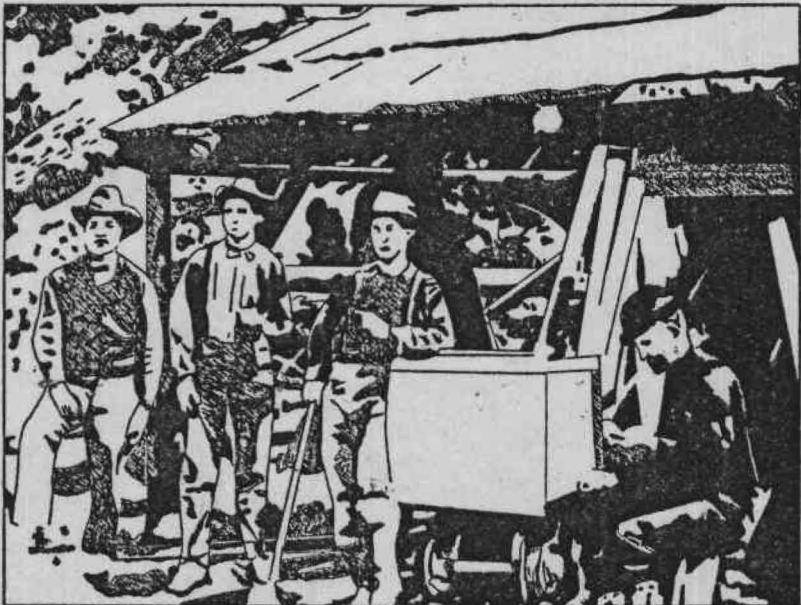


Bohemia Mining District A Brief History



Prepared for: **U.S. Department of Agriculture**
U.S. Forest Service, Region 6
Umpqua National Forest

to Eugene



Cottage Grove

Cottage Grove
Range Sta.

Cerro
Corao

Quarry
Basaltoid

Laying Creek
Fossil Beds

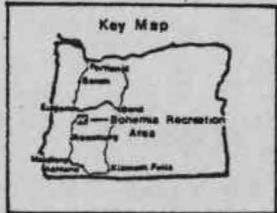
Culp Creek

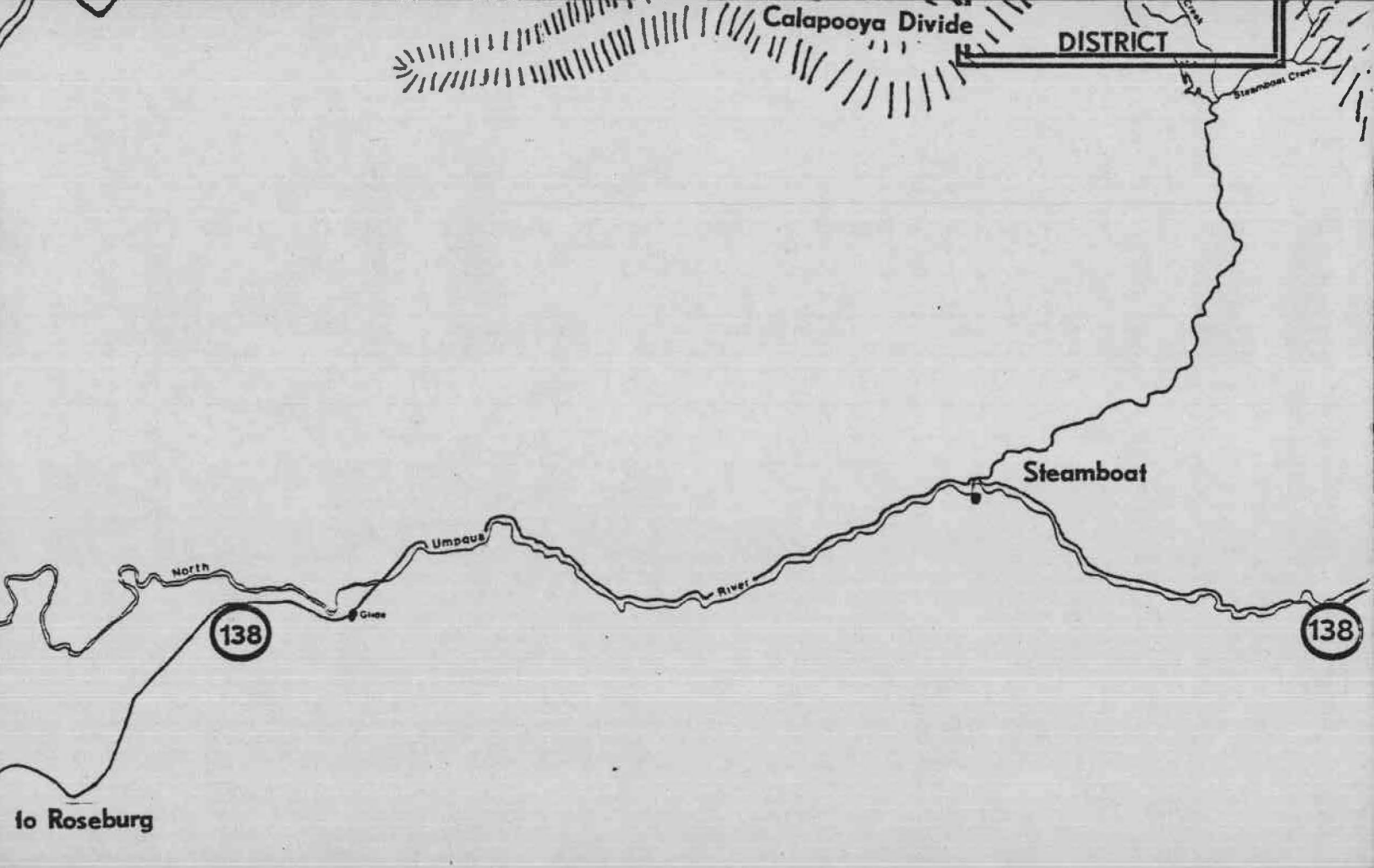
Dixon

Grice
Creek

Shasta
Creek

Calapooya Mountains





Calapooya Divide

DISTRICT

Steamboat Creek

Steamboat

Umpqua

River

North

Glide

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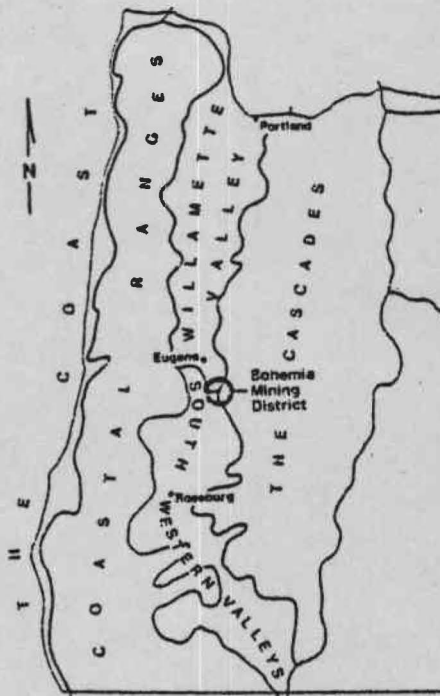
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to Roseburg

BOHEMIA MINING DISTRICT
A BRIEF HISTORY

The Bohemia Mining District is situated on the Calapooya Divide, which separates the North Umpqua and Willamette river basins. It is the largest mineral-producing area in the western Cascade Range of Oregon, although mining districts in eastern and southern Oregon have singly produced more gold. Historically, Bohemia is credited with over one and a half million dollars in gold--certainly much more at today's prices.

Bohemia is one of the best preserved historic mining districts in the Northwest. Although damaged by vandalism and harsh weather conditions, it contains the remains of buildings, machinery, and trails from the early mining days. Bohemia also possesses evidence of the remains of Indian cultures which occupied this area before the miners came in search of gold.



Location of the Bohemia Mining District

BOHEMIA BEFORE THE MINERS

Anthropologists who have studied the Bohemia Mining District have found that Indians were here before the miners arrived. The way of life of Indians in this area is not well known, because there is no written information, nor have there been archaeological excavations. Anthropologists suggest how the Indians might have lived in the Bohemia region based upon information known about other cultural areas that might be similar to Bohemia in climate, terrain, and resources.

Perhaps Bohemia served as a hunting and gathering area. Groups from the Willamette, Umpqua, Klamath, and even Deschutes river valleys may have come into the area during the spring, summer, and early fall to collect ripening berries and other plant materials. They probably hunted animals at the same time.

Indians, as part of their religious practices, had a ceremony known as a vision quest. Usually these quests were performed at high altitudes to allow for more closeness to the heavens. Little is known of this practice, but it is thought to have been done by males prior to entry into adulthood, and by shamans or medicine men seeking some type of special religious vision. Bohemia Mountain could have been the location of such ceremonies.

Old timers in this region tell of a trail along the Calapooya Divide used by Indians to travel from eastern Oregon to the Pacific Coast for trading purposes. Obsidian from the volcanic Cascades was used for making tools and would be traded to the coastal Indians for fish and other items. In some instances, one group might capture members of another group to serve as slaves. In 1863, an early white explorer walked the Calapooya Divide into the Deschutes Valley. At that time he noted many trails leading to and from the divide, as well as the presence of many Indian camp remains.

Just how long Indian peoples used the area is not known. It has been said that pictographs or rock writings/drawings were once present on Adams Mountain. They are no longer visible, but might have provided some clues to the length of Indian occupation of Bohemia.

The remains of Indian activities are called sites. In Bohemia, these sites vary from scattered cultural materials, such as projectile points, to areas where the Indians may have lived for long periods of time. The key to understanding how and when the Indians lived in the Bohemia region is scientific excavation of these sites by trained archaeologists. Only in this manner can we learn more of Bohemia before white men entered the area.

DISCOVERY BY WHITES

The discovery of gold in the Bohemia region is the topic of three different stories. One story, published in the Cottage Grove newspaper, The Leader, indicates that Dr. W.W. Oglesby first found gold in Bohemia. The newspaper story suggests that in 1858 Oglesby and other miners located placer gold on Sharps Creek. O.P. Adams, one of Oglesby's companions, made an exploratory trip in 1859 into the Calapooya Mountains in search of the source of the gold. Unfortunately, Adams continued looking for more placer gold and overlooked the gold-filled quartz ledges in the upper part of this country.

A second story tells of James "Bohemia" Johnson killing an Indian and escaping from Roseburg to evade the law. The route he took into Bohemia is not known, but he probably went up the North Umpqua River and followed Steamboat Creek to Bohemia Mountain. While stopping for a drink of water at the base of Bohemia Mountain, Johnson saw gold in the creek. The year of his startling discovery was 1863. Miners heard of his find and quickly moved into the area.

A third story indicates that L.L. Williams may have been the discoverer of gold in Bohemia. Williams came into the area in September of 1863 while on a trip sponsored by a group of Roseburg merchants. The trip was intended to locate a route from Roseburg into the Deschutes Valley so that trade between the two areas might be realized. Although he was not searching for gold, Williams' excursion took him and several companions into the Steamboat Creek area, where some men were attempting to locate placer gold. While moving to the top of the Calapooya Mountains, Williams

noted that the Bohemia area seemed to have potential for lode mining. The abundant quartz ledges, he wrote, "looked promising."

Whether Williams was in Bohemia before or after Johnson is not known. Most accounts say that Johnson came to the area in the spring of 1863, while Williams' journal mentions his presence during the fall. Regardless, it seems that news of Johnson's discovery initially attracted miners to Bohemia.

ESTABLISHMENT OF BOHEMIA MINING DISTRICT : 1858-1879

From "Bohemia" Johnson's discovery arose Bohemia City on the eastern flank of Bohemia Mountain. Unfortunately, little is known of the early beginnings of this settlement. Not until 1866 did the miners of the area--numbering over 100--begin to organize the district and write formal rules to govern themselves. The mining district covered a 6-mile radius from Bohemia Mountain. Mining claims were not to exceed 25 by 100 yards, and each miner could file only one claim. Bohemia City was platted, with town lots measuring 50 by 75 feet. In 1868, the city had several cabins, a hotel, a saloon, and one arrastra ore crusher.

The success of the district required an adequate transportation route for miners and their supplies. The first widely-used trail was the Bohemia or Crouch Trail from Oakland in Douglas County. This route was constructed in 1864, much to the excitement of Roseburg merchants who were eager to serve the miners. Transportation problems continued because the trail was too narrow for wagons and horse teams, so supplies at Bohemia were always below the demand.

Joseph Knott was the most successful miner during this period. Knott came to Bohemia in 1867 and won a claim on Grouse Mountain in a poker game. Realizing that the gold ore required crushing and processing, Knott planned to establish a stamp mill. The mill was purchased in San Francisco and brought by boat to Portland. It was transported to Eugene on the Willamette River, then taken by wagon to Cottage Grove. Although Knott's first plan was to carry the mill up the long and steep Bohemia Trail, he soon realized that an easier route might be

found to the north. Departing from Cottage Grove, the mill was moved up Row River to Culp Creek and over the divide between Sharps and Brice creeks. This route became known as the Knott Trail. Although extremely rugged and requiring that a wagon be hoisted by block and tackle at several locations, the distance remained shorter and the task easier than on the Bohemia Trail.

Joseph Knott set up his stamp mill on Grouse Mountain and mined some \$5,000 to \$7,000 in gold by 1874. Insufficient water supplies and legal problems concerning his claim forced Knott to close his operation in the same year. In 1877, the abandoned mill collapsed under the weight of snow.

Little is known of other people working in Bohemia during this time. Most miners lacked adequate money to make their claims profitable. Winters were severe, supplies still inadequate, and knowledge of the stamp milling process was limited to a few individuals. By 1879, Bohemia was deserted and idle.

DEVELOPMENT : 1889-1906

Known as Bohemia's heyday, the period from 1889 to 1906 marked the greatest recorded production of gold, silver, copper, and other minerals than at any other time. At first, the effort to develop the mining district probably was led by local individuals, including some of the same people who took part in Bohemia's discovery. Many of these people acquired the financial assistance of outsiders to develop their claims. Newcomers entered the district and found large amounts of gold. For example, James Musick came to Bohemia in 1891. At the site of old Bohemia City, Musick located gold which previously had gone unnoticed.

Suddenly gold seemed to be everywhere. The Helena Mine was established by a photographer who was sent on a "wild goose chase." His discovery was one of the largest of this period. By 1904, over 2,000 mining claims were filed in the district.

Transportation continued to be important to the success of Bohemia. The miners established several new

trails which, with later improvements, became roads. The first such trail was the Annie Trail, which followed Brice Creek and went up the Noonday Ridge. This trail terminated at the Annie Mine, owned by Dr. W.W. Oglesby. In 1896, the Noonday Company of Chicago purchased the Annie Mine. One of the Noonday Company's first tasks was to turn the Annie Trail into a road. At a reported cost of nearly \$1,000 per mile, the Annie Trail became the Noonday Road, the first true road in Bohemia. Although steep, the Noonday Road made it possible to transport adequate supplies to sustain the district.

The Sharps Creek or Hardscrabble Road also was originally a trail. This road was developed in 1899 with some funds donated by Lane County. It was the first public road into the district. Other roads were constructed in Bohemia, such as the Oregon-Colorado Road which led from the Musick Mine near Bohemia Mountain to the southeastern corner of the mining district. The Noonday Road provided access to the Helena, Noonday, and other mines in the eastern section. The Sharps Creek Road, at the western edge of the district, was important to large mines such as the Vesuvius, the Musick, and others. The Champion Road served as an early route to the Champion Basin mines such as the Crystal Group. The route into the Champion Basin was begun in 1902 by local miners and completed in 1926 by the United States Forest Service. All these roads were important because they reduced the isolation of the district.

Plans were made to bring the railroad to the mines, but the "idea" did not reach beyond Disston. The Bohemia region was too steep and the cost too high for track to be laid past Disston.

Another important development occurred in 1904, when electricity was introduced to the district. A hydro-electric facility was constructed at Lundpark on Brice Creek in order to generate power to light the miners' boarding houses and cabins, and to run stamp mills and tramways. The Lundpark facility was constructed by the Oregon Securities Company, which purchased many of the larger mines, including the Helena, Musick, and Champion, and began to combine these properties. The Oregon Securities Company's consolidation plan was the first systematic plan for Bohemia.

In the early 1900s, the newly created Cascade and then Umpqua National Forests, administered by the United States Forest Service, added another dimension to the district--timber and resource management.

CONTINUING EFFORTS : 1907-1933

Following the period of intense development, mining continued in the area, but at a slower pace. The West Coast Mines Company was the principal operator in Bohemia during the 1907-1933 phase. Due to inflation, the fixed price of gold, and higher wage demands, by 1919 the district all but shut down. From 1919 until 1933, only a few individuals remained, doing just enough work to keep their claims valid. Some mines, including the Champion, continued operation on a periodic basis. Unfortunately, this period was marked by extensive vandalism, fires, severe weather, and other factors which destroyed some of the mines and equipment.

Near the end of this phase, the Great Depression occurred, and Bohemia was characterized by "Depression Era" mining. Abandoned claims and cabins were put into productivity, but the activity was slow.

RESTORATION : 1934-1945

Interest in the district increased after a United States Geological Survey report in the early 1930s suggested that Bohemia still had untapped mineral resources. In 1939, H and H Mines Company invested in several mining properties and resumed mining activity. Miners moved into the district at a rapid rate, much as they had in the late 1800s.

The new flotation process for mineral extraction was used at the Champion and other mines. Not only could more gold be recovered, but silver, copper, lead, and other minerals could be mined, which made operations more profitable. Excitement ran high, as did production, but just when the "going got good," World War II brought mining to its knees.

The federal government L-208 order was one of the immediate obstacles that could not be overcome. This

order specified, in part, that mining efforts were to stop. In addition, explosives could not be purchased and all unused iron and steel were to be recycled. In Lane and Douglas counties, salvage campaigns began immediately. One salvage collection point was at Disston. What equipment was taken or donated from the Bohemia Mining District is not known. Again, the district was practically deserted. Some of the miners began logging their patented claims in order to remain solvent.

CONTEMPORARY MINING : 1945-PRESENT

After the end of World War II, mining activity resumed in Bohemia. The Champion, Musick, and other large mines were reactivated, but mineral production during the late 1940s was not as great as in earlier years. Interest was high, but money and equipment were in short supply.

Mining continued during the 1950s and 1960s, although the activity in Bohemia was primarily accomplished by a few individuals and partnerships. Most of the remains of Bohemia's heyday--cabins, stamp mills, boarding houses, and elaborate processing stations--had all but vanished. Generally, only tunnels and mine tailings remained visible on the landscape. The amount of minerals extracted during this phase is not known.

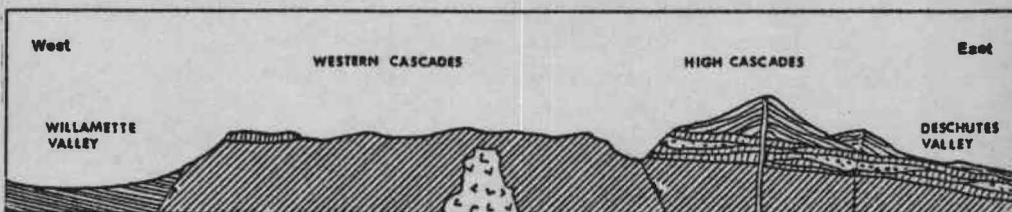
Because of the high prices of gold and silver in today's economy, the Bohemia Mining District is experiencing a new surge of activity. Once again, outside capital is interested in the district. Many miners currently are leasing their properties to companies who are reactivating the operations.

A SKETCH OF CASCADE GEOLOGY

The Cascade Mountain Range is separated into the High and Western divisions. A cross-section diagram of the mountain range is shown at the bottom of this page.

The High Cascades are composed of steep, rocky peaks. Mount Hood, Mount Jefferson, and the Three Sisters are all features of the High Cascades. They are approximately two million years old, but are considered "newcomers" in geological time. Noticeable are their steep slopes, composed mostly of basalt rock. Lava flows and material thrown from volcanoes helped build the High Cascades. Many of the higher peaks have been reshaped over time by the action of glaciers and from erosion. This cycle of building and eroding is a continuing process. Elevations of the High Cascades vary from 5,000 feet to nearly 12,000 feet.

The Western Cascades are geologically quite different from the High Cascades. The Western Cascades are approximately 40 million years old. These mountains were built by four different volcanic events (formations) and are characterized by a variety of dissimilar rock and mineral types. Unlike the High Cascades, volcanic peaks in the Western Cascades are not visible except for an occasional cinder cone. Continuing erosion has caused the Western Cascades to take on a broad and gently sloping shape. Elevations range from 2,000 feet to 6,000 feet.

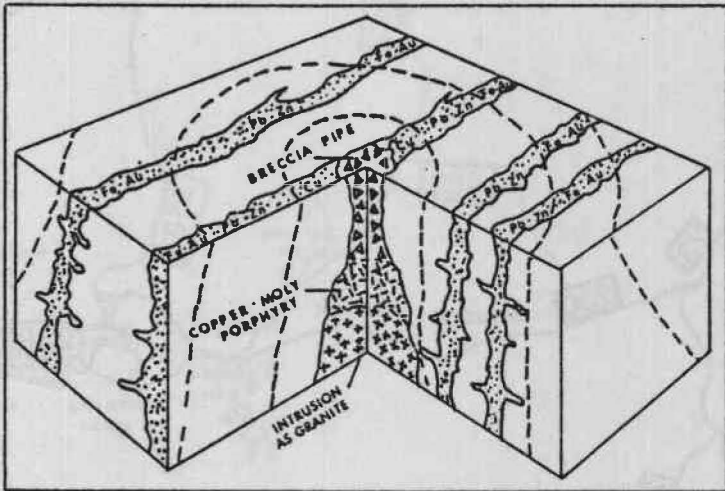


Cross-Section of the Cascade Mountain Range

(After Baldwin 1964)

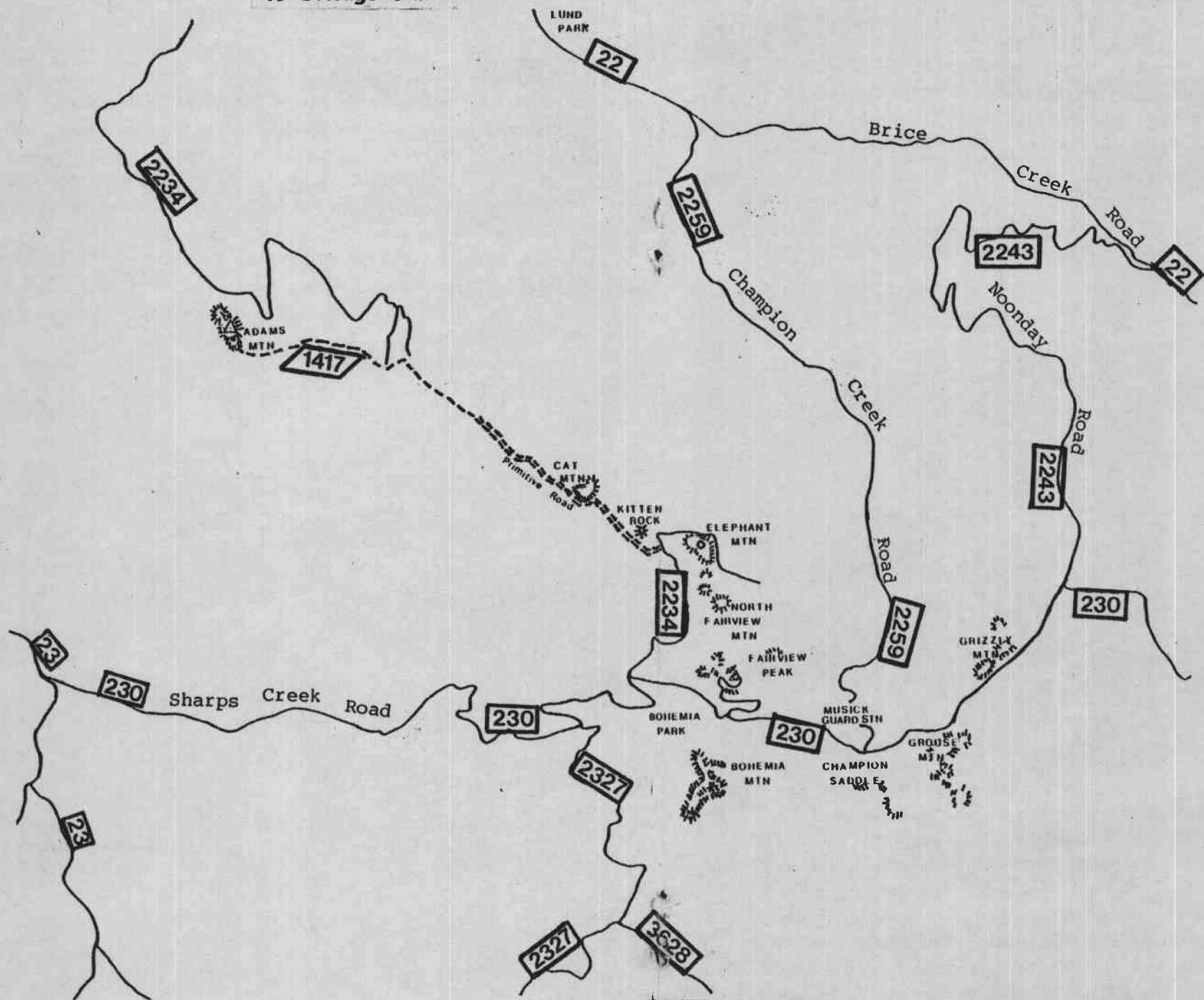
HOW MINERALS FORM

Past volcanic activity has influenced the manner in which gold, silver, and other minerals appear in mountains, especially the older Western Cascades. Mineralized areas are associated with a geologic activity known as intrusion. Intrusion takes place in older, established rock (called country rock), where the hot melted material from deep within the earth pushes its way to the surface. This molten rock is accompanied by small amounts of trace elements (gold, silver, lead, and so on). As the mixture cools, deposits (veins) containing precious metals are formed. Of course, the process is much more complex than described here. The following diagram shows approximately how this formation occurs.



Mineralization of Country Rock (After Mason et al: 1977)

to Cottage Grove



to Steamboat

MINING IN OREGON'S WESTERN CASCADES

The history of gold mining in the Western Cascade Mountains of Oregon has been confined to five major locations, called mining districts. These districts are North Santiam, Quartzville, Blue River, Fall Creek, and Bohemia. The following map shows the locations of these districts.



Locations of Five Western Cascades Mining Districts
(after Brooks and Ramp 1968)

Mining districts in the Western Cascades are primarily known for gold production, but other minerals such as silver, antimony, zinc, copper, and lead also have been mined. The actual amount of gold and other minerals removed from Oregon's Western Cascades is known in the historical record only for certain years, because miners were not required to keep such records in the early years and because recent records are kept confidential. It is estimated that the five Western Cascades mining districts have produced more than two million dollars in gold since the 1860s.

WAYS OF MINING

Several methods of mining are used in the Western Cascades. Placer, hydraulic, and lode mining are the most common methods. Placer mining has been used extensively in the five Western Cascades mining districts, but placering is not as important as lode mining.

Placer mining is the process of removing free gold from loose gravels such as those present in creeks and streams. Placer gold is usually washed into streams from eroding rocks with exposed mineral veins, and then mixed with the gravels. Panning, sluicing, and dredging are various ways to remove gold from gravels.

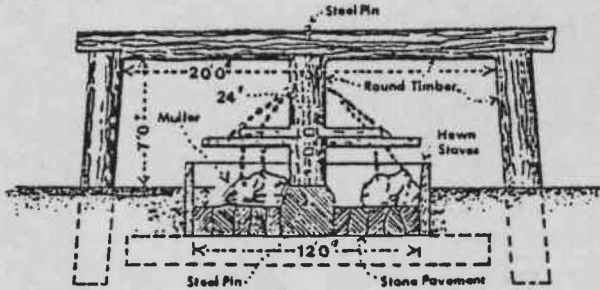
Hydraulic mining, a form of placer mining, uses large amounts of water under pressure. The water is diverted from a nearby source and channeled through a series of pipes to a nozzle, or "giant." The pressurized water is directed toward an embankment where soil, gravel, and--with luck--gold are washed away and captured downstream. Hydraulic mining requires sluicing to recover any gold which was washed downstream.

Lode mining refers to tunneling for gold beneath the surface of the ground. By following placer gold in streams, miners often are led to the higher mountain regions where they may locate the source of the placer gold. Sometimes, the lode gold can be observed in ledges, or lodes, where traces of gold can be seen on the surface. The largest volume of gold still lies underground in veins, sometimes in "pockets."

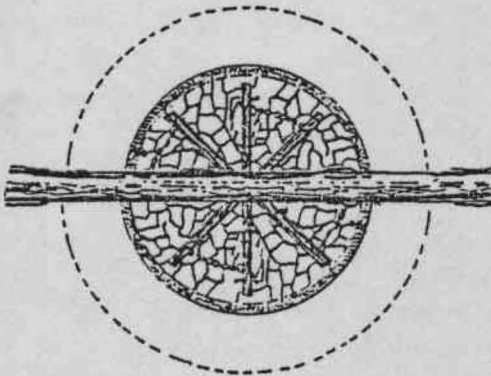
Lode mining requires a great deal of skill and knowledge. A pick and shovel are sometimes the only tools needed, but if the rock is hard explosives are used. If the excavation is horizontal it is called a tunnel. If the excavation is vertical, it is called a shaft. The entrance is always referred to as an adit.

In most cases lode gold is referred to as ore. In other words, it is combined with other materials. Once the ore is transported from the tunnels and shafts to the surface, the gold must be separated from the other materials. First the ore is crushed, then it is processed or separated from the other materials. Although crude and

slow, the arrastra ore crusher was one of the first machines used to grind ore and separate the gold. The arrastra came to Oregon by way of California from Mexico in 1840. This simple device is operated by dragging a large stone around in a circular bed to crush the ore. It is powered by water, beasts of burden, or by the miners themselves. The arrastra has been especially useful in isolated areas because it can be built from local materials without the difficulty of hauling supplies over long distances. A typical arrastra is illustrated below.



Side View



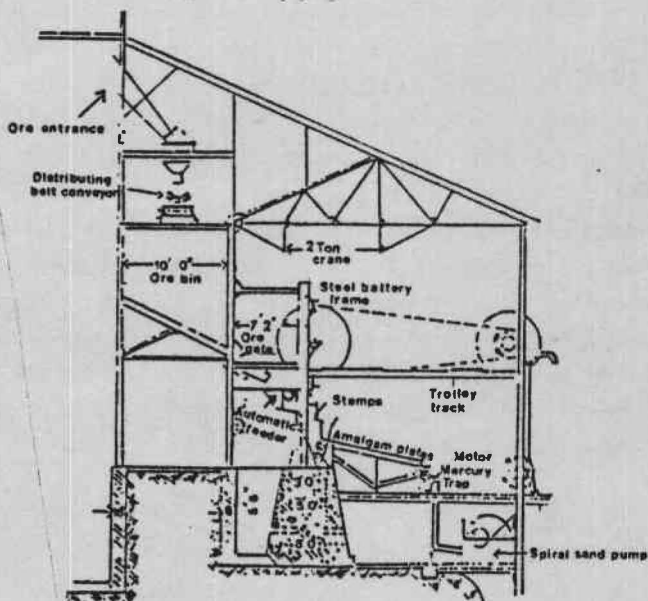
Top View
Arrastra

After Thompson 1913

Between 1,000 and 3,000 pounds of ore can be placed in an arrastra at one time. At best, however, the device can turn about 12 revolutions per minute, at some 6 horsepower. At peak efficiency, it can grind approximately 6 tons of ore in 24 hours. Arrastras have remained in use because of the low cost of operation. Recently they have been used to rework tailings at abandoned claims.

The inefficient arrastra was replaced by stamp mills during the early years of activity in Bohemia. With a stamp mill, the ore is crushed at a more rapid rate, so the stamp mill is able to handle larger amounts of ore during a 24-hour period. Equally important, the stamp mill can pulverize the ore into finer pieces, making the separation process easier. The stamp mill operates in a manner similar to a camshaft lifting valves in an internal combustion engine. The ore is crushed by the heavy pestles as it passes beneath them. The operation is similar to a hammer cracking a walnut. Stamp mills date from the Middle Ages. They were introduced from Europe to the eastern North America coast, then to California and Oregon.

In the early days, the most common type of stamp mill was the five-stamp battery. Smaller mills with one or two stamps are known to have been used in Bohemia. At the other extreme, 40 or more stamps were used at larger mines. The mills were powered with steam, electricity, and internal combustion. The design of a complete stamp mill is shown below.



Stamp Mill

After Thompson 1915

Another ore crushing device is the Chilean mill. Its use was rather short-lived because it proved to be inefficient. The Chilean mill is a form of arrastra used primarily for coarse grinding. Chilean mills are powered by water or steam.

No matter which crushing device is used, once the ore is crushed, a process to separate the gold from other materials is necessary. Amalgamation was one of the earliest methods devised for separating gold. This process originated in California in 1860. Sloping copper tables are coated with mercury and, as the crushed ore and water pass over the tables, the gold is trapped by the mercury and separated from the other materials.

Cyanidation, using cyanide of potassium, is another processing method, but it was not successfully used in Bohemia. A knowledge of chemistry is required and cyanide poisoning of miners is not uncommon, so the process is dangerous as well.

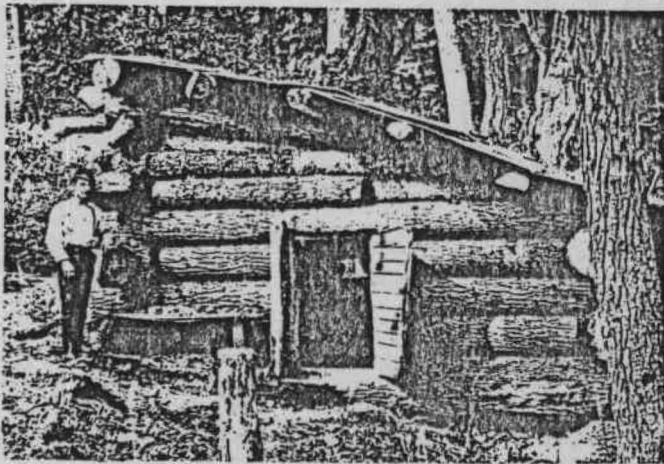
One of the most efficient and more recent separation methods is a process known as flotation. It is valuable because it can recover other minerals, such as silver and copper, in addition to gold. Briefly, gold and other minerals are caused to float at the surface of a mixture of crushed ore and an oil base that chemically creates a frothing and bubbling action. This churning action causes the precious metals to surface.

Every known mining and ore-processing method was tried by the miners in Bohemia at one time or another. Costs of equipment and labor, transportation difficulties, and the types of ore found in this region influenced the success of various mining and processing efforts. The relatively inexpensive stamp mills and amalgamation processes were the most common methods used in the early years of Bohemia's development.

ARCHITECTURE OF BOHEMIA

An interesting but often unnoticed feature of the Bohemia Mining District is its architectural style. Many cabins in Bohemia were constructed of logs, with log foundations and dirt floors. These cabins were small, rectangular buildings with steeply gabled or sloped roofs to shed heavy snows. For the most part, cabins and other buildings in Bohemia and other mining areas were not built to be permanent. The typical miner did not spend a lot of time in his cabin, so comfort was not a primary consideration.

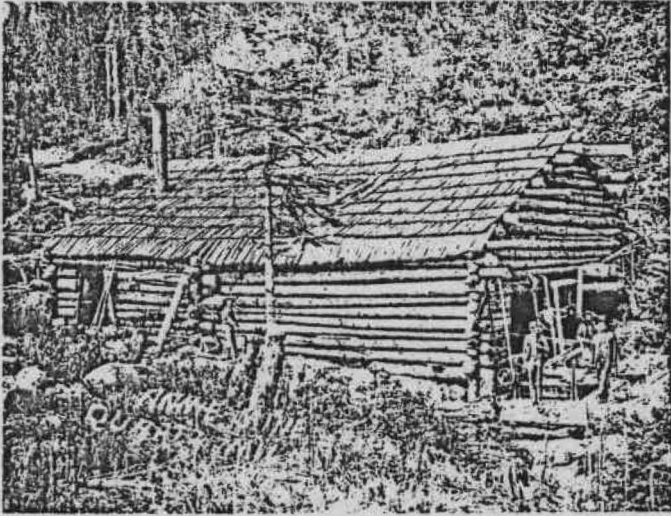
The style of architecture in Bohemia is referred to as Cascade Vernacular. The term vernacular is used to describe an architectural style originating in this area, not borrowed from another part of the country. Many of the cabins were built of peeled or rough hand-cut logs. Split shakes were frequently used for roofing. Only recently has corrugated metal been used. The cabin shown below is typical of Bohemia or Cascade Vernacular architecture.



Typical Early Cabin Style in Bohemia (photo courtesy Lane County Museum, Eugene)

In the late 1800s and early 1900s, many of the larger mining operations built small sawmills on their properties. Milled lumber was needed for boarding houses, stamp mill buildings, and other structures.

The following photographs show the contrast between the earlier use of logs and the later use of milled lumber.



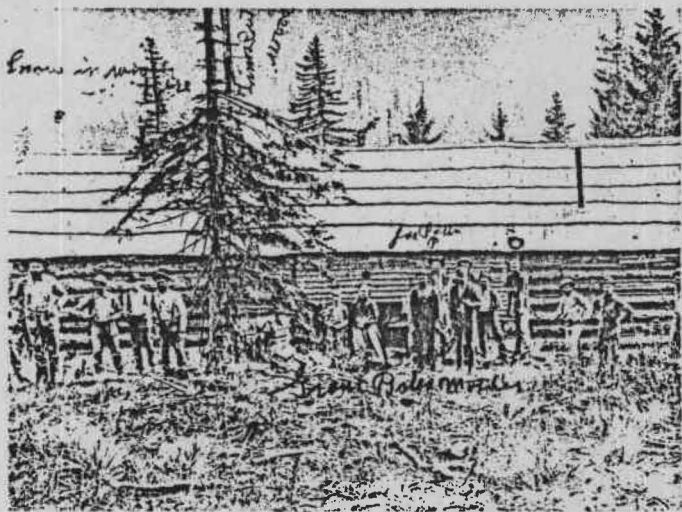
Log Stamp Mill Building (photo courtesy Lane County Museum, Eugene)



Building Made of Milled Lumber (photo courtesy Oregon State University)

Because many structures had to be replaced on a yearly basis, miners began erecting sturdier buildings to withstand weather extremes. One construction method

called "dogtrotting" was commonly used to provide stability. A dogtrot building is actually two smaller square buildings constructed with an open space between them, but joined by a common roof. The Annie boarding house in the following photograph was built in the dogtrot manner.



Dogtrot Construction of Annie Boarding House
(photo courtesy Lane County Museum)

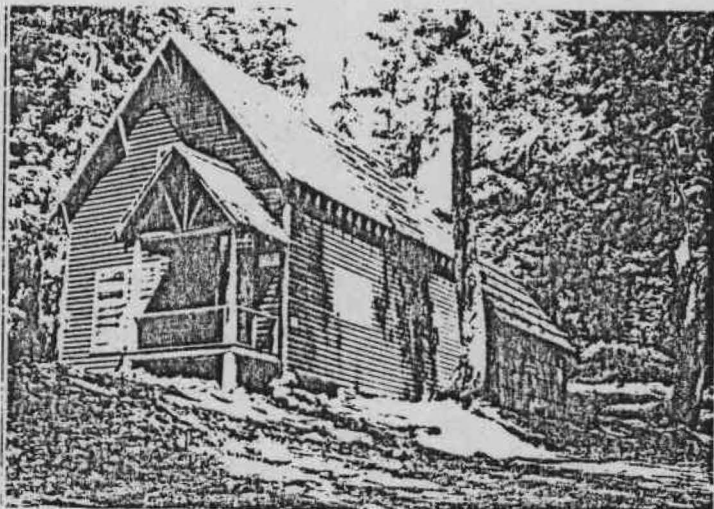
Later, cement foundations were used in a few stamp mill buildings, although the use of cement was rare in Bohemia. Remains of the cement foundation of the Champion stamp mill building are visible in the following photograph.



Cement Foundation Remains at the Champion
(photo courtesy Oregon State University)

Many buildings in Bohemia were built on steep slopes, and it was common to see cables wrapped around the buildings. The cables were anchored to trees or some other strong support to prevent heavy snow from pushing the buildings down the hillsides.

Other architectural styles are seen in Bohemia. The Musick Guard Station pictured below is an example of the Civilian Conservation Corps buildings constructed during the Depression of the 1930s. There are several trail shelters or lean-to buildings throughout the area which were built by the Civilian Conservation Corps.



Musick Guard Station, built by the Civilian Conservation Corps (photo courtesy Oregon State University)

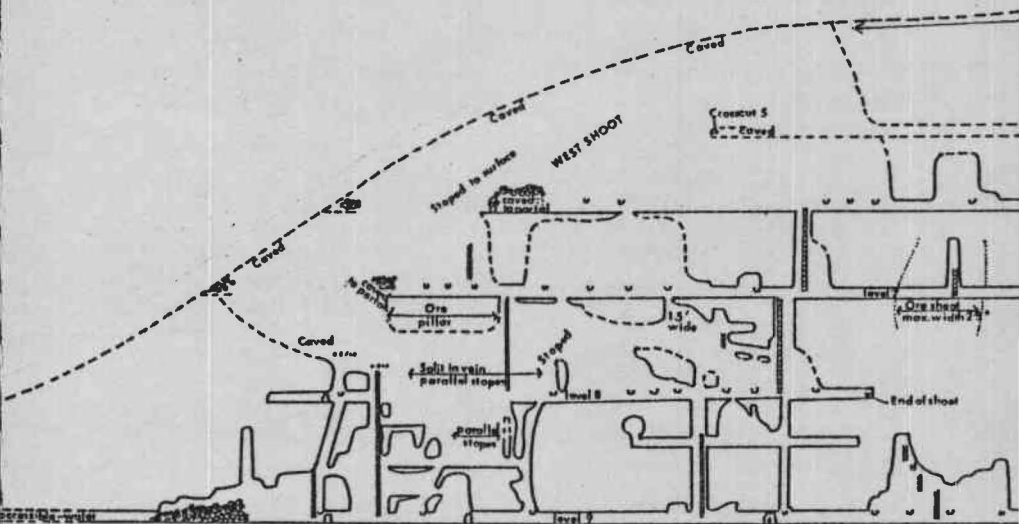
VIEWING THE PAST AND THE PRESENT

Although the roads of Bohemia may seem hard to navigate, they are vastly improved over the early trails and roads. The collective efforts of miners, loggers, the Forest Service, and Lane County have increased access to the mining district. These improvements allow visits to the area by recreationalists and tourists.

"Tour of the Golden Past" is designed to allow visitors in Bohemia to view remains of the historic past. It is unfortunate that so little of the past can be seen,

especially those buildings that were unique parts of the mining community, such as stamp mills and cabins. The most visible remains of the past are the tunnels and shafts excavated to remove the gold ore from the ground. A few can be seen from the roadside; most are noticeable in the sides of mountains.

One of the best viewpoints in this region is on Fairview Peak. Bohemia Mountain is easily seen from Fairview. Bohemia Mountain has a flat top and rock ledge on its eastern flank. Below, on the eastern edge, tailings from many of the tunnels associated with the Musick Mine can be seen. One tunnel goes completely through Bohemia Mountain and comes out on the other side. The following diagram illustrates a typical pattern of tunnels and shafts excavated in a mountainside.



Mining Excavations in a Mountainside

To the east of Fairview Peak is the Noonday Ridge, where portions of the old Noonday Road are present. A new road has cut the original roadbed in places, but the old road is still visible. Below the ridge lies the Champion Basin. The large Champion claims are on the eastern edge of the lower basin, where a few remnants of

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