throw Australian percussion table answers very well and has the great advantage of cheap construction by the mine carpenter.

This concentrator consists of a solidly built wooden table some 8 feet long with two divisions. The first with a copper plate set at a low angle say 45 degrees 18 inches long from which with a rise of 1 ½ inches in 2" 6" is built the floor up which the ore must ascend. The lower half of the table is similar. This table is hung by four strong iron arms and is held firmly against a bumping block by a powerful spring, with a treble cam the table is pushed forward about one inch to be pressed back by the spring when free of cam, from 180 to 240 times a minute.

The jar naturally settles the heavy pyrites the lighter sand passing off with the water. Any straying particles of gold or amalgam are caught on the copper plate, while floured quick silver is again united by the continuous action. The machine is capable of taking 5 to 7 tons every 24 hours. The concentrates are removed with a small shovel by the amalgamator when necessary.

A frequent loss of gold occurs from using too much water over the tables, there should only be just enough to make the black sand and pyrites drag along without actually silting.

Plates should be dressed every four hours, and at that time the battery and water should be stopped, as a piece of amalgam once moved is liable to be swept away with a rush of water. In dressing the plates, a very weak solution of cyanide of potassium may be used to remove any oxide of copper, but on no account should a plate be touched by the naked hand, a piece of chamois leather should always be used.

The quicksilver in the ripples should be retorted once a month as retorted quicksilver has a greater affinity for the fine particles of gold than that which is charged and the gold produced from retorting well repays the cost and trouble.

The use of Sodium Amalgam and Cyanide is not to be encouraged, as both are very dangerous to the plates, and quicksilver, unless thoroughly understood, but a very small piece of Sodium Amalgam say the size of a pea, may be placed in each ripple once or twice a week to liven up the quicksilver.

Samples of tailings should be drawn every hour, water and all, and allowed to settle, and fire assays should determine the daily loss of gold per ton.

All details of Millwork, such as stopages, length and cause, time quicksilver introduced to mortars, speed of stamps, delivery of ore, etc., should be regularly entered in the Mill-book, which should be signed at end of shift by amalgamator. If these details are necessary, in an ordinary office, surely they should be attended to when a valuable mineral like gold is concerned.

It is not possible to enter into the question of the various chemical processes for treatment of concentrates in this paper, but I have found very effective results from simply grinding them to a fine slime, more especially if they have been spread out on floors, and exposed to the action of the sun and weather for several months. If a little salt is added, the material kept constantly moist and turned over once a