

During a recent trip to the Yerington District, primarily for the purpose of inspecting the newer non-metallic mining developments there, visits were made to the gold placer prospects of J. S. Adams and Jefferson Rice in the Singatse range on the west side of Mason Valley, and also to the Guild-Bovard property north of Smith Valley.

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The Adams-Rice property is located in a small unnamed dry canyon between Mason Pass and Gallagher Pass, easily accessible over dirt road from Yerington, 8 miles distant. The Guild-Bovard prospect is on an alluvial fan sloping southerly to Smith Valley, and about 2 miles east of the old mining camp of Buckskin. Both of these prospects were discovered last May, a result of renewed prospecting following the discovery of the Hughes placer in low hills north of Smith Valley. News of the Hughes placer and its mode of occurrence had been published by the Nevada State Bureau of Mines, stimulating a search for more placer gold in the gullies of the Singatse Range.

The canyon in which the Adams-Rice placer occurs is about 3 miles long and runs northeasterly into Mason Valley, debouching at a point almost west of Mason Buttes, which are low landmark hills upon the valley floor. The owners have sunk 14 prospect holes along a length of 2 miles. Three are shafts 20 feet deep, others are only 5 or 6 feet; the average is about 15 feet. The gravel is small and angular and sufficiently coherent to stand well without timbering, so well in fact that all the ground can be sampled with economy by means of pits. All of the present pits extend down to the bedrock.

Messrs. Adams and Rice have been working on their property throughout the summer and fall, and are working there this winter, as the weather permits. They have sunk a well 25 feet deep to water on the edge of the valley a mile east of the mouth of the canyon. A small gasoline engine and pump delivers the water to a storage tank, from which it is drawn as required to supply a hand rocker, which is used to wash small lots of gravel extracted in prospecting.

The gold is rough and angular, much of it is in finely divided flakes. This gold undoubtedly originated from the erosion of a system of gold-bearing veins lying adjacent to the canyon. Gold-bearing veins exist in the Tertiary volcanic rocks on the southwest side of the canyon, and probably also in the basal Triassic rocks on the northeast side. The greater portion of these veins have been removed by erosion and the gold accumulated in the canyon below. The Sweepstakes mine, a small gold-quartz property, lies in the canyon at the head of the placer deposit, and has produced at least one ore-shoot which Adams says netted about \$1500. Less than a mile southwest of this is the well known May Adams gold mine, which has a very creditable record of production and supplied a 10-ton Gibson amalgamating mill with ore at intervals for several years. The May Adams is located near the top of a southwest slope, from which the present drainage is south and away from the canyon under consideration. However, it is quite near the summit of the range, and before the long periods of Tertiary and Quaternary erosion altered the topography extensively, it is probable that the land containing the May Adams vein sloped toward the Adams-Rice canyon, and the eroded gold was carried into it. The Ironsides copper mine is on the north side of the canyon, and was worked for copper in 1906 and 1907. The erosion



of this vein may have contributed gold, as well as several other small copper and gold prospects in the immediate vicinity.

The Adams-Rice placer exhibits very little gold of definite or characteristic washed gravel origin, which is not the case with the Hughes placer located a few miles westerly, and north of Smith Valley. In the Hughes gravel and clay the presence of rounded gold prompted a search for stream beds of washed gravel as the origin. Masses of washed fluvial conglomerate were found nearby, resting unconformably on the oldest Triassic rocks. These probably contained a very little gold, which underwent additional concentration by streams of Tertiary age. An appreciable amount of such gold may have found its way into the Hughes placer, but no water washed gold has been definitely determined in the gold from the Adams-Rice placer, although a quantity of washed gravel lies adjacent to the canyon, and on both sides of it in one place. Larger masses of the fluvial conglomerate lie 500 feet above the head of the canyon, and outcrop along the south slopes, descending nearly to the level of Mason Valley. The washed gravel composing the conglomerate consists almost entirely of dark-colored basic rocks. Most of these pebbles and smooth boulders are undoubtedly of Triassic andesite, one of the oldest rocks of the district. There is a total absence of quartz pebbles, but a few quartzite pebbles are present. Presumably the quartzite belongs to the Triassic series. This formation has been described by Knopf(1). It is not considered gold bearing, but it is probable that large masses of it worked over by the ancient streams resulted in local concentrations of gold. It is difficult to account for the presence of rounded gold in the Singatse Range otherwise.

Speculation as to the value of the auriferous gravel and its quantity, in the absence of thorough sampling and measuring is idle. In the Adams-Rice ravine the bed is flat and the gravels are comparatively shallow. The canyon alone may contain from 500,000 to 1,000,000 yards of gravel, the value of which is wholly a matter of conjecture at present. In sampling it may be found that the upper layers of gravel are poor, but there may be a sufficient concentration near the bedrock to repay working the whole. It is worthy of careful sampling, and in addition, the long alluvial slope at the mouth of the canyon, extending down to the valley, should also be explored by a series of shafts. This alluvial fan, or delta, may contain commercial gold bearing gravels of much greater importance than the canyon. As yet no prospect hole has been dug upon it.

A favorable feature of all the placer prospects in the district is an absence of large boulders in the gravel. Probably the use of a power shovel, trommel and sluice boxes would be sufficient for proper mining in the canyon and in shallow delta gravel. Water can be pumped from wells in Mason Valley one mile south of the canyon, or be conveyed to the same point from the Walker River by gravity. The elevation of the upper end of the canyon is about 600 feet above the valley according to the topographic sheet of the U.S. Geol. Survey. The electric power line of the Sierra Pacific Power Co. is less than 2 miles from the mouth of the canyon, so pumping costs should be low.

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(1). Knopf, Adolph. Geology and Ore Deposits of the Yerington District, Nevada; U.S. Geol. Survey, Professional Paper 114, 1918, pp.67



The Guild-Bovard placer lies on a gentle slope looking south toward Smith Valley. It was discovered by Frank Bovard of Yerington. Fourteen claims have been located along the smooth slope, the owners of which are Judge Clark Guild, Frank Bovard, Louis Pittwood and Ralph Hall. Four shafts have been put down to bedrock at an average depth of 20 feet, and there are also many shallow assessment holes.

The gravel is composed of rough and angular fragments of rhyolitic rock, and is partly consolidated, so that no timbering is required in any of the shafts. Much of it has been disintegrated and decomposed to an earthy material. Much of this volcanic conglomerate had been partly altered and softened by solfateric action prior to accumulating on the slope. Several strata are said to contain gold, but the best values are said to lie in the 4 or 5 feet resting on the bedrock, and are rather well distributed through this thickness instead of being concentrated on the rhyolitic bedrock. Pannings made at a 20-foot shaft where men were working at the time of our visit were very good, and tended to confirm the distribution of the gold.

Artesian water can be obtained near the edge of a playa about 4 miles south and 400 feet lower. It is not probable that it would be sufficient, but an abundant supply can undoubtedly be obtained by sinking shallow wells near the edge of the playa. Because of the earthy nature of the gravel, a minimum of water for washing would be required. If sufficient tonnage and value and tonnage can be developed to justify a placer mining operation somewhat similar to that at Atolia, California, the costs should not be excessive.

Some valuable data on desert placer mining costs have been collected by Vanderberg (2) as to placer mining at Atolia, Calif. Placer mining is being carried on in that arid, desert region in San Bernardino County at a direct cost of 57 cents per ton of gravel, or approximately 49 cents per cubic yard. The water is pumped from a well 200 feet deep, 7 miles distant, and conveyed to the scene of mining through 5-inch pipe. The total vertical lift is 650 feet. The mining is done by a 1-yard revolving type shovel mounted on caterpillars, which works economically to a depth of 30 feet. The gravel is hauled 1000 feet by two trucks of 7 and 5 tons capacity each and delivered to a concentrator equipped with trommel, jigs, magnetic separator, drag classifier and other machinery for recovering tungsten concentrate. A settling pond is maintained for recovering a portion of the used water. The net water used per ton of gravel concentrated is about 150 gallons. The maximum capacity of the plant on a 5-shift basis is 800 tons per day. During the first 10 months of 1930 an average of 405 tons per day was treated. The costs given by Vanderberg do not include obsolescence, interest, taxes and insurance, which may have materially increased the total.

With this concrete present-day operation in a barren desert region before us, a successful operation near Yerington seems possible if the gold values prove to be sufficient. The climate for working outside is favorable most of the year, and is better than at Atolia, where summer heat is excessive. The operation could be carried on at a much lower cost, for no trucking and milling would be necessary.

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(2). Vanderberg, W. O., Methods and Costs of Concentrating Tungsten Ores at Atolia, San Bernardino Co., California: Information Circular 6532, U. S. Bureau of Mines, Oct. 1931, pp. 12.