BEATTY DISTRICT

Crowell Fluorite Mine.

Few people know that Nevada supplies most of the fluorite consumed on the Pacific Coast. It comes from the Crowell mine, 4½ miles east from Beatty. During 1930 about 1400 tons of fluorite was shipped to Los Angeles and Sacramento. This year to date but 350 tons have been called for, due to a general falling off in western steel manufacture. It is required that the ore contain 85% or more calcium fluoride, and not more than 5% of silica. It sells for $14. per ton on the cars at Beatty. The freight rate to Los Angeles is $4.50 per ton.

The ore occurs as a replacement in limestone, in general in a vein with NE strike, 70° dip to SW. Within the vein are numerous large replacement chambers of fluorite, irregular in design, and sometimes containing inclusions of silica and kaolin, which is sorted out as closely as possible. It is uniformly of purple and lavender color, and of granular crystalline structure, and in place in the mine appears like a loosely consolidated, dark colored grit or sandstone. This mode of occurrence is strikingly different from the usual translucent quartz - or calcite - like deposit. We cut 2 samples of the ore in place on the 169' level of the mine. One, "high grade", across 3½ feet returned an analysis as follows:

CaF_2 83.1% $CaCO_3$ trace, SiO_2 1.06%

A sample across 6' of lower grade fluorspar ran:

CaF_2 74.0% $CaCO_3$ trace, SiO_2 8.2% Ignition Loss 4.2%

The deposit is mined through an incline shaft on the vein, 220' deep; 1st level at 80', an intermediate level at 100', 2nd level at 160', below which is a 60' winze. On the first level the ore is from 6 to 15 feet wide between walls. On the second level a drive in the hanging wall opened up wide bodies of ore.

For large tonnages, cheaply developed, mined, and loaded on cars, this is an exceptional fluorite mine. The drawbacks are: first, the softness of the ore and the tendency to break into fines, and second the difficulty of reaching a 90% grade on account of intermixed limestone and clay. This second difficulty is being met by mining, at no profit, two narrow veins in the district having solid bands of hard pure fluorite in sufficient quantity to bring carload shipments up to required grades by mixing.

Silver King Group.

On May 28 we also examined the gold prospect owned by Ex-Gov. James Scrugham, of Reno, John Harper and George Greenwood of Beatty. It is located S. 30° E about 4½ miles from Beatty, in the Bare Mountain. The general formation consists of stratified Paleozoic limestones, schists and quartzites. High up on the mountain several small quartz veins cross the sedimentaries with a general N 60° E strike, and dip steeply to the NW. On one of these a tunnel has been driven 102 feet in four short courses. The vein averages about 18" in width, and is cut off near the end of the adit by a vertical fault having a strike of N 50° E. The formation is mica schist, conformably overlaid by limestone at a higher elevation. A sample was taken from a small pile of ore at the mount of the main tunnel, for which the State Laboratory gave returns of:

Gold		Silver
.67 ozs. per ton	22.	0.6 ozs. per ton.

Seventy-five feet or so higher up on the mountain slope, on a vein similar in structure, strike and dip, a flat incline has been driven in about 35 feet. The vein is from 6" to 10" wide, and pans gold freely. Some 35' southeast of it is a similar vein 14" wide, and 55' from the incline is a third parallel vein, showing vein structure 4' wide, of which 16" is quartz. The area is blocked by two sets of faulting, which might soon discourage the prospector. The faulting may not prevent a logical exploration of these veins, for the displacement is not great. This is indicated by the overlying limestone strata, and in another case, by a 2' throw photographed over the mouth of the incline tunnel. The presence of substantial gold value in these small veins is sufficient reason for giving them consideration.

BEATTY

Kyanite

Harper's Cyanite.

In the Funeral Range of mountains about 18 miles south of Beatty is located a large deposit of sillaminite schist. It is at least 100 feet wide and 3,000 feet long, and is conformably bedded with limestone and quartzite of Paleozoic age. The schist has a peculiar criss-cross surface pattern as it is partly composed of short black, rod-like crystals of sillamanite. The bed has a strike of N 75° W and dips 40° SW. At several places within the schist belt are magmatic segregations of white quartz and blue-green crystalline-cyanite, which have been opened up by shallow surface cuts and pits. The largest opening, 12' long and 6' deep, exposes a limited amount of crystalline

cyanite in much quartz. Mining of the deposit for the cyanite does not offer much hope of reward, because of the remote location, and low percentage of cyanite content.

There is a possibility that at some future time the schist might be beneficiated for the sillimanite it contains, but present conditions, absence of water, etc., do not encourage additional experimentation in that direction at present. Our Mining Laboratory reports that after many tests their conclusion is that the sillimanite apparently contains too much included magnetite.

Panama Nevada Mines Co.

This property was first known as the "Diamond Queen" and later as the "Golden Ace". The latter name may cause it to be confused with the "Gold Ace" which is another property some miles westerly in the same district, under different ownership.

The Diamond Queen Mine is located on the east flank of Bare Mountain, and on the west side of Crater Flat at an elevation of about 4500 feet. By road it is 10 miles easterly from Carrara on the Beatty-Las Vegas highway.

The general formation is limestone of Paleozoic age, dipping at a steep angle. Along the east flank of Bare Mountain is a prominent rhyolite dike with a northwesterly strike which cuts across the sedimentaries and is near the vein. The vein lies roughly parallel to the dyke, and is in the limestone, close to the footwall. It dips 70° east, and is from 2 to 6 feet wide. It is in the nature of a fissure, open in places, but mostly filled with quartz, calcite and iron oxides. The ore is principally calcite, containing some iron oxide. A peculiar, chocolate

colored oxide is often rich, yet some of oxides, usually darker in color, are barren. Values are also found in smaller fissures in the limestone which occur in the footwall at right angles to the main vein. These contain the same character of ore.

On the surface are open cuts from which ore was shipped in 1907-10. A shaft, equipped with a good light hoist and headframe, goes down 200 feet, with a level at the 100. Later on a tunnel was driven in lower down to connect with the shaft at 200 feet in depth. As the mountain is very steep, one questions why the preliminary development was not entirely through a tunnel to the vein, instead of by a shaft.

The ore is a clean gold-silver product, containing no copper, lead or zinc, and no sulphides. On the dump is a large tonnage of calcite ore, some of which may be of milling grade, or may be raised to that grade by sorting and screening. A number of carloads have been shipped. Supt. Sol Camp said much ore had been developed on the 100-foot level in a shoot raking to the south from the surface. On the 200 foot level but little ore is exposed, and it is thought by Mr. Camp that the ore-shoot curves to the north below this level, in consequence of which work had been pushed at the wrong point.

Mr. Camp says that much ore of milling grade can be mined by following the fractures or smaller veins, but the values and widths vary so much that estimates are impossible.

Mr. Camp stated that the Panama Mine, owned by the Panama Nevada Mines Co., and located 3 miles south of the Diamond Queen, is in quartzite, vein 8 to 10 feet wide, values uniformly $8.50 per ton in fine gold. Limited schedule time prevented a visit to this mine, which may have very attractive possibilities. The greatest problem confronting this company is a lack of water. A 60' well on Crater Flat to the

east found no water, but deep drilling has not yet been tried. The topography of the valley is not unfavorable for water. The present plan is to truck the ores to Carrara, 10 miles, for water and power, and construct a mill there. The mining company claims to have a lease on the Carrara property and power plant, but as yet is said not to be sufficiently financed to rapidly push the work.

On May 29, after the trip out to the cyanite deposit, and return to Beatty, a trip was made to see a deposit of silica and alunite immediately east of Hot Springs, about five miles north of Beatty. An area of 3 or 4 square miles of mountainous land adjacent to and east of the Amargosa Valley is composed of Tertiary volcanic rocks, brecciated, which have been altered by hydrothermal action. At one point is a shaft 40' deep, entirely in pure white material, of which 80% has the appearance of flour, and 20% consists of lumps of chert, a dense, hard silica.

Just west of the shaft is an open cut, long, deep, likewise entirely in pure white altered volcanic breccia. There are a few other smaller openings that expose the same material.

In the spring of 1931, this deposit, which is covered by mining locations of Mrs. Sutton of Beatty, was said to have been examined by Mr. S. H. Wade, representing the Alunite Sales Co., Box 114, Beverly Hills Calif., who reported it as having an alunite content that yielded 4% potash, too low grade for his company, which requires 6% or more. Samples were taken by us for potash analysis, which we are informed the State Laboratory is not yet properly equipped to make.

It is said that the American Alunite Co. which is now shipping alunite from Sulphur, Humboldt Co., Nevada, has the alunite fine-ground to 200 mesh at Berkeley, Calif., and sells it as a fertilizer.

As such potash is not water-soluble, a question arises as to the amount absorbed by the soil, and by plants, but this company claims to demonstrate remarkable results.

With the coming of cheap electrical power from Boulder Dam, deposits such as this derive new importance, or new interest. If the percentage of alunite is large enough, it might be possible to first extract the potash, and then smelt the residue for aluminum by the electrolytic process.

At night, on this date, we drove from Beatty south to Las Vegas, where we spent two days in interviews and arranging immediate and future examination trips.

SEARCHLIGHT DISTRICT

The afternoon of June 1st found us at Searchlight. The camp is a scene of renewed activity, due to the Searchlight Gold Corporation, which took over the well-known Duplex Mine on July 31, 1930. The officers of the new company, which is incorporated in Delaware, are Albert H. MacCarthy, President, Dr. Wilton McCarthy, Treasurer, W. J. Loring, V. President and General Manager, and Roy A. Lennon, Secretary.

The mine is now producing 600 tons per month which is milled at the company's own plant. The ore is largely brecciated quartz containing gold, silver, lead and copper. It is much oxidized, and 80% of the value is in gold, the remaining value being divided between the other metals.

The mill consists of a ball-mill, operating in closed circuit with a Don classifier & flotation unit. The mine had been worked for many years by former owners and subsequently by leasers. Much "dead" work has been necessary to put it in shape for steady production, yet