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GREATERVILLE PLACERS

Greaterville district is situated in southeastern Pima County, at the eastern foot of the Santa Rita Mountains. The small village of Greaterville, which is in the approximate center of the placer area at an elevation of 5,280 feet above sea level, is about 34 miles in air line southeast of Tucson and 8½ miles northwest of Sonoita, a station on the Nogales-Benson Branch of the Southern Pacific railroad. The district is accessible by several short roads that branch west from the Tucson-Patagonia highway.

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Sufficient water for domestic purposes, but not for much gravel-washing is obtained from shallow wells in Empire, Ophir, Kentucky, and Big gulches.

"They (the placers) are irregularly distributed, chiefly in the bottoms of the present stream courses and gulches, where the principal diggings occur in shallow ground, and also upon the benches, slopes, and tops of the ridges, where some of them seem to represent deposits in old stream channels, examples of which occur just south of Greaterville 30 feet above the valley, on the crest of the ridge to the southeast, and on the north side of Hughes Gulch below the mouth of Wigger Gulch 15 feet above the bottom. They consist chiefly of a 2-foot bed of angular gravel which rests unconformably upon the bedrock of all the different older formations contained in the area, including the early Quaternary "cement rock." They are covered by 1 foot to 20 feet of more or overburden composed of later Quaternary and recent gravels and wash. In places, as in Kentucky, Ophir, and Empire gulches, the upturned, irregularly eroded edges of the underlying sedimentary beds form natural riffles, behind which the gold has been concentrated.

"The gravels of the gold-bearing bed are generally small, the pebbles, as a rule, being less than an inch in size, tho in many places cobbles 4 to 8 inches in diameter occur. In a few places the gravels are crudely stratified and slightly cemented, generally by lime. They are sharply angular and but slightly waterworn. The sand consists chiefly of angular fragments, and many of the particles of quartz and feldspar show well-preserved crystal faces. The coarse material consists chiefly of red and yellow sandstone, shales of various colors, arkose, a little dense white rhyolite, and granite prophyry. The gravels rest in most places in a red-brown clayey matrix which is handled without difficulty by hydraulic methods."

Character of the gold. - "The gold, which is rather uniformly distributed throughout the bed, is mostly coarse. It ranges from flakes one-tenth of an inch in longest diameter, which was the size of most of the material recovered at the time of the visit in 1909, to nuggets worth a dollar or more. The gold of the early days was all coarse, nuggets ranging from \$1 to \$5 in value being common. Some nuggets brot into Tucson contained from \$35 to \$50 worth of gold, and the largest nugget reported from the camp weighed 37 ounces and had a value of about \$630. The gold averaged about \$17 to the ounce fine, and it was not difficult for a man to take out an ounce a day. The gold, like the containing gravels, is very angular, with many pointed projections, denoting that it is of local origin and has not

traveled far. A little quartz adheres to some of it and seemingly also galena, both of which are reported to have been common in the large nuggets. The gold is mostly bright, but some of it is iron-stained and concentrates from panning contain considerable magnetic black sand."

Page-40.

Origin of the Placer gold, - Since most of the productive gulches head in the Cretaceous sedimentary belt that surrounds Granite Mountain, the placers very probably were derived mainly by erosion of quartz veins of that vicinity. These veins have been prospected in the Yuba (Inghram), St. Louis Quebec, and other lode mines, and found to contain more or less free gold. Particularly in the Yuba, some beautiful wire gold has been found. That the gold of the placers has not been transported far from its ultimate source is proclaimed by the angularity of its flakes and nuggets.

Present operations - A small amount of placer mining is carried on intermittently in the district by a few men, chiefly Mexicans, who dig pits or shallow shafts to bedrock and gopher out the gold-bearing gravels. This material is then washed in rockers, but frequently the clay matrix of the gravels somewhat lowers the percentage of recovery that ordinarily can be made by rocking or by other known hand methods. Due to this clayey matrix, also, dry-washing is possible only in the loose sands of the washes, during the driest months of the year. Much of the known richer ground has been re-worked one or more times, and the floors of many of the gulches are literally pocked with pits, as illustrated in Fig. 11.

However, several of the best mining engineers who have examined the area estimate, according to Schrader, that it still contains about \$50,000,000 worth of gold. Due to such factors as overburden, clayey matrix, and lack of an abundant local water supply, this gold can be recovered profitably only on a large scale, by dredges or by certain adequate hydraulic methods, after ample water supply has been developed. Because of these facts, large-scale placering operations are contemplated by the Gadsden Purchase, Inc., and by the Greaterville Dredge Gold Mining Company.

Gadsden Purchase, Inc., which is the successor of the Santa Rita Water and Mining Company, has control of several thousand acres of ground in Hughes, Colorado, Los Pozos, Hefty, Ophir, Succor, Louisiana, Kentucky, Boston, Harshaw, and Fish gulches. This ground, according to M. E. Young, contains from 40 to 60 cents gold per cubic yard. The company plans to bring water, from reservoirs in Cave, Gardner, and Sawmill canyons, thru about 12½ miles of ditches, tunnels, and steel pipe lines. Hydraulic, drag-line, and dredge operations are contemplated, and it is said that production thereby will be started in 1927.

The Greaterville Dredge Gold Mining Company is reported to have control of 1,960 acres of ground, and to plan operating a special dredge with water pumped from wells 150 to 200 feet in depth. According to Root, their workable ground averages 60 cents or more per cubic yard.