

length, but is traceable for twelve to fifteen chains further. The first workings consisted of small shafts and open cuttings, but afterwards, when some water was struck in the deepest shaft, an adit nearly 400 feet in length was driven in the strike of the reef from the slope towards Conroy's Gully, but starting so shallow that it required an open cutting over two chains in length, and nearly two more of a tramway, to obtain fall for the waste, and principally that it lies only 50 feet beneath the surface at the end. In fact, when it reached so far, a great portion of the backs had already been worked out from the top. If on this account the adit must be pronounced, to say the least of it, a very injudicious piece of work, it appears still more so on considering that not far in advance of where the cutting begins the slope towards the bottom of the gully suddenly becomes very abrupt, and that it (the adit) might, therefore, have been put in from a point in the latter in the line of strike of the reef lying at least 150 feet lower, and not perhaps more than 300 feet farther, than where it now commences. After all the backs above the adit had been worked out, a shaft was commenced in the reef at the far end of the adit, but after sinking ten feet, where water made its appearance, the work was given up, and the reef shortly after deserted. Down the shaft, and left in the bottom, a vein of quartz was followed of six to eight inches in thickness, showing a tendency to widen out, of which the last twenty-five tons crushed yielded over 1 oz. of gold per ton. Touching the aggregate of the returns, it amounted, according to Mr. Poole, to £2,005 from less than 500 tons crushed; whilst the total expenditure on the claim, including crushing machinery, tools, &c., was £3,756. The crushing machinery, which stood in the bottom of Conroy's Gully, close below the line of the reef, was sold to Williams and party, on the Carrick Range, who are there erecting it on a reef claim, to be noticed further on. All accounts agree that a considerable amount of the, in the average, very fine gold, as also of quicksilver, was lost in the tailings, through the crushing and gold-saving process not being at all well understood at the time. Comparing the great waste of money, through injudicious workings, with the total returns, and looking at the above-indicated facility with which it could be opened at a good depth, whilst relying on the information concerning its character as left under-foot at the end of the old adit, I certainly think this reef deserves another systematic trial.

APPENDIX 6.

AURIFEROUS REEFS OF THE BENDIGO DISTRICT.

In my examination of most of the reefs of this extensive district, I was kindly accompanied by Mr. G. B. Douglas, the manager of the Bendigo Deep Level Company, and I am indebted to him for much of the information about the yields, workings, and other particulars given in the following descriptions:—

Logan's Reef and Cromwell Company.—This celebrated reef, in the possession of Messrs. Thomas Logan, B. R. Baird, and G. W. Goodger, the latter of whom was kind enough to show us through the workings, is without question the richest and best defined in the province, and has been very extensively worked for nearly half a mile in length, but is traceable for perhaps three-quarters of a mile further east in strike. It cuts through nearly horizontal, very quartziferous mica schist, at a strike of E. 5° S., dipping with slight bends for about 100 feet from the surface, close upon vertical, and then bearing gradually to the north, at an angle of 75°. Its walls are especially well defined and even, and there is a clayey ferruginous casing on either. According to Mr. J. Parry, the mining manager, its thickness in the present workings ranged in places from two to six feet, but the average was about three feet. It did not, however, consist of quartz throughout, but there were larger and smaller mullock patches, the larger ones with a step-like outline at the top, of which some carried very good gold. The quartz shows a fine seamy structure, and is of a brownish colour and ferruginous near the surface, but in depth assumes a bluish colour, whilst becoming more and more strongly impregnated with pyrites, galena, and zinc-blende (Black Jack). The gold occurs both in the seams and in the mass of the quartz, but was on the large scale not found evenly distributed through the reef, but to be accumulated in shoots dipping eastward in strike at rather sharp angles. Thus in places the quartz paid hardly a few pennyweights of gold per ton, but was succeeded by such paying over two ounces, and this again by a shoot yielding up to and above six ounces per ton. The average yield from different working places has for some time been over three ounces per ton. In the lowest part of the present workings, a few feet above the bottom of a whim shaft 260 feet in depth (there are two other shafts, 170 feet and 114 feet deep, worked by derricks, besides), one of the rich shoots, paying up to six ounces per ton, has been struck, which dips at an apparently sharp angle eastward into the so-called "Golden Link" ground, where the reef was first opened and most extensively and successfully worked. The deepest shaft on this line of workings, which has for some time been at a standstill, is 330 feet, and excellent gold (three to six ounces per ton) from large quantities of stone, wrought either side, was obtained to about 150 feet in depth. Below that the quartz became gradually poorer, and from near the bottom, where the water grew very troublesome, it paid only seven pennyweights per ton. There is every probability, however, that the rich shoot just noticed as existing at the bottom of the whim-shaft will be struck on further sinking. In parts of these workings the walls of the reef came close together, whilst in others they were up to ten feet apart, both quartz and mullock, which filled these wide places, paying over six ounces per ton throughout. Towards the east the reef deteriorates very much in quality, and there are only a few places—one at about four chains, and another at two to three chains still further on—where it has been superficially worked, and paid up to sixteen pennyweights per ton. Good-looking leaders, running at acute angles towards the reef, have been struck here and there along the line worked, but none have been followed, and not a single prospecting cross-cut has been driven throughout the whole extent of the workings. Whilst showing occasional outcrops through the Golden Link ground, the reef came to a point in the line of the present workings; and whilst sending out two strong branches—one on the north, the other on the south—it itself continues in the centre, but dips rather sharply in strike westwards, as indicated by its disappearance down the pretty steep slope of the hill—on which the workings are situated. This feature has, however, only been properly understood lately; for whilst the workings on the main reef were carried on westward from the Golden Link ground, the northern one of the two branches—which soon assumes