a renewed interest in opening new frontiers. Transportation routes emerged quickly during the mining boom connecting Montana’s small towns and provided access to neighboring regions. One route connected with the Oregon Trail at Fort Hall and ran to the Bitterroot, Deer Lodge, and Beaverhead Valleys (Malone, Roeder, Lang 1991). This off-shoot of the Oregon Trail later developed into a major coach and freight route.

In 1857, Congress provided funds for a road to be built from Fort Benton to the Columbia River near Walla Walla, Washington (Billington 1949). The idea of a road was first proposed in 1883 when the new territorial governor of Washington traveled west to take up his new post and scouted the area for a suitable route for a transcontinental railroad. The governor’s assistant, Lieutenant John Mullan, explored the Northern Rockies and discovered a potential route from Fort Benton to the Columbia River. He convinced Governor Stevens that it was feasible to construct this road and later, when Governor Stevens was elected to Congress, he pushed through a bill in 1857 that provided the funds for the construction of Mullan road (Malone, Roeder, and Lang 1991).

The construction of the road began in 1859 with Mullan, who was assigned the task of building the road, starting construction in Washington territory. The first season, Mullan reached the St. Regis River in Montana territory; the next year, he continued eastward crossing over Mullan Pass toward present day Helena (Malone, Roeder, and Lang 1991). Mullan and his crew continued northeast following the Missouri River and they reached Fort Benton in August of 1860 (Billington 1949; Malone, Roeder, and Lang 1991).

Mullan Road did not become a primary passageway. In places it was not very wide, and being rough, it made wagon travel
difficult. However, it was an important route for prospectors and linked Montana's gold producing localities from Idaho and Fort Benton (Billington 1949; HRA 1982; Malone, Roeder, and Lang 1991). The road, most importantly, gave prospectors a passageway through western Montana.

The Montana gold boom turned Fort Benton into a major river port. Mining equipment and passengers were the main cargo coming up the river to Fort Benton with the boats returning downstream loaded with gold and bison hides (Malone, Roeder, and Lang 1991). The dominant freighting companies transported the equipment and supplies to the mining camps using oxen and mules to haul their freight. In 1867, Fort Benton peaked, bringing approximately fifteen hundred passengers in thirty-nine boats. Later, fewer and fewer boats docked each year due to diminishing placer deposits and competition from the railroad.

In 1869, the first transcontinental railroad line, the Union Pacific-Central Pacific which followed the old Oregon Trail from Omaha to Sacramento, was completed (Athearn 1971; Malone, Roeder, and Lang 1991). The Union Pacific gained control of the Mormon Road, later named the Utah Northern, and it built a narrow gauge from Utah into Montana with a spur reaching Silver Bow in the fall of 1881. By December 1881, the railroad entered Butte, and crews continued working until they stopped at Deer Lodge in February of 1882. The Utah and Northern-Union Pacific continued laying line to Garrison where they expected to connect with the Northern Pacific Railroad (Athearn 1971).

Congress established the Northern Pacific in 1864 (Renz 1980; Smalley 1883; Winser 1889). Although the Northern Pacific received the largest land grant ever given to any railroad, it was not granted any government subsidies (Malone, Roeder and Lang 1991; Renz 1980; Smalley 1883; Winser 1889). Therefore, the Northern Pacific managers requested the support of the Jay Cooke and Company to administer the railroad's finances. Before Cooke would agree to help, he sent his men to explore the region that the Northern Pacific would be built through (Renz 1980; Smalley 1883).

The reports that the banking house of Jay Cooke received convinced them that the proposed undertaking was profitable (Renz 1980; Winser 1889). The railroad construction began in the summer of 1870 and by 1873, the road was completed from Duluth (at the head of Lake Superior) to Bismarck, North Dakota. The western expansion started in Washington Territory, on the Columbia River. The line reached Tacoma in the same year (Renz 1980; Winser 1889). Because of financial difficulties in 1873, Jay Cooke and Company stopped the construction of Northern Pacific, but the Northern Pacific's president and vice-president were able to organize their company and construction resumed. During the years 1881 and 1883, the work continued with vigor,
and the Northern Pacific line reached Helena, Montana in 1880 and Deer Lodge, Mt. in 1882. The eastern and western Northern Pacific lines met near Gold Creek Montana in September 1883. Thus the country had its second transcontinental railroad (Renz 1980; Winser 1889).

Montana mining companies waited eagerly for the railroad. By the 1870s, accessible placer deposits were not easily found, and to continue mining gold and silver, the companies needed to employ hard rock mining techniques. The railroads revived interest in Montana mining and presented an incentive for miners to switch to hard rock mining. The Northern Pacific and Union Pacific provided Montana mining camps access to the industrial centers of the east and the west coast (HRA 1982). The railroad also provided a means for miners to get their ore to the mills and smelters for processing (Malone, Roeder, and Lang 1991).

**TRANSPORTATION AND DIET**

Food spoilage and the availability of fresh food were major problems. Hot summers and cold winters limited the foods people could keep for any length of time so that their diets did not improve until there were improvements in safe food preservation techniques and distribution.

The railroad not only shipped ore and mining supplies, it also augmented the nation’s diet by expanding the range of available foods. Prior to the railroad, fresh food was generally available only in its own growing area. Railroad transportation, therefore, improved the diversity of people’s diets. Root and de Rochemont (1976:152) suggest that the railroad provided the nation with beef which was tenderer, tastier and cheaper than that to which the nation had been accustomed. It was tender because cattle which rode to market instead of walking to it did not develop such tough muscles. It was tastier because the same lines that carried cattle north and east also carried grain to the south and west with which to fatten. The meat was cheaper because they lost less weight between pasture and slaughterhouse.

**Food Preservation**

Before the 1840s, people throughout the United States did not use perishable foods (milk, fresh vegetables, fruits, and meat) very often (Cummings 1970; Root and de Rochemont 1976). The summers in the United States were warmer than most European countries; in addition, people in the U. S. were not accustomed to fresh foods deteriorating rapidly (Cummings 1970). Norman Desrosier lists the deterioration rate for some plants and animals after harvest. He states that "the storage life (days at 70 °Fahrenheit) of fruit is one to seven days depending upon the fruit; for leafy vegetables it is one to two days, and seven to twenty days for root crops (Desrosier 1970:2)."
Milk spoils even more quickly than fruit or vegetables at warm temperatures, therefore many people converted milk into cheese and butter which lasted much longer. Fresh fruits and vegetables were only abundant during their growing seasons. Since most fresh fruit and vegetables did not store well during the winter months, people relied on the fruits and vegetables they could dry; for instance, beans, turnips, pumpkins, and prunes (Cummins, 1970). Apples stored well and they generally lasted several months. Fruits other than apples perished quickly and a majority of the people could not afford to preserve them with costly sugar.

Before ice houses were common, fresh meat was not available throughout the year. People slaughtered animals in the autumn months when it was cool enough to let the carcass hang. Autumn was generally the only time they would eat fresh meat. Most often, meat was salted down and smoked. Pork, unlike beef or mutton, improved in flavor when preserved as hams and bacon (Trager 1970).

Tasty smoked hams and bacon could be hung, and other parts of the carcass immersed in a crock of brine, until needed. This salty meat was relished by the hard working farmers. It is said that because of its flavor value a pound of bacon goes as far as three pounds of beef steak (Cummins 1970:16).

Between 1841 and the 1880s, the supplies of perishable foods increased throughout the country (Trager 1970:393). The railroad systems transported food more quickly from further distances so that foods were no longer restricted to their production area (Root and de Rochemont 1976). Refrigerator cars expanded supply and demand for perishable supplies. For example, by 1842, fresh oysters were shipped from Albany to Buffalo, New York. Once people discovered that perishables could arrive safely, oyster shipments became a regular service. Chicago, in the 1850s, had shipments of fresh fish, packed on ice, arriving and being sold just days after fishermen caught them from the east coast (Root and de Rochemont 1976).

A breakthrough by Parker Earle increased the ability for railroads to transport perishables. Earle designed a portable refrigerator chest that could be filled with ice and shipped (Cummins 1970). These chests were large and held more than other chests on the market. He improved the ventilation system that allowed the circulation of cold air. Railroad companies used Earle’s chests to transport fresh fruit from Florida to Chicago, Illinois. By the 1860s, shipments were coming from Florida to the northern states (Cummins 1970; Trager 1970; Root and de Rochemont 1976). Eventually, the demand increased beyond the carrying capacity of the chests and gave way to refrigerator railcars.
Refrigerator cars meant that more perishable foods could be transported during the growing season; they also meant an increased supply of food out-of-season (Root and de Rochemont 1976). The suppliers kept the perishables fresh with ice from the northeastern states. By 1850, artificially produced ice replaced this costly method, and the ice making industry expanded to over 200 hundred plants by the 1890s.

Canning Industry

Transportation improvements lengthened the availability of fruits, vegetables, milk, and meat, but year-round supplies were not possible until the development of the canning industry. The Civil War emphasized the problem of safe food storage. A newspaper article in the 1864 New York Tribune discussed this problem:

In spite of universal care and forethought millions worth of food are destroyed daily through its actions, and innumerable buffaloes and other cattle are slaughtered for their hides, and the carcasses left to rot where they fell because the conditions necessary to their preservation for food do not exist. Of Fruit and Vegetables, the annual loss by decay transcends all estimate, all conception; and thousands famish for want of the bounties of nature which but a few weeks earlier, decayed and passed away before their eyes, they being impotent to prevent the ruin (Cummings 1970: 66).

Women with plentiful access to fresh vegetables and fruit, "put up" as much as they could for the winter months. They stored their preserves in earthen jars until 1858 at which time mason glass jars appeared on the market. The glass jar enabled women to preserve their food more efficiently (Root and de Rochemont 1976). Availability was still a problem at this time as women had access only to the produce in their neighborhood. The development of transportation and the industrial canning industry expanded the range of foods women could preserve and consume.

Nicholas Appert wrote an article in 1810 describing a method he used for hermetically sealing jars (Anonymous 1983; Anonymous 1971; Bitting 1937; Cummings 1970; Teague 1980; Root and de Rochemont 1976). Appert's method of preservation generated much interest in the United States. In the 1820s, Underwood and Kensett applied Appert's techniques and established the first canning companies in the United States (Colin 1986; Cummings 1970; Rock 1984; Teague 1980). They used glass, but later both switched to tin thus starting the first tin can industries in the United States (Root and de Rochemont 1976).
The canning industry boomed (Cummings 1970; Root and de Rochemont 1976). The first cans were cut, shaped, and soldered all by hand. A tinsmith could produce 60 cans a day, but by the 1880s machines were invented that could produce over 2000 cans a day. There were many technological advances made in filling the cans. The first method of filling was through an opening in the center of one end called the "hole-and-cap" (Rock 1984). The next improvement was to the hole-in-cap in which a small hole was made in the center of the cap and a drop of lead solder sealed it. The advantage of the hole-in-cap was that it allowed the container to be closed and heated, driving off excess moisture and air through the small opening (ibid:99).

By the 1840s, numerous companies were canning a wide variety of foods and by 1863, tons of canned fruit and vegetables were available by 1863. These food items included strawberries, peaches, tomatoes, sweet corn, fish, chickens, beef, and much more (Rock 1984; Root and de Rochemont 1976). In 1885, John Meyenberg started using hermetically sealed cans for evaporated milk (Bitting 1937:737; May 1937:184; Rock 1984:103). Most of his cans had flush tops and a small cap with a filler hole in the center. Fontana et al. (1967:74) describes Meyenberg's can as having lips on the tops and bottoms that overlapped the body of the can. The hole-in-top can, introduced by Carnation in 1900, had stamped ends and a small filler hole. This can is still used in today's milk industry.

The side seams of cans changed as well. The original seams were lap and plumb joint. In 1888, Max Ams and his company made a major breakthrough by introducing the double side seam. This seam locked together and held the can together better than the first seams (Rock 1984; Root and de Rochemont 1976).

A Chicago company first used the key-opened, rolled, strip can putting it to use for processed meat in 1895 (Fontana et al. 1962; Rock 1984; Teague 1980). A new seal improvement, introduced by Charles Ams and J. Brenzinger, crimped the top and bottom seams forming a sealed double seam. By 1902, a solderless can was on the market. An air tight container called the "sanitary can" replaced the double seam process and did not require soldering to seal it. By 1911, the sanitary can dominated the industry (Cruess 1948:37; Fontana et al. 1967:72; May 1937:91; Rock 1984:106).

People in the United States were introduced to a wide variety of foods as the canning industry grew (Cummings 1970; Root and de Rochemont 1976). No longer were people dependent upon foods from their own neighborhood because canned foods were easily transportable and different goods were reaching remote mining areas, "whose few inhabitants would otherwise have been reduced to local resources, often scarce or monotonous" (Root and de Rochemont 1976:191).
The process by which faunal remains and artifacts become part of the archaeological record is an important consideration in subsistence studies. Recovered samples from the archaeological record can be biased by processes known as formation processes, recovery procedures, identification techniques, and quantification methods (Reitz and Scarry 1985; Schiffer 1991). These biases are important to recognize because they hinder the archaeologist’s interpretation of the samples and affect the reliability of their results (Schiffer 1991). Because formation processes work in a biased manner, archaeologists cannot take the historical record and archaeological record at face value (Schiffer 1987). They must assess the effects of formation processes and make necessary corrections (Reitz and Scarry 1985; Schiffer 1987).

Michael Schiffer defines two kinds of formation processes: cultural and noncultural.

Cultural processes are defined as the processes of human behavior that affect or transform artifacts after their initial period of use in a given activity... Noncultural formation processes are all events and processes of the natural environment that impinge upon artifacts and archaeological deposits (1987:7).

Pre-depositional Influences

Artifacts before deposition are in systemic context, thus still "participating in a behavioral system" (ibid:3). These artifacts are part of the historical record. A reuse process is an artifact, in systemic context, that may change use, form, or user after its original function (ibid). The two varieties of reuse I discuss include lateral cycling and secondary use. Lateral cycling involves a change in the user but not in the form or use of the artifact. Secondary use may involve a change in use and some modification of form.

While Schiffer (1987) does not elaborate on cultural formation processes of faunal material, the following are just a few factors that may influence the faunal archaeological record. They include the processes of butchering, preparation methods and the disposal of the elements. Biases may exist in the record because of where butchering took place, where the elements were discarded, and where they were consumed. The different cutting tools may introduce biases, as well. A cleaver can leave many
unidentifiable fragments, but bone cut with a saw may consist of larger fragments that are more identifiable. Cooking methods also have an effect as well. For example, roasting the bone is less damaging than boiling. It is these practices of butchering and food preparation that can influence the chance of finding faunal remains in the archaeological record.

**Post-Depositional Influences**

Once artifacts are thrown away, they are in the archaeological context, and are influenced by other processes. If an artifact is not reused, discard is generally the destiny of the broken or unreusable artifact. Primary and secondary refuse are terms describing the location of discard. Artifacts used and discarded in the same place are primary refuse and those discarded some place else are secondary refuse. Artifacts, once discarded do not always stay in the archaeological record. The cultural materials in dump sites are possible resources that the number of societies take advantage of at some point. "Transformation of artifacts from archaeological context back into systemic context is known as reclamation processes" (Schiffer 1991:99).

Scavenging, collecting, and pothunting are three major reclamation processes I discuss. Scavenging involves individuals within the society reclaiming material remains in the archaeological record. Collecting is the disturbance, transport, and removal of material remains from the surface. Pothunting involves the reclamation, disturbance, and transport of remains below the surface. Both collecting and pothunting involve the transfer of the artifacts from an archaeological site to another place.

**AGENTS OF DETERIORATION**

"Noncultural formation processes act on cultural materials at all times, both in systemic and in archaeological context, and are responsible for what decays and what is preserved" (Schiffer 1987:7). The noncultural agents of deterioration in the archaeological context include chemical, physical, and biological processes (Reitz and Scarry 1985; Schiffer 1987). I will examine the effects of these agents potentially had on the tin cans and faunal material removed from the two dumps.

**Bone**

The best known chemical agent of bone deterioration is acid. "For example, in forests decaying organic matter lowers the pH and thus reduces the survival probabilities for bone near the surface" (Schiffer 1987:182). Fossilization, another chemical process, is the transformation of the organic material into a harder mineral substance. Bone left on the ground surface
weathers through the combination of physical and chemical actions (Schiffer 1987). Cracks appear longitudinally on the bone and continue to get deeper, causing exfoliation. Eventually, the bone disintegrates completely.

The weathering process generally does not affect buried bone. If weathering occurs, it is very slow compared to exposed bone. Wet/dry and freeze/thaw cycles contribute to weathering. These cycles produce the same type of longitudinal cracks as those described for exposed bone (ibid).

Mechanical processes also can affect bone. Water transport can eliminate butchering marks and "they can occasionally produce marks that mimic carnivore tooth scratches" (Shipman and Rose 1983:79). Carnivores and scavengers can wreak havoc on fresh elements by transporting them away from the site. Bone can suffer damage from trampling. "Because of the many effects animals can have on bones, the archaeologist needs to carefully distinguish the effects of such processes from human behavior in the assemblages being studied" (Schiffer, 1987:189).

Metal

Corrosion is the process predominantly responsible for metal artifacts deteriorating in archaeological context (France-Lanord 1976). It is a chemical process that occurs with unstable metal and the product of this process is "rust". Biological agents can aid in the corrosion process as well. "Corrosion starts with the formation of a thin film on the surface of the metal, and may eventually penetrate the entire object" (Schiffer 1987:191).

IDENTIFICATION OF FAUNAL REMAINS

Ideally, archaeologists need specialized training to identify and interpret faunal material. They also require a good comparative collection with specimens of all ages and both sexes. Pictorial guides are useful, but they are generalized pictures and not good substitutes for comparative collections. Archaeologists without appropriate training should treat assumptions made during the identification process as biases (Reitz and Scarry, 1987).

Zooarchaeology

During identification, archaeologists should note the age, sex, modifications to the bones, count, weight, types of elements present, side the elements came from, and taxon (Reitz and Scarry 1985:17). Quantification methods introduce biases and only provide a relative measure of abundance. Common quantification methods include bone count, bone weight, minimum number of individuals, and meat weight estimates.
"In interpreting biological materials and artifacts, strict attention should be paid to sample reliability" (Reitz and Scarry 1985:21). Sample size is one aspect of this reliability. Grayson (1978) demonstrated that small faunal samples are unreliable indicators of human subsistence activities. If the sample size is small, minimum number of individuals, bone count, and diversity and equability will probably be incomplete and inaccurate (Reitz and Scarry 1985). Although small samples are problematic, they are useful tools in investigating patterns of human behavior (Reitz and Scarry 1985). The methods, relevant to Garnet, will be discussed in the following chapter.
CHAPTER SIX

ANALYSIS OF SUBSISTENCE PATTERNS

Michael Schiffer states, "archaeological inference is the process of assessing and synthesizing diverse lines of evidence to produce well founded statements about the past (e.g., chronology, diet, social organization, climate)" (1988:477). Assessing and synthesizing the evidence to produce statements about diet takes place in the context of a research design.

A research design is an explicit plan for solving a problem or set of problems. It is a plan that must contain theoretical goals in the form of a specific problem or hypothesis, relevant analytical variables, and specifications of data that will allow empirical testing (Goodyear. RaabKlinger 1978:91).

The artifacts, faunal remains from the Garnet dumps, and written documents provide building blocks for reconstructing subsistence patterns. The data is used to investigate these patterns that influenced the Garnet people concerning how, where, and when they acquired their resources. The examination of the archaeological material and documents may illustrate nutritional adequacy for the Garnet residents.

In this chapter I will address each research question and the biases that influence the archaeological record. It is important to note that the two dumps do not represent every food item used by the Garnet people, but they do represent resources consumed and thrown away at the two dumps.

Written Documents

The study of documentary sources (inventory records and day logs) suggest that the people of Garnet had access to a variety of food and were not dependent upon local resources. Davey’s inventory book, 1900 through 1904, shows his suppliers came from various distances such as Walla Walla, Washington and St. Paul Minnesota (Appendix A). The supplies Davey ordered were diverse. The Garnet people however were not solely dependent upon Davey’s store because other merchants sold food items at Garnet but there are few known records available for any comparison.

The inventory records written on order slips state that fresh and canned goods arrived by railroad at Bearmouth. Davey ordered fresh peaches, strawberries, blueberries, pie cherries, eating cherries, and mason jars. Hammond (1987) and Morin (personal communication 1994) both mention that wagons from
Garnet picked up supplies from Bearmouth for the mercantiles. They also note that women planted small gardens producing some fresh vegetables and canning huckleberries, jams and fruit.

The Moss, Davey, and other day logs reveal that the Garnet residents (Appendix B) bought stables and canned goods. Items, from the Moss August 1895 day log include flour, salt, beans, canned milk, canned salmon, oysters, sardines, bacon, and ham. Fresh fruit was rare. The documentary evidence suggests that canned fruits and vegetables were probably easier to ship to the Garnet community. People could keep foods longer in cans and not worry too much about seasonal conditions restricting food availability. By 1900, the town was established and Davey’s inventory reveals that this trend of relying on canned foods gradually changed to include more fresh produce.

The day logs and inventory records are not complete and depict only six years of Garnet’s history. The known records only represent two stores, Davey and Moss. There were a number of stores at Garnet, for example, the Garnet Cash store and Peterson’s meat market, but there are no price lists or inventory records for either. Also a good portion of the information on the logs and records is illegible. The appendices (A, B) represent a very small sample of foods bought.

**Faunal Inventory**

Table 1 and 2 gives the classification of faunal remains and artifacts recovered from the Mountain View dump and Sierra dump. The relative frequencies of the archaeological materials are used to test hypotheses about the subsistence pattern reflected by the Mountain View dump. These patterns may be the result of different activities that took place, or the result of pre-depositional and/or post-depositional influences (Hardesty 1981; Reitz and Scarry 1985 and Schiffer 1987).

There are 633 identifiable faunal bone elements and over 200 unidentifiable fragments. These fragments are not analyzed at this time. Cattle (*Bos taurus*) are the most frequent animal preferred (Table 1, 2). Pig and sheep-goat contributed to the archaeological record as well. The University of Montana does not have a comparative collection containing pig, sheep, or goat; therefore, I could not distinguish between sheep or goat. From illustrations (Lawrence 1951; Ryder 1969; Olsen 1960; Schmid 1972), I tentatively identified pig and sheep-goat. Since I could not positively identify pig, sheep-goat the data is categorized as Sus and Caprine (sheep-goat). I did identify one sheep skull and sheep-goat complete femur, and coxal bone (David Dyer, personal communication 1994).

A saw was used in the butchering of the faunal material from both dumps. The points of disarticulation were smooth with
striation marks. Frank Fitzgerald (personal communication 1994) said that the town did not have electricity until the 1930s. The smooth cut marks suggest that a power saw was probably used. A circular saw powered by steam or water was available and most likely used if the faunal elements were butchered at Garnet. Ham and beef loin were shipped to the Davey Mercantile but the records do not show if they were pre-cut for sale (Appendix A).

Mountain View Dump  
Faunal Inventory

Table 1

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<th>Sus and Caprine</th>
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* transverse cut

Total  387  268
Sierra Dump
Faunal Inventory

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<th>Sus and Caprine</th>
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<td>Proximal Ulnaradi</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Tibia *</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Distal Tibia</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Proximal Tibia</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thoracic Vertebrae</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Pelvis</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sternum</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Scapula</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Femur *</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Distal Femur</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Proximal Femur</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>25</td>
<td>7</td>
</tr>
</tbody>
</table>

* transverse cut

It is unknown if the faunal material collected from the dumps represent butchered meat from Garnet or meat shipped from suppliers.

The butchering pattern is very similar to the cuts of meat found today. Roast type cuts for pig and sheep-goat were generally unmodified proximal long bones. Cattle olecranon processes of the ulna are cut off and then the bone is cut two to three inches further down the bone shaft. The femur is generally cut across the shaft near the trochanter minor and again two to three inches below the first cut of the femur. Roasts were also cut from the innominate pelvic bones. Sawed pelvic bones are
present at the Mountain View dump.

There are a number of individual servings reflected by sections of sawed bone. They are identified today as round steak, T-bone steak, pork chop, lamb chop, blade steak, and ham slices. Generally, the vertebra is split when the animal is cut in half and then cut along the transverse plane. The presence of elements below the radius and tibia suggests that butchering took place at or around the Mountain View dump area. It is also possible that meat cuts were purchased from all quarters and discarded at this dump.

I used the data from tables 1 and 2 to classify the elements into high, medium, and low value. The cut values relate to the proportion of quality meat available on an element. An example of a high cut value is the femur. The butchered meat from the femur area is called the round. Boneless round from a 250 pound side of beef weighs approximately forty-five pounds (Rombauer and Becker 1973). Other high value cuts include the scapula, pelvis, sternum, and thoracic vertebrae. Low value cuts are from the hind and forefoot and the skull. Medium value includes all other elements. The tibia and radius, medium value meat, are called the shank. The hind shank (tibia), including the bone, weighs approximately ten pounds and the meat is tough.

Medium value meat cuts predominant at the Mountain View dump. Ribs (Table 1) represent 53 percent of the total for the cattle and 50 percent of the pig and sheep-goat total. Generally, the ribs are cut two to three inches in length and a butcher can get two racks of short ribs from a steer. Because a rack of ribs is generally split, the medium value cut is exaggerated.

Artifact Inventory

Tin can analysis "can contribute to a wider understanding of the ways in which mankind adapts to new and challenging social and natural environments while retaining many elements of an already familiar cultural repertoire" (Rock 1984:97). Tables 3 and 4 give the dimensions of the collected tin cans. Also noted are can contents derived from known or estimated sources. There are a number of references from manufactures about can content, but can manufacturers shipped their cans to packing companies who could fill them with anything they chose (Teague 1980:98).
### Mountain View Dump
### Classification of Artifacts

#### Table 3

**Class: Food Containers**

<table>
<thead>
<tr>
<th>Top Diameter</th>
<th>Height</th>
<th>Can Type</th>
<th>Total Represented</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Type:</strong> Condensed/Evaporated Milk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 15/16&quot;</td>
<td>3 5/16&quot;</td>
<td>Milk</td>
<td>25</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3 5/16&quot;</td>
<td>Milk</td>
<td>6</td>
</tr>
<tr>
<td>2 15/16&quot;</td>
<td>4 6/16&quot;</td>
<td>Silcot Evaporated Milk</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Milk</td>
<td></td>
</tr>
<tr>
<td><strong>B. Type:</strong> Fruits and Vegetables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 &quot;</td>
<td>4 11/16&quot;</td>
<td>No. 2 1/2</td>
<td>2</td>
</tr>
<tr>
<td>4 1/4&quot;</td>
<td>4 7/8&quot;</td>
<td>No. 3</td>
<td>2</td>
</tr>
<tr>
<td>6 3/16&quot;</td>
<td>7&quot;</td>
<td>No. 10</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Industrial size</td>
<td></td>
</tr>
<tr>
<td><strong>C. Type:</strong> Vegetables or Juice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 7/16&quot;</td>
<td>4 8/16&quot;</td>
<td>No. 2 Special</td>
<td>7</td>
</tr>
<tr>
<td><strong>D. Unknown</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 7/16&quot;</td>
<td>4 7/8&quot;</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>4 6/16&quot;</td>
<td>5 5/16&quot;</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>4 14/16&quot;</td>
<td>5 1/2&quot;</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>4 7/8&quot;</td>
<td>5 8/16&quot;</td>
<td>Pry out lid</td>
<td>2</td>
</tr>
<tr>
<td>6 1/16&quot;</td>
<td>6 12/16&quot;</td>
<td>X cut &amp; all around cut</td>
<td>3</td>
</tr>
<tr>
<td>6 3/16&quot;</td>
<td>7 3/16&quot;</td>
<td>Spout</td>
<td>2</td>
</tr>
<tr>
<td>6 8/16&quot;</td>
<td>7 1/16&quot;</td>
<td>All around cut</td>
<td>1</td>
</tr>
<tr>
<td>6 12/16&quot;</td>
<td>7 4/16&quot;</td>
<td>Spout</td>
<td>1</td>
</tr>
<tr>
<td>2 8/16x4</td>
<td>12/16x9 13/16&quot;</td>
<td>K screw top</td>
<td>1</td>
</tr>
<tr>
<td><strong>E. Known Non-Food</strong></td>
<td></td>
<td>Tobacco</td>
<td>2</td>
</tr>
<tr>
<td>5 1/4&quot;</td>
<td>5 1/2&quot;</td>
<td>Pry out lid</td>
<td></td>
</tr>
</tbody>
</table>

" Indicates inches

References: Anonymous 1983; Bitting 1912 and Teague 1980
### Table 4

<table>
<thead>
<tr>
<th>Top Diameter</th>
<th>Height</th>
<th>Can Type</th>
<th>Total Represented</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Type: Condensed/Evaporated Milk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 15/16&quot;</td>
<td>3 5/8</td>
<td>Milk</td>
<td>7</td>
</tr>
<tr>
<td>2 15/16&quot;</td>
<td>3 5/16&quot;</td>
<td>Milk</td>
<td>4</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3 5/16&quot;</td>
<td>Milk</td>
<td>4</td>
</tr>
<tr>
<td>2 15/16&quot;</td>
<td>4 6/16&quot;</td>
<td>Close to 'Tall' size</td>
<td></td>
</tr>
<tr>
<td>3&quot;</td>
<td>4 6/16&quot;</td>
<td>'Tall' Evaporated Milk 16 oz.</td>
<td>1</td>
</tr>
<tr>
<td>3&quot;</td>
<td>3 3/8&quot;</td>
<td>14 1/2 oz (pre 1931)</td>
<td>1</td>
</tr>
</tbody>
</table>

| **B. Type: Fruits and Vegetables** |        |                           |                   |
| 4"                                | 4 3/4" | No. 2 1/2                 | 1                 |
| 4 3/16"                            | 4 7/8" | No. 3                     | 1                 |

| **C. Type: Fruits, Vegetables, Soups, and Specialties** |        |                           |                   |
| 3 6/16"                            | 4 8/16"| No. 2 Special             | 7                 |

| **D. Type: Fish** | 4 5/16"x3 | 1/16"x0145 | Sardine | 1 |

| **E. Unknown** |        |                           |                   |
| 3"            | 3 4/16" |                           | 1                 |
| 3 5/16"       | 5 1/16" |                           | 1                 |
| 4 1/4"        | 4 12/16"| X Cut                    | 1                 |
| 4 5/16"       | 5 5/16" |                           | 1                 |
| 4 2/16"       | 4 12/16"|                           | 1                 |
| 6 3/16"       | 7 3/16" | Spout                    | 4                 |

" Indicates inches

---

References: Anonymous 1983; Bitting 1912; Rock 1984 and Teague 1980

I used canning trade books to get can type, but there are a few specimens that did not match.

All cans are older than the modern style of cans (sanitary). The food container specimens from the two dumps were either hole-and-cap or hole-in-top. Milk cans are the most frequently occurring can. It is not possible to distinguish what kind of
milk was in the cans (condensed or evaporated). They have similar textures and both only require small puncture holes to remove the liquid (Anonymous 1983).

**ANALYSIS RESULTS**

In this section I review and address the research questions outlined in Chapter 1. Again, these questions include:

1. what information can the written record provide?
2. did isolation and high cost restrict their choice?
3. can the faunal evidence provide evidence of social status?

**Isolation and Cost**

Isolation and high costs are factors that may have influenced the choice of resources bought and consumed. The analysis of the archaeological evidence (tables 1 and 2) and the written documents (appendices A and B) suggests that isolation did not restrict what was available. Davey’s orders to Minnesota and Washington support this assertion. The inventory records from Davey’s store, suggests that winter snow and spring rain did not isolate the community from major population markets.

The different inventories demonstrate that the mercantile owners had access to outside markets. Hammond (1987) and HRA (1980) mention that women made summer railway trips to Missoula and Deer Lodge procuring provisions for the winter months. These summer trips suggest that distance from markets did not restrict their food resources. Davey ordered a wide range of fresh and canned goods all year around. The archaeological data suggests that people did purchase canned fruits, vegetables, and milk similar to the canned foods purchased by Davey for his store.

The interviews with Frank Fitzgerald and Mary Jane Adams Morin (personal communication 1994) support the written records. They recall that their parents made trips to Missoula for supplies. Fitzgerald’s father had a store. He remembers his father having food shipped via the railroad and purchasing food by the case. He also remembered that Davey got some supplies from the Missoula Mercantile.

Restrictions due to cost are difficult to infer from the faunal material. There are neither written documents for the meat market nor was meat sold very often at the mercantiles. There are only general prices for the canned, fresh, and stable goods. I would suggest that improved transportation routes (Northern Pacific railroad and the China Grade) and the booming canning industry kept prices at moderate rates. Prices were
probably higher at Garnet than in a larger commercial area, such as Missoula, but people paid for the convenience of a local store.

Colin (1986) discusses the incredibly high price of foods at the beginning of the California gold rush, and the forty-niners grumbled but they paid the high prices. Later, the prices dropped from very high (oysters a dollar apiece) to an affordable 20 cents per can, much to the distress of the merchants (ibid 1986:90). "Captain Howe wrote that upon his arrival in San Francisco he found, the market to be extremely dull" (ibid:98). It seems that supplies arrived regularly thus stabilizing the market.

I tentatively conclude that isolation and cost did not greatly limit their resource choices. The residents of Garnet had access to fresh and canned goods throughout the year. The oral interview and written record demonstrate that people could travel to major population centers and buy for the winter.

**Social Status**

The proposal that consumption or avoidance of certain foods can correlate with status is based on a number of factors (Reitz and Scarry 1985). They include symbols recognized by the community (e.g., conspicuous consumption) and access to valued goods.

It is difficult to detect social status differences from the faunal remains recovered at the Mountain View dump. The recovery of phalanges, carpals, tarsals, metacarpals, metatarsals suggest that butchering took place in or around this dump, but the origin of the faunal remains is unknown. Looking at meat value (Table 5) suggests that there was a higher use of medium value meat cuts. It is important to note that there were a large number of short ribs (2 to 3 inches in length) present (Table 1). Since the rib was cut, a butcher could get a number of short ribs from one rib (Steinback, 1994). This over abundance of ribs introduces a bias into the archaeological record.

I suggest that social status cannot be inferred using the limited sample of recovered faunal remains from the two dumps. From the evidence, I cannot conclude what symbols the community associated with high status. Furthermore, the archaeological evidence suggests that access to goods was not restrictive. Without written documents noting who used the dumps it is unlikely that the relationship of social status to food can be inferred. "It is most important with animal remains to find the rubbish source, since their real importance can only be assessed when the type of establishment from which they came is known" (Green 1961:51-54).
The study of the faunal material sample from the Sierra dump is too small for a status assessment. Grayson states that, "samples intuitively that appear to be 'too small' are rejected as the basis for statistical manipulation" (1984:117).
CHAPTER SEVEN

SUMMARY AND CONCLUSIONS

Food is inseparable from the behavior and biology of the human species and from the adaptation that humans have made to the conditions of existence on the planet (Colin 1986:x).

Several research questions were generated to infer subsistence patterns at Garnet. I tested these inferences using the archaeological record from the Mountain View and Shamrock dumps and oral and written records. By combining the archaeological record with documentary evidence and oral interviews, a picture of the subsistence system emerged. Consideration was given to the processes that are important to the formation of subsistence patterns—cost and distance from a major population center and social status.

Written Record

The use of various types of written documents proved to be essential. These documents increased my understanding of important questions about patterns of food use and consumption. The sources most valuable for Garnet were local histories and mercantile records. The documentary evidence suggests that Garnet residents had access to the same food items as the rest of America. The review of the local histories, day logs, and inventory records presented in Appendices A and B demonstrate the role of the railroad and new food preservation technology had on the subsistence pattern at Garnet.

At the beginning of Garnet’s growth, canned goods were important. Gradually, as the town grew, more diverse foods were imported. Residents had a fairly secure supply line and therefore, they did not need to depend solely on growing their own fruits or vegetables. The mercantiles provided for their needs. If a store did not have certain items, people could get it in Missoula or Deer Lodge.

Cost and Isolation

One aspect of food cost is travel. Proximity to resources is one way to reduce cost. Technology offers ways to reduce cost as well. Garnet residents were fortunate that by the time the town was founded there was a railroad, the China Grade, and a booming canning trade. Documentary evidence shows that Davey ordered goods from as far away as Minnesota as well as locally in Missoula, suggesting that isolation was not a negative factor in the subsistence pattern.

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The day logs provide the cost of some items. For example, one can of salmon cost 25 cents and one can of milk cost 20 cents. These prices were probably considered high but not beyond the means of the Garnet people. The archaeological evidence shows that people purchased canned goods and butchered meat, but it does not tell from whom the goods were bought or the quantity.

Social Status

There is no observed correlation between social status and meat cut value at the Mountain View dump or Shamrock dump; however, the archaeological evidence is not conclusive. The Mountain View sample is biased for medium value cuts for cattle, pig, and sheep-goat. Taking this bias into account, there are still more low value elements than high. Since the sample is small, statistical analysis is not reliable and social status cannot be determined using high meat cuts. Documentary evidence for social status is not available for the Garnet resident using the Mountain View dump. The records cannot provide any evidence to support the inference that high meat values correlate to social status at this dump.

There is no documentary evidence discussing which residents used the Shamrock dump. The archaeological evidence is too small. Since evidence is unreliable, I cannot draw any conclusions for social status with the data from this site.

CONCLUSION

The research for this thesis has shown that there are many directions which can be explored using the data from the Sierra dump and Mountain view dump. With additional archaeological material it should be possible to examine the archaeological material and documentary evidence more closely and reliably. It would also be useful to study additional dumps from Garnet in order to see whether the archaeological material from Mountain View dump and Sierra dump are typical for the entire community and time period. Individual household dump material from Garnet is stored at the University of Montana, but I did not have access to this material. This additional archaeological material could provide enough data to quantifiably test social status and the effects of cost and distance.

The data base for the subsistence patterns of the Garnet residents is small but other hypotheses and ideas could be tested. These ideas and hypotheses include the importing, the purchasing and consumption of exotic food items shipped to Garnet (exotic foods not mentioned in Appendices A and B). A comparison of the Garnet material with a contemporary urban community is another idea that could be tested. Local papers (mercantile advertisements) are sources that would provide useful information for this comparison.
The directions I presented for further research are not exhaustive. They demonstrate that more research is needed in historical mining town subsistence patterns.
APPENDIX A
Frank Davey’s Inventory Book
1900-1904

LINDSAY AND CO.  HELENA, MONTANA

October, November, and December, 1901

1 Box Bananas  5 Dozen Eggs
25 Baskets Conords  1 Case Honey
2 Boxes Apples  10 Baskets Conords
10 Bacons  Oysters
1 Case Honey
20 Pounds Popcorn
10 Boxes Bellflower Apples
1 Box Peanut Bar
3 Dozen Eggs
1 Box - 150 Navel Oranges

January, February, and March, 1902

Yankee Peanuts
2 Box Soda Crackers
1 Brick Figs
1/2 Box Graham Wafers
1/2 Box Cocoa Bars
1 Box Aust. Peanut Taffy
1 Box Hot Tamale

RE COBB  ST. PAUL, MINNESOTA

October, November, and December, 1902

1 Pckage Bajo Beans-77 Pounds
1 Box Fancy Navel Oranges
1 Dozen Eggs
Bacon
5 Pounds Jawbreakers
1 Brick Butter
Cauliflower
160 # Melons
1 Box Walnuts
2 Dozen Eggs
14 Small Melons

1 Case Eggs  2 BX Cheese
161# Turkey  24 # Duck
49 # Geese  5 Cases Fresh Eggs

1/2 Box Vanilla Wafers
1 Box Chocolate Dip
Cranberries

199
10 Cases Fresh Eggs  
161 # Turkey  
25 # Duck  
69 # Geese  
259 # Turkey  
28 # Duck  
151 # Spring Chicken

1 Box Cream Cheese  
30 # Geese  
82 # Turkey  
26 # Duck  
33 # Geese  
5 Cases Eggs

ALL GOODS SENT TO BEARMOUTH VIA NORTHERN PACIFIC

CHLOPECK FISH CO. SEATTLE, WASHINGTON

May 1902

1/12 # Salmon Kip Chinook  
Sent to Bearmouth  
Northern Pacific

LUTEY BROTHERS GROCERS. BUTTE, MONTANA

October, and November, 1900

1 Roquefort  
15 # Eng. Walnuts  
1 Box Pears

1 Brie  
25 # Pecans

November, 1901

200 # Turkeys  
5 # Duck  
38 # Hens

April, May, and June, 1902

2 Dozen Oysters  
Jam  
3 Bot. May. Dressing  
43 # Turkey

1 Whole Butter  
30 # Turkey  
1 Case F.P. Cereal

JOSEPH BOWDEN CORVALLIS, MONTANA

October 17, 1901

220 'Scks Spuds  
5 Scks Carrots  
10 Scks Onions

70 Scks Rutabagas  
10 Scks Cabbage

WALLA WALLA PRODUCE CO. WALLA WALLA, WASHINGTON

June, July, and August, 1902

2 Cases Cantaloupes  
5 Dozen Plums  
1 Box Cucumbers

3 BX Tomatoes  
6 Cases Cantaloupes  
3 Boxes R.A. Cherries
1 Case L.D. Cherries
1 Box Turnips
1 Box Peas
1 Box Beets
2 Boxes Rhubarb
1 Case Gooseberries

GRIGGS, COOPER AND CO.  ST. PAUL, MINNESOTA

August 22 and 23, 1902

2 Boxes Sea Rose 2 # brk Cod Fish
1 Case Dom Quat # Sardines 1 Scks #47 Japan Rice
Sent on Refrigerator Car

DAVIDSON GROCERY CO.  HELENA, MONTANA

September 26, 1901

2 Scks Sugar 50 # Bouron Coffee

February, August, and December, 1902

10 # Can Schillings Baking Powder
1 Drum Santos Coffee 55# 2 C/S 8 oz. Rooster
Oysters
2 C/S Easter Seeded Raisins

January, and October, 1903

2 C/S Fig Prune Cereal 5 # 1/2 SK Lalla Rook Tea
5 # 1s Lalla Rook Tea 1 Case Fig Prune Cereal
1 Case 1# Tall G.A. Salmon 5 # 1# Salada Tea
2 C/C W.G. Corn

March 15, 1904

1 C/S Pioneer Tomatoes

FOLEY BROS. AND KELLY  SEATTLE, WASHINGTON

January 29, 1904

1 Bbl Lge Fam. Mackerel

ARMOUR COMPANY  CHICAGO, ILLINOIS

September, and October, 1902

1 Hind Beef Quarter 153#
20 # Pork Sausage
1 Sheep
1 Beef Loin 3 #
2 Loins
1 Four Quarter Beef
1 Pork Win.
1 Mutton
1 Hog
A.F. BRAY BUTTE, MONTANA

May, and August, 1903

1 Case 3# Baked Beans
1 Case Peaches Sliced
10 # M & M Tea
1 Box W.H.B’s Chocolate

August, September, and November, 1904

10 Cases June Peas
1 Case Pears
1 Scks Japan Rice
1 Case gal Blueberries
2 Cases Tomatoes
5 Cases Columbia Cream

Sent by Railroad

MISSOULA MERCANTILE MISSOULA, MONTANA

November 13, 1901

1/4 Dozen Ham Loaf
1/4 Dozen Cottage Loaf
1/4 Dozen Beef Steak Onion
1/2 Dozen Boneless herring

January, February, and March, 1902

3 Kegs Syrup
1 Dozen C.C. Sardines
10 # Schillings Baking Powder
1 Dozen Raspberries
Pie Cherries
Pumpkins
3 Boxes Macaroni
1 Quart A.S. Lemon Extract

1/2 Dozen Horse Radish
1 Box Figs White
25 Gal Vinegar
2/3 Dozen Mustard
2 Scks Large ham
1 Sck B.F. Bacon wide

June and October, 1902

Utah Tomatoes
1 Box Macaroni
1 Sck Lima Beans

202
1 Dozen Dev. Ham
2 Scks Med. Ham
2 Dozen Rowa Corn
23 Cans Peas
16 Cans Oysters
2 Cans Cinnamon
10 Cans Vinegar
44 D.S. Ham
34 Ham
19 Scks Flour (Star Flour)
1 Pt. A.S. Lemon Extract
20 # Lard
45 # Rice
28 # Bacon
1/4 # Ground Nutmeg
32 # N. Beans
8 Scks Sun Flour

20 Scks Sun Flour
1 Sck B.F. Bacon
5 Scks Sugar Beets
55 Cans Beans and Corn
1 Can Hominy
10 Cans Tomatoes
Onions
10 # Bacon
1 Sck Corn meal
10 # Apricots
1 Pt. A.S. Vanilla Extract
50 # of 1 # Salt Bags
54 # ham
1/2 # W.H.I. Pepper
100 # Rutabagas
10 # Evap Apples

# Indicates Weight in Pounds
APPENDIX B

SAMPLING FROM THE MOSS STORE, DAVEY STORE, AND ANONYMOUS DAY LOG BOOKS AND INVENTORY BOOKS
1895, 1900, AND 1904

### Moss Store (Date unknown)

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 1/2 Doz Eggs</td>
<td>$1.40</td>
</tr>
<tr>
<td>1 Box Celery</td>
<td>$1.00</td>
</tr>
<tr>
<td>1 C BP Powder</td>
<td>$ .50</td>
</tr>
<tr>
<td>16 # Ham</td>
<td>$2.24</td>
</tr>
<tr>
<td>1 C Radish</td>
<td>$ .25</td>
</tr>
<tr>
<td>6 C Milk</td>
<td>$.90</td>
</tr>
<tr>
<td>1 Doz Oranges</td>
<td>$.60</td>
</tr>
<tr>
<td>4 # Peaches</td>
<td>$.60</td>
</tr>
<tr>
<td>2 C Honey</td>
<td>$3.20</td>
</tr>
<tr>
<td>28# Sugar</td>
<td>$2.80</td>
</tr>
<tr>
<td>24 # Beans</td>
<td>$1.45</td>
</tr>
<tr>
<td>5 1/8 Ham</td>
<td>$.73</td>
</tr>
<tr>
<td>8 # Butter</td>
<td>$2.40</td>
</tr>
<tr>
<td>12# Onions</td>
<td>$.45</td>
</tr>
<tr>
<td>4 # Coffee</td>
<td>$.75</td>
</tr>
<tr>
<td>1 Box pepper</td>
<td>$.25</td>
</tr>
<tr>
<td>4 # Salmon</td>
<td>$.60</td>
</tr>
<tr>
<td>1 Doz Lemons</td>
<td>$.50</td>
</tr>
<tr>
<td>7 # Apples</td>
<td>$1.05</td>
</tr>
<tr>
<td>5 # Apricots</td>
<td>$.75</td>
</tr>
<tr>
<td>2 Loaves Bread</td>
<td>$.20</td>
</tr>
<tr>
<td>8 # R. Berries</td>
<td>$2.00</td>
</tr>
<tr>
<td>5 # Lard</td>
<td>$.50</td>
</tr>
<tr>
<td>1 bol Catsup</td>
<td>$.50</td>
</tr>
<tr>
<td>1 Case Corn</td>
<td>$2.90</td>
</tr>
<tr>
<td>1 C Oysters</td>
<td>$4.56</td>
</tr>
<tr>
<td>2 Box Sardines</td>
<td>$3.00</td>
</tr>
<tr>
<td>6 C. Tomatoes</td>
<td>$.90</td>
</tr>
<tr>
<td>1 Box Crackers</td>
<td>$2.88</td>
</tr>
</tbody>
</table>

* # Indicates Weight in Pounds

### Moss Store 1895

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/ 1 Can Milk</td>
<td>$.20</td>
</tr>
<tr>
<td>5 # Bacon</td>
<td>$.75</td>
</tr>
<tr>
<td>12/ 1 Can Fruit</td>
<td>$.25</td>
</tr>
<tr>
<td>1 Can Corn</td>
<td>$.20</td>
</tr>
<tr>
<td>1 Can B Powder</td>
<td>$.40</td>
</tr>
<tr>
<td>23 LB Sugar</td>
<td>$1.84</td>
</tr>
<tr>
<td>Item</td>
<td>Price</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------</td>
</tr>
<tr>
<td>2 1/2 LB Butter</td>
<td>$ .65</td>
</tr>
<tr>
<td>1 Doz Can Milk</td>
<td>$1.75</td>
</tr>
<tr>
<td>3 Doz Eggs</td>
<td>$ .20</td>
</tr>
<tr>
<td>2 LB Coffee</td>
<td>$ .50</td>
</tr>
<tr>
<td>1 Can Oysters</td>
<td>$ .20</td>
</tr>
<tr>
<td>2 Cans Sardines</td>
<td>$ .20</td>
</tr>
<tr>
<td>5 LB Onions</td>
<td>$ .15</td>
</tr>
<tr>
<td>14 LB Ham</td>
<td>$1.92</td>
</tr>
<tr>
<td>2 Cans Tomatoes</td>
<td>$ .30</td>
</tr>
<tr>
<td>2 Cans Peaches</td>
<td>$ .50</td>
</tr>
<tr>
<td>1 Can Salmon</td>
<td>$ .25</td>
</tr>
</tbody>
</table>

### 1900 Inventory

- 2 Corn
- 11 " V. Sausage
- 2 # Br. Cod
- 10 # Seedless Raisins
- 6 Cans Salmon
- 6 Cans Cayenne (4 oz)
- 6 Cans Cinnamon
- 7 Cans Allspice
- 2 1/2 gallons Honey
- 48 # Rice
- 340 # Navy Bean
- 203 # Bayo Beans
- 8 Doz Schillings B Powder

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Corn</td>
<td>$ .20</td>
</tr>
<tr>
<td>11 &quot; V. Sausage</td>
<td>$1.10</td>
</tr>
<tr>
<td>2 # Br. Cod</td>
<td>$ .45</td>
</tr>
<tr>
<td>10 # Seedless Raisins</td>
<td>$1.35</td>
</tr>
<tr>
<td>6 Cans Salmon</td>
<td>$1.08</td>
</tr>
<tr>
<td>6 Cans Cayenne (4 oz)</td>
<td>$.99</td>
</tr>
<tr>
<td>6 Cans Cinnamon</td>
<td>$1.00</td>
</tr>
<tr>
<td>7 Cans Allspice</td>
<td>$.49</td>
</tr>
<tr>
<td>2 1/2 gallons Honey</td>
<td>$1.20</td>
</tr>
<tr>
<td>48 # Rice</td>
<td>$3.36</td>
</tr>
<tr>
<td>340 # Navy Bean</td>
<td>$17.00</td>
</tr>
<tr>
<td>203 # Bayo Beans</td>
<td>$10.15</td>
</tr>
<tr>
<td>8 Doz Schillings B Powder</td>
<td>$26.88</td>
</tr>
</tbody>
</table>

### Davey’s Store 1904

- 50 Spuds
- Box Apples
- 50 Sugar
- 1 Butter
- 4 Doz Eggs
- 50 Flour
- 5 Onions
- Cabbage
- 6 Cans Salmon
- 19 LB Ham
- Can Pumpkin
- Can Tomato
- 4 Cans Milk
- Can Cinnamon

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Spuds</td>
<td>$1.25</td>
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<tr>
<td>Box Apples</td>
<td>$1.50</td>
</tr>
<tr>
<td>50 Sugar</td>
<td>$3.65</td>
</tr>
<tr>
<td>1 Butter</td>
<td>$ .65</td>
</tr>
<tr>
<td>4 Doz Eggs</td>
<td>$1.20</td>
</tr>
<tr>
<td>50 Flour</td>
<td>$2.00</td>
</tr>
<tr>
<td>5 Onions</td>
<td>$ .50</td>
</tr>
<tr>
<td>Cabbage</td>
<td>$.25</td>
</tr>
<tr>
<td>6 Cans Salmon</td>
<td>$1.15</td>
</tr>
<tr>
<td>19 LB Ham</td>
<td>$3.04</td>
</tr>
<tr>
<td>Can Pumpkin</td>
<td>$.15</td>
</tr>
<tr>
<td>Can Tomato</td>
<td>$.20</td>
</tr>
<tr>
<td>4 Cans Milk</td>
<td>$.45</td>
</tr>
<tr>
<td>Can Cinnamon</td>
<td>$.25</td>
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SITE ABANDONMENT BEHAVIOR FOR THE MINING TOWN OF GARNET, MONTANA

Jennifer Kathleen Spencer
CHAPTER ONE

INTRODUCTION

A culture is viewed as a behavioral system of self-regulating and interrelated sub-systems which procures and process matter, energy, and information (Schiffer 1972:157).

The focus of my thesis deals with cultural deposition and the effect certain reclamation process may have on the interpretation of the archaeological record. My intention is to explore hypotheses on abandonment at a Western mining town. Garnet, Montana has been selected for my research area. The selection of a historical mining site allows previous research by Stevenson (1982) on Western mining towns to be used as a guide.

My investigation of Garnet deals with the town in its present condition and explores the variables at play in the interpretation of the town's abandonment. Because the town had a long duration, 1895-1947, I am unable to focus on one particular abandonment event, but rather will focus on the general abandonment processes. My evaluation of Garnet's abandonment behavior subsequently refines general archaeological hypotheses on site abandonment. The study of abandonment is part of a larger scheme of interpretation within archaeology called "formation processes." It is useful to begin with a discussion of these formation processes.

CULTURAL FORMATION PROCESSES

Schiffer says that "although we would wish it, the past - manifest in artifacts - does not come to us unchanged" (1987:5). Therefore, according to Joyce and Johannessan, "formation processes provide the inferential bridge between the static patterns of the archaeological record and the dynamic patterns of ongoing behavior" (1993:138). Before artifacts enter the archaeological record, they participate in behavioral systems called "systemic context." This includes the historical record of artifacts still being used or kept within an ongoing society. Photographs are classic examples of the historical record that provides insight to past behavior within our own society (Schiffer 1987).

The two basic types of formation processes identifying the changes that occur when the archaeological record forms are cultural processes and natural processes. Natural formation processes focus upon the agents of the environment and how those agents affect sites. Cultural formation processes consider human activities upon artifacts and sites.
Understanding formation processes has created two views of archaeological investigation: the entropy view and the transformation view. The entropy view "implies that our potential knowledge of the past is directly related to the state of preservation which is conditioned by the time elapsed since cultural deposition" (ibid:8). The roots of this conception are linked to the work of Robert Ascher (1961, 1968). Robert Ascher is a pioneer in identifying the factors that influence the archaeological record and formation processes, and in realizing their importance for any inferences about the past. The transformation view, on the other hand, claims that archaeologists cannot directly extrapolate past behavior and organization. This view suggests that one can clarify any distortions "by using appropriate analytical and inferential tools" (Schiffer 1987:10) or laws developed to predict observed patterns. No matter which approach an investigator follows, both approaches recognize that both cultural processes and natural processes interact with sites and the archaeological record. Within this thesis, behaviors in the past are inferred from the material culture present at Garnet.

Ascher (1968:44) believes that people working with nature "act as agents of disorganization." This is especially true when examining the archaeological record. Ascher feels that the time elapsed since the site's last occupation directly relates to the anticipated volume of material remains produced by the excavation. Regardless of a site's duration, the longer it is abandoned, the less information from material culture archaeologists can recover. Yet even before items are within the archaeological record, several mechanisms may be acting within the societal sphere.

Michael Schiffer deserves special recognition for elaborating on the transforming activities affecting the archaeological record (Deal 1985; Wheeler 1992). Schiffer realizes that the processes that affect the archaeological record can transform it "spatially, quantitatively, formally, and relationally" (1976:11). Thus, the archaeological record is a: distorted reflection of a past behavioral system. However, because the cultural and noncultural processes responsible for these distortions are regular, there are systematic (but seldom direct) relationships between archaeological remains and past cultural systems (ibid:12).

Within each class or type of formation, there are numerous subcategories that might prejudice one's interpretation of the archaeological record. There are "four principle types of cultural formation process -- reuse, cultural deposition, reclamation, and disturbance" (Schiffer 1988:471-472) that mark
changes within and between systemic context and archaeological context. I am particularly interested in cultural deposition as seen by abandonment behavior.

There are two major activities that may influence the composition or frequency of artifacts before deposition into the archaeological record. The first, lateral cycling, is the reuse process of giving or selling items to other individuals rather than curating or depositing those items. It may involve the transformation from one type of use to another type. The second, draw down, suggests a conscious effort of people not to replace an item whose use life is over or almost completed. Because items are not replaced, the frequency of items in the archaeological record is lower than that of the normal systemic frequency (Schiffer 1987).

Besides pre-depositional activities, there are also post-depositional activities that may influence the composition of the archaeological record. There are three activities or processes that transform the archaeological context back into the systemic context. The first reclamation process is scavenging. Participants of this process are residents still living within the settlement or are from the immediate area. Intensity of scavenging directly relates to the abandoned material’s quantity and quality (Stevenson 1982). The second process effecting systemic inventories is collecting and looting. These activities reflect the disturbance and permanent removal of items from an abandoned site by nonresidents. The third is salvage. Salvage reclaims artifacts, facilities, and structures from an earlier occupation into a present population (Schiffer 1987).

These pre- and post-depositional activities can be linked to site abandonment. According to Deal (1985), the first two--lateral cycling and draw down--are pre-abandonment activities while the latter three--scavenging, collecting, looting, and salvage--are prone to be post-abandonment activities (Figure 1). Scavenging, collecting and looting intensity varies with respect to migration patterns, population and site size (Murray, P. 1980; Schiffer 1972).

Humans impact the environment in and around the sites at which they reside, visit and leave. As a product of human behavior, culturally deposited material, or refuse, illustrates changes that occurred within occupations. The four avenues of cultural deposition into the archaeological context are discard, abandonment, disposal of the dead, and loss (Schiffer 1976, 1987). The focus of this thesis concentrates on the abandonment avenue of artifacts into the archaeological record. From the different types of refuse patterns, site abandonment behavior may be inferred.
Discard patterns during a site’s use and abandonment have been the subject of some interesting research (Cameron 1991; Deal 1985; Green 1961; Joyce and Johanssen 1993; Lange and Rydberg 1972; Murray, P. 1980; Schiffer 1972, 1976, 1983, 1987, 1988; Stevenson 1982, 1985; Wilk and Schiffer 1979). The examination of these processes commences with the identification of several types of refuse, namely, primary, secondary, abandonment, and de facto (Figure 2). Primary refuse is located at the area of use while secondary refuse involves a transfer away from the locality of use. Both are part of daily discard patterns (Schiffer 1972, 1976, 1987) that generally tend to reflect on-going habitation and do not directly relate to abandonment. Yet there are some archaeologists (Joyce and Johanssen 1993; Lightfoot 1993; Schiffer 1987, 1988:98), who see abandonment refuse as a special type of primary and secondary refuse related to the anticipated departure of an area or settlement. As for abandonment and de facto refuse, both types of disposal occur with site abandonment. Abandonment refuse refers to individual households or settlement’s reduction of waste maintenance and the gradual accumulation of refuse in activity areas or residential structures (Hayden and Cannon 1983; Schiffer 1983, 1987; Stevenson 1982). According to Schiffer (1987:89), "de facto refuse deposition consists of cultural materials that although still useable (or reusable) are left behind when an activity area is abandoned".

An elementary awareness of formational processes is necessary to comprehend the correlation between the historical documentation of Garnet and the archaeological record. Additional comprehension is needed to evaluate abandonment behavior and its affect on site formation and the archaeological record.
ABANDONMENT FORMATION PROCESSES

Usually the very mention of the word abandonment conjures up images of haunted houses or ghost towns. The Random House dictionary defines "Abandon" as "to leave completely and finally; forsake utterly, to give up, to discontinue" (Random House 1988). Most archaeologists use Schiffer's definition of abandonment. He describes abandonment as "the process whereby a place - an activity area, structure, or entire settlement - is transformed to archaeological context" (Schiffer 1987:89). This definition refers to the material culture entering the archaeological record during a final abandonment and not the temporary abandonment of structures. Other definitions of 'abandonment' are specific to regions, mention the absence or presence of structures for habitation, or the presence of certain archaeological materials within or around possible structures (Fish and Fish 1993; Graham 1993).

No matter where abandonment occurs, according to Brooks
(1990:2), this process must not be seen as an isolated or stagnant occurrence, but rather a series of events linked "through a structure of behavioral dynamics". He is not alone. Schiffer (1976) and Tomka and Stevenson (1993) also agree that abandonment is a process, not just a singular event within a site's occupational demise.

Many other archaeologists (Brooks 1989, 1990, 1993; Cameron 1991; Deal 1985; Joyce and Johannessen 1993; Lightfoot 1993; Schiffer 1985, 1987; Schlanger and Wilshusen 1993) have worked to further comprehend human discard behavior and its ability to affect the archaeological record. Mark Stevenson's 1982 article has inspired hypotheses applicable to abandonment processes at historic mining sites. Stevenson (1982) and other archaeologists' works on abandonment of sites and artifacts are discussed in greater length in Chapter Five.

**SKETCH OF STUDY AREA**

After the gold rushes in California, Colorado, and Nevada, miners traveled north looking for new regions to prospect for gold. In search of the "mother lode," miners usually worked hard, traveled light and rarely continued working unprofitable mining claims when news of new strikes was heard. Yet even with this tendency to be mobile, miners usually left physical evidence of their presence. Montana was no exception.

In 1863, miners abandoned the territorial capital of Bannack, Montana. They left to search for gold in the Alder gulch area near Virginia City and Nevada City. During the same period, the early 1860s, gold was discovered in the Garnet mountains. Because of transportation and technological limitations, these buried deposits were not removed. A drop in silver prices, during the 1890s, renewed interest in the gold deposits located within the Garnet mountains. In 1896 the mining camp of Garnet (then Mitchell) was established. As with many other mining camps on the western frontier, the camp was constructed haphazardly and not expected to last long. However, the camp grew into an established town by the 1900s (Photograph 1).

Local and national events created boom and bust cycles on the settlement and population of Garnet. Examples of such events are the 1912 fire which destroyed much of downtown Garnet, the Great Depression, and World War II (Photograph 2). The town ceased to function as a settlement in 1947 with the death of the last permanent resident, Frank Davey. At his death, several buildings were still standing in the town and there were various artifacts scattered around the settlement, creating a unique ghost town. Today, most of the town is administered and owned by the Bureau of Land Management (BLM). A few structures are owned and used privately. The present philosophy of the BLM on Garnet
is to leave the town in a "state of arrested decay" (Photographs 3-4).

It is this state of 'arrested decay' that brought me to select Garnet as my area of research. Because of the long duration between final abandonment (1947) and BLM's initial management, it is not possible to detect all abandonment variables affecting Garnet through all of its boom and bust cycles. I will focus my investigation on the final abandonment and the material culture that is present in Garnet as of 1993-1994. Included within this thesis is the examination of the perception of Garnet's residents on the anticipated length of occupation of the town.

Photograph 1. Circa 1900 view of Garnet's business district. (BLM photo)

As is established in chapters Two and Three, mining settlements typically boomed, busted, and if fortunate boomed again before eventual decline. The fact that Garnet had a fairly typical existence within Montana's mining history allows the examination of abandonment principles at Garnet to be implemented at other historical sites. The process of identifying abandonment behavior at Garnet is illustrated by the comprehension of predepositional activities, refuse disposal patterns, and postulates on artifact and abandonment variables. These will be discussed in chapters Five and Six.
Map 1. A 1898-1910 sketch map of the town of Garnet (BLM 1982:3).
1--- Billy Liberty's Blacksmith
2--- Billy Liberty's House
3--- Cabin
4--- Cabin
5--- Ed Herrin’s House
6--- Charlie Davis’s Barn
7--- Davey’s Barn
8--- Well
9--- Cabin
10--- Honeymoon Cabin
11--- Carpenter Shop & Stage Stop
12--- Neal McDonald’s House
13--- Dugout
15--- Union Hall
16--- Icehouse
17--- Hotel Outhouse
18--- J.K. Wells Hotel
19--- Link’s Clothing Store
20--- Davey’s General Store
21--- Drugstore Annex
22--- Kelly’s Saloon
23--- McDonald’s Hotel
24--- No Name
25--- Garnet Hotel
26--- Lyle and Fitzgerald Saloon
27--- Davis Saloon
28--- House/Stable
29--- Hannifen House
30--- Hanks Barn
31--- Charlie Lewis’s Barn
32--- Adams and Shipler Grocery
33--- Link’s General Store
34--- Nettles Saloon and Hotel
35--- Store
36--- Meat Market
37--- Barber Shop
38--- Hotel and Drugstore
39--- Assay Office
40--- Adams House

Figure 3. Key to the sketch map 1 on the previous page (BLM 1982:4).
Photograph 2: A view of Garnet taken in 1932 (Hammond 1983).

Photograph 3: View of Garnet in 1971 (Hammond 1983). Notice the presence of supports on the building seen in the middle of the photograph.
Photograph 4: A 1993 view of Garnet, Montana.
METHODS AND MATERIALS USED

A wide body of material illustrating abandonment processes at Garnet was used in this study. The historical perspective comes from several books and company records, while the personal side is obtained from individuals associated with Garnet. The bulk of my analysis comes from photographs.

Literature

Historical documents come in a multitude of forms. The information obtained from them also varies in reliability and integrity. Congressional or government documents, newspapers, journals, books, and biographical essays are all sources of information especially important in reconstructing or interpreting past historical events and behaviors. This is especially true for western mining towns.

In my preliminary research on the history of mining, I drew upon two groups of sources. The first group consists of general historical overviews of mining. I have found several books that provide an account of the mining frontier and history of the American western movement (Billington 1949, 1956; Fisher and Holmes 1990; Greever 1963; Hardesty 1988; Heath 1985; Hogan 1990; Kemp 1960; Leeson 1885; Lingenfelter 1974; Mc Garth 1984; Malone 1983; Paul 1963; Ovitt 1952; Smith 1977; Spence 1966; Wolfe 1953, 1963; Young 1970). These sources explain how camps and towns were organized, settled and abandoned (Alanen 1979; DeHaas 1976; Hardesty 1981, 1991; Hogan 1990; Malone 1981; Murray, R. 1972; Rohe 1984, 1986; Rohrbough 1986; Wallace 1987). By examining possible general causes of abandonment, more information may be obtained on the rate of abandonment and anticipated return for local regions like Garnet (Hardesty and Hattori 1983).

The other group consists of a general history of mining in the west, the Garnet mountains, and Garnet. There has been much public interest in Garnet, and this is reflected in several newspaper articles on the tourist qualities the town possess or what buildings have been stabilized. In addition to the town's newspaper, there are a few books and monographs on Garnet. Helen Hammond (1983, 1987), with the help of former residents of Garnet, wrote two books that paint a colorful portrait of life in the town. Reports by Historical Research Association (HRA 1982) and Daley and Mohler (1973) tell of Garnet's history with a more detached voice.

Oral Histories

Oral histories in many instances bridge gaps among historical documents. The purpose of oral interviews from people associated with Garnet is to correlate the pictorial images with
the remaining structures and material culture located in and around the town. Because of insufficient written documentation on Garnet, past residents provide the only non-archaeological bridge into the town’s past.

Yet caution must be applied to the information from these informants. There is a tendency for individuals to tell what they want us to hear or what they think the interviewers want to hear rather than what actually occurred. To aid in the interviewing processes, a preliminary directed questionnaire was sent to fifteen individuals who had some contact with Garnet. Of those fifteen, a few were interviewed further in open ended discussion format to add detail to their answers.

In addition to those interviews, Garnet Preservation Association members, volunteers who worked at Garnet, and BLM employees associated with Garnet were also asked about Garnet and the conditions within the town. Attempts were made to relocate previous recordings by the BLM of former residents, now deceased.

Field and Archival Methods

Because the BLM had been actively responsible for Garnet since 1969, there has been several surveys of the district. Each has produced results beneficial for my investigation, freeing me from a surface survey. In fact, my research tactics were limited to document searches and field documentation of material culture by photographs. Earlier photographs displayed the condition of the town and the type(s) of abandonment that occurred at Garnet. Besides illustrating the progressive changes that have occurred over time, photos also show evidence of material culture that was used in Garnet and possibly left either through abandonment or as refuse.
CHAPTER TWO
MINING HISTORY OF THE AMERICAN WEST

Is the west a distinctive subregion of American culture, equivalent, for example, to the south, or is it merely a frontier, simplified version of Eastern American culture? (Schuyler 1991:7)

Part of the American dream entails striving to become one of the many rags to riches stories. Yet unfortunately, in the 1840s the opportunities for immigrants, and other citizens, were not ample. There were only a few things that could cause a man to leave his family, job, and home behind to risk uncertain promise, frustration and possible death. One of them was gold and the rumors of unlimited and easily accessible supplies located within California. Those rumors created the famous 1849 rush to California and the American western frontier.

California

The first discovery of gold occurred thirty-five miles north of Los Angeles, but the deposits were so meager that no publicity was given (Webb 1961). The first story that came out of the west was John Augustus Sutter’s mill. On the south fork of the American River, John Sutter hired John Marshall to construct his saw mill. Five months later on January 24, 1848 Marshall detected gold (Billington 1956; Lingenfelter 1974; Murray, R. 1972; Paul 1963; Spence 1966; Webb 1961). News of Sutter’s discovery could not be kept secret. A March 1848 newspaper account of Sutter’s treasure ignited strong interest, better known as "gold fever" (Billington 1956).

Population of existing camps within California seemed to double as new camps were established weekly (Malone 1981; Webb 1961). After the initial fever swept through San Francisco, the city grew from "3000 in early 1849 to 20,000 by years end" (Meyer 1992:5). The population of California, between the years 1848-1852, expanded from 14,000 to 223,000 (Rohrbrough 1986).

Lured to California by the simple technology of placer mining, miners found that the rewards of placer mining slim and usually dissipated quickly, or even worse, never existed (Billington 1949; Fischer and Holmes 1990; Rohrbough 1986). As deposits decreased or became less obtainable, prospectors used new methods to acquire ore. Sluices and rockers facilitated the separation of gold from the soil. Surplus water was used with these devices, if feasible. As many places started to play out and sluicing no longer was efficient, new technologies were needed to maintain production levels. By the mid 1850s,
production methods switched from placer to hard rock mining. These new mining techniques required mills and smelters to process the raw ore. For the typical prospector who was without significant initial investment principle and equipped only with a pickaxe and pan, he or she either stayed as a hired miner or chased gold either further upstream, in the next valley, or across the mountains northeast toward Nevada, Colorado, Idaho, and Montana (Rohrbough 1986).

Nevada

As California placer deposits started to play out, miners searched for new frontiers or "los dorados" either "inward toward midcontinent" (Malone 1981:5) or further north (HRA 1982). Although miners who had reached Nevada prior to 1859 extracted much of the acquirable placer gold, they continued to search for new los dorados or waited for heavier machinery to extract gold located in quartz veins (Billington 1949; Paul 1988). While waiting for heavier equipment to arrive in the fields, some miners tried their hand at mining silver along the Carson River basin in Nevada.

News of the strike at Washoe lode, later called the Comstock lode, along the Carson River created a rush "transforming the site from a series of placer camps into a city in the desert" (Rohrbough 1986:13). The district (Comstock) produced around $100,000 per year until the late 1850's when most of the placer gavels were exhausted and the few settlements that had come into existence were in serious decline. The situation changed drastically after a rich body of silver ore was located in 1859. (Meyer 1992:5)

As with California, at times these rushes would empty the towns such as Virginia City (Billington 1949), but the overall increased population within the territory helped establish Nevada Territory (out of western Utah Territory) in 1861 (ibid).

With the close of the Civil war in 1865, Virginia City was boasting of a population of 9,000 people, but by 1875 was well over 30,000 (Webb 1961). The stimulus for such a great influx of people into the region occurred when four miners sunk a shaft into the Comstock lode. The men extracted ore valued at over $200 million, but not all districts were as successful as Virginia City. Many mines died quick deaths, freeing men to try their luck elsewhere.

Colorado

As men and women from California migrated east to the
Washoes of Nevada, wagon trains headed west in 1859 toward Pike's Peak (Colorado) (ibid). Initially the deposits did not require great investment in equipment thus permitting men to invest less wealth in order to obtain the precious ore (HRA 1982). When the Rocky Mountain News in May 1859 printed a story on John Gregory, who was obtaining $2.00 per pan from his claim on Clear Creek, it created the usual rush. Within a month, 5,000 people had turned Gregory’s mining camp into a town named Central City, Colorado (Billington 1949). The extreme haste of individuals to reside in or near Central City and commence mining activities typified the early stages of a mining camp. The result was haphazardly log constructed buildings and a crowded appearance (Smith 1967).

Even with the success of Central City, the majority of placers were shallow and not nearly as successful as initial prospectors expected and could not hold miners for long (HRA 1982; GPA; Paul 1988; Smith 1992). For the prospectors who stayed, silver became the important metal to extract until those deposits started to diminish. Many miners who left Colorado headed north to the present states of Idaho and Montana (Smith 1992).

Idaho

The 1860 discovery of gold in Idaho is credited to Captain E. D. Pierce (Billington 1949; Paul 1988). The Orofino district, established in 1861 along the Clearwater River, accommodated a population ranging in the several thousands. Another big strike in the same year ignited a rush along the Salmon River which during the following summer of 1862 brought over 20,000 miners to Idaho (Billington 1949; Meyer 1992).

In their haste to reach Idaho, prospectors took any way possible over the mountains. Many miners ended up abandoning wagons and material goods, packing whatever they could handle to the Salmon River or Clearwater rivers. In 1883, a mini-rush to the Coeur d'Alene mountains ensued, but this rush was more hope than actual. Very quickly, prospectors left wandering in search of new strikes. Miners left behind evidence of their past mining activity: rubble piles, abandoned camps, trash dumps, and excavated gullies.

Montana

Legend has it that a French trapper, Francois Finlay, was the first to discover gold in Montana along Gold Creek (originally Benetsee Creek) in the early 1850s. Finlay, along with others, are mentioned in finding gold, but due to lack of documented evidence, he does not receive credit. The first fully recorded gold strike was by James and Granville Stuart’s party. The men detected gold in 1858, along Gold Creek, Montana (Map 2), twenty miles from the Garnet mountains, in what was then the
eastern section of Idaho Territory (Billington 1949; Davis 1963; Graves 1991; HRA 1982; Leeson 1885; Meyer 1992; Paul 1988; Rowe 1933; Smith 1992; Spence 1978; Timmons 1986; Trexler 1918; Wright and Wright 1972).

Although the Stuarts' party is accredited with initial discovery and first systematic mining within Montana, the first strike of any significance was achieved by John White's party along Grasshopper Creek, Montana in June 1862. White's party was heading to Idaho's Salmon River placers, until word from returning miners told them that all the 'choice' spots were taken. They decided to head toward Gold Creek, Montana, but ended up at Grasshopper Creek (Billington 1949; Paul 1988; Smith 1992; Spence 1978; Toppings 1992; Webb 1961; Wolle 1953). In the summer of 1862, White's party had hit the often dreamed about "mother lode." As historian Duane Smith (1992:23) calls it, "the mysterious mountain telegraph" was on-line once again spreading news of the strike quickly. Miners from regions in Montana, Colorado, Idaho, and California rushed into what would be Montana's first boom town, Bannack (Malone 1981; Smith 1992; Toppings 1992; Webb 1961).

As of September 1862, the population of Bannack was fifty inhabitants. Within a month, the camp population grew to well over 400 residents (Billington 1949; HRA 1982; Rohe 1984; Webb 1961). The growth continued in the following year. Spring population estimates are around 1,000 individuals and the summer peak estimate is nearly 5,000 (Rohe 1984).
A visitor from Central City, Colorado to Bannack in late winter was shocked to see that this camp was called a town (Graves 1991). He saw no permanent buildings, only log cabins (Smith 1992) indicating that "those people who came to 'the diggings' were boomers, people who would hurry off to the latest strike with no intention of settling, but only to strike it rich" (Graves 1991:12). This unknown visitor believed that Bannack would not be a permanent town like his Central City. He was right. As news of other findings occurred, people left for those other strikes and bonanzas (Malone 1981; Spence 1978).

While the White party had been the first to make a strike of any substance, Henry Edgar and William Fairweather are credited with the richest placer discovery. Edgar and Fairweather, camping along a tributary of the Gallatin River, panned for gold. When they returned from Bannack with supplies, hundreds of prospectors followed them back to Alder Gulch (Billington 1959; Smith 1992; Webb 1961). The town of Virginia (originally Varnia) City was established on the same day as Edgar and Fairweather returned to the gulch on June 6, 1863. The miners who followed Edgar and Fairweather back lived in caves, tents, wagons, or under the stars (Smith 1992).

Boasting a population over 4,000 after twelve months and 10,000 after eighteen months, Virginia City began to resemble a town (Billington 1949; HRA 1982; Malone 1981). Virginia City took over as the Territorial capital from Bannack, but as with Bannack, the title was not enough to keep Virginia City populated. The town's location inhibited it from greater access or becoming a supply center like the next territorial capital, Helena.

The ore from Alder Gulch could not last forever and by 1870 started to play out. This gave miners the signal to start looking for new fields within Montana, like Silver Bow Creek or the Garnet Mountains, or outside Montana at such locations as the Yukon or Alaska (Graves 1991; Malone 1981).
CHAPTER THREE
MINING TOWN CHARACTERISTICS

Even though archaeological sites may differ in content through time and space, the processes responsible for their initial formation should remain generally the same (Stevenson 1982:261).

A large part of the mining history within the west is associated with the mining camps themselves. The mining camps may be viewed as many things: as a lodging community, a golden lined utopia, a trade center, a grave yard, or a part of American migration behavior. Historians Smith (1967), Spence (1978), and West (1979) saw that the camps had established patterns, but they attributed these patterns to previous knowledge and technology derived from experiences in the California camps. These California camps set the parameters for succeeding camps and towns in the American West. This experience was evident within a poem passed down the line: "a good silver mine is above timber-line, ten times out of nine" (Spence 1978:28).

An essential question is whether each mining camp was unique unto itself or was its development part of an underlying pattern within the west. The mining frontier consisted of a series of sporadic thrusts and retreats of clusters of individuals "from both east and west into the cordilleran middle." (Paul 1988: 25; Murray, R. 1972). Camps and towns arose overnight as the mining frontier opened. The first groups, exploratory miners, lived in small clusters/camps until an organized financier or mining companies came into the settlement.

R. H. Morse described mining camps in simple terms which will be referred to through this section as an underlying definition. Morse's definition of a camp, as quoted in Hardesty is:

a place where deposits have been located, miners colonize the island, which is surrounded by what is to them a social and cultural wilderness (Hardesty 88:1).

Morse's image that ore deposits represent "islands" of economic utility is fundamental to the notion of "islands of urbanization" (Smith 1992). Ore deposits are "available only in geographically circumscribed areas and can be obtained at least cost, only at these specific locations" (Langehorne 1976:77). Thus, the desired locality of camps and towns would be within close proximity of the ore, if not right on top of the deposit.
Since most gold deposits are located within mountains or semi-mountainous terrain, one finds the majority of mining camps in such settings. The general landscape characteristics of mountainous terrain settlements not only isolated individuals from main arteries of transportation/trade, but also the climatic and topographic relief made access to camps difficult (Rohe 1984; Smith 1967). With similar environmental settings, one would expect the major differences in the various camps to be found in details of building construction, camp planning, and longevity of the camps (Hardesty 1991).

For the majority of cases, placer camps were particularly unpredictable. With a migratory population, often in the thousands, and depths of gold deposits unknown, a placer camp could last a few months or a few years, but rarely over an extended period of time (Rohe 1984; Smith 1992; Spence 1978). For "thousands of communities that grew up around the new mineral discoveries" (Webb 61:10-11) it was almost a cycle. The cycle included a rush to a drainage, growth, the unfortunate or latecomers leaving for the prosperity of other gulches, stabilization or a plateau in population, and then decline (Paul 1988; Rodman 1985; Rohe 1984; Smith 1967, 1992; Spence 1966). As Rohe states:

During the first months of their existence mining settlements experienced a great explosion of population. The flush period typically proved short, never more than six years, usually no more than half of that, and not uncommonly, only a season. If more stable forms of mining followed or other industries became important, population eventually leveled off. If not, population continued to decline until none remained. Bannack, Montana provides a fairly typical example (1984:111).

For a few fortunate towns there were other opportunities for stabilization, rather than reliance on profitable mines. Known as trade or supply centers, these communities had greater status and opportunity for permanence because of locality on trade routes, planning by initial residents, commercial investors, and business diversity. Typical trade centers were planned and staked out and did not rely on the usual sporadic growth to direct building construction (Paul 1988; Reps 1975). Regardless if a mining community was prosperous or not, the initial camp planning "began with its commercial area closely built up along a street specially laid out for its development" (Rohe 1984:108).

Unplanned long habitation and anticipated quick departure were factors seen in the general appearance of mining sites which included overlapping properties and few, if any, streets. Camps and towns initial habitation structures were simple: lean-tos,
tipis, wickups, rudely constructed wood cabins, and tents. Tents offered owners with limited capital the opportunity to move and settle with great ease. The canvas construction allowed miners the flexibility and freedom from paying the often inflated rates for lumber which usually occurred with the rushes into new camps (Graves 1991; West 1979). The isolation of these camps often increased the cost of building materials, mining equipment, and food staples. Upon knowledge that the camps would not generally last longer than a few weeks, crudely constructed cabins were often erected. Considerations toward winter weather usually meant either stuffing cracks in cabins with newspapers, cardboard, or mud or heading south to other claims. Log structures were easily supplied from neighboring woods. Energy expenditures for logging, not to mention the time factor, seemed greater than most men wanted to spend away from the mines (Smith 1992).

After log structures, the next "sure sign of progress" (ibid:25-26) was the construction of frame buildings, false fronts, and sometimes stone buildings. As time progressed, the log constructed business buildings were replaced with one and a half or two story wood frame buildings. False front on businesses were initially designed to cover log structures and distinguish commercial buildings from residential ones. Yet little distinguished the various business activities except the painted lettering on the false fronts (Heath 1989). While many business buildings made use of the false fronts, residential builders consistently stayed away from it.

According to Heath:

the wooden commercial front, then reflects the first attempt at stability on the Western frontier...If the town flourished, the humble, wooden structures would soon be superseded by buildings of grander scale and more previous materials; if the mining venture failed, the abandoned buildings remained like a banner of defeat (ibid:201).

The construction and elaborate decoration of these false fronts gave the appearance of a prosperous business. The use of large windows to display goods within the store is just one example. The merchant’s "goal was to appear legitimate by approximating, in sawn lumber and plate glass, the kinds of buildings being built of cast iron or brick in more established cities" (ibid:206).

Rohe believes that in fact vernacular architecture in the western states originated from "elements of prevalent eastern styles which served as residential structures" (1984:104). Yet not all stylistic elements can be accounted for by eastern standards. Preferences are seen in adaptive features, such as...
those related to the heavy snow fall in the high altitude mountainous regions. "Snow loads required increased roof pitches and braces," (ibid) and caused the reduction of overall roof size. Smaller roofs were also a reflection of the need to reduce heating costs. Besides changes in roof pitches, basements were not constructed due to their difficulty in construction in the mountainous soil and time requirement. Another reason stemmed from the fact that cellars or berms functioned adequately.

No matter what the type of mining community is present in the west, all are a segment of the archaeological record. Archaeological excavation at historic mining sites not only supplements any existing documentation, but gives further interpretation of the site. Archaeologists must be aware of the total dynamics involved for mining communities. With the advancement of new technology and better access to mines, reoccupation of the abandoned or nearly abandoned camp sometimes occurred. The reoccupation sometimes disturbed previous materials and created layers of accumulations. With this introduction to key features of a typical mining town, I will now focus on the mining town of Garnet, Montana.
Buildings of log and frame construction were erected in haste, without foundations and with little thought to design or performance. Garnet was built to take advantage of the opportunity and not to last (Bureau of Land Management [BLM] 1982:1).

In 1859, Captain John Mullan commenced construction of the military trail from Fort Benton, Montana to Walla Walla, Washington (Billington 1949). It is rumored that his men may have prospected for gold along Bear creek, Montana as they constructed the trail. Yet it was not until 1865 that news of gold along the Bear creek was heard throughout Montana (Cushman 1964). Miners followed the Bear creek back into the Garnet mountains and several camps were established. Beartown, located further up Bear creek, has been considered Montana’s last great placer discovery and placer camp.

Because the rich placer deposits, location within the gulch, and proximity to Mullan road, Beartown had opportunities to become more than just a mining camp. The town evolved into a supply center for the over 5,000 miners who lived throughout the Garnet Range. The steep elevation and the narrow gulches did not allow easy or frequent passage to other camps further up in the mountains (BLM 1982; Daley and Moher 1973; Hammond 1983; HRA 1982; Wolle 1953).

The town followed the typical plan for a western mining settlement. The September 6, 1931 edition of the Great Falls Tribune published Mary J. Pardee's observations and extracts from her own journals on Beartown:

Bear gulch is narrow, steep-sided, gravel-bedded and widens in only a couple of places to as much as a few hundred feet. The 'bowl' wherein Beartown lay is no more than a quarter of a mile long and 450 feet wide. But for canyon like openings at either end, it is hemmed in by ragged mountains. Into this small area Beartown life seethed for fifteen years. For the most part, buildings were one-story, one-room and of logs, although Ball's Hotel and Pelletier's Saloon attained two-story height. Roofing was either of sod or shakes; flooring was of dirt or rough lumber. A typical cabin of early Beartown was a one room shack, about 10 by 12 feet, often smaller, built of roughly matched logs, loosely chinked and roofed with shakes. This was a
cabin of a bachelor. The very few who lived there with their families had nicely constructed cabins of several rooms and more carefully furnished. In all of them, cooking was usually done over large, open fireplaces. Stoves were too hard to pack in (Daley and Moher 1973:10-11).

After four seasons of work, the Bear no longer produced yellow particles the size of wheat, prompting men to leave and search elsewhere. By 1870 the population dwindled to less than 600 inhabitants.

Even before the population decline, not all who initially came to Beartown stayed there. Many were lured away with promises of rich strikes elsewhere while others followed the drainage further up into the Garnet mountains. Col. G. W. Morse and his party went into the mountains during the mid-1860s. Jack Reynolds, prospecting at the headwaters of the Elk Creek, found gold and staked a claim in the Garnet Range. His claim and word of its potential worth created Reynolds City on June 9, 1865. The prospects looked so promising that within six weeks over 130 homes were built in the town. Some of the other camps established within the Garnet mountains are Elk Creek, Springtown, Top O’Deep, Yreka, and Garnet.

Once simple placer mining became less profitable, miners turned to hard rock mining as a way to extract ore. The community of Garnet lies at the junction of First Chance and Williams Gulch. In 1867, the first mine, the Lead King, was established near these gulches, followed by the Shamrock mine and Tiger mines. Sam Ritchie claimed the most famous mine, the Nancy Hanks, in 1874. The Nancy Hanks did not reach high volumes of production until 1895 (Hammond 1983; Toppings 1992). Part of the delay in the full production of the Nancy Hanks and other mines was due to the transportational limitations and needed hard rock mining techniques. The lack of suitable roads to the Garnets and the inability to transport ore efficiently leads to a decline, but not total abandonment of the mountains.

Completion of the Northern Pacific Railroad (1883) along Mullan Road brought transportation and a new lifeline to Bearmouth and the Garnet Range. However the Northern Pacific Railroad was not sufficient by itself to spur mining activities. The 1893 repeal of the Sherman Silver Act plummeted already declining silver prices and created a desire to return to gold and the Garnet mountains.

Dr. Mitchell, accompanied with his colleague and mining partner, Dr. Mussigbrod, built a stamp mill on the "china" or "Chinese" grade, near the mouth of the Red Cloud Creek. Initially the Mitchell-Mussigbrod mill was for processing the ore obtained at the Doctors’ claim. Later other claims in and around
Garnet sent their ore there. Soon after Mitchell finished construction on the mill (1896), the Nancy Hanks mine hit a rich vein, causing a boom to the area and the community of Mitchell. By fall 1896, the camp of Mitchell, located further up the gulch, had become a town with ten commercial buildings and a number of private residences (Hammond 1983; Meyer 1992). By the time the town warranted any interest from outside newspapers, the town’s name had been changed to Garnet after the death of Dr. Mitchell (HRA 1982; Smith 1992) for reasons unknown.

The Bear Mountain News (January 27, 1898) publisher, Boos, could not resist the opportunity to comment on Garnet’s lack of regard for construction, town planning and the general questionable durability of the structures. His suggestions to the residents were ignored. Boos’s observations suggest a typical frontier boom town. Helen Hammond, in her interviews with local residents, paints a similar portrait of the town that Boos did.

The buildings were constructed quickly and generally without foundations. Most were small and built of logs with low ceilings and few windows, so they were fairly easy to heat. Some roofs were constructed with two layers of board with sod laid between for insulation. The ceiling, if any, often were just of cloth stretched form wall to wall. Chimneys were built of clay, since bricks had to be hauled up the steep road from the railroad station at Bearmouth. Unfortunately, after a few years the clay cracked and fire occurred" (1983:18).

The structural features of the homes within Garnet indicate a (probable) lack of energy investment towards construction, not to mention the expense of material transported up the mountain (BLM 1982; Lawerence 1981). Large windows were not only expensive and difficult to ship, but also allowed greater amounts of heat to be transferred during the winters (Cushman 1964). Many residential cabins only have one or two small windows, unlike commercial buildings which have a higher frequency of larger windows.

The construction choices of Garnet residents, according to historian Toppings, stem from the fact that they were:

hampered by the hellish tight bends on the road called the "chinee(sic) grade" which came up from Beartown. Garnet residents found it uneconomical to import high grade building materials. Instead they fashioned their town from those items that the mountains themselves provide: logs chinked with mud from the creek, rough-hewn lumber in very limited quantities and clay for fireplaces. The fireplaces turned out to a big mistake. In time, the clay
cracked from the heat of the big fires that Montana winters required and the buildings burst into flames (ibid 1992:56).

In a similar article, historian Cushman (1964:10) feels that "Garnet was a town built in haste. It was not a town built to stand. Permanence was not an overriding factor in any of its construction" (1970:10). The cycle of discovery, boom, plateau, decline, and abandonment became so routine that many miners expected it. It was also common knowledge that it was wiser to spend one's time developing one's claim rather than wasting energy in constructing a house that one only slept in (BLM 1982; Ellingson 1970; Lawarence 1981).

Another possible factor affecting construction at Garnet was that very few individuals actually owned the land beneath his/her home (Hammond 1983; HRA 1982). This may have affected investments in structures. However, because records prior to 1917 are listed by surname and legal location, title searches are incomplete (HRA 1982:65) and it is difficult to quantify landownership. Helen Hammond explains that:

Tax records frequently noted the presence of buildings on individual claims, but seldom was the name of the structure was given, its location, its size, or its use. No townsite map is on record in the Granite County Courthouse. Neither Sanborn Company or insurance maps are available. Rarely, were the builders required to purchase the land because Garnet was built on mining claims. Instead, a fee was paid for the use of the land, and the owners paid the taxes on the claims. When a building was vacated, it became the property of the claim owner (1983:18).

As an example of shifting ownership, local legend has it that a bachelor built the Honeymoon cabin on Frank Davey's claim, but upon the miner's departure, Davey acquired the cabin. Davey rented it out to newlyweds, thus the name Honeymoon cabin (Garnet Preservation Association [GPA] nd).

When the town's population peaked in 1900, there were over 1,000 inhabitants and twenty mines in operation. Garnet had the flavor of a typical mining town with its thirteen saloons, gambling halls, and a brothel. Less typical of a mining town was the presence of a strong miner's union, families and a school. As the quartz mining returns started to decline and costs of transportation rose at Garnet, it coincided with the news of great gold discoveries in the Klondike (BLM 1982). These two events siphoned off the populace and marked Garnet's first decline. By the year 1905, the population of Garnet was well under two hundred residents, with only ten miners working at the
Nancy Hanks. Efforts were made to maintain the population with attempts to acquire a telegraph line into Garnet or a railroad spur up from Bearmouth. Neither were successful (Garnet Mining News 10/6/1898; Hammond 1983; HRA 1982).

Garnet's second decline began in 1912. With an almost 80% decline in the town's 1900 population, a 1912 fire destroyed much of Garnet's commercial district, and shattered any remaining hope for revival. Many of the discouraged residents did not have the insurance to rebuild and left the town (Fitzgerald, personal communication 1993; Meyer 1992). This event was followed by World War I. The war syphoned off many residents from the Garnet mountains and mines and into towns and higher paying factory jobs. In fact, almost all the mines, except the Dewy, closed by 1916. One of the town's longest inhabitant, Frank Davey, stayed to run his store for the few remaining residents. Fortunately, his store, Kelly's Saloon, Ole's Saloon, and the Well's Hotel survived the 1912 fire.

Garnet seemed to be more of a town whose inhabitants had left on vacation rather than an abandoned or ghost town. Cabins appeared fully furnished, waiting for the inhabitants to return (GPA nd). Eventually, some residents did return occasionally, particularly in the summer (GPA nd). The unemployment of the depression and President Roosevelt's 1934 action to double the price of gold to $35.00 per ounce brought new life back into forgotten gold mines. It stimulated hundreds of unemployed people to move back into the Garnet mountains and Garnet. By 1936, there were 250 people residing within the town. The resurgence of Garnet included the construction of a few new buildings; a new school, some residences, two saloons, and a new mill by the Mountain View Mine owned by Pete Shipler and Samuel E. Adams were built. Not many homes, however, were built (HRA 1982; Morin, personal communication 1994). Many people, like the school teacher and her husband, moved into an abandoned cabin (Hammond 1983; HRA 1982).

The renewal did not last long and soon Garnet experienced its third decline. America's involvement in World War II had a dramatic effect on the town. The military's demand for dynamite, the "cessation of mining for nonstrategic minerals" (Kingsbury 1988:4), and the lure of higher paying factory jobs initiated the final decline. Yet, as most historians agree (Hammond 1983; Meyer 1992; Toppings 1992), it was the death of Frank Davey in 1947 that transformed Garnet from a living town into a ghost town. Upon Mr. Davey's death, an auction (November 1947) was held to sell off his possessions (Hammond 1983; Kingsbury 1988).

For a period of about twenty years after the auction and until the Bureau of Land Management (BLM) took over the town in 1969; its fate, along with the town's cultural heritage, was in the hands of vandals, bottle collectors and the elements (BLM
1982; Lawarence 1981). Materials such as the Wells Hotel’s wooden staircase, stained glass windows, and wallpaper scraps were lost. The BLM selected Garnet as one of the ghost towns within Montana that it wanted to preserve for stabilization as a part of the state’s mining history (Lawarence 1981). The State Historical Preservation Office and the President’s Advisory Preservation Council entered into an agreement with the BLM that states the BLM:

shall stabilize, protect, maintain, repair, preserve, rehabilitate, restore, and reconstruct buildings, structures and sites and construct and maintain visitor use facilities (BLM 1990).

In accomplishing this, the Bureau of Land Management has stabilized, restored, maintained, or repaired a majority of the buildings located in and around Garnet (Map 3; Figure 4). The town has become a popular tourist attraction for people around the world, as the guest register attests. In 1978, the townsite was nominated and declared a national historic site (McLean and McLean 1980). The history of Garnet with its three periods of decline allows for a unique case study to be done on the principles of abandonment.
Map 3. A sketch map of the town of Garnet as seen in 1994 (Garnet Preservation Association n.d.). The key to this map are seen in Figure 4.
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<table>
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<tr>
<td>1</td>
<td>Dahl Saloon built in 1938 and operated until the mid 1940s</td>
</tr>
<tr>
<td>2</td>
<td>Kelly's Saloon built before 1898 and owned by B. Moore. Sold to Kelly.</td>
</tr>
<tr>
<td>3</td>
<td>Frank Davey's store built about 1898. Auction held here in 1948</td>
</tr>
<tr>
<td>4</td>
<td>Wells Hotel built in 1897. The hotel closed in the 1930s.</td>
</tr>
<tr>
<td>5</td>
<td>Site of the Miner's Union Hall built in 1898. It collapsed due to snow.</td>
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<tr>
<td>6</td>
<td>A jail built in 1897, but rarely used by the residents.</td>
</tr>
<tr>
<td>7</td>
<td>Built in 1938, this building served as the second Garnet school</td>
</tr>
<tr>
<td>8</td>
<td>Billy Liberty's Blacksmith shop. Built sometime between 1896 and 1900.</td>
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<tr>
<td>9</td>
<td>The livery stable built between 1896 and 1900.</td>
</tr>
<tr>
<td>10</td>
<td>Samuel Adams' carpenter's shop built between 1896 and 1900.</td>
</tr>
<tr>
<td>11</td>
<td>The Honeymoon cabin built between 1986 and 1900.</td>
</tr>
<tr>
<td>12</td>
<td>Homes to various miners throughout the years.</td>
</tr>
<tr>
<td>13</td>
<td>Originally a miner's cabin, later in the 1930's the post office</td>
</tr>
<tr>
<td>14</td>
<td>Adams home built between 1896 and 1900. They lived there until 1927.</td>
</tr>
<tr>
<td>15</td>
<td>Will's cabin built in the 1930s. Ms. Godkin-Palermo's father lived there.</td>
</tr>
<tr>
<td>16</td>
<td>Rented residence of Fitzgerald family until 1911.</td>
</tr>
<tr>
<td>17</td>
<td>Bill Hebner cabin built in 1949. It presently serves as the guard cabin.</td>
</tr>
<tr>
<td>18</td>
<td>Site of the H.M. Stringham's General Grocery store built in 1887. Stringham stopped business in the 1930's and in 1971 the building was destroyed by arsonists.</td>
</tr>
<tr>
<td>19</td>
<td>Ole Dalh's home built in 1938 and lived in until the 1960s.</td>
</tr>
<tr>
<td>20</td>
<td>Originally a cabin built between 1896-1900, later became a storage facility.</td>
</tr>
<tr>
<td>21</td>
<td>Hanifen house built in the early 1900s. Mrs. Clearly lived there in 1926.</td>
</tr>
</tbody>
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Figure 4. Key for the map 3 on the previous page.
ARCHAEOLOGICAL inference is the process of assessing and synthesizing diverse lines of evidence to produce well-founded statements about past (e.g., chronology, diet, social organization, climate) (Schiffer 1988:477).

Interest in abandonment processes, as a part of settlement pattern studies and formation processes of the archaeological record, started in the early seventies. Following in Ascher's (1961, 1968) footsteps were various other archaeologists who were concerned with the effect certain cultural or natural processes had upon a site (Baker 1975, 1978; Binford 1978, 1979, 1980; Bonnichson 1973, Cameron 1991, 1993; Schiffer 1972, 1976, 1983, 1987, 1988).

Michael Schiffer (1972, 1976, 1987), suggests that five main variables of abandonment explain most of the variation in refuse seen within the archaeological record: rate (slow and planned vs. rapid and unplanned), anticipated return, means of available transport, distance to next settlement, and season of abandonment. Many other archaeologists have been interested in one or more of the variables of abandonment (Bonnichson 1973; Cameron 1991; Lange and Rydberg 1972; Stevenson 1982).

Yet Mark Stevenson (1982, 1985) is considered the first to do a systematic study on abandonment. Using two abandoned mining camps, Mush Creek and Bullion Creek in the Yukon, Stevenson compared their archaeological assemblages in order to examine the effects of two major variables of site abandonment behavior. He examined the manner the site was abandoned (planned versus unplanned) and the expectation of the inhabitants to return to the site (Stevenson 1982). The three other variables, as listed by Schiffer, were not investigated, because they are held constant in the comparison. Both Bullion Creek and Mush Creek experienced rushes during the same season and had equally similar transportation methods available.

Stevenson stresses that abandonment behavior observed in historic settings create hypotheses that should be tested against the archaeological record. From his research, I have selected three hypotheses related to what my preliminary investigation reveals at Garnet, a site in which abandonment was slow and planned. Below are the three hypotheses I selected.

1. "Planned abandonment without anticipated return is hypothesized to yield comparatively little de facto refuse and
few normally curated items" (Stevenson 1982:259). "Relatively few normally curated items will be found on sites undergoing planned emigration as most or value (functional, personal, monetary, aesthetic, or otherwise) would probably be taken during abandonment" (ibid:242).

2. It is hypothesized that relatively "few artifacts and features will be found in processes of manufacture, use or maintenance on sites under normal or planned conditions . . . conversely, sites abandoned under more extreme or unplanned conditions are expected to produce significantly greater amounts of de facto refuse" (ibid:241).

3. "Holding other variables constant, it is hypothesized that significantly more refuse and perhaps more concentrated arrangements of refuse would accumulate within enclosed living area on sites undergoing planned emigration where return is not anticipated. Conversely, where return is planned considerably less refuse would be discarded within enclosed living areas" (ibid:260).

Stevenson is not the only archaeologist to have done research on abandonment principles. To further understand Stevenson's hypotheses, other ideas and concepts derived from additional abandonment processes research need to be examined. With that information, one can incorporate Stevenson's work on historic mining sites into a larger framework of archaeological discard pattern studies.

No two sites have the same cultural formation processes acting upon them. Generalizations about abandonment most often are associated with individual features and structures abandoned rather than entire regions. Variation between sites, as seen in the archaeological record, may originate from the distribution (types and quantities) of de facto refuse, the kinds of curated behavior that occur, and patterns of refuse disposal for a site's inhabitants and differences in their structures (Binford 1983; Brooks 1993; Lightfoot 1993; Schiffer 1972, 1987; Stevenson 1982).

Another source of variation is the temporal component of abandonment as it affects the archaeological record (Brooks 1990; Cameron 1991; Tomka 1993). The temporal component may be broken into three categories: temporary (episodic), long term (seasonal) or permanent abandonment. Further exploration on this component is needed. This thesis focuses on the permanent abandonment of residential structures at Garnet. A unique perspective on this temporal component is the fact that structures at Garnet were not abandoned at the same time, but rather rates of abandonment changed over the decades.

There are many causes for abandonment which vary due to
circumstances pertaining to each locality. Researchers concerned with abandonment behavior are not interested in all the causes, but rather attempt to reconstruct certain processes or behavior of the inhabitants through the examination of the material culture left in the archaeological record. Archaeologists should aim to use "systematic procedures to identify, categorize, and classify variation in abandonment processes" (Brooks 1990:3). This examination may take place on several levels: regional, local, or localities within a site (Cameron 1993).

Even though abandonment may be investigated on a regional level, archaeologists must be aware of the connection between smaller localities within a region. As Schlanger and Wilshusen state:

all abandonments are part of a general process of adjustment between local populations, local conditions, and regional conditions. When abandonments occur, however, they occur as local events: houses are abandoned as regions are depopulated (1993:85).

Rarely has a region been so uniform that a catastrophic event, like war, flood, or drought, would cause its total abandonment. Regions usually do not depopulate due to one reason, but rather due to multiple reasons. Lillios, in her work on Copper Age settlements in lowland Portugal, sees that the archaeological or paleo-environmental data does not support a single factor as cause for regional abandonment (1993:110).

Because this thesis focuses on site abandonment, frameworks based on a regional scale are reviewed only briefly. Binford's (1978, 1979) research with gatherers and hunters is the basis of many models of regional abandonment (Cameron 1993). Binford views site furniture and artifact curation as key concepts to understanding abandonment within a regional setting. Another possible framework for studying regional abandonment is the mechanism at work in center-periphery relations. Access to raw material or land, along with other avenues, provides a means for investigating possible territorial, economic, or ideological struggles (Lillios 1993).

As for local abandonment, most investigative framework deals with refuse patterns in the interpretation of abandonment behavior (Ascher 1968; Lange and Rydberg 1972; Reid 1985; Schiffer 1987; Stevenson 1982). However, according to Cameron (1993:5), since abandonment processes can be continuous within a settlement, the abandonment of individual structures or activity areas may have a "direct effect on the entry of these features and the artifacts they contain" as those items enter the archaeological record. Thus, it follows, "that the operation of abandonment process and their effect upon artifact assemblages
and architectural features does not end with the termination of continuous occupation of a site" (Tomka and Stevenson 1993:192). When occupied sites are in proximity to abandoned sites, scavenging and reuse seems to occur in greater frequency as artifacts or "features are constantly rebuilt, reused, and reoccupied" (ibid) by local populations.

The documentation of settlement and site abandonment behavior stems from the presence of material culture. It is the material patterns for which inferences on abandonment behavior are made. Individual artifact attributes such as size (DeBoer 1983), weight, replacement and economical costs (Ebert 1979), artifact function, and curate probabilities relate to Schiffer's (1972, 1976, 1987) main abandonment variables. Robert Brooks (ibid) has addressed some of these attributes in relation to the rate of abandonment. By examining certain characteristics or refuse, Brooks (1989, 1993) attempted to imply the behavioral characteristics of planned or unplanned abandonment. He identified three assemblage attributes from refuse located within and around structures. Before addressing his attributes, it must be noted that these attributes can be accurately measured only when post abandonment activities are nonexistent or held to a minimum.

The first attribute, size effect, correlates the presence of large artifacts with unplanned abandonment. The justification is that the energy required to transport or curate a large item is so great that it is not selected (Baker 1978). Second is refit sequence. The higher percentage of refit sequences and the greater degree of reconstruction of an item indicates the likelihood of unplanned abandonment. If planned abandonment would occur, activities such as daily maintenance (sweeping), curating, or scavenging would reduce the number of refit sequences. Third, spatial distribution tends to assist in identifying planned versus unplanned abandonment. The distribution of items during planned abandonment seems to have the proclivity toward edges of structures or support post columns while unplanned abandonment exhibits a more uniform distribution of artifacts.

At mining sites, abandoned artifacts include household items such as broken plates and cups, utensils, food containers, bed springs, refrigerators, and stove parts as well as non-household items such as nails, wagons, sleds, automobiles, tools, and mining equipment. Rothchild et al. (1993:129) devised eleven major classes for abandoned artifacts. The classes are subsistence food containers or items, alcohol or soda containers (indulgence), medicinal, personal effects, items related to food preparation, serving or storing, household furniture (equipment), recreational items, tools, hardware or construction materials, transportation related items and unidentifiable items.
By establishing patterns of artifact class quantities and documenting the presence of those classes, comparisons can be made. The importance of these artifact categories aid in the comparison between individual structures or loci. With an overview of material in and around structures, a comparison may be made between sites. The application of these classes to Garnet artifacts was not possible due to incomplete inventories and records of artifacts and post abandonment changes. What is available at Garnet are several structures that have photographic documentation of change, not artifacts within those structures (see photograph 12).

The major emphasizes in the identification of abandonment processes has been on material remains located within the structure, not the structure itself. Although Stevenson (1982) mentions the conditions of buildings located within the camps of Bullion Creek and Mush Creek, he does not detail other abandonment activities acting upon those buildings. Additional research by Cameron (1991), Joyce and Johanssen (1993), Rothchild et al. (1993), Schiffer (1987), and Schlanger and Wilshusen (1993) focuses upon the actual residential/activity structure.

The construction of a building tells a lot about the anticipated occupation span of the inhabitants and the expectation of return. A building’s use-life is "defined as the period from initial construction to final abandonment" (Cameron 1991:157). During a building’s use-life, various natural and cultural processes modify the structure and cause changes from its initial appearance.

Anticipated occupational span of a settlement assists in interpreting abandonment behaviors of structures. "The longer builders plan to use a structure, the more effort they will expend in construction and the longer the structure should last" (ibid:158). This implies that the "longer anticipated occupation should result in less frequent structure abandonment because use-life has been increased through improved quality of construction" (ibid). Thus, the inverse is that low energy expenditures on buildings will produce structures with shorter occupations. Weighing costs of construction versus costs of maintenance often influence the form of structures (McGuire and Schiffer 1983). Structures from western mining sites also demonstrate consideration by builders for construction costs, maintenance, and occupation duration. One visible aspect of this anticipated occupation is bark stripped logs. Bark is removed from logs to retard insect infestation and increase use-life (Cameron 1991). Another adaptation for longer use-life is seen with wood shingles or stick roofs versus sod (ibid).

Structures are defined as abandoned "if they were no longer water tight, that is, they lacked window glass or doors, or their roofs had holes" (Rothchild et al. 1993:129). Obviously this
definition does not consider episodic or seasonal abandonment (Brooks 1993), nor structures whose construction does not require glass or a door. Seasonal abandonment at mining camps tends to leave buildings abandoned with windows, door, and other features still intact. A difference in structure abandonment is seen by the activities surrounding a building’s abandonment and the occupants expected return.

Within a settlement, an abandonment is usually tied to the construction or presence of a new residence indicating a gradual planned move (Brooks 1993; Cameron 1991). A gradual departure allowed structures to be reused for future inhabitants, storage facilities, or scavenged for firewood or building materials. On the other hand, if the settlement is left with occupants expecting to return, maintenance of the structure will occur before departure, and certain items within the structure will be left (Joyce and Johannesson cited in Cameron 1991; Stevenson 1982). The "presence or absence of curtains, canned or other food on shelves or tables, clothing, and bed linens attests to more or less recent use" (Rothchild et al. 1993:126) indicates possible intermittent abandonment. Intermittent abandonment is the abandonment of settlements and in particular structures with the inhabitants expected return after an absence.

Another indicator of possible return, besides the maintenance of buildings, is placing boards over windows and doors. The presence of this action is more a symbol to other groups that the building is not abandoned and the occupants expect to return. Structures with collapsed or missing roofs, partial walls, broken or missing doors, and the overall lack of general maintenance represent final abandonment with no anticipated return (Rothchild et al. 1993).

By illustrating ideas and research on abandonment behavior and processes from the last ten years, a foundation has been laid for further analysis on this topic. My goal is to take Mark Stevenson’s hypotheses previously listed in this chapter along with other ideas to reconstruct the abandonment behavior, at the town of Garnet, Montana. Inferences toward other historical mining communities site abandonment behavior may be guided by the analysis at Garnet.
ABANDONMENT OF GARNET

Towns without people are thought to have taken on static form because nothing novel is added, but observations of such towns over even short periods show that changes continue in the absence of people (Ascher 1968:44).

As presented in the previous chapter, my goal is to evaluate the abandonment behavior for the town of Garnet. To accomplish this, I will first investigate Stevenson’s hypotheses as they apply to Garnet. Second, I will comment on the conditions of structures as a method to identify abandonment variables, especially rate of departure, the anticipated return, and anticipated occupational duration as factors influencing abandonment behavior. For these two discussions, I include an examination of the conditions for misinterpretations, errors, and inconclusive interpretations inherent in this study. My focus is on final abandonment for individual residents of Garnet, not necessarily the abandonment during a particular time. To understand what material I base my investigation on, let me reiterate part of Garnet’s history.

The history of Garnet, as detailed in Chapter Four, shows that it was founded by a group of people familiar with mining settlement patterns. Such established patterns demonstrate that the majority of placer camps boomed, busted, and, if fortunate, boomed again before eventual decline. The expectations of residents for the duration of Garnet fit within this pattern. Although residents realized Garnet would not last forever, many hoped that it would survive and prosper.

After the auction of Davey’s remaining material in his store, the town was left open and accessible to unrestricted reclamation processes. As mentioned earlier, the BLM assumed control and management of the town in 1969. It is this management, along with continuing reclamation processes (i.e: collecting, pothunting, scavenging, and salvage) that has conditioned the archaeological record of 1948 in comparison with that of 1993. By reclamation’s definition, these acts have disturbed the archaeological remains and brought items back into the systemic context. Aiding in this transition over the past twenty years were "cleaning" sessions and stabilizing efforts by the Green Thumbers, Youth Conservation Civilian Corps, and citizens interested in the town’s preservation.

In the initial years of Garnet’s management, the town underwent several sessions of "cleanups" or mass trash removals.
During the summer of 1969 John Ellingson and John Couch volunteered for the BLM to record structures and clean up the town. Fifty truckloads of rubbish were removed that summer at Garnet (Ellingson 1970; Lawerance 1981). The same year, plans were initialized to stabilize several buildings. Efforts to salvage (reclaim, stabilize, restore) structures altered the appearance of the town.

Photograph 5: A photograph taken of the window display at Davey’s in August 1993. The photo shows an abundant amount of de facto refuse. Notice the shoes, buckets, pans, and tools.
This initial stabilizing of Garnet has continued until the present. However, stabilization has not halted formation processes acting upon the town.

In my observations of activities affecting structures and artifacts in town, I have seen significant alterations in the historical record at Garnet that could create different interpretations. In the beginning of August 1993, the Davey's store front window sill and tables were full of artifacts to display the store's goods (Photograph 5). By the end of August, all the artifacts had been removed from the store and put into storage (Guide, personal communication 1993). The purpose was to repair parts of the floor. As of June 1994, the building is still without many of the artifacts I saw in August 1993. It may be awhile before any displays are reestablished if they are re-established at all. A volunteer guide for the BLM informed me that a high powered hose system would be used to sanitize the floors and walls of the various buildings in Garnet. Any displays or storage of artifacts would have to be moved during this procedure (Guide, personal communication 1994).

Besides the BLM transporting artifacts around Garnet, individuals have also been changing the appearance of artifact concentrations. A photography class at Garnet in June 1994 created many displays. I witnessed a woman "create" an artistic display of artifacts in Davey's Store. Another woman, in an attempt to get a better shot, dropped some artifacts as she rearranged the displays in the livery stable.

TESTING STEVENSON'S ABANDONMENT HYPOTHESIS

Stevenson's first hypothesis focuses on the frequencies of curated and de facto items in the archaeological record. Stevenson (1982:242) distinguishes curated items as objects with a "functional, personal, monetary, aesthetic" or other important value which are usually transported with the inhabitant. The only problem with determining these values, is that the values the residents of Garnet associated with artifacts may not always be the same as my interpretation. Yet according to Schiffer (1987:90), "curate behavior (Binford 1976, 1979) designates the process of removing and transporting still usable or repairable items from the abandoned activity area for continued use elsewhere". Curating occurs for more "utilitarian items in anticipation of immediate needs in the next" settlement (Stevenson 1982:244).

As for de facto refuse, there is likely to be "comparatively little" (Stevenson 1982:259) if the site underwent planned abandonment. Individuals anticipating abandonment have time to plan, organize, and select or "curate" artifacts for departure. Those who experience rapid and unexpected abandonment leave a higher percentage of valuable items behind. Thus it follows that
any *de facto* refuse found at Garnet would either be cached in a few locations (anticipated return) or left in use locations (no anticipated return) (Cameron and Tomka 1993; Stevenson 1982). In both rapid and gradual abandonment, energy expenditures, artifact variables (size, weight, replacement cost, remnant use life) as well as distance to the next site and season of abandonment "condition curate probabilities and thus influences *de facto* refuse deposition" (Schiffer 1987:92).

My initial survey of Garnet revealed few items with high curate probabilities and moderate amounts of *de facto* refuse. After continued walks around the edges of the townsite and later at the Mountain View mill and the Mussigbrod mill, I found a low frequency of *de facto* refuse. I begin by presenting the pattern at the mills and then return to the town site.

As stated above, artifact attributes like size, weight, and replacement cost influence *de facto* refuse deposition (Schiffer 1987). Large activity specific items and difficult to transport artifacts tend to be abandoned in their original activity loci (Baker 1975; Schiffer 1987). At Garnet this is an accurate prediction at the Mussigbrod mill and Mountain View mill. For both of these industrial sites, Baker's (1975) and Schiffer's (1987) assertion that very specialized tools may be left at the activity loci, especially if large or low replacement costs, is true (Photograph 6). Due to the size and weight of the heavy ore processing equipment, these objects were not removed, despite assumed monetary value. Items such as handmade benches, wooden flumes, wood stoves, wooden ore boxes, and handmade tools were not removed, probably due to the low replacement cost. Other items that are broken, but specialized to this loci, are also left. Even artifacts not specific to processing ore are located at the mills, but based on their small size, they may reflect loss. With regards to the size effect attribute of artifacts, the presence of such large items may imply unplanned abandonment. Yet the visible higher frequency of smaller items versus larger artifacts implies planned abandonment.
Photograph 6. A wooden wheel with a metal rim. It is located just north of the Mussigbrod mill and close to the location of the flume heading down the drainage toward Bearmouth.

From oral interviews (Conway, personal communication 1994; Fitzgerald, personal communication 1993, 1994; Mayer, personal communication 1994; Morin, personal communication 1994; Olson, personal communication 1994; Steffan, personal communication 1994; Therriault, personal communication 1994), little additional information was gained on the status of the mills before and after final abandonment. Since the mines were closing (Fitzgerald, personal communication 1994; Morin, personal communication 1994; Olson, personal communication 1994; Therriault, personal communication 1994), less material was being sent to the mills. The gradual decline in the need to process ore gave the owners time and ability to draw down goods and remove portable items. From the lack of great amounts of de facto refuse located at both mills, it implies planned abandonment for the mills and the town.

As one travels from the mills to the town, several dilapidated structures are seen. The walls are leaning as the roofs have collapsed within the cabins (Photograph 7). Quick examination of these cabins reveals very little refuse within the actual structures. Possible secondary or abandonment refuse may also be seen near the structure.

Although regarded as part of Garnet, my focus is on the actual town. Within the town, I will consider the address of the Davey’s store and the Wells Hotel followed by several other
structures. As mentioned earlier, Davey’s store had a full display of artifacts as of August 1993. The presence of such an abundance of de facto refuse and items with high curate probabilities suggests unplanned or rapid departure.

Photograph 7: A building near the Mussigbrod mill. Notice that the structure has completely collapsed upon itself and prevents any visual investigation of the floor.
Photograph 5 documents the presence of shoes, cups, toys, horns, furniture, tools, and various other discarded material. Yet the auction of 1947 sold many of the items left in the store and the Well’s Hotel except a few beds, tables, and chairs. As for the safe and benches, those objects were collected or looted later (Fitzgerald, personal communication 1994). Many items found in the store came from a store room adjacent to the store and were put on display (Catey, personal communication 1994). No one seemed to know where these items originated from (Catey, personal communication 1994; Fitzgerald, personal communication 1993). With this information about artifacts in the stores, a different portrait is painted for the abandonment of the town and this store.

Just west of Davey’s store is Well’s Hotel (Photograph 8). Upon entering the dining room, one sees tables, chairs, silverware, shelves and displays. Further back in the kitchen is a stove, hood, and various food preparation and serving artifacts. On the second floor, the east side rooms had beds, chairs, dressers, and a few other items. The west side rooms are full of material items. Since the windows were boarded closed, access to the rooms were prohibited by a gate, and the hotel is closed because of Hanta Virus precautions, I was not able to examine those items.

Photograph 8: The Wells Hotel
The presence of such apparent *de facto* refuse in the Well’s hotel gives the impression of unplanned or rapid abandonment. Using Brooks (1989, 1993) spatial distribution hypothesis, it can be suggested that unplanned abandonment occurred due to uniform distribution of artifacts in the dining room, kitchen, and bedrooms. The size and replacement costs might have conditioned the choice of residents to leave behind these items. Both interpretations (Brooks and Stevenson) are not correct. Andrew Scott Catey (personal communication, 1994), a volunteer for the BLM in the summer of 1988, remembers no displays on the second floor. In fact, the only displays he saw was the one in Davey’s store windows. The range and kitchen items were sold at the 1947 auction (BLM 1990; Fitzgerald, personal communication 1994). It was not until 1992 that the Well’s Hotel had these displays. Robin Freese (personal communication, 1993) of the BLM set up and arranged the Well’s displays. She is also responsible for the displays in the livery stable and various cabins. The furniture as well as other items came from a storage area holding material from Garnet, Marysville and other Montana towns, or it was donated. Freese (personal communication, 1993) said that none of the artifacts were catalogued or recorded as to its origins. With this information, it is no longer reliable to take artifacts located within the town of Garnet at face value.

An excellent example of this problem is the display in the livery stable (Photograph 9). All the items are from the turn of the century, yet no one knew if any of these items were from Garnet (Freese, personal communication 1993). The historical display of livery tools without actual documentation implies the use of these tools at this stable and *de facto* refuse. Test excavation outside revealed implements associated with horses and a livery stable (Foor, personal communication 1994). However, a test excavation within the structure reveals no organic material or other evidence to support the idea that this structure was actually a livery stable.

The individual residences at Garnet only show objects with utilitarian functions such as beds and stoves. The implication is that these structures were left slowly or gradually. Although Freese put a bed and stove in every miner’s cabin, residents verified this assertion that people planned their departure of Garnet (Fitzgerald, personal communication 1994; Freese, personal communication 1993; Morin, personal communication 1994; Olson, personal communication 1994; Therriault, personal communication, 1994).

With such reorganization of material in Garnet, it can be questioned whether there are any examples of authentic *de facto* refuse. There are at least a few. I have found three interesting examples:

Just south of the Samuel Adams family home is one of the
best examples of de facto refuse in Garnet. It is an abandoned wagon. Over the years a tree has grown within the frame and reached maturity. The fact that the tree is present suggests that no attempt was made to scavenge or collect the wagon.

The second example is on the other side of town, just west of Billy Liberty’s blacksmith shop. Perhaps to be fixed later, the wagon wheel rim was against a tree. The rim was not scavenged or collected and the tree grew around the rim.

Photograph 9: A photograph of artifacts in the livery. Notice the saddle, horseshoes and flat bottom shovels.

The third example can only be taken from photographs. In the early 1980s, the forge within Liberty’s shop was intact. During some restoration of this building, the forge was dismantled and not replaced. Fortunately, it still lies near where it originally functioned. The implication of its removal changes the forge from de facto refuse (South 1979:217) to secondary refuse from the stabilization and salvage.

Although not necessarily left in the exact area of use, there are a few other items that are worth mentioning. The first was left due to loss. In the stabilization of the Honeymoon cabin, a plastic elbow joint was left for anticipated use. It may have been left unscavenged due to its assumed low economical value. Another item is a scattering of cut logs behind the Honeymoon cabin. The appearance of immense weathering suggests a
long time since the activity occurred. The presence of the pile implies a lack of interest to collect, store, and draw down the wood. A stove, placed west of the Wells Hotel, was not taken from Garnet due to its low replacement cost. The stove was hand manufactured rather than industrially fabricated. Manufacture of another stove would require only a few items.

The last two worth mentioning, a bottle and a coffee pot, were discovered in a dump near town. Both items, thought still functional, were transported to a refuse loci for discard. The Jergen’s bottle, discarded after the contents were depleted, represents no collecting or looting upon this area.

Stevenson’s second hypothesis considers the amount material culture in the state of manufacture, use or repair. Individuals with the knowledge of abandonment are less likely to expend great amounts of energy to repair or manufacture artifacts, unless return is expected (Cameron 1991). Time is more efficiently spent on preparing for departure and evaluating items to take. Those without knowledge of departure are less likely to abort repair processes. They would leave greater amounts of functional items behind, especially if return is anticipated.

On sites with longer occupations, more accumulation of materials for future or potential reuse will occur. Artifacts requiring great expenditure of energy to repair will be seen in increased frequencies from sites abandoned rapidly. These locations would be provisional discard localities (Deal 1983) or activity areas. Similarly, the draw down process does not have time to be initialized when settlements are left quickly (Schiffer 1987). As for structures, original construction and maintenance should not be viewed as the same. As stated in Chapter Five, differences in building construction suggest perceptions on future abandonment (Brooks 1993; Cameron 1993; McGuire and Schiffer 1983; Rothchild et al 1993; Stevenson 1982).

In my initial survey of Garnet, I found few or no items in the process of use, manufacture, or maintenance. The absence of such artifacts suggests a gradual and planned abandonment. Interviews with former residents state that while they lived in Garnet many broken items were thrown away rather than repaired (Fitzgerald, personal communication 1993, 1994). Unfortunately, none of the people I spoke with could remember if they did or did not replace broken or worn out items as they abandoned Garnet. It should be noted that the several clean up sessions could have had a serious impact on the testing of this hypothesis. Any activity area that might have reflected use probably was cleaned up. These sessions would also influence the percentage of refit sequences. Although not designated to indicate the activities of use or maintenance, this sequence is prejudiced by those same cleaning sessions at Garnet.
Stevenson's third hypothesis concerns the amount of refuse and, in particular, the concentration of refuse within structures, activity areas, or near structures. The disposal of refuse coincides with its value and hinderance. With no plans to return, energy does not need to be expended on placing refuse in sanctioned trash dumps (Kent 1993). Instead, refuse disposal creates different waste streams. It is placed in corners of a room, out a window, or dumped in a hole behind the building (Fitzgerald, personal communication 1994). With plans to return, the refuse is less likely placed within living areas or structures that could attract fauna disturbances or inhibit reoccupation.

Because of the efforts to beautify and remove all the clutter in and around Garnet, not to mention stabilization efforts on some buildings and vegetation overgrowth, it is difficult to see refuse patterns within the town. There are a few buildings that could be used to test this hypothesis on refuse concentration. I have selected one.

Although privately owned, the Hawes house has no boards on the windows to obstruct a view inside (Photograph 10). There is an abundance of refuse on the floors. Some items that are visible are a woman's shoe, a sink, two coats, bed mattresses, bricks, two pairs of pants, benches, metal bed frames, refrigerator, and washer. Some of the artifacts are covered up by loose boards, newspaper, and cardboard distributed by environmental processes acting upon the structure. Olson (personal communication, 1994) said his relatives, the Hawes, left everything behind in anticipation of return. The Hawes did return for a while. Olson said that the years of neglect and vandalism have taken its toll on the building. He has never gotten back up there to clean it (Olson, personal communication 1994).
Photograph 10. A pile of refuse adjacent to the Mountain View mill. The debris appears to be random with some downslope assortment of items occurring.
The present display of a great amount of refuse within this structure, as compared to other structures, suggests planned abandonment without return. Spatial distribution of refuse is uniform throughout the whole building suggesting unplanned abandonment (Brooks 1989, 1993). It is only by personal communication that it is known if the occupants of this cabin intended to return followed by abandonment with no anticipation of return. The natural formation processes illustrate their influence upon interpreting spatial patterns as an indicator of anticipated return.

Returning to the Mussigbrod mill and Mountain View mill, refuse amounts and concentrations are more visible. Neither mill has undergone salvage processes or acts of cleaning. As structures with specific activities located there, the refuse should reflect that specialization. The presence of refuse in the mills appears random, but tends to concentrate along structure walls or concrete features (Photograph 11). The closer to the wall, the larger the size of the refuse. Since individuals did not live within the mill, the concentration or amount of refuse would not interfere with habitation routines or the eventual reuse of the structure. The refuse at the mills implies planned departure with the possibility of return. The fact that both mills have been susceptible to environmental processes introduces other influences on the reoccupation of the mills.

ANTICIPATED ABANDONMENT IDENTIFICATION BY STRUCTURES

As shown in the previous chapter, structures have also been used to assist in the identification of abandonment variables. The three variables that I am interested in are anticipated return, rate of departure, and anticipated occupational duration. If individuals did not intend to stay long, the structure he or she built would reflect that anticipated abandonment. No one building will be used to identify these three aspects in abandonment, but rather the general pattern at Garnet as seen at several buildings will be assessed. It should be noted that the sample size of structures at Garnet is small and reflects several occupational episodes from 1895 to World War II.

First to be addressed is the idea of anticipated occupational duration. Generally the more energy expended on the construction of a building, the longer the duration the building is used. Usually the abandonment of a structure relates to the presence of a new structure or intentions to build a new structure. If a structure is built to last, the impetus to leave must be fairly strong.

Generally higher building costs reflect a higher quality of building and a longer use life. Building costs refer to energy
expenditure and raw materials. There was no need to invest great principal in a cabin one did not expect to stay in for long. This is evident by the presence of few and small sized windows on log structures or the lack of decorative detail (Photograph 11). A possible consideration for the lack of windows beside the desire to prevent excess heat loss is the actual cost of the glass. In Bannack, Montana, 1862, "a sheet of glass measuring eight by ten inches cost $2.50, nails cost $1.40 a pound, and whip sawn lumber cost $400.00 per thousand eighteen-foot lengths" (Heath 1989: 204). Incomplete records were found on the cost for materials at Garnet.

Yet an aspect in construction selection that is not readily distinguishable is length of the duration that the building is used. Usually the abandonment of a structure relates to the presence of a new structure or intentions to build a new structure. If a structure is built to last, the impetus to leave must be fairly strong. Individual motivational factors must also be taken into consideration when examining structural duration and building preferences. Improvements on these structures could be made when finances permitted, motivation occurred, or duration was expected to continue longer than anticipated. There is no documentation to support or deny this assertion that all buildings with small windows, no foundations, or low pitched roofs imply short occupational duration.

Photograph 11: The photograph of the cabin shows a rather large window, but does not show it is the only window in this structure. Also note that this structure has barked logs, no foundation, and a dirt floor.
An obvious feature of anticipated occupation duration in building construction is bark on logs. Log buildings with bark still on the logs tend not to last as long as barkless ones or those of sawed lumber. The majority of homes at Garnet have barked logs. This may be a reflection of individual styles or anticipated duration. The implication is that these homes were built fast and with low construction costs. Supporting this is the presence of several logs with a flower shape at the end of the log. The design, created by resin, suggests "that the builder did not let his logs dry out properly" (Miller 1974: 26).

Another indication seen in construction is the presence of sod roofs. Sod roofs do not last as long as wood shingles or planks, because of the easier insect infestation and moisture retention (Cameron 1991). "Items were often hung from pegs on the wall to safe guard them from water damage from the sod roof" (Heath 1989:202). Frank Fitzgerald (personal communication, 1994) mentioned many cabins had sod roofs, but the sod was sandwiched between the sawed planks. Hammond (1983:8) also mentions this combination roof type. Fitzgerald (personal communication, 1994) could not remember which cabins had this combination. Unfortunately, photographs taken of Garnet do not reveal in close detail the type of roofs. The wood planks indicate an attempt to extend the duration of the sod roofs or increase their pitch for winter use. The Bureau of Land Management's stabilization of buildings using wood shingles and/or planks is done with the intention of duration and longer use life for the structures.

Photograph 12: The Honeymoon cabin after restoration in September 1993. The roof has planks and the gravel around the base is for a drain field.
Related to anticipated occupation, as seen in building construction, is the presence and location of formal storage and refuse deposit loci (Kent 1992). If inhabitants plan for long occupation, formal refuse loci and storage facilities will be established at the onset of habitation. On the other hand, inhabitants who anticipate short occupation will scatter refuse throughout the settlement. Also anticipated occupation will influence the amount of material one brings with them to a site (ibid:641) and thus affect quantity as well. In the town of Garnet, there are a few large concentrations of refuse. The largest concentration is just over the hill from the Adams family home. Former residents speak of a dump on the edge of town, but no mention to its exact location.

The establishment of the trash dump, south of the Adams home, implies a longer anticipated occupation. Yet the presence of smaller refuse concentrations and the fact that individuals dumped behind individual residences (personal communication, Fitzgerald 1994; personal communication, Olson 1994) indicates probable short anticipated occupations. Another explanation may be related to refuse hinderance and value or residents motivation to transport refuse to other loci within the settlement. As for material brought with people to Garnet, Mary Jane Adams Morin (personal communication, 1994) said bachelors brought only their personal belongings with them to this mining community. By transporting minimal amounts of items likely to be discarded, there would be a lower frequency and diversity of the items that were actually discarded.

The application of formal refuse loci at Garnet is not without its misinterpretation. Again the several cleaning sessions at Garnet would seriously impact any interpretations about smaller, more scatter loci of refuse.

The second aspect to identify abandonment in structures is the speed of abandonment. This identification is difficult. A comparatively easy way to detect rate is through buildings in the process of construction or maintenance. The elapse of time between Garnet’s final abandonment and the early 1970s biased any evidence of construction. No mention was made in the historical record or the oral interviews pertaining to any construction that was halted or not completed due to departure. It is my conclusion that this aspect of building construction is not visible at Garnet.

The abandonment of Garnet, as stated by the residents was gradual and planned, not rapid. According to Schiffer:

In a settlement with a rapidly dwindling population, availability of building material will probably excel the demand, leaving many abandoned structures intact. For example, rapid boom-bust cycles in
metal markets created many ghost towns in the western United States that contained unsalvaged structures. Settlements that have intact structures could have undergone a very rapid growth and perhaps an equally rapid decline (Schiffer 1987:109).

Schiffer’s assertion is fairly accurate at Garnet. Garnet grew quickly, yet declined slowly. In the 1930s, re-occupation of Garnet included the reuse and salvage of abandoned structures for inhabitation. There was no need to build all new buildings for reoccupation when there were still functional buildings present. Today, Garnet has several intact buildings, thanks to the salvage acts of the BLM (Fitzgerald, personal communication 1993, 1994; Godlin-Palermo, personal communication 1994; Morin, personal communication 1994). Environmental processes at work on structures facilitated the collapse of several buildings due to heavy snow falls. Arson destroyed at least another three buildings (HRA 1982).

The third aspect of abandonment, shown at residences and business locations, is anticipated return. Identification is only visible by residents’ actions or lack of actions. The presence or absence of a building, along with the construction materials, assist in the identification of anticipated return. If a structure is abandoned and return is anticipated, there must be signs to inhibit use by others. The Hawes house had a padlock on the door and boards on a side entrance to prevent intruders. These actions symbolized return, not necessarily actual reoccupation. Another building, presently privately owned, has the windows boarded up and door locked for the inhabitants eventual return.

If a structure is abandoned and the inhabitants are not expected to return to the structure, it becomes available for others to use. As for anticipation of return, only one of my informants expected to return and did return to live at Garnet (Mayer, personal communication 1994). The others had no expectation to return. Mayer (personal communication, 1994), who returned to Garnet after a four year absence, did not say if her home was boarded up, locked or left open between occupations. One individual witnessed the effects of reclamation on the home she occupied. Conway (personal communication, 1994) moved to Garnet in the 1930s. The house that she and her husband moved into had the basic furniture and was fairly sound. After she left, she returned in the 1950s to witness the house she lived in being torn down for firewood. There would be no return to this residence. Several cabins within Garnet today are being used as storage facilities, indicating no anticipation of return, but the act of salvage for present use. Collapsed buildings signify final abandonment and no return.

Using structures as a method of identification for
abandonment is a difficult task. The results are not decisive for the analysis at Garnet. The longer the time between final abandonment and the initial salvage or documentation, the greater influence formation processes will have on a site. This is especially accurate on a building. As seen with Garnet, the present standing structures represent different occupational periods, anticipated lengths, construction costs, expectations on return, and salvage efforts. Maintenance with the intent to extend use life on these structures did not occur until the property was in the BLM’s administration (Fitzgerald, personal communication 1994; Godkin-Palermo, personal communication 1994). BLM’s actions reflect Garnet’s final abandonment and their efforts to "salvage" the town as a historic landmark. Conclusions on this and the rest of my analysis on Garnet’s site abandonment behavior will be discussed in the following chapter.
CHAPTER SEVEN

CONCLUSION

Archaeology provides one reality. Ethnography provides a separate reality. History provides yet another one. Each perspective is valid as the next one. There is of course still another reality, namely the one that which actually occurred in the past (Adams 1978:52).

Garnet’s history as a placer mining camp, a mining town, and a Bureau of Land management’s recreational ghost town provides an interesting case to test abandonment hypotheses. Taking the postulates from Mark Stevenson’s 1982 article, I have further documented the role of site abandonment behavior. In addition, the investigation of anticipated abandonment as seen in structures contributes information toward site abandonment behavior for this mining town.

The original application of Stevenson’s hypotheses to mining camps held the distance to next settlement, means of transport, and season of abandonment variables constant. At Garnet, the distance to the next settlement for most residents was over fifty miles (Fitzgerald, personal communication 1994; Mayer, personal communication 1994; Morin, personal communication 1994; Olson, personal communication 1994; Steffan, personal communication 1994). All residents had access to freight wagons down the mountain and tended to leave in the fall before it snowed. Holding these three abandonment variables as constant for the town, the "hypothesized archaeological scenarios" (Stevenson 1982:262) for Garnet should be similar to Stevenson’s hypotheses for Mush Creek. They were.

Through the various abandonments or "busts" of Garnet, an accumulation of material culture occurred. Patterns of discard behavior were established for the town and outlying areas. At the time of the various abandonments, choices were made by inhabitants as reflected in the archaeological record as abandonment processes. Within the town, during any one abandonment sequence, several homes were left sparsely furnished (Conway, personal communication 1994; Fitzgerald, personal communication 1994; Mayer, personal communication 1994) while other structures were empty (Godkin-Palermo, personal communication 1994; Fitzgerald, personal communication 1994). The 1947 auction sold much of the de facto refuse from the town, thus reducing the concentration of material present in the town. The implication of such a mass removal of artifacts permitted items not necessarily collected or looted to be removed without restrictions or fear of a reprimand.

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After the final abandonment of Garnet, the various attempts to remove debris scattered around the townsite in the 1970s altered refuse concentrations. Within household units, individuals removed refuse to dumps along the edge of town or collected out of town. As seen at Mussigbrod mill or Mountain View mill, the collapsed segments of the structure have "protected" or increased the refuse concentrations in and around these industrial sites.

Fortunately, previous residents are still alive to interview about discard patterns at Garnet. Volunteers and BLM employees have provided key insight to artifact distributions in the town. All these individuals bridged many gaps between the visible historical and archaeological record. A key example was the livery. The display of objects alluded to a rapid abandonment and no anticipated return. Robin Freese (personal communication, 1993) stated the objects were placed in the livery. Test excavation within the structure questions the placement of those items in this structure.

The complexity of post-abandonment activities and attempts to reclaim the entire town has had substantial influence on the data available to interpret Garnet's abandonment behavior. This unique feature of Garnet may have significant relevance in the interpretation of material culture patterning. In comparison with some sites Stevenson (1982) investigated, neither Mush Creek nor Bullion Creek (at the time of that article) were being salvaged for recreational purposes. Yet following Stevenson's hypotheses, a planned abandonment with no return should produce little de facto refuse. This is true at Garnet.

Using structures to indicate abandonment processes is not new (Cameron and Tomka 1993). The application of anticipated return and rate of abandonment was presented in Chapter Six. Structures in the process of construction or maintenance reflect quick abandonment. Yet, if maintenance is completed or symbols applied on buildings (boarded windows or locked doors) return is expected. The overlap of inhabitation and scavenging reduced the potential to accurately identify these conditions of abandonment for all structures.

As stated by the oral interviews (Conway, personal communication 1994; Fitzgerald, personal communication 1994; Mayer, personal communication 1994; Morin, personal communication 1994; Steffan, personal communication 1994), many homes were left open upon abandonment. The reason for this may have stemmed from the idea of potential reuse by other prospectors at Garnet. Vandalism and the years of environmental processes at work on structures has created an abundance of building materials, i.e. lumber, around Garnet in the early 1970s. The cleaning sessions removed any evidence of construction, maintenance, or semi-erect buildings.
Using buildings as indicators for anticipated occupational duration as a variable of abandonment is a fairly new concept. As demonstrated, prospectors' expectations during the later half of the 1800s were that settlements rarely lasted beyond a few years. With the anticipation that a camp would not last long, the need to invest substantial energy or money was not necessary. This is possibly seen at Garnet. Several homes reflect a low investment in their construction. The presence of barked logs, flower designs at the log ends, no foundation, small and few windows, lack of ornamental features and sod roofs alludes to anticipated short occupation. Yet as mentioned previously, it is not possible to document if these building attributes stem from low motivation or financial limitations.

The Bureau of Land Management's decision to select and preserve Garnet as a segment from Montana's mining history greatly affected the town's archaeological record. The goal of the BLM was to reestablish the town by stabilization and restoring as many structures as possible. An element of their management was to extend the use life of buildings. Although important to preserve this segment of Montana's history, this preservation has altered the archaeological record, and much valuable information pertaining to the final abandonment of Garnet was lost.

It is my hope that this thesis demonstrates the need for detailed recording of sites. Even such seemingly mundane items like refuse on structure floors will further advance studies on abandonment behavior and human discard patterns. As Stevenson states:

> Even though archaeological sites may differ in content through time and space, the processes responsible for their initial formation should remain generally the same. While the exact nature of these processes may vary with level of technology, cultural conditioning, material availability, etc., cultural materials still predominantly are transferred from the systemic to the archaeological context by processes of discard and abandonment, regardless of what is being transferred and why (1982:261).

Thus, regardless if the site is prehistoric or historic, the types and frequencies of archaeological remains should be similar. Although the conditions of abandonment, site contents or artifact concentration may be similar between sites, the cause may be different. Future investigation needs to focus on the combination of cause and the effect. This can be seen at Garnet with the dwindling ore production and subsequent revival in the 1930s. With a greater foundation on the principles on abandonment, inquiries toward discard patterns for socioeconomic
status and gender may be addressed. It is important that any further examination of sites note distinctive discard patterns for individual sites as a basis for comparison on site formation processes.
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