deposits. It was in prospecting for one of the alluvial leads that a quartz reef was discovered, and since this discovery, several companies have taken up, and are working mining leases, or claims, on the same line of reef. Their present workings are about 1,100ft. below the surface, and the quartz lode that they are working is an inclined reef from about 3ft. to 4ft. wide, which averages about 18dwt. of gold per ton. The system of working the ground, timbering the stopes, passes, or levels, is similar to that adopted in the principal quartz mines in New Zealand, therefore a description of these systems would not be of any interest. Their crushing-battery consists of 50 head of revolving stamps about 8½cwt. each, with keyed discs instead of being screwed, which the manager of the battery informed me was far superior to the screw, and not so costly. They use the same description of copper gratings as is in use at Clunes, with stamp-boxes discharging back and front, the discharge from the back being brought round the end of each 5-head battery into the quicksilver riffle wells. The first set of tables are covered with copper plate, and below these are placed the blanket-tables, at the bottom of which is one of Haley's percussion-tables for concentrating the pyrites. The battery is fed by a self-acting hopper, but the battery manager informed me that this was no saving on hand labour, as the number of men employed was the same, and that there was a good deal of wear and tear on the lower ends of the hoppers, caused by the constant striking of the disc of the stamp on the top of the iron bar which is attached to them. The pyrites collected in the percussion-tables is roasted in a reverberatory furnace and then ground in Wheeler's pans; it thence runs into a concentrating-pan or separator, where all the gold is collected. The waste product runs into two pits, placed one after another; the stuff in the first pit is much coarser than in the second, as the further it travels the finer it gets. The material in the first pit is taken out and sold as knife-polish, and it is likewise used at the foundries, for polishing the bright parts of engines and machinery. The fine sediment in the second pit is collected and passes through a paint-mill, being ground up with linseed oil, and afterwards sold for paint. The manager informed me that the company gets £8 per ton for the material as it is taken out of the pit, or £1 for every 5-gallon drum when made into paint. In addition to getting the gold out of the pyrites, the company utilizes the whole of the oxide of iron that the pyrites contain, and they likewise collect the arsenical fumes and condense them in chambers, or recesses in the flue, between the furnace and the chimney. This is done by having the flue constructed in a serpentine form, or, what the manager stated was better, a series of Vs in the bottom of the flue, with doors at the bottom of each V, so that they can be cleaned out when necessary, and to have a jet of steam or small spray of water, falling over the top of each V, but not sufficient to retard the draught. The amount of pyrites in the quartz is about 2 per cent. and the average amount of gold obtained from the pyrites is about from 1½oz. to 2oz. per ton. There is about 1 ton of crude arsenic collected from about 25 tons of pyrites, and the value of the arsenic in this state is about £6 per ton. It may be well to state that, in grinding the roasted pyrites, there is about 28lb. of lime mixed with every ton of ore to assist in keeping the quicksilver clean and lively; and when the quicksilver gets dirty it is cleaned with sodium amalgam. They estimate the entire cost of treating the pyrites at £2 per ton.

I visited the Black Hills and other companies' workings, but there is nothing special to note about them, as they are all on the same principle as the Band of Hope and Albion Consols Company's works. All the managers concur that there is no saving by using self-feeding hoppers.

Stawell.

The quartz lodes on this field differ materially from any other field in Victoria. There are series of flat reefs, having an inclination of about 1 in 3, branching away from the main or nearly vertical lodes, and it is on these flat reefs, especially near the junction with the main lode, that the best shots of gold are found. The farther away from the junction the gold keeps steadily decreasing until the lode wedges out altogether; but these flat reefs in many instances run for a long distance carrying payable gold, and they average from 2 to 4 feet in thickness. In some of the mines I visited the quartz from these flat reefs, near their junction with the main lode, and for a considerable distance back, contained 9oz. of gold to the ton, as was the case in the Oriental Company's Mine; but the main lode in many places is 25ft. thick and generally contains low grade quartz, which, in many instances, does not pay to take out.

The system of working these reefs is likewise slightly different from inclined or vertical ones; it necessitates having to use a great deal of mining timber to keep up the roof, which is generally put in as sodgers and caps. Wherever the levels are constructed stone walls are built, having openings on the upper side to get down the quartz. The timber used is necessarily very heavy, and when one is passing through the old workings it looks like a forest of timber squeezed up to such an extent that heavy props are split and twisted about like small strips of wood, similar to those used in making the bottoms of old-fashioned wooden riddles. All the passes are likewise logged up with very heavy timber, which looks, when first constructed, strong enough to stand any pressure, but the flat nature of the reef prevents the ground from being filled in as the quartz gets taken out, so that the whole weight of ground overhead is standing on narrow walls, pillars, and props.

The rock of the hanging- and foot-walls is extremely hard. In many instances it has the appearance of elvan rock, and is very costly to work. Many of the mines could not have kept going so long as they did were it not for the use of the compressed-air rock-drills. The deepest shaft in the Australian Colonies is in this district—namely, the Magdala Company's shaft, which is about 2,400ft. deep; but no quartz of a payable nature has as yet been found at that depth. At the present time the Magdala Company is prospecting at the 1,500ft. level. The Oriental and North Cross Companies are working about 1,500ft. below the surface, and still continue to find stone of a payable character.

None of the quartz companies in this district have crushing-plants of their own, with the exception of the Moonlight Company, which is likewise a public crushing company. There are several companies owning nothing but a crushing-plant, and these charge on a sliding scale a certain rate per ton for crushing, in proportion to the quantity of gold there is in the stone, ranging from a