

at considerable, or high, angles, and are not overlain by younger deposits, they can be easily prospected by trenching along the surface of the ground; and even when the dip is at moderate angles, as in the Maraewhenua goldfield, the outcrop of the auriferous stratum is usually easily to be found.

Further prospecting should be carried on in these beds in the hilly country between Pigroot and Hyde, at Hamilton's; under the basaltic sheet and along the line of outcropping drifts to the Sow Burn, and along the different lines that appear round the borders of the Maniototo Basin, Ida-Burn and Pool-Burn Valleys, and in the Manuherikia Valley, and wherever the beds are met with east of the Molyneux River. The newer quartz drifts and breccia conglomerates of Tinker's, Drybread, and some other places along the south-east base of the Dunstan Mountains should be further prospected in the same way.

The great difficulty in the way of the further development of alluvial mining in Otago is the scarcity of water, and the difficulty of bringing an abundant supply on to many places where hydraulic sluicing could be carried on profitably. The measure of the water available is, therefore, that which must determine the rate of progress and increase of this form of gold-mining in the district examined. At Fullerton's, Hyde, Hamilton's, Black's No. 3, St. Bathans, and several other places very rich driving-ground was met with in the quartz drifts, but it was never, apparently, rightly understood under what conditions the gold stratum had been deposited, and, as a consequence, prospecting by shafts in the deeper ground was usually adopted, when the gold-bearing stratum might have been followed at the surface. It is hoped that this report has thrown some light on the subject, and that future prospecting will be carried on for driving or sluicing ground, not by the costly method of deep-shaft sinking, but by following the outcrop of the auriferous gravels where these have been proved, and by trenches cut across the belt of drift country where the gold-bearing stratum has not been determined.

Of the newer quartz drifts and breccia conglomerates on Criffel Face, Cardrona Valley, much cannot as yet be said, but it is a field that is very well worth prospecting, since it may prove to be continuously auriferous from opposite the Cardrona Township to the mouth of the valley near Mount Barker. Of the newer Miocene or older Pliocene conglomerates, locally known as "Maori bottom," these may not at many places be rich in gold, but they are at the present time being worked at several places—notably at Switzer's—and indicate a source of gold that is practically inexhaustible.

The old high-level lake terraces at the Crown Terrace, Arrowtown, Frenchman's, and Mid Run, in the Upper Clutha Valley, show that at similar levels at other localities like deposits of an auriferous character may be found.

The illustrations accompanying this report comprise geological map of the goldfields of Otago, and six sheets of sketch sections, Nos. 1-28.

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