

due to the natural gravitation of the gold. Thus it comes about that attention has been turned to dredging as a method of reaching these deep and submerged deposits effectively. On the face of it a simple enough problem,



CLEANING UP A SLUICE BOX

yet what vast sums have been spent in the mistaken efforts of those who did not fully appreciate all the conditions involved, and how elusive the little yellow grains are when attacked under water! The seductiveness of the gold attracts many to engage in a mad and determined search for it, and it is not strange that, like moths around a candle, some should come to grief.

The truth is that gold mining is a business which must be learned, like any other business, and it is just as amenable to the natural laws which govern it as any other of the practical sciences. What would be said of a tailor who engages in watch making, or of a merchant who endeavours to design a bridge or a locomotive? Yet we see the merchant, the manufacturer, and the business man launch

out into gold mining, and make simple calculations of the enormous wealth that can be taken out of their claims at so much per cubic yard, and assume all the responsibility of the practical and technical work. The primitive mode of hand washing is by the "pan,"—a shallow dish of sheet steel about 18 inches across and 3 inches deep, with a flat bottom and flaring sides. The little cut at the head of this article shows a miner panning out some samples with which he seems well satisfied. The much-used expression, "pan out" has its origin in the early gold-mining days, when, after careful washing down to the last fine particles, the results in the pan were eagerly looked for. Inasmuch as there are about a hundred pans to the cubic yard, it will be seen that a cent's worth of gold to the pan would be valuable ground when worked by modern wholesale methods.

"Panning" gold is a simple and rapid operation to an experienced miner, but to the novice it is slow and laborious. By a few gyratory movements with the lip of the pan under water the bulk of the gravel is quickly washed over the edge of the pan, while the gold settles to the bottom. The process is then continued, with repeated lappings of the water carrying off a little sand and gravel each time, until there remains only a small quantity of the heavy magnetic "black sand" always found in gold-bearing gravel. In this sand the occasional gleam of a "golden colour" is seen, and then comes the interesting and delicate part of the operation. Every grain of black sand must be carefully washed away, leaving the grains of gold perfectly clean.

The determination of values can be made only by weighing the results of a large number of pans, or from a definite volume of material, but the