

W.A. No.

NAME Grasshopper Mountain

SUBJECT Ministry References

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ANNUAL REPORT OF THE MINISTER OF MINES
FOR 1937.

Part D--Special Report by
M.S. Hedley.

Grasshopper Mountain.

Grasshopper mountain extends between the mouths of Bear and Eagle creeks on the north side of Tulameen river. It is a steep-sided and heavily timbered mass with an elongated, rounded summit almost 5,000 feet in elevation. The sides are broken by bluffs and covered by many small areas of talus.

The western half of the mountain is underlain by pyroxenite and peridotite and the eastern part by rocks of the Tulameen series (see Camsell's map, Geological Survey, Canada, Memoir 26). The pyroxenite extends at river-level immediately south as far east as Hines creek, a mile west of which it crosses up over the mountain along a comparatively straight line. The Tulameen series has a regional strike a little west of north, and steep dips, but with local variations; it is composed predominantly of andesitic rocks, both greenstone and porphyry, intercalated with which is a minor amount of argillite and limestone.

Quartz veins were found on the southern side many years ago, and recently on the northern and north-eastern slopes. The veins are all in the rocks of the Tulameen series and attain widths as great as 8 feet. They are characteristically composed of white, semi-vitreous to vitreous quartz containing spots and patches of an iron-bearing carbonate, and are mineralized with pyrite and

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chalcopyrite that occur in many instances as small blebs or rounded granular aggregates; in addition, small amounts of galena, sphalerite, hematite, petzite and free gold have locally been observed.

NE-15
ACE
group

Hamilton Brothers: Hamilton brothers and associates of Tulameen own five claims on the north slope of Grasshopper mountain, between the summit and the small creek tributary to Bear creek. The ground can be reached by car over the Murphy Lakes logging road which leaves the Tulameen River road $5\frac{1}{2}$ miles from Tulameen, and is 4 miles in length to the old logging camp in the small valley, elevation 3,875 feet.

The ground lies just east of the pyroxenite contact. The rocks are poorly exposed and badly weathered, and on the claims are strongly altered. They appear to be predominantly sediments, although including igneous material; considerable serpentine and limy rock is seen besides schistose sediments, and quartz porphyry is seen east of the main showings. The wall-rock of the mineral deposits is predominantly serpentine. The mineral deposits are narrow quartz veins which strike north 20 to 35 degrees west, parallel to the pyroxenite contact, and dip steeply westward. The quartz is vitreous and contains considerable rusty-weathering carbonate and also local pockets of talc; a bright-green chlorite is sometimes seen in the walls.

The quartz occurs as fissure-fillings, with locally a little replacement of the walls, although stripping has not been well enough done to make this latter point clear. The metallic content is everywhere low and in many sections very little is to be seen. The principal mineral is pyrite, besides which are chalcopyrite and rarely hematite, the silver-bearing telluride petzite, and free gold; some pyrite, pyrrhotite and chalcopyrite are locally present in the wall-rocks.

There are five nearly parallel veins in an interval of 200 feet. An open-cut, 195 feet in length, which extends between the outermost veins, cuts No. 2 85 feet from the easternmost end, crosses the line of No. 3 at 105 feet, that of No. 4 at 160 feet and ends on No. 5 at 195 feet. No. 1 vein is 16 to 30 inches wide in this open-cut and is up to 40 inches wide in cuts to north and south. No. 2 vein is up to 3 feet wide at the main open-cut, and 8 to 10 inches wide 30 feet to the south. No. 3 vein is not seen in the main open-cut, but is stripped a short distance to the south and is 12 to 24 inches wide 20 feet to the north, where it apparently terminates. No. 5 vein is 16 inches wide, and is seen as a 2- to 3-foot zone of bleaching and irregular quartz 35 feet to the north. Stripping and open-cutting has been done at odd intervals over a vertical range of 300 feet northerly down the 30-degree hillside;

similar quartz has been uncovered in many places, but not at sufficiently close intervals to prove continuity on all or any of the veins.

No. 4 vein has been stripped continuously for 45 feet, which stripping ends 25 feet south of the main open-cut; the vein is again seen 30 to 60 feet north of the main open-cut. In the principal stripping No. 4 vein is 16 to 54 inches wide, pinching out to the north and fading into a 4-foot zone of alteration at the south end. Petzite and free gold have been found in stringer a few inches wide near the center of the stripping. Some mineralization for several feet in the east wall contains a little sulphide and a very little quartz. Stripping farther to the south shows some mineralization, but not definitely the continuation of this vein-zone.

Six samples were taken of average-looking material; four of these were from No. 4 vein-zone and including one sample of selected sulphides from the dump of No. 4 stripping. Each of these samples returned a trace in gold. No attempt was made, however, to include material containing telluride or free gold, and it is likely that most of the values are contained in either or both of these forms. A shaft has since been sunk on the best section of No. 4 vein-zone.

NE-67 Marcotte: Louis Marcotte, Al. Price and N. Macdonald own two claims on the crest and high southern slope of the mountain, immediately south of Hamilton ground. A quartz vein 100 feet east of a band of peridotite is, at an elevation of 4,520 feet traced by numerous open-cuts for a distance of 125 feet. The vein strikes north 20 degrees west and dips steeply; the wall-rock is hornblende-schist. A maximum width of 7 feet is seen, including 2 feet of mixed rock and quartz, and apparently the vein pinches out to the north; the average width appears to be close to 3 feet. Mineralization is not heavy and consists of chalcopyrite, pyrite and hematite. Some 300 feet to the west a 5-foot vein of barren-looking quartz is exposed, strike north 40 degrees west, in calcareous schists a short distance east of the main pyroxenite contact.

NE-1#68,69 Rabbitt Brothers: Rabbitt brothers hold eight claims on Grasshopper Mountain, and they and associates also own the ^{L.79 NE-68} Nevada and ^{L.72 NE-69} Bonanza Queen Crown-granted claims. The Crown-granted claims are on the south side of the mountain east of the pyroxenite, and the located claims extend north and east across the eastern spur of the mountain and down to Bear Creek.

A trail leaves the Murphy Lakes logging road nearly a mile from the river and traverses the southern

slope of the mountain, at an easy grade, a distance of two miles to a cabin at an elevation of 4,330 feet. An old, steep trail from the Tulameen River road to the Bonanza Queen is now largely overgrown.

The quartz veins are commonly clean-cut fissure-fillings but tend also to be irregular and in a few instances form part of shear- and breccia-zones. The quartz is semi-vitreous to glassy and crystalline, and sulphide mineralization is in no instance heavy. The veins occur at a number of scattered localities.

NE-14

On the steep north-east slope of the mountain, about 600 feet from the logging road, at an elevation of about 4,200 feet are 3 cuts on a quartz-vein with a strike of north 55 degrees east and with steep dip. This vein, between greenstone walls, is irregular, and varies in width from a few inches to 5 feet, averaging more nearly the greater width. Chalcopyrite, a little pyrite and a trace of galena, all in scattered grains, make up a very low percentage of the vein matter. A sample chipped across 60 inches in the lower cut returned: Gold, 0.10 oz. per ton. A sample of selected sulphide (10 per cent. of sample) returned: Gold, 0.70 oz. per ton; silver, 0.4 oz. per ton; copper, 0.3 per cent.

On the Tulameen Treasure, south of the summit, at an elevation of about 4,900 feet is a 12-foot pit on

a quartz vein $4\frac{1}{2}$ feet wide, strike north 60 degrees east, dip steeply to the south-east. The crushed, semi-vitreous quartz contains small inclusions and carbonate masses, and is speckled finely with sulphides, chiefly pyrite. A sample chipped across 54 inches in the bottom of the pit returned nil in gold. On the Lindy, to the east and south at an elevation of 4,580 feet, are two open-cuts on quartz in schistose sediments; in one, irregular quartz to a maximum width of 24 inches has a general strike of north 35 degrees east and a dip of 40 degrees south-east; in the other, 20 feet distant, up to 24 inches of more solid quartz strikes north 10 degrees west and dips 40 degrees east. On the Crescent, above the cabin, elevation 4,830 feet, is an open-cut on a vein zone 4 feet wide containing glassy quartz, strike north 5 degrees west, dip vertical. Five hundred feet easterly from the camp at the same elevation, is a zone of shearing 7 feet wide, containing 18 inches to $4\frac{1}{2}$ feet of quartz, strike north 50 degrees west, dip vertical. On the Tulameen King on the edge of the bluffs near the cabin, elevation 4,180 feet, is a narrow, steep zone striking north 30 degrees east and containing 3 to 10 inches of quartz; a sample across 14 inches returned; Gold, nil. There are a few more generally similar occurrences of quartz on the property, in the upper section just described.

NE-68

On the Nevada on the west side of a small creek,

elevation 3,950 feet, is 6 to 30 inches of quartz, strike north 20 degrees east, dip 70 degrees south-easterly. The quartz is semi-vitreous and splintery, mineralized with chalcopyrite and pyrite. A sample of poorly mineralized quartz returned trace in gold, and one of selected sulphide returned: Gold, 0.04 oz. per ton; silver, trace; copper, 0.3 per cent. About 750 feet down the slope from this,

NE-69

on the Bonanza Queen, elevation 3,550 feet, is a quartz vein (perhaps the same) exposed for 100 feet in length and 10 to 42 inches wide, consisting mostly of vitreous and semi-crystalline white quartz; the strike is north 20 degrees east and the dip 70 degrees south-east. Only about 10 per cent. of the quartz contains sulphides, which are locally quite heavy. An adit, elevation 3,500 feet, is driven for 60 feet on the vein at the lower limit of exposure; the vein, between soft greenstone walls, is nearly vertical and averages 3 feet or less wide. Scattered sulphides are not heavy. A grab sample of fines from the dump returned: Gold, nil; silver, nil. Samples of selected material from this vein are said to return occasional high assays.

On the Famous, elevation 3,150 feet, some 600 feet south-east of the above adit are two cuts in greenstone containing stringers of quartz, strike north 20 degrees east, dip 50 degrees south-easterly. This is a shattered and sheared zone, and mineralization includes

chalcopyrite and galena. A sample of selected material returned: Gold, 0.04 Oz. per ton; silver, 1.0 oz. per ton; copper, 0.6 per cent.; lead, trace. On the road, west of the mouth of Hines creek and near the same small creek that heads near the cabin, is a vertical quartz vein about 2 feet wide which continues down to river-level.

NE-13

SUNRISE
group

Max Hanson: Four claims are held by Max Hanson and one by Lundquist, both of Tulameen. They are on the southern slope of Grasshopper mountain east of the Nevada and Bonanza Queen and south of the upper claims in the Rabbitt Group. From a cabin below the road, a short distance west of the mouth of Hines creek, a narrow trail leads straight up the hillside to the lower showings. The occurrences are in no important respect different from others just described.

At an elevation of 3,350 feet an open-cut in grey argillite discloses a quartz-vein, strike north 10 degrees west, dip 60 degrees west. The vein is 5 to 18 inches wide and contains some inclusions of wall-rock and patches of carbonate; it is mineralized sparingly with pyrite, chalcopyrite, a little galena, sphalerite and free gold. High values have been reported from this open-cut, and a small shipment was made in 1937. A sample 8 feet above the bottom, across 17 inches, returned: Gold, 0.04

oz. per ton; silver, trace. A sample 4 feet above the bottom, across 5 inches returned; Gold, 0.93 oz. per ton; silver, trace. A sample near the bottom, across 10 inches returned: Gold, 0.10 oz. per ton; silver, trace. This vein intersects with a 5-foot vein, strike north 60 degrees east, dip 80 degrees north-west, which may be traced for 150 feet south-west into greenstone wall-rock. This latter vein has not been opened up.

A second open-cut on the first vein, 70 feet above, discloses a 5-foot width of quartz, including 25 per cent. of wall-rock, which appears to parallel the sedimentary structure. A sample across the full width returned a trace in gold. On the same vein, an additional 200 feet higher, are two small cuts and one or two natural exposures. The topmost open-cut, elevation 3,550 feet, shows a vein-zone 3 to 5 feet wide containing irregular quartz with very little mineral. The dip is here 30 to 40 degrees to the west.

From this last point about 700 feet north-west, elevation 3,700 feet, is an open-cut on an 8-foot width of quartz, strike north 65 degrees west dip 60 degrees northeasterly. The quartz contains local patches of carbonates and a few inclusions of greenstone wall-rock; much of the quartz is glassy and the sulphide content is low. Uphill from this point, elevation 4,025 feet, is an

open-cut on a 6- to 8-foot zone of quartz in schist, strike north 70 degrees west, dip 70 degrees southerly. This shear-zone, in greenstone, may be 15 to 20 feet wide, but is poorly exposed. A sample of selected material (5 to 10 per cent. sulphide) returned: Gold, trace; silver, trace; copper, 0.28 per cent. Down hill and west from this last point, 600 to 700 feet from the Nevada line, elevation 3,720 feet, is a 15-foot open-cut on a vein which strikes north 25 degrees east and dips 50 degrees north-west. Glassy quartz 2 feet wide in greenstone contains chiefly chalcopyrite in small quantities. A sample across 23 inches of rather barren quartz returned: Gold, trace, and a sample of selected material returned: Gold, trace; silver, 0.4 oz. per ton; copper, 3.5 per cent. Hanson optioned his ground late in the summer.