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A GEOLOGICAL FIELD TRIP GUIDE FROM COTTAGE GROVE, OREGON TO THE BOHEMIA MINING DISTRICT

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This article, a companion to the "Overview of the Bohemia Mining District" (Ore Bin, May 1978), is the last in the four-part series on mineralization in the Western Cascades. The route of the self-guided trip and locations of checkpoints mentioned in the article are indicated on the centerfold map. Titles of the other articles in this series and sources of additional information on individual mines and the geology of Lane County are given on page 116.

Anyone taking this field trip is warned of the dangers of entering abandoned mines, caves, open pits, and quarries. Remember, you enter any mine at your own risk, and the greatest dangers are those that you cannot see until it is too late. Mines that look safe to you may instead be extremely dangerous.

Road Log

(Circles indicate checkpoints; triangles are parks; squares are mines.)

(1) (2) (3)*

- | | | | |
|---|-----|-----|--|
| ① | 0.0 | 0.0 | Starting point is the junction of Interstate Highway 5 on-off ramp east of the Interstate and Row River Road. Take Row River Road south, passing the Village Green Motel, to Thornton Road South. |
| ② | 0.4 | 0.4 | Turn right on Thornton Road South and go to Mosby Creek Road junction. |
| ③ | 0.1 | 0.5 | Turn right. You are now traveling west on Mosby, which, after a few city blocks, becomes Main Street. Follow Main until it crosses the bridge over the Coast Fork of the Willamette River. Turn right onto North River Road; then, within half a block, turn left onto "H" Street. The Cottage Grove Historical Museum is two blocks ahead on the left, at the corner of Birch Street. |
| ④ | 1.4 | 1.9 | Cottage Grove Historical Museum. The museum (Figure 1), housed in an octagonal-shaped former Roman Catholic church that was built in 1897, is a joint |

* (1) Checkpoints; (2) Mileage intervals; (3) Cumulative mileage.

project of the city of Cottage Grove and the Cottage Grove Historical Museum Committee.

On display are some of the crude mining tools from the Bohemia mining district, including a working model of an ore stamp mill that shows how gold was extracted from ore taken from mines located east of Cottage Grove.

In July and August, museum hours are Wednesday through Sunday, 1-5 p.m.; the rest of the year, the museum is open 1-4 p.m. Saturday and Sunday on the second weekend of each month.

Return to checkpoint 2.

- 2

1.6
3.5

Row River Road and Thornton Road South junction. Turn right onto Row River Road.
- 5

1.4
4.9

U.S. Forest Service Ranger Station, on Cedar Park Road, which intersects on the left. Here you may obtain a copy of the Forest Service's "Tour of the Golden Past," containing more information about Bohemia.
- 6

2.5
7.4

Row River Road-Government Road junction. Turn left onto Government Road, which soon crosses and then follows the old OP&E Railroad, built by and for the Bohemia miners in the early 1900's. Now the railroad serves mainly the lumber industry.
- 7

1.1
8.5

Cerro Gordo Mountain. Dorena Reservoir viewpoint and parking lot are to the right and past the roadcut. Park, walk back about 200 ft, and examine the roadcut. The rock high up in the cut is from a lava which flowed over an earlier, already cooled lava flow. Note the bright red color at the contact between flows. The color is caused by heat from the overlying flow baking the material below. Both flows are part of the Little Butte Volcanic Series as mapped by Peck and others (1964). In some parts of the roadcut, sedimentary material occurs between the lava flows (Figure 2).
- 75

4.2
12.7

At milepost 10, to the left about 50 ft above road level, is Pinnacle Rock (Figure 3), a needle-shaped erosional remnant left when soft, weathered, outer rock was worn away, leaving behind the harder, unweathered core. On the return part of the trip, at checkpoint 75, you will see Pinnacle Rock from across the reservoir.
- 8

2.2
14.9

Stop sign at junction with Row River Road. Across the road and to the right is an old covered bridge. Turn left onto Row River Road.
- 9

1.0
15.9

You are now traveling around a bend in the river. Because river currents are always stronger on the outside of a bend, this is the area where it is hardest to keep a highway from being washed away. Here, during the 1964 flood, the river took the highway completely out and washed away the steel railroad track on your left, wrapping it up along the mountainside.
- 10

1.1
17.0

Dorena Post Office and business district on the right.
- 11

2.3
19.3

Row River Road-Sharp's Creek Road junction. Turn



Figure 1. Cottage Grove Historical Museum (checkpoint 4).



Figure 2. Little Butte Volcanic Series lava flow rock overlying sedimentary material (checkpoint 7).

Figure 3. Pinnacle Rock, about 50 ft above road, visible from across the reservoir at checkpoint 75 on return trip.



right onto Sharps Creek Road and cross the bridge. The "Red Bridge" sign is the Forest Service "Tour of the Golden Past" mile point 0.0.

⑫ 0.3 19.6

Alteration zone. The rock face on the right shows zeolitic (green-colored) alteration. Such zones can be identified by the alteration of pyroxene, hornblende, and volcanic glass into green clay. Zeolites, carbonate minerals, and chalcedony have been introduced into the original rock.

⑬ 0.9 20.5

Rock quarry on the right. Mining in Oregon today generally means sand and gravel and stone. During 1975 (latest year for statistics), stone production from mines such as this was 21 million tons, making stone the mineral commodity with the greatest output. Sand and gravel production during the same period was 17 million tons. No other mineral commodity in Oregon came close to these totals.

△ 14 2.2 22.7

Sharps Creek Recreational Area on the right. This Lane County park rests on a stream terrace underlain by a gravel deposit. In the past, the stream bed was at a higher level and the stream had a lower gradient. Then the stream eroded laterally, cutting a broad valley. Now, with a steeper gradient, the stream is instead downcutting a narrow channel.

Just before you reach checkpoint 15, you cross a bridge listed in the Forest Service Tour.

⑮ 3.7 26.4

The rock face on the right (Figure 4) has a complex geological history. As you face the outcrop, the rock jutting out on the right is a volcanic breccia with angular fragments from 0.1 to 7 in long. On the left is black basaltic lava flow rock. The 2-ft-wide vertical band of rock in the center is a dike. Between the dike and breccia and between the dike and basalt are zones of zeolitic and hydrothermal alteration. The flat face on the breccia next to the alteration is a fault plane. Slickensides, polished and striated (scratched) surfaces resulting from rocks moving past one another along a fault, occur high on this fault plane against the alteration zone. The slickensides dip toward the road slightly, showing that movement along the fault was mostly horizontal. The dike is parallel to the fault plane. Massive and crystalline calcite occur within the alteration zone.

Examine the black basalt on the left. Just above the road level, you can see quartz and another type of volcanic breccia. Fragments of basalt, about 1 or 2 in across, are cemented together by white quartz (Figure 5). The geological events at this stop include the faulting of two different types of rock against each other. Then a dike intruded along the zone of weakness created by the faulting. The basalt was crushed during faulting, forming a small breccia zone within the basalt. Hot-water action produced zeolitic alteration. At this stop, yellow and brown clay minerals formed, in contrast to the green minerals found at checkpoint 12. The water here may have been hotter and more highly mineralized than the water at checkpoint 12.

⑯ 2.1 28.5

Arrastra mine, located a short distance up Walker Creek and abandoned about 1900. An ore-grinding mill called an arrastra, powered by water from a falls in Sharps Creek, was set up on the flat area between Sharps and Walker Creeks. Here ore was crushed to powder and gold was separated from the crushed ore. Although no evidence of the old arrastra remains, you may be able to find where holding bolts were fastened to the rocks.

⑰ 0.2 28.7

Yellow-brown alteration in roadcut to left. This 100-ft zone has been silicified and pyritized, making the rock so hard and resistant to erosion that it formed the falls used as a water source for the arrastra. These types of alteration zones or areas within them are often gold bearing.

△ 18 0.3 29.0

Gold Bottom unimproved campsite on the right, part of an old mining site. At the creek below the parking area, a cut was driven into a pyritized and silicified white- to gray-colored fracture zone. Small pyrite crystals and secondary quartz veinlets can be seen on broken rock surfaces in this zone. Apparently values were nonexistent or too low to warrant mining.

⑲ 0.2 29.2

Umpqua National Forest boundary sign. This forest of about 980,000 acres is managed by the U.S. Forest

*Figure 4. Checkpoint 15.
At left is basaltic
lava flow rock; in
center is alteration
zone cut by dike; at
right is volcanic
breccia.*

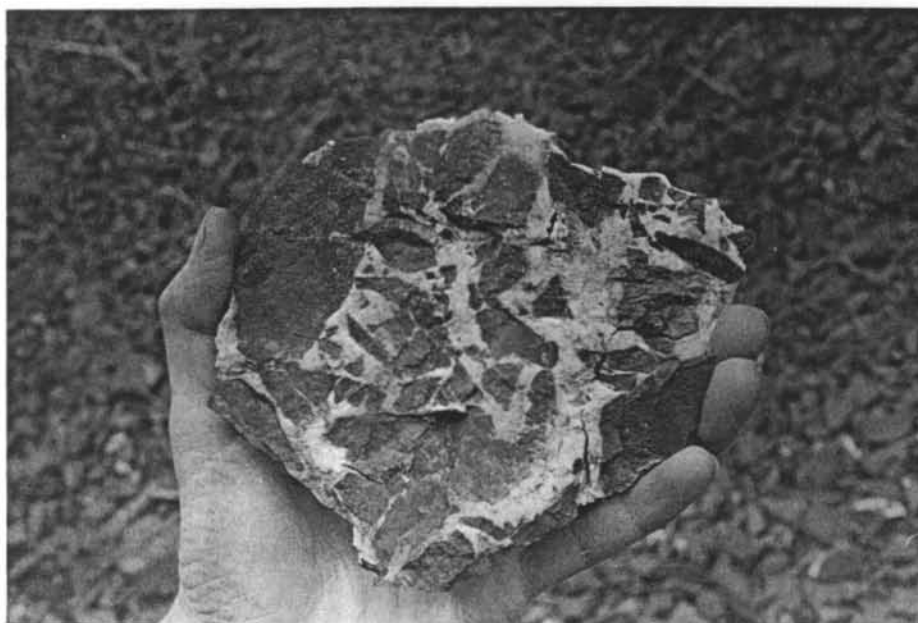


Figure 5. Breccia cemented by quartz (checkpoint 15).

Service under the Multiple Use Act of 1960.

②0 0.6 29.8

Fork in road. Take the left road and continue on Sharps Creek Road (Road 230).

②1 0.5 30.3

Stage Road sign on the right.

②2 0.6 30.9

Sailors Gulch (also spelled Saylor's Gulch). Placer gold was discovered on this small tributary of Sharps Creek in 1858. Water flowing over ore veins upstream picked up and carried gold particles in suspension until they were dropped as placer deposits farther downstream. Recovering this gold is called placer mining, in contrast to quartz or hardrock mining, whereby gold is extracted from bed rock.

△ 23 0.8 31.7

Mineral campground. This now peaceful spot was, at the turn of the century, the last stop for miners and freighters before they began the long, hard trip to Bohemia Saddle. At one time, a two-story hotel (Figure 6) was located between Fairview and Sharps Creeks. A post office, general merchandise store, several mining claims, and an assay office were located here at Mineral.

The 6-mi road between Mineral and Bohemia Saddle is known as Hardscrabble Grade. According to early travelers, it took from 4 to 8 hours to cover this stretch of road. Freight wagons needing only four horses to go from Cottage Grove to Mineral required six to eight teams to get up Hardscrabble Grade. According to Nelson (1969), this section of the road was built in 1898; the County contributed \$700, and mining companies and miners supplied the remainder of the cost. Because the grade, especially the first 3 mi, is extremely steep and the road between Mineral and Glenwood is narrow, drive very carefully. Once you start up Hardscrabble Grade, you have little opportunity to turn around.

Most of the rock along the Hardscrabble Grade from here to checkpoint 27 (Glenwood sign) has been silicified and pyritized. The rock is hard, so mine adits driven into it stand well.

②4 0.8 32.5

On the left are three adits which, at the time of this writing, should be reasonably safe to enter. Do not enter any mine, adit, tunnel, open pit, or cut except those listed in this guide as being reasonably safe. Remember that conditions may deteriorate. Furthermore, any loose rocks near or within adits should be removed by a skilled miner before anyone tries to enter. You enter any underground opening at your own risk.

The first adit is about 15 ft long, the second about 50 ft long, and the third about 20 ft long. The adits have been driven in a silicified tuff breccia. The breccia fragments have been eroded and are soft, while the quartz that came in along the fractures between the fragments is very hard. Pyrite crystals can be seen on freshly broken surfaces. Where weathering could reach it, pyrite has been oxidized to limonite.



Figure 6. Old Mineral Hotel and post office located at foot of Hardscrabble Grade (checkpoint 23). (Photo courtesy Ray Nelson)



Figure 7. Giants similar to those described at checkpoint 28. These giants were operated in Josephine County, but similar ones were used in placer operations in the Bohemia district.

- (25) 0.3 32.8 The 65-ft-long adit on the left is unsafe to enter because the back and hanging wall have loose rocks. The adit was driven on a 4-ft fracture zone bound by two parallel fault planes. The rocks have been silicified and pyritized.
- (26) 1.5 34.3 An adit driven subparallel to the road is on the left. It follows a small fracture system for about 40 ft. The rock has been silicified and pyritized.
- (27) 0.7 35.0 Road junction. Glenwood sign. Turn right for a side trip to Shane Saddle.
- (28) 0.1 35.1 Glenwood cabin. In a switchback part way up Hard-scrabble Grade was a way station, a small shelter in which mail and supplies were deposited for those who lived and worked near Shane Saddle, 2 mi to the south. A placer mine at the same site employed the hydraulic system, using powerful jets of water to loosen alluvial material containing gold deposits and wash it downhill. Water from the stream above traveled through a hose and was forced through a nozzle, called a giant (Figure 7). The dirt, sand, and gravel accumulated in the stream bed was channeled into sluice boxes, from which the gold was recovered. Even today the nearby stream can be panned for a few flakes of gold.
- In the roadcut in front of the cabin are thin-bedded, flat-lying shale and sandstone beds, evidence that a body of water such as a lake existed in this area at one time (Figure 2, May 1978 Ore Bin). By walking down the hill below the cabin toward the creek, you can see a thick sill of andesite which has intruded along the bedding of the sedimentary rocks. This sill is about 50 ft thick, and the top of it forms a flat plane on which the stream is flowing. This plane also formed a trap for placer gold.
- (29) 0.9 36.0 Wet Canyon. These sedimentary rocks have been altered; those near the cabin were not. Note the small dike (Figure 8) intruding the country rock on the east side of the canyon. The dike has elongated vesicles, and some of these gas-formed holes are filled with white minerals called zeolites. Both the sedimentary rocks and dike have been silicified, making the rocks hard, and chloritized, making the rocks green.
- (30) 0.7 36.7 Adit at the left just before you cross a small stream. This was the Bull Lead mine (Figure 9). The adit was driven along a silicified zone which has sparsely disseminated chalcopyrite, galena, and sphalerite and considerably more disseminated pyrite. Pyrite can also be found along fractures, as can cockscomb and drusy quartz.
- This adit is reasonably safe to enter. It was driven into hard, strong rock that should not cave in. The roof has a natural arch with no loose hanging rocks. No shafts have been dug below the tunnel, and no mine timber has been left to rot and form bad air.
- At 20 ft the adit forks; the right fork is 20 ft long and the left about 40 ft long.



Figure 8. Dike at Wet Canyon (checkpoint 29).

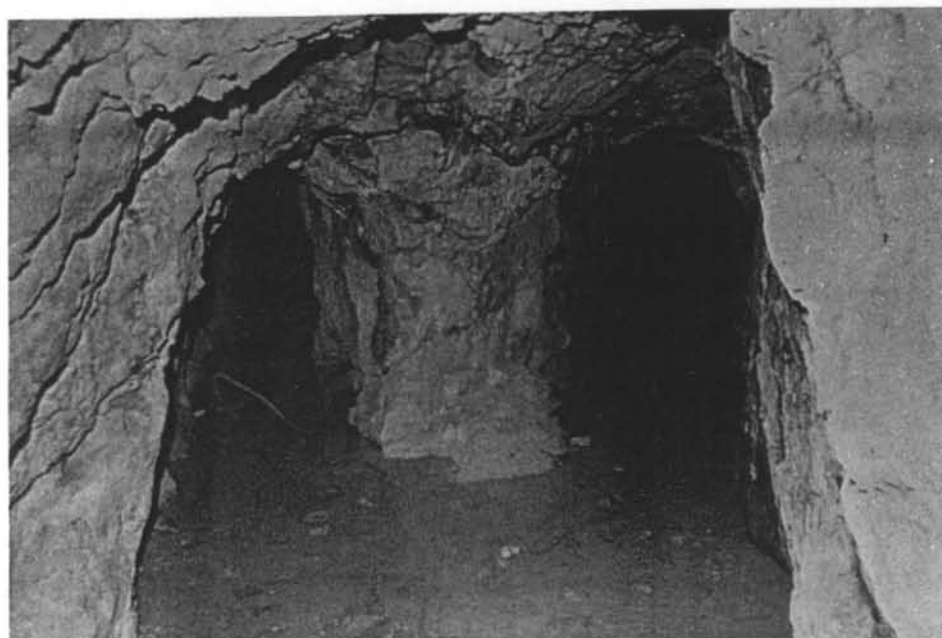


Figure 9. Fork in adit at Bull Lead mine (checkpoint 30).

Remember that most mines, tunnels, and shafts in the Bohemia and other mining districts are not safe to enter.

(31) 0.5 37.2

Shane Saddle junction. Stop and park your car. A poorly maintained jeep trail starts about 200 ft east around the curve and leads to the northwest. Follow this trail for 600 ft to where it forks, and take the right-hand fork, which leads uphill for 200 ft.

(32) 0.0 37.2

An open cut on the right of the trail contains a narrow band of stibnite-bearing ore.

This is the end of the side trip. Return to your car and then to the road junction at Glenwood (checkpoint 27).

(27) 2.2 39.4

Road junction at Glenwood. Turn right and continue up the Hardscrabble Grade (Road 230).

(33) 0.9 40.3

Road turns to the right. Note on left side of road a lava flow with 10 or more regularly spaced planes containing elongated vesicles (Figure 10). This lava is interbedded with tuff breccia and has been mapped by Lutton (1962) as part of a dome, a circular or oval accumulation of extremely viscous lava which, after having been squeezed from a volcano, congealed above and around the orifice instead of flowing away.

34 0.7 41.0

To the left is the old Vesuvius mine cabin. A boarding house was once above the road. The Vesuvius veins were discovered and staked about 1895; claims were bought a few years later by the Ziniker and Graber brothers, who sold them to Vesuvius Mines Company in 1902. By 1908 a ten-stamp mill was operating. The company also built a tramway and several buildings.

(35) 1.3 42.3

Bohemia Saddle. Turn right for side trip to Bohemia Saddle Park.



0.1 42.4

Bohemia Saddle Park, maintained by Lane County. This park is situated on top of the Musick mine's old workings. The square-planked area near the picnic table is the top of a sealed-off ventilation shaft. Do not try to lift the timbers to look into it, because you could take a 40-ft vertical fall into one of the larger stopes (mine workings). Following the trail going down and along the mountain slope, you can see where the California vein crops out and where the mine workings have reached the surface (Figure 11). This dangerous hole is nearly vertical and is protected only by a smooth wire fence. Stay back from the edge.

This is the end of the side trip. Double back to Bohemia Saddle (checkpoint 35).

(35) 0.2 42.6

Bohemia Saddle. By turning to the left onto Road 230-F you may take a side trip to a lookout point.

(37) 1.3 43.9

Fairview Peak Lookout, elevation 5,933 ft. As you drive up to Fairview Peak, look for what appear



Figure 10. Planes of vesicles, called sheet vesicles, in volcanic rock (checkpoint 33).



Figure 11. Part of old Musick mine workings which have reached the surface (checkpoint 36). Shafts like these are very dangerous, so stay away from them.

to be old roadcuts. These were part of the old Knott Trail, built around 1870. The trail was wide enough only for a narrow wagon or sled, but it enabled mining and milling equipment to be brought into the district.

On a clear day, from the lookout you can see the Coast Range to the west and the Three Sisters and other Cascade volcanic peaks to the east. On a very clear day the Pacific Ocean can be seen to the west; Mt. Shasta, California, to the south; and Mt. St. Helens, Washington, to the north.

This is the end of the side trip. Double back to Bohemia Saddle (checkpoint 35).

(35) 1.2 45.1

Bohemia Saddle. Turn left back onto Road 230 and go east toward Champion Saddle.

(38) 0.6 45.7

The rock in a small open cut (6 by 10 ft) on the left side of the road and about 4 ft above the road bed (Figure 12) contains tourmaline of the schorlite variety. This site is hard to find, so drive slowly. On the way to checkpoint 39, the unimproved road to the left can be taken for a side trip to the old Forest Service Musick Guard Station, only 0.1 mi off Road 230. There you will see the old mule barn and guard station.

(39) 0.2 45.9

Musick mine road. Turn onto the road on the right for a side trip to the Musick mine and Bohemia City town site. Beware of high-centering your vehicle. Porphyritic basalt crops out on the right side of the road. The closer you get to the mine, the more epidotized the basalt becomes. Epidote gives the rock a greenish cast and forms a green coating along fractures.

[40] 0.6 46.5

Musick mine and Bohemia City. One of the most productive veins in the district, the Musick vein, was discovered in 1891 by James Musick, who organized the Bohemia Gold Mining and Milling Company. The mine was later purchased by the Oregon Securities Corporation, which also acquired the Champion and Helena mines. Consolidating operations at the Champion site, they built an electric railroad (Figure 13) to haul Musick ore over to the Champion stamp mill.

When you return to Road 230, just past the junction you will notice an extremely level stretch, which was the grade of the narrow-gauge electric railroad that ran between the Musick mine and the stamp mills at the head of Champion Creek. After 1908, the mine was owned by various companies and ran periodically. By the 1950's, however, snow had collapsed most of the buildings. All that remained of the once-prosperous camp were some crushed snowsheds, the old Lundberg stage house (now being restored by the Cottage Grove Prospectors Club), post office, store, hotel, a few cabins, and the ruins of the stamp mill (Figure 14).

Among hazards in the area are rotting boards and timbers with nails, and the mine adit is not safe to enter.

In the mine dumps and along the road to the upper dump you may find specimens of galena, epidote, pyrite,

Figure 12. Tourmaline occurs in open cut above road (check-point 38). This stop is hard to find, so watch mileage carefully.



Figure 13. Electric tram that once ran between Musick mine and Champion mill. (Photo courtesy Ray Nelson)

chalcopyrite, sphalerite, cockscomb quartz, and, rarely, a flake of gold.

End of the side trip. Double back to Road 230 (checkpoint 39).

(39) 0.7 47.2

Road junction. Turn right (east) onto Road 230.

(41) 0.3 47.5

Champion Saddle. The old Knott Trail can be seen nearby. Here you may choose to stay on Road 230, going around the bend to the right, or you may instead take Road 2259, the Champion Creek road, to the left. The roads join at the junction of Champion and Brice Creeks.

This road log first follows Road 230 to the junction; then it jumps back to this point again and describes Road 2259 from here to the junction.

(42) 0.2 47.7

The road has crossed the saddle, and the roadcut is now on the right. The light-colored outcrop on the right is the Champion vein. From within 500 ft of this spot, \$300,000 in gold values have been taken. The Champion vein also crops out along Road 2259, so checkpoint number 42 is used for both outcrops.

(43) 0.1 47.8

The close relationship between granitic (granodiorite) intrusions and veins is shown here and at checkpoint 42. The vein cuts across the granodiorite. Hot water circulating during late stages of cooling of these intrusions was probably the source of metals found in the veins. The granodiorite looks unaltered; however, the green mineral epidote, an indicator of alteration, can be found along rock fractures called joints and in small veinlets.

(44) 0.4 48.2

The rock on the right side of the road shows some propylitic alteration, which means it has a greenish cast because of the development of fine-grained chlorite and epidote, both green-colored minerals. The rock contains a vein-fracture system along which up to 4-in quartz veins, containing euhedral, thumbnail-sized quartz crystals, have formed.

(45) 0.3 48.5

Notice the grove of trees to the left and upslope. Their trunks are curved near the ground but become straight higher up. This curvature is caused by the weight of the annual 10- to 15-ft-deep winter snow pack as it creeps slowly downhill, deforming the bases of the saplings in the process. As you drive through the grove, also look to the right for trees with yellow metal plates. These trees are survey bearing-trees. By reading the plates, you can tell how close you are to a section marker.

(46) 1.3 49.8

Road fork. Road 230 continues to the right, but you should take the left fork, Road 2243, which parallels the Noonday Ridge and its trail. The old Noonday (or Annie) Trail, built in 1892, was the main route for freight and supplies before Hardscrabble Grade and Champion Creek Trails were built.

(47) 0.6 50.4

A roadcut showing an alteration zone to the right. The yellow-brown color is from the oxidation of the introduced pyrite. Near the center of the cut, you can

see a gray clay fault gouge zone. The fault may have acted as a channel for hydrothermal solutions carrying sulfur, which combined with iron in the wall rock to produce pyrite. This site, part of the San Francisco vein system, has been mapped by Lutton (1962) as a breccia zone or pipe. Breccia zones are often rich in ore.

(48) 2.3 52.7

Turn left for a short side trip on the unnumbered road which joins Road 2243 at the switchback.

(49) 0.2 52.9

Take the fork to the left for a short distance and park in the grove of tall trees at the site of the old Ridge Hotel, which was located on the Noonday Trail (Figure 11, May 1978 Ore Bin). The hotel had lodging for both miners and animals.

Double back to Road 2243 (checkpoint 48).

(48) 0.1 53.0

Road junction. Turn left back onto Road 2243.

(50) 3.8 56.8

Junction with Brice Creek and Road 2149. Turn left onto Road 2149 and follow the creek downstream.

(51) 0.8 57.6

Here the road is about to pass through a small ridge of very hard rock which causes Brice Creek to make a horseshoe bend. The rock is hard because it is near a large granodiorite intrusion and has been subjected to propylitic or contact alteration. Near the creek, small, light-colored dikes are exposed in the bed rock.

(52) 0.5 58.1

This is the east edge of a large granodiorite intrusion, molten igneous rock which cooled slowly underground before reaching the surface of the earth. Not only was local ground water heated by this intrusion, but it was also changed in chemical composition. Heat from the slowly cooling granodiorite body affected the surrounding country rock, both by direct contact and also by these hot aqueous solutions which circulated throughout the area. These solutions probably produced the major changes in the country rock. The granodiorite was later exposed after cooling by uplift and erosion and can be seen in the roadcut on the left.

(53) 0.9 59.0

On the left, high up on the slope, a granodiorite dike stands up like a wall.

(54) 1.7 60.7

As you cross the Brice Creek bridge, look downstream to the right. When the Oregon Securities Company took over the major mines, it did a great deal of development, including provisions for generating electrical power. A dam was constructed between two rock walls beneath the bridge on which Road 2149 crosses Brice Creek. A flume ran along the north bank of Brice Creek, and you can still see traces of the ditch that carried the water. The dam was removed several years ago by State officials to allow migrating fish to pass.

You are at the junction of Champion Creek Road 2259. At this point, the road log returns to Champion Saddle (checkpoint 41). Those wishing to go directly to Cottage Grove from here should instead continue with checkpoint 54 on page 113.

(41) 0.0 47.5

You are back at Champion Saddle. Now take the left fork, Road 2259.

(42) 0.2 47.7

The little open cut to the right is the Champion vein outcrop. Look up and see where the vein crops out on Road 230. The checkpoint number 42 was used for both outcroppings of this vein. As you look down the valley you see a glacial cirque, a steep-walled, half-bowl-shaped recess caused by glacial erosion.

55 1.0 48.7

Champion mine and mill. The building (Figure 15) back against the mountain slope is the 1,200-level adit portal house. Do not try to enter; the portal building is in bad shape and the adit is caved in. Take care as you look around.

This mine was discovered in 1892, and a ten-stamp mill was built here in 1895. A thirty-stamp mill operated from 1902 to 1917 under the Oregon Securities Company and the West Coast Mines Company. The mine was idle until the period between 1932 and 1938, when various operators, including the Mahala Mines and the Bartels Mining Companies, produced nearly \$100,000 from the Champion. A flotation mill (Figure 12, May 1978 Ore Bin) built in 1939 recovered other minerals in addition to gold, values which would otherwise have been lost.

Some concentrates and ores were shipped intermittently from 1939 until the early 1960's, but since then the mine has been inactive. In 1960 the Champion site still contained many buildings, including a machine shop, blacksmith shop, assay office, portal house, mine office, diesel electric plant, cookhouse, bunkhouse for 75 men, flotation mill, and several smaller buildings. Now only the portal house and mill foundations remain.

Minerals found on the Champion dump include quartz crystals, galena, sphalerite, and hematite. Because ore was transported over a narrow-gage railroad from the Musick mine to be processed at this mill, the ore samples may have come from either mine. From where you stand, the railroad grade looks like a line; the end of the grade has a rock dump downslope. The Musick ore came down to the mill level by tram.

(56) 2.4 51.1

Golden Curry mine. The authors did not find and check this adit; therefore we warn you to stay out of it if you come upon it.

(57) 0.3 51.4

Trixie mine. Stop and look at the two portals on the left, but do not enter. These adits are unsafe: the timber is rotted; and the bank and rock above the portal are ready to cave down. Look and drive on.

(58) 0.4 51.8

The two adits on the left are not safe to enter. The first, about 65 ft deep, was driven along a fault zone. Material from this fault is falling into the portal. At the second, 10 ft deep, large rocks on the floor have fallen from the back (roof). One large rock in the back is ready to join the others on the floor.

The rock along the road is granodiorite containing



Figure 14. Musick mine and Bohemia City, with restored stage house and post office (checkpoint 40). In foreground is covered portal and mine track. Stay out of mine.



Figure 15. Old Champion mine portal house (checkpoint 55).

- tourmaline (black) and epidote (green) along fractures.
- (59) 0.2 52.0 Downing Point. Two greenhorn miners died here during a snowstorm in the early 1890's.
- (60) 0.2 52.2 Bohemia Smith Falls on the right. Here a drunk early-day miner named Bohemia Smith wandered off the trail between Lundpark and the Champion mine, stepped off the edge of a cliff, and fell, landing in a small tree. When searchers found him, he was completely unharmed, holding his jug, and singing merrily. The spot where he fell has been known as Bohemia Smith Falls ever since. This waterfall and several of the others are caused by basalts that have been altered by nearby intruding granodiorite. The contact alteration has resulted in dense, blocky fractured rock which forms erosion-resistant outcrops.
- (61) 0.3 52.5 Epidote-rich knots can be found in the volcanic breccia on the left. These knots contain plagioclase, quartz, chlorite, pyrite, and magnetite, and some contain very small, well-formed crystals (Figure 5, May 1978 Ore Bin). Walk back up the road and around the curve to see a vertical fault which has lava flow rock on one side and volcanic breccia on the other.
- (62) 0.4 52.9 The rock face on the left at the first curve past Weaver Creek also has epidote knots which contain the same minerals as those at the previous stop, but here the country rock is a volcanic conglomerate rather than a breccia. Breccias have angular fragments, while conglomerates have rounded components. This conglomerate (Figure 3, May 1978 Ore Bin), with subrounded boulders of various types of volcanic rock up to 10 ft in diameter, crops out in Champion Creek below the road curve. To go down to the creek to see this conglomerate, walk past the curve for about 150 ft, and then go down the road outslope.
- (63) 1.6 54.5 The start of the old Noonday (Annie) Trail is marked by a sign board. The trail, on the right, goes up the ridge. This was the main route for freight and supplies before Hardscrabble Grade and the Champion Creek Trail were built.
- (54) 0.2 54.7
60.7 Junction with Road 2149. This stop has been described. The two legs of the tour have joined. We now show two cumulative mileages: the first is for the southwest leg, which followed the Champion Creek; and the second is for the northeast leg, which followed Noonday Ridge. Now turn left onto Road 2149.
- (64) 0.3 55.0
61.0 Trestle Creek sign on the right. Trestle Creek enters the other side of Brice Creek from the northeast. The name came from the trestle built to carry water from the dam to the powerhouse at Lundpark. A lost gold mine is reported to be somewhere along this creek. By checking the map, you will note that Trestle Creek parallels the granodiorite-country rock contact. Along this creek is a good place to look for mineralization.

△
65 0.4 55.4
61.4

Hobo campground on the right.

△
66 0.6 56.0
62.0

Lundpark campground on the right. Lundpark, named after Alex Lundberg and Harry Parker, was an overnight stop on the way to Bohemia. Although nothing remains of the old buildings, Lundpark was once a bustling place. Parker ran the hotel, where nearly all of the men going up the mountain spent the night; Lundberg took care of the barn and warehouse. Freight from the Lundpark warehouse went up to the Champion mine two or three times each week during the summer.

Water from the dam at checkpoint 54 ran a powerhouse (Figure 16) on the north side of Brice Creek. Some of the concrete foundation remains.

△
67 2.4 58.4
64.4

Cedar Creek campground on the right.

⊙
68 2.2 60.6
66.6

Umpqua National Forest boundary sign on the left.

⊙
69 2.0 62.6
68.6

Disston store to the right. The town of Disston was the easternmost end of the railroad started in 1902 and completed by the Oregon Securities Company, which controlled the Champion, Musick, Helena, and Noonday mines. A post office was established here in 1906. With the railroad operating, supplies reached the mines in two days instead of three.

You are now back on Row River Road.

⊙
70 0.7 63.3
69.3

Junction with Layng Creek road. Turn right onto Layng Creek road for a side trip to a fossil plant location.

△
71 1.9 65.2
71.2

Forest Service Rujada campground on the right.

⊙
72 0.2 65.4
71.4

Forest Service Road 2142 joins Layng Creek road on the left. On the right is the Forest Service Layng Creek Work Center. Turn left onto Road 2142.

⊙
73 0.7 66.1
72.1

The Rujada fossil locality (Figure 10, May 1978 Ore Bin). The thin-bedded shale and sandstones exposed on both sides of the roadcut (Figure 17) contain up to 40 recognized types of plant fossils. Lakhanpal (1958) describes the fossil flora in detail.

R. Upton and J. Anderson once established a logging camp nearby. The name "Rujada" is derived from their initials plus "da" for the Department of Agriculture.

This is the end of the side trip. Return to checkpoint 70.

⊙
70 2.9 69.0
75.0

Row River road junction. Turn right.

△
74 2.6 71.6
77.6

La Sells Stewart Park on the right. The sign is almost hidden by trees. The gravel road leading to the park crosses a private logging road that parallels the main road.

The park affords a good view of Wildwood Falls, caused by Brice Creek's effort to erode a basalt flow.



*Figure 16. Hydroelectric powerhouse built at Loidpark (checkpoint 66).
Only foundation remains today. (Photo courtesy Ray Nelson)*



Figure 17. Rujada fossil locality (checkpoint 73).

A dike has intruded the flow, adding to its resistance to erosion. The flat valley floor above the falls is the top of the flow. Look at the stream channel wall downstream from the falls to see how much erosion has occurred. Wildwood Falls Park is on the other side of the creek.

- | | | | |
|------|-----|--------------|--|
| (11) | 1.0 | 72.6
78.6 | Sharps Creek Road junction, the starting point of the loop through the Bohemia mining district, on the left. |
| (8) | 4.4 | 77.0
83.0 | Government Road joins Row River Road. Take the left fork and stay on Row River Road. You will now go around the southwest side of Dorena Lake. |
| (75) | 0.5 | 77.5
83.5 | After about half a mile, look northeast across the lake and valley to see Pinnacle Rock (Figure 3) rising above the trees. |
| (76) | 3.3 | 80.8
86.8 | Baker Bay Park on the right. |
| (77) | 2.6 | 83.4
89.4 | Schwartz Park on the right |
| (1) | 4.7 | 88.1
94.1 | Interstate 5, east on-off ramp, the starting and the ending point for the road log. |

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- Gray, J.J., 1977, A geological field trip guide from Sweet Home, Oregon, to the Quartzville mining district: Ore Bin, v. 39, no. 6, p. 93-108.
 ———, 1978, Overview of the Bohemia mining district: Ore Bin, v. 40, no. 5, p. 77-91.
 Mason, R.S., Gray, J.J., and Vogt, B.F., 1977, Mineralization in the north-central Western Cascades: Ore Bin, v. 39, no. 12, p. 185-205.

Additional Reading

- Brooks, H.C., and Ramp, L., 1968, Gold and silver in Oregon: Oregon Dept. Geol. and Mineral Indus. Bull. 61, 337 p.
 Callaghan, E., and Buddington, A.F., 1938, Metalliferous mineral deposits of the Cascade Range in Oregon: U.S. Geol. Survey Bull. 893, 141 p.
 Lakhanpal, R.N., 1958, The Rujaca flora of west central Oregon: Berkeley and Los Angeles, Calif., Univ. California Publications in Geol. Sci., v. 35, no. 1, 66 p.
 Lutton, R.J., 1962, Geology of the Bohemia mining district, Lane County, Oregon: Arizona Univ. doctoral dissert., 172 p.
 Nelson, R., 1969, Facts and yarns of the Bohemia, Oregon, gold mines: Cottage Grove, Oreg., Sentinel Print Shop, 31 p.
 Oregon Department of Geology and Mineral Industries, 1951, Oregon metal mines handbook - northwestern Oregon: Oregon Dept. Geol. and Mineral Indus. Bull. 14-D, 166 p.
 Peck, D.L., Griggs, A.B., Schlicker, H.B., Wells, F.G., and Dole, H.M., 1964, Geology of the central and northern parts of the Western Cascades Range in Oregon: U.S. Geol. Survey Prof. Paper 449, 56 p.
 Schaub, M.P., 1978, Geology and mineral deposits of the Bohemia mining district, Lane County, Oregon: Oregon State Univ. master's thesis, 135 p.
 Umpqua National Forest, 1972, Tour of the golden past.

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