

eastward in strike, there was no doubt still the chance of its being found of some thickness further a-head; however, on looking at the uncertainty and the expense of further work, I advised the manager to discontinue driving on the slide altogether, and, instead, to open out eastward on a quartz reef, 9 inches thick and dipping vertical, which crosses the adit E. and W. some distance from its mouth, and in which gold is said to have been found when penetrated. In fact, there can hardly be a doubt that this reef represents the continuation of the main reef, worked at the surface; for, besides having the same strike and dip, its position in the adit—as ascertained by tape measurement—agrees tolerably well with that of the main reef, as given on a plan prepared by Mr. Evans, mining engineer, on which also a good length of the adit is marked. As regards the prospects of the proposed workings, I think they are very fair, judging from the character of the reef at the surface, and that gold has already been found in the portion crossing the adit; but it must not be forgotten that as soon as the available backs are worked out, opening of the reef in depth will have to be effected by shaft, and requires pumping and hoisting machinery. The flat reef may either be a so-called “dropper,” or represent a reef parallel in strike to the main reef, which, on crossing the latter in depth, shifted it a little southward; still, whatever its nature, I take it to be uncertain in extent and auriferous character. The portion left in the shaft might perhaps be easiest opened by a rise from the end of the adit. Touching the crushing machine of the company, it consists of five heads of revolving stamps, driven by a turbine, copper-plate table, and blanket-strakes; a rippled tailing-race forming not a bad addition.

Golden Crown Reef.—This is apparently a continuation of Logan's Reef, from which it lies about one and a-half miles distant to the east. The discoverers, J. Wrightson and Co., have not done much work on it as yet; but from what it disclosed, it seems to be of a mullocky character, and from 9 to 16 inches thick. A crushing of 17 tons yielded about 8 dwts. of gold per ton.

Claim No. 10.—This lies also in the line of, and about two miles distant from, Logan's Reef. It contains a well-defined quartz reef, from 2 to 4 feet wide, in which superficial prospecting has not disclosed any gold as yet; but near to this reef, on the south, and dipping towards it, runs a parallel leader from 6 to 10 inches thick, from which a crushing of 26 tons produced at the rate of 26 dwts. of gold per ton. The reef deserves, in my opinion, to be properly prospected.

The Bendigo Deep Level Company: Managed by Mr. G. B. Douglas.—This is a spirited, and, in my opinion, highly promising prospecting enterprise. The adit, which at the time of my visit was only 10 to 12 feet in, starts from the Bendigo Creek, southward, into the high precipitous mountain side, in a direction nearly at right angles to several reefs presently to be mentioned, and also to the lines of the main reefs previously described, though at more or less considerable distances east of their workings. Thus, according to Mr. Douglas's survey, it would intersect, at 60 feet in and 100 feet beneath the surface, the line of a reef 1 foot wide, which has proved auriferous; at 160 feet in and 300 feet below the surface, the line of the *Guano Reef*, a well-formed reef, 2 feet wide, opened right above the line of the adit, and which has yielded from 16 to 26 dwts. of gold per ton from five crushings that ranged from 26 to 48 tons each. Next comes, at 260 feet in and 45 feet beneath the surface workings, the line of *Broadfoot's Reef*, also a tolerably defined reef of 2 feet in thickness, from which three crushings, of from 28 to 42 tons each, gave at the rate of $12\frac{1}{2}$ to $14\frac{1}{2}$ dwts. of gold per ton. Beyond this reef, at 400 to 500 feet in and about 560 feet beneath the surface, come two leaders, or small reefs, from which crushings have yielded $7\frac{1}{2}$ to 9 dwts. of gold per ton. The line of the Lucknow Reef would be intersected at 700 feet in and 550 feet beneath the surface, that of the Aurora Reef at 1,400 feet in and 700 feet beneath, and that of Logan's Reef at 1,900 feet in and 1,000 feet below the surface; also two leaders, each about 12 inches wide—one between the Lucknow and Aurora, the other between the latter and Logan's Reef, of which crushings yielded respectively 9 dwts. and 13 dwts. of gold per ton. A great collateral advantage the site of the adit has is, that from the Bendigo Creek running past its mouth a never-failing supply of water could be procured for crushing purposes, native power included. The adit has been commenced only wide enough for single tramway, though I think double tramway width would have been far more advisable. What I would specially recommend to the company is to start as soon as possible work with a good boring machine driven by compressed air, which would save special ventilation of the adit, and to use gun cotton, or better still, Nobel's dynamite, for blasting.

The Alta Reef.—This reef has been deserted for a long time, though its prospects seemed encouraging enough, up to the last, for an extended trial. It lies about three miles E.N.E. of Logan's mine, and seems, from what could be seen in some of the old workings, to run in a rather crooked way, at a mean strike of E. 3° to 5° W., and to dip nearly vertical; walls apparently not very well defined. Its thickness seems to have ranged from 2 feet to 6 to 8 feet in places. Eight crushings realized at the rate of from $3\frac{1}{2}$ to 19 dwts. of gold per ton.

A peculiar feature in the reef was the occurrence on the south wall of masses of a very heavy, yellowish-white mineral, which proved very troublesome during crushing; and on examination of the spoil heaps from the workings, I discovered specimens and recognized it as “scheelite,” or tungstate of lime. As this is a mineral that most frequently accompanies bismuth ores, there might be a chance of the reef carrying these ores in depth, or of their occurring in the immediate vicinity. The reef has, not very judiciously, been opened by two adits of 90 and 140 feet in length, and at the respective depths of 64 and 80 feet, whilst, according to Mr. Douglas, an adit from the opposite side of the range, where the machinery stands, would at a length of about 680 feet have struck it at a depth of 280 feet, and crossed besides four other reefs, of which one yielded 14 dwt. per ton, from a trial crushing of 12 tons.

The crushing machine, connected by a long tramway and shoot with the mine, consists of ten heads of revolving stamps, in two batteries, driven by turbine; amalgamating tables of the usual pattern, and blanket-strakes. Not being housed in, it is suffering much from exposure to the weather.

The Rise and Shine Reef.—This peculiar occurrence of auriferous stone—for it cannot be called a reef—lies about three-quarters of a mile east of the Alta machine. Judging from three small shafts, the only workings as yet executed—one 18 feet deep lying in the bottom of a gully, the other two shallower, sunk several chains apart on the slope of the southern range—it consists of a zone of highly mineralized mica schist of considerable width, and apparently striking north and south; dip uncertain. The stone worked out of the gully shaft—amounting to about 30 tons—is densely traversed with