



PLACER MINING METHODS

Number 99

1964

Panning ordinarily was used by early placer miners only for the purpose of prospecting: some panning for production occurred under quite unusual circumstances, but it took pretty rich gravel for panning to pay at all. Since a man might screen and pan only a yard a day at best, the gravel would have to run \$3 to \$4 a yard as a minimum before panning could be said to pay. (These figures are estimated on the basis of a wage of \$3.50 a day). Also, almost any such ground could be handled much more efficiently by rockers or sluices. Assuming that the gravel to be worked was already available at the site of the sluice or rocker, a man could put about three yards of gravel through a rocker in a day (compared with about a yard panning) and about ten yards of gravel through a sluice. In comparison with these rates, a man equipped with a giant could put something like 500 yards of gravel a day through a sluice. More effort generally went into setting up a sluice than a rocker, and still a great deal more effort went into setting up a sluice than a rocker, and still a great deal more effort went into setting up a giant. Once installed, though, a sluice had great advantage over a rocker in that gravel running about 35¢ to 50¢ a yard was necessary before a rocker could be used to advantage. A giant was so much more efficient that gravel running only 5¢ a yard often was worked economically. Modern dredging, requiring more capital investment and having higher operating costs, can operate as low as 8¢ a yard.

Rockers had to be used for certain special situations. To begin with, of course, high-grade gravel had to be available. A

second condition that sometimes made the use of a rocker necessary was lack of water to run a sluice. (Sometimes a large amount of water might be available, but in a place where a sluice could not be operated.) Rich gravel which included a great deal of fine gold that might wash through a sluice sometimes had to be handled in rockers also. A fourth condition which sometimes required use of a rocker was the presence of partially cemented gravel or clay. Such gravel or clay had to be rocked in order to break it up and release the gold.

Conditions which made sluicing practical were an abundance of water at a high enough level to run through the sluice; enough gradient below the sluice for easy removal of tailings; and gold which was not too fine, so that it would not wash through the sluice. Ditches often had to be dug to bring water around to the ground to be sluiced, and such ditches ordinarily brought the water high enough above the original stream bed to gain the necessary gradient for sluicing and operation of a giant. Shoveling gravel into a sluice ordinarily was done only in fairly rich spots.

Normally placer miners did not have great heaps of gold-bearing gravel sitting next to their rockers or sluices ready to be worked, and the method employed to get the gravel ready for processing naturally had an effect upon the process used. Generally, though, giants and sluices were used where possible; otherwise, sluices were preferred if they could be used. Finally, for rich ground, rockers were used if sluices could not be employed at all, or if sluices would lose too much fine gold, or would lose gold found in cemented gravels or clays.