

quartz better mineralized than the average assayed: Gold, *nil*; silver, *nil*; copper, *nil*. A sample across a 10-inch quartz offshoot assayed: Gold, *nil*. A crosscut adit driven 40 feet into the hill 35 feet below the outcrop would have to be advanced 40 to 50 feet to cut the downward extension of the quartz if it maintains the dip observed at the surface. A little free gold was noted on a manganese-stained fragment from an aplite dyke which outcrops 100 feet south-east from the cut. A cabin has been built about 600 feet north-westerly from the adit at an elevation of about 4,300 feet.

Approximately half a mile southerly from the adit on the southerly side of a small creek, at 3,825 feet elevation, a cut exposes an aplite dyke 2 to 2½ feet wide which has been fractured and filled with quartz, some pyrite, galena, and arsenopyrite. The dyke strikes south 35 degrees west and dips 35 degrees to the south-east. The hanging-wall is argillite or argillaceous tuff. Twenty feet to the west is a dyke of aplitic granite about 12 feet wide. In the cut a sample across 3 inches at the hanging-wall, consisting of quartz, argillite, and a little sulphide, assayed: Gold, *nil*; silver, *nil*. A 15-inch width on the foot-wall, consisting of aplite containing quartz stringers with some sulphides, assayed: Gold, *nil*; silver, *nil*.

About 450 feet south-easterly of this cut on the north side of a small creek an outcrop of granite lies in contact with greenstone. A shear cutting the granite is seen on the southerly side of the creek. At elevation 3,700 feet an old adit has been driven for 225 feet in a general northerly direction. For the first 90 feet from the portal this adit follows the shear to its contact with the granite on the east and greenstone on the west, and then along the contact for 65 feet and narrow joints in the greenstone for 70 feet to the face. At the portal there is a little quartz, but farther in there is practically no quartz nor other vein-mineralization. Some mineralized greenstone and quartz was seen on the dump, though none could be found underground.

SLOCAN AREA.

The *Little Daisy* group consists of four Crown-granted claims—namely, *Little Daisy*, *Golden*, *Golden Fraction*, and *Idler*—owned by Mrs. McNaught, of Silverton, but under lease to R. A. Grimes, of Nelson, and under sub-lease to A. Erickson, of Silverton. The workings and cabin are on the north-east side of Aylwin creek at elevations between 3,900 and 4,000 feet. The property may be reached from Silverton via automobile-road for 5½ miles and then via 1 mile of pack-horse trail up the north-east side of Aylwin creek. It is situated on a steep side-hill rising from the valley of the creek and the workings are between 300 and 420 feet above the creek. In the narrow valley-bottom there is considerable red cedar that is suitable for shakes, but farther up the hillside in the vicinity of the adits and above, where the slopes are steep and rock bluffs numerous, the timber is chiefly small fir and spruce.

The rock in the immediate vicinity of the workings is fine-grained granite. It occurs in the form of a "Y"-shaped mass 2 miles long and about a quarter of a mile wide (see Geological Survey of Canada Slocan Sheet). This granite is much finer in grain than the typical granite of the Nelson batholith and Cairnes believes it is younger. In places the granite is finely porphyritic and in other places where fractured and slightly oxidized it has a brownish colour.

The main feature of the property is a tight fissure-vein of quartz in the granite. By means of three adits this vein has been explored for an aggregate length of 230 feet along its strike. The width of the vein varies from 2 to 6 inches, but it frequently splits into two or three branches, which individually vary in width from 1 to 2 inches. The vein-filling is quartz containing minor amounts of pyrite, with occasional grains of chalcopyrite and pyrrhotite.

There are several small faults. These are chiefly cross-faults, most of which displace the vein only slightly; the maximum measured displacement is 18 inches. However, a major fault in No. 2 adit displaces the vein an unknown amount greater than this. The evidence indicates that the movement has been at least 12 feet in the plane of the fault. Gouge and crushed rock are present in varying amounts adjacent to the fault-planes.

The mine-workings comprise three adits on the *Little Daisy* claim. The upper (or No. 1) adit is 100 feet long and has been driven at north 60 degrees east on the vein for the full length. The vein is tight and varies in width from 2 to 6 inches, the average being 3 inches. A sample taken across 6 inches of quartz in the face assayed: Gold, 0.02 oz. per ton; silver, trace.

* Report by J. S. Stevenson.

The middle (or No. 2) adit is 70 feet below No. 1 and is distant 100 feet horizontally in a direction of south 50 degrees west. The adit follows the vein for 75 feet from the portal to a point where cross-faulting has developed considerable gouge and crushed rock, so that the back of the adit is badly caved and examination impossible. Thirty-five feet from the portal a winze has been sunk at 72 degrees from the horizontal on the vein for 31 feet. There is some 20 feet of lateral stoping on the vein from the winze for 15 feet from the floor of the adit. A sample taken along the vein from 37 feet to the caved part, a distance of 46 feet, assayed: Gold, 0.50 oz. per ton; silver, 0.1 oz. per ton; the width of the vein varying from 3 to 6 inches. Three samples were taken at the bottom of the winze (as of July 8th, 1935). Here the vein is 4 inches wide and contains a small amount of pyrite; the wall-rock, however, carries considerable pyrite, disseminated and in small seams. A 4-inch sample across the quartz vein assayed: Gold, trace; silver, trace. A 3-inch sample of the foot-wall rock, immediately adjacent to the veins, assayed: Gold, 0.54 oz. per ton; silver, 0.1 oz. per ton; this material containing much disseminated pyrite. A sample along a ½-inch pyrite-streak contained in a 1-inch quartz veinlet assayed: Gold, 1.20 oz. per ton; silver, 0.10 oz. per ton. Fifteen feet down the winze in the bottom of a small, underhand stope a sample across the quartz vein, which was here 2 inches wide and contained a small amount of pyrite, assayed: Gold, 0.04 oz. per ton; silver, trace.

No. 3 adit is 50 feet below No. 2 adit and 90 feet horizontally in a direction of south 60 degrees west from it. It has been driven east for 55 feet and then at north 60 degrees east for 60 feet, after which a short crosscut was driven at south 45 degrees east for 20 feet to the face. The face is about 20 feet in the direction of the strike of the vein beyond the portal of No. 2 adit. The drift is along the vein from 55 to 115 feet from the portal. In this section it consists of one and sometimes three tight stringers of quartz which vary from 1 to 3 inches in width.

The wall-rocks in all the adits are variations of the fine-grained granite as described previously.

At the time of examination A. Erickson and his son were hand-mining in the lower adits.

ROSSLAND CAMP.*

O.K. Mountain Area.

The properties on O.K. mountain are about 2½ miles south-west from Rossland on the easterly slope of the mountain, and they extend up the hillside from the valley of Little Sheep creek at an altitude of 3,040 feet to the highest adit at an altitude of 3,610 feet. A good motor-road branches south-westward from the Cascade highway about 1 mile west of the city of Rossland and leads directly to the properties. In the vicinity of the various adits the slopes are covered by a heavy growth of underbrush and a scattering of evergreens, the densest growth being in the valley-bottom.

The writer examined only those properties on which most work has been done and which were being operated by lessees at the time. These included the *I.X.L.*, *O.K.*, and *Midnight* properties. Lessees had just commenced work on the *Golden Drip* at the time and were busy dewatering the workings; only a brief examination of this property was made.

From the time the claims were located in the early nineties most of the work on these properties has been done by lessees, who have followed the faulted sections of the veins and stoped the high-grade lenses of gold-quartz ore.

Milling on the properties has been attempted twice. In 1894 a 5-stamp mill was erected on the *O.K.*, but it did not operate for long; recently, in 1932, a mill to treat 8 tons in twenty-four hours was installed on the *Midnight* property; however, tests were not satisfactory and the mill is at present temporarily in disuse.

Work on these properties has been fairly active since 1920, and recent descriptions of the operations may be found in most of the Annual Reports since then, the more recent description being in the Annual Report for 1932. Memoir No. 77, "Geology and Ore Deposits of Rossland," 1915, by C. W. Drysdale, of the Geological Survey of Canada, includes a short description of the *I.X.L.* and *O.K.* properties.

* Report on this area by J. S. Stevenson.