

The Sons of Freedom, on the same line, shows a similar reef, which was very good above, but poorer below.

The Moanataiari tunnel has been driven 3,070ft., passing through and beyond the Moanataiari fault. On the seaward side of the fault adjacent ground has been worked below the tunnel-level, but on the inland side no payable gold has been yet discovered so deep.

Immediately beyond the fault the tunnel passes into the hard breccias (No. 6), but towards the present extremity enters a rock of the softer and more "kindly" description.

The continuance of this tunnel would be a desirable prospecting work, to which further reference will be made hereafter.

The Hazelbank Mine comprises the ground of the old Caledonia claim, so fabulously rich in early times. The shaft is 340ft. deep, and the No. 1 or Caledonia lode, though continuous, has ceased to be payable auriferous where it passes into the old Tookey ground. Work is now being principally directed to "droppers" on the hanging-wall side of No. 1 lode.

In the Waiotahi Mine there are several reefs, of which that known as No. 5 is the principal, with "droppers" or branch veins above and below them, the latter being the most auriferous. There is a complete ramification of veins in this ground.

Coming southward to the deeper workings, the Saxon shaft of the May Queen Mine is about 490ft. deep to No. 5 level.

According to the working-plans the lodes have been regular down to that level.

The northern or No. 1 reef has a northerly, and the southern or No. 2 a southerly underlie; a new reef joins No. 2, and the line of junction pitches eastward. There are various other veins and leaders, and the gold-bearing shoots are stated to be continuous under foot.

The old Queen of the May shaft is about 424ft. deep to No. 3 level. Driving was in progress on the lode, which is faulted in places, and is intersected diagonally by another lode; good gold being obtained along this intersection. The lode is stated to have been as much as 20ft. thick in places, and some of the gold-shoots are described as pitching seaward and others inland.

At the May Queen shaft, to the north-east of the last mentioned, the rich gold is reported to have commenced at about 300ft. from the surface, and continued to 480ft., the lodes being the same as those in the Queen of the May and the Queen of Beauty workings.

The Queen of Beauty shaft could not be descended, having been abandoned owing to some collapse of the machinery and difficulties of drainage, but the following particulars were supplied: The shaft is 748ft. deep to No. 11 level, and the same system of reefs was worked from it as those in the May Queen Mine. These were auriferous as far down as the workings extended, and a good large reef was left at the bottom. There was a poor interval about No. 6 level, but the gold made again from No. 8 level downwards; the rock at bottom was the "kindly sandstone" of the miners—decomposed andesite or tuff. The drives at the 460ft. level extended seaward to the so-called Beach fault.

Una Hill, south of Karaka Creek, is traversed by a large low-grade reef known as the Hague Smith line, and, in addition, there are numerous auriferous stockwork veins in the rocks on the southern and western slopes. These stockwork veins are rather a feature on this field, as they frequently carry rich gold while the larger reefs are poor. The Shotover ground, and in fact most of the area between the Kurunui and Waiotahi Creeks, is intersected by such veins, in addition to the larger reefs.

To describe in detail all the reefs of this field and their features would be a work of no ordinary magnitude, but the foregoing sketch is sufficient for the purposes of this report. The question of most serious moment at present is whether there is a fair chance of valuable developments being effected by means of deeper explorations.

Most of the easily-accessible auriferous ground is exhausted, or rapidly becoming so, and the great difficulty attendant on deep sinking is the water, which would necessitate the erection of a powerful and costly plant before deeper sinking could be attempted, the present pumping-plant, which effects the drainage for a number of mines, although being efficient to 640ft., is only lifting from a depth of 400ft.

No single company on the field appears to be able to undertake the erection of the necessary plant, nor does it even seem that there is the ability to effect it by combination of a greater number or the whole. Some assurance of success is, at all events, needful before enterprise in this direction is likely to awaken, though I should imagine the information already possessed with respect to the deeper shafts in the south-western part of the field should afford reasonable encouragement.

It appears evident that in that locality the bottom of the soft andesites and tuffs has not yet been reached, and so far as they extend downward so far are auriferous reefs or veins likely to occur.

I have no hesitation in expressing the opinion, based on personal observation and reliable information, that exhaustive testing by means of deep sinking is most advisable, and that the expenditure on the necessary pumping appliances would be fully warranted by the general indications.

As a precautionary measure, however, and in view of the great cost of sinking a deep shaft and erecting the necessary plant, I would advise preliminary boring, not by any means to prospect for auriferous quartz, for no method is more unreliable with such an object in view, but as a means to ascertain whether the soft tufaceous rocks really do continue to any considerable depth below what has been reached in the deepest mines. If this prove to be the case, then deep sinking will be amply justified, but if, on the contrary, the hard breccias be shortly met with, the project of sinking will wear a less promising aspect.

One or more deep bores with a diamond drill would throw much light on the matter; the cost as compared with sinking would be infinitesimal, and all necessary information would be obtained from the cores with respect to the character of the rocks passed through.