A History of
SMOKY VALLEY,
NEVADA

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Robert D. McCracken

Central Nevada Historical Society
Tonopah Nevada

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To the memory of my father, Robert G. McCracken, a true man of the West.

Contents

Preface

If you don't know how you got somewhere, you don't know where you are. If you don't know where you are, you don't know where you're going.
—James Burke

The usual reason given for the study of history is that knowledge of the past will spare a person or society from repeating mistakes. This justification is no doubt true, but I believe there is another persuasive reason to study history: It has to do with self-knowledge and identity.

Each of us is a synthesized sum of individual experiences. Each moment of our lives results in an iteration: New experiences are incorporated into a baseline consisting of a synthesis or pattern of all past experiences. In a sense, each of us is the past made manifest in the present; and at each instant each of us is pregnant with future identity. Take away our pasts and we are amnesiacs, lost in time and space with no identity.

I believe much the same can be said of society. Society today is the past made manifest in the present; and, as with the individual, present society is pregnant with its future. Take away a society's past and, like the amnesiac, it is lost in time and space, without identity.

We are, in large measure, products of our societies; since most of our experience is drawn from our society, we are in an important way our society's history incarnate. We are the children of our society's history. Without an understanding of history, we have no societal lineage; we are a collective amnesiac, endlessly adrift, marooned in the eternal present.

Given the importance of historical knowledge to both individuals and society, it is distressing that history is largely ignored, indeed devalued, by so many. We are for the most part a history-blind society, perhaps as much as any in the world today. Perhaps our lack of appreciation and understanding of history has more than a little to do with the many difficulties our society presently faces. It is hoped this book will add to the understanding of Nevada's history and perhaps shed a little light on just who we are.

A brief note about Chapter 1: When I began the first draft of this volume, I immediately became curious about where all the gold at Round Mountain and Manhattan came from. "Why was it there? What happened?" I wondered. These questions led me to ask, "Where did the Smoky Valley and the Toiyabe and Toquima Ranges come from? Why are they there?" These questions led me further back in time and prompted me to ask, "Where did the material from which the mountains were formed come from?" Such questions took me back step-wise until I found myself asking about the origins of the earth, then the universe. I searched for answers to these questions and concluded that Smoky Valley was much too large and magnificent a place about which to write a history without starting at the beginning—the very beginning, the creation of the universe—as best as science understands it. Thus, Chapter 1 begins with the scientific explanation of the origin of the universe and the basic elements; it then jumps to a quick overview of the formation of the solar system and the earth. From there, I move to a short discussion of the formation of the Great Basin, the deposition of the gold at Round Mountain and Manhattan, and the geology of the Round Mountain gold deposit. The reader who is not interested in the physical origin of Smoky Valley and its gold can skip Chapter 1 and start with Chapter 2, which begins with the history of human activity in the valley.

The first stage of Smoky Valley's history lasted more than 11,000 years. It began with the arrival of the Clovis people in the valley about 11,500 years ago and ended—after a succession of cultures—in June 1827 when the great American explorer Jedediah Smith became the first white man to set foot in the valley.

The second stage lasted from Smith's entry in 1827 until 1862, when silver was discovered at nearby Austin, Nevada. During this stage, no Euro-Americans made their homes in the valley but many crossed it, including John C. Fremont, Richard Burton, and Pony Express riders (whose route took them across the valley's northern tip).

The third stage began in 1862 with the founding of Austin, and for the next twenty years or so was marked by the birth of a number of short-lived communities up and down the Toiyabe and Toquima Ranges, and the establishment of ranches and farms in the valley at nearly all the sites suitable for agriculture. By the 1880s, most of the excitement in the wake of the Austin boom had died, the majority of mines in the mountain ranges surrounding the valley had petered out, and just a few ranchers and prospectors remained in the area.

Jim Butler's discovery of silver at Tonopah in 1900 triggered the fourth stage of the valley's history. Butler's good luck was quickly followed by the discovery of gold on the west flank of the Toquima Range in Smoky Valley at Manhattan (1905) and Round Mountain (1906). These gold discoveries led to the founding of two boisterous boomtowns on the central Nevada desert that were the talk of the mining world. Manhattan and Round Mountain, along with Tonopah, Goldfield, and Rhyolite, their sister boomtowns on the central Nevada desert at the time, witnessed a special era in American history, one seen no more than a half-dozen times at other locations in the West—most notably the California gold rush. This blossoming of boomtowns on the central Nevada desert at the turn of the century was the last occurrence of a western gold and silver rush in America and was thus the final flowering of the old West in America. This stage in Smoky Valley history lasted until about 1930, by which time most of the mining was being done by small leasing operations.

The fifth stage of Smoky Valley history, which lasted from about 1930 to about 1970, saw a few small mining outfits continue to operate on the flanks of the valley. A couple were large for their day—the dredge at Manhattan and a placer operation at Round Mountain—but most operations were small and undercapitalized. Beginning in the 1950s, a number of the smaller ranches in the valley were consolidated into a large operation.

The 1970s saw the beginnings of the era in which mining in Smoky Valley was increasingly done by huge international corporations, using heavy equipment and open-pit methods; this stage continues to the present. This sixth phase of valley history has witnessed the virtual elimination of the small mine operator and the increasing economic marginalization of valley ranchers.

Aware of Nye County's close ties to our nation's frontier past and the scarcity of written sources on local history, the Nye County Board of Commissioners initiated the Nye County Town History Project (NCTHP) in 1987. The NCTHP was an effort to systematically collect and preserve the history of Nye County. The center-piece of the NCTHP is a large set of interviews conducted with individuals in Nye County communities who had knowledge of local history. The interviews provide a composite view of community and county history, revealing the flow of life and events for a part of Nevada that has heretofore been largely overlooked by historians. Each interview was recorded, transcribed, and then edited lightly to preserve the language and

speech patterns of those interviewed. All oral history interviews have been printed on acid-free paper and bound and archived in Nye County libraries; in the Special Collections in the James R. Dickinson Library at the University of Nevada, Las Vegas; in the Nevada Historical Society Museum, Reno; and in other archival sites in Nevada.

Collection of the oral histories was accompanied by the assembling of a set of photographs depicting each community's history. These pictures were obtained from participants in the oral history interviews and other present and past Nye County residents. In most cases, complete sets of these photographs were archived along with the oral histories.

The oral histories and photo collections, as well as published sources, served as the basis for the preparation of this volume on the history of Smoky Valley. It is one of a series on the history of all major Nye County communities.

In a real sense this volume is the result of a community effort. Before the oral interviews were conducted, a number of local residents provided advice on which community members had lived in the area the longest, possessed and recalled information not available to others, and were available and willing to participate. Because of time and budgetary constraints, many highly qualified persons were not interviewed.

Following the interviews, the participants gave even more of their time and energy. They elaborated upon and clarified points made during the taped interviews; they went through family albums and identified photographs; and they located books, dates, family records, and so forth. During the preparation of this manuscript, a number of community members were contacted, sometimes repeatedly (if asked, some would probably readily admit that they felt pestered), to answer questions that arose during the writing and editing of the manuscript. Moreover, once the manuscript was in more or less final form, each individual who was discussed for more than a paragraph or two in the text was provided with a copy of the relevant portion of the text and was asked to check that portion for errors. Appropriate changes were then made in the manuscript.

Once that stage was completed, several individuals in the community were asked to review the entire manuscript for errors of omission and commission. Scholars with expertise on the early exploration of Nevada, state archaeology, and Nevada history also critiqued portions of the manuscript. At each stage, this quality-control process resulted in the elimination of factual errors.

The author's training as an anthropologist, not a historian (although in many instances the difference between the disciplines is probably less than some might suppose), likely has something to do with the community approach taken in the preparation of this volume. It also may contribute to the focus on the details of individuals and their families and how they lived, worked, and earned a living as opposed to more general descriptions of local residents and their communities. Perhaps this volume's concern with variability among individuals and their contribution to a community, reflects more an "ethnographic," as opposed to a "historical," perspective on local history. The fact that the author has known and admired for years a few of the people discussed in this book, and was himself employed in a small mining operation in the area in the 1950s, perhaps lends some of the insider's detailed knowledge of and love for the subject without seriously compromising the objectivity a book like this needs.

In the author's view, there is no such thing as "the history" of a community; a community has many histories. A community's history is like a sunrise—the colors are

determined by a multitude of factors, such as the time of year, weather, and perspective. This history of Smoky Valley was greatly determined by the historical data that was preserved and available to the author and by the input of those who helped produce it. If other data had been preserved and if other people had participated, both the subjects treated and the relative emphasis the subjects received would have been, at least, somewhat different. Many basic facts would, of course, remain the same—such as names, dates, and locations of events. But the focus, the details that illustrate how facts and human beings come together, would have been different. In a sense, writing a history is like weaving a tapestry. The threads that run lengthwise are the warp, analogous to the facts of history—names, dates, and events that are less subject to interpretation. The warp provides structure and form. The woof in weaving, the fibers that cross at right angles to the warp, give the fabric its texture, color, and design. Those threads are analogous to the events of everyday life and to the personalities, memories, and elements more subject to interpretation—the subjective aspects of history that make it human, sensitive to perspective, and impressionistic.

I hope that readers enjoy this history of Smoky Valley. The residents of Smoky Valley occupy a beautiful place that presents magnificent vistas of desert, mountains, and sky and offers a rare sense of peace and solitude. Although the valley still speaks of the frontier and of lives lived close to nature, it is very much a part of the modern world. In Smoky Valley the human adventure continues, unfolding before our eyes. Huge trucks capable of hauling 200 tons of gold ore at the open-pit mine at Round Mountain seem but the blink of an eye away from an old miner doggedly following a small stringer of gold deep beneath the slopes of Round Mountain up to 90 years ago, his soul filled with anticipation of the wealth he might find with the next blow of his pick. And riding in a whirlwind on the valley floor is dust that once assumed the form of a Clovis hunter who, if you listen closely, will tell you of the valley's many treasures and great beauty.

Robert D. McCracken

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R. D. M.

PART ONE

THE EARLY HISTORY OF CENTRAL NEVADA

CHAPTER 1
Prologue: Origin of a World-Class Gold Mine

Smoky Valley, known also as Big Smoky Valley, or Great Smoky Valley, is located in northern Nye County in southcentral Nevada. The valley, one of the longest in the state, is flanked by rugged mountain ranges with high snow-capped peaks; this is grand and beautiful country. The area is richly endowed with natural resources such as molybdenum, copper, and silver, but it is especially rich in gold. The presence of gold has dominated the valley's history. It would therefore be more than appropriate to begin a book on the history of this magnificent valley by asking a single question: Where did the gold come from? We could begin by describing how the mountains and the valley were formed, but that would lead us to ask where the raw material that formed the mountains came from. And discussing that would likewise provoke these questions: How was the earth formed—and ultimately—how was the universe created?

In fact, anthropologists have learned that all cultures have developed myths and tales to answer questions about origin. Such accounts satisfy the deep human craving to explain existence; they are an undeniably human phenomenon—proof of both the richness of the human mind and the characteristically human need to know.

In western civilization, the ancient Greeks were the first to attempt a systematic, nonmythological explanation of the world's origin. In 196 B.C., for example, the Greek astronomer Eratosthenes was the first to accurately determine the radius of the earth. The tradition of attempting to understand the natural world and its origin through the use of reason and measurement begun by the Greeks has been followed by some of the greatest intellects in human history, among them Nicolaus Copernicus (1473-1543), Galileo Galilei (1564-1642), Isaac Newton (1642-1727), Pierre Laplace (1749-1827), and Albert Einstein (1879-1955) (Lightman, 1991). These scientists, and hundreds of thou-sands of other dedicated researchers through the centuries, have all contributed toward developing the modern scientific view of the world's origin.

The Big Bang

Cosmology, a subdiscipline of astrophysics, is the branch of modern science that deals with the large-scale structure and evolution of the universe. Until about 1975, there were two competing cosmological theories regarding the universe's origin. The first, introduced in 1948 by three prominent physicists, is called the steady state theory. It holds that the nature of the universe has not changed at any time in the past, nor will it in the foreseeable future, with matter constantly being created at precisely the rate necessary to maintain a constant density throughout the universe as the universe expands. The steady state theory was popular for only about 20 years. It gradually gave way to the big bang theory, first introduced in 1955, which, in one form or another, is the theory currently supported by most leading cosmologists. We should keep in mind while reviewing the present theory that details and even major points can vary and will change as research continues.

The big bang theory begins with the understanding, reached in the early 1930s, that the universe is expanding. The stars most distant from Earth are receding at the Incredible speed of

150,000 miles per second—close to the speed of light (Jastrow, 1990b:79). Physicists believe that if the universe's expansion were reversed and the universe were Contracting, not expanding, then if one could go back far enough in time—by some estimates approximately 15 billion years—one would eventually encounter a state where all of the matter in the universe would be compacted into a single point, infinitesimally small and enormously dense and hot. At this point all matter and energy—all that makes up the universe—would become fused in what the great American physicist John Wheeler calls "homogeneous soup" (Wheeler, 1990:240). Time started, and the universe, as we understand began when this point of near-infinite density, this pea soup concoction of all matter and energy, exploded in a cosmic fireball.

In a fraction of a fraction of a microsecond, the universe had cooled to 100 million, trillion, trillion degrees, gravity came into existence (Goldsmith, 1992:74-84). o minutes after the big bang, the infant universe was still hot that it was filled with a hot gas of subatomic particles. As the universe continued to cool, protons and neutrons to come together to form the nuclei of atoms. After about 300,000 years the universe had cooled enough to allow electrons to stick to the nuclei to form atoms. Most of the matter formed in this stage was hydrogen, but about 25 percent by mass of matter was converted into helium, with :race amounts of nuclei of other elements present. Most of other types of atoms found in the universe today were formed much later in the universe's history (Guth, 1991:113).

Cosmologists have found ample evidence to support the big bang theory. In 1965, physicists were able to measure background radiation evenly distributed throughout the universe. This radiation was interpreted as being the leftover traces of the initial fireball, the still-warm ashes of creation (Jastrow, 1990b:92; Wheeler, 1990:240). The relative abundance of the different forms of hydrogen, helium, and lithium—all light elements—also supports the theory (Guth, 1991:113).

At this time, proponents of the big bang theory cannot predict the ultimate fate of the universe. The universe's expansion is somewhat analogous to a rocket being fired from the surface of the earth: If the rocket has sufficient velocity, it can escape the earth's gravity and keep going, presumably until it runs into something else; but if the rocket lacks sufficient velocity to escape, it will fall back to earth. Much the same will be true for the universe: If sufficient velocity remains from the big bang, it is possible that the universe will keep expanding forever, with the galaxies moving endlessly farther and farther apart. If velocity is insufficient, however, a time will come when expansion is no longer possible and the matter making up the universe will begin to contract, eventually reaching that infinitesimally small and incredibly dense and hot point at which it began. The destiny of the universe depends on how much mass it has. So far, cosmologists have not located enough mass in the universe to make them think that it will contract.

Just as physicists are unable to discern the ultimate fate of the universe, they are also uncertain about its distant past. For example, the American astronomer James Peebles has commented that scientists have little idea "what the universe was like at day minus one before the Big Bang" (quoted in Jastrow, 1990a:49).

Stars: The Engines of Creation

As the nascent universe expanded, it continued to cool, but as it did so the temperature fluctuated slightly from one area to another. Faint ripples in temperature, measurable in millionths of degrees, were created. These ripples became gravitational eddies that caused increased densities of matter to form in some areas and then to eventually coalesce during :the next billion years into great galaxy-size clouds of gas. After another billion years, the galaxies themselves were -drawn by gravity into great superclusters and strings of galaxies with immense voids of space between them.

After another 3 billion years, that is, about 12 billion :years ago by some estimates, massive stars formed and began to shine. These stars, the engines of creation, were so large that their lifetimes were relatively short—only several million rears. The heat within the interior of such a star transformed hydrogen into helium and helium into lithium. When a massive star exhausted its fuel, it could no longer resist the inward pull of its own gravity, and it would shrink to a tiny fraction of its original size in a catastrophic implosion. The collapse triggered a rebounding shock wave that caused the star to explode. The explosion, called a supernova, hurled much of the star's contents into space; greatly elevated temperatures during the explosion caused further transformation of lighter elements into heavier elements. The star's contents then became the raw material for the development of future generations of stars, which would in turn synthesize heavier elements from lighter ones in their thermonuclear furnaces. In this manner, the great variety of elements we find in the universe was formed, although only about 1 percent of the matter in the universe today is heavier than hydrogen or helium (Jastrow, 1990b:81).

When the universe was approximately 10 billion years old, a portion of a large, cold, dark cloud of interstellar material located on one of the arms of a spiral galaxy (today called the Milky Way) began to contract, perhaps in response to a concussion produced by a nearby supernova. During the first 500 million years of this galaxy's existence, massive stars evolved, rapidly creating most of the heavy elements that were in turn dispersed throughout the galaxy by supernovas. As the cloud contracted, atoms and molecules collided and occasionally stuck together. Dust-size fragments of solid matter, accumulating as the cloud condensed, were swept along to the center of the cloud, where they fell toward a central plane and created a spinning disk (Flam, 1993:459; Meyers and Flam, 1992:1038). Most of the matter accumulated at the center of the disk, eventually coalescing into a large body, with smaller bodies forming at intervals out on the disk's margin. The central body was so massive that its heat, produced by compaction and radioactive decay, reached the temperature necessary to initiate thermonuclear reactions-20 million degrees. Our sun was born at this point, approximately 4.6 billion years ago.

About 4.5 billion years ago, small clumps of rocky material began to form on the disk's margins. Random collisions of these clumps led to the formation of small asteroids, or planetesimals. In cosmological terms, this period was rather brief and quite violent. Within perhaps only 100 million years, planetesimals grew from modest-size chunks of material to "hefty bodies." One scientific writer says this was "a time of innumerable collisions and near misses, of drastic changes in orbit, of planet-size masses recklessly careening around the sun with devastating consequences" (Peterson, 1993:190). Through collisions, the number of

planetesimals was reduced, and smaller bodies became incorporated into larger ones. When planet-size bodies collided, results could be cataclysmic. During this time period, for example, a large object, believed to be approximately the size of Mars, probably collided with what is now Earth. The cores of the two bodies fused, and a great deal of matter was ejected into orbit around the earth (Jastrow, 1990b:95; Silk, 1989:344; Peterson, 1993:191). That matter is believed to have eventually accreted into the moon.

Star Cookers

Any theory that purports to account for the origin of he universe must be able to explain how the universe came be composed of 92 naturally occurring elements, ranging mum hydrogen, the lightest and the simplest in structure, to uranium, the heaviest and the most complex. All of the elements are made up of the three basic building blocks of matter: neutrons and protons, both found at the center, or nucleus, of an atom, and electrons, which orbit the nucleus. The type of element and its physical and chemical characteristics are determined solely by the unique combination of these three building blocks present in the atom.

Over the past 30 years, cosmologists have come to understand in broad outline how the heavier elements that make up the known universe are formed. In effect, the elements have been cooked in the stars, much in the way a baker would make a variety of pastries from a few basic ingredients.

The relative abundance of different elements on s surface varies. Silicon, for instance, is very common is a primary constituent of the rock found in mountains. In contrast, iron is far less abundant, occurring in small entities in ordinary rock and only occasionally in deposits higher concentration. Gold, however, is quite rare; it is in minute quantities in most rock, and even the very deposits contain only a few pounds of gold per ton of rock.

Physicists have calculated the positions on a scale of relative abundance for the naturally occurring elements in the universe. Hydrogen is by far the most abundant element, followed by helium and lithium. Carbon, oxygen, sodium, magnesium, aluminum, silicon, potassium, chlorine, and calcium all appear in the top one-third of the list. Iron is also relatively common. Platinum is more common than silver, and silver is twice as abundant as gold. Uranium is one of the least common of all elements (Trimble, 1975:884-885). Gold is 19.3 times as heavy as water; 1 cubic foot of gold weighs more than 1000 pounds. It is estimated that all the gold acquired by humans throughout history could be melted into a cube measuring 50 feet per side (Bronson and Watkins, 1977:11).

Thus, gold is rare not only on Earth but also in the universe. Obviously, people assign great value to gold partly because it is scarce. Yet the metal bismuth is about as scarce, but it is neither perceived to be precious nor is it coveted by most people. In addition to being very uncommon, gold has other valuable attributes. It is stable, tending not to decay or tarnish under conditions found on the earth's surface. Moreover, gold is malleable, easy to work, and can be rolled into extremely thin sheets for artistic and decorative purposes. It also has a luster far more beautiful than platinum and other scarce elements. In addition, gold is a safe element: It does not harm people when ingested in small quantities or when touched or held near the body, as do lead and uranium. The fact that gold can also be extracted from the earth's surface and refined by relatively simple, nonthreatening technologies also adds to its value.

In fact, gold is less abundant in the universe than, say, silicon or iron, because the process necessary to "cook" gold in the stars is a more complicated one. The way the stars transformed the bland and homogeneous universe composed of hydrogen and helium into the diverse range of elements found today is called nucleosynthesis. The first phase of this transformation created iron and all the elements weighing less than iron. As the first stars heated up and began to shine, hydrogen atoms began to fuse, releasing energy that further heated these stars. This process continued at a steady pace until all the stars' hydrogen supply was exhausted, at which time the stars collapsed, only to heat up more, this time consuming not the hydrogen that had been exhausted but the recently formed helium (Silk, 1989:281-282). Helium atoms fused much as the hydrogen atoms had earlier, only at higher temperatures. The helium nuclei fused into carbon, and in stars sufficiently large, the consumption of carbon produced oxygen and other elements (Silk, 1989:321). This nucleosynthesis was repeated for increasingly heavier elements, up -through iron in the table of elements. Each time the nuclei were fused into heavier elements, energy was released, and that release provided increased heat to the star so that more Nuclei could be fused. Physicists can account for the synthesis of all the elements from helium to iron by this process (Silk, 99:281-282, 321).

The second phase of transformation, which is necessary for the synthesis of elements heavier than iron, including silver, gold, platinum, and uranium, involves a different process. The synthesis of such elements requires the input of vastly greater amounts of energy than are available in a star's-sustaining, energy-producing system. However, such a massive energy supply can become available when a star's energy supply has become exhausted and the core of the star collapses violently. This sends a rebounding shock wave through the outer fringes of the star, that is, through the surrounding layers of silicon, oxygen, carbon, and helium at outer edge of the star, briefly heating the area outside the central core to temperatures much higher than the star has ever experienced. Tremendous amounts of energy become briefly available during this supernova stage. A supernova, then, provides the unique environment supplying the additional energy necessary for the synthesis of heavy elements such as silver, platinum, uranium, and—most important for the history of Smoky Valley—gold. Researchers believe that exotic but unknown forms of matter are created in supernovas; because of the instability of these forms, they subsequently decay into the known heavy elements. Uranium, for example, decays into lead, but the exact form whose decay makes gold is not known at this time. The supernova not only provides the energy for the synthesis of these heavy elements, but its explosive force also distributes them as dust in space, where they can eventually be incorporated into another star or perhaps into a planet such as Earth (Silk, 1989:335).

The Earth's Crust Develops

As the nascent Earth grew in size, first from the accumulation of tiny grain- and sand-size particles of interstellar dust and eventually from planetesimals, which had accumulated from the accretion of smaller particles, all striking its surface, the energy from the collisions melted the colliding bodies, and the earth absorbed them. As the earth grew in mass and gravity increased, the heavy mineral elements sank toward the center of the growing planet and the lighter elements remained near the surface. Gradually, the earth's core formed. Iron

and nickel became its main components, but much smaller amounts of other heavy elements, such as lead, gold, and silver, settled in the core as well. However, this separation by weight was not perfect, and small amounts of heavy elements, including iron, gold, and silver, remained near the surface. As the earth's surface cooled, minerals began to form in the melt. Continued cooling produced solid rock of various mineral assemblages. Lighter mineral assemblages tended to ride over the top of heavier mineral assemblages. The surface of the earth gradually cooled enough so that water vapor in the atmosphere began to precipitate as a liquid, filling low-lying areas. Lighter mineral materials formed continents and heavier mineral materials formed ocean basins. In effect, these masses, or "plates," of continental crust and oceanic basin serial float on beds of hotter and denser materials.

Large amounts of heat are produced in the earth's interior. The heat comes both from the decay of radioactive elements such as uranium and from heat generated by ,compaction. Convection currents move the excess heat from the hot interior toward the surface, in the way currents in a pot of boiling water transfer heat from the bottom of the pot the top. These currents carry molten or semimolten material from deep within the interior toward the surface. This material is plastic and acts like bread dough, whereas the surface, pieces of the earth's crust tend to be brittle and are subject to breakage and fracture, much like the crust french bread (Davies, 1992:493).

Earth's crust acts as an insulating blanket over areas where heat is attempting to escape from the interior via convection currents. In regions where the crust is thicker—for example, in continental areas that are higher in elevation - heat tends to accumulate under the crust, which leads splitting of the crustal plate. When this occurs, the two pieces of crust are pushed apart as molten material from the interior is forced out onto the surface. This process allows heat from the interior to escape, and in this way pieces of the crust, called tectonic plates, are moved about the surface. As the plates are pushed by convection currents, the lighter continental plates ride over the heavier and denser crustal plates, forcing the oceanic plates toward the planet's interior, where they are heated and some of the material becomes molten. The buoyant molten material rises toward the surface, creating volcanoes near the margins of the continental plates. Over the several billion years that this has occurred, the shuffling of tectonic plates has left telltale patterns of changes in the rock formations on the earth's surface. Geologists are learning to read the history of Earth's formation in these rocks (Silk, 1989:359-360).

The Mountains Rise

In Geology of the Great Basin, Nevada geologist Bill Fiero notes the difficulty of studying our planet's history, observing that "the past shrouds itself in mystery. The farther back you reach in time, the more difficult it is to find data" (1986:69). Nevertheless, scientists have estimated that approximately 2 billion years ago the area south of what is now Reno was under water. A collision with an unknown tectonic plate led to the area's subduction and to the development of an island arc of volcanoes that ran east and west along a continental margin—about where Reno is today. By about 1.75 billion years ago, the island arc had become fully connected to the continent because of the uplifting of the shallow sea floor (Fiero, 1986, 70-71; Elson, 1992-1995). Then, about 850 million years ago, heat rising from the interior caused the

continent containing what is now the state of Nevada to split on a north-south line somewhere near the middle of the state, along a line roughly connecting Tonopah and Elko. The western part of the continent was sheared off and moved west-northwest, and the remainder moved south-southeast. Geologists are not sure where the western part eventually ended up, although they speculate that the largest piece of it may be a part of present-day Siberia. By about 500 million years ago, a new continental margin lay on a line that stretched approximately from Wells through Tonopah, with everything west of that line lying under deep water. The land mass that we know as the eastern one-third of Nevada and much of western Utah was on the continental shelf beneath shallow water (Fiero, 1986:70-82).

During the Middle Paleozoic, the time period in the earth's history lasting from more than 500 million to about 250 million years ago, the western edge of the continent apparently collided with another oceanic plate. The margin of the second plate was subducted beneath the westward-moving plate. As Hal Elson, chief geologist for the Round Mountain Gold Corporation, Round Mountain, Nevada, explains, this led to a period of volcanism during which volcanoes were created west of the continent; eventually a second island arc was formed, positioned much as the present island arc of Japan is in relation to mainland China (Elson, :992-1995). A shallow sea formed between the island arc and the more elevated areas of the continent in central Utah. Sediments, including sand and mud of continental origin and limestone consisting of the remains of sea life, collected at the bottom of the sea that occupied the area geologists now call the Great Basin (Elson, 1992-1995).

The margin of the subducted plate melted as it was driven deeper into the earth; large globular masses, or plutons, composed of light, granitic material were created ,when melted portions of the heated subducted plate separated and rose slowly toward the surface. As the plutons, which ranged in size from several hundred yards to hundreds of miles across, moved upward through the old continental crust. they heated the surrounding rock, changing limestone and shale into marble and slate, and granite and basalt into schist. In addition, as the eastward-driven plate was forced beneath the continent, some of its segments and some blocks of the westward-moving continental plate were thrust upward. They accumulated at the continental margin, the -way material collects in front of a bulldozer's blade. The great stresses produced by the collision between the two plates cracked, broke, and deformed the rock formations located near the continent's edge (Elson, 1992-1995) (see Figure 1.1).

As the subduction process continued, the island arc and basin that occupied most of what we call Nevada continued to fill with sediments, which eventually accumulated in some places to a depth of several miles (see Figure 1.2). Subsequent shifts and collisions between the crustal plates caused the formations laid down in the ancient sea to become deformed and faulted. Continuing episodes of tectonic mountain building and erosional activity during the Mesozoic, the period in the earth's history lasting from 237 to 67 million years ago, caused new formations to be laid down on the old Paleozoic strata (see Figure 1.3). These formations were deformed by the ever-changing forces within the earth during the Cenozoic, the period lasting from 67 million years ago to the present. Cenozoic formations deposited on top of Mesozoic strata also became deformed in turn by the same processes that had altered the older formations (see Figure 1.4). The great beds of limestone and other rock formations visible in the mountains of Nevada resulted from these processes (Elson, 1992-1995).

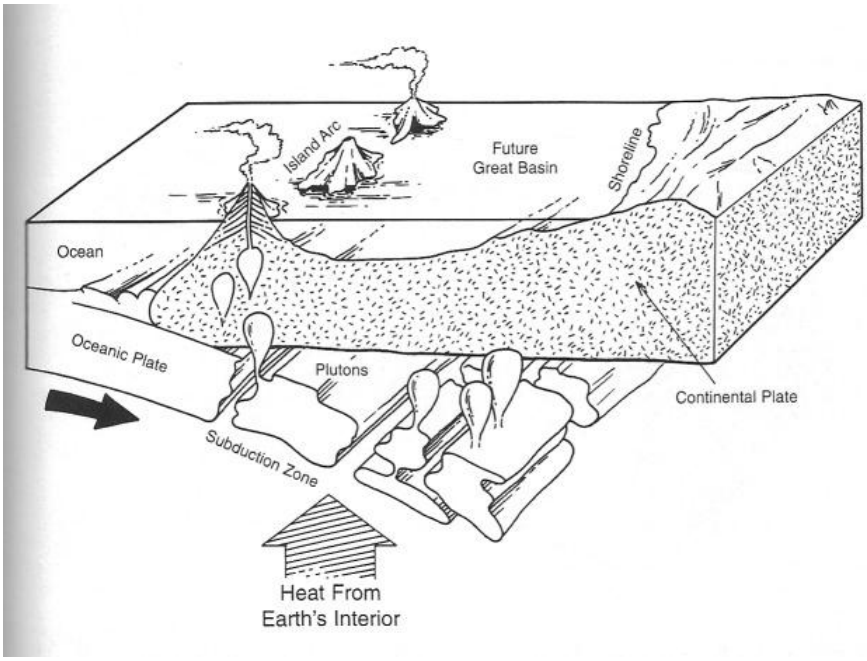


Figure 1.1. Ancestral Great Basin, 500 million years B.P. During the Paleozoic era, the westward-moving continental plate collided with an oceanic plate. The heavier oceanic plate was subducted beneath lighter continental plate, which then melted, forming plutons rose through the overriding continental plate and produced volcanoes in the sea along the plate's western margin. The volcanoes created a chain of islands, or an island arc, running north-along the western edge of the continental margin. A large, oceanic basin between the islands and the continent's reline formed. This sea eventually became the Great Basin. (Art Gary Raham; Hal Elson, consultant)

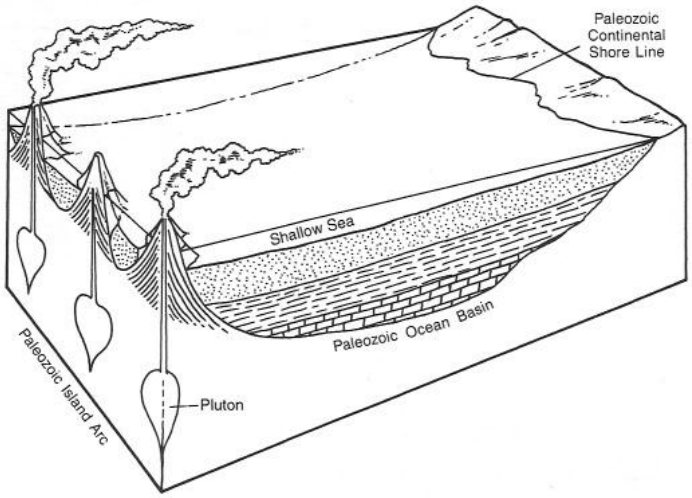


Figure 1.2. Paleozoic deposition. During the Paleozoic era, the great ocean basin became filled with sediments that washed off the continent to the east and accumulated to depths of more than 20,000 feet in some places. The shallow Paleozoic seas teemed with life, particularly with arthropods like trilobites. There were also corals, brachiopods, pelecypods, and fish. Early in the period, the land was still a desolate waste; major plant and animal life took hold later, with forests of tree ferns and the first land vertebrates—lungfish and primitive amphibians. (Art by R. Gag Raham; Hal Elson, consultant)

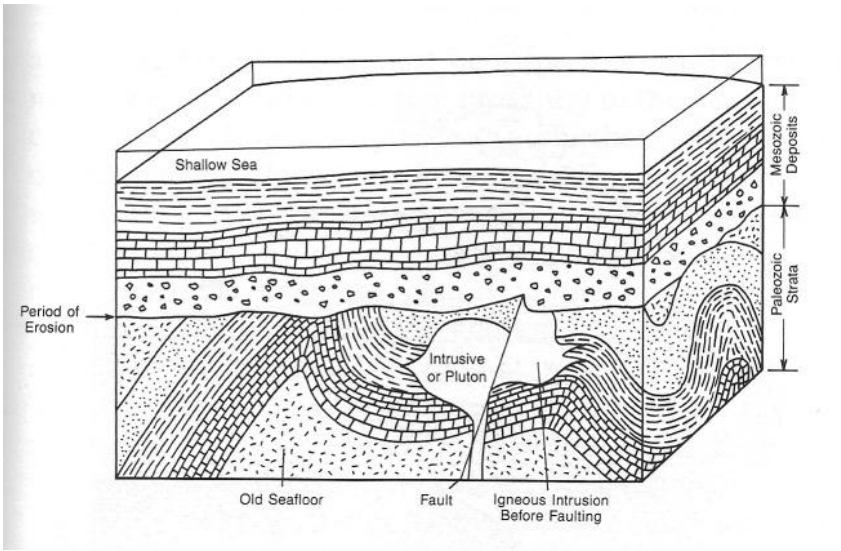


Figure 1.3. Mesozoic deposition. After the oceanic basin (Figure formed, additional tectonic activity, and perhaps further collisions with other tectonic plates, led to the folding and twisting of Paleozoic-era strata. Magma created igneous intrusions into the Paleozoic sedimentary beds. Later, during the Mesozoic era, additional sediments were deposited on top of the deformed Paleozoic strata. (Art by R. Gary Raham; Hal Elson, consultant)

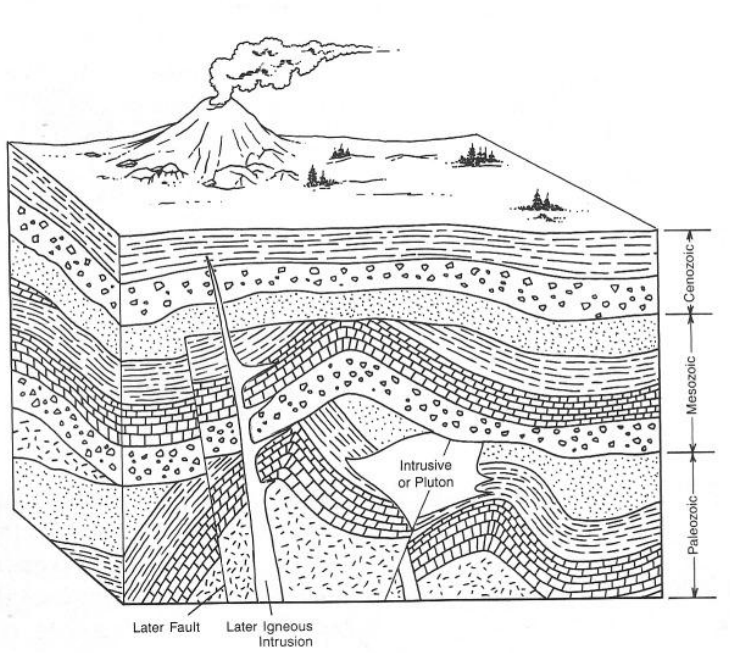


Figure 1.4. Cenozoic deposition. Further tectonism created folds and faults in the Mesozoic strata deposits, and the Paleozoic strata were further shifted and distorted. More faults formed and further intrusions of igneous material into both the Paleozoic and Mesozoic formations occurred. Volcanic materials were deposited on the Mesozoic strata. Cenozoic seas contained corals, bryozoans, cephalopods, fish, and marine dinosaurs like the icthyosaur. On land, plants and insects were similar to those we have today; animal life included small mammals and dinosaurs like triceratops and tyrannosaurus rex. (Art by R. Gary Raham; Hal Elson, consultant)

Making a Gold Deposit

The gold deposits at Round Mountain and Manhattan were formed by a process that depends upon hot water to concentrate gold. The presence of a hydrothermal (hot water) cell, a geological condition that enables a mineral to be concentrated, is essential for depositing gold in rock in the earth's crust.

A pluton moves toward the earth's surface in a journey that may take millions of years. The pluton may contain significant amounts of gold or other elements, but to create a mineral deposit there must be a specific rock formation near the earth's surface in close proximity to the pluton that can serve as a host for deposition and further concentration of the minerals found in the pluton. Conduits from the source rock to the host rock must also be present. These conduits serve as pathways along which heated solutions can move minerals from the pluton to the host formation. Typically, groundwater is the solution that transports gold and other minerals along the conduit, molecule by molecule. The groundwater, which originates on the earth's surface, percolates deeply into the earth until it comes into contact with the pluton. The pluton heats the water, the minerals in the pluton and surrounding "country rock" (a term used here to mean the formations surrounding the pluton but used also miners to mean any rock that is not ore—and is therefore not worth mining) go into solution in the water, and they are then transported upward for deposition in the host rock. As heated water passes upward through the country rock, it may pick up additional amounts of gold and other minerals are present in minute quantities in the country rock. This leaching of minerals adds to the richness of the concentration present in the solution. As the water rises toward the surface, it cools, and the mineral load in solution is precipitated. The cooler water then finds its way back down fractures to be reheated. This particular circulation system, or hydrothermal cell, provides one way for a significant mineral deposit to be formed (Elson, 1992-1995) (see Figure 1.5).

As a pluton (see Figure 1.6) moves upward through earth's interior, it exerts pressure on the rock formations it, and as it gets closer to the earth's surface, the pressure deforms the overlying formations, creating a dome the surface. As the pressure continues, the dome enlarges cracks begin to form in the cold and brittle surface rocks. Fingers of molten material from the pluton begin to extend upward into the cracks, and if the surface is broken, molten material from the pluton is expelled onto the surface, where one or more volcanoes are created (Elson, 1992-1995).

When a significant amount of volcanic material is ejected from a pluton onto the earth's surface, the magma chamber under the surface dome is evacuated. If this discharge is large enough, the rock structures overlying the chamber can no longer support the load and the roof will collapse, leaving a roughly circular-shaped depression called a caldera, from the word caldron, or bowl. Calderas can range in size from hundreds of feet to tens of miles across. The Mt. Jefferson caldera, in the Toquima Range not far from Round Mountain, is more than 10 miles across (Elson, 1992-1995; Boden, 1987:198).

The formation of a caldera cracks the surrounding rock and produces faults in the rock strata nearby. When conditions are right, these fractures can serve as conduits for groundwater to transport minerals from the heat source in the pluton to the host rock. If the volcanic activity associated with the caldera continues to erupt and spew ash, new ash may be deposited on top of the rock formations that have collapsed into the caldera. Eruption of nearby volcanoes can

also lead to accumulation of materials within the caldera or its margins. When considerable heat remains in the volcano following the caldera's formation, and when there is sufficient groundwater, a hydrothermal cell can become established; the ash ejected from the volcano following the caldera's formation can serve as the host rock, and cracks in rock strata can serve as conduits. This is what happened at Round Mountain when the immense deposit of gold found was formed about 26 million years ago (Elson, 992-1995).

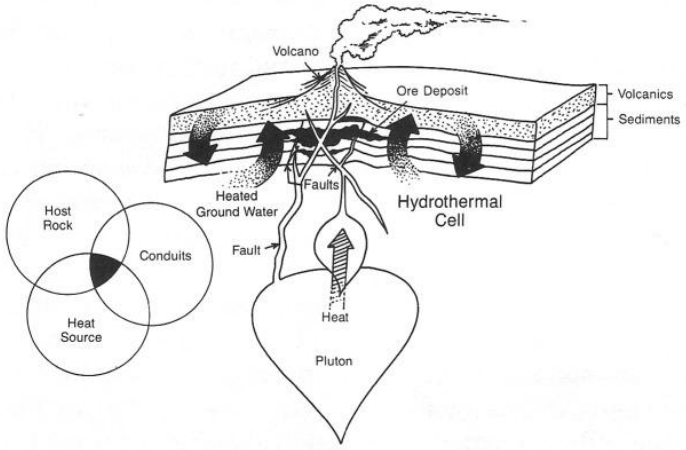


Figure 1.5. Formation of a mineral deposit through a hydrothermal cell. A buoyant pluton rises like a bubble through the earth's interior. Conduits carry magma from the pluton to near or onto the earth's surface, forming one or more volcanoes. Groundwater percolating downward from the earth's surface through porous and cracked overlying rock strata comes into contact with the pluton and the conduits carrying the magma. The groundwater, after being heated by the magma, picks up dissolved minerals and then rises toward the surface. As the water rises it is cooled, and the minerals carried in solution by the water are deposited in the porous formations above the pluton and in the fractures in those formations. (Art by R. Gary Raham; Hal Elson, consultant)

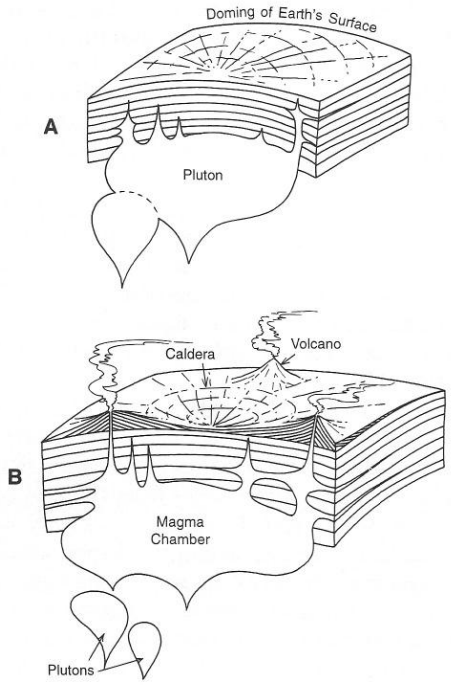
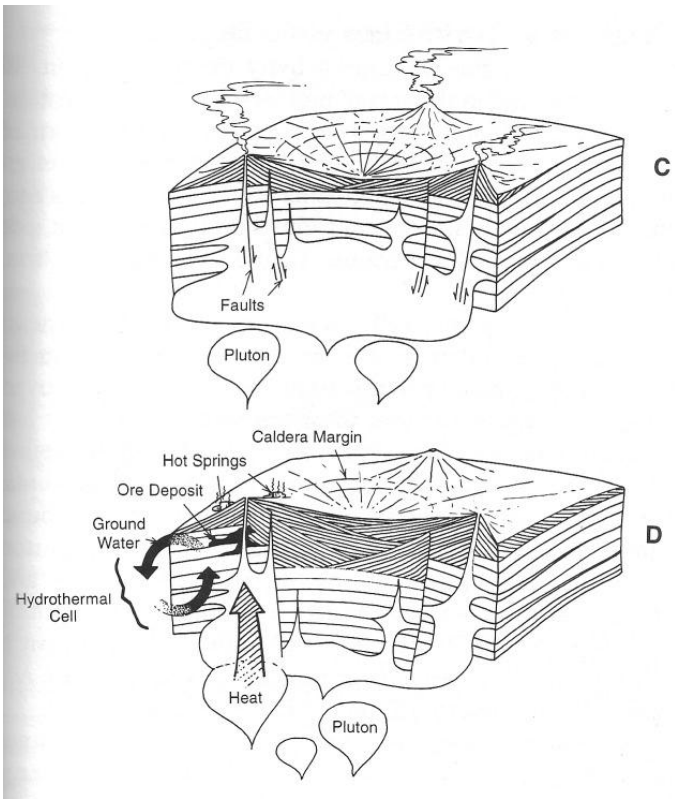


Figure 1.6. Formation of a caldera and the establishment of a hydrothermal cell. (A) A pluton rises toward the earth's surface. As it nears the earth's surface, a dome forms, and strata above the pluton begin to crack and form faults as the pluton threatens to break through to the surface. (B) Magma from the pluton has broken through to the earth's surface. A volcano forms as molten rock is expelled from the volcano's magma chamber.



As magma continues to be expelled from the chamber beneath the volcano, the rock strata above collapse into the chamber, a huge caldera on the earth's surface. This collapse :produces numerous cracks and faults within and on the perimeter of the newly formed caldera. (D) A hydrothermal cell may become established at the site of the caldera. (Art by R. Gary Raham; Hal consultant)

Origin of a World-Class Gold Deposit

Considerable volcanic activity developed about 30 million years ago in the area of present-day Round Mountain. Within a few million years, several large calderas had formed in the vicinity, including those at Moores Creek, Mt. Jefferson, and Trail Canyon. Approximately 26 million years ago, the Round Mountain caldera formed on the southwest side of what eventually became Round Mountain (Elson, 1992-1995).

A hydrothermal cell was established on the northeast margin of the caldera. Gold was transported from a postulated pluton, and/or perhaps from country rock, into overlying rock formations that were composed of volcanic ash that had only relatively recently been ejected from the Round Mountain volcano and from other nearby volcanic vents. Geologists are not certain of the location of the Round Mountain pluton or its age, but a large Mesozoic-age pluton lies underground just to the east of Round Mountain, and attests to continuous igneous activity in the area over a long history (Elson, 1992). (The Round Mountain gold deposit is not related to Mesozoic igneous activity; geologists are not sure of the real source [Elson, 1992-1995].)

Plutons rising toward the earth's surface sometimes follow fault lines—weaknesses in the earth's crust. A large lineament (meaning "like a line") fault runs northwest to southeast on the northeast side of Round Mountain (see Figure 1.7). This lineament fault may be very old and may represent a major crustal weakness in the area. Its length and its overall importance remain to be determined, although geologists know that a very large lineament, the Walker Lake fault zone, runs through Tonopah and can be traced from Goldfield to Hawthorne. Geologists have speculated that this fault zone might have had much to do with the occurrence of many ore deposits, including the great gold deposit at Goldfield and the tremendous silver and gold deposit at Tonopah. The Walker Lake fault and the Round Mountain fault may be ancient scars remaining from tectonic activity dating back hundreds of millions of years. At any rate, geologists believe that the Round Mountain fault may have played an important role in shaping the Round Mountain caldera, which adjoins the fault. Fractures along the fault joined those produced by the collapsing caldera to form the conduits that made possible the formation of Round Mountain's gold deposit (Elson, 1992-1995).

The hydrothermal cell at Round Mountain deposited an estimated 14 million ounces of gold over a period of about 500,000 years. In comparison, the great Comstock Lode contained an estimated 8 million ounces of gold, the Tonopah deposit held 2 million ounces, and the Goldfield, about 4 million ounces. The Gold Quarry Mine near Carlin in northern Eureka County, Nevada, is thought to have contained between 10 and 12 million ounces of gold. The Homestake Mine in South Dakota produced 14 to 16 million ounces of gold, and the mines at Cripple Creek, Colorado, contained 20 to 22 million ounces. Some South African mines contain much larger amounts. The Grasberg mine in Irian, Jaya, in New Guinea is the world's biggest known single gold reserve, with an estimated 40 million ounces (Elson, 1992-1995).

The gold in the hydrothermal system at Round Mountain was deposited in three types of tuff, the rock formed from ejected volcanic ash. Intra-caldera tuff, what mine officials call Type 3 tuff, fills the caldera. This type of tuff is moderately welded: individual particles of ash have become partially fused to each other. The Type 1 and Type 2 tuffs, found above the Type 3

tuff, are densely welded and nonwelded tuffs, respectively. Extra-caldera tuffs are deposited outside the caldera. Nonwelded tuffs form when the volcanic ash falling to the ground is not hot enough to fully the rock it forms is less dense. When gold-bearing solution worked its way through fractures in the intra-caldera tuffs , the gold was deposited as seams in these cracks. The gold-bearing solution more fully saturated the nonwelded tuff formations, depositing the gold more evenly throughout these more permeable rock formations (Elson, 1992-1995).

The gold deposit at Manhattan may have been formed a similar fashion. The Manhattan deposit, like the one at Round Mountain, sits on the edge of an old caldera. Gold-bearing solutions in a similar hydrothermal cell at Manhattan transported gold from an igneous intrusion, and perhaps from country rock, to the host rock. However, the gold deposit at Manhattan was smaller than Round Mountain's and was .deposited approximately 16 million years ago, 9 million years after the Round Mountain deposit formed (Elson, 1992-1995) .

When the gold at Round Mountain and Manhattan was deposited, the hydrothermal cells may have operated at distance beneath the earth's surface. Over time, ever, the upper formations at Manhattan eroded; and the gold they contained was washed down Manhattan Gulch and deposited in gravel. At Round Mountain, though, the upper formations were still present and the gold that eroded from the rocks was deposited at the base of the Stebbins Hill and Round Mountain were originally of a larger formation of tuff. Because the solutions that the gold made the tuff through which it circulated harder, the remainder of the formation (that part not containing gold) eroded, leaving only Round Mountain and Stebbins Hill. It is interesting that the tuff at Round and elsewhere contains small bits and fragments of ancient Paleozoic rocks that were incorporated into the as it moved upward and was ejected from the volcanic vent along with the ash when it erupted (Elson, 1992-1995).

The last stage in the formation of Smoky Valley and its gold deposits began approximately 17 million years ago. The Great Basin then was an "almost featureless volcanic plain, modified by a few domes of the metamorphic core complexes and vast subsident pits of the calderas, arched upwards thousands of feet" (Fiero, 1986:127). Around this time, the earth's crust under the Great Basin experienced considerable stretching, and great cracks along the earth's surface appeared, trending in a north-northeast, south-southwest direction. Massive blocks of earth slid downward along these cracks, leaving adjoining blocks seemingly pushed upward. Considerable vertical displacement occurred, resulting in Nevada's basin and range topography (see Figure 1.8), including the formation of the Smoky Valley and the Toquima and Toiyabe Ranges. Over millions of years, sediments eroded from the elevated areas into the valleys. In some areas, entire mountain ranges lie buried in these sediments. If the sediments from the valleys were removed, at certain places in the Great Basin the distance between the mountaintops and the valley floors would be from 15 thousand to 20 thousand feet (Fiero, 1986:127). (Vertical displacement in the Smoky Valley is about 14,000 feet.(Figure 1.9 illustrates the geological subsurface structures under Round Mountain (Elson, 1992-1995).

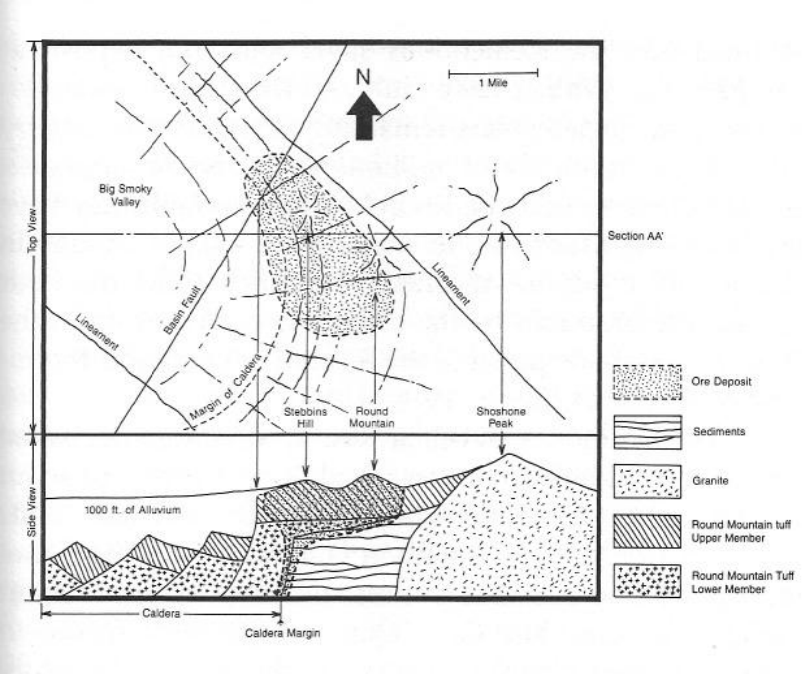


Figure 1.7. Geology of the Round Mountain Gold Mine. The aerial -view of the mine shows the eastern margin of the caldera that .controlled the deposition of the gold at Round Mountain. The western two-thirds of the caldera was sheared off by the fault that created the Toquima Range and the Smoky Valley. The fractures created when the caldera formed are shown, as is the portion of the caldera's margin where gold was deposited by hydrothermal activity (the hatched area). The major faults lying north and south of the deposit may be remnants of lineaments (faults or cracks running for miles) in the earth's crust that may be hundreds of millions of years old and that represent northwest-tending structural weaknesses in the crust that have influenced the development caldera margin and the gold deposit. The cross-sectional of the mine shows Shoshone Peak, Round Mountain, and Stebbins Hill and the fault that dropped part of the Round gold deposit into the valley, where it now lies buried 1000 feet of alluvium. (Art by R. Gary Raham; Hal Elson, consultant)

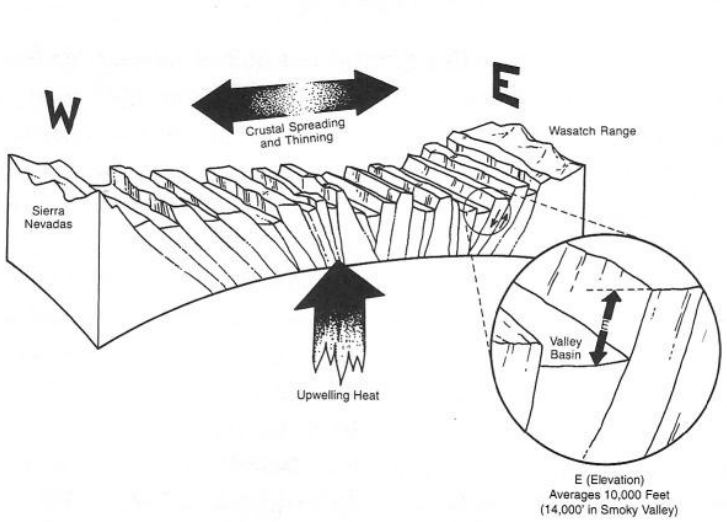


Figure 1.8. Basin and range formation. The extension of the surface of the earth in the Great Basin may have been from 10 percent to 50 percent—even up to 100 percent (e.g., 1 mile of the earth's skin became 2 miles) in some areas. The earth's crust broke along numerous north-south trending fault lines to accommodate the strain. Alternating blocks of earth along these lines fell toward the earth's center; in some places the downward displacement of the blocks was as much as 20,000 feet. The alternating blocks of elevated and depressed surface account for Nevada's basin and range topography—desert valleys separated by mountain ranges running north and south. (Art by R. Gary Raham; Hal Elson, consultant)

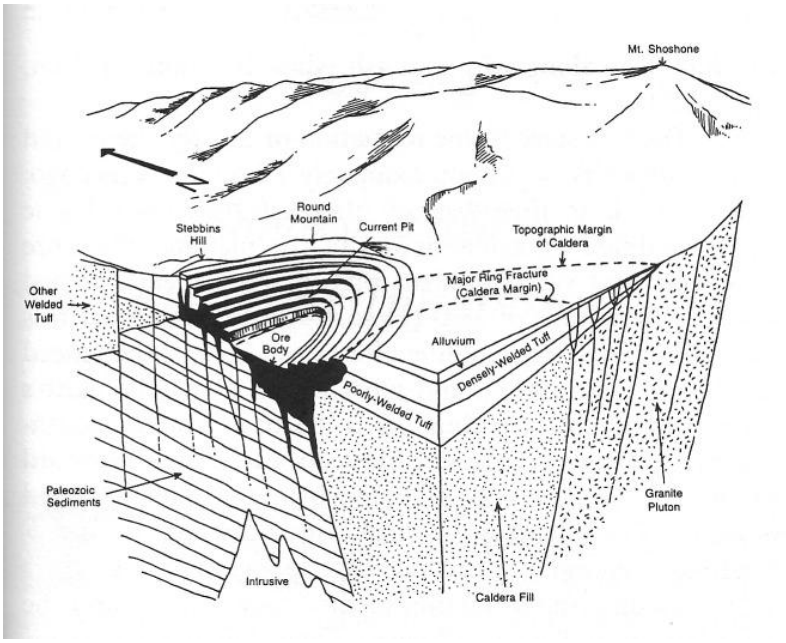


Figure 1.9. Geology near Stebbins Hill and Round Mountain. Shoshone Peak, Round Mountain, Stebbins Hill, and the pit location (as of 1994) are shown on the surface. Layers of different types of volcanic tuff ejected by the volcano prior to its collapse into a caldera, along with the Paleozoic sediments underlying the volcanic tuff, are illustrated beneath the surface, as is a portion of ar. intrusive (likely the hydrothermal source of heat and gold). Seen also are lines representing the outer margin of the old caldera (topographic, or surface, margin of the caldera) and the major ring .structure, the inner margin at the bottom of the caldera bowl. (Art by. Gary Raham; Hal Elson, consultant)

CHAPTER 2
Smoky Valley:
The First Inhabitants

Smoky Valley is located primarily in Nye County, but it extends into Lander and Esmeralda Counties as well. It is one of the largest valleys in the sate—approximately 100 miles long, roughly 10 to 14 miles wide at the northern end, and less than 5 miles wide at the southern end. In 1917, the eminent geologist Oscar E. Meinzer described Smoky Valley in these words: "Big Smoky Valley is a typical Nevada desert valley—a plain hemmed in mountain ranges and underlain by porous rock waste eroded from these ranges and saturated with water discharged from them" (1917:9). Larger than the state of Rhode Island, the valley contains more than 1300 square miles, and its drainage basin encompasses about 3250 square miles. As the majority of Nevada's valleys, it lies on a north-south axis, its southern end arches westward toward the California border.

The Terrain

Smoky Valley is rimmed by several mountain ranges. northern half of the valley, called the upper valley, is bordered on the west by the Toiyabe Range, the largest and most extensive high mountains in central Nevada, and on the east by the Toquima Range. The crest of the Toiyabes, whose name means "mountains" in the Shoshone Indian language (Meinzer, 1917:19), is more than 10,000 feet above sea level. The range, more than 100 miles long, reaches its highest point, 11,775 feet, at Arc Dome, a majestic peak at its southern end. Bunker Hill, located north of Arc Dome, rises to 11,474 feet. The east face of the Toiyabe Range is steep and cut by deep canyons with precipitous walls. Timber of adequate size for lumber formerly grew in the Toiyabes, but today there is only sparse tree growth. Kingston Creek, North Twin and South Twin Rivers, and Birch Creek drain into Smoky Valley on the eastern side of the Toiyabes. Peavine Creek discharges from the southern end of the range into lower, or southern, Smoky Valley.

The Toquima Range extends nearly 70 miles from Hickison Summit in Lander County to the north end of the San Antonio Mountains, north of Tonopah. The Toquimas lack the steep slope facing Smoky Valley found in the Toiyabe Range on the opposite side of the valley. Mt. Jefferson, at 11,941 feet, is the highest point in the Toquima Range and in central Nevada; it is the sixth-highest peak in Nevada. Moores Creek, Willow Creek, Jefferson Creek, and Shoshone Creek all drain into Smoky Valley on the west side of the Toquimas.

Lower Smoky Valley is bordered on the east by the San Antonio Mountains, an irregular mountain mass about 30 miles long beginning just south of the Toquimas; the highest point is 8500 feet. The southern terminus of the valley is formed by Lone Mountain, a conspicuous solitary peak with a precipitous slope that rises to 9114 feet. The Silver Peak Range, the border on the southwest, is wide and rather high, separating Smoky Valley from Fish Lake Valley to the south; its highest point is Piper Peak, at 9447 feet. The Monte Cristo Range, which creates the western border of the 'lower valley, reaches 7997 feet; with little timber or vegetation, it appears desiccated. Ione Valley, lying west of the southern end of Smoky Valley, has a drainage basin of about 500 square miles that drains into lower Smoky Valley.

Tonopah, once a great silver boomtown at the turn of the century and the present seat of Nye County, is located in the San Antonio Mountains and overlooks the southern portion of the Smoky Valley. The towns of Round Mountain and Manhattan lie on the eastern edge of the valley on the western flank of the Toquima Range. The communities of Hadley and Carvers are situated on the floor of Smoky Valley not far from Round Mountain. The small settlement of Kingston lies about 30 miles north of Round Mountain at the mouth of Kingston Canyon in Lander County on the western side of the valley. Austin, once a mining boomtown and the former seat of Lander County, is located on the western edge of the Toiyabe Range at the northern end of Smoky Valley. Eureka, another frontier boomtown and the current seat of Eureka County, is approximately 100 miles northeast of Round Mountain at the south end of the Diamond Mountains (see Figure 2.1 for the locations of the towns in Smoky Valley). Reno is more than 170 miles west of Smoky Valley; Las Vegas is more than 220 miles to the south.

The majority of ranches in the valley are located along west side of the upper valley, near the foothills of the Toiyabes. Most of these ranches date from the 1860s. Several ranches have been built in the southern part of the valley along Peavine Creek, and in recent years some have been established on the valley flat, south of the Peavine channel.

Streams formed by snowmelt and occasional heavy rains have carved canyons of various sizes in the mountain walls enclosing Smoky Valley, and at the mouth of each canyon that discharges water, a large alluvial fan has formed. A low and gentle alluvial swell west of the town of Manhattan divides the Smoky Valley into northern and southern basins. The lowest point in the northern basin is 5443 feet; in the southern basin, 4720 feet (Meinzer, 1917:9). Twelve thousand years ago, in the Pleistocene era, the two basins held large lakes. The upper lake, known as Lake Toiyabe, at its maximum would have been about 40 miles long by 9 miles wide, covering a total area of about 225 square miles; it would have been a maximum of about 170 feet deep (Meinzer, 1917:30). Lake Tonopah, the lake in the lower valley, was probably about 22 miles long by 5.5 miles wide, covering approximately 85 square miles. Its maximum depth would have been about 100 feet at the southern end; its total shoreline would have been about 53 miles long. The alkali flat located in each basin is a remnant of these lakes, and the many gravel benches and beach ridges in the basins are vestiges of the former lakes' shorelines. Today, in the south end of Smoky Valley west of Tonopah, two benches are visible. One lies at a lake depth of 100 feet and the other at 70-foot depth (Kelly, 1978:13). The old Tonopah and Goldfield Railroad roadbed and U.S. Route 6 to Coaldale cross the flat where Lake Tonopah once stood (see the map Pendleton, 1979:260). Streams from the Toiyabe and Toquima Ranges fed Lake Toiyabe; Lake Tonopah was fed by Peavine Creek and, intermittently, by Cirac Creek from Ione Basin (Kelly, 1978:13).

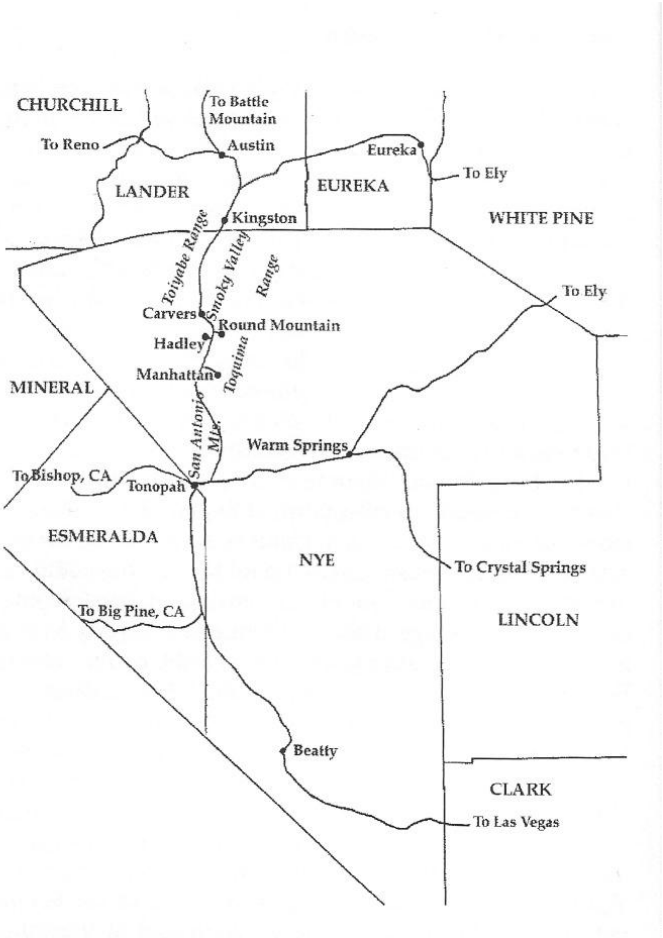


Figure 2.1. Location of towns in Smoky Valley, 1996. (Art by Jeanne Sharp Howerton.)

The Environment

The climate of Smoky Valley, like Nevada's in general, characterized by bright sunshine, clean and clear air, low ,annual rainfall in the valleys and deserts, and variable heavy snow's in the higher mountains. Annual average precipitation the state as a whole is close to 9 inches, about one-half of which falls between December and March. January is the wettest month; August, the driest. Over a 24-year period, precipitation records during the first half of the twentieth century for Millett, a former stage station and townsite at the north end of Smoky Valley, show an average of 6 inches per year, ranging from 2.45 to 8.67 inches.

The valley floor is generally dry, especially in the southern end, but considerable water lies beneath the valley's surface. The surrounding mountains, particularly those in the Toiyabe Range, contribute tens of thousands of acre-feet to valley groundwater supplies each year. Most of this water is accessible by wells and pumping, and the water is generally of good quality. Several artesian wells flow in the Carvers area. In the high mountains, and principally in the Toiyabe Range, surface water collects mainly in small streams. Sometimes, depending on precipitation and the seasons, the streams become lost in rocky canyons; at other times they travel beyond the base of the mountains into the valley.

Sagebrush is the most abundant and characteristic plant of the area. It is found both in the valleys and on the mountains' highest ridges. Although the alkali flats are barren of vegetation, there are thickets of buffaloberry about one-half to two miles away from the Lake Toiyabe flat. Rabbit-brush grows in a belt between the buffaloberry and sagebrush. Willows predominate on the lower courses of streams, and both willows and birches are found in the canyons at elevations between 6500 and 7500 feet. The pinion-juniper complex of trees, mainly pinion pine in this locale, occurs between 6500 and 8000 feet. Mountain mahogany is the principal tree found from 7500 to 9500 feet. Most stands are not uniform and are small, though they can be up to 15 or 20 acres in size. There are aspen trees between 8000 and 9000 feet along the major streams and in moist places, usually on the unprotected northern slopes. Limber pine grows between 9500 and 10,500 feet on steep north-facing slopes. A survey made during the early 1930s of the plants growing in the Toiyabe mountain area identified 505 species and 16 subspecies, as well as varieties representing 69 different plant families (Linsdale, Howell, and Linsdale, 1952:129-200).

The Clovis First Theory

Archaeologists generally agree that sometime between about 50,000 and 12,000 years ago the ancestors of Native Americans, who originated in Asia, crossed over into the New World on Beringia, a land bridge that connected present-day Siberia and Alaska. The continental glaciers that covered much of the Northern Hemisphere during that period had socked up so much of the earth's water that the oceans had been lowered by several hundred feet, creating the land bridge. Exactly when these peoples arrived in North America and which route they took are subjects of considerable controversy in archaeology.

Until recently, most scientists thought that human beings were not present in the New World before about 12,000 years ago because the journey to the New World was simply too

difficult for people with Stone Age technology. The traditional view, or Clovis first theory, holds that the first people to arrive in the New World were members of the Clovis culture.

The Clovis people are said to have crossed Beringia and to have moved south through an icy corridor between the two large continental glaciers that blanketed much of North America at the time, one of which covered western Canada and the other, most of eastern Canada. Once through the corridor, the Clovis people entered the northern Great Plains and then spread out rapidly over most of the New World, including Central and South America. It is presumed that upon their arrival in the New World the Clovis people encountered abundant game and wildlife. The numerous American animal species that had never been hunted by humans probably provided these nomadic hunter-gatherers with a bountiful food supply, enabling the new residents' population perhaps to double every twenty years. In this scenario, the last period of glaciation ended shortly after the Clovis people arrived. The new arrivals were forced to adapt to changing climatic conditions, and as they adapted to their environment they spread throughout the New World, eventually differentiating into the vast number of Native American cultures found by the Europeans when they arrived in the fifteenth century.

Some archaeologists have concluded that the Clovis first theory, although appealing in many ways, is too conservative. In addition to likely misstating the route taken to get to the New World, it understates the length of time humans have been here. Adherents to the Clovis first theory are criticized for refusing to acknowledge the existence of evidence that places humans in the New World before 12,000 years ago (Bryan, 1991:18).'

Recently, highly respected archaeologists have reported finding archaeological sites in widely scattered areas of both North and South America that predate Clovis sites by up to tens of thousands of years. Most of these discoveries are quite controversial and are not universally accepted by archaeologists. Many consider the most credible pre-Clovis candidate to be the Meadowcrest Rockshelter, located about 30 miles southeast of Pittsburgh, Pennsylvania (Rafferty, 1995). The human artifacts there are associated with dates of as much as 16,000 years ago. In the 1970s, one well-known archaeologist, Richard "Scotty" MacNeish, published a list of 12 alleged pre-Clovis sites discovered by archaeologists in South America alone. MacNeish himself claims to have found a site—the Pendejo Cave—near Fort Bliss, Texas, containing human-associated artifacts said to be up to 35,000 years old. These objects include hardened clay with several human fingerprints, a buffalo bone showing the marks of human chopping, and an animal toe bone pierced by a projectile point (Marshall, 1992). MacNeish and some other authorities believe the Clovis culture was only a later adaptation to changing climatic and environmental conditions. Moreover, archaeologists have also found convincing evidence that non-Clovis people were in northern Alaska 11,700 years ago. This discovery supports the notion that the Clovis people may have only been among the first to enter the New World, with at least one other group also present at that time Bower, 1993:225). Regardless of which of the above theories one supports, the people of the Clovis culture were the first known occupants of the Smoky Valley and the Great Basin.

The Search for Remnants

Although many Clovis people must have lived throughout North and South America, little evidence of their culture remains. One skeleton and some bone and ivory tools are the only nonstone remains discovered so far. The primary means of identifying the Clovis culture is

by its characteristic stone projectile point, which has a flute, or concavity, at the base. The concavity was probably an aid in attaching the points, which range in size from less than 1 inch to more than 4 inches, to the hunter's spear shaft. The flute also functioned like a bayonet flute, enhancing the flow of blood from a deep penetrating wound and preventing the wound from closing. Although the first such projectile point was unearthed with mammoth remains near Dent, Colorado, in the early 1930s, the culture is named after Clovis, New Mexico, where additional points were found in a nearby archaeological site. Clovis points have been found over a vast area—from coast to coast in North America and from Alaska to South America. A total of 58 Clovis points is reported to have been found on the ground at Lake Tonopah at the south end of Smoky Valley and at Mud Lake, southeast of Tonopah (Willig, 1991:96) .

Although mammoth is the most common species found with Clovis remains, that does not mean the Clovis people were specialized big game hunters. A dog and butchered mountain sheep have been found with Clovis points in Idaho (Willig, 1991:97; Stanford, 1991:1-2). Most authorities now believe that the Clovis people were generalists, exploiting a relatively wide range of resources in their area. Most Clovis sites are associated with sources of water—springs, streams, river terraces, or shores of lakes (Stanford, 1991:5). It is likely that the Clovis people lived in small groups and did not occupy campsites for long. Radiocarbon dating indicates that the Clovis culture was probably relatively short-lived, lasting from about 11,200 to 10,900 years ago (Stanford, 1991:2).

Elizabeth and William Campbell were the first archaeologists to work in the Smoky Valley area. The Campbells lived in the town of Twentynine Palms, California, and they developed an interest in archaeology after hearing tales of Indian lore from a local prospector. In 1928, they established the Desert Branch of the Southwest Museum in Twentynine Palms. Using their own finances, the Campbells equipped a small fleet of Ford "woody" station wagons with large tires and special gears and proceeded to conduct meticulous fieldwork. They worked in the Tonopah area on at least five occasions during the 1930s, mapping the old shorelines of Lake Tonopah and collecting artifacts from sites there (Pendleton, 1979:253-263). Some of their best collecting sites were in the vicinity of the old community of Millers.

Following the Campbells' work, not much archaeological research was conducted in Smoky Valley and the Lake Tonopah area until summer 1977, when David Hurst Thomas of the Department of Anthropology at the American Museum of Natural History in New York City directed a research project to investigate the prehistoric settlements at Lake Tonopah. Thomas selected a scientific method widely used by archaeologists to assess the types and locations of artifacts likely to be found in an area.

First, Thomas surveyed a 20-mile line on an east-west axis from the crest of the Monte Cristo Range to the crest of the San Antonio Mountains. The exact position of this line was determined by using a table of random numbers. Next, he plotted a second line precisely 1.2 miles from the first, running parallel to it. Then, four more lines parallel to the first two lines were plotted at 1.2-mile intervals. Lower Smoky Valley was thus transected by a series of six lines running east and west. A zone 83 yards wide (75 meters) was designated along the side of each line. Ten archaeologists, evenly spaced across the 166-yard (150-meter) zone, walked the full 20-mile length of the six lines. One hundred and twenty miles were walked in this way. Two supplementary lines were also plotted across areas thought highly likely to contain archaeological sites. In this way, 8.5 percent of the total area under study was walked and a 14

percent sample was made of the study area that intersected old lake bench lines (Kelly, 1978:20-21; Thomas, 1977) .

Thomas describes the procedure as follows:

The crew proceeded across the designated transect, following compass bearings and navigating from prominent topographic features. All prehistoric cultural debris was collected, including waste flakes. Whenever a site was located, the entire crew assembled to collect and map that site. A site form was filled out on the spot, and the site triangulated by major topographic features. Whenever an extremely large site was encountered, the location of the site was noted, and [a] follow-up survey team returned to collect and map the site. (Thomas, 1977:1-2)

In all, 14 sites were mapped, some containing over 300 artifacts and 2000 waste flakes. Each artifact was later carefully washed, measured, and weighed, then categorized as a scraper, graver, drill, projectile point, or spoke shaver (thought to be used for shaving spear shafts), and so on. Some artifacts were examined under microscopes to analyze marks and microscratches that might indicate how the artifact had been used. Artifacts were divided into two groups: those that were used for working hard materials such as bone, wood, and antler; and those used for soft materials, including hides and flesh (Kelly, 1978:22-27).

The survey identified three types of sites. Chipping-armament stations were used by inhabitants on a single brief occasion when hunting weapons were made or when a small number of implements were sharpened. These sites did not yield many artifacts. Processing sites were places where animals were skinned, cleaned, and butchered, and where preliminary processing of hides occurred. A great deal of chipping of stone implements took place in these locations as work activities proceeded. It is suggested that a number of people were present at these work sites, perhaps with women processing the hides. Base camps were the third kind of site, where all types of activities took place. More whole projectile points and shavers were found at these sites, which indicates that stone implements and other items were probably made here. Knowledge about the distribution of the sites and types of artifacts, combined with geographical information, creates the following picture of life in lower Smoky Valley many thousands of years ago (Kelly, 1978:45-47).

Paleolithic Life at Lake Tonopah

When the Clovis people entered central Nevada, they must have found an abundant environment. Animal life included mammoth, buffalo, camels, horses, burros, giant short-faced bear, deer, huge sloths, mountain sheep, and rabbits and other small species, and there were birds as well. There were large, shallow lakes in most valleys, and game, drawn by the fresh water, congregated near the shores, feeding on the lush plant life.

Beginning about 11,500 years ago, during the Paleo-Indian phase (from 11,500 to 10,000 years ago) of central Nevada prehistory, the Clovis people in lower Smoky Valley lived at the edge of the fertile marsh located in the delta where Peavine Creek joined Lake Tonopah. It is likely the environment in that vicinity was so rich that the inhabitants had little need to go elsewhere for food. Peavine Creek, which ran all year, provided fresh water. Groups of Clovis people—perhaps small assemblages of families—occupied base camps from which they ventured to forage and hunt. This culture is thought to have existed at the edge of Lake

Tonopah perhaps for several hundred years beginning about 11,500 years ago (Kelly, 1978:43, 49-51).

The Pre-Archaic Period

The Pre-Archaic period in southern Nevada lasted from about 10,000 to 7500 years ago. Accumulating evidence suggests that there was a worldwide change in climate at this 'nine that led to the entire Northern Hemisphere becoming Increasingly dry (Beck, 1992). Precipitation began to decrease in the Great Basin at the start of the Pre-Archaic period. There were intermittent periods, sometimes lasting for several hundred years, when conditions were wetter, but the trend was always toward an ever-drier environment in central Nevada. The flow of water in Peavine Creek decreased, and the Cirac and Ione Valley Washes ran only periodically. The Pre-Archaic residents of Lake Tonopah probably continued to rely on the marsh, and on other nearby foods to some degree, but resources there became increasingly less abundant. As the environment became more desiccated and Lake Tonopah became more saline due to evaporation, game may have clustered along Peavine Creek, and the successors of the Clovis people (whose way of life is known to archaeologists as the Western Pluvial Lakes Tradition because the projectile points and other stone implements used by these people are found near the many lakes that dotted the Great Basin during that era) may have developed an increasing reliance on hunting. In lower Smoky Valley, they probably moved upstream from the delta, taking advantage of resources along Peavine Creek. Interestingly, archaeologists found an ancient camp dating from this period located on the west side of a low ridge that hid it from Peavine Creek, where animals would have watered, unaware of being stalked by humans.

As precipitation decreased and Lake Tonopah shrank and became more and more saline, fewer animals remained in the valley, and the focus of life shifted even farther from the lake, the delta, and the lower reaches of Peavine Creek, which had once produced food in such abundance. Base camps were moved away from Peavine Creek and became widely dispersed as residents seem to have exploited a wider variety of resources, including the game that grazed on the grasslands in the valley (Kelly, 1978:56, 59). The larger social grouping that the lush environment had earlier made possible probably gave way to smaller groups and to more family-oriented patterns of living that were characteristic of the aboriginal Shoshone. By 7000 years ago, the waters of Lake Tonopah had been much reduced or had even disappeared.

Archaeologists believe populations in lower Smoky Valley attained their greatest size during the period from about 9500 to 8000 years ago. The largest number of stone artifacts found in the Lake Tonopah area date from then, and projectile points found in the area tend to be increasingly younger the farther they are from the lake's edge.

Over the generations, the Pre-Archaic occupants of Lake Tonopah moved even farther from the lakeshore in order to take advantage of the resources up Peavine Creek and in the nearby hills. As these people moved north up the creek and toward the Toiyabe Range, they may have been pressed into closer contact with similar groups occupying the Lake Toiyabe area and with residents near other lakes in the region, such as Mud Lake. Hunting-and-gathering people's long-term survival strategies center on intergroup cooperation, facilitated by marriage between bands. Food resources can be variable from year to year. Each band's territory was sooner or later subject to difficult years when resources were diminished, perhaps even unavailable. Bands experiencing difficulties would ask other groups for access to their territory

and would not be denied, because other bands knew they would face similar resource shortages and would need to ask for help in their turn. Even so, the Pre-Archaic culture that had held sway for more than 3000 years in central Nevada gave way to the Archaic culture.

Surviving the Archaic Period

The Archaic period, which began about 7500 years ago, involved a continued shift toward a way of life in the Great Basin that more closely resembled the survival methods used by the Shoshone and Southern Paiute Indians when European explorers first encountered these peoples in the 1820s. Instead of relying so heavily on one resource area, as the earlier residents of Lake Tonopah had apparently done with Peavine Creek and its delta, the Archaic people adopted what archaeologists call a broad-spectrum subsistence strategy. They became more nomadic, moving from one available food source to another, following the cycle of the seasons as plants ripened and game became available. The new way of life involved spending spring and early summer in the valley, then traveling to the mountains as foods at higher elevations came into season.

Several technological changes accompanied the Archaic period. One of the most important was the introduction of the atlatl, or spear thrower, that enabled a hunter to hurl his spear farther and with more force and accuracy than was possible with the larger javelin. The atlatl appeared in the Great Basin approximately 6000 years ago and greatly improved hunting efficiency (Beck, 1992). At the same time, the production of stone tools—including projectile points, scrapers, drills, knives, and blades of many types—exploded. This increase is attributed to the greater number of implements needed to obtain food and other necessities from a wider range of environments.

Some archaeologists (e.g., Kelly, 1978) have suggested that the shift from the Pre-Archaic to the Archaic way of life produced major changes in the way communities were organized. The Pre-Archaic people in lower Smoky Valley were probably more sedentary and ranged over a smaller geographic area during the course of a year, living in small bands of two dozen or more in extended families. In contrast, the increasing nomadism of the Archaic people seems to have forced a disbanding of the larger extended-family groups into smaller groups that were oriented around the nuclear family, as with the Shoshone. Thus, whereas Pre-Archaic people might have lived in small communities along the shore of Lake Tonopah and its delta and along Peavine Creek, Archaic people were compelled to form small family groups that interacted with others only at select times of the year. The formation of small family groups probably led to the development of high levels of self-reliance, differences in child-rearing practices, and changes in religious beliefs and in ideas about proper social behavior and the nature of the world.

Archaeologists usually break the Archaic period in the central Great Basin into three divisions: Early Archaic (5000-1500 B.C.), Middle Archaic (1500 B.C.—AD. 500), and Late Archaic (A.D. 500-1800) (Elston, 1986:135-148). Each Archaic period is generally divided further. In central Nevada, the Early Archaic includes the Clipper Gap phase (3500-2500 B.c.) and the Devil's Gate phase (2500-1500 B.c.). Although population numbers were low during the Clipper Gap phase and few archaeological sites date from this time, the area was probably not totally abandoned during this period; it is more likely that most residents moved away from the

vanishing lake and that those few who remained simply left scant record of their presence. The Clipper Gap phase was transitional. Its beginning was apparently marked by the growth of the pinon-juniper woodland in central Nevada and by the introduction of a new food supply—the pine nut. This was also the first period during which aboriginals occupied caves in central Nevada. People of the Clipper Gap phase are known to have lived in the Gatecliff Shelter, located on the north side of Mill Canyon in Monitor Valley (Elston, 1986:139). Hearths containing pinion charcoal and burnt pinon needles dating to about 5350 years ago have been found at Gatecliff Shelter, establishing the presence of the tree and its use at the site by that time (Grayson, 1993:216).

The second phase of the Early Archaic in central Nevada, the 1000-year Devil's Gate phase, indicates a sharp rise in population, possibly owing to the increasing abundance and use of pine nuts. This time period is marked by the use of the Gatecliff series of projectile points found in relatively large numbers in the Reese River and Monitor Valleys (Elston, 1986:138-139).

The Middle Archaic (1500 B.C.—A.D. 500), which spans the Reveille phase in central Nevada, is characterized by a cool, moist climate. The transition from the Early to the Middle Archaic was gradual and was marked by an increase in population density, with winter and seasonal camps being constantly reoccupied. Winter sites contained pit houses 6.5 feet to 13 feet (2 to 4 meters) in diameter that had hearths, storage pits, and burials of the dead. The storing of tools at base camps and in specialized cache sites in caves and rock shelters suggests the regular exploitation of limited territories (Elston, 1986:142). The number of grinding stones found at the sites demonstrates that seeds played a central role in the diet. Nonetheless, rabbit bones are abundant in most archaeological sites from the Middle Archaic. Big-game hunting was also important, with a probable focus on mountain sheep and, to a lesser extent, antelope and deer. Bison and elk were also hunted. Archaeological discoveries reveal that there was regional trade during the Reveille phase, involving obsidian and marine shell beads (Elston, 1986:142).

During the Late Archaic, Great Basin residents benefited from the introduction of an innovation that superseded the atlatl: The bow and arrow enabled a hunter to reduce the size of his dart, tip it with smaller points, and fire more arrows with greater accuracy and force. The Late Archaic people apparently emphasized the production of simple flake stone tools from locally available materials; pottery was introduced about A.D. 1100 (Elston, 1986:145). The Underdown phase of the Late Archaic in central Nevada lasted from A.D. 500 to about A.D. 1300, and contact with the Anasazi culture to the south and with the Fremont culture to the east in Utah occurred during this phase. The Yankee Blade phase, which began about A.D. 1300 and lasted to historic times, witnessed an increased focus on gathering and a more intensive exploitation of pine nuts. Dwellings increased in size and settlements grew larger as populations became increasingly sedentary. This trend led to the establishment of the large Western Shoshone villages found on the valley floors when whites first entered the area (Elston, 1986:146).

Before A.D. 600, cultures in the Smoky and Owens Valleys made use of the Toquima Range and the White Mountains. Hunting blinds and sites containing remains of projectile-point manufacture testify to such use on a limited basis (Bettinger, 1991:656). Beginning about A.D. 600, the valley inhabitants began to use the high-altitude resources in the Toquima Range and

the White Mountains intensely. Small villages that date from this period had circular houses with stone footings and timber or pole-and-thatch construction; such villages are found from about 10,250 feet to 12,650 feet above sea level, all above the modern tree line. These are believed to have been warm-season base camps or villages occupied for periods of one or two months by nuclear families and perhaps even by multifamily units or bands. A diverse inventory of stone tools for plant and animal procurement and processing has been found at these sites, along with considerable stone debris from tool manufacture (Bettinger, 1991:657) .

The Numic Spread Theory

Living at high altitude reduces plant and animal as well as human performance. There is a decrease of about 10 percent for every 3000 feet above the 6500-foot elevation level in a plant's ability to photosynthesize and in human endurance, reasoning ability, and visual acuity. In humans, sea-level standards are restored after a few days in higher elevations for some measures—for example, for visual acuity—but for other measures, such as endurance, there is little or no improvement with increased time spent at the elevation (Bettinger, 1991:676). Archaeologists have wondered why people would move to a higher elevation where efficiency is reduced if resources at lower elevations were available. Why would people construct villages at such high altitudes for plant collection and hunting? Game was probably too scarce to warrant lengthy occupation of a high-altitude village, even if plant foods were abundant. One theory suggests that although the human population and the environment had been in relatively stable equilibrium for a long period, drought drove the population to higher elevations. Regional climatic deterioration, some theorists believe, brought about similar responses in eastern California in the White Mountains and in central Nevada in the Toquima Range (Bettinger, 1991:674).

Another possible explanation for the movement to higher elevations has been offered by Robert L. Bettinger, an archaeologist at the University of California at Davis. His suggestions bear on a controversy that has been raging since the late 1950s among researchers who study the prehistory of the Great Basin. In 1958, the linguist Sydney M. Lamb suggested on the basis of linguistic evidence that speakers of the Numic languages, a branch of the Uto-Aztecan language family that includes such languages as Chemehuevi, Ute, Northern and Southern Paiute, and Shoshone (which are Great Basin languages), as well as Kawaiisu and Comanche, did not originate in the Great Basin. These Numic speakers either migrated to or invaded the area, originating from somewhere around the Mojave–Death Valley area in southern California (Lamb, 1958:95-100). This theory, called the Numic spread theory, suggests that ancestors of those who occupied the Great Basin at the time of European contact, including the present Western Shoshone and Southern Paiute, moved in and in some way replaced by expulsion, killing, or intermarriage the original occupants, who presumably had been there since the Pre-Archaic Clovis people.

Exactly what might have happened to the original occupants is an unsettled issue. Bettinger (1991:674) proposes that the people who built the high-altitude villages in the White Mountains were Numic speakers who replaced the original occupants. This wave of immigrants advanced northward and eastward into the Great Basin from a California homeland near or in the Owens Valley. The immigrants, Bettinger believes, are the ones who constructed the Alta Toquima village on the east side of the Toquima Range. Bettinger's theory holds that the former

occupants of the area, including those of Smoky Valley, had chosen particular resources for consumption, such as mountain sheep, that cost an individual less effort per calorie gained. In contrast, the Numic people had evolved a way of life that emphasized harvesting low-quality resources, such as seeds, which required more work for each calorie harvested. The Numic people had the advantage in that they could produce greater quantities of food from a given area—though with more effort per calorie—than could the area's traditional occupants. Because the Numic people used more available resources and were thus more efficient at making a living, the pre-Numic people were powerless to stem their immigration. The alpine environment in the White Mountains and Toquima Range vas therefore an efficient food production zone for the Numic people (Bettinger, 1991:674). Bettinger believes that the Numic groups could have spread from eastern California :o central Nevada in 100 or 200 years' time, bringing with diem their more efficient culture. According to this theory, -.he less economically productive residents of the Great Basin, including those of Smoky Valley, were thus replaced about 1000 years ago by a more efficient culture, the ancestors of the Shoshone. Most linguists agree with this theory, for it fits with what they know about the development and spread of the Numic languages (Charney, 1995).

The idea of Numic expansion out of southern California is hotly debated among archaeologists, however. Other theories extend Shoshone residency farther back into antiquity. One school of thought, based on similarities between pre-Numic and Numic archaeological sites in the central Great Basin, holds that during the Archaic, prior to 1000 years ago, Archaic Numic people living in the central Great Basin—including Smoky Valley—expanded in numbers, moving out to the northwest and southeast. Another view holds that the Numic speakers, including the Western Shoshone of Smoky Valley and the Southern Paiute of Southern Nevada, have been present in the Great Basin for at least 10,000 years—and may be descendants of the Clovis people, the first known human occupants of the area (Rafferty and Blair, 1984; Rafferty, 1995).

Regardless of which theory of the origin of the Shoshone one accepts, the Shoshone first encountered by European explorers in the Great Basin in the 1820s had been in the region for a very long time and were admirably adapted to survival in an environment that could hardly be called abundant.

The Western Shoshone

Western Shoshone Indians occupied Smoky Valley and much of the Great Basin when Europeans first arrived in the West. The Western Shoshone were hunter-gatherers and skillfully used natural resources to sustain their relatively small populations. They were seminomadic, moving from one part of their territory to another as foods became available.

In 1830, Western Shoshone territory resembled a large teardrop on the Great Basin, covering most of eastern Nevada and northwestern Utah and stretching across the southern California—Nevada border into Death Valley and the Owens Valley to below Owens Lake. The western margin of Western Shoshone territory was marked by a line stretching from the Oregon border through Tonopah and south to Owens Lake in California. On the northeast, the territory of the Western Shoshone included the Great Salt Lake and its environs, as well as all of eastern Nevada north of the Muddy River drainage system. All of Nye County north of Beatty was Western Shoshone territory (Thomas, Pendleton, and Cappannari, 1986:264).

Local customs and food-collection practices varied from one part of the vast Western Shoshone territory to another according to the resources available in different regions and the relative isolation of individual groups. Labor among the Newe, as the Shoshone call themselves, was divided according to sex. Men were largely responsible for hunting; women's activities focused on the collection of plant foods, which provided the bulk of the diet (Thomas, Pendleton, and Cappannari, 1986:276-277). Women gathered wild onions on hillsides in early spring. They collected watercress, morning-glory roots, sago roots, cattail roots, young cattail stems, wild carrots, and wild asparagus, which could be dried and eaten in winter. Women dug camas roots, piled them in small mounds, and stored them when dry for winter use (Newe, 1976:5-6). In canyons and on mountainsides, they collected fruits and berries, including the buffaloberry, serviceberry, chokecherry, gooseberry, and wild currant. Buckberries were ground and made into a pudding eaten fresh or dried for winter use (Nave, 1976:7). Seeds were collected from sand bunchgrass, wild rye, and sunflower plants. The Smoky Valley Western Shoshone collected pine nuts on the east side of the Toiyabe Range as far up as the summit line; they also collected in the Toquima Range.

Pine nuts, the most important food to the Western Shoshone, were collected in the late fall. A celebration was held before the pine nut harvest began. After participants from camps in the surrounding area had arrived, the pine nut chief, or "doctor," began the ceremony "by throwing a handful of pine nuts in four directions and asking the Maker to provide a good harvest" (Newe, 1976:7). Under the pine nut chiefs direction, people danced for three nights, then bathed and departed for the pinion groves to pick pine nuts. The nuts could be eaten fresh, but most were stored for winter use; often the cones were placed in caches in the ground and covered with pine branches. Pine nuts were roasted over coals, shelled, and ground into flour. The flour was stored; when used later, it was mixed with water to form a gravy (Newe, 1976:8).

Fall was an important time for hunting. The annual antelope drive was directed by a medicine man, and the event required considerable cooperation among the hunters. A corral of rocks, sagebrush, and cedar trees with brush wings was constructed. Antelope were driven into the corral and were shot with arrows. A sinew-backed bow made of juniper and a quiver of wildcat skin were widely used by Western Shoshone hunters. The rabbit drive also took place in the fall, with people of all ages participating. Rabbits were driven into a net and killed. Their fur was cut into long strips and woven into blankets; some of the meat was dried for winter use. Deer were hunted in both summer and fall but were fatter in fall. Venison was cut into long strips free of fat, dried, and stored in a cool, dry place. Bighorn sheep, which were hunted with the assistance of dogs, were probably the most important large game animal (Thomas, Pendleton, and Cappannari, 1986:267). The Western Shoshone hunted groundhogs in the early spring and roasted them over hot coals in their skins when snow was still on the ground. Sage hens were taken with nets in the early spring during their mating season. Birds of many species and trout from mountain streams supplemented the diet. Food was stored in caches at selected sites for use during the winter (Newe, 1976:5-11).

The Western Shoshone made an assortment of blankets and baskets. Baskets covered with pine pitch were used as water jugs, and conical twined baskets were used for seed collection (Thomas, Pendleton, and Cappannari, 1986:269). Each household kept a large

grinding stone, a small handstone, and a flat willow basket, all used for preparing pine nuts and other seeds.

The Western Shoshone usually spent every winter at their permanent campsite, which was most often positioned near water and in the low foothills, off the valley floors with their colder temperatures. Several families customarily wintered at the same campsite, creating a small village with a fairly stable population. Winter dwellings were constructed of juniper branches and insulated with leaves and other dry materials (Newe, 1976:11). People slept under rabbit-skin blankets, with heated stones at their feet. Food supplies were usually cached at sites within one or two hours' walk from a winter camp. When warm weather returned and harvest time approached, families dispersed to food-collecting areas, where temporary camps were set up.

In general, the Western Shoshone lived in small, relatively isolated family-based groups that met with others only on special occasions. This mode of social organization was a functional response to the highly fluctuating food supply. The nuclear family was the basic social unit, and family members developed strong bonds. The Shoshone language, unlike most European languages, distinguishes between maternal and paternal grandparents; first cousins are called brothers and sisters. Families belonged to small local districts, with their dwellings frequently centered in a valley or in a cluster of winter villages. Groups were sometimes named after prominent geographical features or food resources in their territory. For example, the Western Shoshone of Smoky Valley were called vviyambitukanu, meaning "eaters of buffalo berry" by the other Shoshone (Steward, 1970:100). Social stability was greatest where food resources were most abundant, although people did move between local groups (Thomas, Pendleton, and Cappannari, 1986:276).

Marriage established strong relations between families. Bride price—what the groom paid the bride's family upon marriage—was common, and good hunters were allowed to take more than one wife, the second usually being a younger sister of the first wife. Newlyweds lived in the territory of either marriage partner. Occasionally, a man, aided by friends, obtained a wife by abducting her from her home. Although no group owned the seed areas, women owned the seed harvest and were responsible for the group's welfare at the winter camp. The Western Shoshone economy and way of life was peaceful and did not promote killing and warfare. Individuals were occasionally killed, but they were most likely to be strangers (Thomas, Pendleton, and Cappannari, 1986:277-278).

The Western Shoshone, like hunter-gatherers around the world, developed a religion that involved direct interaction with the supernatural. Religious belief affected all activities: The Western Shoshone practiced a religious approach to life, as compared to the secular approach characteristic of the descendants of Europeans. There was no formal priesthood, and anyone could acquire supernatural powers through visions and dreams (Thomas, Pendleton, and Cappannari, 1986:271). Both men and women could be shamans, but men were more commonly practitioners. There were three different types of shaman, each with particular expertise in curing specific ailments, general curing, or using power only for personal benefit. A considerable variety of plants and substances were used for treating illness, but many plants used for curing by the Western Shoshone are now believed to be extinct.

Puberty rites were restricted to females. During childbirth, rituals were followed to ensure the welfare of the child. A shamanistic midwife assisted the birth and carefully disposed

of the placenta and umbilical cord. When twins were born to Western Shoshones, one infant was sometimes killed to increase the chances of survival for the remaining child, a fairly common practice in many societies. The dead were sometimes cremated, and in mountain areas they were buried in rock slides (Thomas, Pendleton, and Cappannari, 1986:270-271).

The Round Dance ceremony was held when food supplies were abundant, usually in the fall, coinciding with the pine nut harvest, rabbit drive, and antelope drive. The dance provided opportunities for courtship and the cementing of social bonds, and it allowed people to exchange information on available resources (Thomas, Pendleton, and Cappannari, 1986:272-273). Following the pine nut harvest, a five-day fall festival in Smoky Valley was held at Hot Creek, Manhattan, the Millett Ranch, or elsewhere (Steward, 1970:110). In Smoky Valley, the fall festival was followed by a ten-day rabbit hunt held at various places in the valley Steward, 1970:110).

It is estimated that during the 1860s the population density of the Western Shoshone ranged from 44 square miles per person in the Beatty area to 1.7 square miles per person in the Reese River Valley, one of the most abundant environments in the Western Shoshone territory. In comparison, in 1861 the population density of the entire state of Nevada was 15.6 square miles per person (Steward, 1970:48-49). In 1874, in the Reese River Valley—densely populated by Western Shoshone standards—virtually every canyon on the west side of the Toiyabes and on the east side of the Shoshone Range had a winter village. Smoky Valley, however, had a somewhat less favorable environment for the Western Shoshone. The lower end of Smoky Valley south of Peavine, for example, seems to have been unoccupied, as was the northern end of the valley. However, along the middle and south end of the Toiyabes, there was a permanent camp on nearly every small creek that flowed out of the range into the valley, at intervals of every mile or two. The largest villages were at Millett's Ranch, on the South Twin River, at Darroughs Hot Springs, and at Peavine Creek (Steward, 1970:109).

The Coming of the White Man

The arrival of the white man, or *Taibo* in Shoshone (Newe, 1976:1), had an immediate and devastating effect on most Western Shoshone. Peter Skene Ogden and members of the Snake Country Expedition were the first whites known to enter Western Shoshone territory. When Ogden passed through in 1828, he found Indian dwellings lining the banks of the Humboldt River. By the end of 1829, only one year later, beaver were practically extinct in Western Shoshone territory—members of the Snake Country Expedition had trapped almost all of them. In 1833, Joseph R. Walker referred to the Humboldt River as the "Barren River" (Newe, 1976:15-17).

The trickle of white explorers into Western Shoshone territory soon became a torrent. In 1845, between 250 and 300 immigrants crossed through Western Shoshone territory along the Humboldt River (Newe, 1976:21). More immigrants traveled through in 1846 than had in the previous five years altogether—most were heading for California. In summer and fall 1846, wagons could be seen from the Missouri River to the Sierra Nevada (Newe, 1976:22). The many travelers and their teams soon destroyed much of the lush environment along the Humboldt River. The Western Shoshone fought back, sometimes harassing the intruders by stealing their traps, sometimes engaging in hostilities. In 1849, following the discovery of gold in California, 25,000 immigrants traveled down the Humboldt River bound for the California goldfields.

Mormons first appeared in the Salt Lake Valley on July 24, 1847, and between 1849 and 1852 the number of Mormons in the Great Basin rose from 6000 to 20,000 (Newe, 1976:24). The continuing influx of whites led to decimation of the game and the plant-collecting areas upon which the Western Shoshone depended.

The first few decades of contact with whites, from 1830 to 1860, may have been the hardest for the Shoshone Forbes, 1991:77). These years brought the most change and the greatest amount of degradation of Shoshone culture, especially along the Humboldt River. Because they were relatively isolated from the Humboldt area, the Western Shoshone of Smoky and Reese River Valleys were slower to experience the full effect of the arrival of the whites, but after Austin was established in 1862, the Western Shoshone of Smoky Valley felt the full effect of the white influx. As prospectors moved south out of Austin and down the Toiyabe, Toquima, and Monitor Ranges, they established small communities wherever gold and silver were found. Horses and cattle trampled the riparian environment along mountain streams, wild game was killed and scattered, and streams were diverted and polluted. Whites declared ownership of naturally watered sites in the valley, and the areas ere fenced and plowed. The prized Western Shoshone collecting and hunting grounds were unimaginably damaged. The effect on the Western Shoshone was catastrophic. At the same time, miners and farmers were moving north up Smoky Valley from San Antonio in the San Antonio Mountains—and the consequences were the same. In a few years, the very foundation of Western Shoshone culture had been undermined, and by 1900, the culture was only a remnant of what it had been.

As the Western Shoshone became increasingly impoverished, there was sporadic talk of setting aside land for them. A treaty in 1855 established a reserve in the Ruby Valley, but it had little benefit for the Western Shoshone. Another treaty, signed on October 1, 1863, allowed whites to use and settle certain lands and required that the Western Shoshone move to a reservation within their homeland, but the government was slow in setting up reservations and the Western Shoshone were hesitant to give up what was left of their traditional way of life. In 1867, an Indian agent held a meeting at Belmont that was attended by approximately 300 Western Shoshone. It was discovered at the meeting that the Indians had little knowledge of what the government was doing or intended to do (Newe, 1976:51-56).

As their traditions were destroyed, the Western Shoshone became increasingly dependent on the whites for survival. By 1869, approximately 10 percent of the Western Shoshone were working for whites. Knowledge of the old ways was gradually lost, and the culture became increasingly fragmented. By the 1860s, or at the latest the 1870s, it was very difficult, if not impossible, for a Western Shoshone to live according to aboriginal ways, even assuming that knowledge of that way of life had not been lost. Between the mid-1870s and the 1940s, the federal government established a number of reservations and reserves in Nevada, including those at Carlin Farms (1870-1879), Duck Valley (1877), Goshute (1914), Battle Mountain (1917), Elko (1918), Ely (1931), Yomba (1937), Duckwater (1940), and South Fork (1941), as well as enclaves at Wells and at Death Valley, California (Newe, 1976:59-104).

The Indian Reorganization Act passed by Congress in 1934 allowed the federal government to acquire land for Indian groups. The federal government purchased several ranches in the Reese River Valley between 1937 and 1941 and established the Yomba Reservation for the Western Shoshone. Between 1940 and 1944, the government purchased 3785 acres of ranch land at Duckwater, Nevada, at the north end of Railroad Valley in Nye

County for the same purpose. In 1940, 21 families were assigned land at the Duckwater Reservation; of the 21, 12 were from Smoky Valley. Several Western Shoshone families from Smoky Valley also moved to the Yomba Reservation.

Members of several Indian families still reside in Smoky Valley. Although the human population of the valley (excluding Tonopah) now stands at higher levels than ever before in its history, the number of Indians is only a small fraction of what it was before the arrival of the whites. Today a few Western Shoshone at communities like Duckwater and Yomba struggle to keep alive what is left of their traditional culture.

Notes

1. Some archaeologists believe it is unlikely early entrants into the New World would have been able to move south down the ice-free corridor between the two immense continental glaciers. Numerous lakes and swampy areas would have provided little forage for animals, making it difficult for humans to survive. What seems more plausible to some experts is that humans may have entered the New World by following the southern coast of Beringia until they reached the northwest coast of North America. Advocates of this view, which is called the coastal refugium theory, point out that the existence of the great glaciers during the last ice age would have lowered the world's oceans 300 to 400 feet from their present levels. The exposed continental shelf would have been ice-free, providing refuge for numerous species of plants and animals. Beginning perhaps as long as 40,000 years ago, small waves of migrants could have left Siberia, following the coast south, possibly all the way to South America. It is postulated that these migrants from Siberia would have had an arctic-adapted way of life and may have had access to kayak-like or umiak-like craft, making their journey over water easier as they proceeded down the coast, dispersing as they went into the abundant new world they had discovered (Rafferty, 1995; Fladmark, 1979).

CHAPTER 3
Exploration of Central Nevada

Of all the European nations, Spain was by far the most active in exploring the New World in the decades following Columbus's arrival. In 1513, Ponce de Leon made the first recorded visit by a European to Florida. While coasting westward along the northern shore of the Gulf of Mexico in 1519, Alvarez de Pineda discovered the Mississippi River. In an incredible journey that lasted from 1528 to 1536, Cabeza de Vaca ventured from the west coast of Florida across the Gulf Coast to west Texas. In the 1540s, Francisco Vasquez de Coronado explored the lower Colorado River and Hernando de Alacon navigated some distance up :he Colorado River from the Gulf of California. There is a common supposition that Spaniards explored southern Nevada, but Alvin McLane, perhaps the leading authority on :he exploration of the Great Basin, states that no documentary evidence for this exists (McLane, 1993:6).

The Phantom River

By 1750, Euro-Americans had explored much of the North American continent. One important exception was a vast area now known as the Great Basin—including what is now western Utah, the southwest corner of Wyoming, the southeast corner of Idaho, part of southeastern Oregon, part of southern California, and most of Nevada. On the expedition at the beginning of the nineteenth century that took them from the mouth of the Missouri River northwest to the mouth of the Columbia River, Lewis and Clark discovered the great northwestern river drainage system that empties into the Pacific Ocean. In the following decades a legend developed about another mighty river—the "San Buenaventura"—which was said to drain an enormous area that stretched from the Rocky Mountains westward to the Pacific Ocean, bisecting the western one-third of the continent. The legendary river appeared on maps of the time and attracted explorers much as the myths of gold and the Seven Cities of Cibola had attracted Spanish explorers to the Southwest. The search for the San Buenaventura River was one facet of a European dream to find a water passage across North America from the Atlantic to the Pacific—a "waterway to Cathay [China]" (Cline, 1988:22-24).

Between 1768 and 1771, Father Francisco Garces, a Franciscan monk who had been sent to Sonora, Mexico, made a number of forays alone on horseback into the lower Colorado River country, searching for an overland route to link Monterey, California, with the missions in Sonora, and later, with those in Santa Fe, New Mexico. In 1776, Garces traveled up the Colorado River to the Mojave villages at present-day Needles. With Mojave Indians as his guides, he explored the southern perimeter of the Great Basin from the San Bernardino Mountains to the Hopi villages west of Santa Fe. Garces is thought to have reached the approximate southern tip of present-day Nevada. In Santa Fe that same year, Father Silvestre Velez de Escalante and his superior, Father Francisco Atanasio Dominguez, were preparing to search for their own route to Monterey. Discouraged by the aridity of the land and by belligerent Indians to the west of Santa Fe, they sought a better way using a route to the north and west. Dominguez and Escalante never reached Monterey—in fact they never even went beyond present-day St. George, Utah—but they learned much valuable information during their

exploration of the Colorado Plateau, and their trek contributed to the first European map based on empirical knowledge that depicted a part of the Great Basin Weber, 1992:250-255). Although Dominguez, Escalante, and Garces explored the southern and eastern margins of the Great Basin, that vast, inhospitable region remained untouched by and very much a mystery to Euro-Americans.

The location of the legendary San Buenaventura continued to baffle explorers. On their 1776 expedition, Dominguez and Escalante discovered a large stream that they named the San Buenaventura; in fact, they had discovered the Green River, a tributary of the Colorado River (Cline, 1988:43-45). Then in 1825, representatives of the Rocky Mountain Fur Company, led by General William H. Ashley, a prominent St. Louis businessman and politician, arrived at the Green River and believed it to be the same San Buenaventura that Dominguez and Escalante had found almost 50 years earlier (Cline, 1988:195). For nearly another generation, the search for the elusive San Buenaventura, flowing from the Rockies to the Pacific, continued—always, of course, to no avail. The river, like the legendary cities of gold, would forever lie somewhere in the distance.

Another dream motivated the next Euro-American explorers to reach the Great Basin area. This time the dream was not of gold and silver, or of overland routes and waterways, but of beaver fur. That dream would also go unfulfilled, at least concerning the Great Basin. It is a great historical :ropy that although the first Spanish explorers did not find cities laden with gold when they entered the American West, centuries later it was indeed gold and silver that fueled the development of the Great Basin. Unlike the gold and silver that the Spanish stole so easily from the Aztecs and Incas, the gold and silver in Nevada and California had to be dug from the ground in locations that were, in some instances, some of the remotest on earth.

A White Man Crosses the Great Basin

Jedediah Strong Smith, one of the great explorers of all time, was a remarkable figure in the history of the American West. He is credited with being the first white man to reach California by an overland route, to cross the Sierra Nevada, and to cross the entire Great Basin and what is now the state of Nevada. He also discovered South Pass in Wyoming and was the first to reach Oregon by traveling north up the California coast. According to Dale L. Morgan, Smith's biographer, Smith saw more of the West than any other man of his time—he knew the Missouri, Columbia, and Colorado Rivers, and he explored the West from Canada to Mexico (Morgan, 1964b:7).

Smith was born January 6, 1799, in Jericho (now Bainbridge), New York. In 1822, at age 23, Smith signed on in St. Louis, Missouri, with General Ashley of the Rocky Mountain Fur Company, determined to make his mark in the fur trade (Brooks, 1977:18). Smith's reputation for courage and dependability grew quickly, and he soon became an important figure in the fur trade business, eventually becoming Ashley's partner.

On August 7, 1826, Smith began a journey that took him in a great circle similar to the one John C. Fremont was to trace 18 years later (see Figure 3.1). From the rendezvous in southeastern Idaho at the bend of the Bear River north of the Great Salt Lake, where he and two of his partners in a fur trading company had met up, the men split into two parties, having decided that would be best for their business. Two of the partners set off toward the north.

Smith and his men headed south toward the Great Salt Lake and moved on to Utah Lake. They continued south to Soldier's Summit and Price, Utah; down the Sevier River Valley through Cove Fort; south to the Virgin River; and on to the Colorado River. They turned west at the Mojave villages north of Needles, California, and journeyed across the Mojave Desert to San Pedro. They then headed east out of the Los Angeles Basin to Victorville and north to the Central Valley, and turning eastward at the Stanislaus River, crossed the Sierra Nevada at Ebbetts Pass in May 1827.

Smith's exact route from the Bear River to southern California and east over the crest of the Sierra Nevada across central Nevada had been the subject of conjecture (Morgan, 1964b:210) until a collection of items offered to the Missouri Historical Society in 1967 was found to contain a 96-page manuscript that ended the mystery. The document was a first-person account by Jedediah Smith of his 1826-1827 expedition (Brooks, 1977:map).

Smith begins his account on August 7, 1826, when he was at the rendezvous point in Idaho, and he ends with his return to the same site on July 3, 1827, 11 months later. Concerning the trip, Smith remarked that he "hoped to find parts of the country as well stocked with beaver as some waters of the Missouri." In addition to his commercial motives, Smith had personal reasons for undertaking a journey into such remote and unexplored country.

In taking charge of our S western Expedition I followed the bent on my strong inclination to visit this unexplored country and unfold those hidden resources of wealth and bring to light those wonders which I readily imagined a country so extensive might contain. . . . I wanted to be the first to view a country on which the eyes of a white man had never gazed and to follow the course of rivers that run through a new land. (Brooks, 1977:23)

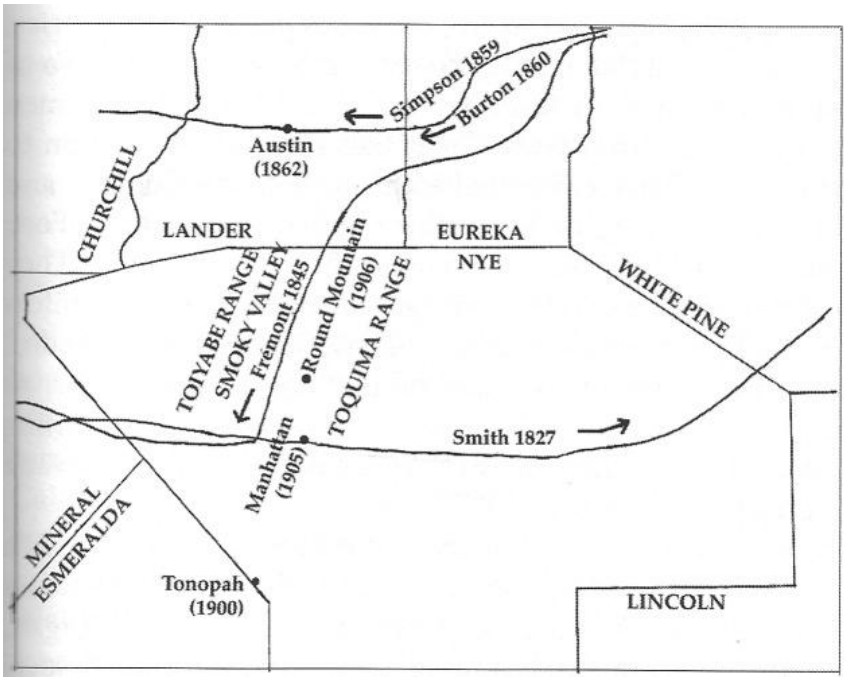


Figure 3.1. Approximate routes across Smoky Valley followed by Smith (1827), Fremont (1845), Simpson (1859), and Burton 1860). Counties and towns shown for orientation. (Jeanne Sharp Howerton)

Smith had two companions, Robert Evans and Silas Goble, on his trip across the Sierra Nevada. The trio had six horses and two mules, about 60 pounds of meat, and hay. On May 20, 1827, they set out on their journey east from a camp on the Stanislaus River near present-day Oakdale, California, where they had left the main trapping party, crossed Ebbetts Pass one week later, then descended the east side of the Sierra Nevada and made their way across West Walker River on May 30. While crossing the mountains, the men encountered snow eight feet deep and a storm that forced them to remain in camp. Smith remembered this as being "one of the most disagreeable days I have ever passed" (Brooks, 1977:169).

Upon completing his descent of the east side of the Sierra Nevada on June 1, Smith sighted Walker Lake (near present-day Hawthorne, Nevada) and encountered Indians, who ran off after realizing the travelers were not other Indians. That night in camp, Smith and his companions were awakened by 20 or 30 horsemen, who surrounded them "with their Bows strung and their arrows in their hands" (Brooks, 1977:174). Smith commented, "If my horses had been tied I should most certainly have fired on them, but as they were loose . . . I thought it prudent not to be the aggressor but to hold ourselves in readiness to beat them off or sell our lives as dear as possible" (Brooks, 1977:175). After several hours, the Indians, who possessed buffalo robes, knives, and Spanish blankets, became more peaceable and accepted tobacco. Smith continued, "It will be readily conjectured that I kept a verry [sic] close watch during the remainder of the night. I do not know how to account for the singular conduct of the [I]ndians. They did not appear unanimous for the massacre and perhaps saw our intention of making our scalps bear a good price. [W]e should not have fallen without some of them in company" (Brooks, 1977:175).

On the next morning, June 2, the Indians appeared friendly and gave instructions that water could be found to the east, in the direction Smith wished to travel. Smith traveled for 20 miles in the direction the Indians indicated but found no water. He concluded, "The [I]ndians no doubt well knew there was no water and intended to deceive me and send me where I might perish for want of it" (Brooks, 1977:176) .

Smith recorded that on June 2 he had seen a "snowy hill" and had steered toward it. Experts believe that the three men made a dry camp at a spot in Soda Springs Valley about 5 miles northwest of present-day Luning. Although it has been suggested that the snowy hill was Arc Dome in the Toiyabe Range, the great peak is not visible until the pass above Luning is reached (Brooks, 1977:176-177). Smith apparently left Soda Springs Valley, crossed northeast through the Gabbs Valley Range and continued east down a wash into Ione Valley, camping near the base of the Shoshone Mountains. It is likely he then crossed the Shoshones in the vicinity of Willow Springs and crossed the south end of the Toiyabes near Barrel and Mud Springs. He camped at Peavine Creek on June 6.

Smith's entry for June 7 describes his course across Smoky Valley: "E 15 miles crossing a plain and at the foot of a hill found water where I stopped for dinner. [T]hen crossing the range of hills and following an [I]ndian trail N 10 miles found water and good grass and encamped. [S]aw an [I]ndian today" (Brooks, 1977:178). Smith stopped for lunch just west of present-day Manhattan, then crossed the Toquima Range directly east of Manhattan on a route approximating that of today's Nevada Route 377 (Brooks, 1977:178).

On June 7 and 8, the group is believed to have camped near what is now Belmont. Smith's June 8 entry describes the terrain:

As my horses were much fatigued and the grass was tolerable good I concluded to rest. The general Character and appearance of the country I have passed is extremely Barren. High Rocky hills afford the only relief to the desolate waste for at the feet of these are found water and some vegetation while the intervals between are sand barren Plains. (Brooks, 1977:178)

On June 9, the party traveled northeast across Monitor Valley and took McCann Canyon through the Monitor Range, then proceeded across the north end of west Stone Cabin Valley. However, it is possible they crossed the Monitors at Barley Creek.

On June 10, Smith and his party noticed a fire and moved toward it. There they found an Indian woman and two children who were understandably frightened by the appearance of the strange men. The woman and children appeared to be travelers, and they shared their water with the explorers. The Indian woman prepared scorpions to eat, the first time Smith had witnessed such a practice. Smith and his party moved down Hot Creek Canyon into Hot Creek Valley and entered the Pancake Range about where U.S. Route 6 does today. He negotiated Black Rock Summit and crossed Railroad Valley at or slightly north of Blue Eagle. From there, they probably crossed the Grant Range at Johnson Canyon and camped on June 14 about 3 miles south of present-day Lund. From Lund, the travelers apparently crossed Connors Pass and Sacramento Pass on their way to the south shores of the Great Salt Lake.

Although Smith's firsthand accounts of his arduous travels across Nevada are not graphic, they are valuable in that they provide the first written descriptions of the Great Basin and northern Nye County. The courage that Smith and his companions exhibited in crossing such an inhospitable and uncharted land is testimony to their indomitable spirit. The trepidation that a modern motorist sometimes feels when setting out to cross the long stretches of Nevada's highways pales when compared to the uncertainty that Smith and his companions must have experienced.

At age 32, Smith was killed by Comanches on May 27, 1831, along the Cimarron River on a dreaded stretch of the Santa Fe Trail. One year later, in June 1832, an item about Smith appeared in the Illinois Monthly Magazine:

And though he fell under the spears of the savages, his body has glutted the prairie wolf, and none can tell where his bones are bleaching, he must not be forgotten. One, at least, who knew his worth, and who had listened with childlike delight to his tales of daring deeds and perilous adventure, can never forget him. But after all, his character as a traveller—as the greatest American traveller—must depend upon his works. When they are published, exactly as he left them, there are thousands in our country, who, thirsting for more knowledge of the "farthest west," will delight to render him all the honor that is justly due him. (as cited in Brooks, 1977:10)

Ogden's Snake Country Expeditions

It is a peculiar coincidence that more than 300 years after the Spanish exploration of North America began and nearly 50 years after the first Euro-American set foot in what is now Nevada, the second and third Euro-Americans to enter the state did so independently of each other in the same month.

As Jedediah Smith was crossing the southern tip of Nevada from the east in the fall of 1826, another group of trapper-explorers, led by Peter Skene Ogden, entered the state from the north (Funk, 1982:7L). Ogden, born in Montreal, Quebec, in 1790 into a family of legal practitioners, gave up a possible career in law to enter the fur trade (Cline, 1974:11). He joined the Hudson's Bay Company and became a brigade leader for the company's Snake Country Expeditions. Ogden trapped thousands of beaver along the Snake and other major rivers in territory that is now part of Montana, California, Idaho, Oregon, Utah, and Nevada. The beaver pelts supplied the fur used to make felt, much in vogue then in European men's fashion (Funk, 1982).

During the second Snake Country Expedition (1825-1826), Ogden and his men trapped the Snake River tributaries in Oregon and eastern Idaho. The exploration of this area in May 1826 took Ogden briefly into Nevada, into northern Elko County in the vicinity of Jarbidge, but because the men were short of supplies and had found the country relatively barren, they returned to Vancouver (Cline, 1974:76).

On his fifth Snake Country Expedition (1828-1829), Ogden discovered the Humboldt River, and on his sixth (1829-1830), he returned to Nevada and in 1829 discovered where the Humboldt River, known then as the "Unknown River," discharged into the Humboldt Sink. Authorities disagree on the route taken by Ogden from there. According to one scenario, Ogden and his party traveled southward to Walker Lake, and moving parallel to the present-day California-Nevada border, continued on as far south as the Gulf of California (Cline, 1974:93). Alvin McLane, who cites a letter Ogden wrote, believes Ogden's route from the Humboldt Sink out of Nevada took him first east, then south. He thinks Ogden may have passed along the Elko and White Pine County boundary, traveling from the frozen lakes of the Unknown (Humboldt) River to, as Ogden later wrote in his letter, the "Great Sandy desert of the Great Salt Lake" (McLane, 1982:283; Pendleton et al., 1982:167-168). From there, McLane believes, Ogden traveled south through Utah to the Gulf of California (McLane, 1995). By either account, Ogden seems never to have made it to the Smoky Valley, but his efforts helped clear the way for future explorers.

Walker's Expedition to California

The next important expedition to enter central Nevada was organized by a young French-born army officer, a graduate of the military academy at West Point, Captain Benjamin Louis Eulalie de Bonneville. Bonneville's expedition was outfitted in St. Louis, and in May 1832 his party headed west with 110 well-equipped men and 20 wagons. Bonneville and his party attended the trappers and traders' rendezvous at the Green River in 1833. There, Bonneville arranged for one of his captains, Joseph R. Walker, to lead an expedition to California to search for western streams reputed to be filled with beaver.

Walker's expedition set out from the area of the Green River on July 24, 1833, with instructions to meet Bonneville at the Bear River the following summer. Walker headed west to the Ruby Mountains, then traveled along the Humboldt River. From the Carson Sink the group crossed the Sierra Nevada into the San Joaquin Valley.

On his return east, Walker left California on February 14, 1834, and crossed the Sierra Nevada at Walker Pass, which he discovered (named for him later by John C. Fremont). He proceeded up the Owens Valley to Benton Hot Springs and thence to Sodaville, south of Walker

Lake, along what later became the railroad route. North of Sodaville, Walker believed he recognized a landmark from the year before, and he turned northeast, thinking to shorten his trip to the Humboldt (Fletcher, 1980:69-86). This shortcut resulted in great hardship for Walker's party. Walker corrected for the error, turning back to the northwest. The party found the Walker River, north of Walker Lake, and continued north, eventually rejoining Bonneville at the rendezvous (Fletcher, 1980:86-90). Although Walker did not set foot in Smoky Valley, he helped set the stage for its later exploration.

The Walker expedition was a big failure from a financial point of view; however, it was a huge success in that it expanded understanding of Great Basin geography. The information that Walker provided helped Bonneville construct his well-known map of the region adjacent to the Great Salt Lake. Walker also concluded, as Smith had earlier, that the San Buenaventura River did not exist; there were rivers flowing from both sides of the Sierra Nevada, but none passed through that mighty chain of mountains (Fletcher, 1980:88).

In the wake of the expeditions across the Great Basin by Smith, Ogden, and Walker, stories about the abundance of land and resources in California spread. In 1840, hundreds of people joined the Western Immigration Society, and its members made plans to head west the following year. John Bidwell and John B. Bartleson, both inexperienced in travel to California, led the expedition. They journeyed up the Missouri River from Independence, Missouri, eventually reaching the Bear River north of the Great Salt Lake. From there they traveled southwest to Pilot Peak, on what is now the eastern border of Nevada. They reached the Humboldt River and followed its waters to the Carson Sink, then traveled to a point north of Walker Lake where they crossed the Sierra Nevada near Sonora Pass (Hulse, 1981:52). In the ensuing years, this route along the Humboldt became the established path across the western Great Basin to California.

Fremont Names the Great Basin

Colonel John Charles Fremont has been variously described as the "West's greatest adventurer" and as the "pathfinder." Because his explorations of the Great Basin and much of the West were preceded by those of Smith, Ogden, Walker, and others, it has been suggested that Fremont was not so much a pathfinder as a pathmaker (Cline, 1988:215). One of Fremont's biographers, Allan Nevins, titled his book Fremont, Pathmaker of the West (Nevins, 1955). However, in the matter of exploring Smoky Valley, which lies close to the center of the Great Basin, the title of pathfinder is much deserved.

Fremont led an incredible and full life. He was born January 21, 1813, in Savannah, Georgia. Fremont was a precocious child. He entered Charleston College (South Carolina) as a junior when he was 16 years old but never graduated, being dismissed within three months of graduation for neglect of his studies; apparently he spent too much time with a young woman with whom he had fallen in love. His reputation for brilliance helped him escape the worst consequences of his expulsion (Nevins, 1955:13-17). After a stint as a mathematics teacher, he took a position as assistant engineer with the U.S. Topographical Corps, doing surveys for a projected railway from Charleston, South Carolina, to Cincinnati, Ohio (Fremont, 1887:19, 23). In 1841, he married Jessie Benton, the vivacious 17-year-old daughter of the powerful senator from Missouri, Thomas Hart Benton (Egan, 1985:46). Fremont was chosen as California's first senator in 1849. In 1856, he stood as the Republican Party's candidate for president of the

United States (Egan, 1985:33, 508). Although Fremont attained unusual fame and notoriety during his lifetime, both he and his beloved wife died in near poverty. This true "man of the West," lying on his deathbed in New York City, on July 13, 1890, told his doctor, "If I continue as free from pain, I can go home next week." Leaning over, the doctor asked him which home he meant; Fremont replied, "California, of course." Those were his last words (Egan, 1985:524).

Between 1842 and 1854, Fremont made five expeditions across the western United States, three of which took him across Nevada. Fremont applied the coup de grace to the legend of the San Buenaventura. On his second expedition (1843-1844), he made a great circle from the northern shore of the Great Salt Lake up through Idaho to the Columbia River, down central Oregon to western Nevada, west across the Sierra Nevada south of Pyramid Lake, down the Central Valley of California, then across the Mojave Desert to the Las Vegas Meadows, and finally north through western Utah back to the Great Salt Lake. In making this immense circle, he encountered no great river like the mythical San Buenaventura, with its headwaters in the interior of the continent. When camped at Utah Lake on May 23, 1844, he concluded that the San Buenaventura did not exist and that the vast territory between the Wasatch Range and the Sierra Nevada had an interior drainage system and was, in fact, a "Great Basin." Thus was the Great Basin named (Cline, 1988:215). Fremont commented that the existence of

the Great interior Basin . . . is vouched for by such of the American traders and hunters as have knowledge of that region. . . . Mr. Joseph Walker . . . informed me that, from the Great Salt lake west, there was a succession of lakes and rivers which have no outlet to the sea. . . . The structure of the country would require this formation of interior lakes; for the waters which would collect between the Rocky Mountains and the Sierra Nevada, not being able to cross this formidable barrier, nor to get to the Columbia or the Colorado, must naturally collect into reservoirs, each of which would have its little system of streams and rivers to supply it. It would be the natural effect; and what I saw went to confirm it. . . The existence of the Basin is therefore an established fact in my mind; its extent and con-tents are yet to be better ascertained. It cannot be less than four or five hundred miles each way, and must lie principally in the Alta California; the demarcation latitude of 42° probably cutting a segment from the north part of the rim. Of its interior, but little is known. It is called a desert, and, from what I saw of it, sterility may be its prominent characteristic; but where there is so much water, there must be some oasis. (Fremont, 1845:275-276)

When Fremont first traced the perimeter and named the Great Basin at the end of his second expedition, he had not explored its interior. Although travel across the Great Basin along the Humboldt River was becoming fairly common during the mid-1840s, no whites had crossed through central Nevada since Jedediah Smith had done so in 1827.

Fremont's third expedition (1845-1846) took him directly across the heart of the basin, the great inland drainage area. The purpose of the expedition was to explore

that section of the Rocky Mountains which gives rise to the Arkansas River, the Rio Grande del Norte of the Gulf of Mexico, and the Rio Colorado of the Gulf of California; to complete the examination of the Great Salt Lake and its interesting region; and to extend the survey west and southwest to the examination of the great ranges of the Cascade Mountains and the Sierra Nevada, so as to ascertain the lines of communication through the mountains to the ocean in that latitude. (Fremont, 1887:422)

Among those Fremont selected to be part of the third expedition were 12 Delaware Indians, two of whom were chiefs. The Delawares, Fremont felt, were "good hunters and brave men" (Fremont, 1887:424). Fremont also had three courageous and experienced fellow explorers in his company: Kit Carson, Alex Godey, and Richard Owens. Fremont left Bent's Fort on the Arkansas River in mid-August of 1845 with a party of 60. Moving northwest, the group crossed the Colorado and Green Rivers on the way to the south shores of he Great Salt Lake. After crossing the Salt Desert to Pilot Peak, as Fremont then named it, the expedition moved on to tributary of the Humboldt River, which he named after Baron Alexander von Humboldt, the great German geographer and statesman. There Fremont divided the party. The main group, led by Lieutenant Theodore Talbot and guided by Joseph Walker, went directly west in search of the Humboldt River, planning to follow the river to its terminus at the Humboldt Sink and then to continue along the eastern foothills of the Sierra Nevada to Walker Lake.

Fremont chose to leave the main party, selecting 10 men to accompany him, including some of the Delawares. This group traveled south around Spruce Mountain, then :raveled west to the Ruby Valley and crossed the Ruby Mountains at Harrison Pass. After camping at what was likely -Th.vin Creek, Fremont went south, crossing into Diamond Valley by way of Chokup [Overland] Pass. After crossing the Antelope Valley and skirting the Monitor Range, he traversed the Toquima Range into Smoky Valley, where he named a small stream at the north end for Basil Lajeunesse, one of his party. He traveled south directly down Smoky Valley, where he camped at Darroughs Hot Springs, then moved around the south end of the Toiyabe Range and went on to Walker Lake (Morgan, 1964a: xxvii—xxviii). Thus Fremont and his men became the first whites to traverse the valley from north to south. As the group traveled, each day involved this routine:

The early morning began the day's work by the usual careful study of the ground ahead for indications to the best line of travel, and so soon as they were ready the hunters started out to the right and left, scouring the country as we advanced. When anything worthy of note was discovered a shot was fired, or the horseman would make a few short turns backward and forward as a signal that something requiring attention had been found. (Fremont, 1887:435)

Simpson's Better Route to California

By the mid-1840s, the Humboldt River had become the preferred route to northern California. Following the discovery of gold on the south fork of the American River at Coloma in 1848, California was admitted (in 1850) into the Union, and westbound traffic along the Humboldt increased. The problem with following the Humboldt, though, was that it took a traveler far to the north of the most direct route between the Salt Lake Valley and San Francisco. A better route was found in 1859, when an expedition led by Captain James H. Simpson of the U.S. Army Corps of Topographical Engineers crossed the Great Basin on its way to California.

Simpson, born in New Jersey in 1813, entered the U.S. Military Academy at the age of 15. He fought in the Seminole War in Florida in the 1830s before he was transferred to the newly created topographical corps in 1838. Experienced in surveying wagon roads, Simpson was sent to the Utah Territory in 1858, where his duties were to examine the region's roads. In October, he made a reconnaissance of the territory west of Camp Floyd, Utah, about 40 miles south of Salt Lake City, where he found unexpected mountains.

In the winter of 1858-1859, Simpson planned a more ambitious survey of the Great Basin and proposed to the U.S. War Department an expedition to find a more direct wagon route from Salt Lake City across the Great Basin to California (see Figure 3.1). The expedition was authorized, and on May 2, 1859, a party of 64—including two junior officers, a noted geologist," a taxidermist, a photographer, an artist, and a military escort—headed west from Camp Floyd (Zink, 1983:6a-6b). John Reese, who had founded the community of Genoa in Nevada (the first permanent settlement in the state) and a Ute Indian named Pete were expedition guides. On June 13, having crossed the Great Basin, the expedition reached the base of the Sierra Nevada and arrived in Genoa, where the party was welcomed with a huge celebration. On June 24, the entire party began the return trip to Camp Floyd.

Within days of Simpson's return to Camp Floyd, :immigrants began to follow the new route across the Great Basin, which saved over 250 miles and two weeks' time in the journey to California. Within a year, heavy traffic marked the trail—so much so that the army was sent out to protect travelers. When the Pony Express was established in April 1860, it followed Simpson's northernmost route. The Over-And Mail and the Overland Telegraph, which linked California and Nebraska, as of October 1861, also followed the Simpson route. Today U.S. Route 50 parallels much of Simpson's trail.

On the trip west through central Nevada, Simpson and his men crossed the Diamond Mountains at Chokup Pass and continued southwest, crossing the Roberts Mountains south of Cooper Peak, moving on to the north end of the Antelope Range. They then went west, crossing the northernmost portions of the Toquima Range and Smoky Valley and ascending the Toiyabe Range a little north of present-day Austin. It was Simpson's rule to preserve the native names of geographical features. He thus called Smoky Valley "Won-a-ho-nupe Valley." He described it as being from 9 to 12 miles wide, with "soil areno-argillaceous, and is very thinly covered with *artemisia*. At the south it appears uninterrupted; at the north [it] is closed by a low range" (Simpson, 1983:76). The expedition members saw a number of antelope in the valley. On May 27, they camped in the valley at Won-a-ho-nupe Canyon on the east side of the Toiyabes at an altitude of 5870 feet and found the spot "quite luxuriant with willow and grass, the latter appearing in places quite green. . . . The stream in the canyon is quite pure, and I think there must be trout in it. . . . The landscape here [is] quite pretty and very unique for this country" (Simpson, 1983:76-77). On May 28, Simpson camped at 6355 feet near the crest of the Toiyabes at a place later named for him—present-day Simpson Park. In his report, Simpson described the pasture at the campsite: "The grass in the pass [is] very abundant and of the finest character. This fine mountain bunch-grass fattens and strengthens our animals like oats. The pass at summit is as much as a mile wide, and both backward and forward the views are beautiful" (Simpson, 1983:78). The expedition then descended the west side of the Toiyabes, crossed the Reese River, and continued west across the valley.

Simpson called the Western Shoshone Indians living in the Smoky Valley area "Diggers." In the Kobeh Valley, south of the Roberts Mountains, he encountered 15 or 20 Diggers from whom he obtained the Indian names for some of the mountains and streams. He described them as

the most lively, jocose Indians I have seen. Say two rats make a meal. Like rabbits better than rats, and antelope better than either, but cannot get the latter. Have no guns; use bow and arrow. They occasionally amuse us very much in their attempts to ride our mules, which are,

however, so much frightened at their rabbit-skin dress as to cause them to run off with them. One of them from this cause caught to-day a tumble. (Simpson, 1983:75)

While the party was camped on the east side of the Toiyabes, an Indian visited the camp:

An old Digger . . . represents that we are the first white persons he has ever seen. He says there is a large number of Indians living around, but they had run away from fear of us. I asked him why he had not been afraid. He said he was so old that it was of no consequence if he did die. I told him to say to them that we would always be glad to see them, and whenever they saw white men always to approach them in a friendly way, and they would not be hurt. He has been around eating at different messes, and at length had so gorged himself as to be unable to eat more until he had disgorged, when he went around again to renew the pleasure. I showed him my watch, the works of which he looked upon with a great deal of wonder. He said he would believe what I told him about the magnetic telegraph the next time he was told it. He is at least sixty years old, and says he had never had a chief. I asked him if his country was a good one. He said it was. He liked it a good deal better than any other. I asked him why. Because, he said, it had a great many rats. I asked him if they ever quarreled about their rat country. He said they did. So it would appear that civilized nations are not the only people who go to war about their domains. (Simpson, 1983:77)

On the return trip in July, Simpson did not retrace his outbound route but instead diverged to the south once he was east of the Antelope Range. While camped at the mouth of Won-a-ho-nupe Canyon in Smoky Valley, eight or ten Diggers followed the party to camp, each carrying two "rat sticks," used to dig out and catch rats. Simpson commented that "several of them are entirely naked, except the breech-cloth. Quite a heavy shower of rain has been falling, but, although it came down cold and chilly, these Indians seem to take it as if it was not an extraordinary occurrence" (Simpson, 1983:111). On July 9, when Simpson was about to break camp at Antelope Creek, he observed:

Just before leaving, the Indians (some twenty) amused us with a specimen of one of their dances, all entering into it with a great deal of zest, and shouting with the utmost delight. The appearance of so many white men and wagons in their country is quite an epoch in their lives, and they are correspondingly elated. (Simpson, 1983:111)

The outbreak of the Civil War delayed the completion and publication of Simpson's manuscript. In 1869, Simpson published an abridged account of his exploration, calling it The Shortest Route to California, but an official report was not published until 1876. Because of the long delay in the report's publication, Simpson did not receive the recognition he deserved for his explorations, despite the fact that his 1859 expedition was one of the first direct treks across the state of Nevada by whites (Zink, 1983:6d).

Burton Describes Smoky Valley

Sir Richard F. Burton, who was born in 1821, became an explorer extraordinary, diplomat, spy, and writer. One of the greatest adventurers of his day, he is said to have spoken twenty-nine languages and a dozen more dialects. As a young man he disguised himself as a Muslim and made a pilgrimage to Mecca, thus becoming the first infidel to complete such a charade. He traveled throughout Africa in search of the source of the Nile—which he never

found—and assisted Indian scholars in translating (from Sanskrit to English) the *Kama Sutra*, the ancient Hindu treatise regarding sensual pleasure, love, and marriage.

In 1860, Burton, who wrote extensively about his travels, visited Salt Lake City and then traveled overland to California, tracing the path that Simpson had taken a year earlier. Burton crossed the Diamond Mountains in early October and, on October 12, crossed the north end of Smoky Valley, and made his way up the Toiyabes to Simpson Park.

As far as can be determined, Burton was the first to record the name Smoky Valley. He described the valley and its environs:

Shortly after 8 A.M. we were afield, hastening to finish the long divide that separates Roberts' Creek Valley from its western neighbor, which, as yet unchristened, is known to the b'hoys as smoky Valley. . . . Crossing the north end of Smoky Valley, we came upon rolling ground, with water—willows and cedars "blazed"—barked with a gash for sign-posts. Ensued a long kanyon [sic] . . . a gate by which the swift shallow stream had broken through the mountains: in places it was apparently a cul de sac; in others, shoulder after shoulder rose in long perspective, with points and projections behind. . . . The granite walls were of Cyclopean form, with regular lines of cleavage, as in the Rattlesnakes Hills, which gave a false air of stratification. The road was a mere path along and across the rivulet bed . . . and where distance appeared, smokes upcurling in slow, heavy masses told us that man was not far distant.... Descending [from Simpson's Pass] by rugged road, we sighted every where on the heights the fires of the natives. They were not symbols of war, but signals—for which smokes are eminently adapted—made by tribes telegraphing to one another their being en route for their winter quarters. (Burton, 1862:484-486)

In the Roberts Mountains area, Burton encountered Indians who belonged to a branch of Western Shoshone known as White-Knives and were said to be under an independent chief.

About the station loitered several Indians of the White-Knife tribe, which boasts, like the old Sioux and the modern Flatheads, never to have stained its weapons with the blood of a white man. . . . The dress was the usual medley of rags and rabbit furs: They were streaked with vermilion; and their hair—contrary to, and more sensibly than the practice of our grandfathers—was fastened into a frontal pigtail to prevent it falling into the eyes. These men attend upon the [Pony Express] station and [they] herd the stock for an occasional meal, their sole payment. They will trade their skins and peltries for arms and gun-powder, but, African-like, they are apt to look upon provisions, beads, and tobacco in the light of presents. (Burton, 1862:481-482)

Burton's accounts of his travels across central Nevada are not known to have significantly influenced other travelers, but they provide colorful information about the Great Basin in the mid-1800s.

A Collision of Cultures

It is not surprising that relations between the first explorers in the Great Basin and Native American inhabitants were not always smooth. In the view of the whites, the Great Basin was essentially unoccupied territory and was thus open for the taking—even if there were Indian settlements scattered here and there. The whites thought that the Indians had attained only a low stage of human cultural development. For a century or more following the first contact, Indian ownership and occupation of the Great Basin territory was not considered a

significant impediment either to passage through the Great Basin or to the extraction of the resources there. To complicate matters, the first white explorers in the Great Basin justifiably viewed the Indians with some fear—and the Indians must at times have viewed the white interlopers with fear and foreboding. Experience had shown that when motivated, the Indians would attack the whites. The Indians' sparse settlement of the Great Basin and the whites' lack of respect for Indian ways, coupled with mutual fear, combined to lead ultimately to the demise of the Indian culture.

An incident during Fremont's second expedition, in the Virgin River area, east of the Las Vegas Meadows, demonstrates the volatility of explorer-Indian relations. On May 5, 1844, a man whom Fremont said appeared to be chief and several other Indians "forced themselves" into Fremont's camp. The chief approached Fremont with great confidence:

When shown our weapons, he bored his ear with his fingers, and said he could not hear. "Why," said he, "there are none of you." Counting the people around the camp, and including in the number a mule which was being shod, he made out twenty-two. "So many," said he, showing the number, "and we—we are a great many"; and he pointed to the hills and mountains round about. "If you have your arms," said he, twanging his bow, "we have these." (Fremont, 1887:379)

Fremont related the difficulty he had in restraining his men, who viewed the chiefs actions as insulting. Kit Carson—among those especially affronted—said that he "felt an insult of this kind as much as if it had been given by a more responsible being." "Don't say that, old man," Fremont admonished, "don't you say that—your life's in danger." Fremont noted that when Carson spoke these words the old Indian was probably "nearer his end than he will be before he meets it" (Fremont, 1887:379).

Although there are many instances in which Fremont showed compassion toward the Indians, his kind behavior was offset by a fundamentally harsh judgment of the value of the Indian way of life. On his third expedition, a day or two after camping at what was apparently Darroughs Hot Springs, Fremont and his party had set up camp by a spring on the bench in the Garfield Hills southeast of Walker Lake. They had just finished a meal of freshly killed antelope and were gathered around the fire enjoying a smoke. Fremont demonstrated his charitable side when he described what happened next:

A good supper and a pipe make for them a comfortable ending no matter how hard the day has been. Carson, who was lying on his back with his pipe in his mouth, his hands under his head and his feet to the fire, suddenly exclaimed, half rising and pointing to the other side of the fire, "Good God! look there!" In the blaze of the fire, peering over her skinny, crooked hands, which shaded her eyes from the glare, was standing an old woman apparently eighty years of age, nearly naked, her grisly hair hanging down over her face and shoulders. She had thought it a camp of her people and had already begun to talk and gesticulate, when her open mouth was paralyzed with fright, as she saw the faces of the whites. She turned to escape, but the men had gathered about her and had brought her around to the fire. Hunger and cold soon dispelled fear and she made us understand that she had been left by her people at the spring to die, because she was very old and could gather no more seeds and was no longer good for anything. She told us she had nothing to eat and was very hungry. We gave her immediately about a quarter of the antelope, thinking she would roast it by our fire, but no sooner did she get it in her hand than she darted off into the darkness. . . . Starvation had driven her to us, but her natural fear drove

her away as quickly, so soon as she had secured something to eat. Before we started we left her at the spring a little supply from what food we had. This, with what she could gather from the nut-pine trees on the mountain, together with our fire which she could easily keep up, would probably prolong her life even after the snows came. (Fremont, 1887:436-437)

However, Fremont's prejudice shows in the journal entry he made discussing his view of the Indians (Southern Paiute) who had threatened him and his men while camped in the Virgin River area on May 5, 1844. Fremont reflected:

In these Indians I was forcibly struck by an expression of countenance resembling that in a beast of prey; and all their actions are those of wild animals. Joined to the restless motion of the eye there is a want of mind—an absence of thought—and action wholly by impulse, strongly expressed, and which constantly recalls the similarity. (Fremont, 1887:378)

Fremont was equally harsh in describing the Indians he encountered in the vicinity of Walker Lake on his third expedition:

In this region the condition of the Indian is nearly akin to that of the lower animals. Here they are really wild men. In his wild state the Indian lives to get food. This is his business. The superfluous part of his life, that portion which can be otherwise employed, is devoted to some kind of warfare. . . . In the Great Basin, where nearly naked he travelled on foot and lived in the sage-brush, I found him in the most elementary form; the men living alone, the women living alone but all after food. (Fremont, 1887:438)

Richard Burton was especially outrageous in his criticism of the appearance of the Indians of central Nevada, singling out the children of Western Shoshone from the Roberts Mountains area for a grossly offensive comparison: "They may be a respectable race, but they are ugly: they resemble the Diggers, and the children are not a little like juvenile baboons" (Burton, 1862:484-486).

Such prejudice against the native inhabitants of the Smoky Valley area was not only the province of the white man. On his third expedition, Fremont and his men were traveling along the foot of a mountain when they saw smoke rising from a nearby ravine, and upon investigating the source, discovered an Indian cooking squirrels in an earthen pot over a sagebrush fire. The Indian saw the intruders too late to make a run for it and instead made an effort to appear friendly, offering the unexpected visitors part of his meal. Fremont stated that the Delaware Indians who were on the expedition would most certainly have killed that Western Shoshone had he and the other whites not been present. As the party turned to leave the Western Shoshone to his meal, Fremont noted in his autobiography (1887:436), "The Delawares lingered as we turned away, but I would not let them remain. Anyhow they regard our journey as a kind of war-path, and no matter what kind of path he is upon a Delaware is always ready to take a scalp when he is in a country where there are strange Indians."

After departing in the company of the Delawares, the group had only gone a short distance when Fremont noticed that the Delawares had taken the Western Shoshone's bow and arrows ("the bow strong, and made still stronger with sinews, and the arrows were all headed with obsidian worked into the usual spear shape . . . sharp as steel" [Fremont, 1887:436]). Fremont asked his Delaware companions to return the bow and arrows to the Western Shoshone, which they did. He then reminded them that in taking the hunting gear "they had exposed the poor fellow to almost certain starvation"—something the Delawares no doubt understood very well when they took the man's gear.

The cruel treatment of Native Americans by Euro-Americans is one of the great tragedies in all of human history—no amount of analysis or rationalization can erase this sad fact. Nevertheless, the fate of the American Indians can be viewed in a larger context. Human beings are a violent species—and neither Native Americans nor Euro-Americans personify all that is good in humanity. The Indians of the Great Basin dealt in slaves, for example, and engaged in killing and warfare before the arrival of the whites. The fate of the American Indians at the hands of Euro-Americans is explained in great measure by a larger phenomenon—the migration of cultures from one area to another. Tragedy often occurs when populations collide during such movement.

CHAPTER 4
California Gold Sets the Stage

The discovery of gold in California in 1848 has been called "the most portentous event in the history of modern mining" (Rickard, 1932:20). It was the seminal event in the history of the American West, and it was arguably one of the most important events in American history (including the Civil War and World Wars I and II); its impact may have been second only to the American Revolution. In addition to providing local economic stimulus, the gold that was discovered in California in 1848 supplied the nation with the capital needed for industrialization. And the event led directly to the settlement of the Far West. The California gold rush provided those who flocked to the goldfields between 1848 and about the end of 1850 with a unique view of life and society that has been passed down through the generations in the West, especially in rural areas. Westerners today—if not in fact, at least in spirit—are very much children of the California gold rush. The values to which westerners now generally subscribe—that is, the ways in which they perceive society and the world—are traceable in large measure to the first years of the California gold rush. The California gold rush was, without doubt, the most important single influence on Nevada history.

Precious Metals in Early America

The Native North Americans encountered by Europeans in the New World had no understanding of metallurgy and in a few cases only a rudimentary mastery of techniques of mining. Anasazi Indians, for example, residing in and around the Las Vegas Valley in southern Nevada from about A.D. 500 until around the twelfth century established salt and turquoise mines in the region, perhaps with the assistance of the ancestors of the present-day Southern Paiute. Copper in its native state was used by Native Americans prior to the arrival of the Europeans. From 1497 on, explorers observed American native peoples wearing ornaments and using tools made of native copper in such diverse places as Newfoundland, Nantucket Island, the St. Lawrence River, and the Arctic Coast. Beginning approximately 7000 years ago and lasting until about 1000 years ago, copper was mined by Native Americans in the Keweenaw Peninsula area of Lake Superior near Houghton, Michigan. The nearly pure copper was extracted from holes as deep as 35 feet using hammer stones, and was traded throughout the eastern United States. Authorities believe most, if not all, the copper found in the possession of native peoples on the Atlantic and Gulf coasts came from the Keweenaw area (Fink, 1996). When Pamphilo Narvaez landed at Tampa on the west coast of Florida in 1527, he was told that much gold could be found in a region named Apalache. Ponce de Leon landed in Florida in 1573 and was told of an Indian chief who possessed much gold. In 1564, Rene Laudonniere described the methods the natives used to recover gold in the Apalatcy Mountains (Rickard, 1932:3-5, 18).

In his classic volume A History of American Mining (1932), T. A. Rickard states that the mining of gold in the southern states by Euro-Americans had its beginning when a nugget was found at the Reed Mine in North Carolina in 1799. Thomas Jefferson mentions (in his "Notes on Virginia") the finding of a quartz specimen containing 17 pennyweights of gold on the Rappahannock River in 1782. Until 1828, all the gold produced in the United States was from

North Carolina, and between 1793 and 1828 that state yielded a total amount valued at about $110,000 (Rickard, 1932:18-19). In 1829, a small rush to a gold-discovery site in Georgia occurred, and in 1833-1834, gold obtained in Virginia, the Carolinas and Georgia was worth about $1 million per year. These early mining operations in the South were based upon placer deposits and digging on soft outcrops. Between 1804 and 1866, the Appalachian goldfield, extending over five states, yielded approximately $19.4 million. Gold mining in the South, Rickard says, "was relatively unimportant, but it played a useful part in preparing American miners for the bigger developments in the West" (Rickard, 1932:19). After 1848, southern diggings were completely eclipsed by events in California and the Far West.

Early Gold Discoveries in California

On the west coast of America, the first mention of gold in California is in Hakluyt's account of the voyage of Sir Francis Drake, who spent five weeks in June and July 1579 in a bay near latitude 38°. Some question whether the bay was Drake's Bay or San Francisco Bay. Hakluyt said, apparently quite seriously, "There is no part of the earth here to be taken lip wherein there is not a reasonable quantity of gold or silver" (as quoted in Browne and Taylor, 1867:13). Authorities dispute the veracity of this claim, believing that it was embellished in order to magnify the importance of Drake and the country he claimed to have added to the English crown. By 1867, when J. Ross Browne and James W. Taylor's government monograph Reports Upon the Mineral Resources of the United States was published, it had been concluded that neither gold nor silver existed "in reasonable quantity" near the ocean at latitude 38°.

Despite Drake's unsubstantiated claim, there were numerous instances of gold being both discovered and mined in California before 1848. At various times from 1775 to 1828, small deposits of placer gold were found and worked by Mexicans near the Colorado River. In 1828, gold was discovered at San Isidro in what is now San Diego County. In 1802, a mineral vein said to contain silver was discovered at Olizal in the district of Monterey; although this attracted some attention, as the deposit at San Isidro did, no profitable mining took place. In 1816 in Edinburgh, Scotland, Robert Jameson published a book entitled A System of Mineralogy. In it he describes a plain on the coast of California "fourteen leagues in extent, covered with alluvial deposits, in which lumps of gold are dispersed" (Rickard, 1932:20). Authorities have suggested that the "plain" to which Jameson referred was a site 40 miles northwest of Los Angeles. It has even been alleged that Jedediah Smith found gold near Mono Lake in 1825, but the source of this report is so confused and filled with error that it is of no value (Rickard, 1932:21; Browne and Taylor, 1867:305). Despite these discoveries, a history of California written in 1835 incorrectly stated, "No minerals of particular importance have yet been found in Upper California, nor any ores of metals" (Browne and Taylor, 1867:13).

In March 1842, Francisco Lopez, a herdsman, who was digging for wild onions with a knife near the Santa Feliciana Canyon 40 miles northwest of Los Angeles, discovered gold. The goldfield at Santa Feliciana Canyon generated considerable interest, and the site was profitably worked on a small scale until 1854. By 1843, there were 2000 ounces of gold in circulation in the small community of Los Angeles (Rickard, 1932:21). In 1841, James D. Dana, a mineralogist who was hired to accompany an expedition of Commodore Wilkes, traveled overland from the Columbia River by way of the Willamette and Sacramento Valleys to San Francisco Bay. In 1842, Dana wrote a book on mineralogy in which he mentioned that gold was found in the

Sacramento Valley, although he did not regard this discovery to be of practical value. Nevertheless, the idea that there was gold in California had been formally established by the mid-1840s, as evidenced by a letter dated May 4, 1846, from Thomas 0. Larkin, U.S. counsel in Monterey, to James Buchanan, then secretary of state: "There is no doubt but that gold, silver, quicksilver, lead, copper, sulfur, and coal mines are to be found all over California, and it is equally doubtful whether, under their present owners, they will ever be worked" (Browne and Taylor, 1867:14).

One can only wonder why the Mexicans (to whom California and much of the Southwest belonged prior to 1848) ignored these discoveries of gold and silver and made no substantial effort to fully develop them. They may have feared the excitement of a gold discovery would draw labor from the rancheros or that hordes of Americans would be attracted if a substantial gold rush developed. Moreover, the Spanish and subsequent Mexican occupation of California was not characterized by the encouragement of commerce and development of the area's resources. All in all, the Mexicans seem to have been content to pursue California's gold resources in only the most modest way; they showed no interest in enthusiastic development of existing sites, and they did not systematically look for other sites where gold or silver might occur. Worst of all, T. A. Rickard suggests that the Spaniards missed the gold treasures of California because they were too busy stealing gold from those who had already expended the effort to wrest it from the earth; the Spaniards sought gold with the "sword and spear, instead of the pick and shovel" (Rickard, 1932:22).

The Gold at Sutter's Mill

James W. Marshall, a carpenter and jack-of-all-trades, is credited with the discovery of gold in California that led to the California gold rush. Marshall was employed by John A. Sutter, a Swiss merchant adventurer who had come to California in 1839 and persuaded the Mexican authorities to grant him a large tract of land in the Sacramento River Valley. Sutter built a hacienda on land that is now part of Sacramento, California, and named it New Helvetia. He had a tannery, a ranch, and a trading post on his property. Sutter had employed Marshall to construct a sawmill at Coloma on the South Fork of the American River about 40 miles northeast of Sacramento. The mill was almost completed when Marshall noticed that a channel, or tailrace, was not deep enough to divert water properly to the mill. On the afternoon of January 23, 1848, he opened the water gate to permit the stream to run during the night to deepen the channel. The next morning, while the workers were having breakfast, Marshall went down to the river to check the tailrace and detected bits of bright yellow metal in the channel. He picked up the largest flake, which was about the size of a melon seed and, suspecting it might be gold, pounded it on a rock; it was soft. He surmised that it was not pyrite but gold, and gathered several other flakes in his hat and exhibited them to the mill hands—five white men and three Indians. As he approached them, he exclaimed these now-famous words: "Boys, by God, I believe I found a gold mine."

Marshall then conducted some tests for gold. He went to the camp cook, Jenny Wimmer, who was making soap, and asked her to boil the largest flake in lye. The next morning, when the flake was cut from the soap, it evidenced no discoloration. Next, Marshall took the flake to the blacksmith, who beat it on an anvil—and it was still malleable (Rickard, 1932:23-24; Paul, 1963:12-13). On January 28, Marshall traveled to Sutter's hacienda to discuss

his discovery. After entering Sutter's office, Marshall locked the door and exhibited his yellow flakes of metal. Sutter first tested the flakes with nitric acid, which he had in his apothecary. He then consulted an old encyclopedia he had and read the entry on gold. After that, he weighed the flakes in water and compared their specific gravity with silver coins. He there-upon pronounced the metal to be 22-carat gold. The next day, Sutter followed Marshall back to Coloma to examine the tailrace and picked up some bits of the precious metal himself. Sutter was impressed enough with the results to ask his employees at the mill not to say anything about the discovery for six weeks because he feared the excitement might cause workmen at his ranch to quit. Most of the workers at the millsite did not appreciate the discovery's significance, and many of them supposedly left California shortly afterward (Rickard, 1932:26).

One man, however, did pursue the matter. Charles Bennett, a carpenter working on the sawmill, took some flakes from the site and went to San Francisco—which at the time had a population of less than 1000—determined to learn whether the metal was really gold. In San Francisco, he was introduced to Isaac Humphrey, who had had experience in the goldfields in Georgia. Humphrey recognized immediately that the yellow flakes Bennett showed him were gold—and he also realized the diggings must be rich. That night, Bennett and Humphrey made plans to return to the mill. Humphrey tried to persuade some of his friends to go with him, but they refused, thinking such a trip would be a waste of time and money.

Bennett and Humphrey arrived in Coloma on March 7, not knowing that they were about to participate in one of the great events in human history. On March 8, Humphrey went to the millrace (where work was proceeding normally), spaded up some gravel, and washed it in a pan. In a short time, he found more gold specimens, and after a few hours declared that site to be richer than any in Georgia (Browne and Taylor, 1867:14-15). Humphrey then made a rocker—the simplest of mechanical apparatuses for concentrating placer gold. It resembles and is about the size of a baby's cradle; it can be rocked from side to side. It has a shelf, called a riddle, at one end, into which gravel is shoveled. Fine material falls through a sheet iron punched with holes at the bottom of the riddle. Material falling through the riddle is washed by the rocking motion and by water flowing down the rocker's bed and out one end. The heavier gold collects behind transverse cleats, or riffles, along the rocker's floor; the lighter gravel particles wash out the end. The operator rocks the cradle with one hand and pours water into the riddle with the other, stopping periodically to shovel more gravel into the riddle and clean the waste material, or tailings, away from the lip of the rocker. Using his newly built rocker, Humphrey then went to work washing gold in the river, obtaining an ounce or two of the metal each day. Once Humphrey had demonstrated that gold in paying quantities could be obtained by a man working alone, others in the vicinity soon followed his example, constructing their own rockers and obtaining their own gold. At the end of each day, the fruit of each man's labor was satisfyingly measurable (Browne and Taylor, 1867:14-15).

Gold! Gold! Gold!

The first printed notice of the discovery of gold at Sutter's mill appeared in the *Californian*, a San Francisco newspaper, on March 15, 1848. Under the heading "Gold Mine Found," the text read

In the newly made race-way of the saw-mill recently erected by Captain Sutter, on the American fork, gold has been found in considerable quantities. One person brought 30 dollars

worth to New Helvetia, gathered there in a short time. California, no doubt, is rich in mineral wealth; great chances here for scientific capitalists. Gold has been found in almost every part of the country. (quoted in Rickard, 1932:28)

San Francisco's other newspaper, the *California Star*, denounced the excitement about the gold as "superlatively silly," "all sham, [as] superb [a] takein as was ever got up to guzzle the gullible" (quoted in Paul, 1963:13). However, the enthusiasm continued to build, and on May 29, the *Californian* announced that it would suspend publication, stating,

The whole country, from San Francisco to Los Angeles, and from the seashore to the base of the Sierra Nevada, resounds what the sordid cry of gold! gold! gold! while the field is left half planted, the house half-built, and every thing being neglected but the manufacture of picks and shovels, and the means of transportation to the spot where one man obtained one hundred and twenty-eight dollars' worth of the real stuff in one day's washing; and the average for all concerned is about twenty dollars per diem. (quoted in Browne and Taylor, 1867:15)

The rush to the sites where gold was found was unlike anything the world had ever known. Whole towns were virtually abandoned in the quest for gold. Most of those who hurried to the placer sites had no experience in mining, but it did not matter. The process of separating the gold from the gravel was simple. No special equipment or machinery was required—all a man needed was a shovel or some other means for scooping the gravel out of the riverbed and some device for concentrating it. A shallow pan or a skillet would suffice for washing gravel, but most miners built or obtained rockers as soon as they could. Of course, the places where gold-bearing gravel were most accessible were worked first. When deposited, the gold tended to concentrate on bedrock by the streams and rivers; cracks and crevices in bedrock could be particularly rich.

During the first months of the rush, on average, one man could obtain about one ounce of gold per day. It was not uncommon for one man working alone to take out $500 in one day. It was also not uncommon for the amount of gold obtained in a week's work to be measured in tin cups.

In a matter of months following Marshall's discovery, gold-seekers were working promising sites up and down the west slope of the Sierra Nevada, a stretch of land measuring 150 miles, from the Feather River to the Tuolomne River. By summer 1849, primitive camps and embryonic towns were scattered throughout the canyons and the valleys of the west side of the Sierra Nevada, where not a single claim or settler could be counted in January 1848 (Paul, 1963:16).

In January 1848, the entire non-Indian population of what is now the state of California is estimated to have been about 14,000, but by the end of 1849, the non-Indian population had swelled to 95,000. By the end of 1852, it had grown to 250,000, and in 1860, the population was estimated to have been about 380,000. By contrast, the population of what is now Oregon was about 12,000 in 1848, 13,200 in 1850, and only 52,000 in 1860. The increase in numbers of settlers in California between 1848 and 1860 is due almost entirely to the impact of mining. By the end of 1848, it is thought that there were about 5000 miners at work in California, and one year later, the number had grown to 40,000. By 1850, an estimated 50,000 miners were working in California, and in 1860, 100,000 (Paul, 1963:15-16).

News of the gold discovery was first received in the Atlantic states and in foreign countries with doubt and even ridicule. But as gold shipments began to be received, doubt

turned to enthusiasm, and an excitement virtually without parallel in human history ensued. Gold-seekers from nations and territories throughout the world made plans to go to California and take the chance to become prosperous. People from Oregon, the Hawaiian Islands, Sonora, Latin America, Australia, China, and Europe and Americans from the eastern seaboard states and the Midwest headed for California and the new El Dorado (Browne and Taylor, 1867:15-16).

It is a matter of great historical irony that Mexico signed the Treaty of Guadalupe Hidalgo, in which the territories comprising the area that would become the states of California, Nevada, New Mexico, Arizona, and parts of Colorado and Wyoming were ceded to the United States on February 2, 1848, only nine days following Marshall's initial discovery. Mexico was paid $15 million for the territory—and the California gold fields produced three times that in 1849.

Because the Mexican government had been removed from authority in California at the time of Marshall's discovery and no territorial government had yet been established to replace it, the territory encompassing the California goldfields was largely without government. The new territory was officially under military rule, with Colonel Richard B. Mason in command. Technically, the mines were located on public lands, and legally, they belonged to the U.S. government. However, Colonel Mason made a decision that had a profound effect on the course of the history of the American West. He decided that though the gold that lay in the gravels on the west side of the Sierra Nevada technically belonged to the U.S. government, it was best "not to interfere, but to permit all to work freely" in extracting the gold (quoted in Rickard, 1932:32). Colonel Mason's successor, General Persifor F. Smith, concurred, believing that allowing free extraction of the gold by the miners would lead to a greater public benefit through the encouragement of trade than would any effort by the government to attempt to control the enterprise. Smith, a general in command of the Pacific Division, remarked in 1849:

I do not conceive that it would be desirable to have the mines worked for the benefit of the public treasury. To do that would require an army of officers and inferior agents, all with high salaries, and with opportunities and temptations for corruption too strong for ordinary human nature. The whole population would be put in opposition to government array, and violent collisions would lead even to bloodshed. . . . If the government shall desire revenue enough to pay the expenses of executing the laws passed on the subject, it is the most that should be proposed. The advantage the whole country will derive directly from opening of the mines, and the indirect advantage to the treasury from augmented commerce, will, in my opinion, more than compensate for any outlay it has made or may make. (quoted in Rickard, 1932:33)

An Experiment in Genuine Democracy

In the absence of any established social order, including a legal system, those who arrived in the California goldfields from 1848 to 1850, relying upon their inborn ability to govern themselves, quickly developed a unique social order. This new social order, grounded in economic opportunity, had not previously existed anywhere. In America between 1848 and 1850, the most an average person could hope to earn in a day was $1 or less. In the California goldfields after June 1848, a placer miner could earn 20 times that, on average. To obtain that required little capital and no expensive equipment or unusual technology. Moreover, disposing

of the gold a miner produced required no special understanding of arcane markets and no imposition of the heavy hand of a middleman to take a lion's share of the profits—gold has always been the most marketable substance in world commerce. In the first months following Marshall's discovery, the wage labor system was uncommon. Why would a man work for wages when he could be self-employed digging gold? Why would he work for another for only a share of the profits? Likewise, few would hire another to dig gold on their claims when an employee would only steal a sizable proportion of the gold produced.

T. A. Rickard, an authority on the history of American mining and a former editor of the Mining and Scientific Press, has called the society that quickly evolved in the California goldfields during the first two years of the California gold rush (1932:36) "the nearest approach to a genuine democracy that history records" (1932:36). For about two years, society there may have been as close to ideal as has ever been achieved outside the Garden of Eden or an island paradise. There was no federal or state government, and military officials took a hands-off approach, leaving the miners free to evolve communities that best suited the situation. The miners had been preconditioned for self-government and, to a certain extent, were self-selected by the journey to the goldfields. The long trip to California, whether over land or by sea, was arduous and typically required cooperation and interaction with others who were also making the journey.

Travelers learned to cooperate on the trip to California in order to maintain the necessary social order to survive on the way. The long trip required them to developed skills in settling disputes. Self-governing travelers became adept at taking shortcuts to preserve a state of law and order, for example, by administering punishment to offenders. Once at the placer diggings, skills and attitudes that they had acquired during the journey were put to use.

Few who arrived in the goldfields from other parts of the United States had experience with or understood the special requirements of mining law. Europeans, however, had experience with codes devised to regulate mining. Cornishmen and Germans who came to the goldfields were familiar with the well-developed European codes that had been based on generations of experience. Spanish-Americans also had worked under mining ordinances in Mexico that had, in turn, been derived from European codes. Drawn on European precedents, the rules the California miners used eventually became the basis for the mining laws of the United States enacted by Congress in 1866 (Rickard, 1932:33; Paul, 1963 :23).

The Mining District—A Community of Equals

The mining district became the basis of government. Residents of a local area where the diggings were promising would initiate a meeting and form a "district" by vote. A presiding officer would be elected and a code of laws drafted. A recorder was chosen to keep a list and a description of all mining claims filed. All disputes and complaints were settled on the spot, and the magistrates, chosen by majority vote, had the power to summon juries. The result was that by 1849, 100,000 people who did not have a "real" government, regular laws, rules, or military or civil protection, who lacked even locks and bolts and jails, and who possessed wealth in gold such as the world had never seen, managed not only to govern themselves but to provide for the public safety so well that a person in the goldfields could be as safe as anywhere in the United States. As one observer in 1849 said, "The capacity of a people for self-government was never so triumphantly illustrated" (Rickard, 1932:34).

Initially, the communities were at least 90 percent male, with most of the men being below middle age. There were few older people present because conditions were too harsh and the trip to California too arduous. Residents were thus self-selected for certain traits, among them vigor, the ability to work hard, and optimism regarding the future and their chances of being successful. As a sense of prosperity prevailed, generosity surfaced as another important characteristic.

The mining camps from 1848 to 1850 were governed by popular tribunals. When disputes arose, the miners dropped their picks and shovels and assembled, listened to the facts of the quarrel, and rendered a verdict. The judgment of the majority was accepted and enforced. In important matters, all the citizens of the district were summoned. In this way, community problems were solved. There were no jails—there was no time to build them since the citizens of a district were too busy digging for gold. Punishment was swift. Offenders were banished from the camp, whipped, or even executed (Rickard, 1932:35-36) .

The basis of life in the gold camps was the right to own a mining claim and any gold found on it. The right of ownership of a claim was derived from the first locator. It was necessary to do a specified minimum of work in order to retain title of ownership, for example, by working the claim "one day in three" (Paul, 1963:23). Title to a valid claim could be passed from the owner to another person. In order to give everyone a chance, in keeping with the democratic spirit of the camps, early laws held that no man in a district could hold more than one claim at the same time. There were relatively few southerners in the gold camps, and no man was permitted to own a claim in the name of a slave; slave labor was forbidden. The maximum permitted claim size varied according to conditions in the district and ranged from 30 to 100 square feet (Paul, 1963:23, 26; Rickard, 1932:34).

To an unusual extent, the mining districts were communities of equals. In the first years, there was no time for pretense, and class distinctions meant little. On one day, a person might be dead broke and have no place to sleep, but on the next, he might hit a rich pocket of gold. The opportunity to find gold existed for one and all—and that situation formed the basis of social structure and values. The one deficiency of the society was the persistent antagonism shown toward Mexicans and South Americans, with Frenchmen, Kanakas, and Indians also being targets. The Chinese, who by 1860 represented nearly 10 percent of the population in California, did not begin coming to the goldfields until 1851 and 1852 (Paul, 1963:25, 35).

Technology Brings Social Change

A society based on equality and pure democracy did not last long in the gold camps. Grounded as it was in economic opportunity, in the use of inexpensive mining equipment, and in the relative ease of first finding and then extracting the gold, the egalitarian society that prevailed from mid-1848 through 1850 gradually gave way as the gold became more difficult to find, more capital was required to extract it, and the price of wage labor dropped. Wages were determined by what a man could earn through his own effort. As the easy gold was extracted and the rich, accessible claims were located and worked dry, wages dropped. In 1848, a miner could earn $20 a day; by 1849 the figure had dropped to $16 a day (Paul, 1963:35). By 1852, wages were down to $6 or $7 a day, and in 1853, they were $5 a day (Browne and Taylor, 1867:21). By 1856, the figure was about $3 per day, and by the mid-1860s, it ran from $2 to $3.50 a day (Browne and Taylor, 1867:21; Paul, 1963:35).

Between 1848 and the early 1850s, there was also a rapid evolution in the equipment and techniques used to extract gold from the gravel. Initially, all a miner needed to work the placers was a shovel or a scoop of some sort and a pan. The skillet-sans-handle evolved into the placer miner's pan, which was made of sheet iron and was approximately 12 inches in diameter and about 6 inches high with inclining sides. The rocker, probably first used in California by Humphrey at Sutter's mill, was more efficient than a gold pan for concentrating gold. The concept of a rocker led to the development of a device known as the "long Tom," essentially a trough about 8 to 10 feet long, about 10 inches deep, and 15 to 30 inches wide. A riddle of sheet iron perforated by holes one-half inch in diameter was placed at the upper end of the Tom, into which gravel was shoveled. Material less than one-half inch in diameter fell into the Tom and was washed along its length by fast-moving water. Transverse cleats, or riffles, along the bottom of the Tom caught the heavier gold as the lighter gravel was moved along the length of the Tom and was washed out the end. Several men could shovel gravel into the riddle while men with shovels removed the gravel that had been discharged at the far end of the Tom. Thus, whereas the rocker had been at most a two-man operation, the Tom could employ the labor of several men.

The sluice box was essentially a longer version of the Tom and could be from 100 to 1000 feet long; sometimes a Tom was placed at the head of the sluice. Gravel was placed at one end of the trough and was carried along the trough. Gold was caught behind the transverse riffles that lined the sluice's bottom. Later, a technological advance involved placing quicksilver, or mercury, behind in the riffles so that the gold became amalgamated, or alloyed, with the heavy metal, preventing small particles of gold from escaping. The sluice thus greatly expanded the placer miner's ability to process gravels in volume and made possible the working of gravels that bore less gold. The sluice, however, required increased labor to keep gravel and water moving through it.

Ditches soon became more common as miners discovered gold in gravels lying in banks above the existing water channels. When that gold was processed, they could get water to the higher banks only by constructing ditches that took in water upstream of the gold deposits, above the elevation of the higher gravel banks. The use of ditches led to the development of flumes, or water pipes, whereby water could be taken in upstream and, when captured in an enclosed pipe, would develop pressure as it descended. Flumes led to the technology of hydraulic mining, in which large volumes of lower-grade gravels could be processed by using a water stream under pressure to dislodge the gravel and transport it to large sluices.

All of these advances in technology increased the need for laborers. Ever-larger amounts of capital were required to construct and operate the mechanical apparatuses. More gravel containing less gold per ton was processed, resulting in thinner per-ton profit margins. The goldfields quickly became more industrialized, and as that happened, wage laborers were increasingly exploited. The halcyon days of mid-1848 through 1850 were gone forever.

A Coterie of Prospectors

As the high-grade placer gravels in California became exhausted, more miners turned to working the quartz veins in which gold was embedded. An interesting legend persists that the first miners who found gold in quartz veins were puzzled about how gold could have escaped from the placers into the veins in solid rock. Quartz, or hard-rock, mining, is expensive and

requires extensive capital and wage labor. As opportunities for the common man diminished, and with steadily falling wages for a day of any kind of work, many miners turned—or at least dreamed of turning—to prospecting for both placer and quartz lodes as their only hope for maintaining the independent life and opportunity they had once known in the goldfields. These miners were aware of the prosperous days of 1848-1850, either through their own experience or through the tales of others. Some of them had been lucky in the goldfields, and some had foolishly squandered what wealth they did acquire, but both the lucky and the unlucky had been replaced or marginalized by the increasing industrialization of the gold mining industry. Thus, in the California goldfields a kind of informal mobile unit of prospectors and would-be wealth-seekers stood ready to take advantage of any opportunity for locating and cashing in on newly discovered deposits of gold or silver. At the end of the 1850s, this group was ready to move. It did so in 1859 upon the discovery of silver and gold on the east side of the Sierra Nevada.

The Western Mindset

The first two wild and heady years of the California gold rush provided common men with economic opportunity such as the world had never known. Those who got there early had an opportunity many, if not most people in the world, long for—to prosper economically free of the constraints and interference of government, the privileged, and large corporations. Although these circumstances lasted for only about two years, they had a profound effect on the mentality of the participants and the subsequent development of the culture of the settlers in the Far West, including those who later settled in Smoky Valley.

Biologists and cultural anthropologists are familiar with what is called the "founder effect," which means, in essence, that the first one on the scene makes the rules and set the standards. Through the founder effect, the experiences of the gold-seekers between 1848 and 1850 created a cultural template for the settlement of the West and determined to a large extent how subsequent settlers would experience and perceive their world. The first miners who rushed into the goldfields of California brought with them the desire to prosper. This desire was rewarded in the common man to a degree not previously seen in history. Communities formed by the miners evolved in an environment unusually free of any sort of external control. The rules of these communities were based on immediate needs. During the first two years of the California gold rush, people were perhaps as free as it is possible to be and still live in society. Because of the founder effect, subsequent settlers adopted these cultural values, which in turn were handed down through the generations. This culture, this way of looking at the world, contains a unique mix of beliefs emphasizing freedom, individualism, personal initiative, economic opportunity, social equality, democracy, open attitudes toward land use, resentment toward monopoly, prohibition of slavery, and a voiced, if not always enacted, impatience with criminal behavior.

Those who left the California goldfields seeking opportunity in Nevada, Idaho, Montana, Utah, Arizona, New Mexico, Colorado, and Alaska carried the culture spawned in the first days of the California gold rush with them. Because this culture has been passed down the generations in western America, the California gold rush is still alive: The people of the American West, particularly those living in rural areas, remain very much the children of the California gold rush. In California in 1859, the miners-turned-prospectors and opportunity-

seekers were spoiling for a new opportunity and new excitement; these men could no longer earn the returns in California to which they had once been accustomed. They were impatient and willing to go anywhere—if the diggings were thought to be rich enough—rather than submit to a life of wage labor. They had become unfit for the routine and ordinary life of laborers (Paul, 1963:36). An opportunity came in 1859 with the discovery of an incredibly rich deposit of silver and gold in the Washoe District on the east side of the Sierra Nevada.

Part Two
SMOKY VALLEY

CHAPTER 5
Settlement of Smoky Valley

There are two deceptively simple principles of gold prospecting that help explain how Nevada was settled. The first one states: You only find gold where you look for it. This assumes that if you do not look for gold, you cannot find it, and if you are not sensitized to its properties, a discovery cannot be made, even though the element might lie right underfoot. The second principle states: The discovery of gold usually draws a crowd. If it does not, you may be sure there is a good reason why it does not. This second principle acknowledges that people direct their attention and activity toward things of great perceived value.

As we have seen, most of Nevada lies within a vast arid region that at first was bypassed by most explorers and travelers. Some did make an effort to determine what the area's desert valleys and mountains held, but they did so hurriedly and under great personal hardship. When brief reconnaissance found little of value, people quickly moved on. The area's potential was played down; California was assumed to hold greater riches. Until 1859, Nevada was generally perceived as a region that travelers aimed to cross as quickly, and with as little cost, as possible.

In the 1830s in southern Nevada and in the 1840s in northern Nevada, a corridor was established that led travelers across those largely unoccupied territories. The Spanish-Mormon Trail crossed the state's southern tip, passing through the Las Vegas Valley. In the north, the Humboldt Trail, which was very heavily traveled following the 1848 California gold discovery, traced the Humboldt River to the foot of the Sierra Nevada.

The Comstock Lode and Virginia City

In 1859, an immensely rich deposit of silver and gold was discovered at Mount Davidson in western Nevada at the foot of the Sierra Nevada, not far from where travelers on the Humboldt Trail crossed from Nevada into California. This deposit of precious metal, called the Comstock Lode, was one of the richest ever found.

The circumstances of the discovery are well known. A party of emigrants on their way to the California goldfields discovered placer in Gold Canyon, a small tributary of the Carson River, in 1849. A permanent mining camp was established there in 1852. In 1853, brothers Hosea and Allen Gorsh arrived in the area and by 1856 reported in letters sent back to the East that they had found silver ore. They continued working gold, however, because they had no money and knew, as the old Spanish proverb says, "It takes a gold mine to develop a silver mine." Unfortunately, Hosea died in September 1857 from the effects of accidentally sticking a pick in his foot, and Allen died in early 1858 from overexposure to cold and snow; the valuable nature of their discovery remained hidden a little longer. In 1859, two Irishmen, Patrick McLaughlin and Peter O'Riley, located placer claims at the head of Spanish Ravine above Six Mile Canyon, located just to the north of Gold Canyon. In early June, a talkative trickster by the name of

Henry T. P. Comstock, known as "Old Pancake," happened along, guessed something rich had been found, and bluffed his way into a partnership in the claims for himself and his partner, Emanuel Penrod. Meanwhile, efforts by others were under way that same month to organize the Washoe Mining District. In late June, a specimen of the ore was sent over the mountains to Grass Valley, California, for assay. It showed rich values—$3,000 in silver and $876 in gold. Word of the discovery spread quickly, and the "great Washoe rush" had begun (Lincoln, 1982:222-223; Rickard, 1932:82-96; Paul, 1963:58-62; Browne and Taylor, 1867:27-28).

Although it was already well into summer by the time of the discovery, hundreds crossed the mountains to the Comstock in 1859; the next year, thousands followed. Ultimately, nearly 17,000 claims were "located" in the area (Paul, 1963:62). The rush to Washoe, of course, had been predicated on the California gold rush, which provided the necessary population base of wealth-seekers. Most of those who joined the stampede to the new El Dorado "were refugees from the decaying placer camps in California." Some were disappointed men returning from the excitement on the Frazier River in British Columbia, "or inexperienced hands from east of the Missouri frontier, or the usual assortment of speculators, saloon-keepers, merchants, and drifters who always accompanied any rush" (Paul, 1963:61-62).'

The majority of those who found themselves in Nevada following the discovery of the Comstock in 1859, especially in western Nevada, including Smoky Valley, came mainly from the west and not from the east. (Exceptions were easterners who had settled in the Salt Lake Valley and had created Mormon communities south of Salt Lake City, including small settlements along Nevada's eastern border and at the present site of Las Vegas.)

Although the Comstock Lode was rich beyond dreams, its treasure was highly concentrated geographically. California's gold bonanza was distributed over more than 150 miles up and down the west side of the Sierra, with plenty of room for all miners who were willing to take a chance; in contrast, half of the Comstock's total production and four-fifths of its dividends came from two pairs of mines, so relatively confined was the ore. There was not enough room for many players to become owners of profitable mines at the Comstock. In the first years of the California placers there were many opportunities for a man to labor on his own profitable mine, but at the Comstock there were relatively few discovery-owners of profitable mines, and many opportunities to work for others for wages. Thus, because there were few opportunities for men who rushed to Washoe to become discoverers and owners, a small army of prospectors almost immediately fanned out from Virginia City to the north, east, and south, searching for other sites where the desert's treasure might lie buried. Within three years, two major booms in Nevada followed in the wake of the Comstock—the first at Aurora, the second at Austin.

The Booms at Aurora and Austin

The first Nevada territorial legislature in 1861 created nine counties in the Territory of Nevada, one of which was Esmeralda County (Angel, 1958:80). The first big silver discovery following the Comstock took place in 1860 at Aurora, about 125 miles due south of Virginia City in what became Esmeralda County. Aurora was located on the west side of Mount Hicks, about 25 miles southwest of present-day Hawthorne, along the California-Nevada diagonal border. The silver discovery is attributed to three Californians, J. M. Corey, James M. Braly, and E. R. Hicks, who had gone on a prospecting trip to Washoe that spring. Trouble with Indians

prevented them from leaving Virginia City until late July, when they traveled north to prospect near Pyramid Lake. They then turned south, traveling along the Pine Nut Mountains to the west fork of the Walker River. In late summer, they passed through Bodie, California, which was being "worked" (mined) at the time. They planned to travel far to the south—to Arizona, perhaps even to Mexico—but they were forced to turn west to find water. They eventually found a spring and camped there for the night.

The next morning, August 25, 1860, Hicks set out looking for game. Near the camp, he passed over a high, craggy area, later named Esmeralda Hill, and noticed the peculiar presence of quartz ledges. He broke off some pieces and brought them back to camp. Hicks's companions were well versed in mineralogy and recognized the blue streaks in the quartz as sulphurets of silver. They ran tests on the samples and found silver in abundance. Further prospecting revealed the hills to be ribbed with quartz veins from top to bottom. They staked out seven veins, including the one Hicks had initially sampled. The group then hastened to Monoville (probably Mono, California), 25 miles southwest, and informed others of the discovery, returning with a company of 20 and setting up a mining district. Corey named the district Esmeralda (Spanish for emerald), perhaps after some beautiful woman, as the term was commonly used in those days to describe green-eyed girls. Word of the discovery spread to the Carson City–Virginia City area, and despite the severe winter weather at the discovery site, with its 6600-foot altitude, and even though the only dwellings were either canvas tents or rude huts constructed of stone, enthusiasts kept arriving all winter.

By 1862, Aurora was a prosperous town with a population of not less than 5000, a city government, two daily newspapers, two fire companies of 60 men each, and two military companies. Moreover, Aurora had the reputation, apparently justified, of being infested with bad characters, gamblers, and thieves prone to getting drunk and killing each other. It is said that "man for breakfast" became so common an occurrence that citizens lost interest in the identity of the newly slain and in whether he had met his end deservedly (Angel, 1958:421-422; Ashton, 1913: 847-855).

In the hyperbole generally used to describe new discoveries at the time, the First Directory of Nevada, published in 1862, noted that the mineralized veins Hicks found at Aurora in 1860 "will be memorable as having brought to light one of the most extensive mineral districts ever discovered" (Angel, 1958:415). Between 1861 and 1896, production of gold and silver at Aurora totaled about $30 million. Another approximately $4 million was produced between 1910 and 1920 (Browne and Taylor, 1867:125-127; Angel, 1958:416; Lincoln, 1982). At least 18 mills (probably steam-powered stamp mills) were constructed at Aurora during the first years of the boom. There were also arrastras (primitive ore-grinders that used a horse or other animal to drag a large rock in a circle over the ore) and two small smelting works in the region. Unfortunately the veins at Aurora did not go deep, and those that did were hard to follow because of interruption and displacement. By 1867, most of the mills around Aurora had been idle for two or three years. Mills that had originally cost $250,000 would not sell for one-third of that amount, and mines that, under "the stimulus of popular excitement and the artful machinations of speculators," had sold for $300 to $400 per foot would not sell for $1 per foot, most being considered largely worthless.

William M. Talcott had been a rider for the Pony Express before its one and one-half year operation was superseded by the telegraph in 1861. The Pony Express route, which

followed Simpson's route, crossed the Reese River at Jacobs Station and continued northeast across the Toiyabe Range by way of Telegraph Canyon Pass to Simpsons Park Station, the next relay station. This route was also used by the Overland Stage and Mail Company beginning in summer 1861. About 10 miles east of Jacobs Station there was a cutoff from the Overland Road called Pony Canyon that Pony Express riders sometimes used (Angel, 1958:461). On May 2, 1862, Talcott was hauling wood in Pony Canyon for the stage station when he discovered a vein of gold- and silver-bearing quartz. The sample was sent to Virginia City for assay; it proved to be rich, and another boom in the wilderness was under way. As a result, the Reese River Mining District was organized in May 1862. In December 1862, Lander County was created out of portions of Humboldt and Churchill Counties, and in September 1863, residents selected the new town of Austin, built in the midst of the mines in Pony Canyon, as the county seat (Angel, 1958:105, 461).

The first cabin in Austin was constructed of logs in 1863. City lots sold for between $100 and $8000 apiece, and business boomed. Lumber from Sierra Nevada trees sold for $250 per thousand board feet, Reese River lumber for $125 to $150. There were 1.6 million shingles and shakes shipped in from the Sierra Nevada, with shingles costing $20 per thousand and shakes priced at $80 to $100 per thousand. Some 2.5 million bricks were manufactured locally and sold for $12 to $18 per thousand. Initially, water was scarce, and a bath—"two inches of cold water in a big tub, a piece of brown soap," and a napkin—could be very expensive, at $1.50 (Angel, 1958:465-468). In July 1863, Austin's population stood at 1052 men, 110 women, and 2 children. If prospectors and immigrants were included in the count (immigrants were not entitled to vote and were not included in the census), the population was estimated to be more than 2000. The first mill opened in August 1863, and by the beginning of 1865, 15 mills with 110 stamps (heavy metal pestles moved up and down by a cam) were in operation in the county. By spring 1866, there were 29 mills with 444 stamps. In 1865, $6 million passed through the Wells-Fargo & Company Express office at Austin. In the same year, the Overland Mail Company charged $40 per passenger, carrying 5840 travelers between Virginia City and Austin. The post office received about 400 letters daily (Angel, 1958: 462-468).

Prospectors spread out from Austin into the surrounding mountains looking for other gold and silver deposits, working their way down the Toiyabe and Toquima Ranges. From 1863 on, mining districts were created and communities were quickly established wherever there was any significant indication of gold or silver. Some settlement occurred to the north of Austin, but most such activity was in the Toiyabe Range south of Austin.

Mining Districts Multiply

In the wake of the Austin boom of 1862-1863, a number of mining districts were established in the northern part of the area that was to become Nye County when it was carved from Esmeralda County in 1864. The existence of a mining district often was ephemeral—created as a result of the initial discovery of valuable minerals, abandoned a few months or years later when the deposits either did not live up to expectations or were seen to have played out. Later, new enthusiasts might come in and create a new mining district in the same area with a new name whose borders might overlap one or more older districts. Figure 5.1 shows some of the first mining districts located in southcentral Nevada and the dates of their establishment.

The year 1863 saw the creation of the Summit District (later known as the Kingston District), 30 miles south of Austin in the Toiyabe Range on the southeast side of Bunker Hill; the Washington District, which adjoined the Kingston District southwest of Austin in the Toiyabes; the Millett District, also known as the Smoky Valley, Blue Spring, North Twin River, and Twin River District, which was organized on the east side of the Toiyabe Range northwest of Darroughs Hot Springs; and the Union District (also called the Ione, Berlin, and Grantsville District), on the west slope of the Shoshone Range, which led to the founding of the town of Ione, named Nye County seat in 1864. The North Union District, also known as the Jackson District, on the west slope of the central Shoshone Range, was also organized in 1864 and was reorganized under the Jackson District in 1878. In 1865, the Belmont District, located on the southeast flank of the Toquima Range, also known as the Philadelphia, Silver Bend, Spanish Belt, and Barcelona District, was created following a rich strike, and a prosperous mining camp had developed there by 1867. The Manhattan District, located on the west side of the southern Toquima Range, was first organized in 1867 and again in 1905.

To the east, the Hot Creek Range was the location of the Morey and Tybo Districts, established in 1865; the Danville District, established in 1866, was situated in the Monitor Range.

The Jett District, also known as the Toiyabe, Pablo Creek, and Hot Springs District, at the southern end of the Toiyabes was organized in 1876 but did not become active until 1880. Although silver was found in Jefferson Canyon on the west side of the Toquima Range in 1866, that district did not become active until 1871. The Northumberland District, created in 1866, was also in the Toquimas (Angel, 1958: 516-519; Lincoln, 1982:160, 171-178, 195; Tingley, 1992.).

We cannot be certain that all the mining districts established in the vicinity of Smoky Valley resulted from the Austin boom. It is possible that at least some of the settlement in Smoky Valley, especially that in the lower end of the valley, may have been a consequence of prospectors moving north, either off the Mormon Trail or out of Death Valley. We could speculate that these prospectors may have been associated with discoveries leading to the formation of the Lone Mountain and San Antonio Districts. The discovery of values at San Antonio and Lone Mountain may also have resulted from activity at Aurora, and it is important to note that these discoveries were made by Mexicans (Haas and Haas, 1992).

The Lone Mountain District is named for the solitary mountain standing at the southern end of Smoky Valley. The discovery of record was made there in 1863, and a district was organized in 1864. The mines were abandoned in 1866 and new mines opened in 1878, when ore was transported to Belleville, where it was milled. Freight was brought from Austin, 120 miles distant.

The San Antonio District, also known as the San Antone, Liberty, and Royston District, situated on the west side of the San Antonio Mountains (really a southern extension of the Toquima Range), was organized in 1863. In 1865, a 10-stamp mill was built at San Antonio Station in Smoky Valley. The Liberty Mine, 12 miles away, and the Potomac Mine were the district's principal mines. In 1881, the Liberty featured a 400-foot shaft (Angel, 1958:518).

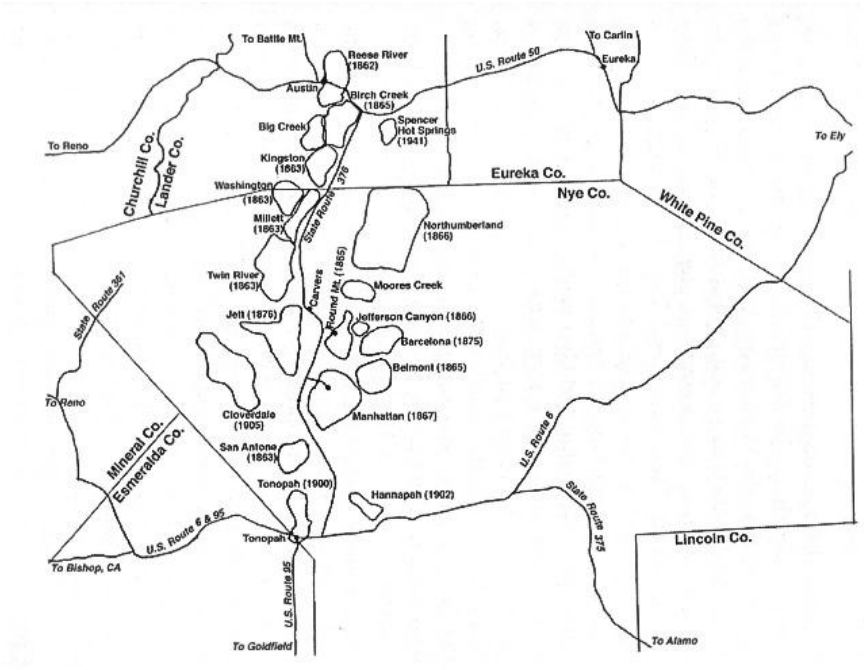


Figure 5.1. Smoky Valley area mining districts and dates of organization (if available). Many districts went though more than one incarnation under different names at different times. (R. McCracken; after Tingley 1992)

Towns and Mines in the Toiyabes

Between 1863 and 1865, a score of communities sprang up in the Toiyabe Range, like a string of little pearls on the rugged slopes south of Austin, usually at intervals of several miles apart. There was Lander City, followed to the south by Canon City, Geneva, Clinton, Globe, Kingston, Bunker Hill, Millett, Park Canyon, Ophir City, and finally, Pueblo.

Geneva, 10 miles south of Austin on Birch Creek, is said to have been founded in 1863 by Charles C. Breyfogle, former assessor of Alameda County, California. In Nevada and southern California, Breyfogle is legendary for having lost the gold mine he had stumbled upon in the Amargosa Valley area but could never find again. By 1864, Geneva had a population of 500. It had a post office from June 1867 to September 1868, although a short time later the town was abandoned (Ashbaugh, 1963:225).

In comparison to Geneva, Kingston, on the east side of the Toiyabes, was a booming milling metropolis. It was located on Kingston Creek near the mouth of Kingston Canyon about 20 miles south of Austin. By 1867, the town boasted two water-powered 20-stamp mills; eight years later it had four amalgamating mills. George Hearst, a California mining tycoon (and progenitor of the Hearsts of newspaper fame), optioned a property in Kingston at one time. A dispute, however, led to Hearst's abandoning the property and taking his money to South Dakota, where he purchased the Homestake Mine (Ashbaugh, 1963:225-226). Kingston had a post office four different times between 1865 and 1907. The Victorine Mine was established there around 1862. Although the ore was low-grade and the local mines were never terribly successful, sporadic activity continued in Kingston Canyon after the turn of the century. Remains of some of the mills were still visible in 1942 (Berg, 1942:27-29).

Nearby Globe, 17 miles south of Austin, was supported largely by a sawmill. Mexicans discovered silver 1 mile south of Globe, founded the town of Guadalajara there in the early 1860s, and constructed stone cabins.

Millett, a freighting center for mines in the Toiyabe and Toquima Ranges, was located 42 miles south of Austin in Smoky Valley, west of the alkali flat. Originally called the Scheel Ranch, its name was changed to Millett when Charles Scheel's widow married Albion Bradbury Millett in the mid-1890s. The early-twentieth-century mining boom in central Nevada prompted Mrs. Millett to open a store and lay out a townsite. Millett had a saloon, a general store, wagon repair shop, and the Lakeview Hotel; Millett's post office lasted from May 1906 to July 1930 (Carlson, 1985:168).

Park Canyon, 4 miles west of Millett, was founded at the mouth of the canyon bearing the same name. The Reese River Reveille reported that a "sprightly little town" grew up there where the La Plata Company had built a mill in 1867. The story goes that for a time a deposed Hawaiian monarch owned mining properties there and resided in the community (Ashbaugh, 1963:226). Park Canyon had a post office in 1886 for less than one year.

Values were discovered in Last Chance Canyon, the next canyon south of Ophir Canyon, in August 1865. Hercules Canyon, on the east side of the Toiyabes just south of Last Chance, was the site of the discovery of a "monster ledge" that same year. Neither discovery amounted to much, however. In 1865, the "hills and canyons swarmed with prospectors" according to the Nye County News, but the ever-hopeful did not find enough to make the search worthwhile (Berg, 1942:25).

The Belmont newspaper noted in 1868 that the Buckeye Mine, discovered in 1865, was producing. The Buckeye was located in Summit Canyon, the second canyon north of Ophir. A company had built a mill there before the mine was developed, "showing the folly of the managers," as Berg says (1942:26), though the activity may have been more the result of promotion than folly.

Silver ore was found in Jett Canyon in 1876 by John Davenport, and a town named for him was established about 3 miles from the mouth of the canyon. Good quality ore was transferred to Jefferson for reduction. The small town had several well-built cabins and a butcher shop. The mine, which produced silver and lead, was located behind the town, but it never amounted to much (Berg, 1942:45-47).

The Murphy Mine and Mill at Ophir City

During the early 1860s, the most important town in the Toiyabe Range above Smoky Valley was Ophir City, 45 miles south of Austin. Ophir City featured a school and a church, various lodges, and several saloons, and it had a post office from June 1867 to December 1893. The town's population probably never exceeded 500 (Ashbaugh, 1963:226). The Murphy Mine and the Murphy Mill were the big employers in the district. In 1863, a party of Frenchmen, led by S. "Henri" Boulerond, called "Old Bullro," had discovered a ledge of silver-bearing ore in the mouth of Ophir Canyon about halfway down the east face of the Toiyabes. The following year, G. H. Willard, Joseph Patty, and John Murphy discovered the Murphy Lode farther up the canyon, and the Twin River District was organized (Lincoln, 1982:194; Angel, 1958:526; Myles, 1969:Part 2).

Toiyabe City, later called Ophir City, or Ophir Canyon, whose post office was known as Twin River, was quickly settled. In 1866, an enthusiastic reporter from the Territorial Enterprise in Virginia City visited the district and noted that "there are seven canyons in the district. . . . At the junction of the Twin Rivers is the infant town of Claghorn, already a thriving business place. Four miles away, in Ophir Canyon, is Toiyabe City, chief business place of the district. Here is the celebrated Murphy ledge with which scarcely a silver mine in the state can compare." Beautiful specimens of native silver were found in the vein, which was from 8 to 40 feet in width, with ore occurring in pockets near the hanging wall. With the boosterism so characteristic of mining camps, the reporter added: "The permanency as well as the richness of the Twin River district is now established beyond a question. Not only the future of this district but the whole state is full of encouragement to the industrious miner and to all classes of business men" (Myles, 1960:6). Old Bullro never profited from his discovery. He stayed in Ophir Canyon into his old age, until he was committed to a state hospital in the early 1890s, where he died.

A wagon road costing $8000 was constructed to connect to the stage road in the middle of Smoky Valley. In 1865, local residents successfully petitioned for a new road to be built from Ione across the Reese River Valley and up over the summit into Ophir Canyon, a distance of 16 miles. Supplies and machinery for construction of the Murphy Mill were transported on this road, which shortened the trip by 100 miles. The Twin River Mining Company, which owned the Murphy Mine, completed a 20-stamp mill in 1865 that cost over $200,000 (Angel, 1958:526). The stamps weighed 850 pounds each. Bricks for the chimney and mill were produced in Smoky

Valley at the future site of the RO Ranch and were shipped the 10 miles to the construction site. By August of that year, ore worth $114 per ton was being extracted from a 30-foot shaft. Construction of an experimental Stetefeldt furnace, the first ever built, was completed at the millsite in April 1868. It cost $25 per ton to ship freight from Austin (Angel, 1958:526).

By 1868, the Murphy Mill was operating at full capacity, which required a workforce of 41 men. Including miners, ore sorters, and woodchoppers, the mine employed more than 100 men. Most of the miners were natives of Cornwall, England. Some of the ore ran over $100 per ton; in one month, 417 tons of ore were milled, producing $36,865 (Browne, 1868:417). The mine and mill produced $750,000 in bullion between 1867 and 1868, and by 1880, over $2 million had been taken out of the mine (Angel, 1958:526; Lincoln, 1982:194).

The mill was housed in a sturdy stone structure and was driven by a 95-horsepower steam engine. The ore was first crushed into pieces less than one cubic inch in size. The ore was then dried using gasses passing from the roasting furnace to the smokestack. Then it was crushed enough in the 20-stamp mill to pass through a screen containing 3600 holes per square inch, after which it was transported to one of eight furnaces, each capable of roasting 16 tons in 24 hours. The ore was mixed with the necessary amount of salt, which could vary from 8 to 15 percent depending on the composition of the ore. Seven hundred to 900 pounds of ore mixed with salt composed a charge for the furnace; the mixture was roasted and stirred constantly for five to seven hours. The roasted pulp was then transported to an amalgamation room where it was mixed with water and quicksilver. The mixture was agitated and ground for six hours, then drawn off. More water was added, followed by more agitation; the quicksilver bearing the silver was drawn off, and the pulp, absent the silver, was allowed to run off as waste. When pressed through leather bags, the quicksilver filtered through the pores of the bag—and the silver remained. The quicksilver was retorted to regain any leftover silver. The crude bullion remaining in the leather bags was taken to the smelting room, where it was once again melted. In the final step, it was poured into ingots, now ready to be assayed and sold (Browne, 1868:416-417).

Although the Murphy Mine produced considerable amounts of bullion, it never paid a dividend to its stockholders, who became discouraged and permitted it to go into bankruptcy. In 1868, the mine ceased production and Ophir City became deserted (Lincoln, 1982:194; Angel, 1958:526) . The mine reopened in 1873 but failed in 1880. The steam quartz mill was put up for sale in November 1874, and by December, only two watchmen, a gardener, and the storekeeper and his wife remained at the Murphy Mine and Mill. Operations were sporadic until December 1879. A vein lost due to faulting, water in the mine (the shaft was only 300 feet deep), and the low price of silver caused the mine to shut down in about 1880.

In 1881, with only four mines still operating in the district, the following was written about what remained of the Murphy Mill: "The massive stone walls of the costly and splendid mill, and the brick walls of the elegant office and mansion connected with the works, mark the scene of the once busy place, monuments of great expectations and wasteful extravagance" (Angel, 1958:526). In 1907, the lost vein was reported to have been found (although according to Berg [1942:24], this was not the case), and the Murphy Mine was reopened. There were other flurries of activity in 1909 and 1917. By 1942, only the walls and chimney of the mill remained. A few stone cabins were left, some with roofs, others with only a wall or two (Berg, 1942:22-25).

Life in Toiyabe City

Life in Toiyabe City is said to have been relatively free from conflict and strife, more so than in most mining towns of that period. Among the most dramatic events that occurred in Toiyabe City was the shooting of Richard P. Ryan on August 31, 1867. Ryan, who was engaged in the mercantile business at Ophir Canyon, had allowed two brothers, William and Robert Tweddel, ages 24 and 22, to become indebted to him. The brothers had been employed chopping wood in the vicinity of Toiyabe City, and it was said they were malting preparations to leave the area. In order to protect his interests, Ryan obtained a writ of attachment on a mule belonging to the brothers. A constable served the writ on the Tweddel brothers, who made arrangements to accompany the officer to Toiyabe City to settle the matter. William Tweddel rode the mule that had been attached. The brothers took a few drinks of whiskey along the way and became boisterous and noisy, asserting they would like to see the man who was big enough to take the mule. Soon, the Tweddels were sitting at Donney's Store in Toiyabe City.

About this time, Richard P. Ryan came up the canyon from his home a mile or two below Toiyabe City. Below town, he met the constable, who informed him that he would be unable to get the mule. Angered, Ryan said, "Give me the attachment and I will get it." Ryan walked on up to Donney's Store, where the mule was standing just outside, with William inside, partially hidden behind the door, holding the mule's bridle. Ryan approached, jerked the reins from Tweddel's hand, and started to lead the mule away. Tweddel immediately jumped up and asked Ryan if he knew who owned the mule and what he intended to do with it. Ryan threw the writ of attachment at Tweddel's feet and told the young man to read it. Almost simultaneously, Ryan drew his revolver and fired at Tweddel. Tweddel drew his gun and fired at Ryan; two shots were exchanged by each man, none hitting their mark. Ryan then stepped into the doorway in pursuit of Tweddel, and as he did, Tweddel fired a third shot—the fifth in all—and hit Ryan in the arm, with the bullet passing into Ryan's chest. Ryan staggered to the door, leaned for a few minutes against the side of the house, and fell, dead. His final words were, "Farewell, my dear," apparently referring to his wife.

Immediately after the shooting, the Tweddel brothers dashed for the hills. Excitement ran high in the canyon, and there was talk of a lynching. A subscription was circulated; in a short time, $500 had been pledged as a reward for capture of the fugitives, dead or alive. The next day, the brothers were apprehended at Deckers Ranch in Smoky Valley by Frank Sealy. When told to surrender, both men drew their revolvers, declaring they would not be taken alive. Once Sealy exhibited a Henry rifle, however, the fugitives' resolve weakened, and they gave up their weapons and were escorted back to Toiyabe City. They were held for a hearing with a grand jury, transported to Belmont, and placed in jail. Since Robert Tweddel was not involved in the shooting, he was soon released.

On September 7, 1867, the Belmont newspaper, the Silver Bend Reporter, stated that the young men had come from the Salt Lake City area and had "gained the ill will of nearly every resident of Ophir Canyon by the foolish brags that they were destroying angels and that they had participated in the Mountain Meadows Massacre." The article noted that the massacre had occurred just ten years before that, so they could have been no more than children when the event took place, which added to their reputation as bigmouths and

braggarts ("Homicide at Ophir Canyon," 1867). Despite the prejudice against him, William Tweddel was eventually acquitted of the shooting (Myles, February 2, 1969:4).

Every old boom camp had its hangers-on, usually old miners who refused to believe the camp was truly dead and remained in the district, steadfastly holding to the belief that there would be a revival of the camp's fortunes. Johnny Martin, who was a native of Canada, held on to such a belief for Toiyabe City. He arrived in the camp in the early 1880s, not long after taking out American citizenship papers in Austin. From the time of his arrival, Martin probably exhibited more faith in the potential of the Murphy Mine than anyone. Although Toiyabe City had been virtually abandoned because of the loss of the Murphy vein due to faulting, Martin stayed on, his belief in the property unshaken. For 28 years, he called Ophir Canyon his home. He periodically left to work elsewhere in order to earn enough money to support what he considered his "real job," which involved driving a tunnel into the hillside in an attempt to crosscut—and thereby locate—the lost Murphy vein.

Martin used to walk the five miles from his home in the canyon to Myrtle T. Myles's father's station in Smoky Valley to pick up his mail, eat a home-cooked meal, and purchase his supplies of bacon, beans, prunes, and flour. Someone always gave him a lift back up the hill to his home. He was also a frequent visitor at the Rogers Ranch, which became known as the RO Ranch later. Once, he missed a trip for his mail, and someone went up the canyon to see if he was all right. His bed had not been slept in and his stove was cold; there was no sign of him. He was found working in his tunnel by candlelight, totally oblivious to the passage of time.

Martin, who claimed he was an atheist, enjoyed arguing about religion and collected numerous books on the topic. Also something of a poet, he wrote a verse for Daisy Hunt, an area schoolteacher:

Ralston Valley cold and hazy,
Raised a golden-headed daisy,
Hair of gold and eyes of love
She's a daisy, she's a dove!

In the springtime, Martin picked wildflowers to decorate graves in the cemetery at the mouth of the canyon. By 1919, Johnny Martin was an old man in failing health. Yet, he continued to work in his tunnel, searching for the faulted Murphy vein. Around Christmastime, he was not seen in the valley, and friends checked on him. He was found in his bunk in the cabin where he had lived for so many years; he had a deep slash across his arm and there were indications that he had bled to death from a self-inflicted wound. The last day marked on his calendar was December 25. He was buried in Round Mountain (Myles, February 2, 1969:4-5).

Towns and Mines in the Toquimas

Of all the towns resulting from the Austin boom, Belmont, situated on a sloping 8000-foot plateau on the east side of the Toquima Range, was the most important. Ore was discovered by an Indian in 1865, and the first locations were made that fall. The Philadelphia District was soon organized. The town established there in 1865 was first called Silver Bend, but the name was soon changed to Belmont from the French bellemont, meaning "beautiful mountain." The Nye County seat was moved from Ione to Belmont on February 6, 1867 (Angel,

1958:519; Carlson, 1985:49). There were five sawmills in the district in 1866. In 1868, salt was discovered in Smoky Valley, much to the benefit of camps in the area because salt was needed for refining silver ore. By 1874, Belmont had 1500 residents (Angel, 1958:520). A new two-story brick courthouse was constructed in 1876, and the telegraph from Eureka to Belmont was completed that September (Berg, 1942:33-35). By 1885, Belmont is said to have produced over $15 million, but following the demonetization of silver, the town gradually declined. In January 1903, about 150 people remained, with the county as the primary source of employment (Berg, 1942:37-39). Belmont had a post office from April 1867 to May 1911 and again from September 1915 to August 1922.

At the north end of the Toquima Range, the community of Northumberland developed after silver was found by Herbert Henry in 1866. The ore ledge was reputed to be nine feet thick. The ore, which ran from $500 to $1000 a ton, shipped to Austin until a mill could be moved in. Northumberland hit its peak in 1879 and had a post office from February 1885 to July 1886. Learnville sprang up on the west side of the mountains, facing Monitor Valley, but the mines there became inactive in 1870, although they reopened in 1908 when ruby silver was found (Berg, 1942:30-32).

Jefferson was located on the southern flank of Mount Jefferson, about 2 miles northeast of present-day Round Mountain (Ashbaugh, 1963:227). By 1874, the town had grown large enough to have a post office, and in 1876 had a population of 800, with 600 votes cast in an election there. There were two mills, one for each of the principal mines, the Prussian and the Jefferson (also known as the South Prussian). The Jefferson produced $363,000 in 1875 and 1876.

The Jefferson Mill had 15 stamps, and the Prussian, 20. As much as 85 to 90 percent of the ore values could be saved in the furnace; milling cost $2 per ton. A specimen of silver from Jefferson Canyon was sent to the centennial celebration at Philadelphia in 1876, where it was judged the finest of its kind at the exhibit. Both mines closed by 1878, due, it is said, to mismanagement, nationwide financial problems, and perhaps underground water in the mines (Berg, 1942:50; Angel, 1958:525). After 1876, only leasers worked the mines.

Once the mines were established, a toll road was constructed over Jefferson Summit from Belmont. Lumber was scarce, so houses were built of stone, with mud and branches used for roofing; most of the wooden houses were moved in from Ophir City. Some of the machinery for the mines in Jefferson Canyon was obtained from Ophir City, but most came from San Francisco.

Two towns were built, one at the site of the two mills and the other about three-fourths of a mile up the canyon. The lower town was founded first. In 1874, the townsite included about 100 houses as well as a butcher shop, brewery, barbershop, lumberyard, and blacksmith shop. There were two general stores, seven saloons, three restaurants, two stables, and two bakeries (Berg, 1942:47-49). Gradually the lower town became depopulated, with most people moving to the upper town because the canyon was wider there.

In 1864, 200 miners were reported to be working in the San Antonio Mountains, just south of the Toquimas. The ore was taken 100 miles north to a mill in the Washington District on the Reese River side of the Toiyabes. In 1865, Hunt's Mill, with 10 stamps, was constructed at Indian Spring (later called San Antonio Station), about 12 miles from the Liberty Mine. In 1868, the mill was moved to Northumberland. A 4-stamp Rigby Mill was built in 1867 and ran

for about one year. By 1875, only 10 men were left working in the San Antonio District, and by 1876, no mills remained at San Antonio, so ore was shipped to Jefferson Canyon. The San Antonio camp was revived in 1902 and again in 1909-1911, but high expectations for renewed production were never realized (Berg, 1942:42-45).

Ranchers Service the Boom at Smoky Valley

Prospectors rushed to the mountains surrounding Smoky Valley following the boom at Austin and, perhaps to a lesser extent, at Aurora. Wherever they found indications of gold and silver, they began digging. Teamsters and shippers, merchants and barkeepers, promoters and politicians, lawyers and investors, wives and children, flim-flam men and prostitutes followed. Each was part of the crowd looking for a way to cash in on the excitement. Communities sprang up almost overnight, and as they formed, one thing was certain: All their residents had to be fed, and it was a long way—more than 180 miles—to established farms. Some people sought to earn a living by providing goods or services, for example, by selling dry goods or liquor, or by setting up laundries or businesses that provided other essential services. Others turned to producing food for the ready markets the communities represented. Within a few years, all land capable of growing a crop or sustaining livestock was quickly claimed.

Ranching began in Smoky Valley about 1863. Messrs. H. Robinson and William Shea were the first ranchers. They may have constructed the stone building at Darroughs Hot Springs that has "1863" carved on one of its foundation stones (Berg, 1942:56). The water from the hot springs tends to moderate the cold of winter, which makes it likely that this was the first ranch site in Smoky Valley. In 1878, a man named H. Hawkins owned the hot springs, and the Belmont Courier reported that people were encouraged to go there to bask in the sun and bathe in the warm waters (Berg, 1942:57). Not long afterward, James Darrough took over both the hot springs and the cold springs, which were about 3 miles apart. He sold the property containing the cold springs, which watered a large meadow, to John A. Moore. In 1908, a second building—a 10-room hotel that cost $12,000 —was constructed at Darroughs Hot Springs. Later, several people tried to operate the springs as a resort, but these efforts were never successful (Berg, 1942:60-61).

Most of the best land in the valley was claimed in the early 1860s for farms and ranches. These years saw the establishment of the Wine Glass Ranch north of present-day Carvers by A. H. Wilson in 1863; the Triple-T Ranch in northern Nye County by W. H. Spaulding and associates in 1864; the Blue Springs Ranch in northcentral Smoky Valley in 1864; and the Peavine Ranch in 1868. The Cloverdale Ranch, at the mouth of Cloverdale Canyon at the south end of the Toiyabes, was established in 1866. Carl and Del Haas, who did extensive research into the early settlement and ownership of property in Smoky Valley, believe the Cloverdale Ranch may have been a stage stop similar to San Antonio Station for travelers coming from the Mono Lake area (Haas and Haas, 1995). In 1863, John L. Smith, A. H. Wilson, George H. Sharp, and W. S. Wilson laid claim to the irrigation waters of Summit, Wisconsin, Ophir, and Last Chance Canyons for use on the North Twin River Ranch; in 1864, Richard Charnock made a similar claim for water for the Charnock Ranch on the east side of central Smoky Valley. South Twin Rivers Ranch was settled by Hiram Reed, the Robinson brothers, William Newel, and Eli Steninger prior to 1865. Situated at the confluence of the North and South Twin Rivers, it encompassed between 1000 and 1500 acres, 150 of which were planted in grain (Haas and Haas, 1995). Thus, by 1865,

mining and ranching, the twin economic engines that had powered the settlement of the central Nevada frontier, were firmly in place in Smoky Valley.

When work in Ophir Canyon slacked off, John McLeod, superintendent of the Ophir Mine, purchased ranch land 5 miles south of Millett in about 1880. At roughly the same time, George W. Schmidtlein bought ranch land north of the mouth of Kingston Canyon. Kingston Creek, North and South Twin Rivers, and Peavine Creek supplied water for two or three ranches each; only two ranches in Smoky Valley obtained their water from sources in the Toquima Range. In 1881, there were 13 ranches, with 40 inhabitants, in Smoky Valley, with 500 acres under cultivation (Berg, 1942:57; Angel, 1958:516).

Berg reports that corn and other vegetables; wheat, rye, and alfalfa; and many fruits and berries—apples, peaches, pears, apricots, strawberries, raspberries, and gooseberries—were grown on Smoky Valley farms. Soil in the valley was fertile despite the presence of two alkali dry lakes. People say that in 1940 in the valley some sagebrush grew higher than an automobile. Horses, cattle, pigs, sheep, and chickens were found on almost every ranch. Only one or two ranches had large herds of cattle, but many ranches had sheep in the early 1900s (Berg, 1942:58).

Smoky Valley Stations and Stages

By the mid-1860s, wagon roads ran down Smoky, Reese River, and Monitor Valleys—the great valleys that stretched south of Austin. Many of these roads may have begun as Indian trails, which always led from one water hole to another. Indian trails became horse trails, and as traffic grew heavier, they were used by wagons. Stations where travelers could stop and rest or change their horses were established at propitious locations where water was ample. Among the earliest stations in central Nevada were those at San Antonio (also called San Antone) and Darroughs Hot Springs, both built in 1863. San Antonio Station was a large adobe-and-brick structure containing 15 or 20 rooms. It had previously been called Bradley's (and before that, it was known as Indian Spring) and was a convenient stopping place for travelers to the nearby mines. Camel trains, which were still in existence as late as 1872, carried salt across the desert from the Columbus Salt Marsh to nearby mills on Peavine Creek (Myles, 1960:8).

Minimum Station, a stage stop on the Austin-Belmont route, was located in Smoky Valley north of Millett near the Kingston Mining District; the station operated from the 1860s until 1890 (Carlson, 1985:169). In describing the stage traffic between Austin and Belmont, Myles says:

Smoky Valley stages plyed [sic] between Austin and Belmont, with Minnimum's [sic] as a stop-over, and from this point crossed over Northumberland Pass in the Toquimas, thence down Monitor Valley to Belmont. At Minnimum's a "pony" met the tri-weekly stage and carried mail, first class only, south across San Antone desert to Silver Peak. and Lida. Two riders operated this "pony," meeting and passing at Desert Wells not far from the present site of Miller's. Later the wagon stages continued down the valley and near Cold Springs turned east to the towns of Jefferson Canyon, thence over the summit to Belmont. The old Northumberland route was no longer used after the Seventies when the Jefferson mines were booming. (Myles, 1960:8)

Tate's Station, built in 1886 at the halfway point on the Austin-Belmont line, was another stage stop in Smoky Valley. That station also serviced a short line to the booming camp at Ophir City (Myles, 1960:8).

In spring 1874, when mining was becoming active in Jefferson Canyon, a road was built over the Jefferson Summit so that mail could be routed via Smoky Valley rather than by way of Monitor Valley, thereby providing better service to Smoky Valley ranchers. Freight took two months to get from San Francisco to Belmont; it was moved by ox or mule team from Wadsworth through Ione, then to Cloverdale, San Antonio, and Baxter Springs. It took from 17 to 24 days to move freight from Wadsworth to Belmont. Once the Eureka and Palisade Railroad was in operation in about 1874, freight was hauled from the railroad terminus at Lodi to Belmont by teams; the trip took two weeks, and shipping cost 6 cents per pound (Berg, 1942:34-35).

By 1880, there were numerous stage lines that operated in central Nevada. Connections could be made with the Central Pacific Railroad, which had been completed along the Humboldt River, and with the Eureka and Palisade Railroad and the Nevada Central Railway, which linked Battle Mountain and Austin. The latter two railroads connected with the Central Pacific Railroad, and their track stretched south of the Humboldt River. The stage lines were generally well equipped and conducted their business with great spirit, enterprise, and energy. All important towns and mining camps in the state not on railroad routes were supplied with mail facilities. There was a daily stage (except Sunday) from Eureka to Belmont, which went on to Morey, 80 miles away, then to Hot Creek, Tybo, and back to Belmont. There was a stage from Morey to Duckwater that ran twice a week. In 1881, there was triweekly service from Austin to Ione, 55 miles distant; that stage continued on to Grantsville and Candelaria. There was triweekly service as well from Austin southwest to Junction, Pine Creek, and Belmont. The stage traveled three times per week from Mason Valley to Aurora, Cambridge, and Washington. Daily mail (except Sunday) was carried from Aurora to Columbus, passing through Marietta, 50 miles away, then going on to Belleville, Candelaria, Metallic, and Columbus. There was biweekly stage service from Columbus to Silver Peak, 36 miles away, then to Lida and on to Montezuma. There was also mail service between Aurora and Bodie (Angel, 1958:107-108).

The Smoky Valley Salt Field

In 1866, Congress authorized the secretary of the treasury to collect "reliable statistical information concerning the gold and silver mines of the western States and Territories" and appropriated $10,000 for this endeavor (Browne and Taylor, 1867:8). Special Commissioner J. Ross Browne, who had previously visited nearly every mining district in the Far West, began collecting the data. During the following year, Browne produced a preliminary report detailing mining activities in the Far West. In 1868, he submitted a massive final report to the U.S. Treasury Department. That work has become a classic information source for those interested in the history of western mining. Browne discussed several mining districts in the Smoky Valley area, including the Smoky Valley Salt Field, located near Blue Springs. It encompassed 2000 acres on the flat of old Lake Toiyabe. Much of the salt used in eastern Nevada both for domestic purposes and for refining silver ore came from this salt field. A light rain would drive the salt beneath the surface of the flat, but it would reappear with the sun. The salt would rise to an efflorescence of one-half inch or more on the surface and was then gathered. Hundreds of tons were obtained annually and were sold for between $30 and $50 per ton. Browne noted that similar salt deposits were found in many locations throughout Nevada. The Smoky Valley salt deposit was close to the towns and mills in the nearby mountains, which prompted Browne

(1868:414) to comment on "the beneficence of a Divine Providence in furnishing it [salt] in such vast deposits and at convenient localities throughout the district."

John Muir Visits Smoky Valley

In 1878, the famous naturalist John Muir traveled south down Smoky Valley, then headed east across central Nevada. Fascinated by Nevada and the many ghost towns that he encountered in the late 1870s, he wrote:

Nevada is one of the very youngest and wildest of the States; nevertheless it is already strewn with ruins that seem as gray and silent and time-worn as if the civilization to which they belonged had perished centuries ago. Yet, strange to say, all these ruins are results of mining efforts made within the last few years. Wander where you may throughout the length and breadth of this mountain-barred wilderness, you everywhere come upon these dead mining towns, with their tall chimney-stacks, standing forlorn amid broken walls and furnaces, and machinery half buried in sand, the very names of many of them already forgotten amid the excitements of later discoveries, and now known only through tradition—tradition ten years old. (Muir, 1918:195)

In one canyon in the Toiyabe Range not far from Austin, Muir reported seeing "no less than five dead towns without a single inhabitant. The streets and blocks of 'real estate' graded on the hillsides are rapidly falling back into the wilderness. Sage-brushes are growing up around the forges of the blacksmith shops, and lizards bask on the crumbling walls" (Muir, 1918:196-197).

Muir took note as well of the boom-and-bust character of development in Nevada:

Adventurous prospectors who came from the exhausted placers of California would discover some rich ore—how much or little mattered not at first. These specimens fell among excited seekers after wealth like sparks in gunpowder, and in a few days the wilderness was disturbed with the noisy clang of miners and builders. A little town would then spring up, and before anything like a careful survey of any particular lode would be made, a company would be formed, and expensive mills built. Then, after all the machinery was ready for the ore, perhaps little, or none at all, was to be found. Meanwhile another discovery was reported, and the young town was abandoned as completely as a camp made for a single night; and so on, until some really valuable lode was found, such as those of Eureka, Austin, Virginia, etc., which formed the substantial groundwork for a thousand other excitements. (Muir, 1918:198)

After noting the wealth in gold and silver that Nevada had produced up to that point, Muir remarked, "In full view of the substantial results achieved, the pure waste manifest in the ruins one meets never fails to produce a saddening effect" (Muir, 1918:202). He went on to discuss the beauty of the ruins of past civilizations in Europe:

Their picturesque towers and arches seem to be kindly adopted by nature, and planted with wild flowers and wreathed with ivy; while their rugged angles are soothed and freshened and embossed with green mosses, fresh life and decay mingling in pleasing measures, and the whole vanishing softly like a ripe, tranquil day fading into night. (Muir, 1918:202)

Muir felt the same to be true of the older ruins in the eastern United States and, to some degree, of the dead mining towns of California. However, with what seems to be a fickle turn of the pen, he was quite critical of the ruins he found in Nevada.

But those lying to the eastward of the Sierra throughout the ranges of the Great Basin waste in the dry wilderness like the bones of cattle that have died of thirst. Many of them do not represent any good accomplishment, and have no right to be. They are monuments of fraud and ignorance—sins against science. The drifts and tunnels in the rocks may perhaps be regarded as the prayers of the prospector, offered for the wealth he so eagerly craves; but, like prayers of any kind not in harmony with nature, they are unanswered. (Muir, 1918:203)

Muir continued, describing the Nevada prospector of but a few years earlier as "the raving, wandering ghoul of ten years ago rushing in random lawlessness among the hills, hungry and footsore" (Muir, 1918:203). Muir did, however, concede that some effort, however misapplied, might be better than stagnation: "Better toil blindly, beating every stone in turn for grains of gold, whether they contain any or not, than lie down in apathetic decay" (Muir, 1918:203). He also noted that in the decade before his visit prospectors had become more skilled in their work, that capitalists had become less likely to be fooled by false dreams of wealth, and that the ratio between growth and decay had improved.

The U.S. Geodetic Survey Station on Arc Dome

In 1871, Congress ordered the U.S. Survey of the Coast (renamed the U.S. Coast and Geodetic Survey in 1878) to conduct a geodetic survey between the Atlantic, Gulf, and Pacific coasts. (A geodetic survey is a survey of a large area of land in which corrections are made to account for the curvature of the earth.) A 2500-mile arc of triangulation along the 39th parallel—the first large-scale trigonometrical survey of the nation—was calculated and was completed in 1895. It was considered a major achievement in the history of geodesy. The survey's results led, among other things, to an increased understanding of the size and shape of the earth. The survey involved selecting peaks whose summits would serve as stations, whereby the earth's surface could be divided into a system of triangles. By measuring the vertices of triangles whose points were at the tops of the mountains, one could calculate the positions and distances between the points of the triangles (Unrau, 1990:61).

In the Far West, the scheme of triangles stretched from Yolo base in the Coast Range of California to Mt. Nebo in the Wasatch Mountains of Utah. The network from the California coast to Utah consisted of a system of linked polygons across the Great Basin. Arc Dome in the Toiyabe Range was a central triangulation point in the Great Basin for the network. Other prominent peaks in central Nevada used in the system included Mount Grant, in the Wassuk Range (Walker River Range) in Mineral County; Lone Mountain, south of Arc Dome and west of Tonopah; Mount Callaghan, northeast of Austin; Diamond Peak, in the Diamond Mountains north of Eureka; Troy Peak, in the Grant Range east of Tonopah; and Mount Wheeler, in the Snake Range on Nevada's eastern border. At 11,775 feet in elevation, Arc Dome was the second-highest peak (after Mount Wheeler) in this network.

In summer 1880, Arc Dome was selected as a home base peak, to be the center of a huge polygon. The area within a 100-mile radius from the top of a home base peak could be triangulated by flashing signals of reflected sunlight from that peak to other high mountaintops in the region. The altitude, longitude, and latitude of each site could thus be precisely determined. The instrument used to take the readings was a theodolite, a sophisticated long-distance signaling device. It is essentially a telescope mounted on a fully adjustable surveyor's transit, with a small, adjustable plate-glass mirror, 1 to 6 inches in diameter, that catches the

sun's rays and reflects them to an observer in the distance. On a clear day, the reflection can be distinguished up to 150 miles away (Unrau, 1990:72). Thousands of such measurements were taken; the results were averaged, and both longitude and latitude along a line of sight were determined. The measurements did not vary by even as much as one-half inch. The Eureka Evening Leader of September 28, 1880, observed that a light reflected from Arc Dome to another mountaintop 100 miles away resembled "an immense blazing star glittering from the far-distant horizon."

It was necessary for workers to live on the mountaintops used as triangulation stations during the years this survey was being conducted. Facilities were constructed on the tops of the observation peaks. In most cases, freight wagons and pack animals were the only means of transporting equipment. Lower camps were established at the base of the mountains, and materials were packed to upper camps on mules and horses. Sometimes it was necessary to fell timber and blast rock for passage or build bridges across gullies to make wagon roads passable. About 10,000 pounds of outfit, instruments, and provisions had to be transported to the upper camps. Five to seven pack mules were used, each carrying about 150 pounds.

The station's occupation party included three officers and a recorder, as well as packers, drivers, and cooks, making a total of about 12 or 13 persons. The theodolite operators were stationed in pairs at distant stations. Observations were made from sunrise until 8:00 A.M., resumed in the afternoon at 4:30 P.M., and continued until sunset. The work season generally lasted from June to November, but usually a party at one of the peaks was weatherbound by storms in October. In 1882, for instance, the party on top of Mount Wheeler was buried in a snowdrift 10 to 12 feet deep, while temperatures plummeted to 20 degrees below zero. The snowdrifts covered the tents in which the researchers were living to within one or two feet of their tops—but the snow kept the party from freezing to death. In order to continue research at Mount Wheeler after the blizzard, deep trenches had to be cut through the snowdrifts in the line of sight (Unrau, 1990:71-72).

Remains of the survey station at the top of Arc Dome are still visible (Weeks, 1990). Some people believe that these ruins are the remains of a signal station used by the U.S. Army in the Indian wars in the American Southwest during the 1860s, but this is not so; they are part of the observation station built for the geodetic survey done during the 1870s and 1880s (Unrau, 1990:73).

Nevada—The Last Chance to Strike It Rich

Myrtle T. Myles (1960:11) reports that the 1870s were largely years of frustration for silver miners, including those in the Smoky Valley area. The discovery of the big bonanza on the Comstock in 1859 apparently flooded world silver markets, bringing down the price of silver. Then the Panic of 1873 resulted in the closing of many silver camps. After the mid-1870s, there was intermittent activity at mines in the Toiyabe and Toquima Ranges, but it took the turn of the century and the boom at Tonopah to breathe new life into the flagging prospects of the ranchers and prospectors in Smoky Valley.

Once Jim Butler had made his fabulous strike at Tonopah in 1900, the rush of people and new money into the area revived old mines and led to the discoveries at Goldfield (1902), Rhyolite (1904), Manhattan (1905), and Round Mountain (1906). For about two decades following Butler's discoveries in 1900, the Tonopah—Smoky Valley area was a focal point for

worldwide interest in gold and silver mining and was the locus of the last flowering of the American frontier. Tonopah, Goldfield, Manhattan, and Round Mountain were among the last places in America where a person of pioneering spirit could, through good fortune, make a major discovery of gold or silver and set off a rush of enthusiasm in which large numbers of people would converge with the sole purpose of getting rich—either from new discoveries of pockets of precious metal in the mountains or from the pockets of others who were also seeking their fortune. The rush into central Nevada was the last real chance in the mining West for an ordinary person of limited means to strike it rich. In fact, not many got rich, but a few did. And, of course, it was the possibility of riches that was the attraction. Several discoveries gave rise to communities that were among the largest in Nevada at that time. After Frank "Shorty" Harris and Ed Cross made their discovery at Rhyolite in 1904, the focus of attention shifted north again with the discovery of two wondrous deposits of gold in the Smoky Valley—first at Manhattan, then at Round Mountain.

Notes

1. As is so often the case with those who make great discoveries, the four partners who set off the rush to Washoe did not profit greatly from their discovery. The site of McLaughlin and O'Riley's prospect became the Ophir Mine, which yielded $17,650,000. O'Riley did the best of the four men. He held on to his share and, with dividends, earned a sum of $50,000. McLaughlin sold out in September 1859 for $2,500. Penrod sold his share for $6,200, and Comstock sold his for $11,000, with only $100 down. Comstock died by his own hand in 1870 and O'Riley and McLaughlin ended their lives as "unhonored paupers" (Richard, 1932:96).

2. When Muir expressed his unreserved preference for the ruins of Europe and the eastern United States, he failed to mention that those ruins, after all, had been abandoned decades, centuries, or even millennia before—time had softened their once-sharp edges; time had removed most of the traces of past environmental abuse. Muir perhaps did not realize that the price paid for the ruins in the eastern United States that he admired had been the destruction of a forest that had stretched unbroken from the Mississippi River to the eastern. As to the "dead mining towns of California," they dated from the 1850's and were already 20 years old at the time of Muir's writing. Yet Muir could not accept the ghost towns of the Great Basin, such as those he found in the Smoky Valley area - where environmental disruption had been minor in comparison to areas that he admired more. the abandoned mines and towns in Nevada were to "new" for him, and the small environmental sins (if they were that) impinged too strongly upon the great naturalist's sensibilities. thus, ruins of ancient civilizations in Europe were "picturesque," whereas ruins of recent origin in Nevada were "monuments of fraud and ignorance." Muir might have considered that time would also "heal" the ruins of the Nevada ghost towns, allowing future generations from around the world to appreciate them much as Muir himself had enjoyed the ruins of Europe. Muir failed to recognize that differences in perception can turn one man's "monuments of fraud and ignorance" into another's "ripe, tranquil day fading into night."

Muir's characterization of the Nevada prospector of the 1860's as a "raving, wandering ghoul" represents a gross misunderstanding of the heart and spirit of the prospectors and miners of the American West. They were men of immense courage and vigor. Most, no doubt,

were of humble origin and were only trying to better themselves. Muir never acknowledged - and seemed oblivious to - the fact that it was the prospectors who had opened Nevada for settlement with their discoveries. He likewise did not understand what procedures were necessary in mining. Even today there is no way to determine the value of a mineral deposit without earth-invasive techniques - and even John Muir would not deny that minerals are needed for the maintenance of civilization. Prospectors in those days sank shafts and drove tunnels (today they drill small holes) on a promising site to determine the size and character of an ore body; such activity required a labor force and the construction of a town to maintain the workers. Living in the wilderness as miners did usually involved building a milling facility nearby. It is true that mills were often erected before the ore body was proven, but that was due to the nature of raising capital. Prospectors and developers of mines, like all entrepreneurs, found capital where and as they could - and used it before it was withdrawn.

Muir's comments on Nevada are important because of his deserved stature as a naturalist. they are even more important because his criticisms of mining in Nevada and his characterization of the prospector and miner are views still strongly represented in the environmentalist movement and government today. Such underserved criticisms are no less out of touch with the reality of modern life in the Great Basin than Muir's were in his time.

CHAPTER 6
A Digression on Prospectors, Leasers, and Promoters

The beginning of the mining industry on the Western frontier, which followed the discovery of gold in California in 1848, gave rise to a number of new occupational specialties in North America. Some of these specialties, which might have existed in analogous, yet less specialized, forms in industries other than mining, have to do with the manner in which gold and silver deposits, as well as those of other minerals, are found and developed. On the Western frontier, mineral deposits were usually discovered by an individual, perhaps with a partner or two, working either for himself or for someone who had grubstaked him. Once a deposit was found, either the property was sold or capital was sought to develop the mine. At that point, there was a need for labor; miners were needed to work in the mines. More-over, men working on rich veins of gold and, to a much lesser extent, silver, would—human nature being what it is—steal some of the gold and silver before the mine owners could get their hands on it. Thus developed the occupations of the prospector, the promoter, and the leaser, and the activities of the high-grader.

The Desert Prospector

As a character of the frontier West, the desert prospector never achieved the popularity and admiration the cowboy did. Yet the prospector's lifestyle embodied the same admired values attached to that of the cowboy: being free of restrictions and living close to nature. If a frontier prospector was willing to live for an extended, indefinite period of time at a minimal economic level (most depended on the "four Bs"—bacon, beans, blanket, and burro—and had an occasional encounter with the "Oh Be Joyful" whiskey), he was about as free as a human being can be. He plied his trade in an environment unusually free of social restrictions.

Typically, prospectors avoided populated areas, where the chances of finding gold or silver were significantly reduced. Given a largely unoccupied area, a prospector on the American frontier (from 1860 to 1910) could move about more or less as he desired, limited only by his own physical needs and courage. The most inaccessible environment was therefore most inviting—looking for gold in remote places probably increased the likelihood of finding undiscovered lodes—because others would not yet have picked over the area.

Still, behavioral freedom was not total. A prospector had to behave well enough to stay out of jail, and he had to avoid seriously offending colleagues while in their company in order to prevent becoming an outcast. Further, there were rules about laying claim to gold or silver finds. Like most cowboys, most prospectors were poor; and both usually died poor. But the prospector, unlike the cowboy, stood a chance, however remote, of striking it rich.

Ed Cross, co-discoverer of the Rhyolite gold deposit, and Bob Montgomery, a well-known prospector and miner in the Death Valley area, both walked away from their discoveries in the Bullfrog Hills with large sums of money. Shorty Harris, Cross's partner in the Bullfrog discovery, could have retired on the proceeds of the discovery, as Cross did. But Harris—typically, as far as the prospector stereotype is concerned—celebrated the discovery by getting drunk and selling his interest in the Bullfrog claim for $1,000. Cross eventually sold his interest

in the discovery for a reported $125,000. Often, prospectors were less interested in either accumulating wealth or developing mines than they were in the simpler thrill of finding gold or silver. As Harris said, "It's the game, man, the game" (McCracken, 1993:32).

In central Nevada, cattlemen were often part-time prospectors. The Cliffords, a ranching family in Stone Cabin Valley, provide a good example: Joe Clifford, Sr., was deeply interested in mining and frequently prospected, always hoping to make the big strike. There are numerous instances where part-time prospectors struck it rich with a lucky find. Jim Butler, who discovered the Tonopah bonanza, is the best central Nevada example. Butler was a Monitor Valley rancher and the district attorney of Nye County when he made his discovery at Tonopah; he and his wife, Belle, were set for life.

In 1907, an article in the Mining and Scientific Press by an anonymous contributor pointed out that finding mineral deposits in the "isolated peaks and broad mesas" was still difficult in Nevada, even though elsewhere in the country people had modern transportation and most of the luxuries of modern civilization. Concerning prospecting in south-central Nevada, the author wrote:

Prospecting in the desert is hard work. There is no grain, no timber, and but little grass or water. . . . The necessity for carrying everything is a serious drawback. There are few places that cannot be approached by wagons, but the everlasting question of water supply is always at hand. Two prospectors often take all their available supplies on burros, but not uncommonly one man spends all his time packing water, while his partner is prospecting. The straying of horses or burros (donkeys) is a constant trouble in the desert. Often they are taken to wells to pack water and to get a drink, but all the persuasive powers of the prospector will be useless to make them imbibe, although he knows that as soon as they get back to the camp, they will drink half of the water they have carried on their backs. ("The Renaissance of Nevada," 1907:573)

How a Prospector Staked a Claim

In the early 1860s, the laws and customs of Nevada, which were fully recognized by the U.S. government, permitted miners who had discovered metal-bearing lodes in an occupied locality to organize a mining district, designate its boundaries, and set codes to regulate the location and tenure of ownership of the mining claims within the district. A mining district was usually 10 to 20 miles long on each side, depending both on whether there were contiguous districts and on local geography (Browne, 1868:396). Mining laws varied somewhat from one district to another, according to how the miners saw the needs of the district. For example, when the Reese River District was organized in 1862, miners initially adopted a code that gave locators of claims the rights not only to the discovery vein but also to all minerals present within a 200-foot-wide strip on either side of the located vein; the code was later amended to restrict ownership to the lode or vein actually located. The locator was allowed to occupy the surface area necessary to work his mine. The mining laws of other districts in eastern Nevada at that time did not differ significantly from those at the Reese River District (Browne, 1868:397).

The locator of a mining claim was permitted to explore public land and take possession of promising-looking properties without any interference. By 1868, there were over 6000 claims made in the Reese River District alone, many hundreds of which were of known value. Possibly one-sixth of the claims filed had already been developed to determine if they were of value (Browne, 1868:397-398).

Once a miner found a promising vein, he would usually explore it by sinking an incline shaft, beginning where the ore appeared on the surface and following the vein into the earth. If the vein proved worthwhile, a perpendicular shaft was sunk at some distance from the initial outcrop, as determined by whether the ground could hold a shaft. Shafts varied in dimension, the best being 5x15 feet. The goal was to pierce the vein at a point 100 feet below the surface. Miners always tried to get below the ore they were mining because by drilling and blasting from underneath they could make the ore fall into wooden chutes; from there the ore could easily be loaded into cars and hoisted to the surface, eliminating the backbreaking task of shoveling. Sinking a 5x15-foot shaft in 1868 cost about $60 per foot (Browne, 1868:397).'

The Leasing System

The typical prospector usually lacked the financial resources and business acumen to turn a discovery into a producing mine and had to depend on others for capital. Most prospectors recognized their limitations, and many sold out to speculators before their claims were developed.

One method prospectors could use to bypass the need for outside development capital, at least initially, was to attract leasers to work the claim. The leaser contributed his labor for a percentage of the profits from the ore he extracted, which eliminated the need for the owner to pay wages. When an ore deposit was rich, for example, as it was initially in

Tonopah, the leasing system was a good way for an owner to accumulate cash to further develop his property and at the same time provide an opportunity to others who had arrived on the scene too late to stake claims on valuable ground. Jim Butler developed his Tonopah claims this way, and some of his leasers made big money. Many mine owners in Manhattan used the leasing system to develop their mines, including John C. Humphrey and his partners on the April Fool and Tip Top claims.

Leasers were quite common in the big mining camps in central Nevada—at Tonopah, Goldfield, Manhattan, and Round Mountain—and they could still be found in the 1950s in precious metal mines in the West. The demise of under-ground mining and the rise of large corporate mining operations employing the open-pit method put an end to the leasing system.

A leaser typically took a lease on a small parcel or block of ground at an established mine. Most leases were not taken with the idea of getting rich; the idea was rather to put "a nice little bundle" or "a good stake" together. Many leasers in the West, from Cripple Creek, Colorado, to Round Mountain, Nevada, experienced the thrill of drilling into a pocket of high-grade ore or of striking a rich seam. And some walked away fixed for life.

The leaser, of course, enjoyed fewer of the advantages the prospector did because the leaser was enmeshed in rules and regulations at the mine where he worked and in the community where he lived. The leaser, like the miner, spent most of his waking hours underground, in darkness, drilling and mucking in drifts and shafts lit only by candle or carbide lamp. Although the leaser gave up some of the prospector's freedom, he gained in the increased probability of a payoff, perhaps even a big one, and he also stood a good chance of making better than a miner's wages. The leaser's chance of success depended on his skill in predicting where the ore could be found in a mine and on how hard he could work. In mines using wage labor where there were many opportunities for high-grading (the practice of workers removing small quantities of valuable minerals from a mine without the owner's

permission), workers had some of the best of both worlds: the security of wage labor and the chance to make more than wages, like the leaser and prospector.

The leasing system was used by the mine owners at Manhattan and Round Mountain. Most owners also chose to attempt to attract outside development capital—either from Goldfield interests, as with the formation of the Round Mountain Mining Company, or from capitalists from as far away as Boston. Even Jim Butler, who in Tonopah profited handsomely from the leasing system, sold out to eastern capitalists after 18 months. In a typical lease, the mine owner furnished the mine, equipment, and such necessities as blasting caps, fuses, and blasting powder. The owner hoisted the ore and waste rock to the surface for 50 percent of the ore's value minus shipping, milling, and smelting charges. The miner furnished his labor. Once true capitalists became mine owners, they were usually unwilling to "give away" a large percentage of their profits to workers under the leasing system when they could maximize their returns by employing miners at the lowest possible wages (McCracken, 1955).

Local business interests in the central Nevada mining towns supported use of the leasing system. Not long after the founding of Manhattan, the Tonopah Daily Sun noted in an editorial that the leasing system had been "universally adopted" in Manhattan, and the system was "a great auxiliary :o every mining camp." Leasing, the editorial stated, should be "expressly encouraged by the business community, recognizing, perhaps, that money in the pockets of leasers was more likely to be spent in town, than were dividends of stockholders" ("Leasing System Should Be Encouraged," 1906).

The leasing system produced an atmosphere of speculation and enthusiasm in a mining camp. In contrast, a camp controlled by outside money with mine work done on an hourly or daily wage basis tended to be more stable and had a less volatile atmosphere. Where wage labor predominated, most people expected less, which affected the town's spirit. Merchants made money and stock speculators could liven things up, but there was no substitute for the enthusiasm of a worker who thought he had a chance to get rich. The leaser and the wage-labor types of communities doubtless self-selected for different kinds of residents. A mining camp that bootstrapped its way to development without outside money probably attracted risk-oriented, independent people with a frontier spirit, whereas a wage-oriented community was likely to appeal to family types interested in a safe, predictable life—people willing to trade the chance of getting rich for a steady paycheck.

Usually during the last stages of a mining camp's productive life (and this was true in Tonopah, Goldfield, Manhattan, Round Mountain, and in the Cripple Creek District in Colorado), as known ore resources became depleted and the mines began to be less profitable, capitalists turned to leasers in a last-ditch effort to keep the mine open. The leaser then risked his labor for the opportunity to locate remaining undiscovered pockets of ore, and the company was willing to forgo a large share of the potential profit on ore that might not otherwise be discovered. The philosophy was: Better to have part of something than all of nothing. In mines where rich ore had been found, especially in gold and silver mines with extremely rich pockets or small veins of high-grade ore—as were to be found in both Manhattan and Round Mountain—a miner working for a day's pay was not likely to tell the company the presumed location of a rich pocket. However, under the leasing system, both the miner and the company could profit—and good miners often possessed extensive knowledge of a mine, sometimes as much as or more than professional engineers employed by a company.

The Role of the Promoter

A prospector or mine owner who wanted to sell or develop a mine was often dependent upon the services of a promoter. The role the promoter played in the development of western mining camps, including those in central Nevada, was, and still is, viewed by local residents with mixed emotions. There are very few instances in the history of Nevada's mining boom camps in which the original locator of a substantial property was able to develop and bring the property to its full productive potential. The promoter essentially acted as a middleman between the prospector or mine owner and the investment sources. Promoters varied greatly, not only in their sales skills and financial contacts but also in their honesty. Some promoters—for instance, Billy Douglas of Tonopah and Joshua Irving Crowell of southern Nye County—were fastidiously honest and were only interested in seeing that a mine they had faith in was properly developed.

There were other promoters, of course, who were con men, swindlers, and crooks. Such people would promote ground they knew to be worthless, exaggerate the potential of a modest prospect, and even salt a worthless claim with gold so that it would appear to be more valuable than it was.

Both the mine owner and the investors had to distinguish between the honest promoter and the crook—not always an easy matter. Dishonest promoters profited from the knowledge that the most naive investor could see no farther into the ground than could the best geologist. Highly qualified mining engineers were often wrong in their assessments of a property. Occasionally, what a dishonest promoter said would actually prove to be a good evaluation, through no virtue of that promoter. Everyone knew that in a rich mining district a shaft sunk in the most improbable spot could hit a bonanza. Promoters always had this advantage: People believe what they want to believe—especially when it comes to gold and silver.

The positive and negative roles promoters played in Nevada's mining camps were well known and were discussed by the leading mining authorities of the day, as in the Mining and Scientific Press in 1907:

The question of capital in Nevada is perhaps rather a delicate subject. It has been hinted that the desert is a favorite resort for wild-cats, and that its value as a mining country is overestimated. . . . It is necessary to draw a sharp distinction between small stock corporations that put the money obtained by the sale of stock into the ground, and those that sell stock with no intention of mining in a serious and legitimate way. The former have done much to develop the country and must not be confused with the parasites of the mining industry. They may show bad judgment, employ incompetent men, and many will choose hopeless prospects and fail. . . .

Of the nondescript wild-cat schemes little need be said. They are an unsavory element in every new mining camp that should be diagnosed by serious investors. ("The Renaissance of Nevada," 1907:574)

On High-Graders

No matter how determined a mining company was to limit and control miners' share of wealth in a mine through wage-labor policy, the opportunities in some mines for workers to "high-grade," or remove gold or other valuable specimens from mines without the knowledge

or permission of the company, were sometimes too numerous for the company to prevent it. In mines throughout the West, many, and perhaps a majority, of the miners who knew anything at all about gold—given the least opportunity—would never confine themselves strictly to income from wage labor. No matter how difficult company rules might make it for miners to high-grade, the ingenuity of the miners always kept them one jump ahead of management. High-grading was common at Round Mountain.

Round Mountain gold tended to be "pockety"— narrow veins and small pockets of high-grade gold were interspersed here and there throughout the mountain. When a Round Mountain miner was underground, if he uncovered a beautiful gold nugget, or perhaps a mesh of wire gold, or some small rock covered with gold, and if he was determined, he could usually get it out of the mine—and immediately sell it. It was not uncommon for Round Mountain miners to double or more than double their income by high-grading. Thus, though Round Mountain was controlled by mining companies, the men who worked the mines were not strictly wage laborers. They in effect had the best of both worlds —the world of the day laborer and the world of the leaser: As day laborers, they were guaranteed a living wage; as crypto-leasers, they took a percentage of what they found by stealth. Yet a miner was always willing to share high-grade found in the mine with the mine's owners. He would leave a share of any rich specimens he found for the company—as long as he could pick his own share first. After all, the company had to stay economically healthy or the miner would lose his high-grading opportunity (Coombs, 1991-1992).

Notes

1. The costs for sinking a shaft currently (1996) are estimated to be $1200 per foot (Snel, 1995).

PART THREE

THE TOWN OF MANHATTAN

CHAPTER 7
Manhattan's First Years

Manhattan, along with Tonopah, Goldfield, Bullfrog-Rhyolite, and Round Mountain, was one of the great central Nevada turn-of-the-century mining boom camps. These camps not only helped revive the state's sagging economy but may have saved Nevada from reverting to territorial status because of a lack of both population and economic production.

Early Mining in the Manhattan Area

Manhattan sits in the western foothills of the Toquima Range, about 45 miles north of Tonopah in Nye County. The town and its underground workings lie at the head of Manhattan Gulch (sometimes called Manhattan Wash), a shallow gulch that stretches for several miles from the western flank of the Toquimas into Smoky Valley.

Although the town of Manhattan as we know it today was not founded until after the turn of the century, mining activity in the area dates from 1866, when George Nicholl discovered silver ore, whereupon a mining district was created. About 50 locations were made in the Manhattan District immediately following the discovery; the principal mines developed were the Mohawk and the Black Hawk. The ore produced there is said to have contained no trace of gold—the ore was "base," a mixture of silver, copper, and iron, and it averaged about $100 per ton in value. The Black Hawk Mine had a 60-foot shaft; the Mohawk, a 100-foot tunnel. Freight came from Austin by team at a cost of $60 per ton; the ore was milled at Belmont. Very little work was done in the district after 1869 (Angel, 1958:518).

In 1877, lead and silver were found in the vicinity, and the Eagle District was organized. Silver values in the ore from the Eagle District ran as high as $2500 per ton. A town, now known as Old Manhattan, was established near Manhattan Spring in a gulch running toward Timber Mountain. In an interview published in the Tonopah Bonanza in 1905, a former resident of Old Manhattan said that in the early 1870s the community had three working mines and a population of 2500. Lucile Rae Berg (1942:96) thought that the population was more likely to have been 25.

Financial trouble for the mining company and a decline in the price of silver led to the abandonment of Old Manhattan. In 1879, there was talk that the town would be revived, but this did not happen. Around 1896, Nye County Treasurer Adam McLean owned the Manhattan Mine, which had supposedly previously produced $200,000. He stole funds from the county to develop the mine, but before he could make it a paying enterprise, his thievery was discovered and he committed suicide. The county eventually secured ownership of the mine and around 1899 sold it to Tasker Oddie of Belmont and Joe Miller of Austin. In 1905, the Tonopah Bonanza reported the presence of an 80-foot ledge with low-grade values on the property, and some believed the ore would increase in value with depth ("Manhattan Mecca of Prospectors,"

1905). As of 1942, there were still several stone cabins at the site of Old Manhattan (Berg, 1942:95-96).

Ledges of Gold

Accounts of how gold discoveries were made usually vary slightly in their details, and this is so with Manhattan. According to one version, on a spring day in 1905, John C. Humphrey, whose family's ranch was at Peavine, was out looking for his cattle and found rock that looked as though it might carry gold values. He staked five claims in Manhattan Gulch, about 3 miles up from Old Manhattan. Humphrey gave E. E. Seyler one-half interest for having the sample assayed. In June, Humphrey and his brother Frank, along with Seyler and George "Shorty" Maute, returned to the property to do some location work. While eating lunch, Humphrey examined a nearby ledge and broke off a piece that was covered with gold. This specimen assayed at 1000 ounces in silver and $10 per ton in gold; another sample, taken from a 12-foot ledge nearby, yielded 68 percent lead, $50 per ton in silver, and $8 in gold. These finds were located on one of Humphrey's earlier claims, the April Fool. When the news got out, the boom was on (Berg, 1942:96-97).

In another rendition of the tale, Humphrey, Seyler, Maute, and an unidentified man stopped to eat lunch on the road between Belmont and the Seyler Ranch on Peavine Creek. Humphrey found specimen-grade gold ore in an outcrop within 100 feet of the road. The group staked out several claims and formed the Seyler-Humphrey Gold Mining Company. Each man is said to have netted $800 from the original ore they broke off the outcrop (Kral, 1951:114).

In December 1905, the Tonopah Daily Sun ran an article that presented still another version of the story. In April 1905, Humphrey and a small party of men were returning from Belmont to Humphrey's ranch when they stopped at the head of Manhattan Gulch. On the strength of assays previously run on samples of surface rock, they staked out the April Fool and the War Eagle claims, the first in the new district. At lunch, Humphrey broke off more gold-bearing samples from one of the outcroppings at the site. He returned in July for more prospecting on the newly staked claims. Humphrey and his associates had been working on silver-lead prospects in the Palo Alto area, to the west at the edge of the valley, which had produced surface assays running as high as 1350 ounces in silver and 60 percent lead. The April Fool and War Eagle claims were enticing enough for them to drop the Palo Alto venture and focus on the new claims. Between July 15 and August 15, 24 leases were let on the April Fool and Tip Top claims ("Six Months of Discovery in the District of Manhattan," 1905).

In summer 1905, Cada C. Boak, a Tonopah mining man, sent Howard Burr, a prospector, to Manhattan to locate some promising claims. Among other properties Burr located was the parcel that would later be the site of the Manhattan Consolidated Mine. In September, Boak and Burr went to Manhattan. Boak found a specimen containing free gold on a site he named the Consolidated Ledge. He immediately formed the Manhattan Consolidated Mines Company (Beatty, 1907:229-231).

An important strike was made by Dan McNamara and Bill Davidson in early October 1905, when they located the Liberty claim. Assay values ran up to thousands of dollars per ton. Eighteen sets of leasers were soon working on the property, but then it became entangled in litigation. The next rich strike was on W. C. Smith's Stray Dog claim. Leasers were also put to work on this claim, and by December they had made a shipment of 225 sacks of ore, with many

leasers on the claim sacking rich ore. Then, Deahl and Murphy made a strike on what they called the Frisco claim, which was also known as the Union No. 9. Again, leasers began to work this claim. This was followed by another good strike—on the Jumping Jack, owned by Darrough and Powers. High-grade ore was being produced by leasers there by the end of December. Other claims located before Christmas 1905 were the Mayflower, Indian Camp, Big Pine, Annie Laurie, Iron King, Iron Queen, Big Chief, Turtle Dove, Big Mogul, and Hooligan. By December, miners working at Manhattan were assured that a mill would be built, and "representatives of capital" were visiting the camp ("Six Months of Discovery in the District of Manhattan," 1905).

Manhattan Becomes a Town

News of the discovery at Manhattan spread quickly. By August 1905, there were about 500 people in the district, and 50 tents had been pitched. Eight townsites had been planned. By late summer 1905, roughly 3000 claims had been staked out in the vicinity. The first settlement in the immediate area was Palo Alto, near Bull Spring (known to local cattlemen) on the edge of Smoky Valley, but because the water there was of poor quality, a better location for the town was soon found up the gulch. This became the permanent site for Manhattan, which was also called Pine-tree Camp for a time. There was no water available at the new site, but water was unexpectedly encountered while a shaft was being sunk (Berg, 1942:97-98).

Manhattan was located in a canyon between the mountains that formed the Manhattan Mining District; it was the boss camp of the area. The town is at an elevation of about 7000 feet, which provides a cooler, moister climate than is found farther south. Manhattan was platted on a site "immediately on and adjacent to the Humphrey and Seyler claim," according to the Tonopah Daily Sun ("Town of Manhattan Located," 1905). L. C. Bell was the general manager of the Manhattan Townsite Company, which had offices in Manhattan and Tonopah (Berg, 1942:97-98).

In September 1905, Humphrey and Seyler found a ledge with gold-bearing rock that was assayed at $10,000 per ton. Good ore was being found at the April Fool, including rich ore on lease Nos. 3, 6, and 11. That fall, multi-ton shipments averaging from $1000 to $2000 per ton were shipped out by team. Such shipments attracted further attention, and the camp continued to grow. By October, the fledgling town featured a number of lodging houses and a general store, three boardinghouses, and five saloons—a total of 70 tents and four wooden buildings. By December, there were 75 frame buildings in town. A four-horse stage negotiated the 45-mile trip to Tonopah. Huge wagons with 14 or more horses or mules transported lumber, which was in great demand, from the railhead at Tonopah to Manhattan—where a load of the valuable building material would sell out in a few minutes (Berg, 1942:98-100).

By December, Manhattan's population had grown to about 800. One of the Humphrey brothers and a man named Harris established an addition to the original townsite; lots there sold rapidly. By mid-December, more new frame buildings had been constructed and plans for a hotel were underway. By Christmas, lots that had originally sold for $75 were hard to find for $500. An application for a post office had been made to the federal government. At least two stage lines and several freight companies were doing a booming business operating between Tonopah and Manhattan at year's end ("Great Stampede to Manhattan's Rich Mines," 1905).

By late December, there was so much traffic on the sadly inadequate road to Tonopah that a call went out to shorten or otherwise improve the road—or Tonopah would lose out to

business interests in Austin, 10 miles closer to Manhattan, given the current roads. It was announced three days after Christmas that up to $2000 would be raised by subscription among businessmen to do the road repairs, including taking out tight turns and removing large boulders ("Must Improve Road to Manhattan," 1905; "Manhattan Road Will Be Improved," 1905).

On a typical day in early January 1906 during the Manhattan boom, 40 people were camped at San Antonio on their way to Manhattan, with an additional 20 stage passengers bound for the new camp. The Tonopah Bonanza reported that "the road between Tonopah and Manhattan is literally lined with burros, teams, broncos, freight teams and automobiles. It is a wonderful sight" ("Headed for Great Manhattan," 1906).

Residents of Tonopah and Goldfield saw opportunities for new businesses in Manhattan. Two former employees of Tonopah's Mizpah Cafe moved to Manhattan and built their own restaurant. A Goldfield entrepreneur, Charles Cussin, headed for Sacramento, California, to buy goods to stock his new store in Manhattan. James Fowlie of Tonopah opened a saloon in Manhattan. "Ikey" Knudson, a popular barber in Tonopah, moved to Manhattan and set up shop ("Headed for Great Manhattan," 1906).

Important businesspeople during Manhattan's first year included John H. Miles, who was the local representative of the Tonopah Lumber Company, owned by Tonopah businessman Albert Revert. Miles also held an interest in several of the best claims in the district. J. H. Gage and R. H. Long, agents for the American Smelting and Refining Company, erected and outfitted a fine large store in the center of town. Mrs. Mitchell operated the popular Pioneer Restaurant; Hugh Madden, who had run saloons from Alaska to Manhattan, opened a bar; Mrs. E. Tate managed a cafe and hotel. Billy Rice and Mr. Tate ran the Manhattan Pioneer Livery. Stratton and Company, owned by S. C. Stratton of Tonopah, established the first building and contracting firm. Mr. W. Busby operated the Manhattan Club; two brothers, George W. and T. J. Dron, were proprietors of the War Eagle Club. T. D. Livingston, a pioneer contractor and builder in the camp, had plans for a two-story hotel with a 36-room second story. Peter Bart ran a bar; Frank Irving, a cafe. The San Juan, another popular bar, was operated by Messrs. F. H. Wiley and H. Gould ("Pioneers in Business at Manhattan," 1905).

Good wages were paid in Manhattan in 1906. In February, the miners' union accepted a wage scale that provided for miners engaged in drifting, stoping, and trenching to be paid $4.50 per day; those sinking a shaft or working on a raise were paid $5 per day, with work in water earning 50 cents extra. Tool dressers and blacksmiths made $5.50 per day; timbermen with no helpers made $5 per day. Those drilling with pneumatic equipment received 50 cents more than those drilling by hand. Carpenters earned $8 per day (Berg, 1942:106).

By February 1906, considerable mining activity was taking place on hills near the lower end of town. The Mustang and Bronco properties were located on Mustang Hill. Gold Hill, across the gulch from Mustang Hill, had the deepest workings at that time and was producing more ore than any other hill in the camp. This was the location of the Manhattan Dexter Mining Company and its famous Union No. 1 property. The Vermilyea and Associates properties, the Stray Dog and the Indian Camp Mines, were located there as well. Gold Hill was a veritable network of veins, all of which seemed to converge on the Stray Dog. Other Gold Hill claims included the Iron King, Iron Queen, Manhattan Cow Boy, Little Grey, Nellie Grey, Gold Wedge, Jumping Jack, Big Pine, and Big Four. On April Fool Hill, closer to Manhattan, were the April Fool

and the Tip Top, and farther up, the Aurora, Bald Eagle, and Kosmopoge claims. East of April Fool Hill was Litigation, or Injunction, Hill. Claims there had been tied up in litigation in 1905, among them those on the Big Chief, owned by Malcolm McDonald (Sprague, 1906). By early 1906, the Stray Dog was considered the great mine of the Manhattan camp, so said the Goldfield News ("Manhattan District News," 1906).

Rounsevell's Observations

Nelson Rounsevell, a newspaper publisher and writer who had worked in Panama and Peru, was living in Oakland, California, in December 1905 when a telegram came from Tonopah, Nevada, with this message: "BIG STRIKE IN MANHATTAN COME AT ONCE." Rounsevell borrowed $100, got together an outfit of carpenter tools, bought some food and three quarts of whiskey, and started on the 24-hour railroad trip to Nevada to join, as he characterized it, "one of the most spectacular gold rushes since the Klondike." He arrived in Tonopah on New Year's morning 1906. Conveyance of any kind was hard to obtain in Tonopah. Rounsevell and five other would-be travelers teamed up to hire mules and a spring wagon at a "fabulous price," loaded their tents, food, trunks, and prospecting outfits, and headed for Manhattan at dawn on January 2. Rounsevell (1933:47-48) remarked that they arrived there at 11:00 P.M. "after as cold, dreary and tiresome a trip as I have ever made"—but his initial impression was good.

Manhattan was the prettiest and most picturesquely situated camp in all Nevada. It was squeezed into a narrow winding gulch with its main street meandering up the canyon, following the twists and bends. There was scarcely room for a row of buildings on either side of the street, and the narrow shacks were scattered among tents and cabins. The rocky hillsides were covered with scraggly nut-pines----almost the only patch of green in the entire stretch of southern Nevada desert. The mouth of the canyon opened onto the broad expanse of Smoky Valley and led up into the Toyabe [sic] Range. (Rounsevell, 1933:48)

At the time of Rounsevell's arrival, there were fewer than one dozen frame shacks in the camp, not one of which was more than a few weeks old.

They were mostly one-story, board-and-batten affairs which housed saloons, restaurants, lodgings, gambling houses, brokerage offices, general stores, a couple of banks and a post office—quite a variety for a two-weeks-old town. . . . The hills on either side of the gulch were spotted with eight-by-ten and ten-by-twelve tents which served as the residence section of the camp. Two townsites had been surveyed and staked out on mining claims which crossed the gulch and lots were being sold and resold on paper titles which represented nothing more than an agreement to sell government land when and if patented title was obtained. (Rounsevell, 1933:48)

In the following colorful prose, Rounsevell described his first meal in Manhattan:

Unloading my carpenter tools in the snow just before midnight, I dragged the box into a corner of "The Horseshoe," then the leading saloon and gambling house in camp. The place, a large half-board, half-tent affair, was packed to overflowing with a noisy, drinking, gambling crowd of boom followers of every type.

On one side of the room was a long bar built of pine boards, behind which a corps of bartenders served bottled beer and straight whiskey to a line-up of customers which filled the place 24 hours a day. On the opposite side of the room were crap games, roulette wheels, twenty-one tables and faro bank lay-outs, all surrounded with as many players as could elbow

their way close enough to lay a bet. In between this swarm of drinkers on one side and gamblers on the other, a motley crowd milled up and down, in and out, back and forth from game to game and from the bar to a restaurant counter at the rear.

There, behind a plain board counter, greasy, fast-working cooks with sleeves rolled up fried steaks and ham and eggs for customers perched on tall stools. Strong coffee, pork and beans, hot cakes, bread and canned peaches made up the remainder of the bill of fare. No napkins, finger bowls, silverware or frills here. Cans of evaporated milk were opened with one blow of a cleaver and the contents poured into a dozen smoking cups of coffee. No waiters, no cashier, no overhead—just an abundance of good food at a high, boom-camp price, and Lord, it tasted good after a 16 hour trip across the snow-covered desert. (Rounsevell, 1933:48-49)

Rounsevell prospered in Manhattan during the first six months of 1906.

On the crest of a boom, everything makes money. It was a period of inflation at the peak of Na general, nationwide prosperity. The spectacular discoveries at Goldfield, Manhattan and Round Mountain, coming almost simultaneously and following close upon the development of extraordinarily rich silver and copper mines in Tonopah, had focused the attention of stockbrokers, speculators, gamblers and promoters on southern Nevada. Sucker money from all parts of the world came pouring in to augment the substantial income from actual mineral production. . . .

Just at the opportune time a rich new strike was made at Round Mountain, 18 miles north of Manhattan. Some prospectors drove into Manhattan one afternoon in an old "buckboard" [spring wagon] in which was a single piece of quartz about the size of an office desk. It was literally plastered with free gold, the alluring yellow metal being visible in every crevice. It was the largest and most spectacular specimen of "picture" gold ever found in Nevada and created a sensation in Manhattan, Tonopah and Gold-field, where it was displayed. Overnight a new "rush" was on and for a few days it promised to outrival the Manhattan rush of a few months before. (Rounsevell, 1933:56-57)

In 1906, with money borrowed from a Manhattan banker, Rounsevell established the Round Mountain Banking Corporation, but the enterprise failed. He returned to Manhattan, where he opened a lumberyard; profits ran as high as $500 a week—surely he was on the road to certain wealth. In 1909, however, he set off on what he called a "periodical," beginning with a drunken binge, after which he "decided to ramble and started on a tour which lasted several months and cost many thousand dollars" of his savings, as he wrote checks with "reckless abandon" until he finally wound up broke in New York. He then returned to Nevada (Rounsevell, 1933:71).

Because the Nevada legislature outlawed gambling in 1909, Rounsevell commented, that was a dull, stagnant summer, and "most of the old timers predicted that it was the death knell to good times and what little prosperity the state had known since 1907" (Rounsevell, 1933:73). In 1909, a placer boom in Manhattan collapsed. Rounsevell returned to Manhattan on the first of September and found the economy sinking. "Hurriedly and relentlessly I slashed prices on everything left in the lumber yard, sold every piece of real estate and property I had for whatever price it would bring—a house and lot with furniture complete for less than the piano alone had cost—and settled accounts receivable for whatever sum I could collect" (Rounsevell, 1933:73). Having paid off his bills, he departed Manhattan and headed for Klamath County, Oregon, with only a few hundred dollars in his pocket.

DeWolfs Portrait of Manhattan

Lester W. Haworth founded Manhattan's first newspaper, the Manhattan Mail, on January 10, 1906. The paper was issued as a 12-page weekly every Wednesday; a subscription cost $5 per year. The printing press Haworth used was historic itself, having done service for the Marysville, California, Appeal, the Carson City Register, Appeal, and Independent, and the Belmont Courier. In 1907, Haworth leased the paper to Frank F. Garside. After changing hands several more times, the Manhattan Mail folded on June 24, 1911 (Lingenfelter and Gash, 1984:128, 148, 242).

The most vivid surviving descriptions of life in Manhattan appeared in the Manhattan Mail in articles by W. P. DeWolf. DeWolf was a keen observer of Manhattan life and a skilled wordsmith, no stranger to the hyperbole and flowery language that marked the journalistic style of the time. On June 20, 1906, under the headline: "Vivid Word Picture of People and their Activities . . . make up the Mosaic of Existence in the Gold Mountains," DeWolf described the great variety of "types" drawn to Manhattan.

Adventurers . . . men who have followed the blazed trail of the prospector over icy wastes and across sun-scorched desert sands that they might garner the golden fruit of his arduous toil. . . . Feminine frailty [sic], trailing the gift of God given beauty through the hell of a life of shame. . . . Grizzled old prospectors, with the humor as biting as a winter's blast, and with sympathetic ear for the cry of the unfortunate. Hospitable, whole souled fellows, imbued with the spirit of the Great Out Doors, and possessed of an honesty as rugged as the eternal hills in which they delve. . . .

Ministers of the gospel, bearing the message of the Son of God over sun-shriveled alkali plains and snow-capped peaks. . . . Mothers, living amid the solitude and grandeur of tree clad slopes, in teaching little children the lesson of gentleness that the south wind breathes to the whispering pines. School teachers starting tiny feet aright at the outset of the trail of knowledge.

Miners, bluff, deep chested, iron muscled. Hard workers and sometimes rough in their hours of recreation. . . . Capitalists from the money centers of the world; dignified in bearing, cautious in investing.

Merchants, mule skinners, mine promoters, wild-catters, professional men, panderers, newspaper men, millionaires, hobos—the entire gamut from . . . every walk in life—jostle each other along the sinuous length of the main street of the camp. On the sidewalks, in the roadway, they crowd and press, each bent upon some errand of moment to himself. From every class and every clime they came, all drawn hitherward by the beckoning finger of the Goddess of For-tune. (DeWolf, 1906)

As DeWolf observed, life in a gold camp was different from that in any other community—a lucky strike, a quick business deal, or the turn of a card could mean fortune and fulfillment of all one's dreams. Further, the social environment was open and without prejudgment. "Socially," DeWolf wrote, "Manhattan has not passed from the khaki of everyday life to the pretentious dignity of a dress suit standard." As he noted, there were no "preconceived ideas of social status" (DeWolf, 1906).

Every man is measured at his true worth or lack of worth, and in making its estimate the community plays no favorites. If a man is right he's right, and if he's wrong he's wrong when

weighed in the Manhattan balance, and in either event the fact that he be the grandson of his grandfather is never considered a handicap. . . . The "busted" prospector of today may be the millionaire of tomorrow, so it is not wise to draw too fine a distinction. The waiter you tip at dinner may strike it rich and may be cracking champagne within the week, and the hoboe [sic] who "bones" you for four bits may wander into the hills and find a pay crack.

All dreamers, this heterogeneous Manhattan crowd; and 'tis the most fascinating of all dreams that has lured them into the Nevada wilderness—the dream of fortune. (DeWolf, 1906)

DeWolf also observed that honesty was highly valued on the mining frontier. Exaggeration was one thing, but to lie outright was to invite disrespect. To break one's word was a serious breach of the moral code; verbal agreements were considered binding.

DeWolf suggested, perhaps stretching the truth some, that Manhattan had a population of 3500 in the summer of 1906. Every class of mercantile pursuit was found along its meandering Main Street. The town featured a telephone system, electric lights, and a telegraph. There was a score of hotels and rooming houses. Main Street was lined on either side with busy brokerage offices. Mining "stock" from exchanges in Goldfield, Oakland, and San Francisco was available within ten minutes following the close of a call. The typical Manhattanite, DeWolf said, was willing to take a chance: "And there are no more zealous speculators in Manhattan mining securities than are the residents of Manhattan themselves" (DeWolf, 1906). The cost of living in Manhattan was high, but wages were also high.

On Manhattan vice, DeWolf commented wryly that a particular feature of the community was the

remarkable thirst with which a considerable percentage of the population is afflicted, or blessed. . . . There are as sincere drinkers in Manhattan as ever brushed the bloom from a cocktail or took an observation through the bottom of a glass; and the frequency with which they line up at the bar is only equalled [sic] by the facility with which they stow a cargo. (DeWolf, 1906)

Gambling was in progress at all hours, with the ceiling the limit. The games, DeWolf felt, were "on the square"—an opinion one must question, as games throughout the state of Nevada during that period, as skilled observers knew, were crooked. Throughout the night, a crier hoarsely shouted, "Well, come on boys; free ride to the dance hall!" There was a band at the dance hall, and girls in abbreviated skirts and bodices urged visitors to dance. Tunes such as "Mule Skinner's Delight" set feet tapping. Nearby were the brothels, where "reside the women of the half-world. Frail Magdalens beneath whose robe of scarlet often beats an aching heart" (DeWolf, 1906).

In contrast, there was the side of Manhattan life that centered on families, love, and children: "Clustering amid the pines on the hill slopes which mark the boundaries of the main street of the. camp are hundreds of happy homes; none of them pretentious, but each the abiding place of peace and deep content" (DeWolf, 1906). Neighbors gathered at each others' homes in the evenings to pass the time singing or playing cards. The Cotillion Club held a weekly youth dance. The Toquima Club, which became a Manhattan institution, was founded in spring 1906; it had an initial membership in excess of 100, with the name of nearly every prominent female resident on its roster. The Masonic Fraternity and the Aerie of Eagles also existed by 1906 (DeWolf, 1906).

Manhattan took pride in having at least six attorneys, four physicians, a real estate broker, an assayer, a druggist, and even a funeral director (who also served as embalmist). William Carol Humphrey, whose son made the first strike at Manhattan, loaded his house at Crow Springs on a wagon and moved it to Manhattan in the first days of the boom. He also assisted in laying out a cemetery that he named Mount Moriah ("History of Manhattan Is Told," 1977:13-14). Father James Butler of St. Brendan's Parish in Eureka followed the boom to Tonopah, where he was given permission to settle and construct a frame church for St. Patrick's Parish. By 1907, the population of Manhattan had grown sufficiently for Father Butler to move there and establish the Sacred Heart Mission (Olson, 1983:166).

Manhattanites were proud of their new jail, a stone building measuring 18x26 feet with two steel cells that had come from Belmont. Formerly, when a man had become rowdy during a celebration, he had been handcuffed to a pine tree located at a conspicuous spot on Main Street. However, a vengeful transgressor had chopped down the tree after spending a night cuffed to it. DeWolf noted that Manhattan had a single deputy sheriff to preserve the public peace (DeWolf, 1906).

Travelers to Manhattan used various forms of transportation. Automobiles dashed between Manhattan and Tonopah. There were travelers on horseback and prospectors with their burros along the way; the automobiles' noxious smells and noisy horns made the burros act up. An old Concord coach, which was pulled by horses and carried a strongbox stowed behind the driver, arrived from Tonopah at the Wells-Fargo office every afternoon. Its passengers were usually coated with an inch of alkali dust (DeWolf, 1906).

With scarcely a year gone by since the first gold discovery in 1905, DeWolf (1906) concluded: "Since the days—but a few months ago—when the first band of pioneers pitched their tents on the present townsite, Manhattan has outgrown its swaddling clothes and is primping up with substantial wooden business blocks and with comfortable, well-appointed residences."

Glowing Reports

During Manhattan's first months, the continuous boosterism promoting the new camp would have pleased any advocate of the power of positive thinking. Isolated as the camp was, news of Manhattan's promise reached the outside world through visitors who came to Manhattan, looked over its mines and undeveloped claims, assessed their potential, and then reported the findings in more established towns like Tonopah and Goldfield. All through summer and fall 1905, the Tonopah papers were filled with reports by respected mining men who had visited Manhattan. In early August 1905, for example, J. Gross returned to Tonopah from Manhattan and told the Tonopah Daily Sun that "as yet, there is nothing done on any of the claims beyond the location work, but the showing eclipses anything I ever saw. . . . I think the district will prove to be among the best, if not the very best. . . . The surface indications are as good and perhaps better than the older camps of Tonopah, Bull Frog, and Goldfield" ("Placer and Quartz at Manhattan," 1905). In December, Harry Sheldon, a well-known broker, visited Manhattan and returned filled with enthusiasm, reporting that he had made "fully a hundred pannings from all parts of the camp, with splendid results" ("Manhattan," December 22, 1905). On December 30, in "Great Stampede to Manhattan's Rich Mines," the *Tonopah Daily Sun* confirmed the gold-rush atmosphere that pervaded Tonopah.

S. E. Vermilyea, a prominent Goldfield attorney, and Harry Hudson, who prospected and hauled freight on the desert, were among the first to go to the new camp at Manhattan. They were the first to send out a shipment of ore, from their leased property on the Stray Dog claim (later purchased by Vermilyea).

Vermilyea, interviewed by a *Goldfield News* reporter in January 1906, estimated that upon his arrival only two months previously, the population of Manhattan was between 50 and 100; there were two board cabins and a few tents on the townsite. By January, the population had exploded to about 1500, with more than 150 wooden buildings and hundreds of tents. More and more newcomers were coming to Manhattan; most were from Tonopah and Goldfield, but many were from other sections of the country. Vermilyea said that, like all mining camps, the town was "filled with hustlers." Sleeping accommodations were scarce; he advised anyone heading for Manhattan to bring along bedding. Restaurants were often crowded—an hour's wait was not unusual. Manhattan, he said, offered excellent opportunities for making money. Lots that had sold for $250 each in November were bringing $2500 in January. There were many stock promotions afloat in the camp, most of them legitimate. Vermilyea did warn people that there would be many wildcat offerings in the near future based on "unstable mining enterprises," thus purchasers should be cautious and carefully examine personnel and company holdings before investing. He remarked that Manhattan had established its first newspaper in January; the first copy had sold to a Goldfield man for $45. The next 200 copies of the paper had sold for 25 cents each, but they could readily have brought $1.00 per copy. The pay area of the Manhattan district, he said, was a 1-mile square within which ore was being sacked at 20 different workings. Finally, "Diamondfield Jack" Davis had visited the camp, he noted, and had felt optimistic about its future. Sol Camp, superintendent of the January Mine in Goldfield, visited Manhattan about the time Vermilyea had and returned convinced it would "become one of the great mining districts of the world" ("The Land of Heart's Desire," 1906).

There Were Problems

Still, despite the enthusiasm, accounts varied. As early as September 1905, the Goldfield News commented that most Goldfield prospectors and investors who had investigated the Manhattan district had returned to Goldfield. Although none condemned the camp, most agreed that there was little chance of staking a good claim because "the territory had been staked for miles around the original discovery" ("Manhattan Mining District," 1905). In December, the Tonopah Daily Sun ran a cautionary article. In the story, C. A. Humphrey, brother of J. C. Humphrey, the locator of the Seyler-Humphrey claims at Manhattan, tempered his enthusiasm for Manhattan's future with a word of advice for those who got there too late to cash in on a good claim: "Keep yourself ready for a rush when a new strike is made and try and get in, in time to get a good lease" ("Manhattan Leasers into the Money," 1905).

Others questioned the extravagant claims made about Manhattan and its future. For example, Martin Herff, who had mined in Leadville, Colorado, in 1878 and had worked in British Columbia, in Mexico, and throughout the Southwest, visited Manhattan in August 1905. He returned to Tonopah, commenting in an article that "people are expecting -,00 much from Manhattan and Palo Alto for the time that they have been worked. They are young and it is just as hard to say what kind of a camp a young camp is going to make as a is to figure out what kind of man a child will become" ("Straight Talk on Manhattan," 1905).

Herff discussed Manhattan's problems, noting that the district had been handicapped from the beginning because the area had been staked out for the most part by wildcat speculators who had no interest in developing a mine but who were intent on selling their claims for a profit. He felt that "the promoter of this class, who rides for ten miles through the country with a pencil and pad of paper locating a bunch of claims, can only do the district harm. It is the very common custom to give away one claim for doing the work on two or three others, then when the work is done the place lies fallow until a possible sale is made, and real mining interests are kept out." Herff stressed that he was not just a "kicker" who had no claims and had been left out of the rush; he, in fact, owned several claims. A bogus claim locator, he said, would dig his location hole in the soft ground on the claim—where there was no hope of finding minerals: "Such location work is a bluff and shows on the very face of it that the locator is simply a dog in the manger and does not mean business." Herff called for a law requiring location holes to be ten feet deep, as was the case in Colorado, because "when you see a hole ten feet long, six feet wide and only four feet deep you may take it for granted that the owner is not there for business from a mining point of view" ("Straight Talk on Manhattan," 1905).

Many who observed Manhattan in 1905 tried to present a balanced view of the camp's potential, tempering their optimism with critical commentary, but were themselves then subjected to criticism. The Tonopah Bonanza, for example, took a dim view of such critics—those practicing the "gentle art of 'knocking"'—remarking that these were people who had been left out of the bonanza, who had not been able to secure a solid position in the new community. Not only were they sore losers, the newspaper suggested, they were really playing the old game of knocking, that is, running down something desirable in the hope of reducing its value in order to get it at a reduced or cheap price: "It is not the good old fashioned 'knock' straight from the shoulder that is employed, but the 'knock' of the shrug and insinuation, the meanest kind of 'knock.'" "The ore may not go down!" was the most common cry, the Bonanza pointed out—the same knock that was heard when Tonopah was trying to prove itself. Indeed, that very knock was heard in Goldfield, Bullfrog, Silver Bow, Kawich, Liberty, and Gold Mountain, the article concluded ("Manhattan Is Talk of Town," 1905).

Charles S. Sprague, a reporter for the Goldfield News, visited Manhattan and wrote a two-part series in spring 1906. The big money had not yet come into Manhattan when Sprague visited the camp; it was still primarily a community based on the labor of leasers. He noted that fully 150 leases were in operation in the mines around Manhattan; however, he was not favorably impressed with the quality of the mining. Because of the richness of the ore on the surface, he noted that

leasers are content to "gopher" around, like pocket hunters, looking for rich specimens or bunches of high grade. . . . I found one leaser on his belly working in a cave dug on his ground, under a roof of rock not more than two feet thick hanging close above his head. He was gouging around with his prospectors' [sic] pick, extracting now and then beautiful specimens of free gold-bearing rock, some of which he gave me. To my astonishment I found this little cavern to be the celebrated lease No. 7 . . from which the most sensational specimens of the camp had been taken, and which set all the country afire. From this hole, 35 pounds of rock were taken which sold for $200. Of course when returns like this can be had at the surface, there is little inducement for the poor prospector—or rather the prospector with little means and in need of ready money, to do serious mining. (Sprague, 1906)

During his visit, Sprague found only one whim (a device powered by a horse that was used to hoist a bucket holding ore from a shaft) in the entire camp and that was on one lease with a 150-foot shaft. All the other holes were worked by windlass (a small hand-cranked hoist). The result, he said, was that not much ore had been produced (Sprague, 1906).

In spring 1906, A. H. Halloran, a writer for the Mining and Scientific Press, a leading mining-trade periodical of the day, prepared a report on Manhattan. Halloran was unusually critical of the promotional activities taking place in the camp. He noted that there were good indications of ore in many localities in the area but that their economic value remained to be proven. Halloran criticized the boom atmosphere that had caused the camp to mushroom from 100 to 3000 people in six months' time. Stockbroker and "real estate boomer" alike had realized how attractive the Manhattan site was to investors who had missed the chance to get in on "the ground floor of other Nevada excitements." In the following six months, little mining had been done. "Claims have been located, other claims have been re-located over them, and still other claims staked on the snow covering pre-existing claims, all blanketed with claims newly recorded since the snow has melted. Yet to many companies merely mining on paper this is as satisfactory as though they actually did own a few square feet of ground." The situation offered, he suggested, "a pleasing prospect to an ambitious lawyer." Moreover, Manhattan was "the best-advertised camp in America." Halloran reported that some high-grade ore had been mined and sacked, "forming an imposing barricade around the whim or windlass." Much of the ore, however, had not been shipped but remained stacked at the mine. Pictures of sacked ore, Halloran contended, were worth more to "wild-cat" companies than smelter returns; too many companies had been formed with the "only mining being confined to working possible investors." There were a few legitimate companies in operation, but until the existence of mineral at depth was proved, Manhattan would remain "a precarious gamble." He recommended sinking a 1000-foot shaft to determine the continuous depth of the ore (Halloran, 1906:380-381).

Claim jumping was a problem in Manhattan. Often a miner or prospector who was interested in filing a legitimate mining claim in order to develop a mine would find that subsequent to his own locating of a claim, claim jumpers had filed claims that overlapped or completely included his own claims. In most instances claim jumpers were not interested in mining; their purpose was to blackmail the rightful claimant by tying him up in court and preventing him from either working his property or selling it. By paying off the claim jumper, the legitimate miner could free up his property legally and proceed with his business.

In mid-December 1905, meetings were held in Manhattan to discuss what could be done about claim lumping, which many felt was giving the camp a bad name. Speeches were given by some of the community's most important citizens, including W. Humphrey, W. J. Clark, and S. E. Vermilyea, regarding methods of dealing with claim jumpers. Everyone agreed that uncertainty regarding title to property was keeping investors out of the camp, and many people thought claims were being jumped by an organized band of extortionists. A majority at the meeting advocated more drastic and summary methods" to deal with the thieves. At one meeting attended by over 100 "determined men" packed into a hall "like sardines," the temper of the proceedings suggested that thereafter the man who jumped Maims in Manhattan "not only jeopardizes his fortune, but takes his life in his hands," which referred to the willingness of some present to use "hemp" (meaning hemp rope) to solve :he problem. No doubt Vermilyea's

calling as an attorney influenced him to join those advocating peaceable methods, such as arbitration, to settle claim disputes. Under Nevada law on mining claims, Vermilyea pointed out, if a prospector wanted to make a truly legal and secure claim, an attorney and a civil engineer would have to be present on the property when the claim was made. Vermilyea further suggested that miners would be better off if Nevada mining law were discarded and U.S. mining law adopted instead ("Manhattan," December 7, 1905; "Manhattan Miners Declare War Against Claim Jumpers," 1905).

Despite such cautionary statements, Manhattan did attract outside money. In January 1906, Patrick, Elliott, & Camp, a Goldfield brokerage house, announced that it would act as agent for the Seyler-Humphrey Gold Mining Company and its famous April Fool property. Within five days the entire allotment of treasury stock was sold out, with offers for purchase of stock coming by telegraph from New York, Pittsburgh, and Chicago. That same month, the company sold out 75,000 shares for the Manhattan Combination Mining Company within a few hours at 15 cents per share. By March, one Manhattan company, the Greater Manhattan Consolidated Mining Company, was controlled by Los Angeles capitalists ("Record Made on Big Manhattan Flotation," 1906). In February, the Jumping Jack, owned by J. T. Darrough and J. W. Power, the former Nye County sheriff, was sold for $90,000 and one-fifth of the stock in the new company, which was headed by a Tonopah banker; the sale price was a high-water mark for the new camp ("Manhattan Jumping Jack Sold to Goldfield Man for $90,000," 1906).

In February, the Goldfield News noted the beneficial association that could develop between a stock promoter and a mining camp—provided the stock promoter was honest. However, the newspaper cautioned that when enthusiasm and expectations rose above realistic levels concerning how much money could be made through stock investment, the possibility of fraud also rose, which was bad for the community. The newspaper appointed itself watchdog for fraudulent stock flotation—but with a disclaimer: Even though the Goldfield News carried an advertisement for flotation, that did not necessarily mean the paper endorsed it ("As to Manhattan Promotions," 1906).

In early spring 1906, the Goldfield News announced enthusiastically that two great mining authorities, Walter Janney and 0. P. Posey, had examined Manhattan exhaustively and were pleased with its showing. By late summer 1906, it was reported that a $250,000 stamp mill would be constructed in Manhattan. Fifty mining properties in the vicinity of Manhattan were said to have milling ore stored on the dumps or blocked out in the mines. By mid-October 1907, at least three mills were under construction in Manhattan, with the Wolf Mill scheduled to be in operation by the first of November ("Stamp Mill for Manhattan," 1906; "News of Manhattan District," 1906; "Renewed Interest in Manhattan Manifested," 1907).

During summer 1906, there was talk of building a railroad to Manhattan. Two possibilities were discussed. If the Southern Pacific Railroad could buy the Nevada Central Railroad connecting the Southern Pacific with Austin, then the railroad could be extended to Tonopah and Goldfield. In another scenario, the Southern Pacific could construct a parallel line from Wells to Austin, then continue south to Tonopah and Goldfield. Some said surveys had been completed and materials for the new railroad ordered. There was also speculation that "Borax" Smith would seek an outlet for his Tonopah and Tidewater line in Manhattan. Smith had been in Manhattan in summer 1906 and had made an inspection of all possible routes for the line. Smith was said to be contemplating extending such a line up Smoky Valley to the main

line of the Western Pacific Railroad on the Humboldt River. None of these options ever materialized ("Railway to Manhattan," 1906).

The fact that Manhattan began to attract the interest of outside capitalists in 1906 not only spoke well for Manhattan's future, it provided a basis for improving community services, including the development of a community water system for which wells would be dug, a reservoir constructed, and water mains laid in the streets ("New Water System for Manhattan," 1906).

The Manhattan Electric Light, Power, and Telephone Company was incorporated in January 1906; telephone service was established between Manhattan and Tonopah in March 1907. Some effort was made to obtain subscribers for electric service, but power from the outside did not reach Manhattan until 1909. In the interim period, some electricity was generated by locally based equipment (Earl, 1980:2).

Electric power produced outside Manhattan reached the town after a $25,000 advance was made by the Manhattan War Eagle Mining Company (representing Manhattan) and the Round Mountain Mining Company (representing Round Mountain), located north of Manhattan. An agreement was reached with the California-Nevada Power Company in February 1909 that power would be turned on at the War Eagle Mill in May. Lines were extended from Tonopah to Manhattan and then on to Round Mountain, as the Manhattan Mail reported in early spring 1909 ("Electric Power Here by May 15," 1909).

Manhattan Weathers Disasters

By spring 1906, central Manhattan was about seven blocks long, stretching up Manhattan Gulch. The town had stores and restaurants; several two-story buildings were under construction. There were two banks: the Tonopah Banking Corporation, and the Nye and Ormsby County Bank, which occupied Manhattan's first stone building. By March, two clerks were needed to handle business at the post office. People said the Manhattan boom was the biggest in Nevada since the Bodie boom in 1879 (Berg, 1942:105-106).

Much of the boom in Manhattan had been financed by San Francisco money. San Franciscans had ridiculed investing in Tonopah and Goldfield and had been dubious about Bullfrog-Rhyolite, but the success at Tonopah and Goldfield had stimulated many to speculate. Legend has it that mining promoters from Nevada used to stand on the streets in San Francisco with samples of ore. However, too much of the mining in Manhattan was being done on paper—there was relatively little actual mining done to back up the promotion. As a consequence, the earthquake in San Francisco on April 18, 1906, had a disastrous effect on Manhattan. The money supply dried up because many of the California investors in Manhattan rushed back to San Francisco when they heard the terrible news. Within two weeks, the town was almost depopulated. To make matters even worse, the ore seemed shallow, appearing to pinch out at about 12 feet below the surface. Of course, the worst thing that can be said about a mining camp is that the ore does not go deep. In May 1906, there were only about 100 people left in town, some of whom held on and dug deeper. With minimal capital, they kept some of the best mines going. They kept digging and opened more mines. Several rich strikes were made in the interim, one at Monte Carlo at the foot of Timber Hill not far from the old Manhattan Mine. People began to filter back to Manhattan by fall 1906 (Berg, 1942:107-108; Beatty, 1907:226).

Tests that fall showed that the Manhattan ore could be refined by cyanide processing and mill construction began. The first mill in Manhattan was owned by the Manhattan Ore Reducing and Refining Company, later called the War Eagle Mill. The second was established by the Nevada Ore Purchasing Company and was sometimes called the Lemon Mill. The two mills were located below Manhattan, on opposite sides of the canyon. In January 1907, a contract was let for a 12-inch water pipeline from Jett Canyon across the Smoky Valley on the east side of the Toiyabe Range (Berg, 1942:108-109).

Because San Francisco banks owned about one-half of the property in Manhattan, the financial Panic of 1907 dealt another blow to the fledgling community. As banks in San Francisco folded during the Panic, many mining enterprises were forced to shut down. The Nye and Ormsby County Bank failed, but the Manhattan bank hung on, in no small part because James Darrough refused to withdraw his $10,000 from it in October—Darrough even sent word that he would deposit more money in the bank if needed. The town struggled hard to survive the earthquake and the Panic—and managed to do so. In 1908, there were 368 registered voters in Manhattan (Berg, 1942:111-112).

Towns near Manhattan

Manhattan had competition. The communities of Palo Alto and Central had boosters, too, who touted the advantage of their town over the others. Silver-bearing lead ore was found near what became the community of Palo Alto about the same time gold was found on April Fool Hill. It was located near Bull Spring at the edge of the valley, about 4 miles east of Manhattan. In summer 1905, the Tonopah Daily Sun reported that Palo Alto claimed a population of 200, but Manhattan supporters were confident that the district could support "two or more good towns." Palo Alto was abandoned by late 1905. By 1917, only a few tin cans marked the site (Ferguson, 1917:167; Berg, 1942:97).

East Manhattan was located about 2 miles east of Manhattan. It sprang up in 1906 shortly after the new discoveries in the district. There were a few promising ledges near the community, which at its height had two stores, two saloons, and a restaurant. With the exception of one wooden blinding, The town was composed of large tents. The veins of ore proved to be shallow, so the community was abandoned by the end of 1906 (Hall, 1981:36).

Central (or Central City) was one of many small camps that developed quickly in the Manhattan District in 1906 and then vanished almost as rapidly. It was located a little more than 2 miles west of Manhattan and could be reached from Tonopah either via Rye Patch, which was the shorter route, or by way of San Antonio, which was somewhat longer but had no heavy grades and was better for transporting freight. Automobile travelers also favored the San Antonio route.

By the end of December 1905, Central had two assay offices. Lumber was stacked and ready for the construction of a two-story hotel. Stage lines connecting Tonopah and Austin passed through Central, and large freight teams of 12 to 20 horses or mules pulling three wagons always stopped overnight there for feed and water. There was an abundance of pure water at the site. The owners of the townsite, with "rare good judgment" as the Tonopah Daily Sun put it, placed sale of the lots in the hands of a Tonopah agency. At its peak in early 1906, the town featured five saloons, two stores, two hotels, a lumberyard, and a bakery; it probably had a population of about 100. Central had a post office from March to September 1906. With

the revival of Manhattan in fall 1906, Central lost out and vanished from the map. Most of its buildings were moved to Manhattan (Hall, 1981:30; "The Town of Central," 1905).

Gold was discovered at Baxter Springs, 18 miles south of Manhattan, east of San Antonio, in January 1906. A town was quickly established, and within several weeks the small tent town had grown to include four saloons, a lodging house, and two grocery stores. One of the stores placed its merchandise on the ground because there was no shelving. By the end of February, 400 people were reportedly there. Samples from one ledge averaged $30 per ton, with selected samples running as high as $1154 to $6712 per ton. The ore was said to be identical to that found at the Mustang and Stray Dog Mines in Manhattan, with Baxter Springs thought by enthusiasts to have been the south end of the Manhattan ore zone. Some rich assays were obtained, but the values were shallow. Placer gold was discovered in 1907, but even so, the town soon faded (Berg, 1942:120-121).

Ranchers in the Smoky Valley provided a plentiful supply of fresh fruit and vegetables in season to the residents of Manhattan-area communities. Beef and mutton were also available from the local ranches.

The Important Mines and Mills

The distribution of gold at Manhattan was spotty. Although there were exceptions, gold tended to occur in numerous small narrow veins of unpredictable length and in small pockets; usually the gold streaks did not go deep. In early 1907, DeWolf (1906-1907) stated that there was mining activity along a 10-mile line running east and west of Manhattan; there were more than 50 mining operations in Manhattan. The most developed properties at that time were the Consolidated, Stray Dog, Indian Camp, Jumping Jack, Pine Nut, Dexter, Consolidated Extension, Seyler-Humphrey, Little Grey, Paymaster, Manhattan Butler, Gold Wedge, Giant, Original Manhattan, Mustang, Mustang Extension, and Buffalo. Some of the other mines being worked were the Mammoth, Red Top, Cow Boy, Bronco, Amethyst, Desert Queen, Cash Rock, Happy Hooligan, Joker, As-You-Like-It, Granny, Cat Bird, and Hindocraft.

The Manhattan Dexter Mining Company, which owned many mining claims but never produced a great deal of ore, holds the distinction of having launched the biggest promotional effort at the Manhattan mining camp. The principal owners of the company included George Wingfield, several prominent local people, including Hugh H. Brown, Ray Pittman, A. G. Raycraft, and A. D. Nash, as well as other well-known residents of Tonopah and Goldfield. A supplement to the Goldfield News in early 1907 that provided considerable detail on the towns and mines of the central Nevada boom area stated:

By far and away the best recommendation for the camp [Manhattan] and the surest guaranty of its future is the renewed activity of the Manhattan Dexter Mining Company. . . . If you take the map of the Manhattan district you can cover the holdings of Manhattan Dexter right in the heart of the mineral belt with one hand. You cannot walk over the company's ground without stepping on the best paying properties in the district. (Goldfield News, 1906-1907:90-91)

The article went on: "The holdings of Manhattan Dexter were so vast and so valuable, that early last year it was decided by the directors to segregate the property and divide it up into subsidiary companies, of which the parent corporation should be the holding company" (Goldfield News, 1906-1907:90-91). Nevertheless, the company never really had any good ore,

and though it probably made money as a promotion, as a producing company it was a flop (Coombs, 1991-1992).

The following overview of the principal mines and mills of the Manhattan area derives primarily from the recollections of Norman Coombs (Coombs, 1991-1992), a native and resident of Tonopah, who spent his life as a hardrock miner, much of it in the mines at Manhattan, Round Mountain, and Tonopah. Coombs began working in the mines at Manhattan and Round Mountain in the late 1920s and continued to work in them periodically for more than 50 years.

The April Fool, the first mine in Manhattan, began producing in 1905. April Fool ore tended to occur in high-grade streaks of milky quartz one-half to two inches wide; sometimes the streaks were wider than two inches, but when they were, their gold content was lower. A shaft about 60 to 70 feet deep can still be seen on the property, which is behind the old post office, and part of the first streak that attracted attention is still visible running up a hill from the shaft.

The Manhattan Consolidated Mine, located above town on the road to Belmont, had a 500-foot shaft. The ore there occurred in veins in siliceous limestone, and mining was expensive because of the water in the lower depths of the shaft. In addition, the rock contained barite, which, when drilled by the miners, produced a foul smell, something like feces. By 1938, the mine had been taken over by leasers. The Manhattan Consolidated Mill ground ore in a Chilean mill rather than in a stamp mill. A stamp mill operated on the mortar-and-pestle principle, except that the stamp was held rigid and was moved up and down by a motor-driven cam shaft. As the stamp moved up and down, it smashed rock in the stamp box, or pestle, portion of the apparatus. Water in the stamp box carried away material fine enough to pass through a screen around the top of the box. The Chilean mill was based on the principle of the arrastra, where one or more large stones were dragged in a circular motion over a hard-surfaced bed by means of a horizontal arm hooked to a pivot at one end. In a Chilean mill, large wheels made of metal were substituted for the stones. They were easier to set up and required less power to run than a stamp mill. Chilean mills were eventually replaced by ball mills and rod mills, which were more efficient grinders of ore.

The Manhattan Gold Mine was also located above town. It consisted mostly of several levels of tunnels, some of which were as long as 2000 feet. Much of the ore found in the Manhattan Gold was high-grade, with the gold having a silvery look and being only about 600 fine (60 percent gold). The veins ranged from two to six feet wide, but they were not uniform and were really two separate veins. One was on the footwall side, and the other was on the hanging wall side, with the material in between being mostly barren. As is usually the case, the footwall side of the split vein carried much higher values than did the hanging wall side. This mine was also associated with a stamp mill located below town.

The Big Four Mine was located on Big Four Hill (also known as Gold Hill) at the lower edge of town. The Big Four was also composed mostly of tunnels, with raises (vertical branches) coming off the tunnels. Some of the tunnels were up to 1000 feet long and went nearly all the way through the mountain. The ore in the Big Four tended to be very pockety. A pocket of ore could produce 15 or 20 tons that would run as high as $1000 per ton with gold at $20 per ounce—meaning about 50 ounces of Manhattan gold per ton. The gold from the Big Four often formed a dendritic pattern in rock, with the small seams of gold in a specimen branching out into a fanlike shape. The gold was present in "blurred" or "drusy"(covered with crystals) quartz

and at times was so rich that it would clog the screens at the mill. The Big Four Mine processed ore at Musket's Mill, named for the man who built it.

The White Caps Mine (part of the Manhattan Dexter holdings) was by far the biggest-producing "lode." or hardrock, mine in the Manhattan camp. It was one of the first in the camp and was discovered because of its outcrops. The mine was owned by the Tonopah Extension Mining Company, whose executives included John G. Kirchen and Homer Williams, as well as many other prosperous Tonopah residents. The White Caps primarily mined low-grade ore. The ore occurred in big veins from 5 to 14 feet wide and ran $30 to $40 per ton with gold at $35 per ounce. However, the White Caps shaft bottomed out at 1300 feet, and there were always serious problems with water in the mine. If it was not pumped from the shaft, water would rise up and flood the mine as far as the 500-foot level. In the bottom of the shaft, water came into the mine at the rate of 1000 gallons per minute; of course, pumping such large quantities of water was an added operational expense. Tonopah businessman John Connolly took over the mine in the mid-1930s (after it had been shut down because of the water-pumping expense), and he opened the mine to leasers. The mill associated with the White Caps Mine had both stamp and ball mills and could process about 100 tons of ore in 24 hours. The mill also had a roaster to roast the ore concentrates. There was a considerable amount of arsenic in the rock and water in the White Caps, which created a constant health hazard for the miners there. A miner who got a small cut or nick and was then exposed to water from the mine found that the wound would not heal, and even worse, the arsenic would cause it to form a large open sore that would not heal until the miner stopped working in that mine. Treating the sore with a tarlike medicine kept it from getting worse, but it still would not heal if the miner continued to work in the mine. Miners in Butte, Montana, had similar problems with arsenic-caused sores.

The Reliance Mine, which opened in the mid-1930s, was the second-biggest producer in the Manhattan District. The shaft at the Reliance eventually reached a depth of 600 feet. Again, there was water in the shaft. Reliance ore became lean below the 500-foot level, but the mine had both high-grade and low-grade ores, with the former running $1000 per ton and the latter, $20 to $30 per ton with gold at $35 per ounce. Coombs estimated that more than $1 million in gold was taken from the Reliance, whose ore occurred in veins that sometimes became very rich. In all, the Reliance Mine operated for no more than six or seven years. Interestingly, the Reliance was first located as a placer operation in the gravels in Manhattan Gulch below town, and subsequent discoveries led to the sinking of the big shaft. The War Eagle Mill, also known as the Red Mill, processed the Reliance Mine ore. Like all of the mills in the Manhattan area, it used either groundwater from Manhattan Gulch or water pumped from the deep shafts.

Many years later, in the 1980s, the Echo Bay Mining Company, which had bought up a number of the gold mines at Round Mountain, also acquired the Reliance property. Drilling proved that the entire area near the Reliance shaft could be mined using open-pit methods. At first Echo Bay tried to heap leach the ore from the open pit, but the company found that more gold could be recovered if the ore was run through a ball mill and then treated in cyanide tanks. The Reliance Mine stood on the right side of the road going into Manhattan (Coombs, 1991-1995).

CHAPTER 8
Placer Mining in Manhattan Gulch

Geology shows us that the gold deposited in the hills around Manhattan was spotty, tended to occur in small veins and pockets, and was not unusually extensive. By the time the last of America's frontiersmen arrived in Manhattan in 1905, much of that gold had eroded from the mountains where it had originally been deposited and had washed for several miles down Manhattan Gulch, or Manhattan Wash, as it was also called. The best Manhattan mines were good producers—and Manhattan placer was among the finest in Nevada.

The topography in the vicinity of Manhattan differs from that near many other mining camps in Nye County, especially around Tonopah and Rhyolite, where the surrounding peaks are jagged and craggy, which indicates mild erosion. In comparison, the hills around Manhattan are well rounded, which shows extensive erosion. It was this erosion that produced the gold in the gravels of Manhattan Gulch. Over the millennia, gold that eroded from the mountains at the head of Manhattan Gulch was stirred up countless times. Torrents of water coursing down Manhattan Gulch polished the bedrock, which acted like a huge natural sluice box. As the churning mass of mud, rocks, and water moved down the valley, the gold, which was heavier, sank to the bottom. The surface of the bedrock featured ridges and crevices that acted as natural riffles trapping the gold. As the water churned in the channel, the mass picked up momentum on the outside and little gold was deposited there. On the inside turns, the mass lost momentum and the heavier gold sank to the bottom and was readily deposited.

The average width of the gulch is about 300 feet. Its grade is approximately 4 percent, and the slope of the rimrock is 30 to 50 percent. The bedrock in the gulch is composed mainly of schist and shale. The depth of the gravels ranges from 20 to 100 feet, with an average of about 30 feet. Roughly 60 percent of the gravel is larger than one inch; the rest is sand and smaller gravel. When placer miners worked the gulch—and eventually 5 to 6 miles of it was mined—the pay streak (the lens of gravel containing gold values) was 2 to 4 feet thick in most of the shafts that were dug into the gravel. Shafts were usually sunk at intervals of about 300 feet, and drifts (tunnels that follow a vein) were constructed at bedrock level at the bottoms of the shafts. Tramming in the tunnels below Manhattan Gulch was done with wheelbarrows or small mine cars (Vanderburg, 1936:126-127).

In fall 1905, the Dexter Company found flashes of gold, called "colors" in mining terminology, in pannings while digging a well at the lower end of town in Manhattan Gulch, but no one paid attention to this find. Later, a miner named Burns discovered nuggets on the surface of a gravel bench above Manhattan Gulch in 1906. This bench had once been at the bottom of the gulch, but subsequent erosion left it suspended above the new bottom.

In April 1908, William McDonald, who Bob Bottom 1995) believes should be cited as William Alexander Donald, a placer miner from California, believed gravel in the gulch would produce good placer values, so he obtained a lease on the Nellie Grey claim. He sank a shaft and hit bedrock at 23 feet. The pay streak was from 5 to 7 feet thick and averaged $10 per yard in value. Donald cleared several thousand dollars before his lease expired. Placer gold had been found in the gravel in a 45-foot well dug at Central in 1905, but in the rush for lode claims it had

been overlooked. After McDonald's success, the owners of the well at Central sank a shaft and found a pay streak 3 feet thick. Observers at the time dated the real inception of placer mining at Manhattan to the sinking of this shaft at Central in 1908 (Jones, 1909:103; Vanderburg, 1936:125).

Thomas "Dry Wash" Wilson, who had been hugely successful with placer mining at Round Mountain beginning in early 1906, became a local celebrity in the Round Mountain–Manhattan area. Wilson heard about the good luck with placer at Central and immediately purchased an interest in several leases in the vicinity. Naturally, Wilson's endorsement of Manhattan Gulch placer caused much excitement (Jones, 1909:101-104). The Manhattan Mail proclaimed in a headline on February 17, 1909: "Bucket of Gravel from Davis-Wilson Lease Washes out $8 in Gold Nuggets. Each Day Brings Forth News of Rich Finds All Along the Gulch — Warmer Weather Causes Renewed Activity." The accompanying story was reassuring:

Interests in ground are being sold at big figures and general excitement prevails along the entire [Manhattan] gulch. "Dry-wash" Wilson is acquiring interests up and down the gulch and according to reports is paying big money for them. Mr. Wilson is one of the best posted placer men in the camp and the fact that he is putting his money so lavishly into the placer ground has had a magical effect on the doubting Thomas. Mr. Wilson made a fortune in placer at Round Mountain and has left that camp for the placers of Manhattan. ("Bucket of gravel . . . ," February 17, 1909)

A nugget obtained from one of the placers in May 1909 measured 2.5x3.5 inches and was 0.5-inch thick. It was reported that gold was being used as a commercial medium of exchange in Manhattan and that leasers were spending bottles of nuggets. Although in April 1908 mining was practically at a standstill in Manhattan, by May 24, a little more than a month after Donald made his discovery, there were 60 shafts sunk to bedrock in Manhattan Gulch that varied in depth from 35 to 90 feet. Some of the placer mines were worked for two, even three shifts, though some by only one or two men. Nearly all had 2- to 4-foot-thick pay streaks, which ran from $5 to $30 per yard. In May 1909, there were 150 men working in Manhattan Gulch (Berg, 1942:113-115; Jones, 1909:103-104).

Gold from the placers was coarse; in a typical sample, a few particles would weigh less than one-half grain, and the rest would weigh up to several pennyweight, with occasional heavy nuggets as well. The gold particles were generally flat Dr only partially rounded, which indicated they had not been moved far by the water. Manhattan placer gold ran about -50 fine (75 percent gold), the balance being mainly silver. One ounce of gold yielded about $15, with gold at $20 per ounce (Jones, 1909:104; Bottom, 1995).

The miners and prospectors in Goldfield and Tonopah ere not overly impressed with the news of placer in Manhattan, perhaps because both were hardrock camps. At that Tonopah was a robust boom camp, one of the largest in 1..merican history; Goldfield was also a spectacular success, a population even larger than Tonopah's. The *Tonopah Daily Sun*, which had always been a strong supporter of Manhattan, noted on February 13, 1909, that the people of Tonopah were "overlooking a bet" when they failed to pay more heed to the Manhattan placers. "Little do they seem to realize the importance of this discovery and they are neither making an effort to take a hand in the operations nor making use of it as an advertisement for Tonopah." The Sun predicted, correctly, that $2 million or $3 million would be a low estimate for the amount of placer gold that would be produced from Manhattan Gulch. Writing in the

prestigious Engineering and Mining Journal, Charles Colcock Jones (1909) was even more optimistic—overly so—saying, "I estimate that the main gulch alone should produce gold in excess of $20,000,000 and capable of being extracted in a reasonable time."

Good News from Manhattan

From spring 1908 on, regional newspapers produced a steady stream of favorable reports on placer activity at Manhattan. There was regular news on Manhattan placer in the newspapers at Rhyolite, Nye County's other new gold camp 150 miles to the south. It was almost as though each new report had to top the previous one. The Bullfrog Miner noted on October 19, 1908, that "placering has become quite the fad in the Manhattan district, and nearly every gulch in the camp has machinery on the surface, extracting gold from the rich placer deposits." "Manhattan Placers Promise Great Gold Production" in the Rhyolite Herald on June 2, 1909, informed readers that placer gravel being mined in Manhattan Gulch ranged in value at the sluice box from $4 to $22 per cubic yard, with an average of slightly above $12 per yard. One outfit broke into gravel reported to run from $2 to $10 per pan. That summer, "Happy Charlie" Birimisa encountered gravel that ran as high as $125 per yard, and, as the Herald put it, "The entire populace sat up, rubbed their eyes and declared that the biggest thing had been struck" ("Placer Gold Runs $10 a Pan at Manhattan," 1909). Ninety percent of the holes dug in Manhattan Gulch produced pay dirt (Berg, 1942:114), and there were some spectacular finds. The Griffen nugget, the size of a deck of cards, was recovered only because it would not pass through equipment. When a worker reached in to throw away what he thought was a rock, he recognized it as gold. It was solid gold and, at 11.13 ounces, may have been the largest nugget ever recovered in Manhattan (Berg, 1942:115).

Between 1906 and 1915, the hardrock ore lode mines in Manhattan officially produced $2,065,072 in gold and silver. More than 12,000 ounces of gold were produced in both 1908 and 1910. The peak year was 1911, when just over 20,000 ounces were produced. Thereafter, production declined—by 1915, to under 8000 ounces. In contrast, the placer mines in Manhattan produced $924,906 between 1908 and 1915. The peak production years for placer at Manhattan were 1912 and 1913, when over 8000 ounces per year in gold were being produced (Ferguson, 1917:167-168). However, the above figures are undoubtedly low, because of both high-grading by miners and underreporting by leasers of the real amount of gold found. After 1913, placer mining in Manhattan Gulch declined slowly as those richer portions of the deposit that could be worked by hand became exhausted Vanderburg, 1936:126) .

There was further good news for Manhattan. In March 1909, the California-Nevada Power Company announced the opening of bids for construction of 37 miles of a 50,000-volt, 3-phase power line to connect Millers with Manhattan, thus making electricity available to the placer miner. An additional 13 miles would extend the line to Round Mountain. Constructing the line was expected to employ 30 to 40 men. Old poles from the Rhyolite Light, Heat, and Power Company were to be used for the new line. New insulators would weigh 30 pounds apiece. The contract was expected to be completed on June 1, 1909, according to the Rhyolite Daily Bulletin of March 3, 1909. The California-Nevada Power Company was also contemplating extensions to the Keane Wonder, Mayflower, and Flourine sections in the Rhyolite region, the Rhyolite Herald reported on November 11, 1909.

Placer Mining Was Hard Work

Extraction of the gold from the gravels at Manhattan was hard work. About 25 percent of the pay streak consisted of subangular boulders composed of limestone, quartz, and quartzite. Their volume rarely exceeded 1-1/2 cubic feet, making them relatively easy to handle. The other 75 percent of the pay streak was made up of sand, gravel, and small pieces of shale and limestone. Above the pay streak was a layer of micaceous siltlike mud, usually one or two feet thick, resulting from the erosion of schists. Between the mud and the surface, the balance of material was composed of limestone, lime dust, and flat pieces of shale. The gravel in Manhattan Wash stood well, requiring little timber except for cribbing (a mining term for support framing) at the mouth, or collar, of the shaft. Two or three hewn poles stood upright above the collar of the shaft to support the windlass. Two men with a windlass could remove enough gravel to sink a 4x6-foot shaft about 8 feet per day, down to about 40 feet (Jones, 1909:104).

Once the pay streak gravel had been lifted to the surface, it had to be processed to remove the gold. Water was hauled to the site in barrels, dumped into a large holding tank, and drawn off the tank into a sluice box. The gravel was shoveled onto a platform, then shoveled from there into the sluice. After the water washed down the sluice, it was trapped in a pit at the end that contained a box attached to a long pole. When the box had been filled with water, the man shoveling the gravel into the sluice jumped off the platform, grabbing the other end of the pole. His weight lifted the water box above the tank, the box opened, and the water fell back into the tank, to be reused in the sluice.

Miners claimed that this method saved over 70 percent of the gold values in the gravel and was much more efficient than the dry washing methods used previously at Round Mountain (see Chapter 11) (Packard, 1907:151). Of course, sluicing took place only when temperatures were above freezing and water could flow freely. Mining continued during the winter all the same, but the pay streak was stockpiled for sluicing when weather permitted.

Dry Wash Wilson's Manhattan Placer Outfit

By late summer 1913, Dry Wash Wilson held rights to more than 1 mile of the pay channels in Manhattan Gulch. Wilson got his nickname from the primitive mechanical apparatus he used to separate the small quantities of gold from the placer gravel without using water. However, after coming to Manhattan, Wilson was not completely satisfied with that process. He therefore developed an innovative water-using placer plant, which he located about one-third of the distance downhill of the upper boundary of his holdings.

Perhaps the most interesting feature of Wilson's new setup was the method used to hoist the gravel from the bottom of the shaft. In his system, miners working on the pay channels in the drifts that led out from the bottom of the 60-foot shaft brought the gravel to a 35-yard capacity ore bin there. A 20-inch-wide double-chain elevator with shallow buckets every 2 feet continuously moved the gravel from the storage bin at the bottom of the shaft to a 25-yard holding bin on the surface. This eliminated the need to hoist the gravel in a single bucket, which was extremely time-consuming. With the elevator, the diggings of many miners could be brought to the surface with the expenditure of minimal effort.

From the storage bin on the surface, the gravel was slowly fed into a trommel screen, in effect a large revolving barrel turned on its side, with walls made of heavy screening. As the gravel was fed into the trommel screen, a steady jet of water broke up the loose clay and dirt that contained the gold. Material finer than 1-1/2 inches fell through the holes in the screen. The oversize gravel passed out the far end of the trommel, fell into a chute, and accumulated as waste. The undersize material that had passed through the screen fell into another chute, then into a 12-foot shaking sluice box with deep riffles every 2 inches. The sluice was set on an incline. As it shook, the water moved the gravel along and the larger pieces of gold, which were heavier than the gravel, sank and were trapped behind the riffles. Fine gravel falling from the shaking sluice passed over three quicksilver, or mercury, amalgamation plates set at the lip of the sluice. Any fine gold not trapped by the riffles was caught by these plates, and the gold was picked up, amalgamating with the quicksilver. It was estimated that Wilson's shaker caught 90 percent of the gold. Below the quicksilver plates, extending for another 150 feet, were conventional sluice boxes, all containing riffles that caught the small percentage of gold the shaker and the amalgamation plates had missed.

A 15-horsepower electric motor provided the power for the elevator, trommel screen, and shaker. Water for the operation was pumped from an upper shaft at the rate of 15,000 gallons per day and was gravity-fed to the sluices; water also came from a lower well in about the same volume. The placer plant could process 150 cubic yards of gravel per day, at an estimated cost of about 30 cents per yard. Wilson's operation employed 15 miners working three shifts. In August 1913, Wilson was working three pay channels in Manhattan Gulch, with a distance of 25 to 75 feet between the rims of each channel ("Ingenious Placer Operations near Manhattan, Nevada," 1913:200).

Three Men Killed in a Placer Shaft

Working in the small Manhattan placer shafts was dangerous. There was the ever-present possibility of a cave-in, which could bury a man alive beneath 20 to 100 feet of gravel. The placers were small operations that nearly always lacked proper financing, and their equipment was usually jury-rigged. Many miners could not afford to buy timber to properly shore up their shaft and tunnels.

But dangerous as the mines were, it was a gas explosion and not a cave-in that took three lives in July 1909. The following description of the events that led to this disaster is based on "Three Killed in Mine Disaster," a re-creation of the event published in the Manhattan Mail on July 14, 1909.

Two men in their twenties, Albert J. Elton and K. Edward Hopf, came to Manhattan from Tonopah in February 1909 to try their luck at placer mining. Elton had graduated only a year earlier from an Oregon university where he had studied mining and civil engineering. He worked for several months as a timberman in the Belmont Mine at Tonopah. Hopf had lived in Alameda, California, and had been a student at Stanford University. The two men obtained a lease on the Charlie Boy placer claim in Manhattan Gulch from Charles Humphrey. They sank a 50-foot shaft, and when they hit bedrock, they began drifting east, where they hoped to find a good pay streak. They had run the drift about 35 feet when they began to encounter too much water for a hoist and bucket to handle. They realized that it would be necessary to install a pump, so they secured one and experimented with five different engines to run it. Four engines

had been lowered into the shaft but had proved inadequate. They then lowered a fifth engine into the mine, a 2-cylinder, 16-horse¬power automobile engine. Elton and Hopf were working on a Sunday, something they ordinarily did not do because they usually observed the Sabbath. This day was an exception because of the water problems in the mine—and they were having trouble getting the fifth engine to run. At about 1:30 P.M., they climbed out of the shaft. Hopf headed for town to fetch a mechanic who knew more about engines. As luck would have it, he was able to find Roy Parr, a good engine mechanic. Parr had been born and had spent his early years in Bodie, California; he later moved to Oakland, California.

While Hopf was finding a mechanic, Elton decided to reenter the shaft to try to start the engine again. He descended to the bottom and set to work. He removed one of the spark plugs, whereupon gas began escaping from the engine cylinder, and the fumes quickly became intense in the small, poorly ventilated confines of the shaft. Soon the fumes were so strong that Elton became frightened and hurried up the ladder to the surface. He left so quickly that he forgot to replace the plug. He went to his nearby cabin, where he chatted with two friends who had come to visit.

Meanwhile, unbeknownst to Elton, Hopf had returned with Parr, and the two men had climbed down the shaft, which by then was dangerously filled with gasoline fumes. Back at the cabin, Elton suddenly jumped up and shouted, "I smell gas, and it's coming from the mine!" He and his two friends rushed to the shaft and looked down. Dense bluish smoke was pouring from the hole, and they could hear stifled groans.

Elton started down the shaft with one of his friends, Frank Cooper, close behind. As they descended, they agreed to keep within speaking distance because the cloud of smoke was making it increasingly difficult to see. Near the bottom of the shaft, Cooper, separated from Elton, called out to him twice. He had scarcely spoken the second time when he heard a splash—as though a body had fallen in the sump. Cooper could hardly see; he was choking on the fumes and smoke, and there was no sign of Elton. Using all his strength, he started up the ladder and managed to make it to the top. Later, Cooper described going into the shaft:

The smoke was so thick that we could not see a foot ahead of us, and we had to feel our way down the ladder. When we were near the bottom I called to Elton, but got no response. I called a second time, but still no reply came. . . . I realized that in order to save myself from certain death, I must climb as hard as I could while my strength remained. The ladder is about 50 feet long, but it seemed like a mile and that an age had elapsed before I was again out in the fresh air, where I collapsed. It was an experience that I shall never forget, and the agonies that I suffered while I was in the shaft are indescribable. ("Three Killed in Mine Disaster," 1909)

After catching his breath, Cooper made another attempt to reach the bottom of the shaft, but his previous experience had weakened him, and he once more had to flee the mine. Rescuers soon appeared on the scene. Two large blowers were hooked to rubber hoses to force air into the mine. About an hour after Cooper and Elton had first entered the workings, the air in the mine was improved enough for rescue attempts to begin. Volunteers, including the deputy sheriff, climbed down the ladder with safety ropes tied to their waists.

The rescuers came upon a gruesome sight. At the edge of the sump, the bodies of Elton and Parr, locked in each others' grasp, were lying in about two feet of water. It appeared that Elton, who had entered the shaft to rescue Parr and Hopf, had found Parr and had clasped him in his arms, attempting to get him to the ladder before he collapsed. Hopf s body was found

about 18 feet farther into the drift. Both Parr and Hopf were burned on the face and other exposed skin areas, but those burns would not have been fatal. It was later surmised that one of the men probably struck a match to light a candle and the gas fumes had exploded, burning them and filling the shaft with the by-products of the explosion. The fumes had probably exploded with a flash rather than with a noisy explosion, which the men in the cabin would have heard. The two men in the shaft were quickly overcome. The Manhattan Mail reenactment ended the tale by commenting that Elton thought not of the danger that might befall himself, his only thought was to lend assistance to his partner and his companion, whose lives were in danger. Rushing down the ladder which he and Hopf had scaled so many times before, he reached the bottom, crossed the sump and found Parr. Clasping his arms about the unconscious man he attempted with what little strength he had remaining to carry him to the ladder and then to the surface—to life. But the death-infested gases were quickly, surely, getting in their work. He tottered and fell. He nor his companion never moved again. In an instant life was extinct. He died a true martyr to the cause. ("Three Killed in Mine Disaster," 1909)

Joint services for Elton and Hopf were held at the Rogers Undertaking Parlor in Manhattan with assistance from the Manhattan Volunteer Fire Department, of which both men had been members. A choir from a local Protestant church sang "Where Is My Wandering Boy Tonight?" Both the viewing of the bodies and the funeral services were held on the walk in front of the funeral home because of the establishment's limited seating capacity. A memorial was held for Parr in which members of the Manhattan Fire Department, the Manhattan Athletic Club, and over 200 friends marched in a procession headed by the Manhattan band to the Rogers funeral home, with the band playing "Golden Gate Funeral March" and "Old Church Organ." At the services, a baritone, accompanied by two comets and a trombone, softly rendered "Nearer My God to Thee," which, as the notes "floated out on the still night air, caused many a heart to ache" ("Three Killed in Mine Disaster," 1909).

Manhattan Placer Mining in the 1930s

After Franklin Delano Roosevelt became president in 1933, one of the first acts of his Democratic administration was to raise the price of gold from $20 to $35 per ounce. This price increase produced a revival in placer mining at Manhattan Gulch. Central Nevada native Jim Larson, who worked the Manhattan placer mines as a young man, recalled that between 1934 and 1938 anyone in Manhattan who wanted to work could become sufficiently prosperous through mining to be able to buy a new car. In those Great Depression years, a new pickup truck cost about $600 and a new car, under $1000 (Larson, 1990). Miners usually did not own the claims they worked but instead took six-month leases. Royalties paid by the leasers to the owners averaged 10 to 15 percent of gross returns (Vanderburg, 1936:130). During that time period, there were as many as 25 sets of leasers working in Manhattan Gulch, employing essentially the same methods used a generation earlier (Larson, 1990).

Sinking a shaft in the gulch was a hit-and-miss affair. A 100-foot-long pay streak was considered good because of the meandering deposit. The surface features gave no indication where gold might lie on bedrock. The best values were found directly on and in the crevices of bedrock (Vanderburg, 1936:129), and the best gold was found on the slack-water side of the old river channel. Larson (1990) reported finding gold in a pay streak on the fast side of the bend

only once. He thought that in that case the gold had been moving so fast that it had flipped out of the channel.

As is the case with most placers, the gold values in a pay streak are found immediately above bedrock, and the layers of gravel above the pay streak usually carry very little gold. In Manhattan, the pay streaks were seldom more than three or four feet thick; thus tunnels were kept low. Manhattan placer tunnels were never tall enough to stand up in but were just high enough for a dolly with a bucket to be pushed through. The gravel through which the tunnels were driven usually stood well without timber; nevertheless, swinging a pick vigorously into the gravel face dislodged it.

The size of a lease was commonly 300x300 feet. Because of the dangers in mining, men usually worked in pairs, although sometimes there were as many as four men working one lease. On a typical day, a placer miner at Manhattan Gulch worked on his hands and knees in a tunnel 30 to 100 feet long, picking away at the gravel, loading it into a bucket on a dolly, and pulling the dolly out to the shaft. Some mines used a wheelbarrow in the mine instead of a dolly (Vanderburg, 1936:132-133). The filled bucket was then hoisted to the surface by an electric hoist whose motor and drum sat to one side at the bottom of the shaft in a little dugout. That way the miner did not have to climb out of the shaft to operate the hoist. Hoists used a Model T Ford transmission driven by an electric motor. Dollies were made of four mine-car wheels with two 6x6-inch or 8x8-inch braces between them, arranged so that the bucket would not slip off. Eight-pound light mine track was used. The hoist cable had a mark on it, so the miner knew when the bucket had reached the top of the shaft. There, a mechanical attachment emptied the bucket automatically, and the miner then lowered the bucket back down the shaft. A placer shaft was usually 5x7 or 7x7 feet wide, although company-owned shafts were sometimes larger.

Very little timber was used in Manhattan placer mines. A timbered set at the collar helped hold the gallows frame, and timber posts, known as stulls in the mining trade, were used to hold the hoist in place in the dugout at the base of the shaft. A ladder, made of 2x4-inch lumber with 1 x4- inch rungs, extended from the surface to the bottom of the shaft. It was placed with the rungs toward the wall of the shaft so that the legs of the ladder could serve as skids along which the buckets slid when being hoisted and lowered. A typical bucket was 3 feet tall and about 20 inches in diameter and usually held 200 pounds or so of muck (mined rock or gravel).

Once a shaft reached bedrock, workers tunneled out from there. Two men working underground could dig out about seven yards of gravel per day if everything went just right, as Larson (1990) recalled. It took about 30 minutes at the end of the shift to run the day's diggings through the sluices and obtain the gold. In the 1930s, Larson and a partner could sink a 40-foot shaft in about one week. Larson remembered that there were amazingly few accidents in the shafts then. "When a man went out and earned his own keep, he was a pretty sharp cookie; very few of them got killed that way" (Larson, 1990:15).

Picking all day in the gravel was hard on a miner's hands. Larson said, "I'm telling you, your hands get . . . you can't even move them, when you wake up in the morning, your hands feel like they'll fit a pick handle. You've got to knead them" (Larson, 1990:8). Most miners knelt while working, which caused constant circulation problems in a man's legs. Larson's knees

would not take that, so he worked sitting on a 6x6-inch block, swinging his pick from that position.

When miners found a pay streak, they always left pillars of gravel to keep the tunnels from caving in. Once the tunnel had been extended as far as the miners intended to go, they worked back toward the shaft, removing the pillars, which were a part of the pay streak. Typically, the roof of the tunnel could not be made more than 8 feet wide and was arched to add strength. When pay streaks were wider than 8 feet, miners would sometimes drive a tunnel parallel to the first, or they might drive little crosscuts (cuts across the vein) off the main tunnel into the pay streak. The usual strategy in tunneling out from the bottom of the shaft was to crosscut the gulch looking for the slack-water channels along bedrock. There was no systematic effort to separate the pay streak from the barren gravel layers above it while working. Miners always panned as they worked, and all diggings from the pay streak in a tunnel were run through the sluicing equipment. In the 1930s, a typical pay streak ran about $4 to $6 per yard but could sometimes go as high as $7 to $10.

In the 1930s, the method for extracting gold from the placer was essentially still as it had been in Dry Wash Wilson's day, except that no mercury was used. After the ore had been brought to the surface, it was dumped into a hopper that held about 10 yards. A door on the hopper allowed the gravel to move out onto a shaker screen. The fine gravel that contained the gold went through the shaker screen; the coarse material went into a mine car to be dumped as waste. The undersize gravel containing the gold went from the shaker screen to a sluice box. At the end of the sluice, a half-barrel caught any nuggets that had not been trapped in the sluice box (Vanderburg, 1936). As might be expected, the farther one went down Manhattan Gulch, the finer the grains of the gold and the greater the proportion of gold to silver, because the groundwaters and natural soil acids had leached out a portion of the silver.

Sluices were about 12 inches wide and not more than 70 feet long. They were constructed of 1x12-inch or 2x12-inch lumber on the bottom with 1x6-inch sides. Riffles in the floor of the sluice that trapped the gold were usually placed 4 inches apart and were made of 2x2-inch boards. Because of the constant abrasion by the gravel passing down the chute, some sluices used angle irons on the riffles to keep them from wearing out. Muddy gravel took longer to run through than clean gravel (Larson, 1990:30-32). Some of the outfits used a shaking sluice box 6 feet or so in length in preference to a longer ordinary sluice that did not move.

Water pumped from the White Caps Mine (and perhaps from another shaft at the head of Manhattan Gulch) ,was used for sluicing. Water was also obtained from the railings (waste rock from milling) of the Matt Kane Mill located above the placer area (Vanderburg, 1936:132-133).

Not everyone who tried placer mining in Manhattan made money during the 1930s when gold was selling for $35 per ounce. James "Jim" Boni described his disappointing placer experience this way:

I thought I'd take a little placer mining on. So we had a pretty good little spot, and we got a little equipment together—that was when we were still in the trucking business. We got a gravel plant and had a truck and we had a little power shovel. We went down and started digging and we had to put pumps in, and everything's run by gas, of course. So we started digging. Well, the first day we made an ounce of gold. That was pretty good. We figured if we could make an ounce in those days we could get by. So about the second day, we didn't make an

ounce. And we kept pouring gas in the pump, pouring gas in the truck, pouring gas in the shovel, and it kept getting less and less-3/4 of an ounce and a 1/2 of an ounce. . . . It finally got down so we just couldn't go—we had to fold her up. So that ended our placer mining. (Boni, 1990:52)

When a large gold dredge was constructed in 1938, nearly all the placer mines of Manhattan Gulch ceased operating (Larson, 1990).

Manhattan's Gold Dredge

It became clear early in Manhattan's development that the placer gravels stretching for miles below town in Manhattan Gulch could be mined using mechanized equipment. It was not until the mid-1930s, however, that drilling and test holes made by the Natomas Company, headquartered in Sacramento, California, revealed that approximately 25 million yards of auriferous gravel, not including the high benches above the main channel, could be removed by a floating bucket-line dredge (Clark, 1946:2).'

The Natomas Company was experienced in gold-dredging operations. The company handled nearly 19 million cubic yards of gravel in 1937, with an average recovery of 10 cents per yard. In 1938, Natomas operated seven of its own dredges and held an interest in two other dredges operated by affiliated companies. With that kind of track record and with the proven reserves in Manhattan Gulch, it was not surprising that the company decided to undertake a large-scale gold-dredging operation there. In the late 1930s, construction began on a mechanized gold dredge that was among the largest and most modern of its day. That dredge was a forerunner of the giant mechanized equipment used later at Manhattan and Round Mountain.

The large mechanical dredger did to placer mining in Manhattan Gulch what a large national chain store can do to retail businesses in a small community. Like the large national chain store, the dredger was modern, high volume, and to some degree efficient. Whereas formerly 25 or more sets of leasers had made a living digging on placer claims in Manhattan Gulch, the big dredge came in and replaced most of the leasers, eliminating not only the miners' livelihoods but also their self-reliant lifestyle. A few of the leasers in Manhattan went to work for the dredge, but as Jim Larson recalled, many just "seemed to disappear" (Larson, 1990).

Although a large company moving into a small mining community always creates excitement and validates residents' belief in the economic potential of the area, many people in Manhattan were aware of the potentially negative consequences arising from such a big operation and realized the source for their livelihoods would likely be badly damaged, or even destroyed. Many of the old-timers, who had "washed out livings, ranging from bacon-and-beans up, with ground-sluices, rockers, and pans," were critical of the change (Clark, 1946:2). The old placer miners' grumblings were briefly discussed in an article in the prominent mining industry publication Mining World on April 30, 1946. In advocating the dredge over the placer miner, the article cast aside the opposition to the dredge with an invidious comparison: "The ensuing rumblings," the author said, "were reminiscent of those against steam-powered looms from the old-time hand weavers in England" (p. 4).

The Natomas Company organized the Manhattan Gold Dredging Company in late 1937, retaining 20 percent ownership and receiving 5 percent of net earnings as a management fee. The dredge was designed by Leland S. Rosener of San Francisco and was erected by the

Natomas Company. Fabrication took place at the Bethlehem Steel Company plant in Alameda, California. Parts were transported to Manhattan to be assembled on site in a large depression that had been carved out of the lower end of Manhattan Gulch. The dredge was electrically operated; the total connected power for the entire plant was 2000 horsepower, supplied by the California Electric Power Company. To create the necessary pond, 1000 gallons of water per minute were pumped 12 miles with a 1000-foot lift up to the pond through a 14-inch pipeline from wells at Peavine, on the west side of Smoky Valley. The electric power bill to run the dredge and pumps on the pipeline exceeded $8000 per month (Clark, 1946:1-2).

The boat itself was 172 feet long and 60 feet wide; it drew 9 feet of water and weighed 2000 tons. It floated on its man-made pond on 39 steel-hull pontoons bolted together, 17 on each side and 5 in the center. It had a 150-foot steel boom on the bow. The boom could be lowered 75 feet below the surface of the pond, and by varying the pool's depth, the dredge could dig even deeper. A chain of 105 buckets, each with 10-cubic-foot capacity, was mounted on the boom. The chain could move 37 buckets of gravel per minute and could deliver as much as 6580 yards of gravel from the bottom of the pond in an eight-hour shift.

To operate the dredge, the boom was lowered into the water, where the buckets began picking up the gravel and moving it to the boat deck. As the buckets cut through the gravel, they eventually hit bedrock, digging into the soft schist to assure that all of the gold on the bottom of the channel that had worked its way into cracks in the schist was moved to the surface. The boom was hinged laterally so that it could move back and forth across the bow of the boat. As the buckets dug, they extended the banks of the pond in front of the boat as it moved up Manhattan Gulch. Jim Boni recalled being able to hear the dredge digging on bedrock from his home in town: "You could hear that thing just squeal and grind" (Boni, 1990:55). Once on board, the gravel was processed, the gold extracted, and the waste ejected.

At the stern of the boat there were two 125-foot twin tailing stackers that were also hinged so that they could move laterally. They deposited the processed gravel behind the boat, in effect filling in the pond. To prevent the boat from moving about as the long boom at the bow reached into the pond and lifted the gravel to the surface, anchor lines were run from the boat to the shore and were hitched to heavy weights, known as dead men. Because the boat was not self-propelled, it took a great deal of skill to guide the boat using only the lines hitched to the shore as the booms on the bow and stern swung back and forth across the pond.

Once the gravel was brought on board, it went through a large cylindrical trommel screen that was horizontally inclined and measured 8 feet in diameter and 48 feet in length. Fine material passed through holes of various sizes in the trommel screen, the smallest being seven-eighths inch. Gold-bearing gravel that had passed through the trommel screen then passed over 16 Pan-American Engineering Company placer jigs, with beds consisting of steel shot. The shot sat in water and the jig pulsated with a suction motion in the water, causing the gold and other heavy material to accumulate on the bed of shot while the lighter material, including mud, sand, and gravel, was carried away by the water. Then the overflow material from the jigs passed over large, flat, slightly tilted tables with lengthwise riffles, charged with quicksilver. Water flowing over the tables caused the heavier gold to lodge in the riffles and amalgamate with the quicksilver, while the lighter matter was washed away. Next, the overflow from the tables passed through a ball mill to scour any dirty or rusty gold, and the material flowing out of the ball mill was passed over amalgamation plates. Twenty flasks of quicksilver

were used at various points in the process to collect the gold. All rejected matter eventually wound up in the stackers and was deposited at the rear of the boat (Clark, 1946:2-4).

The dredge was constructed during summer 1938 just below the mouth of Manhattan Gulch at a cost of $700,000. The pipeline and pumping equipment cost an additional $300,000. That same summer, a small community called Jamestown was built at the site. John L. James, for whom the town was named, was the engineer and manager of the dredging operation. He had begun his career on gold dredges in 1906 on the Feather River about 6 miles from Oroville, California, where 45 boats were in operation. His wife raised fruits and vegetables in a garden at their Jamestown home and grew tropical flowers in her front-porch hothouse. James was also a rock hound and a skilled lapidary (Clark, 1946:4).

At the beginning of World War II, the federal government issued War Production Board Order L-208. The order decreed that all gold mines had to be shut down and mining production limited to minerals essential to the war effort (Grover, 1984:6L). But the Manhattan dredge managed to avoid the order and operated through the war, from October 1938 until 1946. With so many able-bodied men serving in the military, however, the owners were forced to employ older, less physically fit men who were inexperienced in operating a dredge. One consequence of the crew's inexperience was that the boom on the bow was not swung very far from side to side as it dug, thus carving a narrower channel up the gulch (Bottom, 1995).

Bob Bottom, a resident of Manhattan and an expert on its mines and placer who continues to work the gravels in the gulch for gold, can point out the spot in the tailings in the wash where the dredge was operating when War Production Board Order L-208 went into effect—the tailings are narrow from that point on. One reason why the dredge's wartime crew failed to swing the boom on the bow as wide as it had previously been swung is that they were afraid of cutting the large electric cable that supplied the dredge, and risk electrocuting all the workers on board.

The gold-dredging operation in Manhattan Gulch involved more than just operating the dredge. Before dredging, an average of 30 feet of overburden that was barren of precious metal had to be removed. Big Caterpillar tractors, Le-Tourneau "pushdozers," and scrapers worked in front of the dredge scraping away the overburden and pushing the gravel banks containing gold above the channel down into the dredge's path. La Plant-Choate "Carrimor" scrapers (huge for their time, with their 17- and 34-cubic-yard capacity) manufactured in Iowa were used with the bulldozers. The large-sized equipment created quite a stir when it was moved through Tonopah to the job site. Test holes were also sunk in and on the sides of the wash to determine the gold content of the gravels. Up to January 1943, 400 churn drill holes and 165 shafts were sunk, ranging up to 175 feet deep.

The dredge employed only 6 men per shift, and it operated 24 hours a day, as the Reno Evening Gazette reported on December 17, 1938. Eight thousand dollars worth of gold could be produced in a week. The dredge had an impressive operation record. In 1940, it averaged a daily running time of 21 hours and 59 minutes, including time off for holidays, repairs, and clean-up and 15 minutes daily for lubrication ("Manhattan: Where Stripping Constitutes a Major Element in Gold Dredging Operations," 1941:20).

Although the era of the dredge put an end to most future placer mining in Manhattan Gulch, it is remembered with fondness by many former residents of the community as well as by many old-timers in other central Nevada towns. Before heap leaching was introduced on a

huge scale in the 1980s, the Manhattan dredge was for years the largest tonnage-producing mechanized operation in the area (with the possible exception of the Basic Magnesium open-pit mining operation at Gabbs during and after World War II).

When Natomas undertook the Manhattan dredging project, company officials estimated that a total of $3.5 million might be recovered after eight years of continuous operation, according to a report in the Reno Evening Gazette on December 17, 1938. In fact, the company's expectations were exceeded. Between 1938 and 1946, an official total of $4,596,427 was recovered by the Manhattan Gold Dredging Company. It is estimated that the yield was 21 cents per yard (Kral, 1951:115). Bob Bottom and other authorities on Manhattan history estimate that perhaps 50 percent or more of the gold extracted by the dredge was high-graded by the employees and thus was never included in the official tally. So pervasive was high-grading at the operation that John L. James, the manager, served time in prison for high-grading while in charge (Bottom, 1995).

Early fears to the contrary, the dredge was not as efficient in extracting gold as had been assumed by some. There were several reasons for the dredge's lack of efficiency. First, the dredge's screens were of small mesh, and only gravel smaller than 7/8 of an inch in size was processed. Nuggets that would not go through the trommel screen were rejected with the waste—and a significant percent of the gold in Manhattan's placer exists in larger nuggets (Bottom, 1995).

Second, considerable gold accrued on the high banks where the dredge's boom could not reach. There were limits to how much of the gravel in the high banks could be moved down into the channel by the dozers and scrapers as they graded. Of this total, hardrock mines produced $5,765,862 from 402,300 tons of ore. The Natomas dredge, with its recorded production total of $4,597,427, was the largest producer in the district, with the White Caps Mining Company coming in a distant second, producing $2,635,008 from 144,043 tons between 1918 and 1940. The Reliance Company produced $1,077,939 from 59,108 tons from 1935 to 1941 (Kral, 1951:115).

Bob Bottom's Placer Operation

Dreams of the gold miner still live in Manhattan. Although the gulch no longer echoes with the sounds of scores of miners tenaciously following the pay streaks of fabulous glitter, Bob Bottom has been digging there for the past 15 years, maintaining the traditions of the small placer miner dating back nearly 150 years to the California goldfields: the small, independent miner digging on claims belonging to him and his partner, Gail Durland, free, beholden to few, his own man, doing his own work, finding what has always been civilization's most basic standard of value, gold!

Bottom and Durland's placer claims are located at the upper end of Manhattan Gulch. Working alone, or perhaps with a hired hand or two, Bottom must first determine where on his claims chances are good that gold can be found. Bottom knows the gravel in Manhattan Wash the way a wine connoisseur knows vintages or a diamond cutter knows diamond crystals. He is keenly aware of the conditions under which gold is likely to be found in the wash and where it is not. Large boulders in the gravel and a layer of coarse gravel near bedrock, for example, indicate the presence of gold. Using a gold pan, Bottom can estimate how much gold the gravel at a site will contain to an accuracy of a few cents per yard. It is this skill, as much as anything,

that makes his operation possible. Overestimating the gravel's gold content would mean wasted time and effort.

Once he has selected a good spot to dig, Bottom must first strip off the barren overburden above the gold-bearing gravels. After the overburden has been stripped off with a dozer, he loads the gold-bearing gravel into his dump truck and hauls it a short distance to his small placer mill, where he dumps the load on the ground. He tries to process ore that contains at least one-twentieth of an ounce of gold per cubic yard. On a good day, he can haul and process about 80 yards of gravel.

At the placer mill, the gravel is loaded into a hopper with a front-end loader and from there it is fed automatically to a trommel screen. Oversized material that will not pass through the screen goes to the dump. Later he will go over the dump with a metal detector to make sure no nuggets too large to pass through the screen have gotten away. Undersized material goes to a shaking sluice box. Gold in the gravel is trapped behind riffles in the sluice and the waste goes out the end. Both oversize and undersize tailings are periodically moved back to the gulch. Water to operate the mill comes from a nearby well, and the discharge from the mill goes to a pond where it can be recycled or drained back into the gulch. Because the water used in the process never comes into contact with anything but gravel and steel in the machinery, it is clean enough to drink when it comes out of the mill. The mill can be operated only in warm weather—from late spring to early winter—when water and gravel will not freeze.'

Notes

I. There had been other attempts to dredge gold in Nevada before the dredging at Manhattan. Two dredges operated briefly around 1909 on the Colorado River at El Dorado below the present-day Hoover Dam. There was also a dredging venture on a stream at Dayton in the Carson River Valley around the turn of the century. Both of these operations were largely unsuccessful (Grover, 1984). A small wooden-hulled dredge operated successfully in Spring Valley in Pershing County northeast of Lovelock between 1912 and 1914, reportedly producing $10.9 million worth of gold (Vanderburg, 1936:160-161).

2. Bob Bottom, a native of Tonopah, learned much of what he knows about mining from other Tonopah miners, notably Norman Coombs and Louie Meyer. Although by almost any measure Bob Bottom is about as free and independent as a person can be in this day of big government and large corporations, he must deal with challenges of which earlier miners would never have dreamed, even in their worst nightmares. Mining in Nevada is now highly regulated by the federal government and to a lesser extent the state. Bottom's operation is constantly being monitored by officials from a variety of agencies, even though he is digging on ground that was first disturbed and dug up—with few negative environmental consequences—more than 85 years ago. His use of water and petroleum products are watched. Endangered plants and archaeological sites that may be nearby—there are none—are looked for. When he is finished digging, he has to return the site to its original contour—not the condition in which he found it, but the contour that existed when miners first dug there, perhaps as early as 1909. When he asked a Bureau of Land Management official how a miner was supposed to know what the

contour looked like 50 or more years ago, the reply was, "There must be a picture somewhere." This, of course, is absurd on all counts (Bottom, 1995).

Almost every week Bottom receives a registered letter from one federal agency or another. Each time he finds a yellow notice of a registered letter in his post office box, he gets a knot in his stomach. He no longer picks up his mail at the Manhattan post office on Saturdays because of the anxiety he suffers until Monday when he can pick up the letter.

Although it does not affect Bob Bottom's Manhattan claims directly, another set of regulations has serious consequences for most miners in central Nevada, including other claims owned by Bottom and other central Nevada miners, as we shall see in Chapter 18. Federal regulations hold that if a mine has an old dirt road to it and the road is on federal ground, as virtually all roads in central Nevada are—and that road may have been there for 100 years or more—a miner is free to use the road to access his mine or to get to a hunting or recreation area. The user can even maintain and repair the road so long as he uses only hand tools. If he so much as blades it once, or even drags a tire on it to smooth it out, he must continue to maintain it on a yearly basis. If he fails to maintain the road in any given year, the federal government may consider the road abandoned, and the road may never again be repaired or used. When Bob Bottom asked a federal official how a person was supposed to get up into the mountains without using a road, the reply was, "By horse" (Bottom, 1995).

The net long-term effect of such policy, as well as other policies, as most central Nevada residents are very much aware, is the eventual elimination of all mining and ranching in the West. Small ranchers and mine operators are particularly vulnerable because they lack the political clout of the corporate giants.

Most miners in central Nevada believe the effect, if not the intent, of such policy is to turn most of rural Nevada, indeed much of the West, into a de facto wilderness, bereft of miners and ranchers, a domain where an occasional hiker or horseback rider is the only human presence. The West is being dehumanized.

William Cronon, Frederick Jackson Turner Professor at the University of Wisconsin at Madison, in an article in the New York Times Magazine in August 1995, presents a perspective on the idea of wilderness with which many in central Nevada would agree. He points out that a study of the history of the concept of "wilderness" shows that it is not at all what it seems. Far from being the one place on earth that stands apart from humanity, he says, "it is quite profoundly a human creation." A wilderness is not a pristine sanctuary where nature can be seen and enjoyed "without the contaminating taint of civilization" (p. 42). It is, instead, at its best the product of that civilization. Since the nineteenth century, celebrating wilderness has been, Cronon contends, "an activity mainly for well-to-do city folks" (p. 42). To underscore how artificial and a historical the wilderness concept is, how dehumanized it actually is, to create an "uninhabited wilderness" in America, Cronon points out it is first necessary to remove the Indians. There never was a wilderness in Nevada, at least not for the last 11,500 years. As we saw in Chapter 2, upon their first entry into the New World, human beings began altering the landscape. To alter a landscape is a quintessentially human trait, a universal activity. The idea of wilderness erases both history and prehistory.

Cronon believes the wilderness idea is an illusion that we can somehow wipe clean the past and return to a tabula rasa. He writes:

The trouble with wilderness is that it reproduces the very values its devotees seek to reject. . . . The dream of an unworked natural landscape is very much the fantasy of people who have never themselves had to work the land to make a living —urban folk for whom food comes from a supermarket or a restaurant instead of a field, and for whom the wooden houses in which they live and work apparently have no meaningful connection to the forests in which trees grow and die. Only people whose relation to the land was already alienated could hold up wilderness as a model for human life in nature, for the romantic ideology of wilderness leaves no place in which human beings can actually make their living from the land.

Most miners and ranchers in central Nevada recognize that the concept of wilderness is a city-based idea, at its core antihuman. They wish more urban residents and government regulators would take heed of Cronon's words when he says:

We live in an urban-industrial civilization, but too often pretend to ourselves that our real home is in the wilderness. We work our nine-to-five jobs, we drive our cars (not least to reach the wilderness), we benefit from the intricate and all too invisible networks with which society shelters us, all the while pretending that these things are not an essential part of who we are. By imagining that our true home is in the wilderness, we forgive ourselves for the homes we actually inhabit. In its flight from history, in its siren song of escape, in its reproduction of the dangerous dualism that sets human beings somehow outside nature—in all these ways, wilderness poses a threat to responsible environmentalism at the end of the 20th century (Cronon, 1995:43).

CHAPTER 9
Life in Manhattan in the Early Years

From the beginning, Manhattan was a friendly, socially minded community. One reason for this disposition was that Manhattan lacked the rich, high-producing mines like those found in Tonopah and Goldfield. The town remained relatively small and never became significantly stratified socially. For the most part, the Manhattan population was composed of miners, small merchants, and their families. Few people were making big money—the crucible of social class formation. Levels of educational achievement differed among the community's residents, but most people in Manhattan did not see this difference as a basis for social ranking. Placed as Manhattan was, solidly in the middle of the nation's last frontier, the prevailing values of freedom, justice, democracy, a belief in education, and a concern for the welfare of others were clear principles guiding the development of Manhattan.

The Toiyabe Literary Club

The most important social organization in Manhattan was the Toiyabe Literary Club, a women's organization. The club was founded during the earliest days of life in the community and gradually faded away, disappearing altogether in the 1960s. The Toiyabe Literary Club aimed to improve the educational level of the community. Initially, club members met once a month to discuss topics ranging from local affairs to matters of national and international interest. Each meeting focused on a preset topic. At first, the members took turns hosting the meetings in their homes, but shortly after its inception, the club purchased a building where meetings were held.

In 1913, that building burned down, so the club members purchased the Dexter Building, a two-story office building on Main Street. They financed their purchase with funds raised from several sources, which included club dues, promotional activities held in the community, and donations from local businesses and mining companies. The club rooms were upstairs and were nicely decorated with carpets and paintings. Meetings and discussions were held in these rooms, and members often played bridge after club dinners there as well. The downstairs was remodeled to accommodate a dance floor and a stage at one end. The first floor served as a town hall and as an auditorium for the school. Previously, for dances, programs, and other large gatherings at the school, the removable dividing wall between the high-school room and the grammar-school room had to be moved to increase the available space. Both community and school dances were held in the new Toiyabe Literary Club facility.

The club strongly promoted education and culture in Manhattan as well as in the Manhattan school, supporting numerous school activities designed to raise money for the school and enrich the lives of students, teachers, and townspeople. In the early 1930s, the school principal, Ernie A. Moeller (talented both as an actor and as an acting coach), directed plays put on by the school in the club's auditorium.

In 1931, the community entered four contestants in a state reading and drama contest in Reno. Three of the four Manhattan contestants placed in the competition. The student body in the high school was so small that often there were not enough students to fill all of the roles

in plays, so teachers of the lower grades and townspeople would assume parts. Sometimes plays were taken on the road to Austin.

The Toiyabe Literary Club building was equipped with its own kitchen, banquet table, fine china, and silver service. Club members hosted an annual banquet for eighth-grade graduates and graduating seniors. Meals were cooked in the club's kitchen and served formally. After the banquet, which included speeches, there was a dance with live music. It was the only opportunity many of the students had ever had to dress up and attend a formally served dinner complete with speakers.

The club belonged to the National Women's Club Association. Most members were miners' wives, but membership was open to any woman in town at least 18 years old. Some young women joined as soon as they reached the eligible age; others moved away and later returned to Manhattan, then joined the club. There were a few women in town who refused to join because they believed club members were putting on airs.

The Toiyabe Literary Club was quite active until World War II. The depopulation of Manhattan caused by the government's closing of the mines began the gradual decline in the club's membership. In time, the only two remaining members were Merle Abernathy and Ella May Humphrey, with only Humphrey residing in town. When Humphrey died, people began to break into the old building, vandalize it, and steal the club's belongings. Finally, Abernathy sold the building for $1300 and donated the money to the Tonopah Scholarship Fund. With this final gesture toward the education of the area's children, the Toiyabe Literary club faded into the pages of history, along with the many other groups and people who had once had dreams for the booming town.

In its prime, Manhattan also boasted an Elks Club with a beautiful clubhouse and an Eagles Club, the Toquima Eagles. The Toquima Eagles hosted a masquerade ball on News Year's Eve in 1912 in the Athletic Club hall, a gym located on Main Street ('Manhattan School: Its History, Students, Personalities," 1977:16; most of the references for the Toiyabe Literary Club discussion came from Anonymous 1990:105 - 108).

A Case of Child Neglect

Although central Nevada was still the frontier at the turn of the century, residents of the area were very much aware of, and sensitive to, child neglect. John D. and Martha Goodleigh of Goldfield became parents of a daughter, Isabelle Inge Goodleigh, in October 1905, when Martha was 43 and John was 44. Shortly thereafter, the family moved to Manhattan. The history of the Goodleighs before their arrival in Goldfield is unknown, as is John's history after 1910. John Goodleigh does appear in the 1910 U.S. Census for Manhattan, where his occupation is listed as laundryman in his own home. When first in Manhattan, John's work in the mines kept him away from home for days at a time. Martha fell ill and tuberculosis and died when Isabelle was four and one-half years old. Before Martha's body was discovered, the child spent an unspecified amount of time alone in the house with her mother's body. After Martha's burial, John continued to leave his daughter alone for extended periods of time. Presumably he was working, but he was also drinking; he had a weakness for alcohol. Years later, Isabelle told of having been left alone in the house, where she would sit at the window on rainy days and cry

because she though the rain was making her mother's face muddy. Goodleigh persisted in leaving his young daughter alone and unattended until Manhattan officials finally took action.

One day the sheriff appeared at the child's home, took her in his arms, and told her that she was coming with him and not to be afraid. Isabelle tugged at the sheriffs beard and said she recognized him. The child clearly had rickets from being malnourished; moreover, her father had kept her head shaved to prevent infestations of lice. In November 1910, Isabelle was adopted by Manhattan residents William Henry and Frances Mott, at which time her surname was legally changed to Mott.

In September 1913, a woman named Mrs. Grant, who claimed to be Goodleigh's sister, came to the Motts to ask for custody of the child, saying that Isabelle should be raised by a blood relative. Mrs. Grant, who reportedly offered the Motts money for the child, later claimed that the Motts accepted the bribe; the Motts contended that they had refused. The dispute eventuated in a court decision that favored the Motts. In 1917, when Isabelle was 12, the Mott family moved to Marysville, Washington. In the mid-1930s, after she had grown up and married, Isabelle received word that her natural father had died. The authorities asked if she wished to make arrangements. After toiling over the decision, she declined, and his burial was left to the unknown state where he had been living (Lucas-Dean, 1992).

The Shooting of Sheriff Thomas W. Logan

On April 6, 1906, Thomas W. Logan, the highly regarded and much-loved sheriff of Nye County, Nevada, was shot and killed in an altercation in the Jewell Saloon, a Manhattan brothel. Logan's assailant, William A. Barieau, also known as Walter Barieau, was immediately apprehended and charged with murder. Three months later, on July 9, Barieau was tried in Tonopah for the crime. The story of Sheriff Logan's murder is one of the most interesting in Nye County history, and it provides an unmatched view of life and the law in turn-of-the-century central Nevada.

Thomas W. Logan was born in Washoe Valley, Nevada, in 1861 to parents who had moved west from Michigan in the rush to the Comstock. Until 1872, Logan's father had been a miner on the Comstock, but then he moved to southern Nevada, settling on the Muddy River in Lincoln County to take up ranching. Logan married at age 23, then moved to Arizona in 1884, where he went into the cattle business. He brought his family back to Nevada in 1892, settling near Duckwater to raise cattle. In 1899, Logan, by then the father of eight children, ran for sheriff against Charles McGregor, the popular four-term incumbent, defeating him by only seven votes. Logan served his first term as Nye County sheriff from 1899 to 1903 and was reported to have once cowed Wyatt Earp. He was reelected in 1905 but did not finish his term (Douglass and Nylen, 1992:360; Inventory of the County Archives of Nevada, 1940). At the time of his death, Nye County commissioner W. Cuddy is quoted in the Tonopah Daily Sun as saying, "Tom Logan was a man in a thousand. He was an ideal sheriff, and we will not see his like again. The man was absolutely fearless, and his only fault was that he was too kind hearted for his own good" ("Sheriff Thomas Logan Is Shot and Killed by Walter Barieau," 1906).

Barieau was born in 1869 in Nova Scotia. When he was eight, his family moved to Selma, California, near Fresno. He left home at 14, after his father punished him for leaving a gate unlatched, an oversight that allowed some horses to escape. Barieau moved to Fresno, where he worked in a nursery for a few years. At about age 16, he began his career as a gambler, and

he eventually played all the roles in the trade, as customer, dealer, operator, and proprietor. In 1893, he married Margaret Young, an emigrant from Liverpool, England. The couple had one child, Edith, born in Sacramento in 1894. Barieau contended that during his lifetime he had made and lost five fortunes—including one in Alaska, where he was ruined by a tidal wave. After the Alaska adventure of 1898, he went to Colorado in 1903, then moved on to Goldfield in 1905, where he worked at the Northern Club and later on, for Blazier Brothers.

Barieau had been working in Tonopah running a roulette wheel. In April 1906, when the story begins, he had only recently moved to Manhattan, where he was in charge of the craps table at the Monarch Saloon. His family had stayed in Goldfield, though Barieau had just written telling them to come along to Manhattan (Barieau, 1971).

There are two versions of the sequence of events that led to the shooting of Sheriff Logan. The only witness to the shooting was May Briggs, owner of the Jewell Saloon, and the prosecution adopted her version. At the preliminary hearing, Briggs contended that Barieau had been in the brothel and had become drunk and obnoxious. She said she then asked him to leave, but he refused to do so, grasping her wrist and giving it a painful wrench, whereupon she screamed for help. Her screams, she claimed, attracted the attention of Sheriff Logan, who rushed into the house to assist her. Logan, who was said to be unarmed, prevailed upon Barieau to leave, which he did peaceably enough, but by the time Barieau reached the street, he had apparently become enraged. He then turned, pulled out his automatic revolver, and fired at Logan through the glass in the building's front door. Logan, who was standing in the hallway, ran out of the house, intending to disarm Barieau. Once Logan was outside, Barieau opened fire on him, hitting him four times, once in the right cheek, once in the groin, and twice in the right leg. Although mortally wounded and bleeding profusely, Logan, who outweighed Barieau by more than 50 pounds, pounced upon Barieau. As the two began to struggle, neighbors and others rushed to the scene. Logan tried to disarm his assailant. At that point, Briggs remembered, Wilson Bering, a musician employed in the "resort" (as the Tonopah Daily Sun described the house of prostitution), hurried to Logan's assistance. Bering was unable to disarm Barieau, so he rushed back into the house to get Logan's gun, which was lying on the bed in Briggs's room. Briggs handed the gun to Bering, who returned to the scuffle between the two men and managed to hand the gun to Logan. Logan used the gun to beat Barieau, after which a bystander separated the men. With blood spurting from his wounds, Logan was finally persuaded to reenter the Jewell, where he fainted on a bed. He lay there for several hours and died before medical help arrived.

News of Sheriff Logan's death spread quickly in town. The citizens of Manhattan were so outraged that during the night people talked of lynching Barieau. The constable, aiming to protect the rights of his prisoner and fearing mob action, spirited Barieau out of Manhattan and took him to the Tonopah jail. Popular sentiment weighed heavily against Barieau, and the press in Goldfield and Tonopah was very much against him as well, presenting only Briggs's version of the events.

Margaret Barieau and 12-year-old Edith were grief-stricken at the news. The Goldfield Sun reported four days after the killing that Mrs. Barieau, "a frail appearing little blonde woman, modest in demeanor . . . bears strong evidences of having been well and respectably reared" (Barieau 1971:9). Margaret Barieau and daughter Edith moved immediately to Tonopah, where Margaret could visit her husband daily.

Barieau did not fare well in press descriptions. The day after the murder, the Tonopah Bonanza labeled him an "absinthe fiend"; the Tonopah Daily Sun followed suit, calling him a "drunken gambler" (Barieau, 1971:5). Only two days after Logan had died, the following item appeared on the front page of the Tonopah Daily Sun on April 9, 1906, signed by 20 prominent residents of central Nevada, including Jim Butler and Tex Richard: "We greatly deplore . . . the killing of Sheriff Logan. Such acts . . . are becoming too common. We trust . . . that swift justice will be meted out to the perpetrator. The murder . . . has cast a deep gloom over Nevada people here."

Funeral services for the slain sheriff were held in Tonopah at the opera house on April 11, being delayed one day so that the deceased's sister in Hazen, Nevada, could attend. Crowds gathered in front of Wonacott's undertaking establishment early that morning to gaze once more upon the sheriffs face as his remains lay "embowered in flowers." Major mines in Tonopah closed the afternoon of the funeral out of respect. A fire truck draped in black carried Logan's remains to the opera house, followed by a cortege of Eagles and Odd Fellows. At the services, the theater was filled to overflowing, and hundreds packed the entrance and the street. The services paid tribute to Logan's bravery, and the procession to the cemetery was the "longest ever held in Tonopah or Nye County." Large crowds gathered along the way, listening to the "muffled beats of the drums and the wailing sounds of the dirge" ("Thomas Logan Laid to Rest," 1906; "Tom Logan at Rest," 1906). For the time being, Logan's family remained residents of Smoky Valley.

Margaret Barieau loyally defended her husband's actions, claiming the sheriff had beaten him badly and that he had shot to defend himself. While in jail, Barieau handled the whole incident with great stoicism. Apparently he showed emotion only once while confined, and that was when his wife first appeared three days after the murder, as she flung herself against the bars of his cell and wept bitterly. At that point, tears welled up in his eyes.

During the preliminary hearing, Barieau suffered a "fit," as the press put it, and with "a wild inarticulate cry fell to the floor" under the "shadow of the gallows, writhed and twisted in a very agony of penitence. Frothing at the mouth like a wild animal . . . " ("Remains of Sheriff in State —Murder[er] in County Jail," 1906).

Perhaps the luckiest thing that ever happened to the gambler Barieau was that attorney Patrick A. McCarran assisted senior counsel S. P. Flynn in Barieau's defense. McCarran was one of several young attorneys who had moved to the central Nevada desert with the great Tonopah boom. Key Pittman, a veteran of the Klondike, was another. Both McCarran and Pittman went on to serve as U.S. senators from Nevada, ranking among the most powerful political figures in the country. McCarran, noted for his eloquence, sarcasm, and brilliant defenses, had an engaging personal style. His acceptance of several risky and controversial cases while in Tonopah helped earn him a reputation as a maverick in Nevada politics. The fact that the district attorney, and thus the prosecutor of Sheriff Logan's murderer, was William B. Pittman, Key Pittman's brother, may have been the origin of the longstanding feud between McCarran and Key Pittman (Earl, 1981, 1987). Interestingly, McCarran was appointed Nye County district attorney replacing Pittman not many months after the Barieau trial.

The Barieau case posed a great challenge for McCarran. There was no doubt that Barieau had killed Logan, and McCarran's defense was made doubly difficult by the heavy weight of public opinion against his client. The strategy McCarran chose involved undermining

Sheriff Logan's reputation and making the murder seem justified. And this he did with the greatest of skill.

A little research revealed that Logan had some financial assets. People knew, for example, that he owned the American Saloon on Main Street in Tonopah. However, it was apparently not widely known that he was also May Briggs's silent partner in the Manhattan brothel. Logan had purchased lumber, in part on credit, for construction of the brothel. Further, an examination of the accounts of the Sheriffs Department of Nye County showed that there was a shortfall of at least $9000 when Logan died. People remembered that when Logan left the sheriffs position in 1903, his office was $1000 in arrears. He had to borrow money to make up for the deficit. The Goldfield Sun suggested that it might have been Logan's intention to repay the $9000 similarly but that his untimely murder prevented him from doing so. Instead, Logan's bondsmen had to make good on the money.

Walter Barieau's trial was held in Tonopah and began on July 9, 1906, with the headline in the Tonopah Daily Sun proclaiming, "Walter Barieau Is Placed on Trial for His Life." Barieau's sallow complexion and sunken cheeks testified to his long confinement in the Tonopah jail. He responded nervously to the glances of the many curious and hostile spectators. All prospective jurors were asked if they held any prejudice against gambling and gamblers, with the McCarran team making it clear from the outset that Barieau was a gambling man. Those answering in the affirmative were excused. Members of the jury were sequestered and housed at night in the courtroom, which was converted nightly into a big dormitory with cots.

Dr. George S. von Wedelstaedt testified that Sheriff Logan had died of a puncture of the femoral artery in the leg, and he commented that if Logan had received prompt medical attention, his wound might not have been fatal. The prosecution got off to a bad start. Mrs. Etta Hoffman, the official stenographer at the preliminary hearing, testified that the transcript she had made from that hearing was not reliable. She stated that at the hearing Judge Hoggott, Barieau's legal counsel at the time, had been quite intoxicated and had frequently interrupted her, making it difficult for her to produce an accurate record.

The trial provided Barieau with the first real opportunity to state his version of the events. Barieau testified that he had been pressured by Judge Hoggott and two friends to join a party of men who went to the Jewell the morning of the murder. When asked how he happened to be carrying a gun, Barieau said the judge had been concerned about the considerable amount of money and jewelry he was carrying and asked if anyone else had a gun. Barieau told Hoggott that he seldom carried one but that he always kept one in the drawer of the gaming table where he worked. On Hoggott's behalf, Barieau put a gun in his pocket before they left. At the Jewell, the men were served wine. Barieau, for some reason, became ill from the wine, lay down on the lounge, and went to sleep. About two hours later, May Briggs came in and told him to go home. Because he still did not feel well, he asked to stay, but Briggs told him again to go. Barieau headed for the door but was overcome by dizziness. He went back to the lounge to lie down again. Barieau's own version of the story was as follows:

The woman then seized me by the arm and told me to get out, but I was ill and offered to pay for the privilege of sleeping in the parlor and again pleaded with her to let me remain. She refused so I arose to go. I suppose I was not moving fast enough and she started to shove me along. I objected to this and hit back with my elbow, striking the woman on the arm.

As soon as this happened she screamed. I heard someone coming down the hall and suddenly a man dressed in a nightshirt came to the door. He did not say a word to me but punched me in the eye, knocking me to the floor. I arose to grapple with him when he upper-cutted me and again knocked me down. I struggled to my feet and then I was struck on the head several times with some heavy instrument. . . . I was trying to keep from being beaten and was backing down the hall trying to get out of the house. When I saw that the man had a gun I drew my revolver and fired. That was in the hallway. When I got into the street and the man with the gun was still coming on and I fired four more shots. I fell over backwards off the porch and the man jumped on top of me.

At the time that the man came into the room I did not know that he was Thomas Logan, the sheriff of this county. I had never seen the man before. I don't believe I knew the name of the sheriff of Nye County before the shooting occurred. He was an entire stranger to me.

After I had fallen off the porch and Logan had jumped on top of me we fought for possession of the gun. Then someone came running up and started to strike me with the gun and finally Deputy Sheriff Scott Hickey came and when he told me who he was I surrendered the pistol to him. I acted in self-defense all the way through. I have never been in trouble before in my life and have always borne a good reputation. ("Defense Attempts to Show That Barieau Was Justified in Shooting," 1906)

The prosecutor ridiculed the statement Barieau had made on the witness stand in which he said he carried a revolver for protection against wild horses while prospecting, emphasizing that such a statement was merely a weak effort to bolster the defense. Barieau looked on stoically as District Attorney Pittman cast aspersions on his character for the jury's benefit. But cross-examination by the prosecution could not shake Barieau from his story.

Albert Revert, owner of the Tonopah Lumber Company (and progenitor of the Revert family in Beatty), testified that Logan had purchased lumber from him and had had it shipped to Manhattan, where it was delivered to the Jewell premises. Witnesses were then brought forward by the defense to show that Logan had purchased $1,385.28 worth of lumber from the Manhattan branch of the Tonopah Lumber Company and had used it in construction of the Jewell. Logan had paid one-half of the total bill but was behind in settling the account at the time of his death. In fact, the company had drawn up papers to file a lien on the Jewell just days prior to Logan's passing. May Briggs had not had anything to do with the transaction until after Logan's death, when she went to the lumberyard office and asked to be allowed to pay off the balance, which she then did ("Defense Attacks Credence of State's Witnesses," 1906).

The same payment procedure used in Manhattan had been used in Tonopah, $550 paid at the time of purchase, with the balance due in 90 days. The balance was not paid off until after Logan's death, as the Tonopah Daily Sun reported on July 12, 1906.

The defense then went on to show that Logan had been intimately involved with May Briggs. One witness, Margaret Chase, had known May Briggs in Dawson in the Yukon when Briggs was a dancer; Chase had also been Briggs's housekeeper in Tonopah. Mrs. Chase testified that Logan frequently purchased expensive gifts for May Briggs, among them two vases that cost $250, a pair of diamond earrings worth $600, a turquoise ring set with diamonds, a lovely wooden box with solid silver trimmings, and many other gifts of lesser value; but perhaps most symbolically, he had bought her two bedsteads and mattresses (Barieau, 1971:14; "Defense

Attacks Credence of State's Witnesses," 1906). The prosecution admitted that Sheriff Logan had been wrong to visit the Jewell but pointed out that so had Barieau.

The closing arguments for prosecution and defense were brilliant—and both were tearjerkers. Those who had followed District Attorney Pittman's career stated that his arguments were masterful and among his best work to date. Pittman's tribute to the memory of Sheriff Logan, who had been a close friend, was beautiful and reached a climax when Pittman burst into tears and sobbed out the remaining words of his sentence. Several members of the jury could not hold back their tears. When confronting the charges of Sheriff Logan's wrongdoing in becoming involved with a woman from the shadowy side of society, Pittman waxed eloquent, saying all men should display charity toward unfortunate women; he begged the jury not to be influenced by Logan's lapse. He emphasized his opinion that Barieau had acted with malice and ended with a plea that the jury not turn the defendant loose and give him an opportunity for further criminal activity (Barieau, 1971:17-18; "Fate of Logan's Slayer with the Jury," 1906).

However, those present in the courtroom agreed unanimously that no more eloquent and logical delivery had ever been made in the Tonopah courthouse than that by Defense Attorney Pat McCarran in his closing argument. McCarran had no equal in the use of sarcasm and invective at the local bar. His assaults on the character and testimony of the prosecution witnesses were especially memorable. He charged as well that the state's chief witnesses, May Briggs and Wilson Bering, were unreliable. He presented Sheriff Thomas Logan as having been a decent married man with eight children, a victim of May Briggs, an "enchantress who had wound herself into the life of a man inclined to do right and making him a slave to her every will and wish" (Barieau, 1971:16; Tonopah Daily Sun, July 13, 1906). There were few dry eyes in the courtroom when McCarran touchingly referred to the dead sheriffs family, emphasizing that while the sheriff was under the influence of this woman of dubious character, showering gifts upon her which he could ill afford, his family in Smoky Valley "had but few of the necessities of life" (Barieau, 1917:17; Tonopah Daily Sun, July 13, 1906).

At noon on July 13, the case went to the jury. The instructions to the jury, drawn up by the attorneys for the prosecution and defense with the approval of the court, took 20 minutes for Judge Breen to read. The most crucial instruction informed the jury that if there was a reasonable doubt about whether the killing had been premeditated or deliberate, then Barieau could not be found guilty of murder in the first degree. If there was reasonable doubt about whether the killing had been done with malice, then Barieau could only be found guilty of manslaughter, not of murder in any degree. If there was any doubt about the manslaughter charge, then the defendant should not be found guilty of any offense.

"Gentlemen," the instructions read to the all-male, all-white jury:

You are instructed that a bare fear of personal violence or danger to the life of the defendant at the hands of deceased, to prevent which the homicide is alleged to have been committed, shall not be sufficient to justify the killing. It must appear that the circumstances were sufficient to excite the fears of a reasonable man and that the party killing really acted under the influence of those fears, and not in the spirit of revenge. (Barieau, 1971:16; Tonopah Daily Sun, July 13, 1906)

When jury members began their deliberations they were evenly split, six for conviction, and six for acquittal. Ballot after ballot was taken as the margin changed. At last there were

only two holdouts, then they were won over by the majority. On July 14 at 5:30 A.M., after 17 hours of deliberation, the jury, worn out with its all-night struggle to reach an agreement, rendered its verdict. Barieau was brought into the courtroom by the sheriff; his wife and child and a few spectators were present. Mrs. Barieau broke down when her husband arrived, but Barieau spoke encouragingly and attempted to appear unconcerned. However, his fingers twitched nervously and he shuffled his feet.

The clerk read the verdict: "Not guilty." Mrs. Barieau threw her arms around her husband's neck and kissed him repeatedly, weeping at the relief the decision brought. Barieau's daughter climbed on his lap and embraced him. Barieau then gave way, weeping with his head in his hands. Barieau had emerged from the shadow of the gallows.

Word spread rapidly through Tonopah. Sheriff T. J. McMahan (Logan's replacement) and the newspaper offices were besieged with inquiries until late that night about the jury's decision. Betting around town had been that, given Sheriff Logan's popularity, Barieau would be found guilty—at least of manslaughter.

After beating the gallows in his Manhattan encounter, Barieau lived a long life. Some say that around 1930 he ran a plush gambling casino in Ensenada, Mexico, for Jack Dempsey, the world heavyweight boxing champion. He died in San Diego, California, in 1953 at age 83 (Barieau, 1971:3). Young Pat McCarran established his legal reputation during the trial. After being appointed Nye County district attorney, he later moved up to the state supreme court. In 1932, he was elected to the U.S. Senate, where he served until his death in 1954. He eventually chaired the Senate Judiciary Committee (Earl, 1987).

Stray Dog Bob

Life during the early twentieth century in frontier mining camps of central Nevada had a lighter side, too. Stray dogs were a common sight in the camps, and almost like coyotes, they scrounged for a living. Sometimes a miner would take pity and give one some scraps. Nobody paid much attention when an old medium-size stray—a yellow dog of mixed collie extraction with a short tail and sharp ears—showed up in the camp of Manhattan in summer 1905. No one knew exactly where the dog came from, but somehow—nobody remembered how—he ended up with the name Stray Dog Bob. Some said that he had once belonged to an old Indian who had been left to die by his tribe and that the faithful dog had stayed with his master until the old man died. Then a group of prospectors had found the man and buried him and had taken the dog.

Stray Dog Bob quickly established a reputation in Manhattan as a "lucky dog." He seemed to have an uncanny ability to be around whenever somebody found high-grade ore. He was there when Clark Davis discovered rich ore on the April Fool lease in August 1905 and when operators found jewelry-quality ore on the Annie Laurie lease in September. Later that fall, Stray Dog Bob was at the Bronco lease when operators hit a streak of white quartz richly seamed with gold—and he was at the Nellie Grey claim when another rich find was made. As might be expected, rich placer diggings were discovered on the Iron King and the Iron Queen claims—a few days after Stray Dog Bob had visited.

Many miners were superstitious, given to believing in good and bad luck, probably because mining was a risky, dangerous occupation. Such ever-present danger invited belief in

hunches and omens that could keep a man safe. Further, a chance find of high-grade usually seemed due more to luck than to premeditation.

News of the lucky dog spread fast among the leasers. Whenever a new discovery was made, someone always asked, "Was the dog around?" Stray Dog Bob became a camp favorite. Some miners even cut the hearts out of tenderloin steaks to try to attract him. Some fed him boxed candy; others made soft beds for him.

Even so, Stray Dog Bob did not stay for a full year in Manhattan. After late February, he disappeared, and everybody wondered what had happened to him. Could he have rejoined an Indian band? In March, people heard that he had shown up at Millers, a milling camp at the south end of Smoky Valley about 40 miles from Manhattan. Naturally, several leasers hit pay dirt in that vicinity shortly after his arrival. Still, Stray Dog Bob did not linger at Millers, either. The last time he was seen, he was heading south toward Goldfield (Earl, n.d.).

Human Hogs

In 1909, irritation with neighbors apparently got the best of W. A. Berry, inspiring him to write an article for the Manhattan Mail entitled "Dissertation on 'Human Hog.'" Clearly, Berry was not referring to the source of bacon and pork—he was writing about some of his neighbors.

Why is it that so many people residing in mining camps and frontier villages have so little respect for the feelings and rights of others? The answer is simple: Because they are human hogs. No doubt they have been driven from civilized communities by the laws, customs and usages of the community, and prefer to find a home more suitable to their habits and taste, in mining camps, where the laws are usually lax and people are too busy in their efforts to hastily accumulate wealth to pay much attention to enforcing the customs of older communities. ("Dissertation on 'Human Hog,'" 1909)

Berry wryly observed, "God gives us our relatives, says some cynic, but thank God we can choose our friends." Then he made his point: "Unfortunately, we cannot choose our neighbors, except to a very limited and negligible extent." Berry provided a few examples of characteristic human hog behavior:

If you are awakened in the middle of the night by the braying of a burro, which has been fastened to your front gate post by your neighbor, for the lack of a more convenient hitching post, you have an exhibition of the human hog. If your neighbor allows his dog to make night hideous with yelps and howls, while you are vainly trying to court sleep, this is another example of the human hog. If your slumbers are disturbed by the rattling of old tin cans being thrown down on your premises by your neighbor from above, and said neighbor meets you next morning with a look of injured innocence, he is certainly a human hog.

To pile rubbish, throw slops, old tin cans, etc., on vacant lots in close proximity to your neighbor, is also an instinct of the human hog. ("Dissertation on 'Human Hog,"' 1909)

Berry recommended violence as an appropriate response to some human hog behavior. For instance, those hogs careless with fire should be punished with mob violence and "resented with a shot gun." Berry concluded his exhortation by pleading that residents of Manhattan should try to understand that "a certain consideration for the rights and comforts of others can be cultivated, even in a mining camp" ("Dissertation on 'Human Hog,"' 1909).

A Practical Joke

The front wheels on a four-wheel buggy are usually smaller than the rear wheels, which makes for greater control and stability. Reversing the front and back wheels not only gives the buggy a very strange appearance, as though it is being pulled backward, but can also be dangerous if the horses pulling the buggy become fractious.

On a lovely Sunday morning in spring 1909, a young couple, probably bent on spending a few hours alone in the country, found themselves riding down Main Street in Manhattan in a buggy whose wheels had been reversed by practical jokers. People on the street immediately noticed the misarrangement and commented about it as the buggy passed by. One observer was heard to say that he "didn't know whether the rig was going or coming." The driver, no doubt preoccupied with the charms of his lovely young companion, must have appeared somewhat foolish as he drove along unaware of the joke. It would perhaps be kinder to suggest that because he was going downhill he overlooked the situation, as the buggy was tilting backward. Nonetheless, a long drive in the country still left the young couple unaware of the joke. Upon the return of the team and buggy to the Pioneer Stables in Manhattan, the attendant noticed the reversal, and only then did the young driver become aware of the danger he and his companion had been subjected to during their outing ("Jokers Change Wheels About on a Buggy," 1909).

The *Manhattan Mail*, however, did not appreciate the joke. "What is considered locally as one of the lowest and most contemptible tricks ever perpetrated in Manhattan," the editors stated in the front-page article, "was enacted during the still hours of Saturday night, at the Pioneer stables, when the wheels on a certain buggy were transposed by parties whom it is claimed are known and who are now held in utter contempt by the community." The newspaper referred to the episode as a "dastardly trick" played by "miscreants whose sole motive for the act . . . was to have a little fun at someone else's expense" ("Jokers Change Wheels About on a Buggy," 1909).

Manhattan's First School

The western frontier has been correctly portrayed as being anti-intellectual, that is to say, unreceptive to overtly abstract concepts that either lack visible references or are not practical. Yet despite the concrete quality of western thinking, no one admired illiteracy. One need only read the newspapers from central Nevada from the turn of the century to appreciate that a higher level of reading comprehension and word skills must have been held by an appreciable percentage of the Nevada populace than is held today. W. P. DeWolf, writing in the Manhattan Mail during the Manhattan boom days, for example, used an extensive vocabulary and complex sentence structure not typically found in modern Nevada's newspapers.

Residents of frontier Nevada recognized the importance of literacy. Education was almost always one of the first public services arranged for in a mining boomtown. The presence of a school in a turn-of-the-century mining community was a good gauge of a camp's expectations of permanence. If a town had a school, it meant that the population included more than just prospectors and slick promoters intent on getting rich; it meant there were women, children, and family men living there. A school indicated a desire among the residents

for the arts of civilization; it was proof that community members were investing in the town's future—its children.

In 1906, the first school in Manhattan was located in a small building on upper Main Street. The class portrait taken that year pictures 16 children. The school was moved to a site across from the Presbyterian church in 1908. (Additional older children may have continued to use the first school.) In 1908, the class photograph shows 24 schoolchildren. In 1909, Effie Mona Mack graduated from the University of Nevada and took her first job—as principal of the Manhattan school. Mack went on to become a prominent Nevada educator and an outstanding Nevada historian. On September 14, 1909, she wrote a postcard from Manhattan to her mother in Reno, remarking, "Opened school with 13 pupils on the 13th of the month. I am settled temporarily, I do not like the place. No table, stove, or chair in my room! Will change as soon as possible. Love to the family & write often. E. M. M." Mack moved in later on with the W. C. Humphreys, with whom she remained close friends throughout her life ("Manhattan School: Its History, Students, Personalities," 1977).

In 1912, a special election was held in the Manhattan School District to decide whether to issue $5000 in bonds in $100 denominations at 7 percent per annum for 8 years to construct a new schoolhouse. On Monday, June 2, 1912, the polls were open from 1:00 to 5:00 P.M.; on Saturday, June 22, it was announced that the vote had been unanimous: 137-0 for issuing the bonds. It was, the announcement read, "the most decisive election ever held in Nye County" ("Manhattan School: Its History, Students, Personalities," 1977:10). The bonds, totaling $5026, were sold to the First National Bank of Plainsville, Ohio. The new school, built on Dexter Avenue, was 30x75 feet, and featured a projecting entry foyer, four rooms, and a small bell tower. It had a frame structure, wooden doors and floors, and was finished in pressed tin with various patterns. The Manhattan school still stands; although its exterior has been plastered over, it "remains a rare example of a public building constructed entirely with pressed metal surfaces" (Janus Associates, 1980).

To celebrate the new school's opening on September 2, 1913, a "Grand Benefit Entertainment" was held, featuring a skit, as well as music by the Manhattan Orchestra, the Manhattan Male Quartet, a solo violinist, and solo vocalists. A dance was held following the program ("Manhattan School: Its History, Students, Personalities," 1977:10).

Jim Boni, who grew up in Manhattan, remembered that during the 1920s and 1930s, the Manhattan school used three rooms. One teacher taught grades 1 through 4 in one room, a second teacher taught grades 5 through 8 in the second room, and in the third room, another teacher, who was also the principal, taught grades 9 through 12. The number of students in the school depended on Manhattan's economic circumstances. When Jim Boni started school in the early 1920s, there were 30 or 40 children attending the school, and when he graduated, there were about 10 students in the high school, 3 or 4 in his class. Manhattan had no basketball team because there was no basketball court. As a substitute, players used a medicine ball, throwing it back and forth and into a basket for practice. Manhattan competed against Round Mountain in track meets, in which two of the events were three-legged races and sack races (Boni, 1990:7-8). Lack of students caused the school to be closed in 1955, after 42 years of use ("Manhattan School: Its History, Students, Personalities," 1977).

A Church for Manhattan

The charming Catholic church that still stands in Manhattan was originally erected in Belmont on East Belmont Summit in 1874 at a cost of $3000. It was built by Reverend William Maloney and members of the Catholic parish. In 1901, the building had been abandoned because of the town's decline.

In 1908, the building—complete with belfry, bell, and cross—was moved to Manhattan and was renamed the Sacred Heart Mission. The steeple bell was made in New York by Meneelys-Troy, the same company that made the bell that was installed in 1868 in the historic church in Virginia City, Nevada. Over the years, the pews and altar disappeared from the Manhattan church. In 1956, the bell was moved to Beatty. Then in 1971, a group of citizens undertook some restoration of the building. With donated funds and volunteer labor, they overhauled the church, repairing windows, doors, steps, handrails, and so on. Today the church is a central Nevada landmark. During the national bicentennial celebration in 1976, a photograph of it was published in European newspapers. In that same year, the Catholic Church turned over its ownership of the Manhattan church to Nye County, which still owned it in 1995 ("Manhattan School: Its History, Students, Personalities," 1977:16).

The First Major Fire

During its first three years, Manhattan had little organized fire protection. It was simple luck that there were no serious fires in town during that period. However, the town's long-term luck gave out on March 11, 1909. On that night at about 10:30 P.M., flames shot up in a second-floor room at the rear of the Nevada Hotel on Erie Street. The fire spread quickly from the hotel. Eight buildings, with an estimated total value of $25,000, were destroyed. When the fire started, the winds were blowing to the north along Erie Street instead of to the south, as was usual. This, observers said, saved the town from devastation. Frank Garside, editor and publisher of the *Manhattan Mail*, had a house - among those threatened - on the hill overlooking Erie Street. Firefighters found it necessary to drag one house that had already caught fire down the hill to save Garside's. Garside's roof caught fire three times, but each time the flames were extinguished with buckets of water.

The best account of the fire appeared in Garside's *Manhattan Mail* on March 17 ("Fire Destroys Eight Buildings," 1909). An interesting sidelight within the story concerned the experience of Trixy the Cocker Spaniel. No doubt aware that his readers would enjoy a "dog story." Garside noted that Trixy was raising a litter of newborn pups in a carpenter shop that caught on fire that night. Several times poor Trixy rushed into the burning structure in a futile effort to save her pups. Through the remainder of the night, she howled mournfully around the ruins. The next morning poking through the ashes and debris, she found one of the dead pups and tenderly carried it to an old coat lying nearby. She kept a lonely vigil there until the puppy's remains were thrown into a wagon and hauled away.

After this serious fire, the residents of Manhattan established a volunteer firefighting corps. During its history, the town experienced several other serious fires (Earl, 1980:3).

Manhattan's Red-Light District

If a camp had brothels, that was another sure sign that it was more than a flash in the pan (an expression that describes the flash of gold in a miner's pan). In its boom days, Manhattan had a number of brothels, but by the early 1920s, the red-light district, located at the lower end of town, had only three left—Pearl Linder's, Marie St. Clair's, and Ella Clark's. Locals referred to the houses by the first names of their owners, as Pearl's, Marie's, or Ella's.

The presence of brothels in town was an accepted fact of life; nobody seemed to object much, certainly not the children. If children in Manhattan had tickets to sell for a school raffle or some other fund-raising purpose, the red-light district was the first place to go. The brothel operators had the most money in town—and they were generous. The kid who got to Ella's or Pearl's first would always make a good sale, sometimes even $10 or more worth of tickets, which was a great deal of money in those days.

Some fastidious souls, of course, considered the topic taboo for discussion among family members. One longtime Manhattan native (Anonymous, 1990) remembered that although her mother never mentioned prostitution and would have disapproved of any interest her daughter might have shown in the brothels' occupants, she would probably have said that prostitution was a "necessary evil." Nevertheless, the woman remembered that as a schoolgirl during the 1920s she would visit Ella's or Pearl's from time to time. She liked Ella's place because Ella had a player piano. Ella would always give any young visitors cookies and milk and let them play the piano. The visiting girls were too young to know what was going on in the brothels. To the girls, Ella and Pearl seemed old—they were perhaps 50.

Both Ella and Pearl were enterprising businesswomen. They owned their own houses and practiced their trade there, keeping all of the proceeds. Usually they had no other girls working for them because the town was small and demand was limited. In those days, prostitution was unlicensed. The only restriction seems to have been that the business be conducted in the part of town considered appropriate. Neither Ella's nor Pearl's had a bar. Ella's place had a kitchen, a living room, a little dining room, and one bedroom. The player piano was in the living room. A patron might be served a drink, and because those were bootlegging days, all liquor was sold surreptitiously. Ella and Pearl were accepted in the community and were always greeted politely on the street. There was no attempt to make them pariahs or the brunt of jokes. Yet they would never have tried to join the Toiyabe Literary Club.

Ella was friendly with the owner of Rippy's, Manhattan's local newsstand-drugstore. One winter, Rippy became quite ill, so Ella shut down her business, locked the door, and moved uptown to take care of him until he died. Not long after that, Pearl closed down her business but remained in the house, where she lived alone. Relatives moved her away when she became less able to take care of herself (Anonymous, 1990).

In the 1930s, there were several prostitutes working in Manhattan. Girls at the local brothel wore chemises, or "teddies," fancy one-piece undergarments that were easy to take on and off. Most of the women in town could not afford such finery, and in any case, they might have been scandalized at the thought of wearing such garments. Around 1935, a local high-school student who worked at a small clothing store in Manhattan sold several teddies to girls from the brothel. She recalled, "They'd come in and talk to me and pick out what they wanted .

. . silk stockings and different articles of clothing that they needed." The women working at the brothel paid cash; they had money when few others did (Anonymous, 1990).

CHAPTER 10
Manhattan Reminiscences

For those who tried to make a living on the Nevada frontier, life could be difficult. The struggle against the elements and the isolation required ingenuity and resilience. The stories of Cora and Omar Maris and Virginia and George "Monty" Stewart are two excellent examples of what pioneers faced. We are fortunate to have their firsthand accounts: Cora's diary, which covers the years 1916-1919, and Virginia's book, Golden Gravel: Manhattan, Nevada, in the 1930s.

Life at a Rural Quarry

Grinding ore was a priority in any milling operation. It was necessary to grind the rock in order to free the particles of gold and silver or other minerals, which could then be captured by a variety of methods, including gravity-based separation (like a jig), by amalgamating with mercury, or by using cyanide. The first miners in Nevada ground ore with primitive arrastras, which worked on the same principle as the ancient grain mill. The ore to be ground was placed on a stone platform, or base, that was two or more feet wide. A large stone was then put on the platform, attached to a wooden beam several feet long, and anchored at one end by a pivot that was pushed or pulled at the other end by a horse or mule. By walking in a circle, the animal moved the heavy stone over the platform, thus grinding the ore (Young, 1978:69-71).

The stamp mill, which operated on the mortar-and pestle principle and used a mechanized source of power, was a great deal more efficient than the arrastra. A falling steel head a few inches in diameter connected to a cam crushed the ore in a small steel box, which was usually less than one foot in diameter. The pounding or stamping of the head on the ore pulverized it to the desired fineness.

The ball mill and the rod mill took milling technology one step further. In those mills, a large steel container held either steel balls, ranging in diameter from one and one-half to six inches, or long steel rods that turned on one another. The container rotated horizontally. As the steel balls or rods ground against each other, the ore that was fed into the container was pulverized.

Although ball and rod mills were efficient, they had disadvantages. Steel balls or rods were expensive, and grinding wore them out—the harder the ore, the faster they wore out. Moreover, because the balls or rods worked against the inner lining of the rotating mill, steel liners were needed on the inside of the mill to protect it. Mill operators sometimes used stones composed of unusually hard rock either with or instead of the steel balls. The best stones for this purpose came from Scandinavian beaches, and Norwegian stones were considered superior. Stones were shipped to either the East or West Coast of the United States as ballast in ships returning from Europe. However, when World War I began, "Scandinavian pebbles" became difficult to obtain.

Sometime around 1915, Omar Maris, an inventive and independent man whose passion for mining had taken him from North Carolina to Alaska and Oregon and from there to Nevada, conceived the idea of building a mill to manufacture grinding pebbles. Maris took his plans for a tumbling machine—basically a much-enlarged version of the small tumblers lapidaries use to polish small stones—to the Campbell-Kelly foundry in Tonopah. After many mishaps and delays,

a working model was produced and taken to a rock quarry overlooking Ralston Valley, on the east side of the Toquima Range about 10 miles from Manhattan. At this site, chalcedony, a hard rock that is a type of siliceous lime, was to be quarried and then formed into grinding pebbles in Maris's machine. Maris constructed a small house for himself and his wife, Cora, as well as a bunkhouse for workers he planned to employ at the quarry. The Marises had moved to the pebble quarry by mid-January 1916. Cora, whom her daughter Faith described as "gently bred by New England parents, adapted to the hardships and hazards of such a life . . . with courage, loyalty, and good humor" (Maris, 1982:54).

Before they moved to the quarry, Cora and Omar, both middle-aged, had been living in Manhattan, where they had a house and where Cora had many friends. Their daughter Mary was married to newspaperman Frank Garside. Garside edited the *Manhattan Mail* in 1909 and 1910 and published the *Manhattan Post* from 1910 to 1914. He was publisher of the *Tonopah Daily Times* and the *Tonopah Times-Bonanza* from 1915 to 1933. In 1926, he purchased the *Las Vegas Review* and merged it with the *Las Vegas Journal*.

Cora Maris found life at the pebble camp lonely, so she began to keep a diary in 1916 and continued it until 1919. The diary was written in ink with no corrections in a ledger book labeled "Toquima Copper Company Cash Book." Excerpts from the diary, published in the Nevada Historical Society Quarterly in 1982, provide a wonderful snapshot of the life of a small-time mine operator and his wife in rural Nevada. Life at the quarry was elemental, revolving around the weather, the changing seasons, and the day-to-day struggle to provide life's necessities.

Although she had few visitors, Cora was still concerned with her appearance. She wrote in February 1916:

Here I've let the morning go and I haven't put my hair in kids [soft leather hair rollers] so I might be beautiful. I don't want to get too careless, but have always had an undercurrent of feeling that it was lost and wasted time to try and improve my appearance. Not that it couldn't be improved—oh no! But that it was not worthwhile. I've planned a thousand times I guess to brush my hair regularly, use cold cream, massage and manicure my nails, go through a few limbering-up exercises—but, alas, the resolutions last about as long as snows in May, I go over the order once and then forget for ten days or more. (Maris, 1982:57-58)

Noting that her husband was unable to sleep and was constantly worried about the success of the pebble venture, she remarked, "And I've not been distracting to any great extent—what with wearing my oldest clothes and curling my hair once a week. What I need to keep my attention focused on my appearance is a long looking glass. It would certainly start civilization in these quarters." When she received a note that the Manhattan Toiyabe Women's Club, which she had helped organize, had inducted at least five new members since she had moved to the pebble camp, she wrote, "I shall not feel acquainted when I go back if I ever do" (Maris, 1982:55, 58).

Mail was delivered to the camp twice a week and was the highlight of Cora's life. When it was not delivered, she felt on edge. One February day, she wrote with the frustration of isolation evident, "If we don't get mail tomorrow I shall be about ready to fly." After big snows, the mailman skied in from Manhattan, which he could do in less than three hours. Cora's delight was clear: "The mail came yesterday—such richness!" In another entry, she mused: "Mail time again. It's about the only excitement we have—watching twice a week for the man

on skis." A few days later she commented, "The mail came on the 12th (February) by sleigh and an old white horse named Thomas and a driver named Brown. Both horse and man were played out and stayed here all night, going to Belmont on Sunday." The mail brought not only letters from the outside world but also newspapers and magazines (Maris, 1982:55-56).

Reading, especially reading magazines, was one of Cora's favorite activities. "I had eight letters to read and Omar galloped through ten newspapers, trying to catch up with events of the world for nearly two weeks," she recorded that February. One time the mail sled brought groceries and fresh meat, "but no cigars or magazines," Cora lamented. Another time they began running low on magazines. She wrote then, "We've been reduced to digging out old *Populars* and *Blue Books* and others of the like for lack of current magazines." On another occasion, feeling well-supplied, she noted, "We have reading matter to keep us satisfied for a while. Newspaper from Jan. 27 on to Feb. 14—magazines too, and Faith [a daughter] sent a bundle from the University. Interesting ones that we are not in the habit of seeing." Receiving a package in the mail, perhaps items that had been ordered, was a special occasion. In one diary entry, she recorded having received an order from New York, which she was "glad to unpack . . . a new pair of shoes $3.00, waist [a bodice, or blouse] $1.00, handbag $1.20 and several lesser items" (Maris, 1982:55-57).

For the resident of rural central Nevada, there was always solace to be found in the beauty of the high desert. Cora observed:

Yesterday, Monday, it rained all day steady, and quite a stream was running alongside the house by afternoon. We could hear Silver Creek roaring, though a mile distant. Watching the sunset was thrilling. The cloud effects were indescribable but so beautiful. There was a hint of a rainbow over Hunts Canyon and when the mists lifted we saw all the higher mountains over that way, covered with a drift of snow. (Maris, 1982:61)

The Marises shipped pebbles to the West End, the Tonopah Extension, and the MacNamara Mills in Tonopah, and to the White Caps Mill in Manhattan. In 1917 they shipped 709 tons of pebbles for a gross return of $13,000. Nonetheless, their venture was not profitable. Despite such production, Cora wrote, in January 1918, after having moved back to Manhattan, "We've no money in the bank and still have debts" (Maris, 1982:63). The pebbles were transported to the mills on freight wagons. Cora wrote that on January 16, 1916, a freight outfit picked up a load of pebbles and headed for Manhattan. The Marises equipped themselves for emergencies and followed the freight wagon to Manhattan in their car, intending to return home the next day. They had no trouble reaching Manhattan even though it began to snow. However, it snowed that day and all night, accumulating to 18 inches, and the next day they realized they could not return in their car. They had to hire a freight team to take them back to the quarry. The 10-mile trip took three and one-half hours and, as Cora said, "never did horses sweat more" (Maris, 1982:54).

In late January, it snowed again and soon the snow was knee deep even in the shallowest places. Two men who were working at the camp got cabin fever, decided they had to get out, and attempted to walk to Manhattan. One died of exhaustion on the way, and the other barely made it.

Toward the end of their first winter at the pebble quarry, an accident in the mill caused Omar's dentures to split and, with the resourcefulness characteristic of mining men of the rural West, he fashioned small silver rivets from a quarter to clamp the crack together. Although

eating with the repaired dentures was not altogether pleasurable, it was better than "gumming it," as Cora wrote in her diary. The repairs, however, only lasted about a week when one of the rivets broke. Omar then tried to tie the cracked plate with some of Cora's silk thread. Then he accidentally dropped the dentures and they broke in half, so he drilled a number of tiny holes in the plate and Cora stitched them together. In March, when supplies got low, Omar finally had to walk to Manhattan. There, he located "a little old-maid dentist" and was fitted for new dentures. He drove their car back to the quarry, though he had to buck snow, mud, and frozen ruts for four and one-half hours to reach home. Several times he was forced to unload the car full of groceries and other items and dig a path through the snowdrifts for the car (Maris, 1982:59-60).

Excerpts from Cora's diary run from February 2 through April 18, 1916, and pick up again when she and Omar were living back in Manhattan. The last entry was for March 3, 1919. Cora died in fall 1920 in the hospital in Tonopah. Omar lived for nearly another 20 years, dying in 1940 at age 82. They are buried side by side in the Elks plot at the Tonopah Cemetery. The two houses in which the Marises lived, both described in Cora's diary, are gone. A fire swept through Manhattan one night and destroyed their house there, and by 1970, as daughter Faith Maris wrote, the abandoned buildings and pebble quarry had returned to "Mother Earth," revealing "little trace of human activity" (Maris, 1982:64). The desert, with all its beauty, solitude, and majesty, had reclaimed all.

A Job Turns into a "Heap of Living"

Some who came to places in Nevada like Manhattan during the Great Depression found economic opportunities that did not exist in other areas. As "transplants," they experienced both the harshness and the rewards of life in a mining community. Even those who eventually left the area took away a lifetime of memories.

In the mid-1930s, George "Monty" and Virginia Stewart had been married for two years and were living in Ohio, where they had met. Although Monty was educated, he could not find any work because of the Great Depression. In 1936, he happened to drive his mother to Manhattan and used the occasion to look for a job. After securing a position at the Reliance Mill, he sent for Virginia, who came by bus from Ohio to Tonopah to join him. Monty met her at the bus stop in front of the Mizpah Hotel, and they drove the remaining 48 miles to Manhattan on that June day in 1936.

As Virginia remembered later, when they reached the upper end of Manhattan, Monty told her they were going down the main street of the old gold mining town. Virginia said, "So this is it; but you didn't tell me in your letters that it was like this." Monty answered, "Guess I forgot. Anyway, first impressions don't count." She shook her head and wondered at the madness of leaving the comforts of civilization for "this dusty little Nevada mining town" (Stewart, 1992:10-11).

Manhattan was well past its rambunctious boom days, and its population had shrunk to about 300. There was a garage with a lone gas pump on Main Street, and across the street sat a decrepit building. The words on an old sign hanging above a door were no longer distinguishable. The town corral was inhabited by two "sorry looking mules." There were two grocery stores, six saloons, and Rippy's drugstore—with the town's only public telephone, an old-fashioned crank type (Stewart, 1992:21).

Monty and Virginia rented a house that had been vacant for some time from Mrs. Lillie Wist, the town's postmistress. The couple repaired the house, which took about a month, including painting and hanging new wallpaper (Stewart, 1992:16-17, 24).

For Virginia, who was raised in a wealthy eastern family, adjusting to life at Manhattan was not easy. A trip to Tonopah with shopping at Dave Coleman's store to stock up on supplies was a special occasion. The young couple could not afford an electric refrigerator, so Virginia had to use a desert cooler to keep food cool in the summer. This contraption was a wooden box with screened sides, a hinged door, and burlap attached to the frame. Water continuously dripped onto the box and evaporation kept the contents cool.

During the winter, one of the biggest challenges Virginia faced was keeping warm. The house had many cracks that let cold air in, but putting adhesive tape around the windows helped. The couple could not afford coal and used wood for heat. In Golden Gravel: Manhattan, Nevada, in the 1930s, Virginia vividly recalled her first Manhattan blizzard in 1936. The storm began shortly after dark. Virginia and Monty had gone to have Christmas dinner with their nearby neighbors, Jack and Rose Walters. They had just thanked the Walters and were about to start for home.

When we stepped off of Rose's porch, we were greeted by big, feathery, soft snowflakes drifting lazily down from the sky. These were the advance guard of a long fierce blizzard and Jack called to us from the open doorway as we started down the hill, advising us to get plenty of wood. We lost no time in doing this when we got home. . . .

Monty immediately built fires in both of the stoves. The house was like an icebox. The heavy snow that was now falling was accompanied by what developed into gale force winds. They beat on the house like a furious monster bent on the destruction of the building and its inhabitants. All night long the wind moaned and whined at the windows. I couldn't sleep for the drumming of the wind on the balloon ceilings. It was as if the devil himself were beating a tattoo on the drums of doom.

The next morning all the windowpanes were frosted over so much that we couldn't see out. The wind and the snow continued all that day and night. Keeping warm became a constant chore, going back and forth between the two stoves to supply them with chunks of wood that burned so quickly. . . .

At night we dressed for bed, bundling up like Eskimos and giggling at the comical picture we presented. Monty set the alarm clock and got up at three hour intervals to keep the fires going. Even then, in the mornings, the temperature was below freezing in the house. How I wished for the comforts of civilization, especially central heating. (Stewart, 1992:47-48)

By midmorning of December 28, it had stopped snowing and the wind had died down, so the two young people ventured outdoors. They were struck by the beauty of the storm's aftermath. "Gradually, the snow clouds drifted away to reveal the turquoise colored sky," Virginia wrote. "Everything looked brilliantly clean and new. We could see that the snow had formed huge drifts around the house. Venturing farther into the yard, Monty was up to his waist in snow" (Stewart, 1992:78).

Then began the task of digging out. The temperature hovered between 15 and 20 degrees below zero. Taking care not to expose any part of their bodies except their eyes, they spent the rest of the day shoveling paths to the garage, the woodpile, and the outhouse. Because of wind during the storm, snow had drifted nearly to the top of the front door. They

did not shovel any of the snow that had drifted over the windows because it provided insulation—and that snow lasted until March.

During the storm, the outside world had been shut out. Six days after Christmas, Nye County Sheriff Bill Thomas called from Tonopah to say that the snowplow had left for Manhattan that morning. The stage was following the snowplow and was loaded with mail, fresh bread, and meat. Doctor Craig from Tonopah was on the stage in case anyone needed medical treatment. Virtually the entire population of Manhattan was present to greet the snowplow when it appeared late that afternoon and cleared the way up Main Street. It continued on to Belmont from Manhattan (Stewart, 1992:48-49).

Virginia Stewart became pregnant with her first child while living in Manhattan. In July 1937, her daughter Diane Marie was born. The Stewarts' car was not working when Virginia's labor pains began, but they found someone to drive them to the hospital in Tonopah, where Doctor Craig could deliver the baby. On the way, Virginia had visions of not reaching the hospital in time and of Monty having to deliver the baby himself. Her anxiety disappeared when they reached the hospital and she saw Doctor Craig. As it turned out, there was no rush; the baby was born the next day.

Caring for babies in the 1930s in rural Nevada was done without the convenience of disposable diapers, readily available hot water, and central heat. Mothers in Manhattan washed their babies' diapers by hand. In temperate weather, they hung them on the outdoor clothesline to dry. This work was hard enough in good weather. It was doubly difficult in the winter for mothers to keep their babies warm and dry.

When Virginia's baby was not even six months old, the weather turned cold. Every morning, the thermometer in the kitchen read below zero. After December in that part of Nevada, the outside temperature could drop to 20 degrees below zero. Because an infant can kick the covers off at night, the baby's grandmother had sent a "Snuggle Bunny," a blanket that could be tied to the crib on each side. The Snuggle Bunny had a zipper down the front so that once it was zipped up, the baby could not kick it off. Each night, Virginia would slip a hot water bottle under the covers at the foot of the baby's bed. She also wrapped the baby's 2:00 A.M. bottle in a clean towel and placed it under her own pillow. Then, when the bottle was heated in the electric bottle warmer before her late-night feeding, it would not break from the sudden change in temperature. Drying washed diapers was a constant challenge: "The diapers froze solid on the clothes line in the yard, looking like white squares of card-board. I would almost freeze my hands when I went out to hang them, even though I wore heavy gloves" (Stewart, 1992:125-126). Monty strung a clothesline near the stove and ran it the full length of the living room to dry diapers in bad weather. No attempt was made to take the baby outside for fresh air. "There was," Virginia noted wryly, "enough fresh air that blew in the innumerable, unsealed cracks and crevices of the house. This was more air than we needed" (Stewart, 1992:126).

Virginia Stewart had not been in Manhattan long before she caught gold fever. In 1936, Rose Walters took Virginia to one of the placer shafts in Manhattan Gulch to see some of the high-grade gravel people talked so much about. Jack Walters was working in a 60-foot placer shaft there. He decided to give the women a demonstration, and after shoveling some gravel into the sluice box, he turned on the water. "I'll let it run for a while," he said, "then turn it off so we can all pick the nuggets from the head of the sluice box" (Stewart, 1992:37). After ten minutes of sluicing, Jack brushed the sand away from the tops of the riffles in the sluice box.

Before Virginia's eyes, glittering in the morning sun, gold flakes and nuggets rested against the riffles.

This was the first time Virginia had ever seen gold in its natural state. "What a thrill," she wrote. "It was very heavy and very soft. Some of the nuggets were pure gold." In an instant, she had caught the gold bug. "Now I could readily understand," she said, "the fascination and the drive that has compelled man to mine for gold through the ages. A little of that fascination rubbed off on me right then and there. I silently resolved that Monty and I would have to do some placer mining, the sooner the better" (Stewart, 1992:38).

Monty and Virginia discussed the possibility of Monty turning to placer mining to earn a living. Monty agreed to the plan, although both realized that it would take some cash to begin a placer mine. Monty's wages from working in the Reliance Mill enabled the couple to meet their bills, but there was nothing left over. With no savings, they could only dream.

However, the dream came true when Virginia's uncle sent an unexpected gift of $1000—enough to start a mine. They went to Ohio to avoid the remainder of the winter of 1936-1937 (the Reliance Mill had shut down because of cold weather) and to discuss the mining venture with their families. Virginia's brother, Ed, decided to go back to Manhattan with the couple. As Virginia described the decision-making process, "Monty and my brother, Ed, after discussing all the pros and cons, the ifs, the buts, plus the risks involved and not heeding the fears and advice of their parents, decided to pool their money and have a fling at gold mining in Manhattan Gulch" (Stewart, 1992:62).

In the months that followed, they learned firsthand the joys and sorrows in the tough life of the placer leasers. "The first month of their partnership," she wrote, "the boys worked so hard in their mine. The results of their labor was one small gold nugget and not enough flake to fill a thimble." There were unceasing difficulties with mining machinery. Electric motors burned out. The sluice box and ore bins needed repairs. More rails for the dolly were needed as they dug deeper tunnels. Timber for the tunnels was expensive. They ran low on money, so they charged their groceries at Coleman's store in Tonopah. As the venture progressed, irregular shipments of dore (a kind of gold clinker) to the U.S. Mint at San Francisco enabled them to pay bills and stay about even, but they never saved much. Virginia's description of the results of their first gold shipment—the receipt of a check from the mint—summarized much of their frustration: "After the necessary payments and royalties were deducted from the total amount of the check, I did not think it was enough money for the months of back breaking labor involved" (Stewart, 1992:103).

Twice, there were serious cave-ins at the mine. The first almost completely buried Monty, but Ed, who was standing nearby, dug frantically and saved his life; the tunnel caved in just as the two men got out. On another occasion toward the end of the venture, the whole workings caved in, including the shaft, which collapsed, leaving only a saucer-shaped depression in the gulch (Stewart, 1992:80-81, 130). The threesome took on partners—three brothers from Nebraska who were looking for work. After that, things improved for a while. They hit a high-grade streak, a rich seam of gravel that ran from $80 to $100 per yard. "We were able to make very small shipments to the mint from time to time," Virginia remembered, "but the checks that came back were barely enough to keep us going. Our share did pay our rent and enable us to send Dave Coleman a little to reduce the bill which we now owed for our winter supply of groceries" (Stewart, 1992:121-122).

During January and February, they could not operate the sluice boxes, but they continued to work the gravels underground, storing the ore on the surface. Virginia's chief source of annoyance was the winter wind. It "blew continuously and was like a breath from a glacier," she wrote (Stewart, 1992:125). Her battles with the wind and the frozen water lines were wearing. Melting buckets of snow on the kitchen stove provided disappointingly small amounts of water for domestic use.

In 1937, Monty and Virginia began to hear rumors that a dredge was going to be constructed in Manhattan Gulch to mine the placer gold mechanically. In February 1938, rumor became truth when the leasers were told that the land in the gulch had been sold and, as of March 1 that year, they had six months to vacate their lease. Soon after that, Virginia, Monty, and their partners hit a rich seam of gravel in the mine and "once again visions of a long dream of fortune loomed big and bright on my horizon of hope" (Stewart, 1992:128). It was not to be, however. The entire shaft and all of the tunnels collapsed—it was only sheer luck that no one was trapped underground when it happened. Had their truck not broken down on the way to work the morning of the collapse, some of the men, including Monty, would probably have been killed. They desperately tried to sink a shaft near the one that had collapsed so that they could drive a tunnel into the high-grade gravel that had been lost in the cave-in, but their efforts produced only poor-quality gravel (Stewart, 1992:128-130).

Monty foresaw that he could probably get a job on the dredge that would last for several years (until the dredge reached the head of Manhattan Gulch), but he concluded that "after that I'm afraid this town will be dead" (Stewart, 1992:145). With one month still left on the lease, Monty and his partners gave it up. Monty took a job as a carpenter's helper and worked on the buildings at Jamestown being readied to house the dredge's crew. He became discouraged, though, feeling that he was not putting his education to proper use. Using all their financial resources, Monty and Virginia paid their bills and returned to Ohio in early December 1938.

Many years later, Virginia Stewart wrote movingly of her departure from Manhattan and of the last moments she spent in the home she had shared with her husband and the daughter born to them in the old boomtown:

The Walters, who were taking us to Tonopah to catch the afternoon bus to Las Vegas, were waiting outside in their car. . . . Now it was time to go. I walked slowly through the still rooms of our little brown house, checking the stoves one last time, assured the fires in them had been reduced to faintly glowing ashes and that every-thing else was in order. The curtains I had left at the windows billowed slightly and I thought of the past winters, when we had taped all around the window frames to keep the cold air out. A heap of living had been crowded into the few short years we had lived in this house, I mused. The memories of all the happy and sad times floated into my mind, then brought tears to my eyes. I silently said Good-bye to this part of our lives, a part I'd never forget. I'll come back someday, I promised myself quietly, shut and locked the door for the last time. (Stewart, 1992: 146-147)

Of their drive down Main Street through Manhattan that final day, Virginia wrote:

I looked back once more as we pulled into Main Street and saw a faint wisp of smoke rise out of the kitchen smokestack into the blue sky above, a farewell salute from the old behemoth kitchen stove.

When we passed Boni's garage, I could see our old pickup parked at the side of the garage. I would miss the old rattle trap, it had almost been like a member of the family. I was grateful for the fifty dollars Val [Boni] had given for it, as the money helped to pay some of the train fare home. (Stewart, 1992:147)

Then, in a final act, Virginia Stewart symbolically severed herself from her life on the desert:

"Look Monty," I said a little later, digging into my coin purse and showing him the post office receipts for each of our gold shipments. "I've kept them all, and added up they come to a good sized sum."

"That's past now," Monty said. "Throw them away."

I slowly tore them across, then opened the car window, watching as the wind snatched them from my hand and set them fluttering in the air, then gently scattering them over the desert, little white ghosts of our dreams of fortune. But we did go away rich—in friendship and experience. (Stewart, 1992:147)

During the next 30 years, the Stewarts made four visits back to Manhattan. Each time they returned, there was less of the town, and there were fewer people they had known. Old familiar faces had passed on; once-sturdy buildings had fallen into disrepair or had been hauled off or dismantled. In the epilogue to her book on her life in Manhattan, Virginia Stewart concluded, "As long as there are people who care, I don't think Manhattan will ever be an old forgotten ghost town. To me, it will always be very much alive" (Stewart, 1992:150).

Jim Boni Recalls Winter in Manhattan

Nearly all old-timers in central Nevada report that winters in the 1920s and 1930s were longer, colder, and snowier than they ever have been since. Winters could be tough in Manhattan. Jim Boni's father, who had a small trucking business, obtained a contract one year to haul freight between Tonopah and Tybo. One of his hauling trucks was an old Republic with solid rubber tires and an open cab—an open-cab truck in the cold Nevada winter! Once Jim Boni and his brother Val, who was eight years older, drove from Manhattan into Tonopah in that old Republic truck to pick up barrels of gas. Jim recalled:

Most of the roads were dirt, and the Manhattan road was dirt. And so we got a load of gas and headed out and I was pretty good until I got to Rye Patch. I could see the lights [of Manhattan], but it seemed like it took forever till that light came to where we were close. Then it got kind of cold, and I was just shivering, and I was afraid to fall asleep because I'd fall out of the open cab. I guess I stayed awake and finally we got to the foothills—Spanish Springs, that's where the old road went. And after we got to the foothills it warmed up, and it wasn't so cold. Then we finally made it into Manhattan. But boy, that's the longest ride I ever took. (Boni, 1990:14)

During the 1930s, Manhattan was once snowed in for 45 days. There was no travel in or out of town, and no mail. Val Boni and Joe Cowden had an old Dodge truck and attempted to transform it into a snowplow. They built a makeshift blade and hooked it to the front end of the truck, but after several runs it broke. Finally, they got the blade to work a bit, but then the truck got stuck. They decided to add a second axle—a dead axle not hooked to the drive shaft—to the back of the truck. They connected the dead axle to the original axle with a rubber belt that had cleats, the idea being that the belt would turn and propel them through the snow. This

time, the belt would not stay on the tires. All their efforts to construct a snowplow that winter failed. So Pete Boni and Joe Francisco made a sled, and they used it to go from Manhattan to Seyler Reservoir, via San Antonio, to pick up the mail from the driver and return home (Boni, 1990:15-16).

Jim Boni's Trucking Adventures

For many years, Jim Boni, who grew up in Manhattan, made a living in the trucking and wood business. Like his father before him, he gathered wood south of Manhattan at Timber Hill, sawed it into stove lengths, and sold it by the cord. In the 1930s and 1940s, wood brought $10 to $12 per cord and was sold to individual customers for home heating. John Connolly in Tonopah, who operated a lumberyard, would buy 50 cords at a time, saw the wood into small pieces, and sell it by the sack.

Boni and his brother Val had two dump trucks that held five tons each. They used to pick up ore from small mine operators in Manhattan, Round Mountain, Tonopah, Golden Arrow, Gold Hill—or any other place in the area that was producing—and truck it to the Kennecott Copper Corporation smelter at McGill, Nevada, most often using both of their trucks, hauling a full load in each. The smelter had them unload the trucks by hand at McGill and muck the ore into a gondola. The Boni brothers would then return home and try to pick up another load somewhere else. Jim Boni recalled, "We were out day and night trying to make a living. And it was a tough go" (Boni, 1990:41). Usually they were not paid until the mine owner or leaser got his check from the smelter. Sometimes the small producers failed to pay the Bonis at all. Around 1960, Jim Boni went to work for the Nye County Highway Department, where he was employed until he retired in 1981.

Boni once hauled a load of lead-silver concentrates from the Reveille Mill, located in Reveille Valley about 12 miles south of Warm Springs, to a smelter near Tooele, Utah, not far from Salt Lake City. Robert G. McCracken was operating the mill at that time and had been running screenings from the mine dumps at the old Reveille lead mine in the Reveille Range through the mill. The mine dump screenings were fed from an ore bin into an elevator, which fed them into a ball mill that was powered by a 1947 Cadillac flathead V-8 automobile engine. Thoroughly ground ore was discharged from the ball mill onto an old Wilfley concentrating table. The concentrates that came off the end of the table were caught in a trough and transferred to 55-gallon barrels.

The lead concentrates were very heavy because they contained more than 50 percent lead and 150 ounces of silver to the ton. Running the mill all day produced about one 55-gallon barrel of concentrates, weighing about 1000 pounds. About two barrels of concentrates could be obtained from the full ore bin at the mill, which held approximately 25 tons of screenings. Four men screening the dumps at the mine by hand could load roughly 5 tons per day into the ore bin.

In July 1954, McCracken hired Jim Boni to haul a load of concentrates from the Reveille Mill to the smelter at Tooele. In order to save Boni's tires, McCracken had his teenage sons, Robert and Mike, remove large rocks from the unimproved dirt road that connected the Reveille Mill to U.S. Route 6 at Warm Springs. Boni arrived at the mill in an impressive 1951 Chevrolet dump truck, a relatively new truck compared to the McCrackens' vehicle; they were

equipped with a rickety 1930s Ford dump truck they had rented from Red Douglas at the Midland Garage in Tonopah.

Because the concentrates were being loaded onto the truck by hand, Boni had no way of knowing how much weight was being put on his truck as the loading progressed; he could judge the weight only by how full the dump box was and by observing how far the springs on the rear axle were being compressed. Boni normally hauled a maximum of six tons, but the lead concentrates were deceptive; the dump box was nowhere near full, yet the springs indicated a full load. Boni said to McCracken, "Well, that's pretty good." McCracken replied, "I just got a little bit more. I got a little bit more." McCracken kept this up and loaded several more barrels of concentrates. Finally Boni said, "Well, it's pretty heavy," and he and McCracken agreed that the truck was loaded. Boni drove away in the truck with McCracken accompanying him in case he needed any help (Boni, 1990:39).

By law, a single-axle truck with dual rear wheels was allowed to carry only six tons on the highway. The maximum load Boni's truck could handle safely was six and one-half tons. While going up the hills between Warm Springs and Ely, especially up the grade at Currant, Boni noticed the truck seemed to lack power. Moreover, going downhill, the vehicle seemed inclined to run away. Boni and McCracken drove all night and arrived at the smelter at Tooele the next morning. Luckily for both of them, the weigh station in Utah was closed when they passed it in the middle of the night. The weigh-in at the smelter at Tooele showed that Boni's truck had carried eight tons of lead concentrates.

When Jim Boni was interviewed in 1990 for the Nye County Town History Project, he told this story without prompting by the interviewer, Robert D. McCracken, who had been one of the teenage sons involved in the activities. Boni pointed proudly to that same 1951 Chevrolet dump truck sitting in his yard.

PART FOUR
THE TOWN OF
ROUND MOUNTAIN

CHAPTER 11
The Development of
Round Mountain

About 26 million years ago, following the deposition of the hot volcanic ash from which Round Mountain would later be sculpted, mineral solutions bearing gold percolated up from deep within the earth, depositing gold one molecule at a time in the volcanic ash, which had become solidified. All the formations making up Round Mountain and adjoining Stebbins and Fairview Hills contain small quantities of gold, but the richest values were deposited along a network of veins and stringers (smaller breaks or cracks that crosscut a vein). Both the veins and the stringers were probably ancient cracks that formed when the Round Mountain caldera collapsed not long before the gold was deposited.

Miners usually found the best ore at the junction of a vein and a stringer. The large veins of ore on the south side of Round Mountain ran northwest-southeast and dipped to the north. The veins ranged in thickness from 4 to 20 feet and ran for as much as one-half mile, dipping into the mountain for 900 or more feet. The most important veins were the Los Gazabo, the Automatic, and the Placer—all on the south side of Round Mountain; the Mariposa, located on Stebbins Hill; and the much smaller Fairview vein on Fairview Hill, immediately east of Round Mountain. A series of nearly vertical stringers ran perpendicular to and cut across the big veins. Stringers tended to run almost due northeast-southwest. The major stringers included the Neubaumer, the Indian, and the Placer. The Los Gazabo vein, with gold visible to the naked eye, came up to the surface and stuck out of the ground on the south side of Round Mountain (Coombs, 1995; Elson, 1992-1995; Tingley and Berger, 1985).

A Great Discovery

Before 1906, the Round Mountain area was prospected for silver, not gold. The old community of Jefferson in Jefferson Canyon, 2 miles northeast of Round Mountain, had been founded after the discovery of silver there in 1866. By 1876, the mines in Jefferson Canyon had produced $1.5 million in silver, and prospectors always held the hope that more silver would be found. No one suspected that a bonanza of gold lay nearby, protruding from the surface of the round-shaped mountain located at the edge of the valley just south of the mouth of Jefferson Canyon. It no doubt complicated matters that the gold at the mountain sometimes occurred in a crystallized form resembling iron pyrite, or fool's gold. In an ironic turnabout, many old prospectors may have been fooled into believing that the mineral they had found was not gold—it was fool's iron, as it were. The rich specimens in this crystallized form of gold that lay on the surface were more or less overlooked before 1906 (Coombs, 1990).

Details regarding the discovery of the Round Mountain gold are confusing and may never be fully sorted out. Even accounts from old Tonopah and Goldfield newspapers at the time do not agree on the most basic facts. A fanciful, no doubt folklore, version goes as follows: Laura Stebbins, daughter of a local cowboy who owned a small ranch at the mouth of Jefferson

Canyon, went out one day searching for a strayed milk cow. During her search, she found a rock pretty enough to take home with her. Her father, John F. ("Jack") Stebbins, noticed the rock, asked her where she had found it, and, with a friend, investigated the site. Thus, the discovery of one of nature's great treasure chests was made.

All the versions of the Round Mountain discovery revolve in some way around John Stebbins, born in 1868, a native of Austin, Nevada. A cattle- and sheepman as well as a miner, he was married to Lena M. Smith, described as "a true Nevada girl," the only daughter of Catherine and John L. Smith of the Rogers Ranch in Smoky Valley (Haas and Haas, 1992:20). In 1890, Jack Stebbins moved to Jefferson Canyon and went into the cattle business with his partner and brother-in-law, Frank W. Dixon; they operated their small ranches at the mouth of Jefferson Canyon, about 2 miles from present-day Round Mountain. It was common in those days for prospectors to take up residence at sites with water and establish "stump ranches," small, marginally profitable operations. Although Stebbins and Dixon's ranches did not amount to much, the two men eventually acquired virtually all of the water rights in Jefferson and Shoshone Creeks (Moody, 1980:1). Stebbins and Dixon rode the area extensively for years, knowing gold was present but never realizing that one of the greatest gold deposits on earth lay under their feet (Beatty, 1907:248-249). The two men were long-term partners, as Stebbins's biography in Bessie Beatty's Who's Who in Nevada, published in 1907, explains.

Both men were cowboys in the early days and knew Nevada as do few others. . . . [They] have never had any written agreement, not even the scratch of a pen, and not once in all the years has a disagreement occurred to mar their happy relations. . . . In Jefferson Canyon they have lived for so many years with almost no companions but the members of their two families and without any amusement except that which they could manufacture for themselves. (Beatty, 1907:249)

Stebbins's wife, Lena, later located the Antelope claim, which she sold to Cada C. Boak; she is said to have known "enough about mining to make the average city-bred woman open her eyes in wonder," and she made a "large sum of money" from her own locations (Beatty, 1907:149).

Nye County and U.S. Bureau of Land Management records show that E. T. Carillo, J. T. Darrough, and John F. Stebbins located the first lode claims on Round Mountain on July 3, 1891. The claims were named the Flat, the Gold Note, and the Golden Gate; the Flat claim was relocated in 1903, along with several others staked for the first time that year. One of these claims, the Saddle Back, was situated between Round Mountain and Stebbins Hill, where Dick Patterson was said to have found gold in 1904 while herding sheep for Stebbins (Tingley and Berger, 1985:7). Eric N. Moody of the Nevada Historical Society credits Stebbins with the location of placer claims in Jefferson Canyon around 1891 and with the 1901 discovery of gold on Round Mountain on the Saddle Back claim (Moody, 1980:2), later called the Round Mountain Extension. In 1902, Stebbins and Dixon ran a tunnel 100 feet on the Mariposa vein on Stebbins Hill.

Stebbins's gold discovery seems not to have ignited the imaginations of the boomers who had flocked to Tonopah; nothing apparently came of his discovery. Stebbins and Dixon continued to prospect the area. In the meantime, sometime between late 1902 and 1905, Louis D. Gordon, a young mining entrepreneur from Austin (Moody, 1980:2) with good contacts in Goldfield, began to grubstake, or otherwise employ, Stebbins and Dixon.

Gordon, the single most important figure in the history of Round Mountain, was born in about 1885, but sources differ as to his parentage and upbringing. Norman Coombs, who knew Gordon for more than 40 years and had discussed the matter with him, contended that Gordon was the son of George Schmidtlein, a Smoky Valley rancher and prospector, and that Louis and a sister were adopted by a family named Gordon. Circumstances leading to the adoption are not clear, but the children's mother may have died and Schmidtlein may not have been able to provide for the children as he wished. According to Coombs, Louis Gordon was raised in the East, perhaps in Virginia, where he received his education (he may have attended Virginia Military Institute). Following college, he returned west to seek his fortune, eventually meeting his biological father in Smoky Valley. (When Schmidtlein died, he is said to have left Gordon his estate [Coombs, 1990, 1995].)1

Another source says that George Schmidtlein was, "by some accounts," Gordon's uncle (Moody, 1980:1). One published account of Gordon's life history relates that he was raised in Austin, and when he was 15 years old, he joined the U.S. Navy. He then attended the Naval Academy at Annapolis but soon found that the life of a navy man did not appeal to him. He moved to Philadelphia, where he was employed by E. C. Miller Company, a brokerage firm. He later attended college in San Francisco and eventually returned to Austin, where he worked at the Austin bank. Gordon was deeply interested in mining, especially in promoting. He pursued that interest in Round Mountain, where he, as one source put it, "From the very inception of the camp . . . stood as its sponsor and godfather" (Bohannon, 1907:109).

According to the Goldfield News, Louis D. Gordon was working an old silver property at Round Mountain in February 1906. The operation had been underwritten by a syndicate of Pittsburgh capitalists until an adverse report by a consulting engineer from Idaho persuaded the syndicate to close down the operation. In one of the great misjudgments in mining history, the engineer, whose name has been lost to time, did not like the porphyritic formation of the area (most of the early geological and mining reports of the area referred to the Round Mountain tuff as porphyry or rhyolite) (Bohannon, 1907:106, 109).

Even as a young man, Gordon exhibited what would be his lifelong faith in the mountain. In its first article on the discovery of gold at Round Mountain, the Tonopah Miner reported on March 24, 1906, that "years ago," Schmidtlein had secured claims on Round Mountain by doing the required location work. By February 1906, Schmidtlein had let his Round Mountain claims "run out," and Gordon asked Stebbins to relocate them for him, which Stebbins did on February 20 ("Southern Nevada Mining News: At Round Mountain"). The claims, apparently five in all, that Stebbins relocated for Gordon included the Sunnyside 1, 2, and 3 on the south side of Round Mountain, at the site of an old excavation. The Sunnyside claims, as it turned out, were at the heart of Round Mountain's treasure trove and included a rich outcrop on the Los Gazabo vein. It is not known why Schmidtlein let his filings on the claim run out; perhaps he had received bad assays—it seems unlikely he suspected gold was present. At any rate, Gordon had secured his place in central Nevada history by having the claims staked in his name and was to become the major player in the saga of the development of the gold at Round Mountain for the next half-century and beyond.

It is interesting that when George A. Packard, a reporter for the Engineering and Mining Journal, visited Round Mountain in October 1906, eight months later, he reported the presence of a dump on the north side of the Round Mountain "butte" that was "good for 100 ft." of

diggings and "must have been weathering some years." He also noticed the presence of an old cabin at the site (1907:150). The dump may have been Stebbins and Dixon's workings on the Mariposa vein; but if Packard's report was in error and the dump was on the south side of the mountain, not the north side, perhaps it could have been Schmidtlein's workings.

Stebbins had no sooner refiled for Gordon on Schmidtlein's old claims than one of those odd coincidences of history took place. Just ten days after the refiling, C. R. Scott, a resident of Manhattan, in association with Tonopah mining engineer Arthur H. Elftman, grubstaked two novice prospectors, Luther "Slim" Morgan (a cowboy and former railroad mechanic) and L. R. "Little Scottie" Scott, "to spend some time in the hills," as an article in the Tonopah Daily Sun put it ("The Round Mountain Strike Lucky Chance," March 16, 1906). On their first day out, Morgan and Scott, accompanied by burros, found themselves on the flat at the foot of the south side of Round Mountain. In a familiar scenario, "one of the men picked up a rock to throw at the animals to hurry them along. A glitter in the rock caught his eye and caused him to stay his hand. Looking at the rock he found it to have free gold scattered through it" ("The Round Mountain Strike Lucky Chance," March 16, 1906).

Because it was getting near dark, the two men made camp and the next day began panning the alluvium on the side of the hill, on the acreage that later became the site of rich placer diggings. They found gold-bearing float, traced it up the hill, then went up the mountain by way of a little draw, where they came to an open cut about 12 feet long by 9 feet wide on claims just located for Gordon by Stebbins. Rocks on the dump had been washed clean by the rain of previous years. Morgan and Little Scottie could see the rocks were "thoroughly impregnated with gold," and pannings from the muck also showed rich values ("The Round Mountain Strike Lucky Chance," March 16, 1906). Apparently they did not know that the site had recently been claimed by Gordon, so they staked some claims, then headed for Manhattan, where they enthusiastically informed C. R. Scott of their good fortune. One of the claims they had located was the Los Gazabo, which lay almost entirely within Gordon's Sunnyside claims.

Once they were in Manhattan, word of Morgan and Little Scottie's discovery spread fast. C. R. Scott and his partners were naturally greatly disappointed to learn that Gordon already controlled the old Schmidtlein workings, but they went ahead and attempted to jump Gordon's Sunnyside claims anyway, asserting their first discovery of the mineral in place. Gordon learned what Scott was doing and, consequently, was in no mood to be trifled with. He posted armed guards at his claims to prevent Scott from doing the required location work. By March 24, Gordon had bonded his five claims, including the Sunnyside 1, 2, and 3, to a group of investors headed by James R. "Sandstorm" Davis of Goldfield; Gordon stood to "clean up," as the Tonopah Miner put it on March 24, to the tune of $250,000.

In its first article on Round Mountain, on March 24, 1906, the Tonopah Miner called the discovery "one of the best ever in Nevada." On June 2, the paper summarized the excitement at Round Mountain by commenting that "the greatest gold excitement ever known now prevails in Nevada." Within days, the country for miles around Round Mountain was solidly staked out, with 100 people camping near Round Mountain and along Shoshone Creek. By late March, properties that showed real promise had been bonded to those who expressed a willingness to begin development work.

Coombs's Account of the Gold Discovery

Norman Coombs (1990, 1991-1995), a native of the Tonopah—Round Mountain area, knew many of the people involved in the discovery and development of Round Mountain. He offered an account of the gold's discovery there that differs somewhat from the one the author has pieced together from old newspapers and other published sources presented in the previous section. Coombs's version should be considered seriously along with the foregoing account not only because Coombs was blessed with an excellent memory but also because beginning in the mid-1920s, when he was a youngster, Coombs was friendly with Louis Gordon, Jack Stebbins, Slim Morgan, and others who took part in the discovery and development of the Round Mountain mines.

As related by Coombs, Stebbins's own version of the discovery of gold at Round Mountain went as follows: Stebbins said he was out riding one day on his ranch at the mouth of Jefferson Canyon when he found a large rock that was covered with what he thought were cubes of iron pyrite. He carried the specimen home and used it as a doorstop in his cabin at the mouth of Jefferson Canyon. In the meantime, he located a claim at the spot where he had found the specimen and dug the required prospect hole, which by law had to be at least 264 cubic feet. Not long after that, his friend Slim Morgan stopped by and noticed the specimen. Morgan asked Stebbins where he had found the rock, and Stebbins replied, "On a hill out there that sticks out of the desert." Morgan exclaimed, "Jesus Christ, that ain't . . . " Anticipating Morgan's assertion that it might be gold, Stebbins responded, "No, it's iron." Morgan, who was a prospector himself, contradicted Stebbins: "Hell, that ain't iron. That son of a bitch is gold" (Coombs, 1990).

The two rode out to the site. Morgan was understandably excited by the prospect of finding gold, but his enthusiasm must have been seriously dampened when Stebbins said, "It ain't going to do us much good, anyway, where I got this, because I traded it off." "Who did you trade it to?" Morgan asked. Stebbins related that he had traded the claim to George Schmidtlein for an old ranch in Smoky Valley (not the one near Kingston Canyon). When Stebbins and Morgan arrived at the site of the claim, Schmidtlein was already loading rock from the small dump Stebbins had made when he dug the assessment hole. Coombs (1990, 1991-1995) was told in the 1920s that Schmidtlein took $30,000 worth of gold-bearing ore from that dump alone.2

The New El Dorado

Word of the discovery of gold at Round Mountain spread quickly. But the news was received somewhat differently than when the first word came from Manhattan at a similar stage of development. The Round Mountain boom had the advantage of occurring in the wake of the Goldfield, Rhyolite, and Manhattan discoveries, which had prepared the mining world for big news of another gold strike in the remote deserts of central Nevada north of Tonopah, as with Manhattan. News from Manhattan in its first few months had occasionally been spectacular, but more often enthusiastic praise had been lavished on discoveries of middling value, on streaks of ore whose depth and extent were not always obvious. Sales of mining stocks had faced little regulation, thus Manhattan had been both a promoter's and a swindler's dream. Newspapers in Tonopah, Goldfield, and Rhyolite had all predicted a bright future for

Manhattan, yet the size and richness of the camp's gold veins had not necessarily backed up the vision.

The Round Mountain discovery was different. The specimens of gold coming from a number of ledges were truly spectacular from the beginning—much better than anything from the Bullfrog and Rhyolite mines, from Manhattan, or even from Goldfield. Specimens coming out of Round Mountain were among the best ever seen anywhere in the world. Early observers sometimes compared the Round Mountain specimens with those that had come from the rich mines of Cripple Creek, Colorado, in its boom days.

Assays of free-milling gold ore running as high as $60,000 per ton were reported to abound in the quartz, and nuggets the size of peas could be obtained by pulverizing samples of the ore. A panning that produced $2 or $3 worth of gold was said to be common, and it was not unusual to obtain $15 worth of gold from a small handful of rock. A bottle filled with nuggets from one of the ledges was taken to Manhattan and generated the predictable level of enthusiasm (Bohannon, 1907:106; "Another Camp of Great Promise," 1906).

In a headline story on March 23—one of the first articles written about the discovery—the *Goldfield News* hailed the boom:

Once more the restless prospector is on the move, and is now trekking across the sand wastes from all portions of Nevada to the Round Mountain country, scene of the latest successful quest for gold. Following closely on his trail is a rapidly increasing cohort of fortune hunters and adventurers of nondescript character, all bent upon picking up "something good" in the new El Dorado; each taxing himself to the very limit of human endurance in the effort to be the first on the ground. ("Another Camp of Great Promise," 1906)

Manhattan took a back seat as "Sooners" hastily packed their belongings and headed for Round Mountain: "Miners, prospectors, business men, capitalists strive with each other for precedence along the snow clogged trail leading to the latest of Nevada's golcondas and each day adds to the motley throng which, bedraggled and shivering, makes camp along the bleak hillside adjacent to the point of first discovery" ("Another Camp of Great Promise," 1906). Both Goldfield and Tonopah contributed their share of wealth-seekers, with more than a score of Goldfieldites arriving in the first days following the discovery, bent on securing holdings, as the *Goldfield News* said, "in proximity to the primal location" ("Another Camp of Great Promise," 1906).

Those who arrived early and secured holdings near the Sunnyside claims profited quickly. A group of three claims adjoining the Sunnyside group on the southeast—the Antelope, the Blue Jay, and the Ethel—promptly sold for $50,000 in cash. Someone paid $25,000 for an option on the First Extension, the Extension No. 1, the Red Top, and the Hot Stuff claims. The Black Hawk claim adjoining the Sunnyside on the northwest brought $30,000 for an option.

Immediately following the discovery, Louis Gordon's Sunnyside claim was besieged by a number of potential investors, but it was James R. "Sandstorm" Davis of Goldfield who plucked the plum. Gordon, who may have had previous dealings with Davis, apparently initially bonded his claims to Davis and his partners, who included J. S. Cook (a Goldfield banker), Lewis H. Rogers, and C. H. McIntosh, for a reported $140,000 (or $250,000, according to a different account), with provisions for a substantial first payment. But there was a problem: Whether justifiably or not, there was a cloud on Gordon's title to the Sunnyside claims. As previously noted, C. R. Scott justified his efforts to jump the Sunnyside claims by saying that he had been

the first to discover the mineral in place. Although Scott's Los Gazabo claim was situated almost wholly within the boundaries of Gordon's Sunnyside properties, the competing claims to gold in the rich outcroppings along the Los Gazabo vein threatened to embroil the new mining camp in a legal battle. Scott had interested some of the state's biggest capitalists and most eminent legal talent in the matter, and as one publication noted, the litigation "threatened to kill the infant prodigy in the bornin"' (Bohannon, 1907:106).

Louis Gordon, no doubt aware of how litigation had stunted Manhattan's development, intervened and likely saved the camp from years of crippling and protracted court battles. At some substantial sacrifice to his own interests, he moved quickly and effected a compromise: By the end of May 1906, a plan was worked out in which a group of Goldfield investors headed by J. P. Loftus and James R. "Sandstorm" Davis, and including John P. Sweeney and banker John S. Cook, purchased the Sunnyside claims. The group paid $80,000 and one-fourth of the capital stock of the company they then formed for the claims; the money and stock from the sale was presumably divided among Gordon, Stebbins, Scott, Dixon, Morgan, and Little Scottie (Moody, 1980:2). The name of the new corporation was the Round Mountain Mining Company. It had a capitalization of 1 million shares at a par value of $1 each ("Another Camp of Great Promise," 1906). Davis was appointed president; Gordon, vice president; Sweeney, secretary; Cook, treasurer; and Loftus, director. The Round Mountain Mining Company owned the Sunnyside—Los Gazabo Mine, the Blue Jacket Mine, and the Fairview Mine. The Blue Jacket Mine was located on Kelsey Creek southeast of Round Mountain.

J. P. Loftus and several associates left Goldfield for Round Mountain to examine the Round Mountain Mining Company's holdings for the first time on July 14, 1906 ("Visits Round Mountain Bonanza for First Time," 1906). Loftus returned a week later with a glowing report. He had seen big chunks of quartz with bands and fissures of solid gold; a single panning of ore yielding $45 worth of coarse gold, worth $100,000 per ton; an ore body from 8 to 40 feet thick, dipping into the earth at a 45-degree angle; a "dump" containing no waste because all of the work had been done in ore. The Loftus group spent two days industriously panning the entire length of a ledge over a distance of 2000 feet, and at no time did they fail to "find gold in quantity." Other mines located on the mountain by other companies were also favorably noted. Loftus concluded, "I am satisfied from the present showing that in Round Mountain another great gold camp is certain to be established in Nevada. . . . There is wood and water in abundance, and more will be accomplished here in a few months than can elsewhere be accomplished in years" ("Panned Gold by the Handful," 1906).

Work at the Sunnyside was already under way by the time the settlement was reached. By the end of June 1906, there were two incline shafts being sunk on the Sunnyside 1 claim, one to a depth of 65 feet with a 35-degree pitch—and every pound of rock removed in the sinking was ore. In addition, a 35-foot vertical shaft had been dug with a crosscut to ascertain the ore's width. There was also a 100-foot tunnel that "cut seams and stringers of quartz carrying exceptional values . . . every few feet" ("Development at Round Mountain," 1906). Assays taken by the new mining company were some of the best the world had ever seen, running as high as $190,000 in gold per ton of ore. With that much gold showing, it is understandable the entire property was under armed guard ("Goldfield Capital Gets Best in Round Mountain," 1906). By June, some of the ore from the Round Mountain Mining Company's operation was so valuable it was necessary to store it under lock and key. It was

valued at $10 per pound in gold, with a gross value of $1000 per sack of ore. The Goldfield News reported that several tons of such rock had already been sacked ("Round Mountain Keeps Up Its Rich Production," 1906).

By the end of June 1906, there were 15 mining companies operating at the site of the discoveries (Berg, 1942:127). The Round Mountain Extension Company was purchased and reorganized by A. R. Dearborn of Birmingham, Alabama, with some of the same officers also involved in the Round Mountain Mining Company ("New Company Formed on Round Mountain Extension," 1906).

The Round Mountain Sphinx and the Round Mountain Red Top Companies operated on the Los Gazabo vein system on the west side of Round Mountain. The Round Mountain Fairview Company, the Round Mountain Daisy Mining Company, which owned the Daisy Mine, and the Round Mountain Red Antelope Mining Company, which owned the Antelope Mine, operated to the east on Fairview Hill and on the ridge connecting Round Mountain and Fairview Hill (Tingley and Berger, 1985:10).

Nature's Treasure Trove

Every discovery of gold, or silver, or of any other mineral on the desert had its advocates. If the showing of mineral value was poor, the only advocate may have been the discoverer himself. But if the discovery site showed promise, .t was normal for a chorus of boosters, motivated by the excitement of potential wealth and by the desire to attract others, to tout the riches to be made and the importance of each new find. Usually the praise showered on a new prospect amounted to little more than hyperbole, because in most cases the deposits of silver and gold were not as important or extensive as their finders had initially thought, and in most cases, hoped. Enthusiasm for each discovery soon collapsed, then built up once again as new El Dorados flashed into existence, then disappeared overnight.

Round Mountain was an exception. The fantastic stories that commonly accompanied the birth of any new mining camp but which later proved to be wild exaggerations were, in fact, true for Round Mountain. The many beautiful gold specimens found in the first months after the camp's founding in early 1906 were enough to more than fully justify the considerable enthusiasm. When Round Mountain boosters touted the extraordinary richness of the gold there, they were not exaggerating; 90 years of production from one of the world's largest gold deposits has fully proved their claims. However, it actually took more than 70 years from the time of discovery to justify fully all the early hyperbole about Round Mountain gold.

Because the newly formed community at Round Mountain did not have a newspaper until early June 1906, the Manhattan Mail and newspapers in Tonopah and Goldfield served as advocates for Round Mountain. A Mail reporter wrote an eloquent description on June 20, 1906:

Out on that sandy waste this lonely hill rested peacefully and undisturbed for ages unknown and un-thought of by man, hoarding in its bosom fortunes beyond the dreams of avarice and gazed upon by the uninterested glance of the traveller in sweeping the landscape without thought or purpose. In the treasure vaults of that great hill have lain untouched in seemingly inexhaustible supply, stores of the precious metal for which men have struggled and battled from the dawn of the day of reason until the eventide. There, under that superficial stratum of barren, hungry looking volcanic flow, has been hidden for so long the purchasing

agent of nearly every human desire, perhaps luxury and enjoyment with its gratifying immunity from the care for every being on this globe. ("Nevada's Richest Gold District," 1906)

In that same issue, the Mail carried an editorial that would stimulate many a reader's imagination regarding the golden glitter:

Round Mountain, the latest addition to the list of Nevada's bonanza producing camps, is the marvel of the mining world. The story of its riches reads like a page from romance and the rapidity of its growth astonishes even the oldtimers, inured to scenes of mining excitement and of towns which sprang up in a night.

Less than three months from the date of the original discovery of gold in that section the camp has no less than half a dozen productive mines, and properties which are today prospects may tomorrow be in high-grade, so extensively and plethorically enriched with gold are the ledges. Throughout the entire area embraced in the Round Mountain district free milling ore predominates and the surface gravel holds valuable deposits of the precious metal.

Clinkers of almost pure gold have been unearthed on a number of the claims and nuggets are found with such frequency their discovery creates little excitement. ("Round Mountain a Wonder," 1906)

It is undoubtedly difficult for the modern reader - and even for modern miners—to comprehend how rich the Round Mountain ore could be. Specimens aside, large veins yielded from $15 to $25 per ton when gold was valued at $20 per ounce. A miner who found ore that rich in that quantity so close to the surface today would think he was mining on the other side of the Pearly Gates.

Yet it was the incomparably beautiful specimens that really drew attention. The Goldfield News called them "the golden wonders of the wonderful Round Mountain mineral area, Nature's cache." The Sunnyside produced specimens of quartz that looked as though they had been "sprayed over with an endless succession of yellow globules." The correspondent for the Goldfield News wrote that the yellow globules appeared to have been "wafted to their points of lodgement from the bow [blow] pipes of a coterie of prankish elfs during some underground bubble-blowing frolic in which molten gold formed the bubbles" ("Round Mountain Ore Runs High," 1906).

The ledge at the Antelope was described in equally glowing terms:

On the Antelope claim the ledge is seemingly one vast repository for Nature's cache of gold. Across a width of two feet gleam and scintillate in the rays of the miners' candles, a glittering succession of golden cubes and spirals and across the faces of the rock there is a delicate tracery of the precious metal. ("Round Mountain Keeps Up Its Rich Production," 1906)

Perhaps the most spectacular specimen was the famous Badger nugget, discovered on the Antelope claim in late May 1906. So outstanding was this specimen that it set off a second boom—an echo of sorts—that quickly followed news of the first discovery. A group of men had been camped at the foot of the hill below the Antelope claim, which was located east of the Sunnyside claims. The digging and howling of the camp dog drew the prospectors to a mound of dirt at the mouth of a badger hole. Closer examination revealed that the mound contained gold nuggets.

The prospectors returned to camp for picks and shovels, then proceeded to dig out the badger hole. All the loose dirt was found to carry gold and was put into ore sacks as fast as the men could shovel. At a depth of three feet, the badger tunnel dipped vertically. The prospectors

discovered that the badger's sleeping quarters were on a slab of rock forming part of a quartz vein. The men broke off a large piece of the ledge-12x16 inches—and removed it to the surface. To the prospectors' astonishment, the rock was coated on one side with nearly pure gold that ranged in thickness from about one-fourth to three-fourths of an inch. This slab suffered some breakage as it was removed from the hole, but even so, it proved to be the largest and richest nugget ever discovered in Nevada (Bohannon, 1907:106-107).

The "echo" rush initiated by the discovery of the enormous Badger nugget led to the development of the Antelope property, which featured a flat ledge from 1 to 4 feet wide that was rich in specimen ore, with the whole ore body running better than $25 per ton. In July 1906, 11 tons of high-grade ore from the Antelope worth more than $2000 per ton was sent in a single shipment to the siding at Millers (Bohannon, 1907:107).

The richness of the ore from Round Mountain and its tendency to occur in spectacular specimens can be demonstrated from accounts of early shipping records. Within the first year at the Fairview Mine, 200 tons of ore averaging better than $30 per ton and 500 tons at better than $15 per ton were removed, along with $10,000 worth of gold specimens. The production of about $13,500 worth of ore yielded only somewhat more than the value in specimens alone (Bohannon, 1907:107).

Never missing a chance for promotion, in May 1906, the Round Mountain Mining Company put about 30 pounds of specimens from its Sunnyside operation on exhibit at the company's headquarters in Goldfield. The Goldfield News called it "the greatest display of gold, taken direct from the ground ever shown in this camp, possibly ever shown anywhere in the history of gold mining. . . . The fortunate group of men who own it would seem to be favored by the Gods." Those favored, of course, included Louis Gordon and his associates. The display contained a gold value of $2000. The gold was in seams, bands, and crystals of solid metal from one-fourth to one-half inch thick, with assay values of $250,000 per ton ("Round Mountain Has $250,000 Ore," 1906).

That summer, J. H. Shockley, a well-known and reputable mining engineer and an officer of the Round Mountain Mining Company, set off on a tour of U.S. cities to the east to display a cabinet containing the specimens. He intended to visit Salt Lake City, Denver, St. Louis, Pittsburgh, Philadelphia, New York, and Boston to promote "the glory of Nevada and its mines." The sign on the cabinet read:

This gold was taken from the ground owned by the Round Mountain Mining Company of Gold-field, Nevada, property located in the Round Mountain mining district. This is probably the richest gold ever taken from a vein, having an approximate assay value of $250,000 a ton. It occurs irregularly in a four- to twenty-foot vein of payable milling ore. This exhibit is made not for the purpose of calling attention to any particular property, but rather to show the wonders and richness of Nevada's goldfields. ("Bonanza Round Mountain Ore to Make a Visit East," 1906)

As if to back up this statement, the directors of the Round Mountain Mining Company ordered that no stock be sold for the time being ("Bonanza Round Mountain Ore to Make a Visit East," 1906).

Gordon Runs Round Mountain Mining

On July 10, 1906, Louis Gordon married Cornelia W. Winson at Plainfield, New Jersey. After a honeymoon in the East, the couple returned to Round Mountain, whereupon Gordon furthered his business interests in Round Mountain. To facilitate handling his mining assets, he formed a brokerage firm, Louis D. Gordon and Company, and conducted business with an extensive group of clients in the East (Bohannon, 1907:109). In addition to his holdings in the Round Mountain Mining Company, he became "heavily interested" in the Round Mountain Combination, the Round Mountain Extension, the Round Mountain Antelope, the Round Mountain Sphinx, and the Round Mountain Fairview Companies.

Gordon also played the role of land developer in Round Mountain, having filed on the site for a town located just north of the mountain during the early stages of the boom. Initially, the town was named for him, but the place soon became known as Round Mountain, the name it retains to this day. In 1907, he received assurances that a railroad would be built to link the Western Pacific Railroad to the north with Tonopah, with Round Mountain as a principal station. He confidently predicted construction within a year (Bohannon, 1907:109), but the railroad was never built, which was perhaps Gordon's biggest error in foresight concerning Round Mountain's development.

Over the years, Gordon gradually assumed control of the Round Mountain Mining Company, renamed Nevada Porphyry Gold Mines in 1929. He became president and principal stockholder of the company and completely dominated its operation. Unlike the majority of successful capitalists of the era who invested in the mines of central Nevada—Charles Schwab, George Wingfield, and John Brock, for example, who took as much money out of mining camps as they could, caring little for the fate of the town and the miners and their families—Gordon seems to have augmented his managerial style with a human, caring attitude. Although he maintained a home in Reno, for years he usually lived and worked in Round Mountain. He was concerned with the mine's profitability, as any businessman must be, but he also seems to have exhibited an avuncular attitude toward those who worked for him and others in town whose fates he controlled. It could be argued that Gordon was as interested in the welfare of local people as he was in pure profits. In fairness, however, it must be admitted that some of Gordon's managerial style may have been due to his personality and views on business and some may be attributable to the economics and methods necessary to extract Round Mountain's gold.

Early Mining at Round Mountain

When Engineering and Mining Journal reporter Gordon A. Packard was in Round Mountain in October 1906, remarkable progress had already been made on several tunnels and shafts (Packard, 1907). By the camp's first birthday, the Round Mountain Mining Company had sunk a 170-foot shaft on the Sunnyside. A station had been cut at that level and a 50-foot crosscut had been driven to tap the ore ledge. The company had also sunk three incline shafts on the ledge, which was from 5 to 8 feet wide. Scott and Morgan had been given a lease on the Sunnyside No. 1; they had in turn sold their lease to four men, who had a crew working there, shipping both high-grade and mill-run ore. Two shifts of men were sinking the main shaft to the 300-foot level, and ore was being removed from drifts. Nearly 1000 feet of development work

had been done on the Sunnyside by 1907 (Bohannon, 1907:106). By 1908, the Sunnyside shaft measured 550 feet, and by 1910, it reached 900 feet.

By early 1907, the Round Mountain Sphinx Mining Company had a main shaft that reached 200 feet. The company was working three distinct ledges of ore that varied in width from 3 to 13 feet and produced gold values of $20 to $100 per ton.

By 1907, the Daisy Fraction had an incline shaft 50 feet deep exposing a ledge of ore 6 feet wide that averaged $50 per ton. One 800-pound load of ore from the Daisy Fraction sent to the mill at Central near Manhattan proved to be so rich in gold that it clogged the screens in the mill and would not pass through the amalgamation tables. That load of ore was later sent to the Selby Smelting Works in Utah and returned $14 in gold to the pound (Bohannon, 1907:107).

At the Fairview Mine, an ore body that was 11 feet wide was tapped in a 115-foot shaft. Shafts sunk at different points on the Fairview claim produced milling ore. The Round Mountain Great Western Mining Company had claims located between the Sunnyside and the Sphinx. Two hundred and fifty tons of high-grade ore were taken from a 103-foot incline shaft there (Bohannon, 1907:106-108).

In March 1908, the Nugget Directory, published by the Round Mountain Nugget, the local newspaper, listed 25 companies and 250 men at work in addition to leasers (Berg, 1942:128).

In 1909, the famous geologist F. L. Ransome visited Round Mountain and noted that the principal mine of the district, the Sunnyside, had an ore body fully 300 feet long and from 6 to 20 feet wide, with ore that averaged $10 to $15 in gold per ton. In 1908, the mine was producing $35,000 to $42,000 worth of gold each month (Ransome, 1909).

It should be noted, however, that the production figures for Round Mountain mining in the first seven decades of operation are quite unreliable because the occurrence of Round Mountain gold in nugget and specimen-quality forms made high-grading easy and inevitable—a miner or a placer worker could easily palm gold in this form. The mining companies took precautions, of course, but it was impossible to stop the high-grading. U.S. government figures indicated that the Round Mountain lode mines produced $122,261 in values in gold and silver in 1907. This figure rose to nearly $500,000 in 1909. By 1909, Round Mountain was second only to Tonopah in the amount of bullion tax paid in Nye County (Tingley and Berger, 1985:13), with hardrock out producing placer by far between 1907 and 1919. Records show that between 1906 and 1940 the Round Mountain Mining District produced $7,834,828 in gross yield, yet the real production figure was almost certainly double that, or more, given the high-grading. Old-timers who worked at Round Mountain believe it is fair to say that the camp probably produced somewhat over $15 million between the date of its discovery in 1906 and World War II, when the mines were shut down (Moody, 1980:1; Coombs, 1990).

The Round Mountain Mining Company was the largest producer in the camp from the outset. Through mid-1909, before it assumed nearly total control of the valuable properties in the vicinity by buying them out, the company out produced the smaller operations by more than ten to one (Ferguson, 1921). In May 1908, stockholders received $75,000 in dividends, and the company continued to pay a dividend every quarter for a number of years (Berg, 1942:132). On several occasions, as much as $10,000 in gold specimen ore was stored under guard in the office of Superintendent McDonald at the Round Mountain Mining Company (Bohannon, 1907:106-107).

In 1910, Gordon's Round Mountain Mining Company was producing $38,000 worth of bullion each month. The company had begun with 70 acres and had expanded to 343 acres by 1909. In 1923, the company controlled 2009 acres and placer rights for 216 acres, excluding its property in Jefferson and Jett Canyons. Its workings included a 1000-foot shaft with 5 miles of underground tunnels equipped with two hoists and a compressor, a 180-ton mill, and a 6-mile pipeline from Jefferson and Shoshone Canyons, and a 9-mile pipeline from Jett Canyon (Berg, 1942:132-133).

The Round Mountain Mining Company's production remained fairly constant through 1919 but slowed in the 1920s. The company continued to purchase mining properties in the area. In 1929, only five companies were left operating in Round Mountain, and those companies were then consolidated to form Nevada Porphyry Gold Mines. Thenceforth nearly all mining in the district was done by that company. It shut down in 1936 after nearly 30 years of operation (Tingley and Berger, 1985:13).

Early Mills in Round Mountain

George A. Packard, reporting for the Mining and Scientific Press, called Round Mountain a millman's "paradise, in striking contrast with some of the nearby camps." He noted that the ore was soft and that over 90 percent of the gold could be saved (Packard, 1908:808).

Initially, ore was hauled to Manhattan to be milled. The first large stamp mill in Round Mountain was erected to treat ore from the Fairview Mine (Tingley and Berger, 1985:13). By the end of 1906, the Round Mountain Mining Company had a mill running on Shoshone Creek, about 1 mile from the mine. Not long after, the mill was moved closer to the mine, and its capacity was increased to process 60 tons of ore each day. Water was piped from Jefferson Canyon. In 1911, this mill was enlarged again to 100-ton capacity and was expanded at least once thereafter (Berg, 1942:131).

In 1908, when Packard visited Round Mountain, four mills were operating in the camp. Mills belonging to the Round Mountain Mining Company and the Round Mountain Fairview Company were in operation by 1907. The Fairview Mill was located on Shoshone Creek, about 1 mile north, and had a 20-ton capacity in 1908. There was also a mill for the Sphinx Mine and a small custom mill on Shoshone Creek that took ore from leasers. By 1909, there were six mills running in the area, including a tungsten mill (Berg, 1942:128). Mills were powered either by wood or fuel oil; fuel oil cost 52 cents per gallon, and wood cost $8 to $10 per cord in 1908 (Packard, 1908:807-809).

Making a Buck

It was true that Round Mountain featured big ledges of milling-grade ore, but the occurrence of rich ore, as well as the marvelous specimens, were not altogether predictable—especially for all but a handful of experienced miners who could say with some success where the pockets of gold might be found. Moreover, although there was gold there and the company and the miners might know where it was, it was another thing to get it out. That was hard work—dangerous work! Thus, Round Mountain never attracted substantial investment from the big centers of capital in the East and on the West Coast; investment in Round Mountain was largely local, attracting mostly Goldfield and Tonopah investors.

Still, a miner who knew the ore and the rock at Round Mountain could always make good money (Coombs, 1990). Many miners who worked there did not understand the mountain and its treasure and consequently had to settle for wage pay, seldom prospering as leasers. But for those who knew the ore, to a substantial degree Round Mountain embodied the American dream—a dream made manifest and traceable to the California goldfields—to be able to attain prosperity on one's own initiative, to be largely independent of the restrictions and control of big companies, the rich, and the government. A miner at Round Mountain who understood gold and its occurrence there could get his share either through leasing or high-grading, or both. The gold was in the mountain; all a miner had to do was find it and come up with a way to get it out.

Round Mountain Placer

Placer gold was discovered in 1906, primarily on the south slopes of Round Mountain, in the same area where Slim Morgan and Little Scottie Scott had traced float up the mountain to the Los Gazabo vein. The placer deposits resulted from erosion of the Los Gazabo, Queen, and Placer veins and the stringers between them. None of the gold had traveled more than a few hundred feet from its source. Round Mountain gravel beds ranged from several feet to 50 feet deep and consisted of 15 to 20 percent large angular boulders. The remainder was sand and gravel. Because the bedrock was very uneven, it took considerable work to remove the gold from the crevices on the bedrock. Most of the gold was coarse, averaging 635 fine (63.5 percent gold), and was alloyed with silver (Smith and Vanderburg, 1932:71).

Dry Wash Wilson is credited with discovering the placer at Round Mountain in spring 1906 on land that he leased from the Round Mountain Mining Company and the Round Mountain Combination Mining Company. Early that summer, he installed two small hand-operated dry washers. Within a period of three months, he took between $40,000 and $50,000 from dry washing at the base of Round Mountain. Wilson also located several valuable claims on the placer ground himself. From 1906 to 1915, all placer mining was done by leasing ("'Dry-Wash' Wilson Gets Placer Leases," 1909; Beatty, 1907:254; Vanderburg, 1936:135) .

In the dry-washing system used initially at Round Mountain in 1906, gravel was thrown against a screen with one-inch openings. Material that passed through was shoveled onto a dry washer, featuring a screen with one-fourth-inch openings. Material that passed through the dry-washer's screen was fed onto a frame covered with coarse, heavy cotton cloth that was overlaid with riffles every four inches. A bellows situated beneath the cloth-covered frame discharged puffs of air through the cloth, which agitated the gravel as it moved down the inclined bed. Waste was discharged onto a steel sheet from which it was periodically shoveled away. Two men were needed to operate the device; one to shovel, and the other to turn the crank that operated the bellows.

The gold retained by the riffles, still mixed with some gravel and black sand, was brushed into a tub and processed a second time. After the second run, the tailings (which are normally rejects, but which had gold values in this case) were sacked for shipment, and the concentrate was further refined by panning. Black sand was removed with a magnet. Two men working one dry washer for about ten and one-half hours per day could handle approximately 17 tons of gravel. In 1906, dry washing at Round Mountain probably recovered about 70

percent of the gold values from the ore, producing from $2 to $10 in gold per cubic yard (Smith and Vander-burg, 1932:71-72).

In 1907, the Round Mountain Hydraulic Mining Company was organized by Wilson and Henry J. Bartlett. They piped water (leased from the Daisy Mining Company) from Jefferson and Shoshone Creeks to claims leased from the Round Mountain Mining Company. Water was carried to the placer site in 8-inch pipe, which was soon replaced with 12- to 15-inch pipe that was hauled from Austin by 20-mule teams (Berg, 1942:134-138).

By August 1907, 400 inches of water under 400 foot-pounds of pressure was being delivered from Jefferson and Shoshone Creeks and from the Indian Ranch. By October, the first giant hydraulic placer nozzle was sending 600 to 1000 tons of gravel through the sluice boxes every 24 hours Berg, 1942:135). Three giant sluice operations were working by May 1908—two on the Sunnyside, and one below the Sphinx. The gravels could be quite rich in gold. For example, one pay zone (a streak containing gold in a placer deposit) was encountered that produced $2000 in gold from 100 yards of gravel. In June 1908, the hydraulic placer nozzle uncovered 150 feet of gravel just below the surface that ran Si per ton for the first 20 feet, then averaged $10 per ton Berg, 1942:135-136). In 1911, Key Pittman, later a U.S. senator from Nevada, leased a placer operation from the Round Mountain Mining Company and was joined in the venture by his brother Vale, who went on to become Nevada's governor.

In 1914, the Round Mountain Mining Company began construction of a 45,336-foot pipeline to divert water from Jett Canyon, directly across the valley on the east side of the Toiyabes, to the placer deposit; the pipe, from 15 to 30 inches in diameter, was buried 42 inches deep to protect it from freezing. The Jett Canyon water line cost $150,557 to complete, and the water rights cost $28,410. The difference in elevation between the water source and the point of discharge on Round Mountain was 650 feet. In 1915, hydraulic operations using the water from Jett Canyon began in July and continued until September, when the flow in the creek began to decrease. It became clear then that Jett Canyon water would be insufficient, so the Round Mountain Mining Company purchased the water rights to Jefferson, Slaughterhouse, and Shoshone Canyons from the Round Mountain Power and Water Company (Berg, 1942:137-138; Vanderburg, 1936:136-137; Smith and Vanderburg, 1932:72-73).

The Town Grows

The town of Round Mountain developed at the northeast foot of Round Mountain. On June 1, 1906, the town consisted of only two tents. By the end of the month, Round Mountain had 400 to 600 residents. Although people speculated that Round Mountain would soon be more important than Goldfield (Berg, 1942:127), it never grew as large as Goldfield, Tonopah, or even Rhyolite. By 1910, the population had leveled off at about 350 residents, but then it dropped throughout the 1920s and 1930s. In 1940, Round Mountain had 234 residents, and by 1960, fewer than 100 (Moody, 1980:8-9).

As noted, the capital to develop Round Mountain came mostly from local sources, from Goldfield, Tonopah, and Manhattan. This reliance on local resources enabled the young community to weather the April 18, 1906, San Francisco earthquake, which hurt many Nevada mining communities by disrupting the flow of capital.

Nearly all the surviving historic nonresidential buildings in Round Mountain were constructed during the town's first two years of existence. Most were wood-frame buildings,

although a few adobe houses were built. The commercial center was on Main Street at the intersection of Stebbins and Mariposa Avenues. Important buildings included Round Mountain's foremost hostelry, the Tarbell, a two-story building owned by Fred Tarbell, and Chester Olive's general store, which was also the original location of the post office and the bank.

The Round Mountain Mercantile Company constructed a building in 1906 at the corner of Main and Stebbins; its proprietor was Frank H. Gove. A union hall belonging to the Western Federation of Miners Local 247 which had more than 30 charter members) was built in 1906 or 1907 on a site donated by Louis Gordon. In 1908, the Round Mountain Banking Corporation erected a one-story frame building that featured an interior lined with pressed steel of fancy design" and fixtures that had come from a defunct Manhattan bank (Moody, 1980:4). The new building had been open only three months when the bank folded. Other buildings included the Ideal Restaurant and Lodging House; Millett, Shuppy, and Myles's Grocery; the 'Walker Saloon; the Overland Hotel (owned by John "Coffee" Harris); a clubhouse for the Round Mountain Athletic Club, built about 1908; a post office; and the Round Mountain Mining and Stock Exchange, whose president was Louis Gordon. The Miners Union Hospital was completed by 1908.

Notable among local bars were the Nugget Bar; the Sunnyside Club; the Second Class Saloon; the Palace, with its false front; and the Round Mountain Club, which Slim Morgan opened in June 1908, using funds received from his discovery" of Round Mountain gold.

In the early years, Round Mountain's population .1pported many other buildings: general merchandise and grocery stores, laundries, lodging houses, cafés, restaurants, livery stables and corrals, a bakery, meat markets, drugstores, stationery stores, lumberyards, mining supply stores, barber-shops, blacksmith shops, an ice and cold-storage company, and a wholesale liquor store. Only five commercial buildings erected before 1910 remained in the town by 1980: the Miners Union Hospital and the jail, both built in Round Mountain, and Foley's store, the Palace, and the post office, all of which had been moved to the town from other locations (Moody, 1980:6).

Although Round Mountain had a volunteer fire department almost from the start, the town was lucky to escape major fires since the water system built by the Round Mountain Water Company was not installed in town until 1908, two and one-half years after the community was founded. The water company's office was located on Mariposa between Main and Market. That building was completed just as installation of a 15-inch water main through the center of town was finished.

Most of Round Mountain's residents lived in frame or adobe houses, although some people lived in the rear or on the upper floors of commercial buildings. Jack Stebbins built several houses and sold them to newcomers (Moody, 1980:4-6). In 1906, James Joseph "Black Jack" Raymond built an adobe house at Sunnyside and Jefferson (Nye County Historic Property Survey, 1980). Undoubtedly the finest residence in town was the house constructed by William H. "Will" Berg in 1915, which he built for his new bride, Lillian.

In 1907, the Round Mountain Banking Corporation was opened by Chester Olive and Nelson Rounsevell (Berg, 1942:143). Olive had come from San Francisco in 1906, leaving—on a hunch—just before the great earthquake. The discoveries at Round Mountain had just taken place, and Olive headed for the new camp. He pitched a tent, and because he was not

knowledgeable about mining, he started a small store. He became the local postmaster and a short time later opened the bank. He was also involved with Dry Wash Wilson in the Round Mountain Hydraulic Company. Olive was regarded as one of the most substantial citizens of the camp. He left Round Mountain in 1909 (Beatty. 1907:252).

The Round Mountain Banking Corporation started up with $50,000 in authorized capital in the unsecured notes of Olive and Rounsevell, payable to the bank with no interest in the amount of $26,000. George Bartlett, editor of the Round Mountain Nugget, contributed $100 and was made president, and Jack Stebbins contributed $500 and was appointed vice president. Bartlett and Stebbins were added as bank directors because it was felt they gave the bank respect and standing. The law required five directors, so Thomas McSorley was appointed to fill the last position.

The bank was started with a cash outlay of $3000 borrowed from the bank at Manhattan. Arthur R. Smith of that bank refused to loan the money unless a guard of his choice was in charge of the money at all times. On the day the bank opened, the money was spread out on the counter to give potential depositors confidence and to create the impression that more funds were in the vault. By the end of the first day, $2000 had been deposited; at the close of the third day, $12,000 was on deposit. By the end of 1907, the Round Mountain Banking Corporation had $70,000 in deposits, with less than $35,000 on loan. When the State Bank and Trust Company of Manhattan closed in August 1908, furniture and fixtures from that facility were moved to the Round Mountain bank.

The Round Mountain Banking Corporation did not last very long. It closed its doors in December 1908, because, it was said, "malicious and persistent reports" had caused depositors to make heavy withdrawals. The bank went into receivership. Two months after its closure, it was reported that there were enough funds to pay off all liabilities, but in the end, depositors were not paid (Berg, 1942:143-145).

As the town of Round Mountain grew, increasing demands were made for services from Nye County. An editorial in the Round Mountain Nugget, reprinted in the Rhyolite Daily Bulletin on April 22, 1908, complained that although the area embracing Round Mountain (Belmont, Manhattan, and Smoky Valley) was growing, the town was not represented when it came to county services. Residents of the area, feeling that it was human nature for county commissioners to favor their home districts, saw a need for representation. Members of a county committee on public roads and sanitation had visited Round Mountain in the spring of 1908 and had promised to do "their utmost to make improvements." Nevertheless, the editor wrote, "It will always be a toss up whether we get something or do not get anything, with chances in favor of the latter, so long as we are not represented on the board of county commissioners." At the next election, the editorial suggested, area voters should not cast their ballots on the basis of party or politics but should unite to put a qualified representative on the board of commissioners.

Many residents of early Round Mountain, like those of virtually all frontier mining communities in the West, were racially bigoted. In the middle of January 1908, a mass meeting of citizens was held in Round Mountain; the subject under consideration was the unwanted presence of minorities in the community. An item regarding Round Mountain in the Rhyolite Daily Bulletin on January 22 noted that "a resolution was passed warning all Japs, Chinks,

Niggers, and other undesirable citizens to stay away from that place." The report continued: "The edict has gone forth that Round Mountain is to be a white man's camp in the future."

Community Services

Most Nevada boom camps were located on the desert, far from water. Yet an adequate and reliable supply of water was essential if a camp was to survive and grow. Food was important as well, but it could be shipped in, as could fuel. However, if sufficient quantities of water could not somehow be provided, the camp faced difficulties.

Various plans for bringing water to Round Mountain were discussed early on. Two shafts were sunk in town at sites deemed favorable by water witchers, but little or no water was obtained. There was discussion about piping water from Barrel Springs, about 4.5 miles south. The community received its water in barrels until September 1908, when the Round Mountain Water Company laid a pipeline from Shoshone Creek to the camp. The system consisted of three reservoirs on the creek and 5-inch pipeline that distributed water throughout town. A patron could be connected to the water main for $25, which included a $10 meter fee, refundable when the water was turned off and the meter returned. In 1908, rates for water service were three-fourths of a cent per gallon, with a $5 minimum monthly charge. Those not connected to the water system continued to receive their water in barrels at a cost of $1 per barrel, lowered to 75 cents in 1909. Prior to institution of the system, water sold for $1.25 per barrel (Berg, 1942:144-146).

In January 1910, the temperature at Round Mountain dropped to 10 degrees below zero. Many of the water pipes froze in the ground and burst because they had not been buried deeply enough. Pipes had to be replaced throughout the town, and water was delivered in barrels until service could be restored. The Round Mountain water system was taken over by Ernest Brown in 1910. Around 1912, the system was acquired by Will Berg, who added two reservoirs over the next 20 years or so. Around 1935, a new line was laid from springs below the Indian Ranch in Jefferson Canyon. The cost for service in 1942 was $3.50 per month for a family and $1 for a single person (Berg, 1942:145-147).

The community organized a school in 1907. The first classes for children in the Round Mountain area were held that year. In late 1908, construction was begun on a new school. The 20x30-foot building, which cost $1500 to construct, featured large windows on two sides and a 7-foot¬wide front porch. Twenty-nine pupils were enrolled when the school opened that September. This building was used as a grammar school until 1937. Usually only one teacher was employed, although at times there were 40 to 50 pupils; frequently, half of the students were Indians. Two grade-school teachers were hired for several years in the mid-1930s. In November 1937, a new four-room schoolhouse for both high-school and grammar-school students was built with the help of Works Progress Administration (WPA) labor (Berg, 1942:148-149).

Round Mountain's library was founded in April 1907, with 37 books available for loan; the treasury held $20, and there were 10 library members. The first books, donated by the Tonopah Library, were duplicate copies of Tonopah's holdings and a 10-volume encyclopedia set. Within a year, the library had 332 volumes and 50 members, and a committee had been selected to draft a constitution and bylaws. Soon the library had sufficient funds to plan

constructing its own building on a donated lot, but people lost interest after a few years, and the plans were abandoned.

Round Mountain was never known as a churchgoing community and as late as 1942 had no church building. Services for a number of denominations were sometimes conducted in the school or town hall by visiting clergy from Tonopah and Austin (Berg, 1942:149).

Round Mountain's only newspaper, the Round Mountain Nugget, was founded by Henry J. Bartlett and James Travers. The first issue appeared on June 2, 1906. The paper began as an eight-page weekly printed in Tonopah. In 1907, it had a circulation of about 2000, and that same year, Bartlett became sole editor and publisher (Lingenfelter and Gash, 1984:221). Like the editors of all Nevada mining-camp newspapers, Bartlett expressed great optimism about the future of the camp from its earliest days. Bartlett and Travers were said to have invested $10,000 in their venture when Round Mountain had fewer than one dozen tent houses and no more than 50 residents, testimony to their confidence in the community's future.

Bartlett had a reputation as an entrepreneur. It was apparently his idea to develop the Round Mountain Hydraulic Mining Company, and it was his energy that brought the project to fruition. He procured most of the valuable water rights in the district, eventually supplying the mines and mills and the community with water. He may also have been involved in developing the Daisy Mining Company. Bartlett was reportedly the first newspaperman in Nevada to travel in his own automobile, which he christened the "Nugget Flyer." He was evidently well known in all the great Nevada mining camps of the time (Beatty, 1907:250).

In August 1909, Bartlett sold the Round Mountain Nugget to W. H. Bohannon. The following year, Bohannon sold the paper to Edward N. Buck, who shortened the name to the Nugget. The last issue was published on October 23, 1910. Local groups and mining companies produced newsletters from time to time after that, but the community has not had a real newspaper since the first decade of the twentieth century (Lingenfelter and Gash, 1984:221).

Social Life

The most important social activity of miners in any Western mining boom camp was probably gossiping about the mines, discussing who had found gold (or silver) and where. The second-favorite activity was consuming alcohol. The large ratio of saloons and bars to other types of businesses in most mining communities attests to this. A bar was usually among the first businesses opened in a boomtown. All that was necessary to start a saloon was to set up a plank bridging two barrels or sawhorses and provide some alcohol. Miners drank for several reasons. First, heavy drinking by a miner was a socially acceptable, even desirable, form of behavior—a norm. Second, people got bored. There was, in fact, very little for a miner to do in a boom camp other than work, gossip, and drink. Moreover, there were relatively few women in the camps, which further limited social options.

One might argue that there should have been plenty to do in any new community, for instance, improving living quarters, planting and tending gardens, and so on, but most boomtown miners were not very interested in improving their homes because most of them did not intend to stay. A miner had to follow the gold and silver; when the ore was depleted in one place, he moved on to another. His commitment was to the ore—it was his mistress, his dream, his reason for being. Only after a miner made a strike would he consider staying in a community. And many of those who did succeed on the desert chose to leave.

Miners also often turned to drink to ease the strain and fatigue produced by the repetitive work and long workdays. After all, they had to cope with the relentless anxiety caused by ever-present danger—one slip in a mine and a miner could be instantly killed or maimed. Disaster could occur at any time. The air in most mines was polluted by dust and by gases from machinery and blasting, which could leave a miner poisoned and starved for oxygen. Drinking and gossiping in the local bars afforded the miners of Round Mountain some respite from these worries.

Dancing in bars and brothels and at community functions was another important social activity. Once the town became established and more women lived there, dances were held every time there was something to celebrate—and often when there was not. Usually, dances were sponsored every one or two weeks by a community organization or a drinking establishment. Music was either provided by local residents or musicians might be brought in from Manhattan, Tonopah, or Austin (Berg, 1942:150).

A sewing club was organized in Round Mountain in 1910. The members, all women, met once a week in one another's homes to sew, joke, gossip, and take refreshment. A literary club was also established during Round Mountain's early years, but unlike the one in Manhattan, it did not last long.

Baseball was the important sport in the region. Games were played between Round Mountain and Austin, Tonopah, and Manhattan (Berg, 1942:151). Rivalries could become intense, with fans following their teams to games in other communities. In June 1907, a group followed the Round Mountain Mountaineers to Manhattan and held a pep rally as the fans marched up Main Street with the team. The jubilant crowd shouted this verse:

Round Mountain boys they built a mill
And they built it up on Sunnyside hill;
They worked all night and they worked all day
To make the gosh-darned stamp mill pay.
("The Downfall of Round Mountain," 1907)

Despite this enthusiasm, Round Mountain lost that game—"outclassed," the Manhattan Mail reported, "when they crossed bats with the Manhattan team, known from Central to Belmont as the terrors of the diamond" ("The Downfall of Round Mountain," 1907). In 1908, a game scheduled to be played in Round Mountain on Memorial Day—or Decoration Day, as it was called then—was played in a blizzard. Snow was shoveled off the bases and the pitcher yelled when he was ready to throw the ball. The opponent, Manhattan, was reported to have won that game also.

Basketball reached Round Mountain in 1928, when Round Mountain high-school students began playing it in the town hall. Townspeople sometimes played with them (Berg, 1942:151-152).

The Vucanoviches Move to Round Mountain

The mining camps of Nevada became the home of many immigrants. Large numbers of Yugoslavians worked the mines of central Nevada turn-of-the-century boom camps. The Vucanoviches were one such family. John J. Vucanovich and Anica Grubacich had both come to the United States from Yugoslavia. John had spent some time in Butte, Montana, before he moved to Tonopah. He went to Europe in 1914 as a volunteer in the Yugoslavian military during

World War I and returned to the United States in 1919. Anica Grubacich's brother had come to the United States, and he and Tripo Susich, another Yugoslavian immigrant living in Tonopah, wrote to Anica in Yugoslavia, enclosing a picture of Tripo, proposing that she move to Tonopah and become Tripo's wife. Anica agreed. Susich and Grubacich sent her $75 travel money, and Anica arrived in Tonopah on New Year's Eve 1911. The Susiches had four children. Tragically, after only seven years of marriage, Tripo died of silicosis, which he had contracted working in Tonopah's dusty mines. As a widow, Anica opened a boardinghouse and cleaned the Presbyterian church to earn money to support her four small children.

Like several other widows living in Tonopah during Prohibition, Anica produced and sold illegal alcoholic beverages to supplement her income. At night after the children had gone to bed, she fired up her still and made whiskey, which she sold locally. Her son George Vucanovich tells the story of another Tonopah widow with small children who, upon losing her husband, applied to county officials for relief. At that time, Nye County had a unique version of relief—officials immediately provided her with a whiskey still that had been recently confiscated from another, less-deserving illegal producer. After it had been installed at her residence, officials provided instruction on its operation. A neighbor who was handy at making copper tubing prepared copper coils for the widow's new still. He intended to charge $10 for the copper tubing, but when his wife learned of his price, she made her husband reduce it $5.

Anica supported her family in this manner until 1926, when she married John J. Vucanovich, who worked as a miner and bartender in Tonopah. The couple's only child, George, was born there in 1927. In 1929, the family moved to Round Mountain where Vucanovich opened a new business called Big John's Place. He ostensibly served soft drinks and sold tobacco, but in truth, Big John's was a liquor-dispensing establishment; it would not be accurate to call it a speakeasy because the front door was open to all. The bar itself had been trucked in by a man named Mr. McDonald, who operated a coal yard in Reno. In 1994, the building that housed Vucanovich's establishment in Round Mountain was being used as a church.

Inside Big John's was a front bar with about ten stools and a back bar with mirrors behind it. Three or four slot machines stood along a back wall. In the front, as one entered, a showcase displayed cigarettes and candy. In the back, there were several card tables where patrons could play poker and other card games. There was no dance floor. John Vucanovich kept his bar open after 11:00 P.M. on the chance that miners coming off the swing shift might want a drink before going home. Three mines were quite active in Round Mountain then—the Fairview, the Sunnyside, and the Gold Hill, which was located about 8 miles north of town. Vucanovich sold wine that he made from grapes trucked out from Tonopah by Pete Beko. George Vucanovich has vivid memories of his older brother, Bob, clad in midthigh-height white rubber boots, stomping grapes in a large tub.

The Vucanovich family lived in a house that stood next to the bar. The house had indoor running water, but the family also used an outhouse. Water was heated in a water jacket or reservoir in the cookstove. There were apricot, peach, and locust trees in the front yard.

In 1935, John Vucanovich suddenly contracted pneumonia and died, leaving Anica widowed in a rough mining camp on the Nevada desert for the second time. To survive, she leased out the bar and rented rooms in her house, staying in Round Mountain until her youngest child, George, was a junior in high school. She then moved to Tonopah because Round Mountain did not have enough pupils to maintain a school. George graduated from Tonopah

High School and matriculated at the University of Nevada at Reno before going into the army toward the end of World War II.

After her children left home, Anica returned to Round Mountain, where she lived alone for many years. In advanced age, she moved in with her children, first with a child in Wendover, Nevada, and eventually with George in Reno. At age 94, she died in Reno.

After Anica moved away from Round Mountain, George Vucanovich did not return to the town for many years. When he finally returned to visit, he realized once again what a special place it was. He remembered, with great fondness, growing up in Round Mountain, fishing in streams feeding into Smoky Valley from the Toquima and Toiyabe Ranges, and enjoying the wholesome life that previous generations of children growing up in central Nevada had also known. He said that he "loved to go up to the little old grammar school and sit on the steps and just look out over the valley. Those mountains are so magnificent. [As a child] vou didn't realize that they just come right up out of the valley floor and almost straight up" (Vucanovich, 1993). Economically, it was difficult for many families to survive, especially for families that had lost a father. Today, Vucanovich points with pride to the mines in Round Mountain, noting that the community built around them has "raised three or four generations" (Vucanovich, 1993).

Notes

1. On March 24, 1906, in its first known newspaper account on the discovery of gold at Round Mountain, the Tonopah Miner reported that George Schmidtlein, whom the newspaper said was Gordon's uncle, was "an old experienced prospector and rancher of Smoky Valley" ("Southern Nevada Mining News: At Round Mountain," 1906).

George Washington Schmidtlein was eight years old when his family moved from Iowa to Austin, Nevada, in the early 1860s. Around age 18, Schmidtlein set out on his own and returned to Iowa. He married and then returned to Nevada to start a farm 30 miles south of Austin and 4 miles north of Kingston Canyon. The young Schmidtlein couple raised vegetables, which were delivered by wagon to the mining camps—first to Austin, then to Round Mountain, Manhattan, Belmont, and Goldfield. It was not long before Schmidtlein was known as the Potato King of Smoky Valley.

Schmidtlein had an outgoing personality and a booming laugh that could be heard up and down the main streets of the small communities where he sold vegetables from his wagon. He was always greeted by a crowd of housewives who quickly purchased his produce.

When George and his bride arrived in Smoky Valley, mule deer, sage hens, and pronghorn antelope fed in the abundant tall grass; there was less sagebrush than there is today. Native black-spotted, or Lahontan, cutthroat trout thrived in the Reese River and tributary streams on the west side of the Toiyabes. In 1873, George and a brother, Henry, transplanted some of these trout to streams on the east side of the Toiyabe Range. The Schmidtleins cleaned out several vinegar and syrup kegs, loaded them on pack mules and horses, and rode over the crest of the Toiyabes to Washington Creek. There they netted enough trout to fill their containers and headed back over the mountains. They stopped frequently to aerate the water by dipping tin cups into the kegs and pouring the water back. For some reason, the trout in the kegs that had held sugar died, but those in the vinegar kegs lived.

The transplant was successful, and in less than seven years, five- and six-pound trout were being caught in Kingston Canyon. In the late 1960s, descendants of the fish transplanted by the Schmidtlein brothers could still be found in the Santa Fe and Shoshone Creeks (Vincent, 1968:26-27).

2. Another version of the discovery of the gold at Round Mountain can be found in the Goldfield News, March 23, 1906 ("Another Camp . . . ," 1906). According to this account, a man named Scott, first name not given, was employed by Louis D. Gordon to do assessment work on the Sunnyside claims. One morning while walking from his cabin to the Sunnyside claims to go to work, "he picked up a piece of float that fairly sparkled with gold. After some trouble, he succeeded in locating the ledge from which the specimen came and traced it for a distance of several hundred feet across the claims of his employer. A shaft was started on the vein and within a few feet from [the] surface it proved to be phenomenally rich." The article noted, "As is often the case in mining camps he [Scott] will profit little by the discovery" ("Another Camp . . . ," 1906). We do not know which Scott the article refers to—C. R. Scott, Little Scottie, or perhaps someone else. We do know the discovery was "recent," as dated by the article.

CHAPTER 12
Interlude: High-Grading at Round Mountain

Round Mountain was a high-grader's paradise. When a miner worked for the Round Mountain Mining Company, much of the ore he removed was lower-grade mill-run muck. However, the rich specimens that were commonly uncovered were relatively easy to remove from the mine if a miner had the know-how and chose to do so.

Finders Keepers

Usually a miner removed gold from the mine in his clothing or dinner pail, or on or within his body. It was also possible to smuggle gold out of the mine by concealing it in equipment or hiding it in holes in pieces of wood that were thrown over the dump and later recovered. However, these latter methods were used less frequently because they usually required a confederate on the mine's topside. The more usual way to high-grade was for the miner to have the gold specimen concealed on his person and at some point transfer it from his work clothes or dinner pail to his street clothes in the change room. Companies sometimes required miners to keep their work clothes in one section of the change room and pass naked to another section where they kept their street clothes. Even where this was the practice, the miners were sometimes more clever than their bosses. Miners would conceal gold dust in the hair or mouth or even in receptacles inserted into the rectum. Since gold is quite heavy, even small quantities are valuable, and small amounts daily added up.

The Round Mountain Mining Company never went to extreme lengths to apprehend high-graders. Perhaps this somewhat lax, even humane, approach had something to do with Louis Gordon's personality. It may be that Gordon simply attributed high-grading to human nature, or he may have viewed it as being one of the costs of doing business. Gordon once quipped, "I'm paying them $4 a day to steal my gold" (Coombs, 1990:202). During the late 1920s and early 1930s, there were about 200 miners working at Round Mountain, and old-timers estimated that as many as 50 percent of them were high-grading. The majority of those who were not either did not understand gold and its appearance in the rough or had no opportunity to high-grade.

It was nearly impossible to prevent high-grading completely in the 1920s and 1930s, even with the most determined policing. Today, open-pit operations, which handle ore in high volume, offer miners few opportunities to pilfer from high-grade streaks. However, the ore at Round Mountain was not rich enough for open-pit mining, given the technology current at that time. High-grading took place when a miner worked the small rich seams and pockets occurring at Round Mountain by hand, often alone in his work area—and at Round Mountain, that was how most mining was done. Furthermore, if management had gone to high-volume production methods, the company might have lost many of its good miners, who stayed on only because of he high-grading opportunities.

The basic rule of the high-graders was summarized by Norman Coombs: "If you're high-grading, you take some and leave some, because the company's got to operate." If it became known that a miner was stealing more than he was producing, the other miners would take

steps to see that he was run off the job. "You don't wait for the company to catch him," Coombs said (Coombs, 1990:202).

According to Oswald Coombs, Norman Coombs's father, the typical attitude of the high-grader was that "God put that there and the first one that gets it, it's his" (Coombs. 1990:65). Most miners were scrupulously trustworthy in other aspects of their lives, but when it came to finding gold in the mine, it was finder's keepers—up to the point they believed was fair and not seriously damaging to the mine's economic well-being. As Norman Coombs put it, "I know people who wouldn't cuss or anything, and they had some big gold. You can't trust anybody with gold" (Coombs, 1990:65).

A day's pay at Round Mountain during the early 1930s was $4, yet there were single days when a miner could make $1000, which was the approximate monthly income for an experienced high-grader then. On average, Norman Coombs estimated that high-graders were making at least five times their wages in high-grade during this period—but they were also producing gold for the company worth five times their wages (Coombs, 1990:225).

One of the most interesting methods of high-grading at Round Mountain was used by Charlie Farrara. He calculated that on one magnificent day he took $22,000 out of the mine. All the major workings at Round Mountain were interconnected. A miner could go from a shaft or drift in one mine to a similar shaft or drift in another. These properties often broke through to the surface, sometimes in areas where there was not much human traffic. Farrara's method was to enter the workings through an old stope (a big hole or cut that has been worked out) that had broken to the surface and carefully make his way down through the various under-round connections to a site where he knew there was some nigh-grade or where he had stashed specimens earlier. Using buckets, he would carry the high-grade specimens back the way he had come.

Coombs said Farrara lived in a company house, but he mountain was his personal bank. Once, Farrara turned up In Round Mountain in a fancy new car, and people asked him how he could afford it. He explained that an aunt had died and left him some money. However, when asked by young Coombs what had really happened, he replied, "Aww, I never had an aunt. This is my aunt right here," and he pointed at :he mountain. Then he explained to Coombs how he took the specimens out in buckets at night by his secret route Coombs, 1990:225).

In 1935, during the Great Depression, the Round Mountain Mining Company's miners became restless (perhaps they were having a hard time finding high-grade in the mine). They decided their pay should be raised from $4 to 54.50 per day for muckers and from $4.50 to $5 per day for miners, and they threatened to go on strike. A meeting was arranged between Gordon and the miners in the change room. Bill Bennett, an older miner, had been chosen as the miners' spokesman. He explained to Gordon the workers' desire for an increase in wages. Gordon replied, "Well, we're barely breaking even now. If I raise your wages it's only going be worse." Bennett replied, "Well, we're losing money ,working here too. So let's just shut this son of a bitch down and all go home." All the miners stood up and started filing ut of the change room. Gordon followed them outside and said, "Now, wait a minute." He called them all over to the parking lot by the mine dump. "There's fifty cars on this lump and there isn't one of them a year old," Gordon said, pointing at the rows of shiny automobiles. "They're all brand new and you're starving to death?" Gordon and the men argued back and forth for a few minutes, then Gordon capitulated. "Well, I'll tell you what I'll do," he said. "I'll raise the wages, but if it goes

for three months where I'm going behind we'll shut her down." Three months later that was exactly what happened—and he made a deal to sell the mine (Coombs, 1990:226).

Black Jack Raymond

At Round Mountain there was a mine on Fairview Hill called the Black Jack, which consisted of two unpatented claims, the Shannon and the Monte Cristo. During the 1920s and 1930s, they were owned by a former gambler, a blackjack dealer known as Black Jack Raymond. He was an older man by then, a member of Louis Gordon's generation. Raymond had been an itinerant gambler in Austin, Mina, Las Vegas. and elsewhere in the West. He was fairly well known around Nevada. He acquired his two Black Jack mining claims, perhaps from Slim Morgan, when he settled in Round Mountain. The Black Jack Mine produced some, though not a great deal, of gold.

James Joseph "Black Jack" Raymond grew up on a Texas farm. He put down his hoe one day in 1880 and disappeared for 20 years, surfacing in Mexico, but what he did there was a mystery. Raymond, a natural gambler, played all of the games, but his favorite was faro. He left an indelible mark on the gaming profession. Some say that he introduced the game twenty-one to gambling and that it was dubbed "blackjack" after him. He is generally credited with introducing the game to fancy western emporiums, such as Tex Rickard's Northern Saloon in Goldfield (Lewis, 1971:28-29).

Raymond was known throughout Nevada as a buyer of high-grade, and his reputation was justly deserved. He was the largest high-grade buyer in the state (Lewis, 1971:29).

Raymond had more money than he could reasonably use. He secreted cash in Mason jars and buried them in holes dug near his cabin. He knew exactly where each hole was located because he made mental notes of the distances in paces, which he never forgot. Raymond would set off with the loaded jars for Manhattan or Goldfield to gamble and drink sour mash. Although he always carried several thousand dollars in cash on his person, he often borrowed money from a certain Round Mountain shopkeeper. Knowing his reputation for high-grading, the shopkeeper suspected that Raymond did not really need the money that he borrowed. On one occasion, he marked the bills he loaned to Raymond, and sure enough, Raymond paid him back with the marked bills. When the shopkeeper asked Raymond why he paid back with the same bills he had borrowed, Raymond replied that he only borrowed to keep his credit good.

Raymond fell in love with a girl from a well-established family in Smoky Valley. She returned his love, but her family disapproved of Raymond's occupation and refused to let the girl marry. Raymond never forgot her and never married. Georgia Lewis (1971) maintains the girl did not marry, either. Still, Raymond knew how to have fun and was known in Smoky Valley for his excellent dancing, for which he won several prizes at get-togethers. As is the case with many lifelong bachelors, Raymond was a good cook. He won first prize in a cake-baking contest, much to the chagrin of the female contestants.

Once gambling was legalized in Nevada and Las Vegas began to develop a reputation as a gambling mecca, Raymond moved there. He ran several games at the Pioneer Club on Fremont Street when Tutor Scherer and Farmer Page owned it. He also ran a blackjack game at the Wagon Wheel in Whitney, one of several small communities that sprang up near Henderson in the Las Vegas Valley during the construction of Boulder Dam in the 1930s.

When engaged in a card game, Raymond had amazing powers of concentration. Several times, when knives, bottles, and glasses were being hurled in the Wagon Wheel, Raymond remained in his seat and quietly said, "Ante up"—despite the fact that the other players had ducked under the table.

In April 1943, Raymond was found dead on the railroad tracks near Bonanza Street in Las Vegas. He had left a downtown club early in the morning and had not been drinking. His gold watch and elk's tooth, which were always in his possession, were gone, as was his bankroll. Because nothing remained of the large amount of money that he had made throughout his life, old-time gamblers made an effort to pay his funeral expenses, but Tutor Scherer refused to let the others pay, absorbing the cost himself (Lewis, 1971). Some of those who knew Raymond believe that he jumped off an overpass in front of a train to kill himself because he felt that he was old, broke, and had no reason left to live (Coombs, 1990:220).

Fencing High-Grade

The gold at Round Mountain was approximately 650 fine, which meant that 650 parts of every 1000 in a piece of gold were pure gold, the remainder being silver and other elements. At a price of $35 per ounce, a Round Mountain nugget weighing one ounce was worth only about $20. During the 1930s—in fact, until the 1970s—it was against the law in the United States to be in possession of gold that had been melted into bullion. Miners who wanted to sell their high-grade therefore needed to fence it. Moreover, gold could be traced to its source because gold from every mine in the world, or certainly from every mining district, occurs naturally in a unique ratio with other elements. Chemical analysis of a gold specimen can therefore reveal, with a high degree of certainty, where the gold came from.

The form of gold that occurred at the Black Jack Mine was identical to that being high-graded at Round Mountain. As a consequence, Black Jack Raymond became a gold buyer, a fence for the gold high-graded from Louis Gordon's Round Mountain Mining Company. Miners who had surreptitiously removed specimens from the company's mine would sell them to Raymond at a discount, usually receiving $12 per ounce.

Raymond would then refine the specimens, making dore from them. Dore is made by mixing gold with mercury in order to separate the gold from whatever coarse impurities occur with the small grains of gold (gold and mercury have an affinity). The liquid like combination of mercury and gold is placed in a chamois or a piece of unbleached muslin and squeezed. The gold remains inside the chamois, but some of the mercury passes through it and is saved to be reused. A ball of amalgam, composed of gold and mercury, stays inside the chamois. The amalgam is then heated, and the mercury is evaporated and then condensed to be reused. The gold that remains has a spongy texture; some of it melts, fusing into a heavy clinker. The gold clinker, or dore, can then be melted down into a bar or sold as is. Raymond sold the dore to the U.S. Mint for $20 per ounce. At that time it was against the law to melt the dore (Coombs, 1990:100, 229).

In 1936, the Chinese began buying high-graded gold in Round Mountain for $30 per ounce, 50 percent more than Raymond was paying. Moreover, no questions were asked about a little impurity in the specimens. Chinese buyers would appear unannounced in town, do business, and then depart just as quietly. Presumably, the Chinese were smuggling the gold back to China.

In later years, while gold was still $35 per ounce, Louis Gordon developed connections with some Lebanese buyers who were paying substantially above market value for gold. Coombs, who was leasing in Round Mountain at the time, was getting $50 per ounce for his gold from the Lebanese when the mint was paying only $35 for the Round Mountain gold. The Lebanese were actually paying $75 per ounce for pure annealed gold, fully melted and made into bars, which made the gold very difficult to trace. One miner in Round Mountain who was working on a particularly good streak figured that when he had $1000 in gold at $35 it was time to quit for the day. In the early 1930s, Coombs might have $7000 or $8000 in his possession, which was a lot of money during the depression (Coombs, 1990:224, 230).

So I'd see a guy my age get hurt in the mine, or anybody get smashed or killed (they killed 6, 7, around here), and I said, "That could be me." And I'd have all this money—had the cash at home, hidden somewhere—generally buried, so fire wouldn't get it. I'd think, "Hell with this," so I'd quit and take off and then I'd blow all that money and come back ragged-ass broke. (Coombs, 1990:232)

In the early 1930s, Round Mountain was booming with high-grading. There were eight or nine saloons in town, and they were packed every night. Coombs remembered that

it was nothing to take a chunk of high grade up to old Black Jack, if he was up there and had the money (half the time he gambled it off too). . . . Sometimes you'd go up there; if he had the money, he'd give you $10 for a chunk of gold that was probably worth $100. But you'd do it to get some money to drink or gamble with or something. I should have had a fortune. But like my dad used to tell me, "Jesus Christ, you're a young kid."

You know, I was raised with this goddamn gold business, my stepdad and my dad and all. All I ever heard at the dinner table was bore and drilling and so on. I would get hold of this gold and I'd blow the money. He'd tell me, "[with] your knowledge of this goddamn stuff [and] experience with it . . . if you could hold still for 5 or 6 years, you'd never see a poor day the rest of your life." He's talking to a kid who's 16, 18 years old. I could see that, too. And I would start saving my money, and I'd get around $7000—$8000, which was a hell of a lot of money. Most people were in bread lines, for Christ's sake.

Oh, I'd go all over. I'd go back east some-times. . . . Hell, the sky was the limit; give it away. I'd come back broke and then I could see, "Goddamn, my dad's right. I've got to just put this away." I figured I was an old man when I was 25 anyway, you know. I'd see all these young guys dying with this con [silicosis]. Of course I knew the Sunnyside never had much abrasive dust in it. (Coombs, 1990:232-233)

There were two or three other high-grade buyers in Round Mountain. They did not do as much business as Black Jack Raymond, but they did represent alternative outlets. Sometimes buyers traded among themselves. If one dealer had purchased gold from the Reliance Mine in Manhattan, he might trade it to Black Jack Raymond for Round Mountain gold, knowing that Raymond also dealt in Reliance gold (Coombs, 1990:228).

Almost no one who worked at the mines in Round Mountain was exempt from high-grading. Millmen who worked in the mill where the gold was extracted had excellent opportunities for taking the gold. A millman never worked for more than four or five years before he retired, according to Coombs. Even Gordon himself was not immune. According to some observers, he also removed valuable specimens from the mine. Coombs once remarked to Gordon, "You don't even need to go in the mine. You can just wait till you get it in a bullion

form and then take it." Gordon did not answer his youthful employee. Gordon did not dispose of what he had taken through Black Jack Raymond, however; perhaps he had contacts in Reno, where he maintained a house and spent time, or perhaps he simply collected the prize specimens (Coombs, 1990:224).

Many of the rich specimens that the high-graders removed from the mines at Round Mountain during the first three decades of the camp's life would be quite valuable today for jewelry, worth many times their original value. The sheets of gold found in the seams and the bundles of wire gold would be almost priceless if they were made into showpiece jewelry, but in the 1920s and 1930s, the miners did not care about the specimens' value as gold—their interest was strictly in the gold's discount value.

Miners believed they could not trust even the U.S. government. For example, Norman Coombs learned that when he shipped gold to the U.S. Mint in Denver, Colorado, it was best not to assume the employees there were trustworthy. Precautions were necessary to minimize any opportunity for an employee to steal a portion of a mine's shipment. Because the government was the only legal gold buyer at that time, this was difficult. If a miner shipped plain gold nuggets freshly recovered from a mine or stream bed to the mint, there was a good chance that he would be paid for less gold than he had shipped. It was not uncommon for a miner to receive a check for six ounces of gold nuggets when in fact he had weighed and shipped ten ounces.

When shipping dore, savvy miners learned to heat the dore to a somewhat higher temperature than the mint liked, to assure that all of the gold had congealed into one lump and that there were no loose or poorly congealed pieces that could fall off. When loose pieces of dore were sent with the main mass, miners often were not paid for them. Coombs and others believed they went into the pockets of mint employees. If a miner complained to the mint, saying he had sent ten ounces of dore and had only been paid for nine, the reply from the mint would be that the miner had probably used an inaccurate scale. Norman Coombs experienced this even when (before shipping) he took pains to weigh his dote carefully on highly accurate scales belonging to Nevada Porphyry Gold Mines—and was still underpaid. Coombs's solution was to overheat the dore by mint standards. At times the mint would complain, sending a note back with his check, saying that he was using a little bit too much heat. Coombs would just say that he was simply trying to make sure he had burned all the quicksilver off the dore (Coombs, 1992).

CHAPTER 13
I he Development of a World-Class Mine

From spring 1906, there was no doubt that there were abundant quantities of gold at Round Mountain—the hardrock miners (and those who high-graded) had proved that. Dry Wash Wilson had also proved that good money could be made on Round Mountain placer. However, the development of a world-class mine at the immense gold deposit took a very long time.

Trying to Make a Gold Mine

During the 1920s, as gold production at Round Mountain slowed, Louis Gordon continued to absorb other mining properties at the camp, consolidating them to form Nevada Porphyry Gold Mines. Gordon tried sampling the dumps (he may also have sampled some of the underground workings) to determine if a 2000-ton-per-day milling operation was feasible, but his efforts came to nothing. Yet Gordon's thoughts of installing a gigantic mill at Round Mountain were clearly not misguided. As early as 1916, in a private report, C. E. Julihn acknowledged the extensive mineralization of Round Mountain and Stebbins Hill, suggesting that "an industry of exceptional magnitude might be created if the existence of millions of tons of ore could be demonstrated" (Tingley and Berger, 1985:13-14).

When the price of silver fell in 1928, many miners from Tonopah went to work at Round Mountain. The Great Depression hit in 1929, and after Franklin D. Roosevelt took office as president in 1932, the price of gold was raised from $20 to $35 per ounce. In 1930, Gold Hill to the north, which employed more than 100 miners, shut down. Many of those miners found work at Round Mountain. Nevada Porphyry Gold Mines remained in operation, and the ore the company produced was milled at the Sunnyside Mill. Workers were employed underground and were being paid a reasonable wage for the depression era. Moreover, miners with the knowledge and desire could supplement their income by high-grading.

Toward the end of 1935, Louis Gordon sold Nevada Porphyry to a company called Goldfields of America, which was represented by A. 0. Smith. Goldfields was purported to have been financed by ten investors who had put up $1 million each; partners included former world heavyweight boxing champion Gene Tunney and industrialist Walter Chrysler. Smith undertook extensive sampling of the old underground workings, dumps, and placer; he also sampled the supposedly barren country rock in the vicinity, in order to assess the feasibility of developing an open-pit mine. Goldfields operated an enormous assay office at Round Mountain. At the height of a yearlong sampling effort in the mid-1930s, the company was processing nearly 200 tons of samples per day. The program included 27,000 fire assays performed on roughly 10,000 different samples.

Gordon had retained between 5 and 10 percent interest in Nevada Porphyry when he sold it, despite the fact that Goldfields had wanted to buy him out. Smith had always assumed that Gordon would eventually sell his percentage, but when Gordon continued to refuse, Goldfields turned the entire property back over to Gordon. The company's decision came partly from frustration with Gordon's refusal to sell, but it also reflected disappointment. Smith's

sampling had not shown the anticipated high gold values—in fact, the results were more than 150 percent lower than those from Gordon's earlier sampling effort (Coombs, 1990:217; Tingley and Berger, 1985:14).

After Goldfields pulled out in 1937, the large mining property lay almost fallow. A few leasers and chloriders stayed on, working for Gordon and other leasers. (Chloriders were selective miners who took only the best ore, often first tunneling alongside a vein of gold or silver, then going back and slabbing the vein off into the newly driven tunnel. thereby preventing the ore from becoming contaminated with waste while driving the tunnel). Those miners who really understood the mine and its characteristics prospered. Norman Coombs, one such leaser, recalled that there were "a few snipers [small-time "scavenger" operators] like myself. When I'd get hungry I used to go back. . . . I hung around there and I could always . . . beat wages" (Coombs, 1990:218).

The Dodge Construction Company obtained a lease in 1938 and set up a placer plant toward the town side of Round Mountain. Although plenty of water was available on the south side of Round Mountain, there was less where Dodge set up its plant. That was not an impediment to the Dodge operation, however, because it did not require large amounts of water. The Dodge plant's processing capacity was only about 1000 tons per day, which was small compared to the capacity of hydraulic placers used there in the early days. The company made good money when it worked the gravel in a rich streak of placer that ran up the hill, but when the streak ran out, Dodge had a difficult time making a profit. The company quit in 1939, leaving a modest-size pit, after digging out between $600,000 and $700,000 worth of placer gold. About 18 men were employed by Dodge, and there was extensive high-grading by employees. Jigs were used in the mill to catch the gold (Coombs, 1990:235; 1991-1995). After Dodge moved out, once again only a few hard-core chloriders and snipers continued working underground. The mine was formally shut down during World War II, although a few old-timers continued to dig unofficially.

Modern Placer Mining

Modern development of the enormous deposit of gold at Round Mountain began in 1946, when the Round Mountain Gold Dredging Corporation took the property over from Louis Gordon. The company was a wholly owned subsidiary of Yuba Consolidated Goldfields Limited of San Francisco and the Fresnillo Corporation. Engineering and design studies for mining the placer were completed in early 1949. The parent companies had had extensive experience in both hardrock and placer mining, and Yuba had operated the dredge at Manhattan during the late 1930s and 1940s. Fresnillo, owned by a South African gold mining company, operated a number of mines, including a large silver mine in Mexico. Several thousand acres were leased for 30 years from Nevada Porphyry Gold Mines for a 10 percent royalty on all gravel and alluvials and a 6.5 percent royalty on all lode deposits ("Round Mountain Gold," 1950:27).

In 1945, Walter C. Browning, a Los Angeles consulting engineer who eventually became a vice president of the Round Mountain Gold Dredging Corporation, began weighing development options for Round Mountain, initiating sampling and exploration of the property. Preliminary designs in 1947 called for a very large placer plant with an elaborate transport system to move the gravel from the pit to the processing plant.

When the design of the mining and milling system was complete in 1949, much of the necessary equipment was manufactured at Yuba's plant near Benicia, California. In all, 1000 tons of machinery were fabricated, mostly in modules, which were then shipped to Round Mountain and assembled. Browning's project was the largest gold-mining development effort undertaken in North America since that in Juneau, Alaska, decades before. The total investment for the enterprise was $3 million, the largest expenditure for a gold operation since well before World War II ("Round Mountain Gold," 1950). The design of the plant, the mining and milling methods, and the equipment used offered concepts new to the mining industry at the time.

People had known for many years that the Round Mountain placer deposit was immense. The obstacle to development had been that the deposit could not be worked like conventional placers. To begin with, the placer was relatively low-grade, containing perhaps no more than 25 cents' worth of gold per ton of gravel. Conventional dredges that floated on a pond would not work at Round Mountain, where the deposit of gravel was well over 200 feet thick. The biggest dredge ever built, Yuba's Number 20, could dig only 124 feet below the water level. Furthermore, Round Mountain gravel contained numerous large boulders, the bedrock was on a steep slope, and the gravel itself was too porous to hold a dredge pond ("Round Mountain Gold," 1950; "Nevada Placer to Handle 500,000 Tons Monthly," 1952:1).

The gravel at Round Mountain had another unusual characteristic. Most placer gravel comes from a river channel and has been smoothed, rounded, and polished by running water. The alluvium containing the gold at Round Mountain had never been in a water channel. The rocks and pebbles had simply rolled down the mountain and had therefore remained much more angular than normal placer gravel. Still, angular gravel had an advantage—it could ride on a steeper conveyor belt without dislodging.

The Round Mountain Gold Dredging Corporation used an innovative method to mine the placer and convey the gravel to the mill. The placer operation was directed by Edwin H. Oshier, the field superintendent. Macy Meisenheimer, the general foreman, had worked in gravel pits near Los Angeles that used a drag line and a flexible conveyor system with an electric shovel.

Such a system was adopted at Round Mountain. A large Bucyrus-Erie 54-drag line with a 110-foot boom stood at the top of the pit, which was then 200 to 300 feet deep, and raked the sides of the pit with a 7000-pound plate that caused the gravel and boulders to break loose and accumulate at the bottom of the pit. A Bucyrus-Erie 170-B electric power shovel with a 7.5-yard bucket stood at the bottom of the pit and loaded the material into a hopper. Another drag line stood in reserve near the power shovel to periodically tilt the grizzly—a huge screen made of parallel rails—on top of the loading hopper, which kept large boulders from entering the conveyor. The hopper and its attached conveyor system could be moved into position near the shovel as the work proceeded around the perimeter of the large half-circle pit. The radius of the half circle was determined by the equipment, which could swing 225 feet. The gravel was transported on a system of conveyors from the hopper to a crusher located in the pit and :hen to a 200,000-ton capacity stockpile. From there the travel was fed into another conveyor, which moved it on to he mill.

The Round Mountain Gold Dredging Corporation acquired and improved Nevada Porphyry's water rights in Jett Canyon. The company built an unusual dam at the mouth of the canyon. The dam was constructed on bedrock without disturbing the alluvium upstream; the

impounded water was stored in the gravel in the canyon and did not rise above the surface of the canyon bottom.' Additionally, the company drilled wells in Smoky Valley to supplement Jett Canyon water during the dry season.

The mill, designed to handle 17,000 tons of placer ore every 24 hours, processed only gravel one-half inch or smaller, using a complex system of screens, jigs, grinding units, sand wheels, pumps, sluice boxes, and amalgamation plates. It took one year to complete the shakedown of the mill, but in spite of the effort, the mill never did perform up to capacity, and the system of conveyors to transport the gravel from the pit to the mill was a failure. In 1950, Fresnillo bought out Yuba's interest in the operation. Then in 1952, the Morrison Knudsen Company, a specialist in handling gravel and dirt with power shovels, bulldozers, and trucks, was hired to move the gravel from the pit to the stockpile ("Nevada Placer to Handle 500,000 Tons Monthly," 1952; "The Round Mountain Mill," 1951).

In sum, Yuba's successful past experience with floating dredges led to overreliance on conveyor systems, which might have worked well on a floating dredge but were probably inappropriate for open-pit mines at that time. In 1957, Fresnillo contracted with Morrison Knudsen to remove 33 million yards of overburden and to mine 12 million yards of pay gravel. Over the next two years, the operation produced 100,000 ounces of gold at a net profit of $750,000. Nonetheless, the operation was shut down in 1960 because of its excessive waste-to-ore stripping ratio ("Round Mountain: An Introduction for Visitors," n.d.:2).

As was so often the case when the big corporations failed at Round Mountain, the small operators—the leasers—moved back in to take a share. Indomitable desert miners and leasers, such as Eddie Critchfield, Bob Wilson, and Norman Coombs, returned to work the gravel and veins and test Lady Luck once more.

Coombs Tries to Buy Round Mountain

Norman Coombs was the quintessential Western miner. He worked in mines throughout the western United States and in Australia and Mexico. Coombs was thoroughly versed in every aspect of mining, including milling, as he operated several mills of his own to process central Nevada ore. Round Mountain was always his first love—and his cash reserve. Through the years, whenever Coombs needed money, he could count on Round Mountain. As he put it, "What I live off is Round Mountain" (Coombs, 1990:218).

During the mid-1950s, the South African Gold Company and its subsidiary, Fresnillo, were beginning to flounder at Round Mountain. Coombs had constructed a tungsten mill in the Grant Range on the east side of Railroad Valley in northeastern Nye County. He had built the mill for a promoter, Steve Sturges, who was also a cotton farmer.

Coombs talked to Sturges a number of times about the Round Mountain mine, always his first love. One day, Sturges asked whether it would be possible for Coombs to buy the mine, so Coombs did some calculating and told Sturges, who was a millionaire, that he would need $1 million to work with. Sturges came up with $600,000, which Coombs figured was near enough to $1 million to begin negotiating.

The two men flew from Tonopah to Reno in Sturges's plane. Sturges, generally a poor dresser, took along a suitcase filled with what Coombs assumed was clothing. In Reno, they met with Louis Gordon, who still owned the property through Nevada Porphyry, having taken it back from Fresnillo. Coombs introduced Sturges to Gordon and got right to the point: "This is Mr.

Sturges, and he's interested in the mine out there and he'd like to buy it. . . . How much do you want?" Gordon responded that the price was $800,000. Sturges, trying to get the best terms he could from Gordon, who was getting on in years, offered $475,000 in cash for the mine, with the stipulation that Gordon be entirely bought out. Gordon replied that he would have to go through the stockholders, adding, "Where in the hell did you come up with a figure like that?" Sturges replied, "Coombs says that's all your mine's worth." When Gordon heard that, he exploded. The mine had been his life; to have it denigrated was more than the old man could take. He looked at Coombs and said, "Why, you Cousin Jack son of a bitch. You've mined all over the goddamned world and you've never seen a mine like that in your life, nowhere!" (Coombs, 1990:238).

Coombs, of course, had said nothing of the kind. He knew the mine was worth more—much more. Without wanting to contradict the promoter to his face, Coombs tried to explain his way out of the dilemma: "Now, wait a minute on this deal. I just told Mr. Sturges we've got $600,000 and we need $125,000 for the mill and that's what would be left" (Coombs, 1990:238). Then Sturges opened the suitcase he had brought along. It contained $475,000 in one-thousand dollar bills. Gordon's eyes widened; he was impressed. Although Gordon was tempted, he still managed to resist and to turn the deal down. He was not about to sell his pride and joy for that price, at least not that easily.

About one week later, Coombs, who had stayed on in Reno, saw Gordon. Gordon said he was still interested, but by then Sturges had cooled on the deal because Gordon "wouldn't take her [the money] when she was there" (Coombs, 1990:239).

That decision by Sturges was a pivotal point in the history of the development of the gold deposit at Round Mountain. Years later, in discussing the fateful meeting, Coombs said, "I never forced it, but I think I could have . . . that's where I made the mistake. I was sitting on . . . I never had a million." He was thoughtful for a moment, paused, then continued, a twinkle in his eye betraying the ever-present optimism of a mining man, "But I been pretty close" (Coombs, 1990:239).

Elwood Dietrich Enters the Picture

Leasing operations at Round Mountain continued during the 1950s and into the 1960s, during the time the Round Mountain mine was for sale. In the mid-1960s, Don Potts, a San Diego native who had moved to Tonopah, talked to Al Silvers, then manager of Nevada Porphyry. The company offices were in Reno off Virginia Street in what Potts described as a dark cubbyhole. Potts learned that the entire Round Mountain mine was on the market for $750,000, with $50,000 down. He was aware of the property's value but could not raise the down-payment money. By 1966, the price of the mine had risen to $900,000, with $50,000 down.

After Gordon rejected Sturges's cash offer, Coombs went back to leasing at Round Mountain. One evening, Elwood Dietrich and his wife paid a call. Dietrich, a promoter, had a connection with several Pan American Airlines employees. He quizzed Coombs about the Round Mountain mine, seeming most interested in knowing how many leasers were working. In fact, Coombs was the only one at the time. Dietrich, who was disheveled and was wearing tattered clothing and shoes with holes in them, appeared to be broke—but it was also clear that he was

quite a promoter. Coombs cooked some dinner, gave Dietrich a pair of shoes, and invited the couple to stay the night.

The next day Coombs took Dietrich on a surface tour of the mine. "God damn," Dietrich said, "a guy could promote this thing." That night Coombs took him down into the mine and showed him high-grade. Dietrich was amazed.

After spending those few days in Round Mountain with Coombs, Dietrich went to Reno. Louis Gordon had died in about 1965, shortly after rejecting the Sturges offer. His old friend and partner, Al Silvers, who had also been partners during Tonopah's heyday with Coombs's father, Oswald, and with his stepfather, Alec Anderson, had taken control of Nevada Porphyry. Silvers, one of the top millmen in the country, had been involved in Tonopah in the construction of the West End, Montana, and Belmont Mills, and he had built the Extension Mill there as well. He had also run one of the big mills at Millers (Coombs, 1990:250).

Dietrich's meeting with Silvers was successful. The option was to cost $20,000, with a $1 million buyout price. In September 1967, Silvers obtained a purchase option on about 11,000 acres of mineral rights held at Round Mountain by Nevada Porphyry Gold Mines (Cavender and Purdy, 1985:101). After the meeting, Silvers called Coombs and said, "This Dietrich . . . he's got big people behind him. He's coming up with $20,000." Coombs, who had just given "poor" Dietrich a pair of shoes, was incredulous. "Coming up?" he asked. "Yeah," Silvers replied, "he hasn't got it yet" (Coombs, 1990:241) .

Dietrich stalled for months tying up the property with the option without putting up the money. In spring 1968, he brought in backers with cash, who included pilots for Pan American Airlines and a few Texas oil people. The three major backers were Cal Owens, a man named Dickson, called "Dick," and a woman who went by the name "Rocky." They named their newly formed company Ordrich Gold Reserves (the 0, R, and D taken from Owens, Rocky, and Dickson; the "rich" portion of the name, from the latter half of Dietrich's name).

Several of the partners then moved to Round Mountain for a time to assess the situation there firsthand. They were all inexperienced in the mining business, and their constant, and often naive, questioning of residents regarding the mine was sometimes irritating. Meanwhile, Coombs had acquired a three-year lease on the four best claims at the mine: two Sunnyside claims, and the two Great Western claims. Coombs remained in constant communication with Al Silvers.

Initially, Coombs was cooperative and patient with Dietrich and his associates. He made every effort to explain that this was one of the richest gold mines in the world, but the pestering began to interfere with Coombs's ability to do his work. The would-be miners were having great difficulty in getting even a sample that showed worthwhile values. One day Dietrich asked Coombs, "Do you think we could make it here if we get organized?" Coombs, given to sarcasm when frustrated, replied, "Well, you might find a piece of gold about 5-foot square that weighed several tons. You might get it out of the pit and make a little money" (Coombs, 1991-1995) .

Ordrich was using overly sophisticated equipment that either was being operated improperly or was malfunctioning. For example, an atomic-absorption machine was being used to run assays, yet nothing sampled showed gold values; streaks Coombs had mined for thousands of dollars showed no values in Ordrich's assays. Coombs was determined to show the Ordrich group that it was possible to get rich samples. He put a tub of water and a gold pan

in his pickup, led three or four pickups full of the Ordrich people out to a gold streak he knew was hot, and dug out a good-size sample from the streak. He recalled: "The bigshots were there. I panned that [sample] and there were big chunks of gold, wires and nuggets, really hot. . . . They looked at it, and their eyes bugged out. They said, 'Jesus Christ, we can't even get a sample here. There's something wrong with that goddamn rig of ours' (Coombs, 1991-1995).

Now convinced of the mining property's value, the Ordrich group considered Coombs's presence, because of his leasing claim, a major impediment to their efforts. There was some question about whether Coombs's leases were renewable, but Coombs believed he could win a legal battle for renewal. One day when Coombs and Dietrich were discussing whether Coombs's leases on the claims were legal, Coombs remarked, "You and this goddamned hay bag [referring to Dietrich's partner Rocky] are bound and determined to try and push me out of here. Why the hell don't you buy me out?" Dietrich asked how much he wanted; Coombs thought for a minute and then said, "$50,000," thinking that Dietrich did not have 10 cents and that his lease was good for at least two more years.

In the meantime, the Ordrich group, which did not have deep pockets, was attempting to find a buyer for its option. In December 1968, Dietrich contacted Wayne Cavender, a geologist for Copper Range Exploration Company, a subsidiary of Copper Range Company, a Michigan mining outfit, and made a presentation on the Round Mountain mine. Copper Range had been looking worldwide for mining properties. In June 1970, Dietrich used the option he had obtained from Al Silvers to complete negotiations for Ordrich to sell Round Mountain to Copper Range Company (Cavender and Purdy, 1985:101). Dietrich went to Coombs's house and held out a $50,000 check. Coombs rejected it, and Dietrich accused him of going back on his word. Coombs, angered, explained that he would simply rather have the money divided into two $25,000 payments for tax purposes. Three days later, Coombs moved his small gold mill off Round Mountain. After more than 30 years, he was permanently out of the mine (Coombs, 1990:245).

Copper Range Advances

The Copper Range Company was owned by the Big White Pine Copper Company, headquartered at White Pine, Michigan. In the mid-1950s, the company had successfully developed a large underground copper mine at White Pine. At Round Mountain, Copper Range began a program to confirm the property's placer potential, including mapping of the old placer pits and a limited drilling effort. In early 1972, Fluor Utah, Inc., of San Mateo, California, was retained to supervise all testing and study the possibility of establishing a placer operation at Round Mountain for Copper Range and Ordrich; the study concluded that poor economic results were likely.

However, that study also suggested that a lode gold operation—that is, a hardrock mining operation—might have some value. Copper Range thought the deal over very carefully and decided that the lode potential at Round Mountain justified the risk. In November 1972, the company exercised Dietrich's option with Nevada Porphyry and bought the property, paying Nevada Porphyry approximately $1 million for the mine (Simpson, 1990:4). Ordrich had no money to spend and did not participate financially, but the terms of the purchase did specify that Ordrich was to receive an 18 percent net profit royalty after the participating partners had reclaimed their investment from operating profits.

Copper Range then began to develop the property. Interestingly enough, the company did no drilling and performed hardly any exploration. Instead, Copper Range consulted the samples A. 0. Smith had taken in 1936 and 1937 from about 12 miles of underground workings under Round Mountain. Smith had done a very credible and professional sampling job, one of the most comprehensive channel-sampling efforts in U.S. mining history. Most of the samples had come from several thousand channels carefully cut in old workings, each channel 5 feet long, 6 to 10 inches wide, and 2 inches deep. The samples had been used to draw maps, which had been lost; however, the maps (and the person who had done much of the sampling) were eventually located in Tonopah (Simpson, 1990:5).

These samples and maps aided Copper Range in blocking out ore reserves of about 12 million tons, at an expected grade of about .06 ounces of gold per ton of ore. In the open-pit mining business, 12 million tons is not a particularly large reserve, but the Round Mountain ore had the advantage of having the very low waste-to-ore ratio of one ton to one ton. That meant, for example, that in order to obtain 12 million tons of ore, the operators would have to move only 12 million tons of waste, an excellent ratio. The assessment was done in 1974 on the basis of $70-per-ounce gold.

In the early 1970s, when Copper Range was still evaluating the Round Mountain property, the company decided to cut back substantially on its exploration budget, and it looked like the company might abandon Round Mountain altogether. But, as luck would have it, Hadley Case was on the board of directors at Copper Range. Case made it known that if Copper Range abandoned the Round Mountain property, he would buy it. Because Hadley Case was a very successful businessman, the executives at Copper Range figured their property must be worthwhile. As a result, Copper Range held on to the property, and Case came in as a partner. Case was the sole owner of Essex Royalty Company (an investment group that he had inherited from his father, who had founded it), which was later named Case Pomeroy and Company.

Hadley Case was a 65-year-old geologist who had spent most of his career in New York. He had the gold bug and became the prime mover in the development of the Round Mountain mine in the 1970s. Case Pomeroy and Company put up 25 percent of the money thought necessary to develop an open-pit mine and mill at Round Mountain, and Felmont Oil Company (of which Case owned about 45 percent) added another 25 percent. Copper Range contributed 50 percent. Copper Range was to be the developer and operator of the mine and mill, with Case's companies holding a financial interest. In addition, Ordrich, on the outside, was to receive an 18 percent royalty (Simpson, 1990:6).

In December 1973, Copper Range, Felmont, and Essex decided to develop the Round Mountain mine. In 1974, Copper Range hired Mountain States Engineering of Tucson, Arizona, to design and build a gold extraction plant. It would be the first major gold mine in North America to be established using heap-leaching as the principal mode of ore processing. Construction began in 1975; it became operational in early 1977, and in April, the first gold bullion was poured. Gold was selling for $145 per ounce. Total investment in the mine and mill was about $20 million, with another $1.5 to $1.75 million in predevelopment expenditures (Cavender and Purdy, 1985:103).

The initial operation was small compared to that developed later. At first, the mining section consisted of two drill rigs, an electric power shovel, several 10-yard loaders, nine 50-yard dump trucks, and several bulldozers. The processing plant had a 42-inch gyratory primary

crusher, a 7-foot standard crusher, and two 7-foot short-head crushers, which together crushed about 6000 tons of ore per day into pieces one-half inch or smaller. The all-asphalt leach pad was approximately 280x2500 feet. Each of its four sections held roughly 40,000 tons of ore. The ore was stacked 10 to 13 feet deep on the pad, pipes with sprinklers were placed on it, and a weak cyanide solution was run through it. The solution percolated down through the ore to the asphalt, where it drained into a ditch at one side.

The cyanide solution was pumped to a plant containing large columns of activated carbon that absorbed the gold in the solution. After enough gold had built up on the carbon, a hot cyanide and caustic (sodium hydroxide) solution under pressure carried the gold off the carbon. That solution went through some electrowinning cells where the gold and silver were electrolytically precipitated onto steel wool cathodes. The gold and silver on the cathodes formed a sludgy substance that was then melted with flux, which attracted the iron, leaving the gold and silver at the bottom of a cone-shaped mold (Simpson, 1990:7-8).

Don Simpson Overhauls the Operation

The Louisiana Land and Exploration Company, mainly a land-holding company specializing in leasing properties to oil companies, began buying Copper Range stock. By 1977, after spending about $10 million, Louisiana Land had acquired all of the stock, turning Copper Range into a subsidiary of Louisiana Land (Simpson, 1990:15-16).

Louisiana Land inherited a number of significant problems resulting from Copper Range's design and operation at the Round Mountain mine and mill. The heap-leaching system worked badly and the pumps were constantly breaking down. Moreover, estimates of the size and quality of the ore body had been incorrect. Instead of finding 12 million tons of .06-ounce ore, Louisiana Land's efforts ultimately led to the discovery of 200 million tons of .035 ore. The reduced values of the ore made a big difference in estimating what could be mined. Further, A. 0. Smith had produced biased samples by testing the old drifts in Round Mountain, which had tended to follow seams of ore. Also, in places where the old-timers had already taken out the ore seams, the surrounding rock carried higher values than the rock farther away, which had not been adequately sampled.

Don Simpson arrived in Round Mountain in the early summer of 1978. He was born in Texas in 1929 and had lived in Oklahoma until his family moved to Arizona in 1934, where his father became a shovel operator in the open-pit copper mines around Ajo. Simpson attended the University of Arizona, graduating in 1956. His college career was interrupted by a military tour of duty in Korea, where he decided on a career in mining.

Simpson had worked for the Kennecott Copper Company at Ray, Arizona, and then for the Hecla Mining Company south of Casa Grande, Arizona, where he was general metallurgical superintendent. In the mid-1970s when the price of copper fell, he began looking for a job. A friend, who was an executive with Hecla, and who had spoken with the president of Copper Range Company and Louisiana Land, told Simpson that things were not going smoothly at Round Mountain and they needed qualified management. Simpson applied for a position and became operations manager.

Gold mining was a new venture for Simpson. However, the metallurgy of gold is generally simpler than that of copper, so the gold ore at Round Mountain was a "real piece of cake" for Simpson compared to the complex copper ore he was used to dealing with (Simpson,

1990:12). When Simpson arrived, the Round Mountain gold extraction plant was frequently idle because of equipment failures, so one of the first things he did was redesign the plumbing system that carried the cyanide solutions over the leach pads and to and from the extraction plant. New and different pumps made the system more reliable. Another problem involved the lower-than-anticipated gold values in the ore. The company was still trying to process .06-ounce ore. In order to hold that average, the cutoff had to be raised to .045 ounces per ton.

The first week Simpson was there, the big crusher broke down. The contractor estimated five days for repairs. Simpson thought the repairs would more likely take two weeks, meaning that no ore would be stacked or crushed and no gold extracted while they waited. He thought about the 400,000 tons of lower-grade material that had already been crushed and was now sitting on a stockpile. Although he was advised that no money could be made processing such lean ore, he tried leaching it without mixing it with higher-grade—and made money on it.

There were only 12 million tons of estimated reserves at Round Mountain when Simpson arrived. Because they were mining at the rate of 2 million tons per year, the Round Mountain mine appeared to have a five- or six-year operational life. The drilling budget for developing new ore was $24,000 a year. By 1978 and 1979, Copper Range was producing about 40,000 ounces of gold at the mine each year. In July 1979, Simpson was promoted to general manager of the entire operation. Under Simpson's guidance, the company gradually expanded the drilling budget and developed increased ore reserves. As workers drilled around the edge of the old caldera, they found enormous amounts of low-grade ore hundreds of feet thick. By the end of 1979, an additional 18 million tons of reserves had been defined (Simpson, 1990:18-19, 24).

Another Buyout

In early 1983, some investors began to criticize Louisiana Land's investment in Copper Range, which was incurring huge losses at its copper mine in the upper peninsula of Michigan. Copper Range's White Pine operation was not doing well because the price of copper had been low. As a result, Louisiana Land put Copper Range up for sale. Over the next few years, nearly every major gold-mining company in North America came to inspect the Round Mountain property. Although Copper Range had discovered additional ore reserves, it seemed that the ore would have to be milled.2 The prospect of constructing a large mill to handle more complex ore did not interest most investors.

Echo Bay Mines, Ltd., a major Canadian gold producer, was not discouraged. In January 1985, Echo Bay purchased Louisiana Land's 50 percent interest in the Round Mountain property for $55 million. In addition, Louisiana Land retained a royalty of 3 percent of the net smelter return beginning in 1989 and remaining in effect until that fund grew to $75 million, when the royalty would drop to 1.5 percent. Although in retrospect Louisiana Land sold out cheap, the company nevertheless made good money on the transaction (Simpson, 1990:27-28).

When Echo Bay purchased Round Mountain, it only had one other mine, the Lupin Mine in the Northwest Territories in Canada, which produced about 200,000 ounces of gold in 1989 from an underground operation. Because Echo Bay did not have much cash on hand, the company financed the Round Mountain acquisition based on the production of the Lupin Mine. Echo Bay borrowed 100,000 ounces of gold, payable in kind, which it sold for $311 per ounce.

That loan raised $30 million. The loan was payable in kind on a monthly basis. The gold loan was one of the first such innovative financial arrangements made with a bank. The company also issued 3 million shares of stock at $8 per share, which covered the remainder of the purchase price.

Meanwhile, in July 1984, the Felmont Oil Company, half-owned by Hadley Case, was purchased by the Home-stake Mining Company, one of the largest (and oldest) gold-producing companies in the world, which listed the great Homestake gold mine in South Dakota as the crown jewel of its operations. As a result of the transaction, Hadley Case became Homestake's single-largest stockholder.

Before Echo Bay bought Louisiana Land's interest in Round Mountain, Homestake had tried to buy it, making a low offer and telling Louisiana Land that the deeper ore body Simpson had found did not exist (which caused problems for Simpson). Homestake offered Louisiana Land some offshore oil leases in the Gulf of Mexico that had been owned by Felmont, but Louisiana Land did not fall for the ploy (Simpson, 1990:32-33). With its half-ownership of the mine, Echo Bay became the operator of the new company, the Round Mountain Gold Corporation, with Homestake and Case Pomeroy as partners. In 1985, the mine produced 101,200 troy ounces of gold. It was the fourth-largest gold mine in the United States at that time (Argall, Jr., 1985:18).3

As early as 1982, officials at the Round Mountain mine foresaw the need to expand because of the increased ore reserves. In spring 1987, the three owners of the Round Mountain Gold Corporation (Echo Bay Mines, Homestake, and Case Pomeroy) announced plans for a major expansion after significantly increasing the reserves by proving that the mine's Type II ore was heap-leachable. The company first confirmed that the expansion of the mine would not disturb any historic archaeological remains, then constructed another leach pad, an assay laboratory, a maintenance shop, additional crushing and materials-handling capacity, a pad stacker, and a metallurgical laboratory; the solution and ore recovery systems were expanded as well.

This remarkable expansion was completed by July 1989. The goal in 1977 had been to handle 14,000 tons of ore and waste per day. By 1986, the capacity had risen to 100,000 tons; by 1989, it stood at 135,000 tons, with the crushing system able to handle 45,000 tons per day.

Between1985 and 1989, the length of the leach pads was increased from 2400 feet to 11,125 feet, and their tonnage capacity was increased from 900,000 tons to 4.5 million tons. Each day in 1989, approximately 90,000 tons of ore was stacked on and stripped off the pads. Because the solutions on leach pads could freeze in cold weather, solutions were now heated by one of two systems: In the first, heat was supplied by burning fuel oil; and in the second, geothermal heat obtained from water wells in the valley was used in a heat-exchange system that was completed in 1988. In 1981, the mine produced about 60,000 troy ounces of gold; by 1988, production had risen to about 235,000 ounces ("Round Mountain: An Introduction for Visitors," n.d.:4-5). In 1994, gold production stood at about 400,000 ounces yearly. In 1994, there were approximately 600 employees at the company's Round Mountain operation. By 1994, the Round Mountain mine had become the world's largest heap-leaching operation at a single mine. There were larger heap-leaching operations in northern Eureka County in Nevada, but they were based on more than one mine.

Each of the partners in the Round Mountain Gold Corporation shared operating costs and profits proportionally. After refining, the gold produced was divided among the partners, with 50 percent going to Echo Bay, 25 percent to Case Pomeroy, and 25 percent to Homestake.

Gold is easy to sell in a variety of ways. There is always a ready market, although the price fluctuates. It can be sold to an investment bank that buys gold for customers or to metal traders who use it for jewelry. Echo Bay's policy :n 1990 was that about 30 percent of its share would be sold :onward, or hedged, and the other 70 percent would be sold on the spot market. Although Echo Bay did not have a gold-price analyst, it watched the well-known metal-gold gurus. Most investment and buy-sell decisions were made in terms of the current price of gold (Simpson, 1990:35-36).

A Question of Archaeology

When the Round Mountain Gold Corporation decided to expand its open-pit mine at Round Mountain in the late 1980s, the Environmental Research Center at the University of Nevada, Las Vegas, was hired to determine if there were any historic structures or significant archaeological sites on affected U.S. Forest Service or Bureau of Land Management properties at the mine. A portion of the site of the old boom camp became the object of an archaeological investigation. Research focused on a complex of buildings and dumps at the old Daisy and Fairview mine complexes located on Fairview Hill and on the connecting ridge to Round Mountain.

Standard archaeological methods were used to study these old mining sites, which were less than 85 years old. The archaeologists examined a 16-acre area on the Fairview property that held the remains of the old mill, some residential structures, scattered trash, water pipelines, trenches. shafts, adits, and other mining-related features. Four hard-rock mining activities had taken place on the Fairview complex: exploration and development, excavation and removal of ore, transportation of ore, and ore reduction. In addition, miners had lived on the property (Edwards, Kimball, and Roberson, 1990:27-48), so the site reflected most of the activities that occurred in any early mining area.

After a thorough search was made of all documentary records pertaining to the area, the site was mapped in detail. using electronic surveying equipment. Several archaeological test holes were dug and the fill from the test holes was finely screened. All material relating to human activity (except for poorly preserved wood and charcoal) was sent to the laboratory for analysis (Edwards, Kimball, and Roberson, 1990).

The test holes revealed no gold, but numerous historic items were recovered. Archaeologists can gain insight and information from intensive analysis of historic artifacts. For example, an archaeologist can examine a small fragment of glass and calculate its age from its color and by assessing what additives were used in its manufacture. Age can also be determined by analyzing mold marks, makers' marks, and other characteristics. Additives used to color glass varied with manufacturing advances. Before the late nineteenth century, there was no relationship between the color of a glass bottle and the product it contained, but growth of the food preservation industry led to the use of clear glass to permit viewing the contents, so manufacturers began to decolorize the iron impurities in glass with manganese, selenium, or arsenic. When exposed to the sun, clear glass bottles made with manganese

became amethyst or purple, those made with selenium became a yellow or straw color, and those with arsenic remained clear.

By the 1930s, technological improvements in glass manufacture had resulted in control of thickness and elimination of bubbles (Edwards, Kimball, and Roberson, 1990:83). Amber or brown bottles were used for many liquids, including alcoholic beverages. Green bottles were also multipurpose, used for mineral water, wine, and other drinks. Brown glass was made with carbon, nickel, or iron; green glass, with chromium or sulfur. Blue glass, made with cobalt, was used medicines, cosmetics, soda, and other specialty items. Milk-colored glass was produced by adding tin or zinc and was used for cosmetics, food, medicines, and toiletry items. The use of molds to manufacture bottles leaves seams that serve as time markers. Date of manufacture can also be determined by examining embossing marks and top closures such as corks or threaded caps (Edwards, Kimball, and Roberson, 1990:83-84).

Archaeologists perform similar detective work on tin cans, ceramics, and glassware. There are many other examples of artifacts that help archaeologists date sites. Tobacco tins. for instance, came into use in the United States after 1892. The famous Prince Albert upright tobacco tin, suitable for carrying in the pocket, was put on the market in 1908 (Edwards, Kimball, and Roberson, 1990:95).

The research at the Fairview mining complex yielded information about the types of products residents of the community once used and the origins of many of these products (see Table 13.1). Although the miners and their families at Round Mountain were physically isolated on the Nevada desert, clearly that isolation did not extend to the products they used, some of which came from as far away as Japan, France, Bavaria, and Uruguay, as well as from many parts of the United States. The project produced some interesting findings on the types and sources of products, but it yielded nothing new or unexpected. The research established that the site, although interesting, contained nothing deserving of historic preservation. Given the research findings, the Round Mountain Gold Corporation was then free to move forward with its plans for the site.

Round Mountain's Workforce and Operation

A skilled and reliable workforce is essential to the smooth operation of a mine. During the first years of open-pit heap-leach mining at Round Mountain, there was a high rate of labor turnover. The decline of good employment opportunities nationally, the relatively high wages paid by the operators at Round Mountain, and the provision of amenities in the community by the Round Mountain Gold Corporation markedly reduced labor turnover rates beginning in the late 1970s. In addition, higher production in the late 1970s made it possible for the company to become more involved in the community. The company provided housing for the management staff and helped workers finance home purchases. It purchased a small convenience store in Round Mountain that was run by Bob Hattrup and expanded it into a general store. (The largest store in central Nevada at that time was Dave Coleman's store in Tonopah, which was still quite small; the closest supermarkets were at Fallon, Ely, and Elko.) The company also donated $100,000 to complete the construction of the gymnasium at the Round Mountain elementary school and provided a medical clinic, established a day-care center for workers' children, and became active in the schools and in civic programs. The day-care center operates around the clock, seven days per week, whenever mine workers who have need of child care are on a shift

(Quick, 1995). By 1990, about 120 children per day were using the facility. Moreover, the mine has maintained a very open policy toward hiring women and minorities. Because most jobs in the contemporary mining business do not involve heavy lifting or hard labor, women can hold all types of jobs at the mine, for example, driving huge trucks and operating other heavy equipment.

Table 13.1: Data on Some Artifacts from the Fairview Site

Artifact	Maker or Location	Manufacturing Data Estimated date(s)
Bottles		
Adolphus Busch (Budweiser) beer	_____	1904-1907
alcoholic beverage	Masillon, OH	1900-1904
beer	Milwaukee, WI	1900-1921
cod liver oil	_____	1920-1935
condiment, green in color	_____	1899
Heinz mustard	_____	_____
Honey and Almond Crème lotion	Portland, ME	903-1930
ink	_____	1900-1950
pharmaceutical products	_____	_____
pickles	_____	1897-1913
salad dressing	_____	1877-1900
small cobalt-colored cream or facial lotion'		_____
Vaseline	Cheeseborough Mfg. Co., NY	1924-1955
Worcestershire sauce	_____	1900-1957
Tin cans		
Hills Brothers coffee	_____	1914-1922
Log Cabin syrup	_____	1909-1914
meat	Uruguay	
milk, tomato paste or sauce, nuts, candy, coffee, lard, shortening, dried milk, frozen fruit		
sardines	_____	pre-1935
spice	_____	1904-1950
Ceramic fragments	England, Bavaria,	circa 1900
	France, Japan	circa 1900
Glassware fragment iridescent copper-and-pink		
Utensils		
silver-plated teaspoon,	Diana William M. Rogers	1850-1902
Miscellaneous		
dime, with a right profile of the Liberty head		1902
mother-of-pearl button		
right front horseshoe, for big saddle horse, with 5 bent nail fragments		

.22-caliber long-rifle cartridge	Union Metallic Cartridge Company	post-1890

Source: Edwards, Kimball, and Roberson, 1990:96-159.

Technical Aspects of Mining

Over the years, several types of drill rigs have been used at Round Mountain. In 1989, the last of four track-mounted DM-50 Ingersoll-Rand drill rigs was installed. One such machine, fully equipped, sold for about $340,000. The rig sits on what amounts to a stripped tank chassis that has an operator's cab; a tower to hold the drilling apparatus is mounted behind the cab. The mine is drilled in benches, which are typically 35 feet thick. The Ingersoll-Rand rigs drill 8-inch diameter holes in 25-foot lengths, and the holes are 40 feet deep, which leaves a 5-foot subgrade. Rotary drills are used, which have a steel bit rotating on a shaft at the bottom of the drill hole. These differ from the churn drill, in which the bit, hooked to a cable, is lifted up and down and pounds at the bottom of the hole, much in the way a hand driller operates a single jack.

Jets of compressed air blow the cuttings out of the hole, and a dust suppressor at the surface prevents the formation of a large cloud at the drill site. The mounds of cuttings, which accumulate at the mouth of the drill hole, are sampled to determine the gold content of the rock. A 40-foot hole can be drilled in 8 to 10 minutes in soft rock; but if the rock is extremely hard, it can take up to 45 minutes to drill each hole. About 20 percent of the rock at Round Mountain is extremely hard. Drill bits last for an average of 6000 feet of drilling, or about 150 holes. The drill rigs at Round Mountain are operated for two shifts daily. The amount of footage drilled at the Round Mountain mine is astonishing. In the 11 years between January 1, 1979, and December 31, 1989, drilling rigs at the mine drilled 10,357,219 feet (or more than 1961 miles) of holes (Berg, 1990b).

Working conditions at the mine in the mid-1990s are excellent. A top driller makes $16.40 per hour, and the second driller, or helper, $14 per hour. Drill and mine crews rotate between two 12-hour shifts, a day shift (4:00 A.M.-4:00 P M.) and a night shift (4:00 P.M.-4:00 A.m.). There is some variation in working hours for other workers at Round Mountain—those in the assay lab, for instance (Quick, 1995). The cab on the drill rig is heated in the winter and air-conditioned in the summer. Workers receive good health care, vacation, and retirement benefits.

The drilling supervisor coordinates the drilling operation. He makes sure that the holes are efficiently and properly drilled according to the engineers' specifications and then prepared for loading with explosives by the blasting crew.

The mining company's engineering department determines where the drillers will work each day in accordance with a weekly mining plan. This plan considers both the needs of the mill and the geologists' understanding of the ore body, that is, their assessments of where the gold values lie and where the more barren waste rock lies. A typical drill pattern consists of 150 holes but can range from 40 to 350 holes. Normally the pit is cleared at 3:45 P.M. each day, and blasting starts at 3:50 P.M. The blast pattern is designed to suit the geological formation and to cause earth to break and fall the way the engineers want it to after the blast. A one-pound TNT booster charge about the size of a beer can is lowered into the hole. Then the mixture of

ammonium nitrate and diesel fuel oil, called ANFO, is fed into the hole to fill it from 50 to 75 percent of volume, depending on the strength of the blast desired. Holes are fired in a predetermined sequence to assure the maximum breakage of the rock formation.

The blast creates a tremendous pile of broken rock. The engineers know from the samples taken during drilling which parts of the rock pile contain the desired ore and which are waste. They then mark the pile with flags: white for waste, red for ore, and yellow for lean ore. Rock containing less than .006 ounces of gold per ton is considered waste, .006 to .012 ounces per ton is lean, .013 to .099 ounces per ton is ore; more than .10 of an ounce of gold per ton is considered high-grade.

Operation of the Round Mountain mine depends on processing ore containing quantities of gold so small it would seem unimaginable to the old-timers who once worked there. Rock considered high-grade at Round Mountain in the 1990s would have previously been considered barren waste rock by most mines in the world. This shift in perception illustrates the enormous impact that advances in technology—including the development of mechanized equipment that can handle high volumes and the development of bulk heap-leaching techniques—have made on mining in the past two decades.

Once the formation has been blasted and tagged, it is ready for loading. Huge P SL H (Model 2300) electric shovels that have 28-cubic-yard buckets capable of lifting about 50 tons of ore per bucket, load enormous dump trucks that can haul up to 215 tons. It takes about 3 minutes for the 4 shovel buckets required to load the largest trucks. The operator of the loader signals the truck driver with his horn: One beep means ore, two beeps indicate lean ore, and three mean waste. Ore is processed, lean ore is placed on a "dedicated" pad, and waste rock is taken to the dump. Front-end Caterpillar loaders (Model 994), with buckets holding 23 cubic yards, with about a 40-ton capacity, also operate at the mine.

Because it is cheaper and easier to break rock by blasting than with crushers, the blasting and drilling crews at Round Mountain like to describe themselves as the "real crushers" on the job. However, rock can be broken down only so much without wasting explosives, so the trucks transport the ore to a large gyratory crusher with a cone-shaped piston that rotates inside a huge sleeve. Spacing at the top of the cone, and between the sleeve and the cone, allows the rocks to move from the top of the crusher to the bottom, crushed ever finer as they descend. The machine can handle rocks up to 3x3 feet, at a rate of 18,000 tons per day, or roughly 800 tons per hour. A larger crusher has recently been developed that will handle 5000 tons per hour. The primary crusher breaks the rock down to a maximum size of 6 inches and a secondary crusher reduces it to no larger than 2.5 inches. Undersize material coming off the primary crusher bypasses a secondary crushing unit. After crushing, the raw ore then goes to the leach pads for treatment with the cyanide solution.

Caterpillar trucks transport the ore and waste; different models can haul 85 tons, 170 tons, and 215 tons, respectively (Quick, 1995). Twenty-six of the larger trucks are in operation on the property at any given time. The electric shovels can keep 30 trucks operating. In addition, the mine also has at least two bulldozers mounted on large rubber tires; they can zip around the pit, keeping the roads clean by removing spills. The mine maintains a large maintenance shop for the repair and servicing of all of the heavy equipment.

Crushed ore is fed into a storage area, then into an automatic stacking system that moves it through a system of conveyors to its place on the leach pad. Several workers are

employed at the mine to clean up small piles of conveyor spillage and overflow with hand shovels. The ubiquitous hand shovel, known as the "muck stick" to generations of miners, has still not been completely replaced by modern mechanized mining.

The two leach pads have a 7-inch asphalt base with an internal rubberized layer. The north leach pad is 3200x280 feet, and the south, 4000x375 feet. The pads slope at a 5 percent grade toward a system of collection ditches. Before the pads are loaded, a base of oversize material is spread across the asphalt to aid in drainage and to protect the pad from heavy equipment. When ore is crushed, quicklime is added to it to maintain the proper pH level of 10 to 11. Trucks haul material to the north pad at the rate of 10,000 tons of ore per day. The south pad is filled by a stacker.

Each pad is divided into sections, which are supplied by pipes carrying cyanide solutions. Once a section has been loaded with ore, the pipes are placed across the top and sides, and the dilute solution of cyanide is sprayed onto the ore. The solution contains one-half pound of cyanide per ton of solution. When a section has been leached, the rock is rinsed with fresh water. A front-end loader fills trucks with the leached ore, which then goes to the waste dumps. Stacking and stripping takes place 24 hours per day with only nine holidays per year. In cold weather, the solutions are heated and eventually the temperature of the rock mass on the leach pads rises enough to prevent freezing.

As the sodium cyanide solution percolates through the leach pads, it becomes a "pregnant solution" (that is, it contains dissolved gold averaging .020 to .030 troy ounces of gold per ton of solution, with lesser amounts of silver also present). At the processing plant, the solution passes through tanks that contain activated charcoal made from coconut shells. The tanks, 12.5 feet in diameter, hold 3.5 tons of carbon. The solution passes through five such tanks in succession at the rate of 3000 gallons per minute; during this processing, 96 percent of the gold and silver is recovered. Every eight hours, 1 ton of carbon is moved successively from one tank to another up the line; thus the tank holding the carbon that has absorbed the least gold comes into contact with the pregnant solution last ("Round Mountain: An Introduction for Visitors," n.d.:23).

The next step removes the gold and silver from the activated carbon: The carbon is exposed to a solution of caustic (sodium hydroxide) under heat and pressure. The carbon is then reactivated for reuse. Next, the caustic solution containing the gold and silver is put through six electrowinning cells, each containing ten stainless steel anode plates with eight flow-through stainless steel wool cathodes. Gold and silver are precipitated onto the steel wool cathodes. The cathodes are left in the cells for approximately one week. Every day, one or two cathodes are removed from the cell and a sludge containing the gold and silver is removed from the steel wool. The steel wool is placed in another container where the remaining gold and silver is leached out and deposited on steel plates over the course of 24 hours. The precious metal is then scraped off and mixed with the sludge. The mixture is melted and poured into bars containing about 55 percent gold and 45 percent silver. These bars are shipped to a precious metal refinery for further processing.

Reclamation of the Mine Site

Round Mountain Gold Corporation officials estimate that present known ore reserves at Round Mountain will last through the year 2007. At that time, all gold-bearing ore economically

suitable for mining will have been extracted from the site, and it will be necessary to close the mine. At that point, reclamation of the site will begin. The purpose of the reclamation will be to prevent any unnecessary or undue degradation to the environment during and after completion of the project. A surety bond posted by the Round Mountain Gold Corporation guarantees that reclamation will take place.

The goal of the reclamation is to create a safe, stable, and productive environment to assist post-operation land use. A major focus of reclamation of the mine site involves shaping and contouring ore and waste dumps and roadways and re-vegetating those sites to reduce erosion and improve forage production with self-sustaining vegetation. Although the pit will not be filled in, a lake will form in it and the reshaped dumps and roads, after a few years, will scarcely be discernible ("Consolidated Reclamation Plan . . ," 1995). The main difference will be that after almost exactly a century of providing a living for four generations of miners, the small, solitary mountain that stood for millions of years in Smoky Valley at the base of the great Toquima Range will be gone, its treasure of gold dispersed in the possession of people around the world in the form of coins, jewelry, dental plates, vital parts of diagnostic equipment aiding physicians, and in computers and scientific instruments helping scientists unlock the secrets of nature—perhaps even as part of a satellite, lofted into space, sailing high above the earth, eventually bound for interstellar space, from whence it came 5 billion years ago.

Townsite Ownership

It was common in the mining boomtowns of central Nevada for lots to be subdivided and sold by people who did not own them. It was easy to stake out a few claims on federal land and start a town simply by surveying the site, making a map, and proclaiming the existence of a town. Such towns usually did not last long, often disappearing within a few months, almost always within a few years. In most cases, the deposit of gold and silver upon which a small desert community was founded was not extensive, so the basis for the community's existence quickly disappeared.

Round Mountain was different. The town of Round Mountain turned out to be located on the site of one of the world's largest gold deposits, and problems about ownership of the land under the town continue into the 1990s. Although its population has fluctuated through the years, the town has always had enough permanent residents to have had a post office continuously since March 4, 1907 (or since June 18, 1906, when the first post office was named Gordon, Nevada, after Louis Gordon). In approximately 1992, the Round Mountain post office relocated to the Hadley subdivision.

Immediately following the discovery of the rich deposits of gold on Round Mountain and Stebbins Hill in 1906, Louis Gordon staked out several mining claims on the flat ground just north of Stebbins Hill and began subdividing the claim into lots for a town, which eventually became the community of Round Mountain. Although the 1872 mining law did not permit such subdivision of unpatented mining claims (and Gordon never did patent his subdivision). nonetheless on May 9, 1906, Gordon recorded his subdivision with Nye County, and his map was approved by the Nye County commissioners. On this map, alleys and streets were dedicated to the "perpetual use of the public" (Anderson. n.d.:30), and Gordon assigned street names, street widths. block numbers, and so on, which have remained essentially unchanged. Between 1909 and 1924, the mining claims located on Round Mountain at Stebbins Hill were

patented and legally brought into private ownership. The problem lay with Gordon's unpatented subdivision.

Most of the town of Round Mountain is located on four claims—the Gordon, Gordon 1, Gordon 2, and the Bronco. Over the years, the lots in Gordon's subdivision have been owned and title transferred by private citizens, as well as by churches, utilities, mining companies, and the Nye County School District. Nye County began collecting possessory owners' taxes on the lots during the 1940s. In 1975, the county sold several lots in Round Mountain for back taxes, but the sale included this caveat: "The property being sold at this public auction is limited only to the possessory surface rights assessed by the County Assessor in the year during which taxes became due" (Anderson, n.d.:31).

In 1972, when Nevada Porphyry sold out to Copper Range, the problem of ownership of the townsite began to come to a head. Copper Range attempted to quiet title to its patented claims and took steps to remove unauthorized buildings from the patented ground it had purchased. In 1980, recognizing that the legal status of the townsite was in question and fearing competition, Copper Range staked out the ground beneath the town of Round Mountain, which joined its patented property, contending that the unpatented property still belonged to the federal government. The company's action, called stacking, involved staking the ground with three different types of claims—lode mining claims, placer mining claims, and mill sites—one on top of the other. All three types of mining claims are recognized by the 1872 mining law, but such stacking has never been clearly permissible. However, the U.S. Bureau of Land Management, which has jurisdiction over the land in question, has not objected. The stacked claims effectively block other claims from being staked on the land.

Naturally, people owning homes and lots in Round Mountain became alarmed at the company's actions, fearing that the mine was planning to challenge their rights to the lots and buildings they had occupied, in some cases for more than 50 years. Worried Round Mountain residents wondered whether Copper Range might have found a rich deposit of ore under the townsite or might be planning to use the townsite as a dump for waste rock. Mine officials denied all rumors. In the meantime, the company had constructed housing for its executives on its unpatented ground adjoining the mine to the southwest—the land on which it had also filed.

Since 1980, the ownership status of the townsite has remained unresolved, pitting the long-term residents of Round Mountain against the mine officials. To complicate matters even more, in the mid-1980s the Round Mountain Gold Corporation, which succeeded Copper Range in 1985, began development of the town of Hadley, about 5 miles southwest of Round Mountain on the west side of Nevada Route 376. Investment in Hadley has upstaged Round Mountain, raising further questions about the old town's survival.

The Construction of Hadley

When the Round Mountain Gold Corporation began its expansion in 1987, officials acknowledged the need for additional housing for workers. They conducted a survey of residents' attitudes about what kind of new community and services they would like to have. Mine employees and area residents were asked if they would prefer to live in Tonopah and commute to the mine or live in the valley. People overwhelmingly preferred to live near the mine. Because of the legal problems surrounding title to the land under Round Mountain, it was decided that the new community should be built in the valley. Several years earlier, under

Don Simpson's direction, Ingvard Christianson's ICT Ranch, located about 3 miles southwest of the mine on the west side of Nevada Route 376, had been acquired by the company. That site was chosen for the new town mainly because it was the only sizable acreage of fee simple land with plenty of water available in the area.

After about two years of planning, the company began to build the town, naming it Hadley after Hadley Case. The community now includes a high school and library completed in 1992, many shops, a swimming pool, a 9-hole golf course. and a park. The mining company retains ownership of all the land, leasing it to home owners and businesspeople. The company intends to maintain control over the land until the mine closes. Officials believe that the community might eventually evolve into a retirement town, acting as a gateway to the scenic Arc Dome Wilderness Area (Simpson. 1990:48).

Rich Gold Specimens Still Being Found

Modern mining at Round Mountain is based on extracting minute quantities of gold found in the tens of thousands of tons of ore produced daily. Although Round Mountain is one of the largest low-grade ore mining operations in the world, just as in the old days, large chunks of solid gold are still being found on a fairly regular basis. Many of these specimens are so large they set the hearts of miners working there palpitating, and in the old days they would have had boomers' heads spinning and would have made headlines from San Francisco to New York City.

The hallmark of Round Mountain in its glory days was always its unusually rich seams of gold, ranging up to a few inches thick, running for hundreds of feet through formations that had once been volcanic ash. In the mine's early days, when a leaser hit such a vein it was a dream come true; his financial worries were over—at least, for as long as his newly gained wealth lasted with the high living that often followed a discovery. When Louis Gordon's day's pay miners encountered such ore, many helped themselves, surreptitiously high-grading a share, taking care to leave enough of the gold to allow the company to also prosper. It was such a high-grade streak that came to surface at the Los Gazabo vein that led to the discovery of the Round Mountain treasure chest in 1906. Other rich veins exist beneath the slopes of Round Mountain and Stebbins and Fairview Hills. Some old-timers such as Norman Coombs could with some success predict where such rich streaks would be found.

In the early 1990s, a high-grade vein containing enormous chunks of nearly pure gold was uncovered in the pit a little to the southwest of where Round Mountain itself once stood. The vein, which was found about 350 feet beneath the original surface of the ground, lay flat, dipping somewhat to the southwest. It was about 5 inches thick, somewhat boomerang shaped, and measured 1000x300 feet. The rock on either side of the vein was essentially barren of gold. The old-timers were apparently unaware of its existence—no old workings had been dug into it.

In 1992, one specimen was recovered from the high-grade vein that weighed 101.65 ounces and measured 5.5x10 inches, ranging from 0.5 to 0.75 inches thick. At the time, it was believed to be the largest existing mass of gold found in Nevada, and it bore a remarkable resemblance to the Badger nugget that caused such a stir in 1906. Like all Round Mountain gold, the specimen was about 65 percent gold (655 fine), the remainder consisting of silver and small quantities of other naturally occurring elements. Total weight of pure gold contained in the specimen was about 66.5 ounces, or about $26,500 at a $400 per ounce price of gold.

In 1995, further digging in the pit on the vein uncovered a number of specimens whose richness was difficult to imagine. One was 8.75 inches long and 4.5 inches wide and up to 3 inches thick. It weighed 189.4 ounces and contained approximately 126 ounces of pure gold, worth more than $50,000 at $400 per ounce of gold. The specimen was discovered by a metal detector as it lay on a conveyor belt used to help prevent large pieces of metal from past and present mining operations from being fed into the crusher. In all, large specimens recovered from the vein at that time weighed over 1300 ounces and contained 851 ounces of pure gold worth more than $340,000 at $400 gold (Veek, 1995). Clearly, the old-timers did not find all the high-grade at Round Mountain. Who is to say when and where other rich streaks will be found there?

Notes

1. Hal Elson, chief geologist of the Round Mountain Gold Corporation, reported in 1995 that he had not seen any evidence of such a dam at the mouth of Jett Canyon.

2. Hal Elson, chief geologist for Round Mountain Gold Corporation, points out that: "[The need for milling] was due to the perception that the bulk of the ore was un-oxidized, an artifact of the distribution of the peripheral metallurgical drilling. In un-oxidized ore, some gold is encapsulated in pyrite and not leachable without milling. Most of the reserves were actually oxidized, with gold readily available to leaching" (Elson, 1995).

3. In 1986, after it had purchased a number of mining properties from the Tenneco Oil Corporation, Echo Bay was in charge of mining operations at Round Mountain, Manhattan, Hawthorne, and Battle Mountain. Don Simpson was appointed vice president in charge of Nevada operations and was transferred to the company's Reno office. He remained in that position until fall 1989, when the company transferred him to Denver to become vice president of mining and special projects for Echo Bay. Reflecting on his experience, Simpson said:

It became pretty apparent that it [Round Mountain] wasn't just a small mine and that it was really going to have to be operated and run like a big mine. It really becomes a material handling exercise in learning to mine and move and treat large tonnages very efficiently.

The greatest thing I've ever done in my life was what we put together and did at Round Mountain. . . . I was able to . . . do some things with people, and for people, that I've always wanted to do, and never really had the opportunity to do until we got there. It was always very rewarding to see that group pull together and really do something. . . . We had all kinds of fun. (Simpson, 1990:54-55, 59)

CHAPTER 14
Men and Mules to Match the Mountains

The tin mines of Cornwall, England, were worked for many centuries. Young working-class men in Cornwall had two career options: They could work in the mines or go to sea. The Cornish miners, or Cousin Jacks, as they were called in this country, were skilled in working underground and were highly valued in the American West. These miners were acclimatized to the dangerous work and accepted the relatively short life expectancy that accompanied their occupation.

Legend has it that the term Cousin Jack may have originated in a conversation like this: A boss remarked to a worker, "You're a good hand, William! Are there any more like you at home?" "Yes, I got a cousin Jack in the old country who would like to come to America and go to work." "Well, tell your cousin Jack that he can get a job here if he wants."

A Galvanized Cousin Jack

Among themselves, Cornish people referred to those raised in this country as "galvanized Cousin Jacks." Norman "Curly" Coombs fit this description. He was born in Tonopah in 1914 to parents who had emigrated from Cornwall. Men on both sides of his family, including his father, Oswald Coombs, and his mother's brother, Sid Glidden, had been Tonopah miners. Coombs's father had worked in most of the mines in Tonopah. His mother ran a boardinghouse, one of several in town known as the Cornish boardinghouses. Coombs's father and uncle had been working in Bingham Canyon, Utah, and were in Elko, Nevada, when they heard about the Tonopah boom around 1904 and headed for the new camp. Oswald Coombs stayed until 1907 and then returned to Cornwall, where he married Coombs's mother, Lilly Glidden. Sid Glidden was one of the heroes in the fire in the Belmont Mine in Tonopah in 1911.

The Cornish miners were typically small and dark-complected. Although generalizations about them are risky, most of them were of mixed Saxon and Norman ancestry. Norman Coombs had Norman ancestry on his mother's side; his great-grandmother in Cornwall spoke only French. His father could trace his Saxon heritage back about 2000 years.

The Cousin Jacks in the American West loved laughter and joked constantly. Many of the Cornish miners were heavy drinkers. As Coombs described the attitude of typical Cornishmen, "They'd just go through life laughing and all of a sudden they were gone" (Coombs, 1990:308). In Tonopah, where the silica dust (essentially, powdered glass) in the mines could quickly destroy a miner's lungs, many men died young from silicosis.

They used to go up behind the old hospital here. They were up there dying in the pest houses. They had pestilence houses behind the hospital because sometimes that silicosis would go into TB [tuberculosis]. But you'd go over there and . . . you didn't think you were in a place where people were getting ready to die; they'd be laughing and joking and everything. (Coombs, 1990:308-309)

Most of the Cornish miners in Tonopah expected their lives to be over by age 40. Norman Coombs remembered his father frequently spitting up blood from the silica dust in his lungs before he was 40 years old. Oswald, who hated morticians, crawled down an abandoned

shaft in Tonopah when he was 53 and allowed himself to be overcome by the toxic fumes he knew were in that mine; he knew that he was dying from silicosis.

Norman Coombs Comes to Round Mountain

Norman Coombs attended school in Tonopah, but in 1928, when he was 14 years old, his father moved to Round Mountain. Tonopah was beginning to fade, and the mines would soon convert to leasing. When that happened, many of the Tonopah miners moved to Round Mountain. The good miners knew that they could more easily find good ore there than in the dusty mines of Tonopah.

Louis Gordon always generously provided schoolboys in the community with jobs at his mine. Gordon had but one rule: A boy could have a job only when school was not in session. When school began, Gordon terminated the boy's job, hoping to motivate him to stay in school. When he was 14, Norman Coombs began working in the Round Mountain mines during the summer. After his first summer of work, he reluctantly returned to Tonopah to attend high school. A young man between 18 and 21 years of age needed his parents' permission to work underground. Many boys under 18 lied about their age, and the law was not strictly enforced. After two boys were killed at the White Caps Mine in Manhattan, the law was taken more seriously, which threw all of the underage boys out of work. In 1929, when he was 15, Coombs's father said, "Well, you got your choice, you can either work, or starve, or go to school" (Coombs, 1990:201). Coombs decided then to join the Merchant Marine, after which he tramped around the world, though he never strayed far from the mining profession.

Coombs maintained the Tonopah–Round Mountain area as his home base and worked in mines throughout the western United States and in Australia. That experience, along with his aptitude and intelligence, turned him into an expert western miner, familiar with every aspect of the mining business from prospecting to drilling and blasting, to building and operating a mill for refining ore. Moreover, Coombs possessed an uncanny sense of where gold and silver were most likely to occur in a mine—especially concerning the gold in the mines at Round Mountain. He is reputed to have taken several fortunes in gold from those mines over the years.

Like most western miners, Coombs was always unpretentious in his manner of dress and lifestyle, belying his successes. Once, a woman in Tonopah who did not know him well asked him in an accusing tone, after hearing about the tremendous amounts of gold coming out of Round Mountain's new open-pit mine in the 1980s, "If you're so smart, how come you didn't get some of that gold that they're taking out of Round Mountain now?" Coombs, whose shirt was a bit frayed at the elbows and collar, replied with a grin, "Oh, I got a little bit of it" (Coombs, 1991-1995).

Hard Work

The 40-hour work week was instituted in the Nevada mines during Roosevelt's administration. Workers on the Manhattan dredge, for example, thereafter got straight-time pay for the first five days in the week, then time-and-a-half for the sixth day and Sunday. More often than not, though, Coombs worked as a leaser. He felt certain that a man works harder for himself than for someone else.

I always felt better working 7 days. I knew what my job was, I had to drive this tunnel in there, say 100 feet or something, so that was my goal. But if I worked 5 days and laid off and went downtown and got to drinking and chasing women and whatever goes with it, I didn't even feel like coming back. It was about Wednesday before you'd get oriented again and ready to highball it. Oh, I could see it in the mines. The production just went down the tube [with the 40-hour week]. (Coombs, 1990:264-265)

Coombs noted that he once worked 11 months in Round Mountain with only two days off. When asked how a man could do hard labor underground seven days a week, 10 or 12 hours a day with no days off, Coombs replied, "You get exhausted, but you go to bed early, you get rest enough; it makes a good dog out of you. You haven't got any pep left to go out and play with. But some of those young guys did. I was one of them. . . . I didn't know what the word tired meant" (Coombs, 1990:262).

At the Round Mountain mines, the whistle blew at 8 A.M. and men started climbing into the cage for the ride down the shaft. In the early days everybody was already down in the mine by 8 A.M., but the new work law defined an eight-hour workday as beginning and ending at the collar of the shaft.

Oswald Coombs had worked 12-hour shifts at mines in Cornwall and in Michigan. When he first came to Bingham Canyon, Utah, he worked 10-hour shifts. Miners almost always worked seven days a week. The 40-hour, 5-day workweek was implemented slowly. At first some mines started giving Sundays off, but some only granted every other Sunday. Norman Coombs maintained that during one six-year stretch at Round Mountain he would have been lucky to have had a total of three weeks off. His father once worked for 11 years at the Ohio Mine in Tonopah without taking a single day off, not even holidays such as Christmas. On Christmas, miners worked on pumps or on other equipment in the mine.

At work in Round Mountain, miners seldom used the 5-hole or 3-hole burn cut that was often used for drilling in mining camps where the rock was harder. A man who used a burn cut in Tonopah mines would be fired because it was considered wasteful of powder. Round Mountain required only one hole blown in the face of the rock so that the first shot provided space in which subsequent shots could break. Generally, 40 or 45 percent nitroglycerin gelatin powder was used. When miners blasted, they placed an air hose near the blast site. After lighting the fuses, they turned on the air line so that it would blow the powder and blasting gas out of the face at the worksite.

The nitroglycerin in blasting gas produced horrid headaches when inhaled. That kind of headache could be alleviated by inhaling ammonia, packaged in small glass capsules that most miners kept at hand. Handling powder with one's bare hands when preparing to blast also produced terrible headaches. Inhaling or smelling an onion held very close to the face could relieve powder headaches, although this did not work as well as ammonia, according to Coombs. One old-timer helping to sink the No. 4 shaft at Round Mountain used to rub an onion against the face of the rock to make the onion surface juicy, then take a big whiff of it (Coombs 1990:274-275).

At Round Mountain during the 1930s, the leasers and other miners usually worked the day shift, which began at 8 A.M. and ended at 4 P.M. When more than one shift was needed in a mine, the second shift was usually a swing shift from 4 P.M. to 12 P.M. During the graveyard shift, from 12 P.M. to 8 Am, there were usually no drillers in the mine, only skip tenders,

muckers, and trammers, who often used mules to tram the muck out to the mine shaft. For shift work, the men usually rotated, working two weeks on each shift; drillers rotated only from swing shift to day shift.

Mules: Partners in the Mines

On the graveyard shift, mules moved the trains of muck out of the mine. One mule could pull a string of 25 cars. The tracks usually sloped downhill to the hoisting station, so the mule did not have to pull but rather had to hold back, with the cars bumping against his rump. Mules could last a long time in the mines. At first, operators never took the mules out at all, but a law was finally passed requiring operators to take them out every night.

A mule named Rabbit, who worked at the Belmont Mine in Tonopah, used to ride the cage up and down the shaft each shift. His body was too long for the cage, so he had to stand on his hind legs with his front feet raised up to fit. When it came time to go to work, Rabbit would walk into the cage and stand up on his hind legs for the ride down to the diggings.

A mule named Old Jack was used in one of the Round Mountain mines for about 12 years. Jack was exceptionally intelligent. He worked on the 800-foot level near a 360-foot winze (a shaft sunk from the floor of a tunnel within the mine). The miners went up to the 800-foot level to eat their lunch because it was warm there, and Jack was given a feed bag at lunchtime. Sometimes, however, he would slip his feed bag off and lean over, watching the men talk while they ate. The old-timers working in the mine never told a new miner about Jack's habits. Jack would act as if he were listening to the miners talking, seeming to understand the conversation, and when a unsuspecting miner was not looking, he would steal his sandwich—sometimes even snatching it right out of his hand.

Jack wore a headlamp, held in place by a special leather harness. Occasionally, when he was unhooked from his car, he would wander off. When no one was looking, he would go into some old empty drift and knock the lamp off his head. With no light, the mule was extremely difficult to find in the mine. Jack seemed to enjoy his games of hide-and-seek. One old mule skinner remarked that he thought that old mule was smiling sometimes when he found him (Coombs, 1990:277).

Jack knew when the shift was over. When he worked in a tunnel at Round Mountain, the miners would take his headlamp off, hook it to his side where he could not knock it off, hook up his tug lines to his harness, and say, "Let's go home," and away Jack would go. At first, they would find him standing at the gate of his corral when they got out of the mine. Later, Jack apparently discovered that he could have more fun by running down into the valley below the mine, where the miners again would have to play "try to catch me" with him (Coombs, 1990:277).

The mules could also go in and out of the mine by using the mule raise, a corkscrew-shaped walkway that descended into the mine. Sometimes when Jack knocked off his light and hid, he would go up the mule raise, leave the mine, and go straight to the mule barn. He even learned how to open the gate to the mule barn by pulling the bolt on the gate open with his teeth. Eventually, the miners had to put a nut on the bolt to keep him from getting into the barn.

An unclaimed mule named Daniel became well known around 1908 in Round Mountain. As happened to many of his human counterparts of that era, Daniel developed quite a taste for

alcoholic beverages. When Daniel was thirsty for a little of the Oh Be Joyful, he would go to a saloon door and bray; when hungry, he went to a restaurant entrance and brayed. And whenever he did this, he was rewarded with food and drink. After he had spent a month or two doing this, he became quite bold at the saloons. If a saloon door was open, he would enter the establishment and walk up to the bar for his drink. If the door was closed, he would stand there and bray until it was opened, at which time he would walk in and step up to the bar. This so delighted the bar patrons that Daniel was always rewarded for his efforts.

Life Expectancy and Silica Dust

Nevada miners lived with the constant fear and realistic expectation of an early death. As Coombs said, "You knew goddamn well you were going to die in ten years. And here you're a young guy. I'd hear guys say, 'Well, after I'm gone'—and he'd be 20 years old. 'I hope I can stash away enough so my kids won't go hungry' (Coombs, 1990:280). A 30-year-old miner did not expect to reach age 60, and such thinking determined a miner's approach to living: Why build a house that would last 30 years when you could not expect to live that long?

The silica level in the dust in the Round Mountain mines was not as high as it was in Tonopah, but it was still dangerous enough to fear. Many miners protected themselves by wearing respirators or other filtering devices. For example, Robert G. McCracken, who worked in the mines at Reveille, Silver Bow, and Timpahute, always wore a homemade filtering device. He had learned from old-timers in Boulder County and Cripple Creek, Colorado, that the best way to prevent dust from getting into the lungs was to wear a wet sponge, held in place by an elastic band attached to each side of the sponge, over the mouth and nose. The sponge was kept wet and was periodically rinsed out to maintain its moisture content and to wash out the trapped dust. Because of his vigilance, McCracken, who worked for his entire career as a miner—sometimes under very dusty conditions—acquired little lung damage from silica. He observed that most of the men he worked with beginning in the early 1930s were dead long before their time from lung disease produced by dust. Breathing through a wet sponge, however, is not without side effects. Doctor Craig, a Tonopah physician, noted that a person breathing through a sponge sucked a lot of moisture into his lungs. Craig maintained that a miner was better off with a dry respirator, but McCracken disputed this opinion. Another side effect of wearing a wet sponge against the face for several hours a day was chapped skin, but that could be prevented by using Vaseline or hand lotion for protection (McCracken, 1955).

At Round Mountain, as in most mining operations, one of the worst places for dust was around the crushers. Water cannot be used to dampen the dust in a crusher, because the crusher becomes clogged with mud. Further, rock crushes best when dry. When Coombs, who also used a wet sponge, worked with the crushers at Round Mountain, his wet sponge would become so plugged with mud formed by the dust that he had to leave the crushing room periodically to wash the sponge out.

The Miner's Lifestyle

Many of the single miners at Round Mountain lived in small cabins and took their meals in boardinghouses. A standard meal—even at that time—was called a "heart attack on a plate." Breakfast was usually sausage and eggs, sometimes with bacon, ham, or even steak. It was

served between 5:30 and 6:00 A.M. Typically there was beef for dinner, or sometimes pork, usually served with potatoes. which were often fried. Room and board cost $35 per month in Round Mountain in the early 1930s and normally included laundry service. A single meal cost 50 cents. Sometimes families would take on a couple of boarders to supplement their income.

Coombs lived with his father in a small cabin where they "bached"—that is, they prepared their own meals and did their own housekeeping. They made stews and Cousin Jack pasties, a kind of pot pie in which meat and vegetables are baked in a dough crust. The cabin in which Coombs and his father lived in 1926 had only two rooms, one for sleeping and the other for cooking. Miners bought their groceries at the Mine Workers' Mercantile, which was owned by the mine. The miners' checks were routed first to the store, and of course the grocery bill came out of the check before the miner got his pay. In the late 1920s and early 1930s, a worker could live pretty well on $45 per month whether he boarded or bached. He could also eat at one of several restaurants in Round Mountain—at the Mencken's, the Four Day Jack, Josie's Cafe, or at Tabor's hotel, called the Round Mountain hotel, which served meals.

Many of the miners in the area then held leftist political views and either joined or sympathized with the International Workers of the World (IWW) union when it operated in central Nevada. When miners voted, they were likely to support the Democratic or even the Socialist ticket. A large percentage of miners were happy-go-lucky people who tended not to worry much about the future. Often a miner who was a family man did not stay long in such a dangerous and unpredictable profession.

During the 1930s, there were a number of old miners living in Round Mountain. They were kindly old gentlemen who had worked in mines in Round Mountain, in other towns in central Nevada, and throughout the West. Fred Oliver, who had come from England, was a typical old miner. He may have done some high-grading at night to supplement his income. "Old Man Oliver" liked the local children and they liked him. He often ordered "store-bought" cookies from Tonopah and had them sent on the stage for the children. Oliver was always a gentleman; he had been well educated and read extensively.

Oliver lived in a typical two-room cabin that had one room that served as his kitchen and living room and another that was his bedroom. The kitchen-living room contained a sink and cookstove, and the bedroom had only a bed and dresser.

Oliver usually went to the Berg home for Thanksgiving and Christmas dinners. When Karl "Skook" Berg left Round Mountain for military service during World War II, Oliver said to him, "If you ever go to England, please walk across the London Bridge for me." Some time later, Skook wrote to ask his sister Shirley Ann to "tell Old Man Oliver I went across the London Bridge for him" (Lofthouse, 1990:52).

Miners' conversations covered many subjects but often centered on sex-related topics, for instance, brothel girls. There is an old saying in the mining business: A miner does his mining in the bar and his lovemaking in the mine. The language miners used among themselves was rough and was usually laced with both profanity and vulgarity.

Norman Coombs's mother was disturbed by the negative effects working in the mines of Tonopah had on her husband, Oswald, so she purchased a small property 7 miles north of town to try to lure him out of the mines to work instead on the small "ranch." The ruse did not work, however. Oswald Coombs was hooked on mining, as often happened with miners of that era.

Lilly Coombs lived out on the property for a time, but because Oswald continued

working in the mines in Tonopah, she ended up spending most of her time in Tonopah (Coombs, 1990:165).

Rich Rewards

When Norman Coombs worked in the mines at Round Mountain in the 1930s, the stringers often bore gold. Unfortunately, the ore-bearing stringers, though rich, were usually very thin. The ore typically ran about $5 to $6 per pound, and it took all day to get one pound. Once in a while, the stringers would include a little pocket containing larger quantities of ore. The knowledgeable miner hoped to discover the locations where the stringers cut a vein, where rich ore accumulated. Coombs learned that the most productive area was a flat zone running perpendicular to the vein and the stringer, forming a 3-way junction between the vein, stringer. and flat area. Still, not all stringers had good ore like the Neubaumer, Placer, and Indian stringers, and other stringers sometimes contained good ore but could be unpredictable (Coombs, 1990:174).

The original discovery on the Sunnyside claims was at the site of the No. 1 shaft, which had been sunk right into the Los Gazabo vein, the richest at Round Mountain, over 100 feet wide in places from footwall to hanging wall (Coombs, 1990:167). When Norman Coombs, one of the few people still alive in the 1990s who had worked the Los Gazabo vein, first worked there in 1933, he and his companions were working on the 800-foot level of the No. 1 shaft. The engineers had calculated that the Automatic and Los Gazabo veins would intersect with the Indian stringer. Times were tough and the company did not have much money. Louis Gordon informed the crew:

We have no money, but if we hit this thing, I don't know how long it's going to take to get in where we figure this intersection would be. It should make a hell of a pipe of ore in there. In a couple of months we should be in there. If we don't make it, we'll sell all this mill and the buildings and machinery off, and we'll get enough to pay you. (Coombs, 1990:180)

Coombs stayed on because, as he said later, "The Depression was on. . . . If you weren't 30 and didn't have 12 years' experience underground, you couldn't get a job, hardly" (Coombs, 1990:180).

A long, arching incline shaft was sunk in the 800-foot level of the No. 1. It went for over 3000 feet before it eventually ended up on the 1165-foot level, where the ore chemistry changed and the values became poorer. At first the winze was inclined toward the north, then drifted west, then went full circle. Gordon was right: It took about two months—and then they hit the intersection of the Automatic and Los Gazabo veins and the Indian stringer. The spot was so rich that after blasting, the wire gold could be seen hanging down from the walls of the tunnel. In 175 feet of the 800-foot winze, they took out over $1 million in gold. In 1935, they hit the sulfide zones and the change in chemistry, and Gordon sold out—for the first time (Coombs, 1990:179-181, 215).

Over the years, whenever Coombs needed money he would return to Round Mountain. He knew the mine, he knew the ore, and he always knew where he could take out a good shipment and make more than he could working anywhere else.

In later years, after the mill had been shut down, Coombs went down into the old workings and mined some of the old pillars of rock that had been left standing to keep the mine and the shaft from caving in. On one pillar, he fount unbelievable seams of wire gold. The

pieces were al. intertwined in masses of wire like pieces of cable; some pieces were four or five inches long. Coombs said that when he pulled the wire masses apart, they squeaked (Coombs. 1990:177).

When Coombs was a young man, he worked on the surface digging some foundations for modifications on the Sunnyside Mill, which had been built at the site of the No. 1 shaft. While digging the foundations, they hit high-grade. but they just threw it into the ore bin and continued with the foundation work, afraid that mining it might weaken the mill structure. Later, they dug deeper and came up under the mill to get some of the ore, but Coombs knew they had not gotten it all. In 1963, Coombs returned to Round Mountain and stayed for five and one-half years. He leased four claims from Louis Gordon, including two Sunnyside claims. He began digging, moving out from the mill, which was still standing. and sank a shaft on a little stringer not far from the Automatic fault. At first the ore was not very good, but 20 feet down he hit a small pocket of gold. He went down another 50 feet and broke into the old stope under the mill. Coombs realized that breaking into that stope was to his benefit, because he could dispose of his waste rock in it instead of having to hoist it out. He put some timber in and went right across the top of the old stope, heading for the stringer that was producing the ore under the mill. He then took out as much of the block of ore under the mill as he dared, leaving enough rock between his workings and the surface to hold the mill. He was richly rewarded for his efforts. Nonetheless, Coombs pushed his luck only so far when working any dangerous stope because he had no desire to become "the richest man in the graveyard" (Coombs. 1990:211).

Henry Stackpool: Tramp Miner

From the 1920s through the 1950s, much of the labor in western hardrock mines was provided by "tramp miners," men who were highly skilled, versed in all aspects of the mining profession. They were usually well paid for their knowledge. Such miners, in addition to knowing how to drill, blast, and muck, had to have a working knowledge of the operation and repair of the equipment they used. They were skilled in using timber to shore up tunnels, stopes, and shafts, and they were able to lay track in the mine, string water and air lines, and install vent pipe.

Tramp miners never stayed long on a job, moving from one job to another—hence the name, "tramp" miner—sometimes remaining at one location for only a few weeks. Most tramp miners moved about because they preferred to—it was in their blood, some say. Because they were good workers and were so knowledgeable about mining, they could get a job at a mine almost anywhere. They usually traveled a circuit from northern Idaho to Arizona, following the seasons—Arizona in the winter, Idaho in the summer.

Henry Stackpool, a Cousin Jack, was about 60, which was old for a tramp miner. With his fairly advanced case of silicosis, he was unable to walk 100 yards without doubling over from coughing. In the early 1950s, Wah Chang, a Korean tungsten magnate, acquired the large tungsten mine at Tempiute in Lincoln County. Chang had purchased the old mill at Northumberland in the Toquima Range and was moving the machinery to Tempiute. The equipment to be moved included two large ball mills, each of which was about 8 feet in diameter and weighed 20 tons. Engineers were brought in to try to figure out how to move the

mills, which could be taken apart and transported piece by piece, but that was costly and time consuming.

The engineers had not yet come up with a plan when Henry Stackpool, who was on the crew, pointed to Don Cirac, an 18-year-old also on the crew, and said, "Give me that kid and I'll get those things out of there for you in two days" (Cirac, 1990:63). The engineers agreed to let Stackpool try.

The ball mills sat on large cement foundations. First. Stackpool drilled several holes in the cement foundations just as though they were a rock face; Cirac held the steel and Stackpool wielded the double jack. Stackpool could stand and wield the double jack for hours on end without becoming short of breath. After a few holes had been drilled, Stackpool loaded them very lightly with dynamite and blasted, or as they say in mining, "popped the holes." The blasting broke the foundations enough for the huge ball mills to be moved Stackpool then put down 2x12-inch planks and pieces of flinch pipe about 10 feet long and rolled the ball mills on the pipe, pulling them with a block and tackle and using pry bars and jacks. True to his word, the old miner and Cirac loaded both of the mills in two days.

Once, Don Cirac, Stackpool, and another old tramp miner in about the same condition as Stackpool, along with 70 or so other men, were snowed in at Northumberland for several weeks. An airplane dropped food to them, but that was not enough. The deprived miners were thirsty. On a clear day, using rocks they collected from the mines, they wrote "WHISKEY" in the snow to alert the pilot dropping the food. This communication went unanswered, so Stackpool and the other old miner constructed homemade snowshoes and walked about 25 miles to Carvers. Everybody figured that with their silicosis and advanced age they would die en route. so they tried to talk them out of making the trip. But it was to no avail. The two men made it to Carvers and stayed in Round Mountain (presumably drinking whiskey) until the roads were opened up.

CHAPTER 15
Will Berg and Fulton Little Kelsay: Two Who Did Not Mine

The Berg brothers, John ("Jack"), Karl, Elmer, and William ("Will") were from a Pennsylvania Dutch family that had settled in Ohio. Just before the turn of the century, all four brothers made the trip north to join the gold boom in the Yukon. Like most of those who went to Alaska hoping to get rich, they did not; but they were able to make a living there. After spending seven years in Alaska, the Bergs heard about the boom at Round Mountain, and by 1907 they had all arrived there. Later, their mother, Hannah Ward Berg, moved to Round Mountain, as did two cousins. The Berg brothers did whatever was necessary to earn a living in the booming community, including mining and odd jobs, but they focused primarily on commercial activities. Jack operated a garage in Round Mountain; Karl had a general store with a meat market during the 1920s and 1930s;' Elmer Berg, a machinist, did not stay long in Round Mountain but moved to southern California.

Will Berg's Water System

Research on mining communities in the West nearly always reveals a few individuals who are energetic, hardworking, and possessed of an unusual entrepreneurial spirit and ability. In Round Mountain, William Henry Berg was such a man. From the time he arrived in 1907, when he was 34 years old, until his death in 1950, Berg was involved in an astonishingly large number of enterprises in the small community. Louis Gordon was the most important figure at the helm of the most prosperous mining company in Round Mountain. Will Berg and Gordon were the town's most prominent citizens for more than 40 years.

Today, Will Berg would be called a workaholic, but such terminology was not in vogue in Berg's time. Berg's son Skook said of his father:

In those days, they didn't call a guy like him a workaholic. He had to do it to survive in this country. His day started at daylight. He'd come in about 10:30 for lunch then nap for 30 minutes or so. He would just lay down by the stove and go to sleep—no matter who was there. Then, back to work. Seven days a week no matter what the weather was like. (Anderson, n.d.:53)

Berg's biggest achievement was the development of the Round Mountain water system, which he owned for nearly 40 years. Following his father's death, Skook took over the water business and operated it until 1981, when it was sold to Copper Range (Anderson, n.d.:55).

No water was available in the town of Round Mountain until 1908; before that, it had to be hauled in from springs at the base of the Toquima Range to the east. Around 1912, Will Berg purchased, and began expanding, the small company that had been providing water to Round Mountain from a single spring (Arleen Berg, 1995). The water for Berg's expanded system came from three springs: Inkhouse Spring, located on the north side of the old town of Jefferson; Healey Springs, in Jefferson Canyon; and another spring in Shoshone Canyon. Berg never filed claims on the water sources but rather obtained them through possessory rights. To build the system, he worked without mechanized equipment and laid about 7 miles of pipeline, which delivered water to two underground cement reservoirs he constructed near town. Berg dug all

the ditches by hand, occasionally blasting big boulders or bedrock where it came to the surface. Usually, however, if a large boulder was in his path, he simply routed the ditch around it. Because water was already flowing downhill to the reservoirs, it was only necessary to bury the delivery pipelines two feet below the surface.

Water pressure was provided by gravity flow. The water sources were originally only seeps, so Berg had to improve their flow by digging them out. Again using only hand tools, he dug a 100-foot tunnel into the mountain at the Shoshone site and a 50-foot tunnel at Inkhouse Spring. The tunnels contained tracks and a small mine car that Berg used while driving the tunnels. Water in Berg's system never saw light until it came out of the spigot at a customer's house. The water was frequently tested by the state, and it was so pure that chlorination was never required. Will Berg's system consistently produced an average of about 30 gallons of water per minute. When Skook Berg succeeded his father, he did some development work at Healey Park and approximately doubled the system's output.

Will Berg was a small man. Although he weighed only 140 pounds and was no more than five feet five inches tall, he was capable of extremely hard labor. When he was digging the ditches for the water system, he averaged 50 feet of ditch each day. He always made the ditches as narrow as possible, using a shovel that had been cut down and a miner's pick, which is smaller and has a sharper point than an ordinary pick.

By the time the water flowing downhill from the reservoir had reached the lines in town, it was moving slowly. The water lines in town therefore had to be buried four feet deep to prevent freezing. The water mains in Round Mountain did not necessarily follow a rectangular grid; sometimes Berg would run a ditch diagonally across a vacant lot to save work. He could always locate a pipeline once it was buried because he habitually tied a copper wire onto every valve, extending the wire upwards toward the street level, where it ended just one inch or so below the ground surface. By scraping around with a shovel, Berg could easily find the wire. He sometimes hooked wires to customers' pipes and ran electricity down their water lines to locate a buried pipe. He generated the voltage from a Model T Ford coil and used earphones to detect the humming sound in the pipes that revealed their location.

Water service was available to anyone in Round Mountain who wanted it. In 1951, the price for water service was $5 per month for a family and $2 for a single person. In 1970, the rates were raised to $7 for a family and $3.50 for a single person. In 1976, the prices went to $8 and $4.50, respectively, and by 1980, rates had reached $12.50 and $6.50.

Over the years, pipes in the system required constant attention and considerable repair. They were patched by a method well known to Nevada miners and ranchers. The Berg family, children included, helped Will cut old inner tubes into two- to three-inch wide strips up to several feet long, which would be wound tightly around a section of leaky pipe and then secured with baling wire. When the Round Mountain Gold Corporation took over the water system in 1981, the company expanded it, installing a 300,000-gallon holding tank and a chlorinating system, as well as enlarging the water collection system. However, many residents in Round Mountain still feel nostalgic about the old system and miss the water's unchlorinated purity (Berg and Berg, 1990:40-47).

A Born Entrepreneur

Around 1915, Will Berg bought a ranch in Smoky Valley from Hannah Logan. Logan's daughter, Kate, had been raised on the ranch, but she had married Ray Darrough and moved to Round Mountain and then to Tonopah. The ranch, just to the north of Darroughs Hot Springs, had approximately 800 acres (Berg and Berg, 1990:50) and provided an outlet for Berg's great love—growing vegetables. He had a green thumb and could grow anything. He produced a wide variety of vegetables there, among them peas, carrots, beets, turnips, pumpkins, squash, cabbages, corn, potatoes, and tomatoes. In addition, his orchard yielded not only apples, cherries, peaches and pears, but also corn and tomatoes, which he interplanted with the trees. Berg had no patience with animals, even workhorses, so Fulton Little Kelsay, a family friend who lived on the ranch, did the plowing. Berg used ditch water for irrigation. There were three separate gardens: one below the house, one near what the family called the "pond" (filled by two artesian wells), and one farther out known as the "farthest garden," which was devoted primarily to potatoes. In all, Berg had nearly three acres of gardens and two and one-half acres of orchard.

For many years, the garden produce was used primarily by the family, although Berg often shared it with friends and sometimes sold some to local people. During World War II, when the federal government shut down the nation's gold mines, many people left Round Mountain, so Berg's income from the Round Mountain water service dropped. To make up for the loss, he expanded his vegetable-growing operation and peddled his vegetables and fruit in Tonopah, which was booming because of the construction of the Tonopah Army Air Base, and in Manhattan and Northumberland, as well as throughout Smoky Valley.

Will Berg's method of selling produce was similar to the way farmers had sold vegetables in Nevada communities for 60 or 70 years, the only difference being his use of a small truck instead of a team and wagon. He loaded his pickup, left the ranch about 4:30 A.M., and set off for Tonopah, often accompanied by his daughter Shirley Ann. He always went first to the county hospital and the miners' hospital. In a short time, he developed a regular route for each of the towns he visited, and customers waited at specific locations for him. Berg's customers always paid in cash. Beets, carrots, and turnips were 10 cents a bunch; three pounds of apples sold for 25 cents. Berg also grew asparagus and sent a box to Grandma Laura Darrough every week during the season. People up and down Smoky Valley, as well as in the towns, could order assorted vegetables in different quantities, including large orders that cost $5 and $10 (Thomas, 1974:3).

Berg arranged for boxes of vegetables to be delivered by the "stage"—an old blue truck with racks on the back —which ran between Tonopah and Round Mountain every day except Sunday. Pete Beko was the stage driver, and he delivered anything a person requested to any place along the route or at Round Mountain or Manhattan. He carried the mail and packages, as well as supplies and groceries ordered from the store in Tonopah.

Will Berg also used the stage's northern service to deliver his boxed vegetables. The northern stage, driven by Henry "Snooks" Streshley, was a small pickup that ran six days a week from Round Mountain to Austin on an unpaved road. Snooks did not make a daily round trip but would stay all night in Austin and return the next day. He was a quiet, shy, soft-spoken man, but he loved to gossip, and his job as stage driver provided him with ample material and

opportunity. Beko and Streshley both earned most of their income by delivering the mail (Lofthouse, 1990:4-7, 58-59).

In addition to his produce enterprise, for a number of years during the late 1920s and early 1930s Berg operated a dairy in Round Mountain. He kept a small number of dairy cows in a building on the edge of town, milked the cows himself, and sold the milk locally.

Ever the entrepreneur, Will Berg also had an ice business in Round Mountain. Round Mountain was too small to have its own ice plant, and with no railroad or easy means of transportation between Round Mountain and Tonopah, there was a market for ice in warm weather. Throughout the winter, Berg filled five-gallon kerosene cans, from which one side had been removed, with water at Shoshone Creek, about 1 mile east of Round Mountain, leaving them there until they froze. Then he removed the ice block and stored it in an icehouse he had built in the early 1920s. He used sawdust and dried grass from his ranch to insulate the ice (Anderson, n.d.:59).

Lillian Yeager Marries Will Berg

Lillian Gladys Yeager was born in Leavenworth, Kansas, in 1895. She had a difficult childhood. Her parents divorced when she was quite young, and for a while after that she lived with a grandmother and an aunt in Leavenworth. When her mother married Ira Williams in Cripple Creek, Colorado, Lillian joined them there. Williams owned a restaurant and forced young Lillian to work in it. Ira Williams was abusive to both Lillian and her mother, often beating and even chasing them with a knife or gun in hand. In 1906, the three moved to Round Mountain. When Lillian was about 18 years old, her mother died under conditions that always remained questionable to her, given William's violent personality; Williams had stayed home from work the day her mother died, and he was the last person to see her alive (Thomas, 1974:3). Lillian then went to live with relatives who had moved to Round Mountain.

Will Berg had kept an eye on young Lillian as she matured and had fallen in love with her. Although he was 22 years older than she, he hoped to marry her. He took her under his wing after her mother died and sent her to school in California, where she attended the College of the Holy Name, a Catholic school in Oakland. She spent a year in California and then returned to Round Mountain. The nuns, hoping to discourage her from marrying a man who was so much her senior, asked her to return and join their order, but Lillian refused and married Will Berg in 1914.

The couple first lived in a small house next to the garage owned by Will's brother Jack. Will began construction of a house for his new bride on the corner lot directly across the street from the garage. It proved to be the finest house ever built in Round Mountain and still stands as a monument to Berg's industriousness and love for his bride. In 1984, the house, still in the Berg family, was placed on the national register of historic places. It was designed by Berg's brother-in-law Dan Thomas, an architect-contractor living in California who had married Will's sister Georgetta. The one-story house has a shingled hip roof and wide eaves. It was built using rusticated concrete blocks that Berg made by hand. The front entrance, which faces west, has a large porch supported by tapered wood pillars and surrounded by a low wall made of the same cement blocks, laid with spaces between them.

The two-bedroom house was wired for electricity when it was constructed. The bathroom was modern for the frontier, featuring a large iron bathtub and a pull-chain toilet;

the Berg house was likely the first in Round Mountain to have indoor plumbing. Heat came from a fireplace in the living room, an Alaskan double-barreled stove made of two 50-gallon barrels stacked on end in the dining room, and a woodstove in the kitchen. There was another heater on the back porch on which large tubs of water could be boiled for washing milk bottles when Berg had his small dairy in Round Mountain.

Furnishings in the living room included a large carpet with a geometric pattern, three rocking chairs, a table with crocheted coverings, and a piano. A large clock stood on the mantle and Lillian Berg's collection of Indian baskets was eventually displayed on shelves between the living room and dining room. Twenty people could sit around the dining room table when all of the leaves were used. Chandeliers hung in both the living and dining rooms. The kitchen had a sink with running water and ample cupboard space.

On the south side of the house, Berg dug a cellar with walls made of a double row of bottles embedded in concrete, with the bases of the bottles facing outward. The dead air space produced by the bottles created excellent insulation. A shingled roof covered the cellar at first, but it was later replaced by a corrugated tin roof. Will and Lillian moved into the house in March 1915, before it was completely finished, and their first child was born two months later.

Lillian Berg was lighthearted, but she was also realistic. She realized that Will was her father figure, so she did not mind his calling her "kid" (Thomas, 1974:3). Lillian was musically inclined. She played the piano and gave lessons both to her own children and to other interested children in town. She always made her own bread, chowchow (a spicy preserve), piccalilli (a pungent pickle relish), and mincemeat. She canned a great deal and was considered an excellent cook.

Lillian enjoyed hiking and visiting friends and acquaintances. Her hobby was walking the canyons around Round Mountain looking for purple bottles. She found numerous small opium bottles in Jefferson Canyon that had once belonged to Chinese workers there, and she once found an opium pipe.

Lillian and Will Berg had six children, but only five survived. The third child, William Eugene, was sent to California to go to school as a youth and eventually became a professor of zoology at the University of California at Berkeley. The oldest child, Dan, died at age 40. The other children include Georgetta ("Getta") Jakowatz, who lives in Sparks, Nevada, and Skook Berg and Shirley Ann Berg Lofthouse, who live in Smoky Valley.

Death took Will Berg quickly at age 77. He had been digging a cesspool and went home and asked his youngest daughter, Shirley Ann, to get his brother John to take him to the hospital. That was the first indication that he was not well. He was a stoic man, fairly stern, full of energy, and he seldom showed his emotions. His brother drove him to the hospital in Tonopah, where he died before the day was out. Following her husband's death, Lillian remarried but was soon divorced and had her name changed back to Berg. When she died at nearly 80 in 1974, she was still living in the house her husband had built for her. When asked what had kept her in Round Mountain all those years, she answered quickly, "Why, my kids! Where would I go if I didn't have kids? . . . I sure wouldn't want to be in Kansas!" Then, gazing across a windowsill filled with purple bottles, she added, "I even love that old round mountain out there!" (Thomas, 1974:5; Berg and Berg, 1990).

Fulton Little Kelsay

Not many details of the early life of Fulton Little Kelsay, called Little Kelsay (Little was not a nickname, but a family name), are known. Apparently he was born in 1885 and was raised near San Francisco, where he was involved in horse racing. By the early 1920s, Kelsay and several of his relatives, including his mother and father and perhaps his uncle Warren Lerude and his cousin Les Lerude, lived on two small nonadjacent ranches east of Smoky Valley in the Little Fish Lake Valley area; the properties were located north of the Clifford's Stone Cabin Valley Ranch.

In 1923, Little Kelsay arrived at Will Berg's ranch in Smoky Valley. He asked for a job, and Berg hired him. Kelsay then moved to the ranch. He was an excellent horseman, and in a short time Berg gave Kelsay permission to raise horses at the Berg Ranch. Kelsay raised registered quarter horses for the U.S. Cavalry and sold horses locally as well. He had as many as 30 or 40 head and always kept a registered quarter horse stallion. Kelsay's employment at the Berg Ranch began an association between Kelsay and the Berg family that lasted until Kelsay's death in early 1945. Kelsay and Will Berg developed a partnership arrangement—Kelsay was responsible for taking care of the ranch, freeing Berg to spend most of his time on his many entrepreneurial activities. The ranch was never very profitable for either Kelsay or Berg, but it was of prime importance in both men's lives.

Kelsay's mother (known as "Grandma Kelsay" to the Bergs) and father moved with him to the Berg Ranch. During the first few years that Kelsay was on the ranch, his father, and then his mother, died; both are buried in the Round Mountain cemetery. From time to time, other members of Kelsay's family would visit him at the Bergs' ranch, but none of them stayed long.

Little Kelsay was about five feet seven inches tall and weighed about 160 pounds. Sometime around 1920 he contracted polio, and the disease left the lower portions of his legs severely deformed. Kelsay went to a sanatorium in Missouri for treatment. Afterward, his legs remained thin, and one was about one inch shorter than the other. Still, he was able to walk, although with a limp and a shuffle that made him easily recognizable from a distance. He did not allow his handicap to hinder him in his ranch work or in breaking horses, but he seemed to suffer from poor circulation because he always slept with a thick pile of quilts covering him. He had two more quilts made of old Levi jeans filled with cotton padding as mattress pads to keep the cold from seeping up from underneath his bed. Kelsay had the leathery complexion of a man who had spent much of his time outdoors in rural Nevada; by the 1930s, his hair had turned completely white.

Little Kelsay was an excellent cook, and he could take pride in his homemade bread and pies. Occasionally, he would supplement his meat supply by poaching a deer. His legs were too weak to walk the mountains, so he would ride his favorite horse, Queen. Queen was an excellent deer-hunting horse; she could spot a deer faster than her rider, and when she saw a deer her ears would stand up. When that happened, Kelsay knew where to look.

Much of the time Little Kelsay was alone on the Berg Ranch, and often he was quite lonely. He never married but was known to have had a warm relationship once with a woman who had traveled to Nevada, perhaps because she was estranged from her husband, although no one really knew her circumstances. She stayed at the Kelsay place in Little Fish Lake Valley for several months, and the two rode the hills together companionably.

Kelsay had his own bedroom at the Berg Ranch, with a big bay window that looked out toward Darroughs Hot Springs. There was only a dirt road between the ranch and Round Mountain, and from that window Kelsay could see car lights reflecting off the clouds of dust made by every approaching vehicle: "Well, it didn't stop at Pete and Mary Rogers's place [now known as the Wine Glass Ranch]. It didn't go into Darroughs Hot Springs. The car's coming on. Let's see if it stops here."

Kelsay was considered a member of the Berg family. He was loved and remembered with great fondness, especially by Shirley Ann, who always referred to him as Uncle Little.

Around 1930, Little Kelsay began keeping a diary in which he recorded his daily activities and social contacts. He used five-year diaries. There was a single page for each day of the year, with month and day printed at the top, and room for entries for five years on that date. Kelsay filled three diaries covering 15 years' time, but the first diary was lost. The surviving diaries span the years 1932 through 1936, and 1937 through 1941. His diaries, which have been transcribed and are available at libraries and museums in Nevada, provide a terse but graphic record of rural life in Smoky Valley during that era.

The entries that follow were made on Shirley Ann's birthday, July 7, for the years 1932 through 1941:

1932. Thursday. "Shirley Ann Berg." Will came home to night with great news, a baby girl was born to Lillian this morning at 12.30 weight 7 3/4 lbs. Lillian doing fine. good.

1933. Fri. Chores and things to day. then we all went up to the creek to celebrate Shirley Ann's birthday. One year old to day.

1934. Sat. I took Rainstorm [a horse] back to Marsh to day. left home at 7.30 got to Marshes about 4. L. & G. washed. S.A. two yrs old to day.

1935. Sun. Slim Smith, bill Berg and I took 412 fish to Belcher Basin to day, then we went down over the Falls. S.A. three yrs. old to day.

1936. Tues. Shirley Ann's birthday, got her some candy 4 yrs old and a darling. Folks come down aft. noon.

1937. Wednesday. Cut hay fore noon, sick rest of day. Rest of bunch worked on hay and cooking. Dan run mower.

1938. Thur. Cop, Will & Grace F. went to Tonopah to day. More haying. Lillian & Getta washed to day. They & Skook went to the show in Manhattan.

1939. Fri. Still bucking hay. Skook raking. Will went to Rind Mt & back. L put up 8 qt. cherries. S.A's birtday.

1940. Sun. I and Claude mowed fore noon. Skook raked fore noon. mowed after. Will in Garden and Orchard. S.A. playing with Pee Wee. I baked her a cake. (Birthday.)

1941. Mon. Come over the mt. into Jefferson. Colt can hardly travel. To day is S.A's birthday. (Kelsay [1932-1936; 1937-1941], 1991

Over the years the entries in Kelsay's diaries became the official record of events in the Berg family. Whenever a dispute would arise about whether something had happened or not, or about the date of an event, someone would say, "Uncle Little, go get your diary. Let's settle this." He would, and usually the question could be answered. There is a timeless quality about Kelsay's entries; they reveal a flow of events dictated mainly by the weather and the seasons. Kelsay's very first entry, for Friday, January 1, 1932, reads: "Hauled hay on a bob-sled with 4 horses from Twin River. My Pardner Will Berg helped me. Biggest snow fall on the 26th of Nov. that we have had in 15 yrs. This Book was given to me by Lillian Berg Dec. 25 1931" (Kelsay [1932-1936], 1991:1). The last entry was made on Wednesday, December 31, 1941: "5-5 O'clock, snowing but no wind. haven't seen anyone since Sat. Hauled hay and fed all the cows to day. About six in. of snow now" (Kelsay [1937-1941] , 1991:383).

Sometime in the 1940s, Kelsay purchased a small ranch from Pete Boni. He spent his summers at his Barker Creek Ranch, which was across Smoky Valley to the east of the Berg Ranch, but he continued to live and work at the Berg Ranch during the winter. There were no telephones, so Lillian and Shirley Ann worked out a system of signaling with mirrors, using a code they had invented. They flashed Kelsay at high noon each day, and he flashed back. One signal meant that he was fine, another meant to come over, and a third one meant emergency, which they were grateful never had to be used.

Little Kelsay died in the hospital in Tonopah in April 1945 from problems with high blood pressure. He only lived to be 60 years old. The occasional references in his diaries to how "bum" he felt suggest that he had to struggle against a considerable disability from his polio. Kelsay was so fond of Shirley Ann Berg Lofthouse that he left his entire estate to her—the small ranch at Barker Creek and $1500 in government bonds (Lofthouse, 1990:76).

Notes

1. Arleen Berg recalls that Karl Berg's store had a large safe containing a number of drawers that he rented out as safety deposit boxes to local residents (Arleen Berg, 1995).

PART FIVE
LIFE IN SMOKY VALLEY

CHAPTER 16
Schoolteachers in Smoky Valley

There were few careers open to women during the 1920s and 1930s. The most realistic option for a young woman was to pursue a career as a secretary, nurse, or schoolteacher. In those decades, and for several to follow, elementary-school teaching was almost exclusively the province of women. Although male teachers often taught at the high-school level, it was uncommon for a man to work in an elementary school other than as a principal.

A Career for Young Women

In Smoky Valley, the boom-and-bust mining economy and the small, dispersed population of ranchers and miners have always made it difficult to maintain a stable educational system. When Round Mountain and Manhattan were booming, the schools would be filled with children, and several teachers would be working; but when a bust set in, only a few children and one or perhaps two teachers would stay on. When the economy really went sour, the school might shut down altogether, and at those times, children would be bused to schools in Tonopah or Austin. Ranch families often found it necessary to either establish a household in town or board their children with friends or relatives in town so that the children could attend a school. Ranchers with school-age children could also establish a small school on the ranch. State law allowed schools on ranches or in other small communities provided there were at least five students. Once established, a school could continue with only three students, but if the number of students fell below three, the school had to close. Parents on ranches and in rural areas also had the option of home schooling—teaching their children themselves under a curriculum supervised by the state.

During the 1920s and 1930s, there were no unified school districts in Nevada. Each small community or ranch that wanted to establish a school became its own school district—with its own school board, responsible for providing a building, textbooks, and a certified teacher. Typically, no teacher was available locally, so it was necessary to import one.

Conditions at such schools were usually spartan. Ordinarily, the schoolroom was a small cabin or a room within a larger building designated as a school. A teacher performed her own janitorial duties. In addition to normal academic subjects, instruction was also required in music and art, subjects that were taught by specially trained teachers in city schools. Graduates from the University of Nevada normal school were required to purchase a book on playground activities and supervision and were expected to use it. The state of Nevada prepared mandatory exams for seventh and eighth graders. Tests were received in sealed envelopes the day before being administered, so there was no way a teacher could "coach" for the test. A student had to be prepared for anything! Tests included questions on math, English, spelling, and geography. Gladys Bowler, who grew up in the Reese River Valley and taught at the Millett Ranch in the late 1920s, believes that many high school students today would have trouble passing those tests (Bowler, 1995). Teachers were responsible for producing Christmas and

Thanksgiving programs consisting of plays, songs, and recitations performed by the schoolchildren. Traveling nurses visited each school a number of times during the school term. They left medications and instructions for treating lice and impetigo with the teacher. Indian children were especially prone to those conditions at that time.

The teacher might be given private living quarters, possibly a one- or two-room cabin near the school, where she could prepare her own meals, or she might have her own room in the home of a family that lived near the school and would take her meals with the family.

Such conditions made for a meager social life. A teacher isolated in a very small community or on a ranch in rural Nevada did not see many adults on a daily basis. Living with a family meant a certain lack of privacy, even though the young woman might have her own room. Accommodations usually lacked most of the modern conveniences available in urban areas. For example, few buildings or cabins had electric lights or indoor plumbing. Ranchers' homes were often difficult to heat and were cold and drafty in the winter. Facilities for bathing were usually simple; often, people were limited to an occasional sponge bath.

In addition, the pay for schoolteachers was usually low. It was common for a rural school to pay a teacher less than was standard for a comparable position in established communities like Reno or Las Vegas. The student body at ranch and small town schools consisted of the ranch owner's children or the children of the principal family or families at the site; possibly a child or two of a hired hand; and perhaps one or more Indian children whose parents worked on the ranch and lived in quarters on the edge of the ranch property. Most ranches had one or more Indian families living on the property; the Indians were often thought of as family by the ranch owners. Some Indian children were outstanding students. When Gladys Bowler taught at the Millett Ranch in about 1928, one of her Indian students received one of the highest scores in the state on the eighth-grade exam (Ellis, 1995).

Not surprisingly, these spartan conditions made it difficult to attract a teacher. A teaching certificate required two years of college. More often than not, the teachers available for positions in such small rural schools were young women around 20 years old who were seeking their first or second job. Sometimes the teachers were not much older than their students. It was typical for a teacher to take a job in a rural school for a year or two, move on to another rural school for a short period, and eventually land a teaching job in an urban area. Thus, the rural school often functioned as a laboratory for teacher training. Teaching was frequently an interim occupation between the completion of a young woman's education and her marriage. In many cases, a teacher married a local man and remained in the community. Throughout rural Nevada, schoolteachers were a source of "new blood" for these small communities.

Because the teacher was so young and the school environment so isolated, she often formed strong bonds with her pupils and the families she lived with. A number of interviews with women who taught in rural Nevada more than 50 years ago show that these women still remember the children and their families with great fondness (Ellis, 1990; Holts, 1990; and others who participated in the Nye County Town History Project interviews). A surprisingly large number of teachers now in their senior years keep in touch with those children, some of whom are now grandparents.

The role of schoolteachers in the communities of rural Nevada during the 1920s and 1930s was very different from that played by today's teachers. Schoolteachers were expected

to uphold rigorous standards of behavior. Any young school-teacher, regardless of her youth, was in all likelihood one of the most educated people—if not the most educated person—in the community. As a well-bred and educated person, she was expected to conduct herself in ways that would exempt her from gossip or criticism. A young woman had to be circumspect in her interactions with men and in the places she frequented. Proper young ladies did not drink, act wild, or go to bars or other disreputable places. Florence Huffman Ellis, who took her first teaching job at Ione, Nevada, in 1930, explained: "In those days the country schoolteacher walked the straight and narrow. [We had to be] absolutely above reproach" (Ellis, 1990:21). If there was gossip about a teacher, she could lose her teaching certificate, Ellis recalled. Men in the area treated the teachers as ladies. "If you behaved yourself, men didn't make improper advances toward any young woman in those days. That was up to you. You set the standards and then they knew where they stood with you. There was a very different moral ethic in those days than there is today" (Ellis, 1990:41).

A schoolteacher was also expected to perform any number of tasks that local people thought required an educated person. For example, Ellis was once tapped to conduct the funeral service when a prominent long-term resident of Belmont died. She was reprieved from the duty by a traveling minister who happened to pass through the area in the nick of time. Because people assumed she was an expert in mathematics, another of her duties was to calculate the tonnage of hay in a haystack when given its dimensions. Many ranchers in the Reese River and Smoky Valley areas would give the schoolteacher the dimensions of their haystacks and ask her to compute the tonnage, which she did with a formula she had worked out (Ellis, 1990:41).

Flo Reed

Flo Reed, whose family had been Elko County ranchers and businesspeople for two generations, was a prominent Nevada educator for more than 50 years. In 1921, at age 19, after completing one year of training at the University of Nevada at Reno, she took her first teaching job at Halleck, a Southern Pacific Railroad station located about 20 miles east of Elko. In 1923, she taught for one year at the Millett Ranch, about 6 miles north of the Rogers Ranch in Smoky Valley.

In Bygone Days of Nevada Schools, Reed (1991) discusses her teaching experience at the Millett Ranch. She discovered immediately that it was no easy task to get to the ranch to begin her job there. She took the Central Nevada Railroad from Battle Mountain to Austin, a 90-mile trip. Reed and Louella Woodhouse, a young schoolteacher who was slated to teach at the Rogers Ranch, boarded the train at 7:00 A.M. As the two women sat on the train, ready to go, a railroad employee dressed in blue bib overalls and a denim hat asked:

"You fellers have a lunch? You'll need one so you better go to the store and get some cookies or somethin'. You fellers'll be hungry before we get to Austin."

"But its time for the train to leave," they replied.

"We'll wait. Go get your cookies," the train man replied nonchalantly. (Reed, 1991:29)

The train sat at the station for two hours while two carloads of cattle, coal, boxes of groceries, and sundry items were loaded. Once underway, there were numerous stops, and the train's crew chatted with people who met the train. At one stop, Flo and Louella overheard several cowboys arguing—over which of them would have enough nerve to come into their car

and say, "Hello, Schoolmams." After much debate, a young red-faced cowboy took the dare as the train pulled away (Reed, 1991:29).

The train did not arrive in Austin until late that afternoon, and there the two women had to make arrangements to ride the stage down Smoky Valley to their respective ranches. The stage ordinarily took only freight, not passengers. The driver, Henry "Snooks" Streshley, seemed most embarrassed by the women's presence. Reed recalls: "A group of porch sitters had great fun calling out to the stage driver, 'Hey Snooks, want me to drive today?"' The driver, who was sitting so far to the driver's side of the seat that he was virtually hanging out of the vehicle, was told by the sitters, "Sit closer to the ladies; they don't look like they'll bite you. Not every day you get a chance to ride with such good-lookin' Schoolmams" (Reed, 1991:30-31). The hotel proprietor, who had been watching with interest, took mercy on Snooks and arranged for a truck operated by two mining men to take the young women to their ranches. The road that stretched the 40 miles down Smoky Valley to Millett was rough and dusty. At one place, boards on a bridge flew into the air as they crossed.

The main house at the Millett Ranch—a large brick ranch house—seemed like an estate to Reed. It was surrounded by trees and flowers, and the nearby garden and orchard gave the house an aristocratic appearance. One hundred feet from the house was a large building that housed the Millett store and post office. On the hill behind the store were 10 or 12 cabins occupied by Indian families; most of those Indians worked on the ranch. Reed describes Mrs. Millett as a "handsome dignified lady" (Reed, 1991:31).

On her next day at the ranch, Reed went to work. She followed a trail about one-half mile up the hill to the schoolhouse, which she felt looked forlorn, with its scaly white paint. There were two outhouses some distance behind it. Reed felt depressed as she entered the tiny school, only about 12x15 feet in size. Perhaps, she thought, some pictures on the walls, a teacher, and 10 children at their desks would have a "humanizing effect" on the setting.

On the first day of school, Flo Reed felt like a specimen being examined as the children, the majority of whom were Indians, stared at her. "As I went to school I saw several of the children peering from behind the store. I waved at them, but they disappeared and I had the eerie feeling of not being me or anything real" (Reed, 1991:31-32). At 9:00 A.M., she rang the bell and the students came in, the girls first, then the boys. While taking attendance, she noted that one student—Gene Boots—was absent. "Where is Gene Boots?" she asked. No one answered, but everyone grinned and looked toward the door. Near the flagpole was a huge pile of tumbleweeds that had not been there when she entered. The pile began moving toward her and, as the wind was not blowing, she guessed where the boy might be. She went out to the pile of tumbleweeds, and crouched behind it was a "brown elf of a boy with red and blue knit cap clutched in one hand." She took his hand and walked him into the classroom. Someone must have given him a hasty haircut because his hair had a polka-dot appearance—some hair had been cut to the scalp, some left in short tufts.

The children were friendly and polite. The Indian children spoke English quite well in the classroom, but Shoshone was their language of choice on the playground. They attempted to teach Reed some of their language, but she was unable to make the correct sounds, much to their delight (Reed, 1991:32).

In the fall of Reed's year at the Millett school, Mrs. Millett sold her interest in the ranch to the Farringtons from Bishop, California, who then moved onto the property. The family

included Will and Bell Farrington, their daughter Loelia, their sons Lyster and 2-year-old Merritt, and 90-year¬old Uncle Arch. The Farringtons also brought a gardener, an elderly Chinese man named Sing, who was bent over with arthritis. Sing took Reed under his wing when it came to matters of health, providing her with herbs at the slightest indication of a sniffle or sneeze. In spite of her regular contact with Sing, Flo Reed was never able to decipher his speech patterns, understanding only "Missee Teachee" (Reed, 1991:36).

While Reed was at the Millett Ranch, one of the Indian women died of tuberculosis. After leaving the ranch, she received a letter from one of her former pupils, Ray Simon, a son of the deceased woman. Ray, a chubby boy about 11 years old with a big, happy smile, wrote to tell her that his sister had also died from the same disease. The Indian doctor, Rosie, who had attempted to save Ray's mother, had also tried to save Ray's sister Mae. In the letter, Ray wrote:

Millett, Nevada
March 9, 1925

Dear Reed my teacher,
I miss him my good friend. I am writing now to you to say Mae Simon is died. Rosie the doctor one come and three days and the same nights all Indians come for sing. Mae die anyway the same like my mama. You my good friend say to me then my mamma go to happy place. You think Mae go to happy place too and me to. I die soon from that same thing. I like Reed for you to come to Milieu. I like hear about God that one you say like Indian old chiney man and all people. Maybe you come back and bring happy good book.

Your friend,
Ray Simon
(Reed, 1991:38)

Flo Reed taught in a number of rural schools over the years after leaving the Millett Ranch school. She returned to Halleck, and then she went on to work in schools at Ryndon, Star Valley, Contact, Lamoille, Wells, and Elko. In 1952, she was appointed deputy state superintendent of schools in charge of the Second Supervision District, which comprised White Pine and northern Nye Counties. In 1955, her responsibilities were extended to include southern Nye, Esmeralda, and Lincoln Counties. Deputy superintendents' duties involved working with school trustees in each district on budgets, teacher employment, and school improvement plans. They checked with school principals and rural teachers on a monthly basis, reviewing attendance reports, certification, curriculum, and textbooks (Reed, 1991:90). This position brought Reed in contact with the teachers and students at Round Mountain and Manhattan schools during the 1950s.

In 1952, there were 28 pupils in grades one through eight at Round Mountain, and a single teacher was responsible for their entire education. At Manhattan that year, there were six pupils in the first six grades. Once, when Reed was visiting Manhattan and was in a hurry to get a voucher signed by a Manhattan school trustee, she had to visit the mine where he worked and ride the bucket down the mine shaft to obtain his signature (Reed, 1991:112). Reed found, as one might expect, tremendous variability among schoolteachers during her years in rural Nevada. They ranged from being very stable and competent educators to being "a little odd." There were also some who were clearly incompetent and unsuited to the teaching profession.

Bessie "Betty" Holts

Bessie Holts, known to locals as "Betty," who was born in Portland, Oregon, on April 5,1903, was another teacher in Smoky Valley. She studied education at the University of Oregon in Eugene and graduated in 1926. Holts said she was "kind of dumb" when it came to getting a job after graduation. She applied at a local job placement service called the Stout Teachers Agency and was offered a job in Goldfield, Nevada. The climate and terrain in central Nevada were very different from her verdant Oregon. During the year that she taught high-school science and math in Goldfield, Holts lived on the top floor of the Goldfield Hotel. She took some of her meals in the hotel and others at the Santa Fe Club. Her room rent at the hotel was $20 per month; her salary was $1800 per year. She stayed in Goldfield for one year and then taught school in Eureka, Nevada, for two years.

In 1929, Holts agreed to teach at the school on Ray and Katie Darrough's ranch in Smoky Valley. Her pay there was $110 per month. She lived with the Darroughs in the big stone hotel building that is still in use at the hot springs. The school was located in a room at one end of that building. She had about eight students; they included several Indians as well as the Darrough children, Arlene and Lee. Grandma Laura Darrough lived in a small house near the hotel with Luther and Dewey, her sons; Dewey was handicapped. Holts remembered Grandma Darrough as being an interesting woman who did beautiful crochet work. While she lived there, Holts kept to herself most of the time. She greatly enjoyed the big swimming pool filled with warm water from the nearby hot spring. After spending one year at Darroughs Hot Springs, she went to teach at the McLeod Ranch, also in Smoky Valley. At Christmas, her sister in Oregon passed away, so she went home to help with her sister's children.

At the beginning of the next school year, Holts returned to Smoky Valley. She taught high school at Round Mountain for the next ten years from 1932 to 1942. When she started teaching at Round Mountain, her pay was $1350 per year; the year she left, it was $1550. During her first year in Round Mountain, Holts lived with Karl and Katie Berg. After two years at Round Mountain she became principal, a position she held for eight years. In those days, the principal at a small school was not only an administrator but also taught classes. In the Round Mountain School District, Mrs. Michel, Mrs. Goldback, and Will Berg were the school board members, but Will Berg was the driving force.

In 1990, at age 87, Holts recalled the ten years she spent in Round Mountain as having been the best of her life. To explain why she felt that way, she said:

Well, the kids were so smart and good, and I got along so well. And we had dances and we had shows once in a while. Once in two weeks or something we might have a movie. And we had a card club—we played whist. Then after a while we played bridge. It was auction bridge, and that was fun. (Holts, 1990:8)

Two of Holts's students at the Round Mountain school were Getta Berg and Pansy Weeks. There were a large number of Indian pupils. Some of the Indians were not terribly enthusiastic about school, but attendance was enforced by the local constable. Occasionally, an Indian boy named Bobby Mike would stay home. Once, Bobby Mike's truancy coincided with the constable's being out of town. Holts went to the Mike residence to bring Bobby to school.

She knocked on the door, and Mrs. Mike answered. "Bobby's supposed to be in school," Holts stated. Mrs. Mike's answer was short and to the point: "No, Bobby stay home when the cop is gone" (Holts, 1990:18).

Betty Holts often spent weekends at Darroughs Hot Springs or at Will Berg's ranch in Smoky Valley. Holts was a friend of Little Kelsay. He allowed her to ride one of his favorite horses, a nearly pure-white mount named Biddy. Kelsay told her she was the only woman ever to ride Biddy.

The town of Round Mountain was very small. There were only about four streets running north-south and one that ran east-west. Some of the area roads, Holts said, "were just trails through the desert" (Holts, 1990:16). The Palace Hotel was located on a corner on Main Street. There was a bar that also served coffee and light foods, and the town had a barbershop and a beauty parlor.

While living in Round Mountain, Holts purchased a 1929 two-door Chevrolet. She drove it every time she had the chance. "I think I knew every road and every trail around there that would accommodate a car," she recalled (Holts, 1990:15). In 1937, after a snowstorm that many valley residents still remember, Holts was unable to drive her car for six weeks. When the snow began, people realized it would be a bad storm, so they went to the local store to stock up on groceries, including beans and other staples. The store was almost sold out. One Round Mountain woman who had been in Tonopah to deliver her baby had to return to Round Mountain by sled.

Betty Holts moved to Las Vegas in 1942 when it became clear that the gold mines around the state would be shut down. She took a teaching position in the Las Vegas schools, which she held until she retired. She returned to Smoky Valley many times after she left and stayed in touch with her friends there (Ellis, 1990:43).

Florence Huffman Ellis

Florence Huffman Ellis was another schoolteacher during the 1930s in Smoky Valley. She was born on a ranch about 10 miles from Burns, Oregon, in April 1911, and attended normal school at the University of Nevada at Reno. After graduation, the university placement bureau thought that with her rural background she would do well in the country and sent her to teach at Ione, Nevada, for her first job. While she was there, Ellis bought her first automobile—a Model A Ford with a rumble seat. She had her own two-room quarters, referred to as a "teacherage" (pronounced "teach-reach"), and a one-room schoolhouse with 17 children in eight grades. Teaching that many students in so many grades called for a careful allotment of time.

After teaching at Ione for two years, Ellis received an offer from the Darroughs to teach at their ranch. She had met the Darroughs when she taught at Ione and had seen them frequently at dances and on trips to the swimming pool at Darroughs Hot Springs. She accepted the post and lived with the Darrough family in the old hotel, as Betty Holts had previously. She felt very comfortable with the Darroughs, almost like a member of the family. Grandma Darrough was quite old when Ellis lived at Darroughs Hot Springs. Ellis remembered her as being a pleasant person who crocheted and was still able to run her own house, doing all the laundry, preparing meals for Luther and Dewey, and taking care of all the boys' needs. Sometimes the Darroughs and Grace, Pete, and Rene Rogers would gather around the stove at

the hotel and listen to Grandma Darrough, who was an engaging storyteller. Few people had radios in Smoky Valley at that time; Ellis recalled that the Darroughs were fortunate to have a battery-powered set.

The mine at Round Mountain was operating then, and one or two mines were also open in Jefferson Canyon. Ellis had gone to school in Reno with some of the engineers at the Round Mountain mine. She was also good friends with Dan Berg and Rene Rogers, who were about her age. Dan's sister Getta used to play the piano and friends would all gather round the piano at the Berg home and sing, making their own entertainment, as young people did in those days (Ellis, 1990:39). Ellis commented, "I'm glad I had the privilege of growing up on a ranch. . . . We weren't exposed to all of the stuff that young people are today, and we never had time to be bored. When we did get together we really had good times. It was a completely different world than young people grow up in today" (Ellis, 1990:2).

When the banks closed during the worst year of the depression, neither Ellis nor Holts received any pay for several months. In fact, Ellis lost money in one of George Wingfield's banks in Reno.

In 1934, Florence Huffman Ellis accepted a job teaching at Sloan, located south of Las Vegas. Like Betty Holts, she made numerous visits back to Smoky Valley, maintaining lifelong contacts with those who lived there (Ellis, 1990:43).

Evenings Out

As the old-timers remember, the dances held every week or two at various locations in the area were the high-light of social life in Smoky Valley during the 1930s and 1940s and even well into the 1950s. Both Florence Huffman Ellis and Betty Holts cherish their memories of the fun they had at those dances. Ellis recalls the dances were "truly community affairs. It was a time when people of all ages came to visit as well as dance" (Ellis, 1995). Ellis would travel from Reese River Valley to the dances at Darroughs Hot Springs, where the two women first met (Holts, 1990:15). There were not many reasons to make the trip to Tonopah, Goldfield, or Austin; one was to see a doctor in Tonopah, another was to attend a dance in one of those communities. Dances in Smoky Valley usually produced a turnout of 100 to 150 people, though even more came when they took place in Tonopah and Goldfield. In Goldfield, the dances were held at the Goldfield Hotel or in the Masonic building. In Tonopah, they were in the Masonic Hall across the street from the Mizpah Hotel. In Austin, the International Hotel was used (Ellis, 1990:19).

Although dances were also held in Round Mountain, the prime location for Smoky Valley dances was Darroughs Hot Springs. The dances were held on Saturday night, usually starting about 8 P.M. Admission to a dance at Darroughs was around $2, and the event nearly always featured the live music of Bert and Millie Acree from Austin. Bert, on drums, and Millie, on piano, were accompanied by their sons, Dale, on saxophone, and Tom. Millie played the piano until her fingers were so sore she had to wrap them in tape. People in central Nevada still talk about the wonderful music played by the Acrees. Supper was included with the admission price and was usually served around midnight because the dances lasted all night. Sandwiches, cakes, and salads were the usual fare. There was no swimming in the pool at Darroughs during the dances. Sometimes people filled out dance cards, and other times, they just danced. Couples danced the waltz, the fox-trot, and the Varsouviana, but they did not square-dance. Florence

Ellis would prepare for a dance by napping in the early evening; after the dance, she would sleep the whole day. Ellis and Holts never missed a dance.

Charlie McLeod, from the McLeod Ranch, who was about 40 years old, was the self-appointed squire for the schoolteachers. He usually drove them to the dances and home again. He was a good dancer and was fun to be with, but it was more important that he had high moral standards—a young teacher knew that her reputation was safe when she was with Charlie. Charlie's sister, Hattie, often accompanied them, and the car would usually be full. Charlie eventually married a woman about his own age from Austin.

To protect their reputation, the teachers never left the dance hall during the dances. Although there was a bar inside, people often kept liquor bottles in their cars and stepped outside for drinks. This custom may have been a holdover from the Prohibition era, when people took their own liquor to the dances.

CHAPTER 17
Memories of Childhood

Many people who grew up in Smoky Valley during the 1920s and 1930s have fond memories of their childhoods. Most of the families in Smoky Valley were not well off financially, and experienced relatively little contact with the world outside central Nevada. Children often helped their parents by working around the house or farm. Young people took what their environment presented—a tin full of mud, a tree, a companion, a "wild" burro, a trail through the sagebrush—and shaped a world in their imagination as only children can.

Mildred Cornell: Tumbling Tomboy

Mildred Humphrey (Cornell) remembers that "we kids had a great childhood in Manhattan. We didn't know what it was like not to have something to do in those days. Everybody's dad was working hard and our mothers were working and they didn't have time to entertain us. So, we made our own amusement" (Cornell, 1990). Mildred was born in 1918 in Manhattan. Her father was born in Monitor Valley and was a brother of John Humphrey, one of the discoverers of the gold at Manhattan in 1905. Her mother, Ella May, was a native of Carson City.

Mildred sometimes wondered if her mother might have been a bit disappointed with her daughter's tomboy ways. Most girls spent their time learning domestic skills. But Mildred could not help being a tomboy; she enjoyed boys' games. One favorite game was playing cowboys. Mildred's father used to place saddles on two sawhorses so that Mildred and a neighbor girl could mount them and "ride" all over the country, imagining one great adventure after another. Marbles was another favorite game. The children also liked to pretend they were camping out. Parents would give them an old frying pan and some groceries, and the youngsters would go off to a nearby hill, build a fire, and cook the food, spending a few hours camping on the range.

Mildred's older brothers always had horses that were allowed to pasture freely in the daytime and would return at night, hoping to be fed a little grain once in a while. Water was always available for the horses in their corrals. In the winter, the horses were turned loose, and they would migrate south at least as far as Rye Patch, sometimes even wandering below where the Tonopah Army Air Base would eventually be located. In the spring, the family rounded them up.

Picking pine nuts in the fall was a much loved activity. Children would collect ripe pine nuts in the hills and roast them in an open fire in a nearby prospect hole. The nuts were roasted in the cones, which generated considerable charcoal and soot. At the end of a roasting session, the children always returned home covered with charcoal dust.

Mildred remembers that it snowed much more in central Nevada then than it does now. When the snow was deep, children would walk to school, following an 18-inch¬wide path down Main Street. (For Mildred, that was a 1-mile trip.) A youngster who slipped off the path could fall into a 3-foot snowdrift.

When Mildred Cornell's brothers were young, they used to line up the chairs from the dining room table to make an imaginary stagecoach. The "driver," who held a rope attached to his imaginary team, sat in the first chair, and the passengers sat in the chairs behind him. On

one occasion Ella May heard the driver say, "Giddy up, Ton a Bitch. Giddy up." She admonished the little driver, who could not have been more than three or four years old. The boy looked innocently at his mother and said, "Dat's what Daddy calls the horses" (Cornell, 1990).

Life in a mining camp was not without its dangers for young children. On one occasion, Mildred nearly lost her life while playing alone. It was the custom for ladies to call on each other in the afternoon. When a caller was expected, women would try to have their homes clean and tidy, and they would dress with care. It was also desirable to have one's children, especially the young girls, looking nice. On one unforgettable occasion, Mrs. Humphrey had given Mildred a bath and put her in a pretty dress. Mildred was instructed to stay in the house and keep away from the rain barrel where the horses were watered—but Mildred paid her mother no heed. On this day, as she frequently did, Mildred decided to amuse herself by taking her father's empty Prince Albert tobacco cans and filling them with water at the rain barrel to make mud pies. The water level in the barrel was somewhat low, so she climbed up the side, stuck her head down the barrel, and reached down to fill the can. As she did so, she lost her balance and began slipping into it headfirst. One hand was holding the can, but with her free hand she reached up, grabbed the edge of the barrel, and held on. That prevented her from sliding all the way into the barrel, but she had fallen far enough so that her head was under water.

Unable to pull herself out of this position (and, with her head under water, unable to cry out), the only thing she could do was kick her feet as she slowly lost her grip. As luck would have it, her youngest brother, who was a high-school student in Tonopah at the time, was driving a small delivery truck for a store in Manhattan. He happened to be driving up the street when he glanced over at his family's house and saw Mildred's legs sticking out of the barrel. He immediately stopped, rushed over, and pulled Mildred, choking and gasping and screaming in panic, out of the barrel. Mildred's mother heard the commotion and rushed outside, where her son admonished her, asking, "Don't you ever watch this little girl?" Mildred's mother, of course, was furious. Thankful that fate had spared her daughter, Ella May Humphrey gave Mildred a stern lecture on safety in and around the home. To this day, Mildred panics when her head is under water (Cornell, 1990).

Jim Boni Recalls Traveling Doctors

Jim Boni was born in Manhattan in 1916. He was the son of Pietro and Dominica Boni, who were born in Italy, north of Rome. Pietro immigrated to the United States in 1906 and worked in the coal mines near Pittsburgh, Pennsylvania, for a time, but he did not like coal mining. He had heard there was placer mining in Manhattan, so he traveled west to Nevada, settling for a time at Peavine and later moving to Manhattan.

Boni sent for Dominica, his sweetheart in Italy, while he was living at Peavine. Jim Boni was the fifth of their nine children, all raised in Manhattan. With nine children in the family, the Bonis had to maintain the equivalent of two households. The main house contained the kitchen, the dining room, and bedrooms for Jim's parents and sisters; a dwelling next door served as a bunkhouse for the boys. Jim Boni looked back on this arrangement with great fondness (Boni, 1990).

When Jim was a sophomore in high school in 1932, his father, who had been hauling and sawing firewood to make a living during the depression, was killed when a saw blade broke

apart at high speed and mortally wounded him. After their father's death, the children did what they could to earn money for the family; Jim took a job as school janitor in Manhattan.

Jim Boni's recollections of his childhood include some interesting episodes that illustrate the availability and quality of medical care in rural Nevada at that time. Doctors were few and far between. There was no regular medical service in Manhattan, but medical treatment was available in Round Mountain and Tonopah. When Jim was 16 years old, a traveling doctor came through town and removed tonsils for $30. The surgery was a very simple procedure. The visiting doctor came to the patient's house and sat the patient in a chair; using minimal anesthetic (perhaps an injection of something into the tonsil), the doctor cut out the tonsils. When he had finished removing Jim's tonsils, the doctor said, "Well, how's that feel?" Jim replied, "I feel something back there." So the doctor reached in and clipped off a remaining flap of tissue (Boni, 1990:25).

If a doctor was not available, family members treated each other. As an adult, Jim Boni still had a scar on his chest from a belladonna plaster, an old Italian treatment for a chest cold suffered during his childhood. The solution, which was too strong, had been left on his chest for too long and burned him. Boni's older brother used to treat the younger children's sore throats by painting their throats with a 3 percent solution of Assural. Wine, sliced apples, and cinnamon sticks brought to a boil for fifteen minutes, then lit with a match to burn off any remaining alcohol was another sore throat remedy. After drinking the wine, the patient went to bed smothered by blankets and quilts to induce a sweat to break the cold.

Jim recalled amusements Manhattan youngsters pursued. Young boys would walk from one end of the town to the other, and the older boys, who could afford automobiles, cruised around town. Radios, which were just becoming available at that time, were high-status items. One of the most popular stations was KNX, which broadcast from Los Angeles.

The McPherson Girls: All-Day Adventures

Frank and Alice McPherson moved to Smoky Valley from Canada in about 1887. They bought the Blue Springs Ranch, located a few miles south of Kingston Canyon. McPherson's partner was August Lognoz, a Frenchman. Although the ranch was a shaky enterprise at first, it was eventually built up to encompass five ranches. Lognoz returned to France soon after 1900. Later, McPherson and his wife divorced, and McPherson went to Manhattan, where he located the Indian Camp Mine.

Many years later, Louise McPherson (Dron) recalled that although the children in her family assisted with the ranch work, including chores and rounding up cattle, there was always time for childhood pleasures. "When I was a child," she remembered, "happiness was running barefoot the length and breadth of Kingston Canyon, riding horses backward, and fishing with a willow pole" (Cerveri, 1969:4-5).

Louise and her sister, Alice, never missed an opportunity to rise at daylight and go fishing in either Kingston or Ophir Canyon. It was an all-day adventure. The girls would pack a lunch and take hay for their horses. They often returned with as many as 200 trout carefully packed between damp leaves and grass to prevent spoilage. Their mother then packed the trout in a crock, sprinkling each layer with salt to preserve the fish.

The Indians in Smoky Valley fascinated young Louise. She and Alice enjoyed watching the Indian women gather willows to be used in weaving beautiful baskets with intricate designs.

But watching Napias, an old Indian man, caused problems. Napias used to tend the family's garden for 25 cents and "mucky-mucky," his term for food. "When Napias's work was done," she remembered, "he used to go into the alfalfa fields and lie down completely nude, basking in the warm sun." Louise's mother discovered Napias sunbathing and put a stop to it, believing the sight was not for the eyes of young ladies (Cerveri, 1969:4).

A special treat for Louise was sharing a can of Eagle Brand sweetened condensed milk with Basque sheepherders who passed through the ranch with their large flocks of sheep.

Louise and Alice were part French, despite their Scottish surname. They attended school at an adobe school-house on the Blue Springs Ranch. When one of the Indian children was asked to describe his schoolmates, he listed "two Mexican kids, one white kid, and two French kids," the last in reference to the McPherson girls. Others in the valley referred to Louise and Alice as the "French kids who lived at the Blue Springs Ranch" (Cerveri, 1969:5).

Twice a year, the McPherson family took an exciting horse-and-buggy trip from their Smoky Valley ranch to Austin. One year when they arrived in Austin, horse races were being held. Louise, who was considered a good rider, was entered in a race by her father; she won $20 for her first-place finish.

Louise remembered the huge wagons pulled by 20-mule teams and loaded with barrels of beer destined for Tonopah that passed through their ranch. The barrels were packed in straw and ice, which kept the beer fairly cold.

After Frank McPherson located the rich Indian Camp Mine at Manhattan, Louise was sent to a private school for young ladies in San Francisco, but the earthquake and fire of 1906 cut short her stay there. She married George Washington Dron in 1908, and the couple lived for a while in Tonopah, then moved to Austin. Somewhat later they returned to Smoky Valley, where they operated several large ranches for over 20 years (Cerveri, 1969:5).

Fun in Round Mountain

When Shirley Ann Berg (Lofthouse) was a young child, her father, Will Berg, moved a small tin building into the backyard of their home in Round Mountain. That became Shirley Ann's playhouse. The little building had a window, and Will put a screen door on it. Shirley Ann fixed it up and would make lemonade and invite her mother and her aunt Rene (Rogers) to come calling on her and drink lemonade.

Trails ran all over the Berg Ranch. Shirley Ann and her friends from Round Mountain used to play on the trails and crawl through the brush. They made three-wheeled carts, and one child on a bicycle would pull the cart. Shirley Ann had a nephew, Frank Farrington, who was one year younger, and they often played soldier together. The children made play guns by removing the end of an apple crate and sawing it into a gun shape. Using these guns, they fired rubber bands made from cross sections of old inner tubes; clothespins released the stretched rubber bands. The play guns were so much fun that the grownups sometimes joined their battles. There were also water fights. All it took was one shot of water from someone, and the entire company would begin squirting, splashing, and throwing water.

As Will and Lillian Berg's family grew, the boys made their bedrooms in the building next door to the house (like the Boni boys in Manhattan), but the girls slept in the main house.

In the winter, children went sledding, riding their sleds downhill on the streets of Round Mountain and then carrying them back up the street for another ride. But winter or summer,

there were always things to do. In the evenings, there were card games and parties, and young people made popcorn and candy (Lofthouse, 1990:23-27).

A Boy at Millers

Mark Tetrault remembered that in about 1903 his father and mother loaded all of the family's possessions onto an old dead axle (springless) wagon pulled by a team of mules and moved from Bellehelen, located high in the Kawich Range about 50 miles east of Tonopah, to Crow Springs, which was on the dirt road linking Sodaville and Tonopah. Tetrault's father had purchased the overnight rest station at Crow Springs, thinking he could make a living there. But when the railroad to Tonopah was completed, the freight station at Crow Springs became obsolete.

Tetrault recalled that when he was a young boy living at Crow Springs his father had to deliver his baby sister. He also remembered the time his older sister found a $20 gold piece on the ground where some mule skinners had slept. Presumably, the coin had fallen out of someone's pocket.

The Tetraults moved to Millers, where they constructed a house about 1 mile away from the community. The house was near the road, roughly 100 yards from the Tonopah and Goldfield Railroad tracks. Mr. Tetrault intended to go into the draying business, transferring goods from the railroad to other sites, but there was not enough business, so he opened a saloon instead. Tetrault was generous with free drinks in the saloon, and in appreciation, the railroad workers used to toss coal from the gondola of the train as it passed. The Tetrault children gathered the coal for home use.

The saloon venture did not last long. Next, Tetrault went to work in one of the mills at Millers. He saved enough money to buy a Stanley Steamer, the first automobile in Millers. The Stanley Steamer usually burned kerosene, which was expensive; Tetrault converted the burner to run on the heavy oil used at the mill.

Tetrault became friends with a man named Scully who had a mine at Lone Mountain. He invited Scully to Sunday dinner, and Mrs. Tetrault thought it would be nice to treat the bachelor to a special chicken dinner. Scully enjoyed the dinner, and when dusk had settled on the valley, he thanked the family and left, having several miles to walk home. Their guest had not been gone long when the family heard their dog barking near the chicken house. The dog had trapped the dinner guest inside and would not let him out! Apparently Scully had decided to apply his own definition to "a second helping." Needless to say, he was never invited to dinner again.

Soon after, the Tetraults bought a tar-paper house in Millers. Mark Tetrault's father was an inventor. Although the pinball machine was not patented until 1939, Mr. Tetrault had built a crude version of a pinball machine for his children in about 1911. It functioned like today's pinball machines, although it had no lights or bells. While at Millers, Tetrault designed the 2-stamp Tetrault Mill. It could process from 4 to 6 tons of ore in 24 hours and was powered by a 5- to 7-horsepower motor. The mill was manufactured by Campbell and Kelly, Incorporated, at Tonopah (Tetrault, 1979).

A Burro of One's Own

Burros were a common sight in most of the mining communities in the American West during the first few decades of the twentieth century. The animals were wild only in the sense that no one laid permanent claim to them; they were actually completely domesticated. They were not afraid of people and could easily be caught and ridden or hitched to a small wagon. However, because no one claimed them, the burros had to forage for themselves like the local stray cats and dogs. In Round Mountain, the burros would not stay on the creeks in the mountains where there was green grass. They preferred to hang around town, resourcefully and efficiently breaking into people's yards, destroying their flowers and trees, and overturning their trash cans—all in an effort to find food.

During Manhattan's early years, there were large numbers of burros not far away, especially in Ralston Valley. A yearly burro roundup began in Manhattan as soon as school was out for the summer. On a summer morning at daybreak, a group of boys would leave town, some on foot, some riding burros of their own, and head for Ralston Valley. It would be late in the evening—sometimes very late, which caused parents to worry—before the boys would return with their obstinate captives in tow. The boys would ride the burros for the summer. When the boys got older, they abandoned their burros in favor of horses, which were more glamorous and prestigious. Horses and burros were a major source of summer pleasure and amusement for youngsters, not only in Manhattan but throughout rural Nevada.

CHAPTER 18
That Can-Do Nevada Spirit

Many of the people who founded mining camps in the American West were imbued with a certain can-do attitude concerning the world around them. They believed that no challenge was too formidable, that nothing was impossible, given the will to try. What is more, they took pride in accepting the challenge to bring civilization to the wilderness, especially in areas as remote and inhospitable as the central Nevada desert. The spirit of independence and optimism that characterized the founders of frontier boomtowns lives on in residents throughout the rural West.

The wide-open spaces and relatively unrestricted social environment of the West nurtured an independent and individualistic way of life and attitude. Those who moved to the frontier and remained there were self-selected for these traits. Those born on the frontier were raised with those values. Even today, children growing up in the West in areas like rural Nevada are no more than two or three generations removed from the founders' values and attitudes. World heavyweight boxing champion Jack Dempsey and news commentator Lowell Thomas, for example, acquired this attitude when growing up in Colorado mining camps prior to the turn of the century. Louis Gordon and Will Berg exemplified this trait in Round Mountain, as did Virginia and Monty Stewart and Omar and Cora Maris in Manhattan. Carl Haas showed it (Chapter 19) when, barely more than a teenager, he began putting together the huge RO Ranch in Smoky Valley. Bob Wilson demonstrated the same mettle when, like David battling Goliath, he fought the U.S. Forest Service for the right to repair the road to his mine in the Toiyabe Range. Gerald and Jean Carver exhibited that trait when they founded Carvers (Chapter 20). Don Cirac displayed the same audaciousness when he and his partners pursued the White Caps antimony deal.

The Cirac Family

Theodore Cirac emigrated from his native France to the United States, arriving first in New York. In the early 1860s, he sailed to California by way of Cape Horn. He crossed the Sierra and worked in the mines in Virginia City, then moved on to Austin not long after the boom began there. After discoveries were made at Berlin in Union Canyon on the west side of the Shoshone Range 4 miles south of Ione, he went there. At Union Canyon, he established a custom mill and processed small shipments of ore for local operators. Remains of Cirac's mill in Union Canyon are still visible.

Theodore Cirac married and had six sons. He was a stern disciplinarian and sometimes whipped his children with a bullwhip. One of his sons, Louis Victor Cirac (Sr.), ran away from home when he was about 10 years old, walked over the mountains to the Peavine Ranch, and took up residence with some Shoshone Indians living in a camp there. Although he only attended school through the fourth grade, he became self-educated, learning to speak Shoshone and Paiute; in addition, he studied French, Spanish, Latin, and mathematics on his own. After spending two or three years with the Indians, he moved in and became close friends with the Seyler family, owners of the Peavine Ranch. Seyler Peak, at the south end of the Toiyabe Range, and the Seyler Reservoir are named for that family (Carlson, 1985:213).

Louis Cirac, Sr., was deeply interested in mining. In 1905, he and Pat McCarran were partners in a mining venture in Tonopah. Cirac founded the Orizaba Mine in the San Antonio Mountains about 20 miles north of Tonopah and built a mill there. He and Lee Hand owned the Lone Mountain turquoise mine, one of the world's finest turquoise mines, and were also partners in the turquoise mine in the San Antonio Mountains about 25 miles north of Tonopah. Lee Hand held the property north of Tonopah in Smoky Valley that eventually became the site of the Anaconda Molybdenum Mine.

Cirac's son, Louis Victor Cirac, Jr., spent the first 12 or so years of his life in Union Canyon; then the family moved to Fallon. Young Cirac was extremely quick at performing mathematical computations and could calculate gambling odds in his head. From age 15 on, he was always involved in the gambling business to some degree. He became part-owner of the Ace Club in Tonopah in the late 1930s, and people said that he developed a slight case of silicosis caused by licking his thumb so often when he dealt cards in Tonopah. Although gambling was not legalized in Nevada until 1931, games of chance were openly conducted and available throughout the state; like the repeal of Prohibition, Nevada's legalizing gambling simply legitimized activity that could not be suppressed.

Louis Cirac, Jr., eloped with 17-year-old Alice Pratt from Tuolumne, California, whose family did not approve of her marrying a gambler. Louis, Jr., and Alice had two children, Jeanne Cirac (Potts) and Don Cirac, who grew up in Tonopah. Both vividly recalled the town changing as mining gave way to an economy dominated by the Tonopah Army Air Base during World War II. Concerning the family's fortunes, Don Cirac quipped that his grandfather made a fortune in mining but lost it all gambling; his father made a fortune gambling but lost it all mining (Cirac, 1990:12).

During Prohibition, Louis Cirac, Jr., ran liquor from Fallon to the Big Casino in Tonopah. After he became part-owner of the Ace Club, Cirac made considerable money from the several thousand airmen at the air base who did their drinking and gambling in Tonopah. He used to take his money home at night in a sack, cover the big round oak dining room table with it, and count it. Cirac had four safety deposit boxes full of cash; much of the time, he did not know exactly how much money he had.

Although gambling had been legalized, there was still a stigma attached to the business during the 1930s. Gamblers were perceived as crooks, and it took many years for the old attitudes to change. The Cirac family was not fully accepted in Tonopah until after World War II. Alice Pratt Cirac was not accepted by the other women in Tonopah for several years after moving there. When Jeanne Cirac Potts was disciplined in school once, the principal referred to her father as a "nasty gambler."

The White Caps Antimony

Antimony is a metal nearly as heavy as lead. It has many industrial uses, including properties that make lead harder. It is used in the manufacture of fireworks, fireproofing materials, and some pharmaceutical products. The White Caps Mine in Manhattan, originally mined for gold, is a rich source of antimony. Old stope walls there were covered with 2-foot-thick deposits containing up to 60 percent antimony. Running through the antimony were orange and yellow streaks of arsenic 8 inches wide. The arsenic in the ore at the White Caps Mine made recovery of the other commercially valuable minerals in the mine difficult and the

arsenic (along with large quantities of water in the lower levels) eventually led to the mine's shutdown.

Around 1960, Don Cirac and Tony Selig took a lease on the White Caps Mine. Their company, Pacific Antimony Metals Company, obtained a contract with Gosho Company in Tokyo, Japan, to supply the Japanese with antimony. Cirac and Selig were to produce antimony concentrate that contained no more than 0.5 percent arsenic to the Japanese. Arsenic levels above that would have been too poisonous to process at the Japanese smelter. Because the White Caps antimony ran 20 percent arsenic, they had to mill the ore to separate the antimony from the arsenic.

Cirac and Selig soon located a mill, an old tungsten mill west of Gabbs owned by I. J. McCullough (of McCullough chain saws), that they thought might do. They telephoned McCullough and said bluntly, "We want to buy your mill in Gabbs but we're broke." After obtaining a few details, McCullough responded just as bluntly, "Fifty grand, pay me when you can" (Cirac, 1990:75). The mill had to be redesigned in order to remove the arsenic. Cirac and Selig hired Albert Silver, a world-renowned metallurgist who had contributed a key concept in perfecting the milling technique used on Tonopah ores. In his laboratory at the University of Nevada at Reno, Silver developed a method for Cirac and Selig that worked on a small scale in the lab. The Gabbs mill was refurbished using the new design. Japanese officials traveled all the way to Nevada to examine the mill at Gabbs.

Cirac and Selig hauled ore from the White Caps Mine to a stockpile at the mill. Mining the antimony involved slabbing it off the walls of the old stopes in the mine and hoisting it to the surface. Most of the ore was from the 300 foot level, where it is the richest, but some of it was from the 200 - and 500 - foot levels. the antimony ore also contained one ounce of gold per ton, but at $35 dollars per ounce, the gold did not amount to much.

The White Camps Mine is one of the world's best known sources of stibnite, lead-gray crystals of antimony that have a metallic luster. The six-sided crystals can be as small in circumference as a match or as big as a person's finger and can be up to one foot long. Fred Volmer, who owned the White Caps Mine and had given Cirac and Selig their lease, had insisted they save all the stibnite crystals for him; they were quite valuable as specimens.

The Japanese were impressed enough with the White Caps Mine and the mill at Gabbs to deposit $1 million in the Sumitomo Bank in Los Angeles to be paid out as the warehouse received drums of concentrate from the mill. However, the milling process did not sufficiently clean the arsenic out of the antimony. Pacific Antimony Metals Company went broke. Cirac lost his savings - $80,000 in cash that he had saved working in the furniture business in California - and he incurred an additional debt of $60,000. Even so, he gave the White Caps antimony another try, this time using a mill in Mina. But again the results were similar, the only difference being that although the milling process succeeded in cleaning out the arsenic, the chemicals required to do it cost more than the antimony was worth. In about 1974, the old White Caps Mine burned, locking in, at least for the foreseeable future, its treasure of minerals.

Don Cirac Works at Round Mountain

In 1978, at age 48, Don Cirac went to work for Copper Range. Although he had been around mines his entire life, he had never worked in a large open-pit operation. He started by driving trucks and bulldozers, and began to learn how to operate heavy equipment.

Cirac realized that the company needed a heavy equipment training program to increase production and promote safety. He mentioned this from time to time to company officials. Then, as he said, "I finally got my bluff called and they gave me the job" (Cirac 1990:100). In 1988 the Round Mountain Gold Corporation published an equipment training manual, considered one of the best in the business, written by Don Cirac (Cirac, 1988). The manual provides instructions for handling all heavy equipment used in the mine at that time.

Bob Wilson Gets Hooked on Mining

Robert "Bob" Edward Wilson was born in Washington state and grew up in the Red Bluff area of northern California. After graduating from high school in 1932, he spent a year working at a sheep camp out on the range. He used the $200 he saved to move to Los Angeles and enrolled in the Frank Wiggins Trade School to become a machinist. While he was in school, he began repairing automobiles on the side.

After finishing trade school, Wilson worked in a machine shop and then took a job as a machinist for the Byron Jackson Pump Company located in Las Angeles. While working at Byron Jackson during World War II, Wilson established his own machine shop, and when the war ended he shifted to automobile repair work In 1946, he moved to Ojai, California, where he built a state-of-the-art machine shop for complete motor repair. Wilson was in great demand Then of course his life changed during a trip back to Washington state. On the way, he stopped at Woodland, California, about 30 miles from Sacramento, to visit an uncle who have been a rice farmer since 1920.

Wilson's uncle had become interested in mining. He and a couple of partners were constructing a tungsten mill in the Grantsville area of Nye County. Since 1952, the federal government had had a program to stockpile tungsten. The mill was being designed to process scheelite, a source ore for tungsten. The price of tungsten was high at the time, at $63 dollars per unit. (A unit is a measure of the weight of scheelite ore; one unit equals 20 pounds.) Wilson's uncle had caught the mining fever in Grantsville at an old lead and silver mine that also contained a large deposit of tungsten. Unfortunately, the cost of getting the ore out would have amounted to more than the tungsten was worth. The uncle, however, would not give up the project. Wilson recalled, "The old Dutchman wouldn't tip a waitress more than five cents, but he'd give a promoter $20,000 just on the idea that he was going to make a million dollars. That's just the way he operated" (Wilson, 1990:17). Wilson's uncle lost $150,000 at Grantsville, but a promoter found another property for him up in Ophir Canyon above Smoky Valley.

George Barra had originally found the Ophir Canyon mine that interested Wilson's uncle. In the early to mid-1950s, people were on the lookout for scheelite, which is easy to spot because it fluoresces in the dark under an ultraviolet light. Many people carried portable ultraviolet lights, or "black lights," when out in the mountains. Barra had been fishing and had found float that fluoresced. He traced the float up the canyon to the deposit. Bob Marker, Louis Cirac, Jr., and Barra became partners in the property. They sold it to Newmont Mining Company, which did exploratory work. The partners then took the property over again.

One night some years later, Cirac and his son, Don, who had recently been released from the army, were driving up to the mine. Cirac was fooling around with the black light as they drove—and the whole road "lit up" with fluorescing scheelite. Newmont had unknowingly cut a road through a ledge of scheelite about one-half mile below where the company had been

working. Cirac leased the new discovery to Lee Early and Early's brother, and in 18 months, the brothers took out $300,000 worth of ore (Cirac, 1990:80-81). Early hauled his ore to a mill in Bishop, California.

During the time the Earlys were working their lease, Wilson's uncle leased several claims from Cirac, Marker, and Barra. He was attempting to construct a mill at the mine in Ophir Canyon. Wilson, who had a vast knowledge of mechanics and was a mechanical genius according to many, came to his uncle's aid. Although he had no experience in constructing mills, he found it easy to build the mill. As he described it, his key to success was this: "Whenever you want to know something, you go ask the guy who's been successful. It doesn't do you much good to sit in the bar and listen to some guy who has never made a success tell you how to do something" (Wilson, 1990:14). Wilson went to Bishop and inspected Lee Early's tungsten mill there to see how he was processing tungsten ore.

Wilson made money in mining and milling the tungsten—enough to hook him on the mining business. As he said,

I was running two ton an hour on those three tables, and it was running $125 dollars a ton, that was $250 dollars an hour. And I always said, "Man, the garage business could never do this." And I never forgot that. I had two leasers who went in there, and they went down and raised about six feet into a pod of ore that they took out that was pure. My grade went up to 71-1/2 percent. . . . I'd take a ton of concentrate to him [C. W. Jones] at one time, and that was really something. (Wilson, 1990:18-19)

C. W. Jones in Bishop paid $60 per unit of scheelite: the federal price was $63, and the difference was Jones's profit. In spring 1956, the government had stockpiled enough tungsten, and the price fell sharply. Wilson asked Lee Early what to do. Early replied, "You just quit" (Wilson, 1990:19) Wilson took Early's advice and shut the operation down, as did most of the tungsten operators in central Nevada.

McCracken and Wilson in Reveille Valley

Meanwhile, in nearby Reveille Valley, about 50 miles east of Tonopah, Robert G. McCracken had rebuilt the old Belleville Mill at the Reveille Mill site about 12 miles south of Warm Springs. He had been milling ore from the dumps and from previously broken ore from old stopes in the Reveille lead-silver mine across the valley to the east. Promoter Les Emigh had extracted a large amount of money from South Dakota ranchers and businessmen for McCracken's mining project but had pocketed most of it himself, squandering the largest part on gambling. An old Tonopah promoter, Ted Kite, attempted to help McCracken pick up the pieces of his Reveille operation after the Les Emigh disaster. The plan was to expand the Reveille Mill's capacity. McCracken heard about Wilson's Ophir Canyon mill and the idle equipment. He approached Wilson about renting it, and Wilson agreed. Two tables, a hammer mill, a conveyor, and a 100-kilowatt diesel electric generator were transferred from Ophir Canyon to the Reveille Mill site. But it was not to be.

When McCracken's operation went belly-up in 1958, Wilson had to scramble to get most of his equipment back. Thieves—representatives of the "Midnight Development Company," as people said then—had begun stealing the equipment. Wilson never did recover his diesel electric generator, originally a Cummings six-cylinder boat motor with an air starter.

Wilson Works at Round Mountain

In the late 1950s, Bob Wilson worked a short stint at a sawmill near Bridgeport, California, during which time a trailer containing his portable machine shop burned in a fire at the sawmill. In 1957, while Wilson was working as a snowplow operator for the county in the Tioga Pass area of the eastern Sierra Nevada, he got a call from Smoky Bowman informing him that he could go to work for Morrison Knudsen in Round Mountain as a mechanic. Wilson applied for the job and was accepted. Fresnillo had purchased Yuba Dredge's interest in the Round Mountain Gold Dredging Corporation in 1950. In 1952, Fresnillo abandoned the system of using conveyors to move the placer gravel from the plant to the mill and contracted with Morrison Knudsen to strip overburden and haul placer gravel to the stockpile at Fresnillo's nearby placer mill. The placer gravel that was being extracted from the 200- to 300-foot-deep pit contained huge boulders, some weighing as much as 15 or 20 tons, that, of course, would not go through the grizzly, a screening device made of heavy rails that separates large boulders from smaller stones and material. The boulders were loaded into trucks and hauled to a dump site outside the pit. The pit gravel contained considerable amounts of clay and had a tendency to form large clumps that stuck to the boulders.

Fresnillo pulled out of Round Mountain in 1960, turned the lease back over to Louis Gordon and Nevada Porphyry, and sold the mill to Machinery Center in Salt Lake for $240,000 (Wilson, 1990:34). Machinery Center dismantled the mill, cut it up, and sold it for scrap. Wilson helped dismantle the big Bucyrus 170-B electric power shovel, which was shipped to the Peabody Coal Company in the East. It took 15 to 20 truckloads to move it.

When Fresnillo pulled out of Round Mountain, Nevada Porphyry opened the mine to leasers. Eddie Critchfield and Norman Coombs were among the leasers who moved in; Nick Andreason and Frank Jakowatz were two others. Wilson talked to Louis Gordon, whom he described as a big, tall Englishman, about a lease. "Well," Gordon said. "Being that you're Scandihoovian, I'm kind of partial to Swedes. . . . Go ahead. I'll be out and look you over" (Wilson. 1990:36). Meanwhile, Louis Cirac, Jr., had died in the mid-1950s. In 1964, Wilson, who had divorced his first wife, married Cirac's widow, Alice. For a time Alice's son, Don Cirac, and Wilson were partners in a Round Mountain placer venture.

Bob Wilson constructed a placer mill near Fresnillo's dump for the large boulders that had not gone through the grizzly in the pit. Over the years, the gravel and clay that had stuck to the boulders had dried out and broken loose. Using a bulldozer, Wilson pushed the boulders aside and scooped up the gold-bearing gravel that had once adhered to them. In a jury-rigged placer mill, using water from the pipeline from Jett Canyon, Wilson ran 100 or so tons of gravel per day (a day was considerably longer than eight hours) through the mill when it was working; they collected from five to seven ounces of gold per day at $35 gold.

Wilson's mill, which would have done credit to Rube Goldberg, was an outstanding example of Wilson's mechanical ingenuity and creativity. The mill consisted of a hopper, conveyor, trommel screen, sluice box, and nugget trap, with a slusher that was used to pull the ore into the hopper. It was powered by several engines, which only a mechanical genius like Wilson could keep running. It took more than 30 minutes every morning to start up the mill. Wilson's battery of engines included an old Studebaker automobile engine, a flathead Ford V-8, and an old Model A engine; in addition, there were six one-cylinder engines, each one vital to

the operation. If one engine quit, the entire operation had to be shut down. The operation also used an old Studebaker dump truck and an Allis Chalmers HD-5 bulldozer.

Wilson worked the Round Mountain placer for several years. Then, as many miners and heavy equipment operators in southern Nevada did at that time, he went to work at Mercury at the Nevada Test Site; he was employed as a heavy equipment mechanic. Many miners in those days took steady jobs working in the tunnels or on the heavy equipment at the Nevada Test Site to build up their financial reserves before taking another fling at mining. Wilson worked for a time at Area 51, the super secret area on the Nellis Air Force Bombing Range near Groom Lake. For a time, he and Alice lived in Ash Springs, but then Wilson succumbed to the mining bug again.

Wilson's South Twin Mine

Wilson acquired the South Twin Mine in the Toiyabe Range through staking claims. The South Twin, an old mine dating back to at least 1915, had been worked with some success in the early 1920s. A mill had been set up at the mine site, up South Twin Canyon. The mill had been built by Orlo Parker of the Brown-Parker Garage in Goldfield. The pieces were numbered, transported up Smoky Valley, and then packed in to the mine. The trip to the mine involved climbing up a canyon in the Toiyabe foothills, crossing and descending one mountain, and then climbing another. The first owner of the mine had used an old Pope-Hartford automobile with a Model T engine to bring concentrates down the mountain, but then he had to pack the load on horses to move it up and over the other mountain into Smoky Valley.

Al Bradshaw, a Goldfield-Tonopah native, recalled helping pack supplies into the mine in the 1920s. Pete Rogers, an area native, remembered how the concentrates had been hauled down the canyon in the old makeshift truck that had been taken apart, packed to the mine on horses, and then reassembled. At the bottom of the hill, they loaded the ore onto packhorses, then took it up the trail and down into Smoky Valley (Rogers, 1990:24). Apparently, the mine and mill were productive, and considerable amounts of valuable gold concentrates were shipped out for several years. The shipping records have disappeared, so it is not known where the concentrates were shipped.

When Wilson staked the property, the waterwheel. several shacks, and the remnants of the mill were on the site. but there was no road going in to the property. Wilson never intended to construct a mill at the site. He planned instead to haul the ore out of South Twin Canyon and up to his mill in Ophir Canyon, where he had brought many elements of his placer mill. The South Twin Mine was located in the middle of federal government land and fell under the jurisdiction of the U.S. Forest Service. In the late 1970s, Wilson received permission to build a road into the property that complied with all government regulations.

Not long after the road was constructed, however, Wilson got into a dispute with a partner. In an attempt to discourage the partner's further participation in the venture, Wilson refused to repair the road when it was washed out by heavy spring runoff in 1983. He left the road unrepaired but continued to do assessment work on the mine and make necessary improvements, hoping eventually to bring the operation into production. After the road had been unmaintained for two or three years, the Forest Service—in what most residents of the area familiar with the case believe was a highly unreasonable and vindictive use of federal

power—claimed that Wilson had abandoned the road by not keeping it up and refused to let him repair it once he was ready to do so.

A protracted battle ensued between Wilson and the Forest Service concerning whether Wilson should be given permission to repair the road. Wilson devoted most of the remaining years of his life to this battle. At one point, the Forest Service installed a locked gate at the entrance to the road. Wilson decided to take matters into his own hands then; he circumvented the gate and repaired the road without permission. As a result, the Forest Service issued a criminal indictment against him. Wilson went to trial in Las Vegas, was found guilty, and was fined and placed on probation. He continued to write letters and work with attorneys in California and Reno. Although the characters were similar to those in the tale of David and Goliath, here an aging rural Nevada mining man who took on the powerful U.S. Forest Service lost the battle. He never was allowed to repair the road to his mine.

A few months before he died, Wilson, who was a tall and well-built man, began to lose a little weight and noted with pride to friends how trim he looked. Weight loss persisted, however, and he was diagnosed with cancer. Wilson refused to believe the diagnosis and continued his fight with the Forest Service. Then his health began to fail; a visit to a clinic in California confirmed the previous diagnosis.

Bob Wilson died in 1991, but almost until the end of his days he pursued his dreams of mining. He truly had the frontier spirit of rural Nevada—the most buoyant and irrepressible optimism imaginable.

CHAPTER 19
Life on the RO Ranch

The RO Ranch, which grew to encompass a large area within Smoky Valley, had its roots in the Rogers Ranch, founded in the 1860s. The evolution of the Rogers Ranch into a large cattle operation is a story about hard work, determination, and the ability to take advantage of opportunity.

The Founding of the Rogers Ranch

The silver boom that began in Austin in spring 1862 brought an estimated 10,000 people to the area in 1863 (Carlson, 1985:43). Of course, most of the people who rushed to the Reese River area wanting a bit of the big strike missed staking good claims, so they fanned out, looking for gold and silver along the Toiyabe and Toquima Ranges. They spread out along the Reese River in Reese River Valley, over the Austin Summit, down into Blackbird Canyon, and down Smoky Valley.

The Federal Homestead Act of 1862 provided that every person who was head of a family or a citizen at least 21 years old could obtain possessory rights to a piece of land by staking a claim to 160 acres. A title by patent from the United States could not be obtained until the property had been lived on for five years and until the land in the area had been surveyed into rectangular townships 6 miles square, consisting of 36 sections (640 acres each), so it could be given a proper legal description (Georgetta, 1972:69-70). Because for many years very little public-domain land was surveyed into townships in most of Nevada, in 1869 the *White Pine News* advised people holding agricultural land to take the following steps to protect their rights: (1) Have a survey made by the county surveyor or his deputy; (2) within 90 days of the survey, record in the County Records improvements valued at a minimum of $200 in currency for each 160 acres; and (3) where claims involve the right to running water, turn then water out of its regular channel ("Land Survey, " *White Pine News*, January 2, 1869).

During spring, summer, and fall 1863, most of the suitable agricultural sites in Smoky Valley were staked out. The best land was staked first: Blue Springs Ranch, Hot Springs Ranch (which became known as Darroughs Hot Springs Ranch), and Cold Springs Ranch, immediately south of Hot Springs, which later became known as the Wine Glass Ranch.'

John L. Smith, who had sailed around Cape Horn to California in his travels before reaching Nevada, had spent time in Virginia City, Austin, and Ophir Canyon. By 1863, he had staked out a ranch in Smoky Valley that by the late 1880s became known as the Rogers Ranch. Smith quickly began to put the waters of Summit, Wisconsin, Ophir, and Last Chance Creeks to beneficial use and expanded his holdings from 160 to 651 acres. The larger Twin Rivers Ranch, which adjoined Smith's property on the south, was claimed by a group of nine men about the same time Smith staked his claim. The nucleus of the RO Ranch consists of the old Rogers Ranch and the South Twin Rivers Ranch.

By 1871, Smith was successfully selling produce and beef from his ranch to miners in the area, and in that year be sent for a mail-order bride. Catherine Raher, originally from Germany, arrived in Austin and the two were married there Smith then took his bride south to the ranch. A few years later, Catherine Smith gave birth to a daughter, Lena Smith When she grew up, Lena married Jack Stebbins, and the couple eventually moved to Ellis, Kansas, where they had a

wheat farm. Lena never returned to Smoky Valley, although Jack Stebbins sometimes visited in the summer, staying at the Wine Glass Ranch or the Rogers Ranch. Jack and Lena Stebbins's daughter, Laura (who legend has it found the Round Mountain gold while chasing a cow), married James Darrough. In her later years, she was known in the valley as Grandma Darrough.

John and Catherine were only married about four years, when John died around 1875. Catherine inherited the ranch. Later she married William Rogers, who had worked at Ophir. Although Catherine owned the ranch, it became known as the Rogers Ranch. Emma, the first of Catherine and William Rogers's children, was born in 1880. Emma was followed by Ben, Billy, Katie, and Harry (Haas and Haas, 1992:21). Once grown, Emma and Billy Rogers stayed on at the Rogers Ranch; neither ever married. Ben married Grace Anderson, who had been born in Belmont but moved to a Moores Creek ranch when she was nine years old. They remained on the Rogers Ranch for some years, moving in 1926 to the Wine Glass Ranch. Katie married Karl Berg, one of the Berg brothers, and the couple lived in Round Mountain. Harry Rogers moved to Oakland, California, started a tire business there, and married a nurse.

Emma Rogers is an important figure in the history of Smoky Valley. It was rumored that as a young woman, Emma fell in love with the cowboy-miner Jack Stebbins, whom some accounts credit with the discovery of the gold at Round Mountain. But it was Emma's half sister, also in love with Jack Stebbins, who eventually married him. After this, Emma forgot about marriage and focused her energies on the Rogers Ranch for the rest of her life.

As the years went by, Emma, Ben, and Billy increasingly took over management of the Rogers Ranch from their mother, Catherine (Zaval, 1990), who died in 1920. Catherine's second husband, William Rogers, had become ill and had moved to Belmont shortly before his death in 1920. Before his death he had taken to burying gold coins in the yard of the Rogers Ranch, and in later years, 30 uncirculated $20 gold coins were found buried in an old flowerpot. In 1931, Ben Rogers died unexpectedly of appendicitis; he was survived by his wife, Grace, and their two children. Billy Rogers committed suicide on the ranch not long after Ben's death. It is thought he had been despondent over Ben's death because the two brothers had been very close throughout their lives (Haas and Haas, 1992:26).

During the next few years, Emma bought out much of her siblings' interest in the Rogers Ranch. Although the ranch contained only 651 deeded acres, it also had rights to the use of a large area of range on public lands, encompassing much of Smoky Valley south of the ranch nearly to Silver Peak. In addition, the ranch had rangeland on the east side of the Toiyabe Range, from the range's crest south to Peavine. Emma Rogers ran the ranch from the early 1930s until she, Harry, Lena, and Katie sold out in 1951 to Carl Haas, a young cowboy who worked on the ranch. The contemporary name RO was bestowed upon the ranch by Haas in the 1950s; the R and 0 came from the two letters in the Rogers Ranch brand.

During their operation of the ranch, Emma Rogers and her family are reputed to have never borrowed a dime on the place (Haas and Haas, 1992). After Emma and her siblings sold the ranch, she moved to Round Mountain, where her sister Katie had retired. Emma died in 1959, having lived a long and successful life in Smoky Valley.

Childhood on the Ranch

Catherine and William Rogers's son Ben grew to be a big man, over 6 feet tall, and he weighed perhaps 180 pounds. He is remembered as having been a hard worker and a

concerned father. Ben's wife, Grace, who was of Swedish extraction, was also tall. She was good-natured and had a happy disposition.

Grace and Ben had two children, Benjamin W. and Irene Catherine. Although Ben the elder passed his name on to his son, he had never liked his own name. When young Ben was still small, his father announced that he wanted to call his son Pete, a name that stuck for the rest of the boy's life. Irene Catherine's nickname was Rene. The family lived on the Rogers Ranch until 1926. That year, when Pete was 14, Ben Rogers bought the old Johnny Moore Ranch in Smoky Valley (originally known as the Cold Springs Ranch), which was later called the Wine Glass Ranch, and they moved there.

As young children during the years around World War I, Pete and Rene found plenty to do on the ranch. They spent time at the pond in the field playing and watching the ducks. Pete recalled climbing the old cottonwood trees on the property, going clear to the top—so high "it was a wonder we didn't fall out"—and building a tree house (Rogers, 1990:4). In the summer, they waded barefoot in the creeks. They went down to the corral and rode dairy calves.

As soon as Pete and Rene were big enough to sit on a horse, they began riding, and soon they both had their own horses, which had to be fed, watered, and curried. When they were both able to handle a horse alone, they rode up into the canyons west of their ranch. By the time Pete was 10 years old, he was riding with the cowboys on short rides. He helped feed the cattle in the winter, driving a wagon full of hay as his dad pitched hay to the cattle. When Pete got a little older, he began to accompany the riders up North and South Twin Canyons to the crest of the Toiyabe Range looking for cattle during roundup. Late in the fall, as cold weather began to set in, the cows were ready to come down from the summer pasture. All a rider needed to do at that time of year was make a little noise and the cow would begin heading down the canyon on its own. If the cows were not ready to leave the summer range, however, they would hide in the brush and trees, often not visible until a rider was almost on top of them. Even then, sometimes they would bolt and hide again. Pete learned to track and locate stray cattle. A blade of grass bent down, a broken twig on the ground, a twig knocked off a tree were all signs he learned to recognize.

After Pete and Rene's grandfather Anderson died, their grandmother moved in with Grace and Ben Rogers for her last years. Grandmother Anderson was a good cook; she had worked at boardinghouses at several old mining camps, including Rhyolite, Weepah, and Silver Peak. Rene recalled driving down to Rhyolite to visit her grandmother Anderson several times. Although any trip was an adventure for the children, a journey all the way to Rhyolite was especially exciting. Rhyolite was on its last legs, but there were still a few houses in the old boomtown, and Grandmother Anderson cooked for some of the old hangers-on who were waiting for the town to boom again and for a few watchmen stationed there to look after still-valued assets.

Because the Rogers Ranch was extremely isolated, a trip to town was an important event. The family traveled to town about twice a year, usually going to Tonopah rather than Austin. Tonopah was larger, there were more services available, and prices were lower. The 60-mile trip over rough dirt roads took all day. The expedition usually lasted four or five days: one day driving in, one day driving back, and two or three days of business and fun in Tonopah. The Rogers owned an old Hupmobile touring car with a box built on the back for hauling groceries and other items. For trips to town, they carried two or three five-gallon cans of water for the

radiator because the engine sometimes overheated. A flat tire could be expected every few miles, so tire-patching equipment was always carried.

In Tonopah, the family always stayed at Mrs. McNamara's hotel, named The Big Ship after a large hotel in Butte, Montana. Mrs. McNamara's hotel, which was located behind the present-day Mizpah Hotel, burned down in 1922. Pete remembered each room having a large washbasin and a fancy slop jar. The Rogers always attended a picture show in town and made several visits to the ice cream parlor. Pete and Rene bought candy at a pool hall owned by Charlie Stewart, a black man whom the kids liked. Charlie always saved some choice morsels for them. On the trip home, Ben, Grace, and the kids sat in the front seat of the Hupmobile because the rest of the car was loaded with groceries and other supplies—enough to last until the next trip to town.

The Rogers Ranch had no indoor plumbing; water from the well was carried in buckets to the house. The two-bedroom house was heated by two woodstoves, and kerosene lamps provided light. There was a storeroom, a huge barn, a milk house, a blacksmith shop, and a bunkhouse for the ranch hands, who always ate with the Rogers family. The Rogers kept 8 to 10 milk cows, as well as chickens. The milk was put through a separator to separate the cream from the milk. Grace Rogers used much of the cream for cooking; the remainder, along with most of the milk, was fed to the pigs.

The family always managed a big garden that produced plenty of potatoes and other vegetables. Carrots and other root vegetables, minus their tops, were buried in moist sand in the root cellar. To preserve beef, the fresh carcass was hung in a tree at night, rolled tight in a tarp in the early morning, and then stored in the cellar. During the heat of summer, beef was shared among local ranchers as it was butchered so that no one had to keep a large quantity of meat too long and risk spoilage.

Like many women in rural Nevada, Grace Rogers followed a weekly chore schedule. On Monday, she washed clothes on a scrubbing board with soap she made from fat and lye. On nice days, clothes were hung outside to dry; otherwise, they were hung on the porch or inside the house. On Tuesday, she ironed with heavy irons she heated on the stove. On Wednesday, Grace baked; she made all her own bread, as well as a variety of pies, cakes, and rolls, including cinnamon rolls. In the fall, a large supply of firewood was laid in. Ben Rogers and his ranch hands went to the hills, gathered dead trees, and hauled them to the ranch. A man named Duke from Round Mountain had a large portable power saw that he hauled to the Rogers Ranch, where he stayed for several days sawing the wood. In later years, the family used coal. Many of the residents of the valley who grew up using wood still prefer it to coal.

During Pete and Rene's childhood, there were a number of Indian groups living in the valley, usually in camps located near the big ranches. There was one such camp right up the road from the Rogers Ranch. The Indian women helped Grace Rogers; the Indian men worked with the cattle and elsewhere on the ranch. There was a school, a one-room cabin heated by a woodstove, on the Rogers Ranch; the pupils were Pete and Rene, their mother's younger brother, Alvie, and two Indian children. The school was furnished with a teacher's desk, a blackboard, and desks for the students. The teacher lived with the Rogers family.

When children got sick on the ranch, home remedies were concocted. Rene remembered her grandmother Anderson making mustard plasters for children with bad colds. A plaster was made by mixing one-half dry mustard and one-half flour into a paste with water;

it was smeared on squares of cloth and placed on the child's chest. It had to be applied carefully because mustard can cause blisters; a plaster was left on for only about 20 minutes. An onion cough syrup was made by thoroughly boiling onions, adding sugar and vinegar and boiling some more, and straining; the liquid was then drunk. Mentholatum was used for runny noses, and iodine for skinned knees (Zaval, 1990:13-17). When Rene was two years old she got diphtheria, and she and her mother were quarantined in Round Mountain so that young Pete would not get the disease.

In the 1920s, the Rogers Ranch kept Galloway cattle, a Scottish breed. They were long-haired, black, and hornless, but the cattle buyers did not like them because they were only medium size and did not have enough flesh. The Rogers therefore switched to polled, or hornless, Black Angus, a larger breed, for several years. Eventually, they switched to Herefords. According to Pete Rogers, the Angus proved to be a lazy breed that did not follow the feed well in the mountains. When the Rogers introduced a few Herefords, they found they would range all over the mountain. For many years, they would pick a good milker from the range cows for family use. Later, Ben Rogers bought several Jersey cows and a few Holsteins, but he still preferred to milk the range cows. In an open-range ranching operation, a high ratio of bulls to cows is maintained because the cattle are spread out; the rancher wants to maximize the chances that every cow gets covered. At the Wine Glass Ranch, Pete Rogers maintained seven or eight cows for each bull.

The cattle were driven to Tonopah after the roundup, usually in November. The trip took four days. In a typical drive, 5 or 6 cowboys herded 150 to 200 head of cattle. The cowboys slept on the ground in their bedrolls, covering their blankets with tarps. Sometimes the tarps were covered with snow when they woke up in the morning. Each night before going to sleep, a rider made sure his clothes and boots were under the tarp so they would not get wet.

After Ben and Grace Rogers moved to the Wine Glass Ranch, Pete and Rene switched to the ranch school at Darroughs. For high school, Rene moved into Round Mountain and stayed with Katie Berg. There were more girls than boys in high school because most of the boys, including Pete, dropped out to go to work. The high school had a basketball team; Tonopah, Manhattan, and Austin were the usual opponents. School dances were held in the town hall, almost always with live music. Although the school was small, there was a prom; the girls bought their fancy dresses in Tonopah.

After Ben Rogers died in 1931, Pete Rogers stayed on at the Wine Glass Ranch until 1955, when he sold the ranch to Carl Haas.

Rene Rogers Works in Round Mountain

When her father died, Rene moved back to the Wine Glass Ranch to help out. After life returned to normal, she got a job in Round Mountain at Tabor's hotel, which functioned as the town's largest boardinghouse. Perhaps as many as 50 miners working in the local mines took their meals in the downstairs dining room; some stayed in rooms located upstairs. Rene lived across the street and got up early each morning to help make breakfast in the hotel's large kitchen. After breakfast, the staff began preparing dinner and baked batches of cakes, pies, and cookies. After dinner, the men's lunches for the next day were made up. A box lunch usually contained roast beef on store-bought bread and some baked goods. Each man carried his own

dinner pail, shaped like small bucket with a lid. In addition, most miners took thermoses of hot coffee to work.

Rene worked at the hotel for about one year and way paid $3 per day. She attended business school in Reno for a time but became homesick for Smoky Valley. She returned to Round Mountain and married Dan Berg, Will and Lillian Berg's oldest child. Rene and Dan operated the store in. Round Mountain next door to the house Will Berg had built Their store carried a variety of products, including canned goods, and they sold beef raised on the Berg Ranch. Eventually, Dan and Rene moved out to the Berg Ranch. Dan died unexpectedly in 1955 at age 40.

In 1960, Jean Carver Duhme asked Rene to help her at Carvers, so Rene went to work, cooking and waiting on customers. The truck stop was open 24 hours a day. Although the staff ordinarily worked 8-hour days, 6 days per week, Rene often worked 12-hour shifts when they were short-handed. But she liked the work and enjoyed meeting the many people she served. Truckers would stop to rest and talk, and she became interested in their lives and their families. Rene made a career of her job at Carvers; in 1990, she celebrated her thirtieth year of employment there. Although the establishment has been enlarged and the menu expanded, much remains the same. In the early days of Carvers, as Rene said, "We didn't have much . . . [menu] variety . . . and it seemed that the truckers usually stopped there for ham and eggs" (Zaval, 1990:38). With the tremendous expansion of mining operations at Round Mountain, the majority of clients are no longer truckers but miners. Sometimes Rene gets nostalgic about the old days. "Every once in a while now, one of [the truckers] will come in from years ago. . . . We'll just have the greatest time visiting. . . . I miss those truck drivers. Jean [Carver Duhme] does too; we talk about it every once in a while" (Zaval, 1990:37).

Don Cirac Works for Emma Rogers

As a teenager in the 1940s, Don Cirac worked for Emma Rogers on her ranch during the summers. Cirac bucked hay bales from the fields, picking them up and throwing them onto the back of a truck and then stacking them. It was hard work but it made a youth tough by the end of the summer.

Cirac vividly remembered Emma Rogers as a big woman, about six feet tall, with gray hair. She was very attractive and looked as though she had once been quite beautiful. According to Cirac, she always wore long dresses; he never saw her in a pair of pants. The skin on her face was leathery from outdoor life, even though she always wore a bonnet and long sleeves.

Emma Rogers was an excellent rancher. She could look at a calf and divine its ancestry, including its great-grand-mother or great-grandfather. She could run 200 head of cattle through a gate and make an exact count.

Emma Rogers never permitted any cursing. She was not prudish; she simply did not like it. A worker was not even allowed to say "damn" in her presence. Her attitude appears to have rubbed off on those around her, because both Don Cirac and Carl Haas, who worked for her as teenagers, have an aversion to swearing. Emma ran the Rogers Ranch without ever raising her voice. As Don Cirac recalled, "She was tough. Emma was the last of the super strong women" (Cirac, 1990:51). She could destroy anyone from a raw-edged cowpuncher to a big-city cow

buyer with her strong, clean speech if she wanted to. Emma was also a fine poker player. She held poker games every weekend, and every now and then she would clean out the crew.

Although Emma Rogers never married, she clearly ha,.: a romantic side. She would sit and talk with young Dor. Cirac, telling him about the old days and her life on the ranch as a young woman. Over a long period of time and after many conversations, Cirac found out that she had once beer. courted by his own grandfather, Louis Victor Cirac, Sr Emma would get a dreamy look in her old eyes when she revealed a little information about their relationship. For example, she would mention, "I knew your grandfather." That was all. A week later, she might say, "We went to a dance at Ione." Another week, she might add, "We went to another dance in Ione." Then she might comment, "It's a long way-over Trail Canyon to Ione" (Cirac, 1990:56). Don Cirac was able to reconstruct a courtship in which his grandfather Cirac would ride over the mountains from Ione to the Rogers Ranch in Smoky Valley to pick Emma up. The two would ride to a dance at Ione, then return to the ranch after the dance. It would have been a two- or three-day trip, which the couple spent all alone. Why the relationship never blossomed into marriage remains a mystery. Emma never went into much detail, but it does seem certain that a young woman would not spend that much time with a man without being seriously interested in him. It is not clear whether this was before or after Emma's reputed attraction to Jack Stebbins.

In the late 1940s, when the ranch hands were not working out on the range, they bedded down in a bunkhouse, which "was just an old shack with a bunch of beds in it. Just like the bunkhouses you see on TV, only worse," as Cirac said. The beds were iron cots with mattresses. During hay season, there were as many as 15 hands in the bunkhouse. The cowboys got up at dawn, ate breakfast, and worked until about 11 A.M. They broke for lunch and a short siesta in the midday heat; then Harry Rogers would yell, "One o'clock. Time to go to work again." They worked until dark, then had supper. If somebody had a car, the men might go to Round Mountain after supper, but most of the time they just went to bed. They worked seven days a week for $80 per month and all they could eat. When they were haying, the only time off was when the hay was wet (Cirac, 1990:57-58).

Emma Rogers cooked for the hay crew, and Shirley Ann Berg Lofthouse sometimes helped her. For breakfast, the crew had steak, eggs, hotcakes, bacon, ham, oatmeal, and toast. Lunch was the big meal: beef or venison and potatoes. There were plenty of deer in the fields at night, and the game warden allowed poaching for local consumption. Emma Rogers also made her own cottage cheese, cottage cheese pie, cakes, and applesauce. Supper was a light meal of cold cuts.

Food storage was always a problem. Meat was frequently eaten fresh-killed because there was no time or place to age it. Milk and butter spoiled easily. With no refrigeration except a desert cooler, there was no way to keep dairy products fresh. Canned milk was therefore important in the rural western diet. Cowboys and prospectors packed canned milk. People living on the frontier then acquired a taste for canned milk that cannot be appreciated by modern consumers of that food. Many old-timers preferred the taste of canned milk to that of fresh whole milk. Jack Chiatovich, who comes from a family of Silver Peak sheepmen, was something of a poet and penned the following verse as a tribute to canned milk:

No tits to pull, no tail to switch.

Just poke two holes in the son of a bitch. (Cirac, 1990:60)

A piece of bread sprinkled with sugar, with canned milk poured over it all was a dessert favorite. Canned milk on cereal and powdered sugar moistened with canned milk spread on graham crackers were other treats.

During roundup, there was no way to get a chuck wagon into the rough terrain in the Toiyabe Range. Beans. a side of bacon, canned milk, and whatever fish or game could be found had to suffice, along with white flour biscuits cooked in a Dutch oven. Sometimes there was competition among the buckaroos about who could make the best biscuits.

Carl Haas Buys the Rogers Ranch

Beginning in the early 1950s, the young cowboy Can Vernon Haas, Jr., assembled a ranching empire centered in Smoky Valley on central Nevada grazing lands. Haas s holdings were immense by any standard, at the largest totaling more than 1 million acres. Haas was born in Dallas Texas, in 1929, but he considered himself a Nevadan, not a Texan. His father, a teamster and construction equipment operator, worked on large construction projects throughout the West. Young Haas spent his early years in construction camps in Arizona, New Mexico, and California, where his father was employed building roads and airports.

Haas first came to Smoky Valley in 1941 when he was about 12 years old. His father had been in the Tonopah area around 1915 and had become good friends with Samuel Houston "Barney" Manor (pronounced "Maynor"). Barney. whose nickname came from the famous race car driver Barney Oldfield, lived in a section hand's house near Millers. He had gravitated first to Death Valley, then to the Goldfield-Tonopah area. He had been a mechanic for the Tonopah and Goldfield Railroad for many years. The Haas family used to spend time at Barney Manor's place; sometimes, Carl and his sister would stay there without their parents. Manor also had a small cattle ranching operation at the south end of Smoky Valley, where he ran about 150 head of cattle. Barney Manor and the Rogers Ranch each owned one-half of the range on the flat at Millers, so Manor ran his cattle with Emma Rogers, who used the flat at Millers for winter range. Haas was first exposed to his lifelong love, "cowboying," at Millers. He also had his first contact with the Rogers outfit there (Ulph, 1962; 1981; 1984).

In fall 1945, Haas's father worked at Dicalyte, near the summit of Montgomery Pass on the Nevada-California border on U.S. Route 6, 60 miles west of Tonopah. Haas's parents bought him an open-top Model A Ford, which he drove to Tonopah to high school every day. School had already been in session for about one month when he registered; thus he kept his record intact—he never spent a complete year in one school anywhere. Haas's commute turned out to be quite an adventure. He sometimes battled high winds, blizzards, and snowdrifts in the automobile; the temperature during that winter on the high desert fluctuated from 30 degrees above to 30 degrees below zero between sunset and sunrise. Despite his commuting, he maintained straight As in school that year and graduated in spring 1946.

Following graduation, Haas enrolled briefly in the California Institute of Technology to study nuclear physics, but he contracted rheumatic fever. He decided after he had recovered that what he really wanted to be was a cowboy. He returned to Smoky Valley and was hired by Emma Rogers on the Rogers Ranch for $100 per month. Haas was a good buckaroo, and he began to help Emma Rogers, whom the ranch hands called either "Miss Rogers" or "Miss Emma," run the ranch. She appreciated young Haas's intelligence, hard work, and intuitive grasp of the cattle business, and she especially noted that he never drew his wages but saved

all his earnings. Haas was determined to be more than just a hired hand, and not many years passed before he began negotiating with Rogers about the possibility of purchasing her ranch. Rogers, who was getting on in years, had though: about selling the ranch. She thought Haas would be a good candidate to take over her operation. Emma owned twelve-fifteenths of the ranch; the remainder was divided among Catherine Smith Rogers's heirs, including Harry, Katie, and Emma's half sister, Lena Smith Stebbins.

Haas used his accumulated wages as earnest money and made a purchase offer. Emma agreed to carry a firs: mortgage on the real property, and Haas secured a firs: mortgage on the cattle with a loan from the Nevada Livestock Production Credit Association; he used the funds It buy out the minor owners (Ulph, 1962:358). When the deal was completed, Haas owned 1000 head of cattle, and he controlled 700 acres of deeded pasture watered by runoff from four Toiyabe streams (Summit, Wisconsin, Ophir, and Last Chance) as well as several thousand square miles of desert and forest range grazing rights (Ulph, 1962:358).

When Haas bought the Rogers Ranch, it was operated much like ranches were 50 to 70 years earlier. In 1951, one pickup was the only truck on the ranch. The haying was done mostly with teams of horses; when cattle were driven to the winter range from the Twin Rivers area down into Millers in lower Smoky Valley, the work was done entirely on horseback.

Haas was a hands-on owner. He immediately began introducing some progressive ranch management practices. Most ranchers in central Nevada at that time were content to put the cattle out on the range and round them up twice a year, leaving their fate to the vicissitudes of nature. If they died in blizzards, if the cows were not properly covered by bulls and thus remained unbred, if one area of the range was overgrazed—these were seen as risks of the business. In the end, the rancher would emerge with some sort of profit, and that would suffice for his living. While the cattle were unattended, cowboys spent their time in relatively unproductive ways—spending hours straightening crooked nails, for instance, or rethreading old pipe, or patrolling the henhouse and meat cellar. As Owen Ulph comments in his essay "Cowboy's Lament," Haas "refused to become the kind of stockman who appeared only to supervise the scales when cattle were being shipped" (Ulph, 1962:360). Haas was a good rider and rode with his cowboys. He planned the distribution of cattle on the range and culled unproductive cattle from the herd. His strategy was to utilize the range without damaging its natural productivity. He worked toward achieving an optimum ratio between beef and bone for every animal.

Big Steers on the RO

When Carl Haas bought the Rogers Ranch, he shifted from the production of big steers and began selling smaller animals. It had long been the tradition at the ranch to market steers when they were four or five years old, as opposed to selling them either when they were less than one year old or as "long yearling" steers less than two years old. To Haas, spending five or six years (counting the gestation of the calf) to produce beef was wasteful. Beef, he reasoned, could be produced more efficiently pound for pound if steers were sold younger.

When Haas worked for Emma Rogers, he once asked her why she raised the big steers, which to him seemed so wasteful. Emma answered, "A steer gets awfully poor before it dies" (Haas and Haas, 1992:117). She meant that a large steer could survive and get fat, whereas younger animals might perish. A big steer was like a horse in that it could range up to 20 miles

from water and go all the way to the mountaintops for food. It was this hardiness that motivated ranchers to raise the big steers, despite their being otherwise wasteful of resources. When Haas took over the ranch, a 1000-pound steer was considered small.

In the 1950s, these big steers, sometimes called "mossbacks," were considered dangerous if encountered when prospecting or hiking in the remote hills. Pete Rogers (1990 remembered one old mossback steer that hid out high in the Toiyabes. The cowboys tried for several years to bring him down, but he was too smart and would head into dense brush and trees where he could duck down and barely get through: a rider on horseback could not follow him. When the cowboys finally did get their ropes around him, Pete's uncle Billy Rogers threw him down, put hobbles on him, and then tied him to a gentle cow. Once they got him started, with the gentle cow pulling him down the canyon, they removed the hobbles.

A four- or five-year-old steer is, of course, much larger and more independent than a younger steer. Haas recalled that handling the big old steers, which were either Hereford or a Hereford-Angus cross and sometimes weighed more than 1400 pounds, was like handling nitroglycerin. The steers were fairly easy to handle as long as the cowboy kept his distance and did not anger them. It was possible to drive a steer from more than one-quarter of a mile away, because the steer would cooperate, but a rider risked trouble if he came too close; it was not uncommon for the huge animals to attack horse and rider. Most of the steers had been dehorned as calves, but a few were always missed and still had horns, making them doubly dangerous. When a large steer attacked, he would attempt to butt the horse or rider; Haas and the other cowboys were forced many times to scramble out of the way.

In those days, there were no squeeze chutes on the ranch to contain a steer that was being branded, examined, or perhaps having a crooked horn sawed off. It took four riders on horseback to hold a large steer, which was strong enough to pull a horse simply by moving his head. Therefore, two ropers, one on each side, would get lassos around the steer's head and pull from opposite directions. Still, even with two ropes, some steers were able to break the cinches on the saddles and send rider and saddle flying through the air. For that reason, two more riders were positioned at the steer's rear with ropes around his hind legs, thereby stretching the steer out to control him. A cowboy also had to be careful not to anger the big steers when they were in corrals. A steer could completely destroy a corral made of 2x6s by kicking; he could jump over a 6-foot corral fence almost like a deer.

Interestingly, the beef from big steers was not tough, as one might expect. If the steers were put on meadow pasture before butchering, their meat was tender and had a delicious, though strong, taste.

Haas Builds an Empire

Like many entrepreneurs, Carl Haas was interested in money only because it served as a measure of the successful application of his skills to a problem. Haas's strategies began paying off the first year; after the first spring roundup he could have sold out for a before-tax profit of $300,000.

All the while, Haas was casting a thoughtful eye at other ranch properties in Smoky Valley. One year after he purchased the Rogers Ranch from Emma Rogers, he bought out Barney Manor's operation at Millers. However, within a year, changes in the market wiped

away Haas's paper profits. The price of steers dropped from 36 to 19 cents per pound; one year later, it dropped again, to 13 cents. Moreover, a drought hit the area (Ulph, 1962:362).

Although Haas faced insolvency, he did not change his course of action. In 1953, he bought the Twin Rivers Ranch, founded in 1863, from John and Charlie Cavanaugh. It had very little public rangeland, but it did contain 4000 acres pasture and buckbrush. Cattle could graze and get fat there without having to travel great distances on the range. Then in 1954, Haas bought the Cloverdale Ranch, located at the south end of the Toiyabe Mountains, from an old rancher named David A. Stevens. Local people in Tonopah were surprised when Stevens sold to Haas. Davey Stevens was something of a recluse, and most people assumed he would never move off his ranch. However, Haas could be very persuasive, and he convinced Stevens to sell the historic ranch. In the past, Stevens had attracted other interested buyers, but he always persuaded the prospective buyer to help him count his cattle before seriously discussing the sale. once the cattle were counted, he would back out of the deal. Haas called his bluff: When Davey offered to sell, Haas suggested they draw it up right then and there. The deal was spelled out in a five-page agreement dated November 30 1954, that had been written on a notepad while sitting in a pickup. Davey Stevens did hold back several items from the sale, including 40 acres of patented ground at Camel Springs in Ione Valley, a 1936 pickup, and "one horse called Pancho' (Haas and Haas, 1992:29). Finally, in 1955, Haas purchased the Wine Glass Ranch from Pete and Mary Rogers and Rene Rogers Berg and her family.

The financial arrangements were complicated for Haas's acquisition of what came to total seven ranches. The empire included 10,000 acres of pasture and about 1 million acres of range. Banks, insurance companies, and the Production Credit Association provided financing. The institutions involved included Mutual of New York, Equitable Life Insurance, and the First National Bank of Nevada. Haas brought partners into the operation, including at various times Gordon Shelley, Howard Smits, Talfourd Wynn, Alice and Tom Denman, and Charlie Pearcy—but Haas always maintained a 51 percent interest. The availability of financing led to many improvements, including installation of a 5-mile concrete ditch carrying water from North and South Twin Canyons to the RO Ranch. At its grandest, Haas's RO Ranch stretched from the upper end of Smoky Valley past Millers almost to Silver Peak. It included rights to pasture through much of Smoky Valley and in the Toiyabe Range to the east of the crest as well as on the west slope of the Toquima Range.

Although Haas had assembled an immense ranching empire, by 1965 he had become increasingly discouraged with his situation. His first love had always been ranching itself. He loved the life of the cowboy, riding on horseback, working the cows, and being on the open range close to nature. With success, Haas found that he spent less and less of his time on the range; instead, his life revolved around meetings with business partners, lawyers, bankers, insurance executives, and government officials. Squabbles with his partners were also irritating. Perhaps worst of all, Haas suspected that there would be serious problems in the future concerning grazing on public lands. Thus, in 1965, when he had the opportunity to sell the huge operation, he did so at a considerable profit, keeping only the old Wine Glass Ranch.

At the time of the sale, executives from Mutual of New York came to the RO Ranch to assist in the transaction because Haas had had some large loans with them. After the deal was consummated, Haas and an executive from Mutual of New York were riding up one of the canyons in the Toiyabes to examine a source of irrigation water. The executive, commenting

that Haas was now free to discuss frankly the future of open-range ranching, asked about the permits for grazing on national forest. Eastern financiers were aware that many ranchers depended heavily on such grazing lands, which sometimes made up 80 to 90 percent of a rancher's range. Haas answered succinctly, "Open range is finished" (Haas and Haas, 1992:125).

Almost 30 years ago, Carl Haas foresaw the difficulties ranchers in the wide-open spaces of central Nevada would face. He perceived that the kinds of restrictions placed or. ranchers, starting with the Taylor Grazing Act in 1934, were harbingers of stronger regulations to come. Western ranchers. who depended heavily on federal lands to earn their livings. had never secured a legal right to use that land. In contrast. miners had established the right to use public land for mining through legislation, via the mining claim and patent laws. A miner could stake out a claim on public land and hold possessory rights to that land as long as he did the necessary work on the property to maintain his claim. Further, a miner could establish title to the land by patenting his claims. whereby the government granted him a property deed that could be held in perpetuity. The ranching laws provided only that ranchers could acquire title from the government to relatively small portions of land, usually farm or rich pasture-like parcels that could only provide a base for operating a cattle ranch. Use of the vast rangelands for grazing was essential to most successful cattle operations. Because they never secured any inviolable right in perpetuity for the use of public lands, western ranchers had left themselves open to eventual restrictive rules and regulations governing grazing lands. The past 60 years since the passage of the Taylor Grazing Act have seen just such erosion of what ranchers perceive to be their right to use the rangelands.

Del Loomis Haas: From City Life to the Ranch

When Del Loomis was born in 1941, her father, Bud, was serving in the state legislature. There is an amusing story connected to Del's birth. Her mother, Cebe Wallace Loomis, was due to give birth on Franklin Delano Roosevelt's birthday, January 30. Members of the state legislature, which was heavily Republican, decided that if the baby was female they would celebrate, but if the baby was male (like Roosevelt) they would not observe the occasion. Baby Del's birth was celebrated by the Nevada state legislature, whose members became her 49 godfathers and 2 godmothers. In honor of the occasion, the members of the legislature named her Nevada Judicia and gave her parents a beautiful silver cup with the Nevada state seal as a birth gift.

Del grew up in Reno on the Truckee River near Wingfield Park, opposite the Christian Science church. Her childhood home was a beautifully renovated barn that had been attached to a stately row of houses on California Avenue.

After attending Reno High and Anna Heads High School in Berkeley, California, Del attended Mills College in California for a year. She graduated from the University of Nevada at Reno with a B.A. degree. Her parents built the River House Motel and the Bundox restaurant in 1958. (Her mother is still active in the business.) After college, Del helped her family in the restaurant. It was at the restaurant that Del first met Carl Haas. When Carl owned the RO Ranch, he would stay at the River House Motel during his frequent trips to Reno. In 1967, four or five years after they had met, they were married, honeymooned in Europe, and then moved to the Wine Glass Ranch. Del, who was used to city life, and her young daughter, Sunny, by a

previous marriage, had to adjust to life in the country. She remembered her first visit to the ranch:

When Carl first brought us to Smoky Valley it was very romantic. We flew from Reno in his airplane on a beautiful August afternoon. We landed close to this gorgeous ranch with grass three feet high and cattle contentedly grazing. Sunny and I thought we had literally gone to heaven. Living here, however, was a different story from visiting. (Del Haas, 1995)

After the honeymoon, moving to the ranch in the dead of winter was a shock. Del recalled:

It was the remoteness of it—the absolute peace and quiet. In those days there was just one tiny grocery store in Round Mountain and Carvers was a small restaurant with a little counter for a bar. The valley was ranching only, something I had never experienced. Ranching life was very different from city life. The sharing of meals, housing, and family life in general with someone other than your immediate family was a big adjustment for me. (Del Haas, 1995)

Carl took Del back to Reno periodically during the first year to help her adjust. Sunny, however, adapted to ranch life immediately, which helped her mother and new father. She has since formed lasting friendships stemming from her childhood in Smoky Valley.

Del found an interesting difference between the people of Smoky Valley and many she knew in Reno. In Smoky Valley, she discovered,

You have to prove yourself. People take you in a more honest way, I think, than possibly in a city. You are just a human being and they're not really impressed with anything you did as a young adult or who you are at the moment. If you work hard, if you're honest, if you help your neighbors and involve yourself in the everyday life of ranching, then they accept you. After that, they'll do anything for you. (Del Haas, 1995)

Notes

1. The origin of the name "Wine Glass Ranch" is as follows: The original brand of the ranch was a quarter-circle bar, half-circle. Inverted, the quarter-circle resembles the base of a wine glass, the bar its stem, and the half-circle its body. This wine glass shape reminded Carl Haas of the last verse of the *Rubaiyat* of Omar Khayyam:

And when like her, oh Saki, you shall pass Among the Guests Star-scattered on the Grass, And in your joyous errand reach the spot Where I made One—turn down an empty Glass!

CHAPTER 20
Carvers:
Nucleus of a Community

In 1943, Smoky Valley was still quite isolated. Highway 8A, as today's Nevada Route 376 was called then, was paved only from U.S. Route 6 east of Tonopah to Round Mountain; from the Round Mountain turnoff to Austin, it was a dirt road. Like most rural roads in Nevada at that time, it meandered like an old cow path, leading to each big ranch up Smoky Valley and avoiding major obstacles. In wet weather it was easy to get stuck, and when it snowed, the road tended to accumulate drifts. The war had closed the gold mines in Round Mountain, so there were only about 50 people still living there. The Manhattan population had also shrunk dramatically, and there were only a very few people left in Belmont (Duhme, 1994).
Electric power was available in Manhattan and Round Mountain, but there was no commercially available electricity north of Round Mountain. People who wanted electricity had to produce it with their own generators.

There was a telephone link—a single line that connected Round Mountain and Austin, with one operator in either town. All the customers between Round Mountain and Austin were on that single-line crank phone system. Everyone's phone rang when someone turned the crank. The phone line had enough power to convey a signal the full length of the distance between Round Mountain and Austin—that is, if no one picked up a phone in between. However, whenever the phone rang, so many people picked up their phones —whether or not the call was for them—that it weakened the signal. A call to Austin usually had to be relayed up the valley at least once. A person in Round Mountain calling the operator in Austin would thus have to have his or her message relayed by a rancher farther up the valley because so many people were listening in. Often, people could tell who was calling by the way the caller turned the crank. Mary Rogers at the Wine Glass Ranch claimed she recognized some people's distinctive cranking. In cold weather, the line sometimes broke. People would drive up and down the valley looking for the problem. Travelers along the dirt road always watched out for a break in the line. If they spotted one, they would repair it, using a piece of baling wire to tie the two ends of the line together, taking care to lay the repaired line on the tallest sagebrush available to keep it high and dry.' Most of the wire was hung on telephone poles, but there were places where it was not. Cows could walk over it and break it in those spots. There was another phone line that went from Tonopah to Manhattan, where it ended. If someone wanted to call Manhattan from Round Mountain, the call had to be routed through Austin, then to Reno, to Tonopah, and on to Manhattan. The closest repairman lived in Ely, more than 200 miles away (Duhme, 1990).

Mail was delivered by Snooks Streshley, who made a run from Austin to Round Mountain six days per week with mail and packages. Although residents could get their mail in Round Mountain, it arrived faster if it was addressed to Austin. Each household on Streshley's route had several large mail sacks labeled with their name. When Streshley arrived at their ranch—and the road went right through the front yard of nearly every ranch—people exchanged their outgoing mail sack for their incoming one. Snooks had a tendency to drink, and on occasion, he was late. Every so often, he would get a bit careless with the mail. He stopped at Jean Carver Duhme's place once, handed her the sack with her name on it, and then gave her

a second sack, labeled for the Schmidtleins, who owned the ranch at Kingston Canyon. Jean pointed the mistake out, but Snooks, as usual, shrugged his shoulders and said, "Oh, you might as well keep it and read it this weekend. I'll pick it up Monday." Jean kept the sack, but needless to say, did not read their mail. Snooks always visited briefly at each ranch, perhaps having a fresh-baked piece of pie or cake with a cup of coffee. He was an important source of news up and down the valley. Although many people in the valley who had radios listened to Walter Winchell's news broadcast, radios—the main source of national and world news—could only be operated at night. Jean, for example. first learned that the atomic bomb had been dropped on Hiroshima from Snooks. But sometimes Snooks got the news a little mixed up. Although he correctly informed Jean about the bombing, he mistakenly told her that the bomb had been the size of a baseball. Snooks was also the valley paper boy. He delivered the Reno Evening Gazette, one day late, every day except Sunday; the Sunday paper arrived two days late (Duhme, 1990).

Jean Patterson Dutton Marries Gerald Carver

Jean Carver Duhme was born Jean Patterson Dutton in Vermont and grew up in Portland, Oregon, and Salt Lake City. She graduated from Oregon State College (now Oregon State University at Corvallis) with a degree in home economics and completed one year of graduate study in food and nutrition for institutions at Mills College in Oakland, California. She came to rural Nevada in 1943 to get a divorce, but she was also tired of the traffic, crowding, and "keeping up with the Joneses" in the big city. She stayed in a house not far from where Carvers is today. Carvers, sometimes known as Carvers Station, was founded by Jean and her husband, Gerald. It served as a gathering place for Smoky Valley residents and travelers, and, over time, grew into a small community.

Not long after Jean arrived in Smoky Valley, she married Gerald Carver, a rancher who lived down the road. Carver came from Glendale, California. His forebears had originally come from St. Louis, Missouri, in the early 1850s. They had played a part in the California gold rush and had driven 800 head of cattle from Salt Lake City to Placerville, California. They then turned south looking for better rangeland and settled near Yosemite Valley, California. They were likely the first ranchers to run cattle in Yosemite Valley and Tuolumne Meadows.

After Gerald Carver's first wife died, he decided to move. He and a neighbor, Glen Record, drove to Parker, Arizona, but because Carver did not like Parker, they went on to Tonopah. In Tonopah, Sheriff Bill Thomas told them that the old Turner Ranch in Smoky Valley was for sale, so they looked it over. Carver liked it and purchased the 300-acre ranch, located where Carvers is today. Ed Turner had run a meat market in Round Mountain and had slaughtered his own beef on the ranch; the old slaughterhouse was still standing in 1995. Carver also bought an additional 640 acres, located about 2 miles east of the Turner place, from Mimosa Pittman, Key Pittman's widow. Pittman had bought the property from the federal government under the Pittman Act, a law that opened purchase of federal land to individuals. Carver was not able to run enough cattle on the ranch to make a living, so he milked a few cows and sold milk and ecc7i in Round Mountain and Manhattan to supplement 7_:,ft income. Gerald and Jean Carver's first son, Richard ("Dick' was born in 1944; their second boy, Gary, was born in 1946.

Carvers' Smoky Valley Rainbow Ranch Bar and Cafe

Things began to change for the Carvers in 1947. In 1943, traffic up and down the valley was primarily local. Road improvement began in 1947, when construction crews graveled and improved Nevada Route 376 from the Round Mountain turnoff north to Millett. In 1949, graveling was completed from Millett to U.S. Route 50; that same year, the rest of Nevada Route 376 was paved. Paving, however, did. not result in a great increase in traffic on the new highway because the volume of truck traffic on U.S. Route 50 was still not very large (Duhme, 1990).

The Carvers' ranch was ideally situated to open a business because the new highway cut through a corner of their property. They had tried raising fish and lambs to make extra money, but those ventures and others still did not make ends meet. Finally, Jean came up with the idea of establishing a roadside restaurant for travelers. Her training had been it nutrition and food service, and she loved to cook. The couple talked it over, and finally Gerald said, "Okay, you can have a restaurant if I can have a bar" (Duhme, 1990:21). They appealed to John Connolly, who owned the lumberyard in Tonopah, about financing the project. He agreed to give them credit and let them pay him back when they could. In Jean view, Connolly made the new venture possible.

The Carvers bartered with Wally Bird, who operated. a grocery store in Tonopah, trading him $100 worth of hay for an old house in Round Mountain. The Boni brothers moved that house and another one the Carvers purchased at Monarch (east of Manhattan and south of Belmont) to the Carver Ranch. The two old houses were put together in an ell shape, and then the inside walls were torn out. A few years earlier, a flood had gone through Round Mountain and had swept through the corner of the hotel there. The hotel was still standing, but the bar had been washed away. The Carvers searched the gully below the hotel and found the mahogany bar, still in good shape, buried in the sand. They installed the bar, and with a few new doors and windows and some of Mr. Connolly's lumber, their restaurant-bar was soon ready for business.

The grand opening for the Carvers' Smoky Valley Rainbow Ranch Bar and Cafe, as they named it, was held April 4-5, 1948, one year before the highway was actually paved. Gerald went to Tonopah to buy liquor, beer, ice, bread, cheese, and salami for the opening celebration. The Carvers could not afford to stock the bar with beer and whiskey for the grand opening, so Pete Rogers at the Wine Glass Ranch loaned Gerald $200 for supplies. After the first night, they were sold out. Jean always said later that Pete Rogers was to blame for putting them in business. Musicians were brought in from Tonopah to provide live music. People came from all over the valley, from Round Mountain, Manhattan, Tonopah, and Austin. They danced all night that Saturday. Some people went home, others slept in their cars. On Sunday night, they continued the dance. The Carvers also barbecued a side of beef. The place was a hit—and it has been there ever since. In 1992, Jean said old-timers in the valley still reminded her from time to time of the fun they had at that opening. Not long after the business opened, the Carvers changed the name to Carvers' Station. It is now known as Carvers and is so listed on modern maps (Dick Carver, 1995).

The Social Life of Smoky Valley

Life in Smoky Valley involved a rich network of social interaction among the residents. People cared about and looked after each other. If a person needed help, it was always available. Residents of Smoky Valley and nearby towns had to work hard to make ends meet. Although no one had a lot of free time, people still managed to get together often. Potluck dinners were held at people's homes or ranches almost on the spur of the moment. The birthday of a valley resident nearly always precipitated a get-together. On Emma Rogers's birthday, February 2, an enormous dinner was held every year regardless of the weather. Before the highway was built, the roads were not plowed, so it could be difficult to get around when it snowed, but most of the time people managed somehow. At winter get-togethers, people made ice cream from the ice and snow. Some of the ranchers would bring thick steaks, large roasts, and chickens. During good weather, well-attended community picnics were held along streams and at campsites in the mountains. People still recall the good times they had at those picnics.

There was no electricity in the valley until 1966. In the early years, people used kerosene lamps for light, but eventually the more efficient mantle lamp was produced by Aladdin. The Aladdin lamp provided good light if the glass and the rest of the apparatus were kept clean and in good working condition, but even so, open windows that let a breeze in would cause problems. Coleman lanterns brought another big improvement in the quality of light. Most people did not stay up late. In the evenings, they read and listened to the news on the radio. They also played games—cribbage, pinochle, and pan (panguinge).

During the war, when the Tonopah air base was busiest, the air corps had a rest camp at Darroughs Hot Springs. Airmen were brought out to the springs for short periods of rest and relaxation. Thirty or forty men at a time would stay at the hot springs, where they put up tents during the summer. Many people in the valley became friendly with some of the airmen, who became frequent guests in their homes. Jean Carver Duhme recalled, "It seemed like we always had a house full of soldier boys to feed" (Duhme, 1990:20). Many of those friendships continued after the airmen were transferred out of Nevada. Even in the 1990s, some people in the valley still maintain those contacts.

Indians in the Valley

During the 1940s and early 1950s, most of the Indians left Smoky Valley and moved either to the Duck-water Indian Reservation in Railroad Valley or to the Yomba Reservation in the Reese River Valley. About six families stayed on in the valley. Johnny and Minnie Abe lived at Pete and Mary Rogers's, where they had their own house. Minnie made deerskin gloves for people who provided the hide. Custom-made gloves were $5 per pair. Juanita and Pug Ike lived just north of North Twin Canyon. When the mine opened at Round Mountain in 1949, some Indians moved there from the Reese River Valley for employment. When the Carvers opened their restaurant-bar, there was still a federal law against selling liquor to Indians, but there was no state law against it. There were seldom any federal officials in Smoky Valley anyway, so the Carvers used to sell the Indians alcohol. And just to be safe, the Indians would only ask to be served when there was no one else in the bar; otherwise, they would wait around until the coast was clear. If they were in the middle of buying liquor when someone came in behind

them, they would back off and pretend to be playing the slot machine until the person left. Jean remembered trying to observe the law but also feeling that the law against selling alcohol to Native Americans was discriminatory.

Business Grows at Carvers

Initially, the paved road between Austin and Round Mountain was designated as a farm access road. For many years, the Carvers' patrons were primarily local people, with only minimal business being generated by the few travelers on Highway 8A. When the mine at Round Mountain reopened in 1949, this added to business at Carvers. Between 1948 and 1955, the Carvers' mom-and-pop operation gradually developed into a large business open 24 hours where truckers could buy diesel fuel and eat.

The network of roads that developed starting in the 1950s improved business at Carvers (see Figure 20.1). In 1952, Nevada Route 305, which linked Austin and Battle Mountain, was paved, and that did lead to a significant increase in nonlocal traffic up and down Smoky Valley. Because Nevada Route 305 connected with U.S. Route 50 a few miles east of Austin, truckers could take a north-south shortcut on the paved road from Battle Mountain to Tonopah. However, this north-south route negotiated the steep—and in the winter, slippery and treacherous—curves of the Austin Summit east of Austin, winding up the east side of the Toiyabe Range. Before the paving of the roads between Carlin and Eureka and between Battle Mountain and Round Mountain, there were only two paved north-south routes in Nevada, one on the west side of the state and the other on the east. On the west, U.S. Route 95, which passed through Tonopah, linked Reno and Las Vegas. On the east, a traveler could use U.S. Route 93, which went from Wells to Las Vegas by way of Ely, Pioche, and Caliente. This was not a desirable route, though, because it involved crossing several intimidating mountain passes, including Connors Pass, the summit at Pioche, and the Oak Springs Summit west of Caliente (Duhme, 1994).

Jean, of course, was keenly aware of traffic volume through Smoky Valley because of the bar and restaurant; more traffic meant more business. She recalled that what really led to an increase in truck traffic—their primary source of income—was the paving of Nevada Route 278, the road linking Carlin, on U.S. Route 40 (which became Interstate 80), with Eureka, on U.S. Route 50. There are no treacherous mountain passes on this route, so a trucker could turn south at Carlin, about 25 miles west of Elko, travel to Eureka, take U.S. Route 50 west as far as the east side of the Toiyabe Range, then turn south down Smoky Valley on Nevada Route 376, past present-day Kingston, Millett, Carvers, Round Mountain, and the Manhattan turnoff, and go on from there to U.S. Route 6 just west of the Tonopah airport.

Jean remembered that many of the truckers using the new route were bound to or from the loading docks in Los Angeles. This high volume of truck traffic, and business for Carvers, continued until about 1975, when the road linking Lund with Hiko (Nevada Route 318), known as the Sunny-side route, was paved. Truckers then had an even shorter distance to travel from U.S. Route 40 (Interstate 80) in northern Nevada to Las Vegas and Los Angeles. Paving of the Sunnyside route dramatically reduced the amount of traffic through Smoky Valley. Jean noted with interest that, for reasons not fully understood, traffic on Nevada Route 376 past Carvers is once again picking up (Duhme, 1994).

In 1956, Gerald Carver died suddenly, leaving Jean with two children. She ran the business alone until 1975, when she sold it.

Large quantities of diesel were sold at Carvers. One year, they pumped 750,000 gallons of diesel through a single pump. One trucker alone might buy from 50 to 300 gallons of diesel at a time. During the energy crunch that began in 1973, Carvers was fortunate to have a supplier who could provide unlimited amounts of fuel, so a trucker could fill up his tank there, whereas in southern California he might be limited to a 25-gallon purchase. Although there was no garage for repairs, if Bob Wilson was available he would come down to repair a truck or car. Wilson also kept the Carvers' Witte diesel generator in top running order. Jean recalled that Wilson was indispensable; he was "an absolute treasure"—her "guardian angel," she always called him (Duhme, 1990:74). For years, Wilson traveled as far as Kingston Canyon to repair power-generating equipment, and he kept many of the ranchers in electricity for practically no charge.

Many of the trucks traveling through Smoky Valley were hauling goods between Los Angeles and Canada. Jean remembered one night when they fueled 14 trucks loaded with bananas from Long Beach, California, and bound for Calgary and Edmonton, Canada. Idaho-based truckers working for Ida Cal and Wagner often stopped there, too.

Men who worked at Carvers tended the bar and took care of the diesel pumps. Women cooked and served food and sometimes pumped gas. Most of the employees were local people, and some stayed on the job for years. Rene Rogers Zaval went to work there in 1960 and retired at the end of 1993. Leona Williamson from Manhattan, who rolled her own cigarettes in brown paper with Prince Albert tobacco and held them in a cigarette holder, worked there for many years. The bar business was profitable, and the Carvers also put in slot machines on a consignment basis, splitting the gross take with the owners, who emptied them every two to four weeks.

The first menu at Carvers was limited—they had to serve foods that would keep and were available. Tuna, ham, eggs, and cheese were all offered. The Carvers had been buying their ham in Tonopah; a trucker who hauled meat from Billings, Montana, to Los Angeles for the Midland Packing Company told Jean he could bring her ham, from "the best processor in Billings that you ever saw" (Duhme, 1990:41). Jean began buying her ham from him, first ordering three hams per week, then four, and eventually one case per week. Carvers quickly developed an excellent and well-deserved reputation throughout rural Nevada and much of the West for ham and eggs. Truckers would stop at Carvers specifically for the generous slabs of ham served with eggs at a bargain price. Many customers asked for hamburgers, so Jean added them to the menu. She also added hamburger steaks and eventually rib steaks, all served in generous portions.

In the early years, the Carvers held big dances throughout the year on Saturday nights. Bert and Millie Acree from Austin provided the music. The dances were advertised in communities throughout the area and were extremely popular. People traveled long distances to attend, and the merriment lasted all night. Such dances were very profitable, netting $600 or $800 in one night, but they were a great deal of work and extremely exhausting for Jean. The Carvers gradually cut down on the number of dances because they were simply too much work. Jean eliminated them altogether after Gerald died.

Carvers served as the nucleus for the development of a community in that part of Smoky Valley. The state transportation department built a maintenance station on the highway east of the bar on land the Carvers sold to the state. During the 1950s and 1960s, there were two houses, the maintenance station, and the restaurant and bar at Carvers. In the late 1960s, Nye County planners projected that Carvers would become one of the fastest-growing sites in the county. Jean laughed at this at first, but with the development of the gold mine at Round Mountain, the projections proved to be accurate. The C & H Trailer Park was established, followed by a motel, a small shopping center, a convenience store, and a gas station. Numerous houses have been built on lots subdivided from nearby ranches.

Because Carvers had developed into a major stop on the route between Tonopah and Austin, the state finally agreed in 1970 to put Carvers on its official maps, something Jean had fought for years to accomplish. She also had problems getting a pay phone hooked up at Carvers. A quality phone line had been run past the establishment, so the Carvers had their personal phone, but there was no phone for customers to use. People frequently asked Jean if they could use her phone, but she found it inconvenient to have them go into her living quarters. Moreover, sometimes people surreptitiously charged long distance calls to her. Often, they had sad stories about having no money. For five years, she tried to have a pay phone installed, but the phone company refused, always saying there was a pay phone in Round Mountain 2.5 miles away. Eventually, the president of the phone company called her and apologized, saying the company had not realized that Round Mountain was not on the highway. He then said the company would install a pay phone at Carvers if Carvers would guarantee a certain amount of business. Jean refused, saying that was the phone company's responsibility, not hers. Several more years went by. Finally, the phone company relented and installed a pay phone at Carvers.

Figure 20.1. Principal highways in Nevada showing truck routes as business at Carvers changed between 1950 and c. 1975. (R. Gaty Raham)

Desperadoes Apprehended

Carvers had not been open very long when Leona Williamson, who lived in Manhattan and later worked at Carvers, arranged to take the 10 or 15 pupils from Manhattan's small school to Darroughs Hot Springs for a swim and then bring them to Carvers to eat lunch on the way home. Just after the children arrived at the restaurant, the sheriff's office in Austin called Carvers to warn everyone that two desperadoes armed with rifles had stolen a car in Austin and were heading down Smoky Valley—toward Carvers. They were told that the desperadoes had hit a cow near Austin and the accident had damaged the car's cooling system. The fugitives had been stopping at the numerous creeks that crossed the dirt road to fill the radiator with water to cool the engine. Word immediately went out from Carvers to the people living nearby warning them that the desperadoes were headed that way and might be dangerous. Moreover, there was concern about the danger to the children. It was decided that the local people would meet the desperadoes on the road with a show of force, so every adult who was available brought a rifle or shotgun along. That was not difficult because ranchers always had guns on the property, and most miners also owned them.

Soon, the desperadoes' car was sighted driving slowly down the road, expelling copious amounts of steam from overheating. With the children safely in the restaurant, the adults lined the roadway, each one holding a gun pointed toward the car. The fugitives sized up the situation and deciding that discretion was the better part of valor, continued moving down the road. They probably expected to cross streams to fill the radiator farther on, as they had already done between there and Austin, but there were no more streams that crossed the highway farther south. They had not gone far before their car became so hot that the motor seized. Meanwhile, a carful of armed deputies out of uniform was headed north from Tonopah to apprehend the desperadoes, whose car had come to a halt in front of the highway maintenance station. No sooner had the fugitives' car stopped than the deputies arrived with guns drawn and arrested the two men. Betty Barnhurst, who was living at the maintenance station, was watching all the activity from her window and could not figure out what was going on. Unaware that the lawmen were arresting two criminals, she thought the two desperadoes were being kidnapped.

Notes

1. George Vucanovich remembers being told as a youngster that Ed Michel could turn the phone crank and, by listening carefully, tell the approximate location of a break on the line. He wonders now how Michel could have done that (Vucanovich, 1995).

CHAPTER 21
Mining and Ranching: Endangered Ways of Life

The twin engines of western economic development, mining and ranching, led to the settlement of Nevada. Although these industries have been a mainstay of the rural western economy for more than a century, they have come under increasingly vociferous attack by forces from outside the rural West during the past 20 years. The attacks now challenge the very legitimacy of mining and ranching and tear at the fabric of rural life, threatening the livelihoods of a large percentage of Nevadans living outside the big cities. The descendants of five generations of miners and ranchers in central Nevada are frustrated and angry—and fearful that their way of life may soon end.

Very little of Nevada's imposing terrain is privately owned. The federal government claims title to most of the land in Nevada-87 percent is the figure usually quoted. Nevada's land policy is therefore very much a creature of the federal government, administered by such agencies as the U.S. Bureau of Land Management through the U.S. Department of the Interior, the U.S. Forest Service and the National Parks Service through the U.S. Department of Agriculture, the U.S. Department of Defense, and the U.S. Department of Energy, at the Nevada Test Site (U.S. Bureau of Land Management, 1994). Nevada's privately held land generally lies near easily available water sources. Because such sources are usually few and far between, Nevada is among the most urbanized states in the country, with an unusually high percentage of its residents living in large cities. In the rural areas, which compose most of the state, privately held land is occupied by small communities and by scattered ranchers and farmers; the remainder of private land consists of patented mining claims.

Up until the 1930s, the federal government's management of its holdings in the West tended to be accommodative and nonintrusive. In the 70-odd years between the early 1860s and the 1930s, miners and ranchers of the West came to view the vast stretches of federal land in Nevada as a kind of quasiprivate resource in fact if not in principle—free to be utilized, like the atmosphere or the sea, by anyone. Individuals and corporations were free to prospect for metals and other useful minerals and to stake claims as long as the site had not previously been legally claimed. Until about the 1970s, a miner could develop a mineral resource in nearly any way he saw fit; he was free to make roads, drill and dig in the earth, and construct mills of any sort; for the most part, a miner was limited only by budget size.

Likewise, ranchers were subject to few restrictions in their use of federal lands for grazing until the 1930s. In central Nevada, almost anyone could graze cattle and sheep on federal land. Water holes and wells, however, were privately owned. If a person owned a water hole and there was sufficient forage to support livestock near enough to the water hole, a rancher could graze as many animals as he liked; the only limiting factor was the availability of forage. A rancher did not even need to own a so-called base property (meaning a private holding located on a well-watered site, usually consisting of a home, outbuildings, and pasture), although most did.

The Taylor Grazing Act of 1934, implemented in central Nevada in the 1940s, eliminated open grazing of cattle and sheep and established allotments, apportioning grazing rights on federal lands to individual operators. Thus, grazing became restricted to specific areas allotted

to individual ranchers. The majority of ranchers in central Nevada, though concerned with the intrusion of federal regulations into their lives, on balance appear to have viewed the implementation of the act as a positive measure. Most recognized that the rangelands of central Nevada had been previously overgrazed, and the new regulations corrected much of this excess; further, the squabbles that sometimes erupted over who had the right to use specific sites for grazing were resolved. Finally, under the act, ranchers had a new incentive to manage the range's quality. A rancher could maintain his or her allotted area and thus maximize the return on the area over the long term.

The Future of Mining

The era of the small mine operator in central Nevada has almost completely passed; with a few exceptions, small mines are no longer economically viable. In Smoky Valley one or more small operators continue to work the gravel in Manhattan Wash for gold. But throughout central Nevada and the West, the vast majority of successful mines are large operations.

The undisputed star of Smoky Valley mining in the 1980s and 1990s has been the Round Mountain Gold Corporation's operation at Round Mountain. Company officials report that the U.S. Bureau of Land Management, the U.S. Forest Service, and the Mine Safety and Health Administration, as well as state and county officials, have on the whole been most helpful and cooperative in enabling the mine to efficiently operate (Simpson, 1990:43-45). However, federal jurisdiction over the operation is limited somewhat by the fact that most of the land the company is digging on consists of patented claims (i.e., the claims had been purchased from the federal government) and is privately owned. The other huge open-pit mine in Smoky Valley, the molybdenum-copper property north of Tonopah first operated by Anaconda and then by Cyprus Tonopah Mining Company, closed in 1989, after nearly one decade of successful operation.

Calls are frequently heard for more restrictions on mining. Opponents want such things as pit backfilling, tighter controls on prospecting, fees charged for exploration, elimination of the mine operator's right to patent federal land, charging miners royalty fees on minerals extracted from federal lands, increased state taxes, and demands for greater restrictions on where mining can and cannot take place. Some even contend that much of mining, particularly mining for precious metals, is an unnecessary activity and should be stopped entirely.

Supporters of mining feel demands for such changes are excessive, a far cry from the traditions formed in the early years of the California gold rush that have sustained six generations of westerners from the South Fork of the American River in 1848 to Round Mountain today. Don Simpson, former manager of the Round Mountain Gold Corporation's operation at Round Mountain, believes that excessive restrictions might eventually end mining as we know it in the American West. Still, Simpson is more optimistic about the long term. "Everything has its cycles," he says. "There will be a cycle where they will shut things down, pretty much, then another part of the cycle will change when politicians won't be able to tolerate the unemployment that's been caused by it. We can't all live by doing each other's laundry. We have to have basic industries—mining, agriculture—you still have to generate new wealth"—and miners produce wealth at its most fundamental level. Although it is currently fashionable to believe that miners are raping the earth, Simpson believes that viewpoint will not prevail indefinitely (Simpson, 1990:43).

Supporters of mining point out that the products of mining are essential to current lifestyles. Hal Elson, chief geologist for Round Mountain Gold Corporation, comments that many people do not realize that "if we do away with mining, people won't be able to switch on their lights. They won't be able to listen to their radios and drive their cars" (Elson, 1992-1994). Elson suggests that environmentalists should not focus on the producer but should be concerned instead with the consumer, whose needs and tastes create the markets that drive the mining industry. If there is a ready market for gold at several hundred dollars per ounce, the price obviously is being driven by the tastes and buying decisions of consumers. Environmentalists focus on the producer, Elson says, because that is easier than trying to change the tastes and buying habits of several billion people (Elson, 1992-1994). John A. Knebel, president of the American Mining Congress, notes that an American consumes, on average, 40,000 pounds of new minerals each year. For example, an automobile contains 15 different kinds of mined materials, and a color television, 35. Mining, he believes, is essential to the modern economy (Tammariello, 1992).

The Grazing Question

The American cowboy is celebrated in folklore, song, and film. The cowboy and the symbols of his lifestyle—horse, saddle, boots, hat, rope, riding the wide-open spaces (the picture of an honest person working hard to earn an honest living)—are recognized and admired throughout the world. And this is not just myth. Cowboys and their families can still be found on the range in central Nevada and throughout the West. It is, therefore, a matter of great irony that, although cowboys are loved and admired by people nearly everywhere, there are those in this country, including many in government, who would destroy their lifestyle by driving them from the range forever.

Ranchers throughout the West are under intense pressure from environmentalists and federal government managers to alter or even eliminate grazing on public lands. Some radicals advocate fighting a war of attrition against grazing and ranchers to drive them off the range because in the long run, as one antigrazing advocate put it, "[we] have more people, more power and more money" (Kerr, 1994:15). Henry David Thoreau is often quoted: "In the wilderness lies the preservation of the world." (See Chapter 8, note 2, for another view of wilderness.)

The implementation of the Taylor Grazing Act in central Nevada in the 1940s involved setting some limits on the number of cows that a rancher could graze on an allotment, as well as charging a grazing fee based on the number of cattle on government land. In 1976, the federal government passed the Federal Land Policy Management Act (FLPMA, pronounced "flip-ma"). Although many ranchers believe it was not Congress's intention, the U.S. Bureau of Land Management (BLM) and the U.S. Forest Service were given managerial power over federal lands under FLPMA. In the Toiyabe Range, implementation of FLPMA by the Forest Service on federal rangelands traditionally used by Smoky Valley ranchers has resulted in the drastic reduction of numbers of cattle allowed (Haas and Haas, 1992:59). For example, when Carl Haas owned the RO Ranch in the 1950s and 1960s, about 400 RO cattle grazed in the Twin River area and approximately 5500 RO cattle grazed at the RO holdings in the Cloverdale—Reese River area. Under FLPMA, 40 are allowed in the Twin River area and about 895 are permitted on the Cloverdale—Reese River rangelands (Haas, 1992-1994). Haas readily admits that the area was

overgrazed between the 1880s and 1910, but he does not agree that the RO cattle overgrazed those areas when he managed the ranch.

According to Carl and Del Haas, much of the problem arises from the Forest Service's management of the riparian areas in the Toiyabe Range. Riparian land, the area of green, lush vegetation growing on either side of a stream or river, is highly desirable to cattle, and they will graze there until about 85 to 90 percent of the vegetation has been consumed, when they move away to graze on the mountainsides. If they are forcibly moved away from the riparian area before 85 to 90 percent has been grazed, they will return at the first opportunity.

Under FLPMA, the U.S. Forest Service has decided that in order to protect the riparian environment, no more than 55 percent may be grazed, at which time the cattle must be moved off. Ranchers believe compliance is nearly impossible because the riparian areas are located high in rugged mountain terrain; even to attempt to comply creates economic hardship. In order for a rancher's cow not to disturb more than 55 percent of the riparian environment, a rancher is forced to hire additional cowboys who must remain with the cattle at all times, herding them like sheep. But as Carl and Del Haas point out, on the range "cattle spread out more than sheep. A cow will beat you back to the riparian as soon as you leave her to chase another cow off the same riparian area" (Carl and Del Haas, 1995). To make matters more difficult, the Forest Service has ruled that if a cow eats a small percentage of what has been classified as an endangered plant species, the whole herd must be moved off the entire allotment, including uplands and riparian areas.

Many ranchers have simply taken their cattle off the land altogether in response to the grazing restrictions. The vast majority of ranchers feel they cannot survive if they are forced to rely entirely on base pasture and hay lands they own in the valley. An undisturbed riparian area, as far as ranchers in central Nevada are concerned, is tantamount to a no-grazing edict.

Is the Range Overgrazed?

The National Research Council, which operates under a charter granted by Congress to the National Academy of Sciences, is the most prestigious scientific body in the United States. In 1994, the National Research Council produced a report entitled Rangeland Health, which investigated whether there was overgrazing on western rangelands. The report's conclusion was that "although most observers agree that rangeland degradation was widespread on overgrazed and drought-plagued rangelands at the turn of the century, the present state of health of U.S. rangelands is a matter of sharp debate" (Rangeland Health, 1994:1). Scientists who contributed to the study feel that "all existing national-level rangeland assessments suffer from the lack of current, comprehensive, and statistically representative data obtained in the field. . . . There is an urgent need to develop the methods and data collection systems at both the local and national levels to assess federal and nonfederal rangelands" (Rangeland Health, 1994:13). The report's overall conclusion is that, in fact, we do not know if the range is overgrazed. The data simply do not exist. Yet we have a situation in which, in the name of restoration of environmental health, both ranchers and miners are being driven off federal lands.

In Defense of Ranchers

Rancher Wayne Hage, a native Nevadan who lives in Tonopah, has lived his life close to the land. In Storm over Rangelands: Private Rights in Federal Lands (1990), Hage argues that western stockmen have improved the western range and for decades have prevented it from being degraded by eastern capitalists. According to Hage, the western rancher is the one individual who has stood in the way of moneyed eastern interests intent upon drying up and denuding the West. Hage suggests that those who oppose mining and grazing are essentially the stalking-horses of eastern capitalists who aim to destroy and eliminate western property rights and thereby gain unrestricted access to the resources of the West.

Dick Carver's Challenge to Federal Ownership

Dick Carver, son of Gerald and Jean Carver Duhme, goes a step further than Wayne Hage does. Carver, who is a member of the Nye County Board of Commissioners, has challenged the legality of federal ownership of nearly all federally controlled land in Nevada, which includes most of Smoky Valley. His legal argument is similar to that presented by Judge Clel Georgetta in Golden Fleece in Nevada (1972). Both Georgetta and Carver go back to the founding of the American nation and use the Articles of Confederation, ratified in 1781, as the basis for their argument that every state remains sovereign over its own territory, despite joining the Union, as Article 2 sets forth. Further, Article 9 provides that "no state shall be deprived of territory for the benefit of the United States" (Carver, 1993a:6). In 1781, the Continental Congress determined that when a state entered the Union, it did so "on equal footing with all the original states, in all respects whatsoever. . . . " In 1789, the U.S. Constitution became effective on this basis: "All debts contracted and engagements entered into before the adoption of this Constitution shall be as valid against the United States under this Constitution as under the Confederation" (Carver, 1993a:7, 8). The Tenth Amendment of the Constitution reads: "The powers not delegated to the United States by the Constitution, nor prohibited by it to the states, are reserved to the states respectively, or to the people" (Carver, 1993a:10).

According to Carver's analysis, when the original 13 states formed their union, they did so on the basis that the federal government had limited power to own real property within the individual states (Carver, 1993b:1). Subsequent states were admitted on an equal footing and thus should have retained title to publicly held land, just as the original 13 states had. The only land the federal government was allowed to own was that land withdrawn from the state by the federal government for specific purposes. When Nevada became a state on October 31, 1864, very little land had been withdrawn by the federal government, only enough for a few post offices; none at all was taken for national forests or grazing lands (Carver, 1993b:2). Carver believes that the state should retain ownership of all land that was not formally withdrawn before the state's admission into the Union; most land now controlled by the federal government, therefore, should revert to the state. Judge Georgetta, writing in 1972, stated the following:

The Constitution of the United States, which first became effective on 4 March, 1789, did not, and does not even now, contain any authorization for the Federal Government of the United States to own, hold or exert dominion over any public lands save and except the District

of Columbia and whatever land it needs for its own governmental purposes, such as shipyards, docks, military establishments, post offices, and other such governmental uses. Furthermore, the United States Government is authorized to acquire such needed land in any state, only with the consent of the State Legislature. (Georgetta, 1972:152)

Consequently, Carver believes that Nevada citizens have been unjustly required to submit to federal jurisdiction over public land and to pay grazing and other fees to the federal government.

The Nevada Association of Counties (NACO), an association of several rural counties in the state, is in concurrence with this view and asked the federal government to meet with NACO and the Nevada legislature, as well as with miners and ranchers who have valid interests in Nevada's public lands, to negotiate a smooth transition of authority from the United States to the state of Nevada. On December 7, 1993, the Nye County Board of Commissioners, with Commissioner Dick Carver present, affirmed that unappropriated lands lying within the state of Nevada were under the jurisdiction of Nevada, not the federal government. The commissioners resolved that by affirming this they were upholding their oath of office, under which they swore to uphold the laws of the nation and those of the state of Nevada and Nye County.

In March 1996, Judge Lloyd George, U.S. District Court, Las Vegas, Nevada, ruled against Nye County's challenge to federal ownership of public lands. In his ruling the judge said the county's claim to federal lands is "unsupported, unconstitutional, and fails as a matter of law." He wrote that the government "owns and has the power and authority to manage and administer the unappropriated lands . . . within Nye County, Nevada." The county has no apparent plans to appeal the decision ("An Unfond Farewell . . . 1996; Nye County Loses Lawsuit," 1996). A separate issue is whether the state or the county has the ability to properly manage such land, should its claim to title ever be recognized.

One Possible Outcome

What is to become of mining and ranching in Smoky Valley as well as in the West in general? We are not likely to see the return in significant numbers of small mine operators like Bob Wilson, Jim Larson, and Robert G. McCracken. The small mine operator has nearly been eliminated, both by economics and by government regulation. Even large mine operators will increasingly be pressed to survive if controls become ever more restrictive. Even when mining operations are confined to patented claims, a mine on private land can be forced out of business by excessive regulation. It is likely that more big mining companies will move their operations overseas where there are fewer regulations, not to mention low wages.

The case, however, is different with the ranchers. A rancher cannot move offshore. If antiranching forces succeed in making it impossible for western ranchers to make a living by driving them off publicly owned lands, it is likely that the ranchers will demand, and probably receive, compensation for their privately held rights to water located on public rangeland. In central Nevada, most water rights date back to the 1860s and 1870s. If the federal government is forced to pay the ranchers for their water rights, it will cost taxpayers many millions of dollars.

Further, if ranchers are driven off the range, many will eventually subdivide the base ranch properties to which they hold title. Cattle and relatively small numbers of cowboys will be replaced by human beings who reside on subdivided ranch land. Ranches ranging from 50 to

several thousand acres of privately held land will be subdivided into lots that range in size from one-half acre or less to 10 acres or more. In effect, base ranch holdings at the mouths of canyons and in the valleys of rural Nevada will be turned into small communities with some year-round residents, with many more occupying homes there on a seasonal basis. Moreover, as people the world over become increasingly linked electronically, greater numbers of such residents may be able to earn a living by being plugged into the growing electronic information network, living in areas remote from deteriorating urban areas.2 In Smoky Valley, this scenario has already begun to unfold at the old Kingston (Schmidtlein) Ranch at the mouth of Kingston Canyon in Smoky Valley, which was subdivided in the 1960s.3 Part of the Wine Glass Ranch has also been subdivided.

When a tourist or a potential settler drives down a road and sees the raw beauty of the West stretched out extending as though forever and admires the small, charming communities that sometimes seem to belong to another age, that visitor should understand that it is the ranchers and miners who have kept those communities as they are. Ranchers and miners are out in the pastures and hills every day, maintaining what the visitor admires. Because nature abhors a vacuum, if the miner and rancher are driven out, they will be replaced by people, lots of them, many of whom will be "BMW nature lovers" and those whom Senator Malcolm Wallop of Wyoming calls "cappuccino cowboys." A new breed of settler will rush in to fill the void. In time, the excesses of the ranchers and miners may seem mild.

The Common Interest

George Vucanovich, former president of the Nevada Mining Association and husband of U.S. Representative Barbara F. Vucanovich, representing the Second Congressional District in Nevada, speaks for many Nevadans when he says there must, of necessity, be interaction between westerners who make a living from producing in the West and those who make a living from talking about the West. He believes that economic development and the survival of western communities can coexist with reasonable environmentalist aims. Most rural Nevadans believe in preserving the environment, so long as the preservation is rational and has the support of those who inhabit that environment.

More and more, environmentalists are beginning to realize that the traditional residents of the rural West—the ranchers and the miners—are the best friends they have. Those who love the West, and that includes the environmentalists and the ranchers and miners, in reality form a natural constituency: All have a vested interest in preserving its productivity. These groups may increasingly work together to preserve both traditional western lifestyles and the West's natural beauty. This could not happen in a more beautiful and richly endowed place than Smoky Valley.

Notes

1. When a present-day resident of central Nevada looks out across Smoky Valley, the view is not the same as that witnessed by Jedediah Smith in 1827. The ecology is somewhat different. The ecology of the Great Basin, the mix of plant and animal species, was permanently transformed in the nineteenth century by Europeans' introduction of non-native species, especially livestock, onto the range. The change was particularly devastating for the native

grasses, which failed to produce seed when trampled by grazing livestock and had difficulty replacing leaf lost to grazers. The native grasses were largely replaced by more adaptable plants—sagebrush, greasewood, rabbitbrush, and cheat grass. This transformation took place quickly. The first cattle were wintered in Nevada in 1851, and by the 1880s, many Great Basin residents felt that the country was overgrazed (Grayson, 1993:301). Cheat grass, introduced by the 1890s, was native to the arid steppes of Eurasia.

By 1930, it had reached its current distribution, ranging over 160,000 square miles, from British Columbia through southern Nevada and Utah.

Cheat grass is extremely hardy; an experimental plot in northern Elko County in 1964 produced 4000 pounds of the plant per acre. Cheat grass outcompetes the native grasses, and its seeds are fire resistant. Livestock will not eat it. Donald K. Grayson, an authority on the prehistory and ecology of the Great Basin, states, "Even a decrease in grazing pressure will not bring back the native grasses, since the immediate effects of such a decrease would likely be an increase in the amount of fuels on the Great Basin landscape. Increased fuel means more fires, and that plays into the hands, or, more appropriately, the seeds, of cheat grass" (Grayson, 1993:302). The introduction of domesticated livestock into the Great Basin and the alteration of the ecosystem to favor brush and cheat grass had an interesting effect on native grazing species. Before Europeans and their livestock entered the area, bighorn sheep seem to have far outnumbered deer. The Indian diet included venison only sparingly; bighorn sheep was the much-preferred game. After white settlers introduced domesticated livestock, an alteration in the forage occurred that favored deer; during the past 150 years, the deer population has expanded dramatically in the region, as has the mountain lion, or cougar, population (Grayson, 1993:300-301).

2. Many believe a new rush to the West has begun, one with perhaps much more potential to threaten western landscapes and resources than previous rushes that brought miners to dig in the hills and cattle to graze on the range. The rural West is in danger of being loved to death by tourists and a new breed of settlers, many of whom are flooding in from California to Nevada, Oregon, Colorado, and Arizona. In 1992-1993, Nevada received 29,200 new residents from California; Oregon, 25,400; Colorado, 23,500; and Arizona, 20,900 (Larmer and Ring, 1994:6-7).

We are all familiar with what has happened in recent years to such small and once-charming communities as Santa Fe, New Mexico; Aspen, Breckenridge, and Telluride, Colorado; Jackson Hole, Wyoming; and Prescott, Arizona; we have all seen what has happened to once lovely and charming cities such as Denver, Portland, and even Las Vegas. Development there and at countless other communities throughout the West has not only radically altered the character and quality of life in the area but has also put increased pressure on the environment. What is more, the beauty of many national parks and other scenic areas in the West is threatened by rapidly rising numbers of tourists. There is even talk of establishing "sustainable tourism" at some national parks, which means setting a limit on the number of visitors in order to maintain the area's beauty. The impact of tourists and new residents in many western communities—the social excesses, high prices, and gilded subdivisions where a native-born resident is priced out of his or her hometown—is starting to frighten many environmentalists, according to the New York Times. One environmentalist who moved from Kansas to Utah a few

years ago said, "I spend more time dealing with tourism damage than cattle damage. It's really scary what's happened" (Egan, 1994:15).

3. Don Cirac and Jim Kielhack raised the money to purchase the Kingston Ranch in the mid-1960s and then began subdividing the property. Lots in Kingston Canyon averaged one-third acre, and on the flat, averaged two acres. About 1200 lots were subdivided and advertised in Las Vegas and Reno. When cash flow problems developed because of the sale of the lots on time-payment plans, Cirac and Kielhack sold out in the late 1960s to Carl Haas. Later, Carl and Del Haas bought the old Gillman Ranch about 6 miles north of Kingston and subdivided that, too. They built a small restaurant, bar, motel (Kingston Lodge), and general store at Kingston. Land sales were brisk at both the Kingston and Gillman Ranches, except during the energy crisis of the mid-1970s. There are now approximately 200 homes at Kingston, with 70 permanent residents. Las Vegas residents own the largest percentage of the undeveloped lots and second homes at Kingston. People from Reno and western states comprise the balance. By the 1990s, most of the lots had been sold. Some private interests hold large numbers of lots.

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Index