

NEVADA

DOUGLAS COUNTY

BUCKSKIN DISTRICT

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item 3

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# THE PLACER GOLD DISCOVERY

in

THE BUCKSKIN MINING DISTRICT, NEVADA.

by

Alfred Merritt Smith.

On January 10, 1931, Fred Hughes, a keen-eyed prospector and miner, well versed and experienced in the vocation that has given the world so many blessings, was searching over a barren desert mountain slope north of the wide, semi-arid plain of Smith Valley, Nevada. With pick, gold pan and water canteen, he gleaned and washed samples of sand and gravel from the gullies. Flecks of gold he observed and studied, and the probable source of origin was inferred and followed up. Unexpectedly, in a shallow flat ravine, a panning disclosed gleaming yellow nuggets - an El Dorado was found at last.

Hughes kept his discovery a secret and prospected alone until April 13th, when, realizing his need for help and capital, he came to Reno and sought out two friends, R. Carpenter and D. A. Whitaker, well known business men of Nevada. Messrs. Carpenter and Whitaker returned with Hughes to Buckskin and two days later, the three formed a co-partnership, each owning a one-third interest in the gold discovery. Busy days of prospecting and staking out claims followed. A shaft was begun at the mouth of the ravine in which the rich strike had been made. The trio did not wish to disclose their good fortune until their location of claims could be completed, and the limits of the placer deposit approximately determined.



But there is magic in a discovery of gold, and in some manner the news leaked out. Judge Clark J. Guild, prominent jurist of Yerington, heard of it. Judge Guild was born and raised in famous old Dayton, Nevada, and in his infancy, the music that lulled him to sleep was the roar of ponderous stamp batteries grinding out the Comstock's wealth of precious metal. A love of mining is a part of him, so he began a search for the alleged bonanza reported to have been discovered only a few miles from his home. He found it, only fourteen miles away, and told his public the good news. Since then, hundreds of cars have gone to the spot. Men, women and children have been allowed to dig and pan the precious clay and gravel, and they have been thrilled to see the heavy ~~metal~~ yellow metal appear as the dross was washed away. Several hundred dollars worth of gold has been panned out and borne away by visitors, due to the generosity of the owners.

Following the published news of the gold strike, Director John Allen Fulton of the State Bureau of Mines, instructed the writer to proceed to the district at once to examine, take samples and report, in order that the mining public might be promptly informed. It is the purpose of Mr. Fulton, in which he is ably seconded by his staff, to assist Nevada's mining industry in every way at his command, and to continue to use the full technical staff of the nationally famous Mackay School of Mines in that work.

The new "strike" is located about  $2\frac{1}{2}$  miles north east of the old Buckskin Mine, and 14 miles north west of Yerington. It is about 2 miles directly north of Smith Valley, and by land subdivisions of the U. S. Government Survey, it will be found to be in Twp. 14 N., Rge. 24 E., M.D.M. It is in the western foothills of

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the north end of the Singatse Range which separates Mason ~~and~~ Smith ~~Valley~~ Valley from Smith Valley. Starting from Reno, it is easily reached over excellent highways and dirt roads via Carson City, ~~Gardnerville~~ Gardnerville, Wellington, and Hind's Hot Springs, a total distance of 96 miles.

The elevation of the township varied between 5000 and 5500 ft. above sea level. The surface is composed of hills traversed by shallow, flat ravines trending northwesterly to Spring Canon, which in turn drains south into Smith Valley. The hills are utterly barren, excepting for a slight growth of stunted sagebrush and desert shrubs.

There is no running water at the discovery. An old shaft about 15 ft. deep is a few hundred feet north and somewhat higher, supplying a seepage in the bottom but said to be dry at times. Four miles westerly across Spring Canon, located at an elevation equal to or higher than any part of the Hughes placer land, are some springs. It would be possible to pipe water from these springs and ground-sluice the hillsides with gravity water, if the springs will supply sufficient water. Near the margin of Playa Lake in the north end of Smith Valley, artesian water is obtainable and is used on some of the ranches for irrigation. Northerly from the margin of the Playa and nearer to the placer land, abundant water may be obtained in shallow wells. It is quite probable that water may be obtained by sinking a well in Spring Canon within the limits of the placer land.



The gold discovery is located in a small, flat, dry ravine, about one-half mile long, which trends northerly and empties into a large, flat dry ravine named Spring Canyon. The place where the exceedingly rich gravel is found is about two-thirds of the distance up this little ravine, and in a shallow natural trap formed by a slightly higher rib of harder rhyolite tuff across the bed. This natural feature formed a simple concentrating device, similar to a large gold-pan. While much of the gold undoubtedly passed over it and on down into the ravines below, the coarse gold which was retained is proof of its efficiency. The rich spot is about fifty feet long and 10 feet wide, and it is a veritable treasure room. On top of a rough, light-colored rhyolite bedrock lies a thickness of four to six inches of very sticky, brown adobe clay, intermixed with sand and small angular gravel, and covered with a few inches of loose, unconsolidated sand and grit. The clayey pay-dirt will yield "a dollar to the pan." The owners put about 5 cubic feet of it through a small concrete mixer at Yerington to dissolve out the clay, after which the sand and gravel was concentrated, and it yielded \$75. in gold, plus a considerable amount of gold-bearing black sand concentrate. Samples panned at the State Mining Laboratory were exceedingly rich in coarse gold, and ~~Professors~~ ~~Smythe~~ Professors Walter Palmer and Wm. Smythe, in charge, said that in years of experience they had never seen richer placer dirt brought in from Nevada.



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The entire bed of the <sup>small</sup> discovery ravine will no doubt yield gold in profitable amount. Below the junction of this ravine with Spring Canyon, and southwesterly from there to Smith Valley, half a mile or more, prospecting by drilling or pits will be necessary to prove the extent and value of the placer. In view of the extreme richness of the bedrock gravel at the discovery point, it seems probable that drilling in the the broad flat bed of Spring Canyon, and possibly in the alluvial fan where the canyon enters Smith Valley, may prove up an area of profitable dredging ground. Of course all of the great amount of alluvium in the canyon and at its mouth cannot be placer of economic value because of the excessive dilution, but proper development may show that much of it can be worked at a profit. As yet there has been very little prospecting, and no work worthy of note.

In little gullies and depressions high up on the rhyolite hill east of the rich ravine, placer gold is found in numerous places, according to the owners. Some of this finely divided gold may have originated from the erosion of veinlets in the rhyolite of which no evidence has been left behind. It is more probable, however, that this gold also was derived from old gravels/<sup>as will be subsequently explained,</sup> and that the portion of the gravel bed has long since been worn away. It is significant that on the hills west of the rich ravine no colors of gold can be panned above the outcrop of the ancient gravel channel, while below it every panning has yielded some gold.



A search for the source of the gold revealed a bed of washed gravel about 200 feet west of the discovery ravine. This gravel had been steeply tilted to the west by folding, or by intrusive volcanic masses. The gravel stratum is about five feet thick, and it dips under the hillside on which it outcrops, at an angle of 56 degrees. The pebbles are rounded from water-wear, and range in size from one-half inch to six or more inches in diameter. There is only one small open-cut on the gravel outcrop. The strike is N. 20 W., and it can be traced 625 feet in a northerly ~~south~~ direction. Bedded conformably on top of the gravel is about three feet of sandstone and arenaceous grit, and on top of the grit is a stratum of 2 feet of light-colored sandy shale. This series of sediments is conformably capped, or overlain, by andesitic tuff and quartz-latite to a vertical thickness of more than 300 feet.

Along the outcrop of the gravel stratum was once a number of hot springs, long since extinct, but of which much evidence remains. The hot waters found their way upward through the stratum of gravel ~~farther~~ from an indeterminate depth, although they did not originate in it, but in a deeper source. On their way up from the depths, they entered it, and followed it on up, for it was the line of least resistance.



The ~~the~~ gravel was easier for the ascending waters to penetrate than the denser surrounding volcanic rocks. The ravine and the line <sup>extinct</sup> of hot spring craters appear to mark the course of a normal fault which dropped the younger rhyolite east of the ravine to a position lower than the gravel. The solfateric action of the hot springs caused varying degrees of alteration in the washed gravels and accompanying sands. Some of the more coarsely crystalline granitic pebbles are so decomposed and softened that they crumble on exposure to the air. Denser pebbles including some of quartz, are altered to a lesser degree. The hot waters also deposited much iron in the gravel, probably as sulphide and sulphate, which has since been oxidized to limonite. This limonite, with a small amount of siliceous sinter serves as a cementing material. The iron oxide has colored both the pebbles and grits a reddish brown.

Samples of this ancient alluvial gravel and sand, and also of the adjacent volcanic rocks were brought into the Bureau of Mines station at Reno and studied carefully under the microscope by both Dr. J. Claude Jones and Prof. Vincent Gianella. These eminent geologists also examined the rich pannings of placer gold and the associated black sand and dark minerals. Both ~~of these~~ <sup>of these</sup> authorities agree that the placer gold was derived principally from the old stream gravel. The minerals which were found associated with the gold, as it is found in the bed of the ravine, are also found in place in the ancient gravel outcrop. These similar minerals, among which are limonite ( pseudomorphic after pyrite) and magnetite, are not present in the associated volcanic rocks. One particle of gold was observed passing directly through a small pyritohedron of limonite, which had originally been a crystal of pyrite.



East of and adjoining the old alluvial gravel is an area of rhyolite tuff which composes the entire hill east of the ravine. Overlying the gravel to a height of more than 300 ft. are andesitic tuffs and quartz-latite flows. These inclosing volcanic rocks had been definitely placed in the Tertiary period by Knopf, Jones, and Ransome, which of course places the old gravel channel in the Tertiary. Fossilized wood in the gravel also indicates the same period. Thus by correlation, the gravel belongs to the same past age as the great rich Tertiary gravel channels of California. Indeed, the ancient stream which concentrated these gravels may have been a member of the extensive Tertiary river system of California. The Sierra Nevada range was uplifted at the close of Jurassic time, but a long period of erosion followed and flattened them out, and Tertiary streams may have flowed across them westerly, before the second uplift took place in later ~~Miocene~~ times. However, it seems more probable to both Jones and Gianella that the Tertiary stream system of this area was an independent one and not connected with that of California.

Examination of the volcanic hills adjacent to the strike does not support a theory that the erosion of auriferous veins in the Tertiary ~~por~~ porphyries was the source of the coarse placer gold. There are no veins or pockets of importance in these rocks and there has been practically no mineralization in them. ~~The gold came from the gravels.~~ We cannot escape a conclusion that the gold was derived from the gravels, and not from the neighboring volcanic rocks.



How wide was the old channel? Is the present gravel outcrop but the vestige of a broad river bed that has since been eroded away? We can trace it only 625 feet where we lose it on the south end, did it once loop around to the east, or is it cut off at that point and displaced by a post-Tertiary fault which we find there?

In Professional Paper 114, United States Geological Survey, entitled "Geology and Ore Deposits of the Yerington District, Nevada," by Adolph Knopf, this geologist has observed and mapped beds of fluvial conglomerate (which is water washed and subsequently cemented gravel) at the very bottom of the Tertiary series of rocks. These gravels which were originally alluvial fans and other collections of water worn rocks, are fairly persistent, vary in thickness from thin beds to 150 feet or more and no doubt originally covered great areas. They lie upon granodiorite of post-Triassic age, and are covered by quartz-latite of Pliocene age. There is much of this conglomerate, or gravel still in place about  $2\frac{1}{2}$  miles north of the Hughes strike. At one time, it may have covered many square miles. It seems probable that this conglomerate is the primary source of the gold. It was worked over and concentrated by later Tertiary streams. The recent erosion of the resulting later Tertiary gravels ~~practically~~ has given us the gold we find in this new discovery.

Knopf observed and mapped other exposures of the fluvial conglomerate in the district. One is just west of the May Queen mine three miles west of Yerington. Another is shown two miles



northwesterly from Yerington, on the west side of McLeod hill. In addition to the localities where fluvial conglomerate outcrops, Knopf has shown several other points where Tertiary quartz-latite is in contact with the older granodiorite. This contact is the geological horizon of the conglomerate, but he observed none. Thin gravel beds more or less covered up by recent unconsolidated surface detritus may be present at some of these points and have escaped observation. It seems probable that the originally large areas of fluvial conglomerate contained small amounts of gold, and that these gravels were further worked over and the gravels again concentrated by Tertiary streams, the old channels of which are now undergoing erosion and a second and closer concentration, as at the Hughs discovery.

This new discovery and the inferences drawn from it greatly increase the placer gold possibilities in Nevada west of the 118th meridian and south of the 40th parallel. The Yerington and Buckskin Mining Districts and the adjoining townships to the north appear to be particularly favorable areas in which to prospect for placer gold. The canyons and the shallow ravines should be searched for it. New sources of wealth await the intrepid prospector of the old school who knows that gold is where you find it, and it also awaits the newer prospector, college trained, who knows that gold should be found where the geologic conditions are favorable to its deposition.