

THE SILVER KING MINES ARE DOING DEVELOPMENT WORK WITH THE CHEAP POWER OF HARNESSSED WATER AND AIR

They Have Connected Up With the Everlasting Energy of White Coal to Drive Air Compressor and Machine Drills—Have Steel Tracks and Steel Cars and All the Facilities for Economical Mining and Milling of Their Rich Ores—Pictures Show the Scheme of Operations

The Silver King mines are located on the western slope of the Cascade mountains, in Marion county, Oregon, in what is known as the Elkhorn country, near the headwaters of the Little North Fork of the Santiam river, and about 24 miles northwest from the summit of Mt. Jefferson, at an elevation of about 3000 feet. (Photo No. 1 shows view of Henline mountain, arrow pointing to location of Silver King mines.)

Until recent years this region has been very difficult of access, being very rough and mountainous and covered with heavy timber and underbrush with poor and uncertain mountain trails which rendered the ore deposits inaccessible to any but those who would travel on foot, through thickets and over steep declivities. Under these conditions, the opening up and development of these mines has been slow and difficult.

Good Roads Now

Now, however, through the co-operation of Marion county, the local road district, through the ministrs of the Elkhorn country, a road has been opened up and built along the Little North Fork of the Santiam, from Mehama to this mining district, which has been gradually improved, until it is now one of the best mountain roads in the state of Oregon, suitable for trucks or automobiles to operate upon, and over which supplies and machinery are transported to the Silver King and other mining properties and prospects in this district, which will soon become one of Oregon's best known mining districts. This road winds through a scenic country, on an easy grade, and is in itself a sample of engineering skill, and reaches the railroad at Lyons, Oregon, a distance of 17 miles from the Silver King mines. This road has made it possible to open up and operate the mines of this district.

The Kinds of Ore

The ores of the Silver King mines are unaltered, primary sulphides, the ore minerals being argente, galena, sphalerite, pyrite, and arsenic, and are what are commonly known as silver, lead, zinc ores, carrying values in gold, silver, lead, zinc, the lead and zinc dominating in quantity, and silver and gold in value. The principal ore body, so far developed at these mines, occurs in a large, well defined ore bearing fissure vein known as the "Queen vein," and fills a fissure formed by movement along a shearing zone, and is paralleled by an intrusive dike of felspar porphyry, which has played an important part in the genesis of these ores.

The Queen Vein

The "Queen vein" strikes northwest and southeast, and dips about 65 degrees southwest, and is exposed by the Cannon of Henline creek, which cuts through it at nearly right angles at an elevation of about 3000 feet on Henline mountain. At this point the ore bodies of the queen vein have been opened up and developed for a distance of about 400 feet by tunnels along the vein, and by sinking shafts from tunnels as deep as can be sunk by use of hand pumps, and this prospect work discloses an ore body from four to 20 feet in width and over 400 feet in length, the entire distance thus exposed, and surface prospects show that the Queen vein extends for more than a mile across Henline mountain and to unknown depths, which together with the primary character of the sulphide ores of this vein, indicates the probability of an almost inexhaustible body of ore. Hen-

line creek has cut a deep canon far into this mountain, nearly at right angles to the strike of the queen vein, and reaching to within about 1000 feet of the Queen vein.

Going in 1000 Feet

From the head of this canon a cross cut tunnel is being driven, which will cut the Queen vein at a distance of about 1000 feet from the portal of the tunnel, and at a depth, on this vein, of over 900 feet below the upper prospect tunnels, and will make possible the mining and extraction of the ore of the Queen vein, on a large scale, at a very low cost. (Photo No. 3 shows Queen vein at upper prospect tunnels, and photo No. 4 shows power plant and portal of main tunnel, and photo No. 5 shows face of main tunnel now over 600 feet deep and within about 300 feet of where it will cut the Queen vein.) This tunnel has now been driven over 600 feet, and should reach the Queen vein in a little more than 300 feet from the present face of the tunnel.

Using Water Power

For the purpose of driving this cross cut tunnel to tap the ore bodies of the Queen vein, at a great depth, as well as to mill and concentrate the ores, a power plant has been constructed near the portal of this tunnel at the head of this canon, which develops 200 horsepower on 150 feet head of water on a Pelton wheel. This plant was constructed at a cost of about \$12,000, and it will furnish sufficient power to operate mine and mill.

The mine has been equipped with air compressor and machine drills, and with steel railroad tracks and steel ore cars the forces are now well equipped for carrying on the work of driving this tunnel through to and developing the ore bodies of the Queen vein, at a great depth.

Permits Gravity System

This tunnel will drain the mine, allow extraction of the ores, through this tunnel (thus eliminating hoisting and pumping equipment, which is both expensive to buy and to operate), and permit the gravity system of mining, the most economical known, and delivery of the ore at the mill, at the mouth of the tunnel in large quantities at a small cost.

Rich Values There

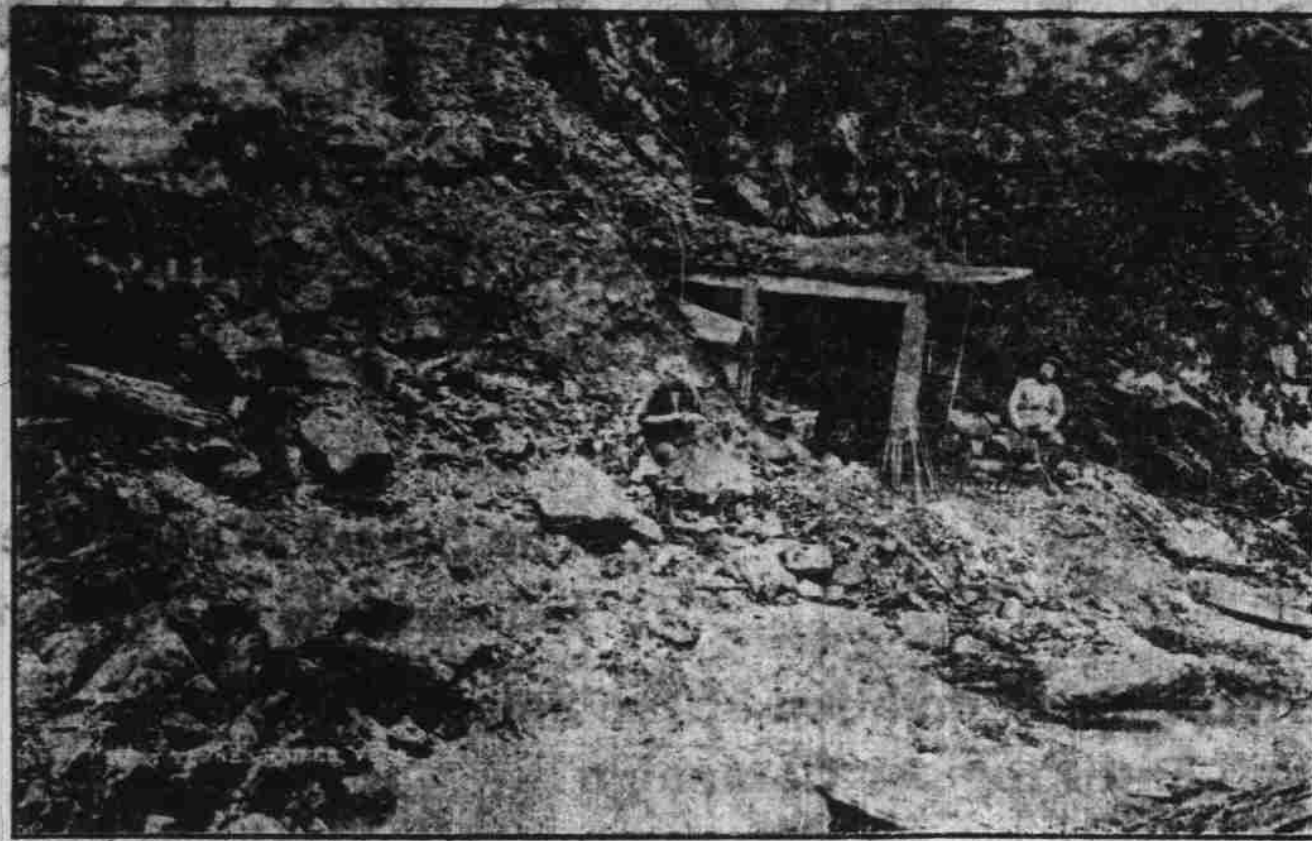
Assays of the ores of the Queen vein, taken in the course of development work on the upper prospect tunnels, shows values ranging from \$5 to \$1000 per ton, and an average value of about \$20 per ton. The owners estimate that when the tunnel is completed and concentrator installed and operated by their power plant, it will not exceed the cost of \$4 per ton to mine and concentrate the ores of this mine.

Probably More Riches

A number of open cuts and shafts have disclosed the existence of several other ore bodies on this property, which, however, are not as well developed as the ore above described, and their extent and value are as yet undetermined.

Great New Discoveries

Silver-lead-zinc-sulphide ores were formerly very hard to treat, and under the old methods used, but a small per cent of the values were recovered; but in recent years great discoveries have been made, and entirely new and scientific methods of treating such



No. 3 East prospect tunnel on Queen vein, showing about 20 feet wide and shearing zone about 150 feet wide.

ores; especially the "flotation method of concentration," which saves the sulphide ore minerals, and discards all of the rock, and which makes nearly complete recovery of all values, has been perfected, and is now in practical operation in treating the silver-lead-zinc ores of the Coeur D'Alene mines in Idaho, and other ores similar to those of the Silver King. These ores have been tested in the flotation method of concentration, which shows a recovery of from 95 to 99% of all values; and this method of concentration will be adopted in the treating of the Silver King ores.

Will Be Big Mine

With ores of the character and value of the ores of this mine, well adapted to modern methods of reduction and concentration, and the natural advantage existing here for economical mining on a large scale, and with air and water properly harnessed by the power plant situated at the mouth of the tunnel, to furnish power for mining and milling operations, there appears no good reason why this should not soon be one of the biggest producing and best paying silver-lead-zinc mines of the west.

The managers could ship ore now from the upper prospect tunnels, but they prefer to properly develop their mine and install reduction works before attempting production.

Other Equipment

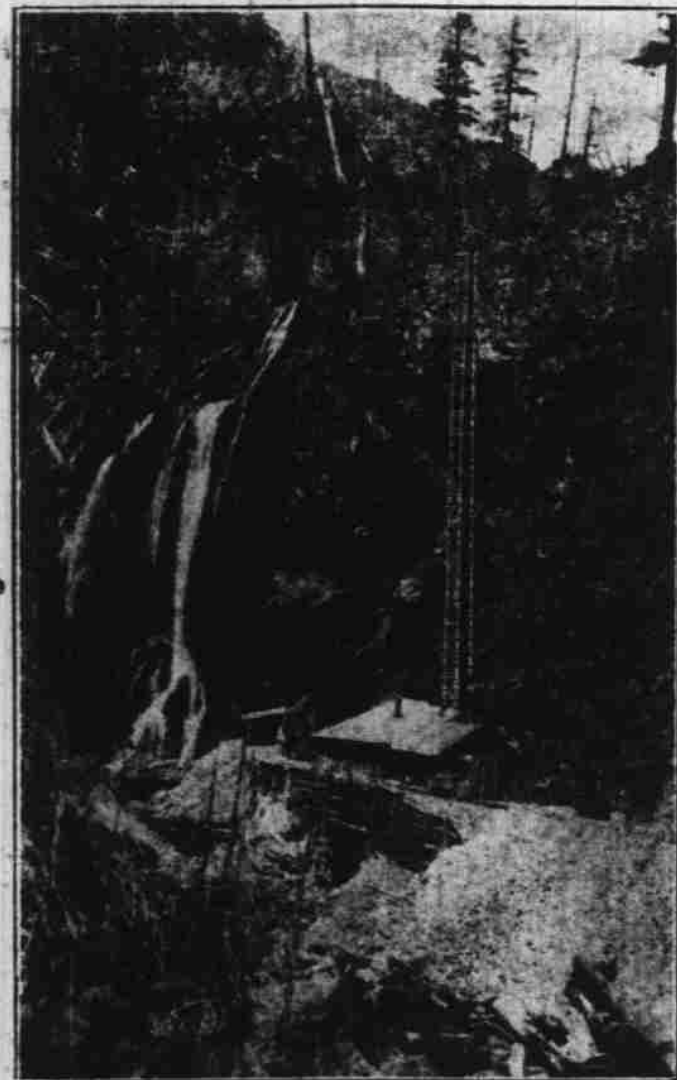
In addition to the power plant, air compressor, machine drills and steel railroad tracks and cars, these mines are equipped with a first class blacksmith and machine shop, and their camp facilities consist of a large and substantial combined cook and bank house, which is well equipped with stoves, ranges, cooking utensils and dining dishes, also beds and quarters sufficient to accommodate a crew of about 15 men. (Photo No. 2 shows camp and cook house.)

You Are Invited

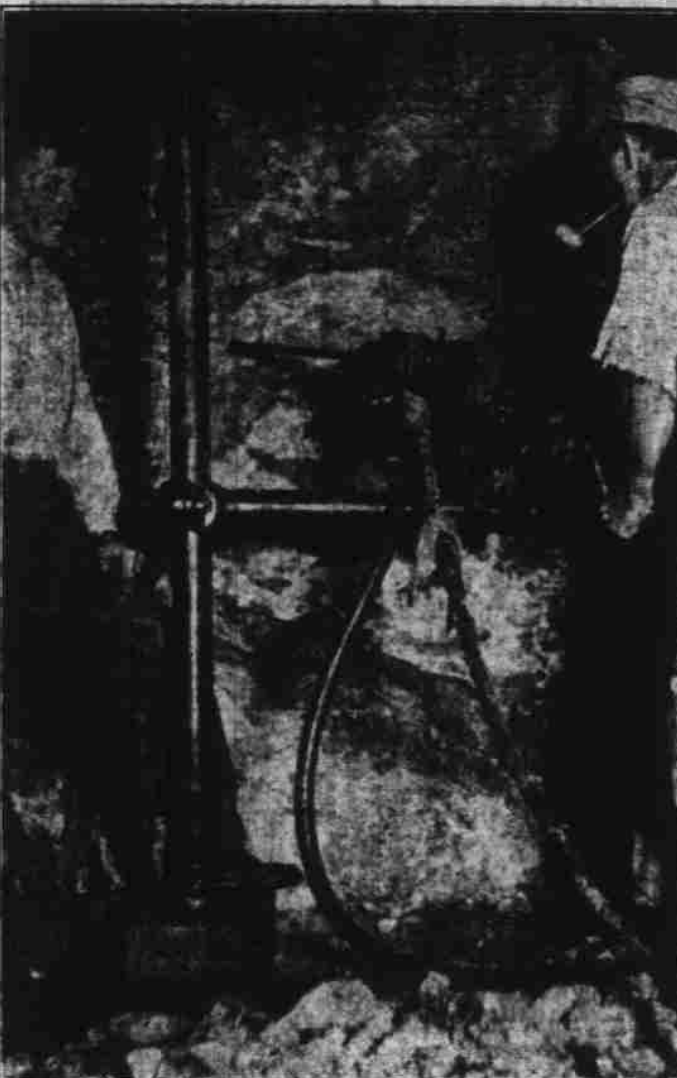
These mines are now easily accessible by automobile and may be reached in a few hours drive from Salem, Oregon, over the paved highway passing through Turner, Sublimity and Stayton, to Mehama, and from Mehama over the Elkhorn road, for a distance of 17 miles along the banks and canons of the Little North Fork of the Santiam, being a total distance of about 45 miles from Salem. This Elkhorn mountain road is now one of the best mountain roads in the state of Oregon, and in some respects the scenic beauty of the drive from Mehama to the mines over this mountain road rivals that of the famous Columbia highway.

The managers of the Silver King property invite the people of Salem and Marion county to drive over and view the scenic beauty of the Elkhorn road and to go and visit and inspect their mines, and see the mineral wealth of their own mountains now in process of development.

The Silver King Mining company is incorporated under the laws of the state of Oregon. Its officers are: President, J. J. Langmack, Portland, Oregon; vice pres-



No. 4. Silver King power plant.



No. 5. Machine drills in face of main tunnel.

ident, E. E. Williams, Albany, Oregon; secretary-treasurer, Wm. S. Risley, Albany, Oregon; and a board of seven directors.

HURRY UP LETTER ON HOP SPRAYING

Oregon Agricultural College Gives Information That Is Very Timely

(C. J. McIntosh, of the department of industrial journalism of the Oregon Agricultural college, sends this note with the special article by Gladys C. Jardine below: "The success of Oregon's hop crop this year depends largely on effective control of aphids—hence it is urgent that the information contained in the enclosed article should be in the hands of the growers immediately. We are hoping it may be possible to publish it this week. Due to the death of the chief entomologist of the experiment station, it was virtually impossible to get this material out sooner.")

By GLADYS C. JARDINE

Hop growers in Oregon lost thousands of dollars in 1923 from ravages of the hop aphid, all because quassia chips were not on

the market, according to information received by Don C. Mote, entomologist of the experiment station.

The customary remedy for the aphid or louse that infests the hop has been for many years—in fact ever since the importation of the roots from Europe—a brew made from steeping quassia chips in boiling water. The bitter liquid so obtained was then used as a spray, and with considerable success. For some reason the supply of quassia chips, which are obtained from a tropical tree grown chiefly in Jamaica, was not sufficient to supply the Oregon hop growers last year.

In the dilemma, many turned to commercial insecticides, and particularly to nicotine sulphate or "black leaf 40," which depend for their efficacy upon actual contact with the louse. For that reason, with varying methods and numbers of application, the results obtained were far from uniform or satisfactory.

While the Oregon experiment station has as yet made no study of hop aphids, the federal department of agriculture conducted experiments with nicotine sulphate and other insecticides on the Pacific coast some years ago. From the results then obtained Mr. Mote suggests that when nicotine sulphate is used the proportion should be one part of nicotine sulphate to 2000 parts of water. Federal experiments also showed effective control with whale oil soap solution in the ratio of 4



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That from many oils becomes hard and flinty. It accumulates rapidly and must be removed every 2000 to 4000 miles. This may require a motor "lay-up" every two or three months.

In addition, the presence of this hard "carbon" even in small quantities is a constant cause of trouble.

It becomes incandescent, pre-igniting the gas and thus causes "knocking."

It lodges under valves and prevents tight seating which dissipates the power.

It attaches to spark plugs, short circuits the spark and causes "missing."

And its flint-like character makes it an abrasive which constantly threatens to score cylinders.

But these "carbon" troubles can be eliminated by a careful selection of your motor oil.

For Aristo Motor Oil deposits an entirely different kind of residue.

It is soft and fluffy, most of it blowing out with the exhaust. It accumulates not more than a quarter as fast as the flinty "carbon."

Being softer than the metals in your motor it can not scratch them. Because it does not lodge under valves, it does not cause power leaks. It rarely fouls spark plugs.

Thus you see why you can have a "carbon"-free motor for thousands of extra miles by merely selecting the right lubricating oil.

Drain your crank case, fill with Aristo, and use it *unmixed* with any other kind of oil.

You save the cost of "carbon" removal, you enjoy the more constant use of your car and you prevent the danger to your motor which always accompanies the hard, flinty, abrasive kind of "carbon."

Try this plan now. And enjoy the freedom from "carbon" troubles which thousands of motorists attest.

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containing paraffin or asphalt or any other non-lubricating substance. Aristo Motor Oil is refined by the most advanced processes designed to eliminate everything in the crude which has no lubricating value.

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pounds of soap to 100 gallons of nicotine sulphate solution, as well as with other more expensive insecticides.

The aphid, almost always present in some numbers, becomes the greatest menace to the hops early in June, especially during a wet season. Managers of hop yards are now preparing spray equipment and materials.

The government crop estimates give the Oregon hop crop in 1923 a value of \$1,440,000 at the rate of 20 cents a pound. Twelve thousand acres are planted to hops in the state, Oregon and California now having virtually a

monopoly of hop growing in the United States.

Hops is the field crop ninth in value in Oregon.

Boys and Girls Club Work Is Shown on Silver Screen

SILVERTON, Ore., May 26.—(Special to The Statesman.)—A group of very enthusiastic boys and girls and a few parents gathered at the Commercial club rooms Thursday night for the purpose of seeing the motion pictures shown by C. M. McAllister, field man of the Union stock yards at

Portland. The pictures were taken out of boys' and girls' club work in Minnesota and were exceptionally interesting, holding the attention of the youngsters throughout the showing. Mr. McAllister was at Silverton under auspices of the Coolidge and McClaine Boys' and Girls' club.

"I suppose you are getting a good fee, doctor, for attending the Smith boy? His father's rich."

"Well, yes, Why?" "Well, I hope you won't forget that my little Sam threw the brick that hit him."



No. 2 Camp at Silver King Mine.

No. 1. View entering district, showing Evans and Henline mountains. Arrow points to location of Silver King Mine.