

PROFESSOR ULRICH'S REPORT.

The following is the report of Professor Ulrich to the Minister of Mines on Green's reef at Ophir:—

"University, Dunedin,
November 23, 1885.

"Sir,—I have the honour to inform you that under the guidance of Mr. Green, Mr. Pitches, Mr. Bannerman (agent for Colonial Bank), and other gentlemen interested in the Ophir district, and who gave me every information desired, I inspected Mr. Green's celebrated gold discovery as well as other occurrences bearing some resemblance to it, and also the drift deposit at Ophir and Blacks No. 2 and No. 3. The result of my inspections are as follow:—

"MR. GREEN'S AURIFEROUS DEPOSIT.

"This is at present exposed and prospected for a distance of eight to nine chains, and in one place for a width of near 30 ft., running at a strike of East 10deg., N.W. 10deg. between two gullies, across an intervening ridge, which is about 60ft. in height. Near the top of this ridge, on the eastern side, are several old shafts, sunk by former prospectors, and it is here where Mr. Green first found the richly auriferous quartz specimens (the auriferous character of the stuff which is presently to be described), and has so far carried on most work. The stuff composing the deposit consists of a thinly laminated, decomposed, soft, and friable metamorphic schist, probably originally chloritic mica schist, showing a nearly horizontal bedding, and being more or less abundantly traversed in all directions, from horizontal to vertical, by broken quartz veins ranging from a thin thread up to an inch in size, and soft, white mineral occurring frequently in irregular small patches and veinlets proved on examination to be silicate of magnesia. The colour of the decomposed schist when freshly broken is greyish blue, but fades quickly on exposure to the atmosphere to a bluish white, interspersed with brown ferruginous spots. According to Mr. Green's trial washings, and some executed in my presence, the gold is distributed through the stuff in spongy crystalline particles from the size of a bean down to a state so fine and light as to be hardly recognisable by the naked eye and scarcely retainable in the tin dish. Besides this it occurs in the quartz-veins, especially those with a steep or vertical dip, some of which have furnished specimens of great richness, consisting in cases of more gold than quartz, and a few which Mr. Green showed me would if the quartz were broken out, yield small nuggets from several pennyweights up to perhaps nearly an ounce in weight. Owing to the irregular distribution of these auriferous quartz veins, it is impossible for an estimate to be made of the gold contents of the stuff in the average; but so much can with certainty be foretold, that, should the ground on further exploration in a strike and depth prove as rich throughout as at the place about the old shafts, Mr. Green will soon become a very rich man.

"Regarding the geological character of the deposit, and what it represents in a mining point of view, I was enabled to make the following observations: An open cutting between the old shafts shows that the soft stuff is sharply cut off on the south side by a hard quartz vein a few inches in thickness dipping N. 10deg. W. rather unevenly at an angle varying 60deg. to 70deg. Beyond this quartz vein, which is called the 'Captain Reef,' and for the prospecting of which old shafts have been sunk, follows a thinly laminated micaeous quartz schist, showing a nearly horizontal bedding. The quartz vein has mostly been removed out of the quartz schist, but at one place a patch is left showing a finely polished surface with deep striations normal to the line of strike—a so-called slickenside, whilst the ends of the laminations of the soft stuff are slightly turned upward on the quartz veins. Whether towards the north a similar wall exists has not been proved as yet, and nothing can be seen on the smooth surface for a distance of about two chains, where Mr. Green has prospected with fair results of fine gold. From the gully upwards to near the top of the ridge is a second vein of soft decomposed rock striking parallel to the first, but showing a lighter colour, and more abundant and larger ferruginous patches. Adjoining this further northwards follows a chloritic mica schist, which, though soft in the gully through the action of the water and richly impregnated with pyrites, becomes soon hard up the ridge, exhibiting there massive rocky outcrops. From these features, considered in connection with others, clear evidence is afforded by the second side and the adjoining quartz schist that in the line of the Captain Reef a fault has taken place with the result of a downthrow of the auriferous rock from probably a very high level, whilst in case of a second wall being found to the northward beyond the second run of soft auriferous rocks, for which there is some probability, the whole of the intervening mass would constitute a huge mullock reef, such as exists on a smaller scale at Skippers Creek and many places in Victoria. The alteration of the rock and its impregnation with gold within the two lines of fissures, or, at any rate, of the faulting fissure, running along the Captain reef, in my opinion is mainly due to the meteoric waters once circulating in these fissures—a hypothesis for which the fact speaks somewhat in favour of the richest specimens and the best prospects of loose gold having been obtained by Mr. Green close along the Captain reef, along which itself has so far not proved gold-bearing. Judging from similar occurrences in Victoria, a great part of the fine gold is doubtless derived from decomposed auriferous pyrites, an ore which may likely occur as a rich impregnation of the rock in the depth below the permanent water-level. There can hardly be a doubt that the fault, and with it the deposit through strike, is greater than at present opened. Several chains to the westward, on the western side of another Gully, Mr. Green obtained from a greenish rotten rock fair prospects of fine gold of a similar character as occurring on the soft rock of his workings. Prospecting further westward would, however, be connected with difficulties, as the line of strike of the fault runs across a drift terrace into the flat, and extends through the township of Ophir. Towards the east the chance of the extension of the deposit, at least of the same width, seems unfavourable, as the ridges in that direction showing the line

of strike of the fault are massive outcrops of hard metamorphic rock rather close together.

"Regarding the extraction of the gold from the mullock, the softness and friability of the latter permits of its quick conversion into fine mud by the action of the water, and therefore the use of a puddling machine and a plentiful supply of water, and the crushing of the quartz portion remaining in the mill, would in my opinion, be the most advisable process to adopt.

"Since Mr. Green's discovery several places showing similar decomposed rock have been tried on the ridges in different parts of the district, but apparently without success in finding payable gold.

"A place called M'Leod's Working deserves, I think, some further explanation, as the run of rotten rock seems to strike nearly in the same direction as that of Green's, and prospects of fine hackly gold are said to be obtainable from it by the tin-dish trials. Considering the great scarcity of quartz reefs in the district, in conjunction with the fact that there are a number of surface workings and dry alluvial gullies high above the boundary line in the mountains, which have yielded payable gold from gravel with very poor appliances and small capital, if an efficient water supply were brought down from the Upper Mauberika (which I was told would be the most advisable course) on to the range above Ophir, it would not only permit the hydraulic sluicing of all the township but would lead no doubt also to the discovery of other high drift deposits of equal richness in quartz. It is highly probable that such gold was derived from mullock deposits similar to that at Green's. The district, therefore, certainly deserves more extending and systematic prospecting.

"THE DRIFT DEPOSITS AT OPHIR AND BLACKS, NOS. 2 AND 3.

"Regarding these, I cordially agree with Mr. Pyke that they are unjustly neglected, and offer excellent chances of rich returns to enterprise. Lower down the valley, towards Alexandra, the workings at Blacks Nos. 1 and 2, now nearly abandoned, indicate, as Mr. Pyke says, the existence of a genuine deep lead, but examination of the ground and information about the depths towards the broad Ida Valley, in which no doubt a deep main lead lies hidden, are required. The two branch leads start at Blacks No. 3, very shallow from a saddle between the main range and so isolated outcrop of metamorphic rock, and run for three-quarters of a mile down the valley along the foot of the range towards Blacks No. 2, reaching gradually a depth of over 100ft. The other runs up the valley, curving towards the latter, but reaches already to within a short distance of the last shaft worked from a depth of close upon 200ft. This shaft, according to information kindly given me by the Hon. Captain Fraser, who was interested in the claim, was abandoned on account of a body of water breaking into it, and from the very limited workings nearly £2000 worth of gold was obtained. About the result of workings on other leads, Mr. Pitches, who knows the field intimately since its opening, gave me a most favourable account. Payable and even rich gold was found in most of the claims, as much as 40os. a day in one case, and the lead was not lost. Only the great expense of timbering, occasional trouble with breaking in of drift, and principally the rush to the West Coast, led to the gradual abandonment of the field. Not doubting the correctness of all the information given I can only say that if such a promising place were in Victoria it would be rushed directly. It only requires several parties of skilled miners with sufficient capital and one or two well managed companies to recommence working, and I have no doubt that this deep-lead field will again become prosperous and attract a large population, the more so as there is every probability of similar branch leads and surface drifts as those worked existing and being opened up along the as yet unprospected foot of the ridge higher up the valley.—I have, etc.,

"GEO. H. F. ULRICH."

It is wise to provide against emergencies that are liable to arise in every family. A cold may be a dangerous thing, or not, depending upon the means at hand to combat it. In sudden attacks of cold, croup, asthma, etc., Ayre's Cherry Pectoral will prove the quickest and most effective cure, and your best friend.

The German journal *Dresdener Nachrichten* announces the conversion to Catholicism of two ladies of noble birth, Miss Von Massow and Miss Von Zeechan, the latter a famous authoress. Their reception took place at Mariastern, in the neighborhood of Teplitz. Miss Von Zeechan belongs to a most ancient family in Saxony. It is rather remarkable that this family was one of the first to embrace Lutheranism, and that she is the first since those sad days to rejoin the Faith of her ancestors.

Bismarck, Dak., Sept. 18.—Charles Lafin a prominent Canadian, John Wilson, and two other hunters, were hunting buffaloes a few days ago on the banks of the Missouri river, 800 miles northwest of this city. The hunters started a herd of 200 animals and were in hot pursuit, when a storm burst upon them. The wind blew the dust and leaves in the eyes of the buffaloes and they turned about and stampeded. The hunters were run down, and all but Wilson were trampled under foot. Wilson recovered the mangled bodies and sent them to their friends.

The following is a real "letter from a boy," aged eleven: "I send back this cur which I hope will bring out virtues. I send him under the pretence of your giving him away if allowable; but if you find an owner for him who will take him under the simplicity of taking care of him, do so by all means. You will think by his manner that he has been ill-treated, but it is owing to his sneaking deficiency face. He has been treated with the utmost tenderness. The food which he relishes best is chickens on the wing. Poets, rails, buckets, and other garden utensils do no good for his epidemical hide; when not well fed he barks doors. Although we have not touched upon his good qualities we will now begin. He has a tendency to drive cows, but not at the right time. I will name the victims which he has fought—a black dog with yellow hair and a spunky little pug. A bad beginning may mean a good ending in the dog life. I think he will come out a genuine dog in the end—all he lacks is lustre."—*Boston Transcript*.