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QUIJOTOA PLACERS

From University of Arizona, Bulletin, Arizona Bureau of Mines. No. 124

Pages, 41, 42, and 43.

The Quijotoa gold placer district is situated in the vicinity of the Quijotoa Mountains of central Pima County, about 70 miles west-south-west of Tucson. According to Stephens, the placers in all cover probably 100 square miles, and Heikes states that they extend north and south for some distance on both sides of the Mexican boundary.

The Quijotoa Mountains, which rise to about 4,000 feet elevation above sea level, or approximately 1,500 feet above the surrounding plains, extend from Covered Wells on the north to South Mountain on the south, or to within about 20 miles of the Mexican line. This region has a very hot climate in summer, and there is no water supply except from wells and from earth or rock tanks. The mean annual rainfall is probably about 13 inches.

In 1906, the Imperial Gold Mining Company was said to own most of the productive ground.

In 1910, a Quenner pulverizer and a Stebbins dry concentrator are said to have been installed by the Manhattan Company in the Horseshoe Basin area, on the east side of the mountains, but, due to conditions being different from those that obtained where these machines had been successful, the experiment failed.

Geology

The Quijotoa Mountains, which are made up mainly of younger granite and lavas, contain numerous deposits of silver, gold, lead, and copper. Erosion of these gold-bearing rocks furnished, in the manner described on page 7, the material for the placers. In these placers, the gold occurs from the surface down into a stratum of cement-gravel or caliche, which carries more gold than does the dirt above it. Much of the ground is said to average over 80 cents per yard, and Stephens states that the red colored dirt averages \$5 a ton. This last figure, however, is probably too high for the area as a whole. In general, the gold is coarse.

Present operations.

At present, as during several years past, there is but slight activity in the Quijotoa placer district. A few Indians and Mexicans work the dirt, and the softer, shallower portions of the caliche, which they pulverize by beating in rawhide bags, in very crude hand dry-washing machines. In the richer known areas, the surface has been thickly perforated by the pits and shallow shafts of this "coyoting" system of mining. The cemented nature of the richer gravels presents an obstacle to large-scale dry-washing operations that has not yet been overcome. Certain projects for building dams to collect the water of the rainy seasons for dredging operations have been contemplated, but, so far, they have not materialized.

·WESTERN·PRECIPITATION·COMPANY·
CHEMICAL ENGINEERS

MAIN OFFICES AND LABORATORIES
1016 WEST NINTH STREET
LOS ANGELES, CALIFORNIA

June 28, 1932.

A. 7/12
'32

Mr. G. M. Colvocoresses,
1108 Luhrs Tower,
Phoenix. Arizona.

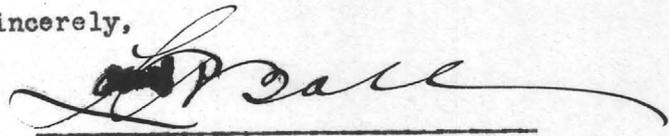
Dear Colvocoresses:

This will refer to your letter of June 16th and mine in answer thereto, dated June 20th, regarding samples from the Quijotoa placer. We ran both samples and the one from the lowest one foot, ran \$1.96 a ton, but the upper sample ran only a trace. There has not been any work done on it that is conclusive, as it was figured that it would be impossible to profitably handle just the lowest one foot. However, we are going ahead with these investigations and if something new turns up, I will let you know.

I am finishing my work with Western Precipitation Company as of August 1st, and thereafter I do not know what will happen, and I will be in the class of the great majority.

With kindest regards, I am

Sincerely,



Louis R. Ball
AEG

QUIJOTOA MOUNTAINS

The Quijotoa Mountains lie between Santa Rosa Valley and Quijotoa Valley. Under some definitions the name Quijotoa includes all the mountains and hills from the depression west of Anegam to South Mountain; in the present treatment only the mountains south of the road between Pozo Blanco and Covered Wells are included. Thus defined the Quijotoa Mountains are about 12 miles long and 6 miles wide and are divided into three main parts. The northerly portion, without specific name, is about 5 miles long and consists of a typical sierra that rises by smooth, rolling brownish slopes to a series of summits on a northwest-southeast line, of which the culminating point is considerably the highest and dominates the rest. In the northern part the rocks are slate, schist, and gneiss. Debris brought down by streams on the west side indicates that the main mountain mass is composed of similar material.

The central portion is Ben Nevis Mountain (p. 352), a high, irregular mass of volcanic rock, which rises by precipitous cliffs from the surrounding rolling hills. In a canyon to the south and west of this mountain lie the Weldon mine and on the east the Quijotoa mine, once centers of intense mining activity.

The extreme southern part of the range consists of South Mountain, an oval mass about 3 miles long and 2 miles wide. It rises abruptly from the plains on the west, south, and east sides and is connected to the rest of the mountains by a narrow tongue of rolling hills. The precipitous cliffs

rise 1,200 to 1,500 feet in almost vertical walls. Easily visible at a distance are the great sheets of lava from which the mountain is carved. They have a slight inclination to the northeast, and hence the west and south sides of the mountain are slightly steeper than the east. The almost horizontal parting and columnar jointing of the lava sheets combine with the purplish red of the rock to make South Mountain a most spectacular landmark, recognizable at great distances and productive of wonder and emotion on closer approach.

On the western flanks of the Quijotoa Mountains are two slightly isolated hills--Black Butte, west of Weldon, and an unnamed hill west of Pozo Blanco. Both are composed largely of lava. The unnamed hill is capped by basalt, and its basal lavas rest on the eroded surface of the crystalline rocks that make up that portion of the mountains. It is evident that these buttes and probably also Ben Nevis and South Mountain are remnants of a more extensive series of lava flows that once capped the whole range. Since uplift erosion has stripped away all but these remnants and deeply carved the underlying rock so that the method of uplift is uncertain. The somewhat steeper slopes of the eastern face of the range suggest that the last uplift was due to faulting on that side.

North of Copeka is South Mountain, a majestic mass which forms the southern end of the Quijotoa Mountains and towers high above the plain, and around the base of this moun-

tain the road goes northwest from Copeka to Gunsight ranch. North of South Mountain, but separated from it by a deep notch, is Ben Nevis Mountain, whose sheer sides rise on four sides in cliffs about 1,500 feet high. Because of its resemblance to the pack basket used by women, the Papagos called this mountain Kihotoak ("burden basket mountain"), a name which, in its Spanish form Quijotoa, is now applied to the whole range. In the notch between South Mountain and Ben Nevis lies San Antone, a small Papago village which is the successor to the once prosperous mining town of Welden.

To the north of Indian Oasis sharp red hills and ragged little plateaus culminate about 10 miles away in the small reddish Cobabi Mountains, separated by a narrow belt of broken plains from South Comobabi Mountains. Here is located one of the oldest mining localities in the region, a place visited by Pumpelly in 1864, when it was being actively prospected. Near the principal prospect, which is called the Cobabi or Picacho mine, are the Papago villages of Nolic, Santa Cruz, and Wickchoupai. Nolic is a Papago corruption of the Spanish name Noria, which means a spring or well. There are three dug wells here--62, 45, and 100 feet deep. Santa Cruz also has three wells, and Wickchoupai has one.

Free

Note re Qujotoa Placer (Mine file)

J. H. Davies, Santa Fe Hotel (phone)

302 S. 7th Ave. Phoenix,

called in behalf of A G. Porter of Casa Grande, an elderly carpenter and owner of the Porter Claims which I have visited and sampled. Said that Porter has been old and sick and would sell or lease these claims on very favorable terms.

Davies has lived on this property for some three years and says that all of the old work of the Indians and all the more recent attempts at mining have been confined to gravel above the upper bed rock or caliche (which he calls a travertineⁿ) that lies some 20-25 feet below the surface and this ground has been largely worked out. He is convinced that the true bed rock lies less than 50 feet below the surface in Porter's upper claim near the dike and head of the gulch and slopes downward to depth of almost 80 feet on Porter's lower claims and a greater depth almost $\frac{1}{2}$ mile further down the gulch where a small well has recently been drilled in which water stands and from which the black sand is said to carry up to \$1.00 per pound in gold. Davies believes that much richer gravel should be found above this lower or "wet" bed rock and that the best values would be in Porter's upper claims where he thinks that there would be many pot holes in the rock. (This theory might be worth investigation) Davies says that there lie many fragments of heavy black shiny magnetic rocks in the surface which he thinks may contain mercury. (Probably this is only some type of lava or iron ore but it may possibly be chromite or something else.)

NOTE RE QUIJOTOA PLACERS

Similar to those at Kofa and consists of several scattered deposits none of which are very large. See File. Some of the gravel is quite firmly cemented and pay values are all found down near to bed-rock.

6/16/'32

Most of the visible gold is fairly coarse, but it is said that when the caliche is properly ground a considerable amount of fine gold can also be recovered. The deposit could be worked by steam shovels, altho a certain amount of blasting would doubtless be required. Most of the ground is owned by five individuals who have recently been negotiating for capital with a number of various concerns, but so far as I could learn no deals have yet been closed and I did not attempt to talk any business.

A small amount of water is available for domestic purposes in wells sunk in the ravines and there is some evidence pointing to the existence of a permanent water table at a depth of several hundred feet below the plain at the base of the mountains.

In gathering such samples as those which I am sending you it is, of course, impossible to determine just what values they are likely to carry, but I sincerely trust that the average will prove fairly good and that they will be satisfactory for testing in your machine. Should you be able to handle this ground to advantage, I have no doubt but that a considerable deposit could be acquired on fairly reasonable terms.

Personal regards,

Sincerely,

S. M. C.

GMC:HG

B/G. Wilson

W. D. Payne

5/25/'32

to find rich gravel carrying, say, \$1.00 per yard at Quijotoa than at Greaterville or any other place in the State. You and I passed very near the Quijotoa placers when we drove some years ago from Tucson to Ajo and I have also examined some copper prospects in that district but never looked into the placer ground. Smith says that in portions this ground was extremely rich and that it has been opened up by a number of pits going down some 15 to 20 ft. to bed rock and sunk for the purpose of sampling the ground by the Imperial Gold Mining Company which was backed by the late Epes Randolph and a number of other good mining men. These people were satisfied with the grade of the dirt, but were unable to find any means of disintegrating the caliche which contained the best values and therefore abandoned their operations and Smith tells me that much of this ground is now open or could be leased on very reasonable terms and he thinks that a considerable yardage would carry better than \$1.00 and I think that your process should be especially well adapted to handle this class of material.

The pits are said to be accessible, but no reliable parties are working there at present and in order to obtain representative samples it would be necessary for a couple of men to make a special trip, equipped with ladders, sacks, etc.

As a matter of fact this is the case at Greaterville, altho I believe that operations are planned to start sometime in June.

Smith offered to go to Quijotoa with me and show me the best ground any time that I might wish to make the trip, but I do not know whether you want to go to any expense in this matter, at least until your present tests have proceeded somewhat further, and have you told me just how large the samples should be, so please let me hear further on this matter at your

Ingoton Placer

XXXXXXXXXXXXXXXXXXXX
Phoenix, Arizona.

May 25, 1932

Mr. Walter A. Schmidt,
Western Precipitation Company,
1016 West 9th Street,
Los Angeles, California.

Dear Walter,

Re: Dry Placers

I acknowledge and thank you for yours of the 21st enclosing your Crater subscription check for \$21.00. With good luck I should have the STAR DUST on the market inside of a week or ten days and then we will see how things may develop.

This morning I have your letter of May 23rd and thank you very much for the interesting and complete explanation of your method of recovering placer gold and the general theory on which you are working. I want to study this over a little more carefully before making any comment and you may be sure that I will keep the information as absolutely confidential. Also, I will write you a separate letter regarding the HELEN MINE, which does not, in my judgement, furnish an opportunity for the use of your classifier, but which I think should be considered entirely on its merits.

Since I last wrote you regarding dry placers I have been trying to gather more data and yesterday got ahold of Walter C. Smith, a very good Engineer who was formerly with me at Humboldt, and who has recently been operating largely in the southern part of the State. Smith is familiar with many of the placers and believes that there is a better opportunity

Mr. Walter A. Schmidt,

-3.

5/25/32

convenience. I am attaching hereto portions of a general description of the Quijotoa placers taken from a publication of the Arizona Bureau of Mines, Bulletin #124.

Personal regards,

Sincerely,

G. M. C.

GMC:HG

Quijotoa Placer

JUNE
16
1932

note by S. M.C.

copy into 2 copies
marked portion

Col. Louis R. Ball,
Western Precipitation Company,
1016 West 9th Street,
Los Angeles, California.

Dear Col. Ball,

Re: Samples from Quijotoa

I am sending you a large and heavy sack of samples from Quijotoa. The two cotton sacks enclosed contain samples which I got in the shaft and drifts representing the gravel for approximately seven feet above the bed rock. The small jute sack contains material from the lowest foot of gravel directly over the bed rock and it should be somewhat richer than the other samples.

The Quijotoa Placer is

In reference to the Quijotoa placer, I would say that this is located in Central Pima County, Arizona, about 70 miles west from Tucson, 50 miles east from Ajo and 62 miles south of Casa Grande. It is in an extremely dry and dusty portion of the State at an elevation of about 2500 feet.

These placers were worked by Papago Indians in the employ of Missionary Priests as early as 1774. The water for washing the gravel is said to have been carried by squaws from tanks located several miles away and it is reported that some \$7,000 per annum was taken from these placers for a number of years.

More recent activity was greatest during the 1880's and again from 1902 to 1913 when about \$30,000 was produced during this last period. The material has always been reported to carry substantial gold values but no satisfactory method of disintegrating the caliche and recovering

C.M.

6/16/ '32

the gold has yet been worked out.

The Quijotoa Mountains from which these deposits were derived by erosion are composed mostly of granite and various volcanic rocks. The bulk of the gravel is now found in the fills formed by ancient streams which extend from the mountains down to the plain some 1500 ft. below the summits. The deposits generally comprise ~~of~~ sand and loose gravel from 10 to 20 ft. below the surface and then the gravel becomes cemented and contains a large percent of lime overlying the granite bed rock.

The best values are in this ^{Cemented} loose gravel or caliche and there is a considerable amount of reddish material colored by iron oxide which is ^{also} said to carry excellent values.

The recent workings are mostly drifts run from a number of larger shafts and the gravel is taken out and ^{for} sent drying on the surface before being concentrated by dry washing. The average depth in the places which I visited is about 25 ft. from surface to bed rock, the lower 5 to 10 ft. representing caliche. The total yardage is undoubtedly very large, but the values may be spotty.

~~Gravel~~ Sampling of various portions of this deposit have been made from time to time. My samples were taken from the Porter Claims where it is said that the gravel runs about 80¢ per yard and the lower 5 or 6 ft. about \$6.00. The White Claims, adjoining but now inaccessible are said to average better than \$1.00 per yard, the lower 5 ft. running about \$7.00. The general sampling over a larger area indicated 60¢ per yard and small areas near bed rock have frequently run up to \$10.00 per yard while occasionally fairly large nuggets have been found.

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Most of this visible gold is fairly coarse, but it is said that when the caliche is properly ground a considerable amount of fine gold can also be recovered. The deposit could be worked by steam shovels, altho a certain amount of blasting would doubtless be required. Most of the ground is owned by five individuals who have recently been negotiating for capital with a number of various concerns, but so far as I could learn no deals have yet been closed and I did not attempt to talk any business.

A small amount of water is available for domestic purposes in wells sunk in the ravines and there is some evidence pointing to the existence of a permanent water table at a depth of several hundred feet below the plain at the base of the mountains.

The samples referred to above gave disappointing results, those from the upper portion of the gravel proving to carry only a trace of gold with values slowly increasing to a maximum of around \$3.00 per yard along and near the caliche which at this point was some 20' below the surface.

It does not appear feasible to work any of these deposits on a large scale with profit and dry concentration would be out of the question for even should it prove successful on the dry upper gravel in which the values are negligible, it is to be noted that the pay dirt is all extremely moist and would have to be artificially dried before any such method of treatment could be applied.

NOVEMBER , 1937

I understand that very small operations are still carried on at these old diggings consisting of gouging out by hand the lower two or three feet of gravel and washing this in rockers or long toms.

In my opinion the deposits are not suitable for any other or larger method of operation.

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NOVEMBER, 1937

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