REPORT on the recently discovered Gold Field at Mount Victoria, County of Dorset, Tasmania, by G. THUREAU, *F.G.S.* 1883

THIS goldfield is situated on the western flanks of Mount Victoria, or about half-way down from the summit of that mountain to the banks of the Dorset River. The country is thickly timbered, and a good thickness of soil of good quality is in places covering the rocks, causing a dense and luxuriant undergrowth of timber.

Mount Victoria (3964 ft. above sea level), with its serrated and columnar crests, is capped by a densely-grained basalt, which rests on horizontal beds of conglomerates, sandstones, and grits of coarse grain. These are succeeded by grey coarse sandstones, nearly vertical in position, and they are traversed by numerous and irregular bands and veins of non-metalliferous white quartz. These gradually pass into more crystalline schists of a metamorphic character, as seen in the deep ravines eroded in these ranges; and it is in this belt of metamorphic schists, which in the north merge into more clearly defined silurian slates and sandstones, that the principal auriferous deposits have been discovered by the prospector, Mr. R. J. Wilson.

The occurrence of gold in this part of the district is, so far, confined exclusively to the *veins* of gold-bearing quartz opened in several places, and no attempt has hitherto been made to test the alluvial gravel deposits in the creeks or in the Dorset River for gold, which probably will yet be found in them.

The geological formation enclosing these auriferous vein deposits presents some very peculiar features worthy of attention, because to a great extent this occurrence of gold-bearing quartz appears to be regulated by the positions observed by the surrounding strata. The metamorphic beds in question are subject to considerable foliation and contortion, by means of which the gold-bearing matrices are made to assume varying angles of inclination to the horizon, rendering it somewhat difficult for the observer to distinguish whether some of these vein-stones, so very similar in character, are, or are not, parts or portions of the same line of reef. For instance, the channel of the present Wilson's Creek, in its westerly course, passes through the apex belonging to the principal anticlinical foliation in that locality, so that, whilst on one side of that creek the schists dip to the north-west, that inclination is reversed on the opposite side to the north-east, the apex observing meanwhile an easterly course.

On the south side of the same creek it was observed that the outcrops of the gold-bearing quartz veins obtained the greater extension in their strike; and one of these veins has been traced for nearly seven chains in length, and wherever same was tested the presence of fine gold has been proved by crushing small quantities or samples taken at random in the mortar.

In nearly all the various workings examined the gold-bearing stone partakes of the same character, viz.—great density, weight, and hardness. It is nearly always of a laminated description, and charged with arsenical pyrites and the allied "pharmacosiderite," which latter gives a peculiar greenish hue or stain to most of these veinstones; galenites, iron pyrites, and calcites are also found, presenting altogether the same appearances so characteristic of other auriferous quartz reefs.

The gold is rather light in colour, denoting an admixture with silver, and it is, generally speaking, more of a fine than even moderately coarse description, which will necessitate the use of the very best appliances in crushing and amalgamation in order to collect this fine gold, which, if treated in the ordinary way only, will entail a considerable loss of gold during the manipulations necessary in separating the gold from its matrices.*

* A small sample of stone, weighing but 2 ozs. troy, gave after crushing a yield of 21 grains of gold; it is not known, however, whether this was a parcel selected for showing good gold.

The Reefs.—I am of opinion, after careful examinations, that some of these quartz veins can be wrought at a profit, if proper attention is bestowed on the treatment of the stone that is being raised at the present time. At the same time it is quite possible that some of the outcrops on the surface now distinctly separate will be found to belong to certain lines of reef, whereby the number of the former will be reduced. So far as my examinations have extended, the belt of metamorphic schists as traversed by the auriferous quartz veins is from seven to eight chains in width, and gold-bearing quartz has been discovered in the outcrops for a distance along their strike of from three to four miles, *i.e.*, three miles north and about a mile south of the prospectors' camp. It is quite possible for other gold-bearing veins to exist within or even outside of those limits, but the depth of the surface soil and the prolific vegetation prevents their discovery at present.

South of Wilson's Creek, the underlay of these auriferous veins—they cannot in the absence of more extensive and deeper mining operations which would disclose their permanent character or otherwise, be called "lodes"—is principally to the east, at angles ranging from 70° to 82°, thus dipping, as it were, beneath the non-auriferous strata overlying them higher up the ranges descending from Mount Victoria.

North of the same creek the underlay of the veins discovered varies considerably, the angles approaching more the vertical. "Faults" are also more prevalent in that direction owing to the greater disturbance occasioned by the tilting of their country rocks.

The first vein discovered by the prospector of this new district exhibits a laminated quartz, stained green from decomposed arsenical pyrites, and is embedded in "altered" slates and sandstones; the vein has a bearing of south 53° east, and it is from 6 inches to 1 foot in width. The stone becomes more mineralised and richer in depth. This vein reappears at the surface across Wilson's Creek in several places, and it maintains a good appearance, with great regularity of its gold-bearing qualities, wherever it has been traced by means of surface trenches, &c. Above it, on the ranges, in a south-easterly direction (here rising fully 45° to the horizon), six successive outcrops of promising auriferous veins have been found, ranging from a few inches to two feet in thickness; of these, three or four have yielded very encouraging prospects on the quartz being crushed in my presence by hand, and they evidently would supply, if systematically opened up by means of adits, for which this region is so eminently adapted, a very considerable quantity of gold-bearing quartz for crushing in batteries when such shall have been erected.

The more dense and laminated veinstones are, in this locality, generally accompanied by other quartziferous strata in the walls, also auriferous in places, which probably, at a greater depth, will cause an increase of the width of the veins in question.

On the prospectors' area, north of Wilson's Creek, four promising gold-bearing quartz veins have, so far, been discovered; and it is quite possible, judging from the surrounding circumstances, that they may prove the continuations of the veins occurring on the south side of that creek or watercourse, or also on the opposite side of the foliations described, or that anticlinal axis.

North-west of the prospectors' camp, at a distance of about a quarter of mile, is the Mercury Association's ground. Their No. 1. vein has been bared of the surface soil and talus; it is from two to three feet wide, and is composed of a solid gold-bearing quartz in a nearly vertical position. Farther along, in about the same direction, No. 2 vein was also closely examined, and this proved the more valuable of all on this goldfield. The vein observes a bearing of North 60° West for a width of 18 inches, and to the south a fault has caused the stone which underlies west to be thrown thirty feet before the continuation could be found again. If for nothing else, this disturbance has by some means enriched the quartz considerably for a width of from 20 to 24 inches. South of the fault the stone also underlays in the reverse direction, making it appear as if a junction would occur at some depth, which however appears somewhat doubtful, as has been found frequently in other cases it would not do. This is the most massive vein formation yet found on Mount Victoria, and in which fine to coarsish gold is showing more freely than any of the other veins. Some very rich stones were broken during my examinations from the bottom of a cutting about 23 feet deep; and in the stone raised from the adjoining shaft, 26 feet in depth, gold was exhibited in a narrower stone more pyritous in character. The wall-rocks in which this rich vein occurs are of a clearer slatey and sandstone character, almost vertical in position, and this stone is one of great promise if it continues to greater depth than at present.

About two miles and a quarter north from the prospectors' camp, following a partly-formed steep sidling track, the Mount Victoria Prospecting Company are also opening a large vein of quartz, on which they have sunk about seventeen feet; the vein, which is of good width (2 feet) has a bearing of North 8° West, and it underlays at an angle of 53° to the West. The hanging wall is very regularly formed, and a soft selvage marks the course of the vein. This appears to be a large vein of gold-bearing quartz formed of blocks dipping north; there is no regular footwall in the east, but a formation of brittle and auriferous quartz, interspersed by blue slate, joins the harder quartz west, and thus forms a very promising deposit, which can be worked very advantageously by means of adits driven in the range nearest the Dorset River, which pursues its course about 350 feet below this outcrop, and at a distance of about 30 chains west.

Gold is reported to have been found in quartz at a distance of a mile farther north, or close to the track cut some years ago from Ringarooma to Black Boy.

The existence of quite a number of gold-bearing quartz veins at Mount Victoria having been proved at and near the surface by means of the numerous workings made by various parties in a belt of country of considerable extent, the question of their permanency in strike or depth can only, on account of the limited depths yet reached, be a matter of opinion, or rather of comparison with similar deposits elsewhere, where the surface extensions along their strike stand in direct relation to the depths they may be followed with remunerative results.

The water power available for crushing purposes ultimately necessary for the development of this new goldfield is found chiefly in the Dorset River, where over twelve sluice-heads may be counted upon, not taking into consideration that which may be obtained from the Ferny, Wilson's, and Lucky Creeks, which are never dry it is reported. This would suffice for some time to come, and the supply now available can easily be augmented by the construction of capacious storage reservoirs.

There is also a considerable quantity of suitable mining timber close at hand.

The abrupt flanks of Mount Victoria, in which these veins occur, present great facilities for working and testing these deposits at greater depths, by means of low-level adits, in a more economical way than by means of shafts sunk from the surface, which latter require close timbering, and constant windlass work for some time to come. And as the future prosperity of this new goldfield depends greatly on thorough reliable tests of the stone raised, (about 40 tons raised now), a small five-head battery worked by means of an inexpensive "reaction jet water-wheel," so universally and successfully employed in the mining districts of the Pacific Slopes, U.S.A., would, as a preliminary, prove whether the results achieved thereby rendered the erection of more expensive and powerful machinery necessary.

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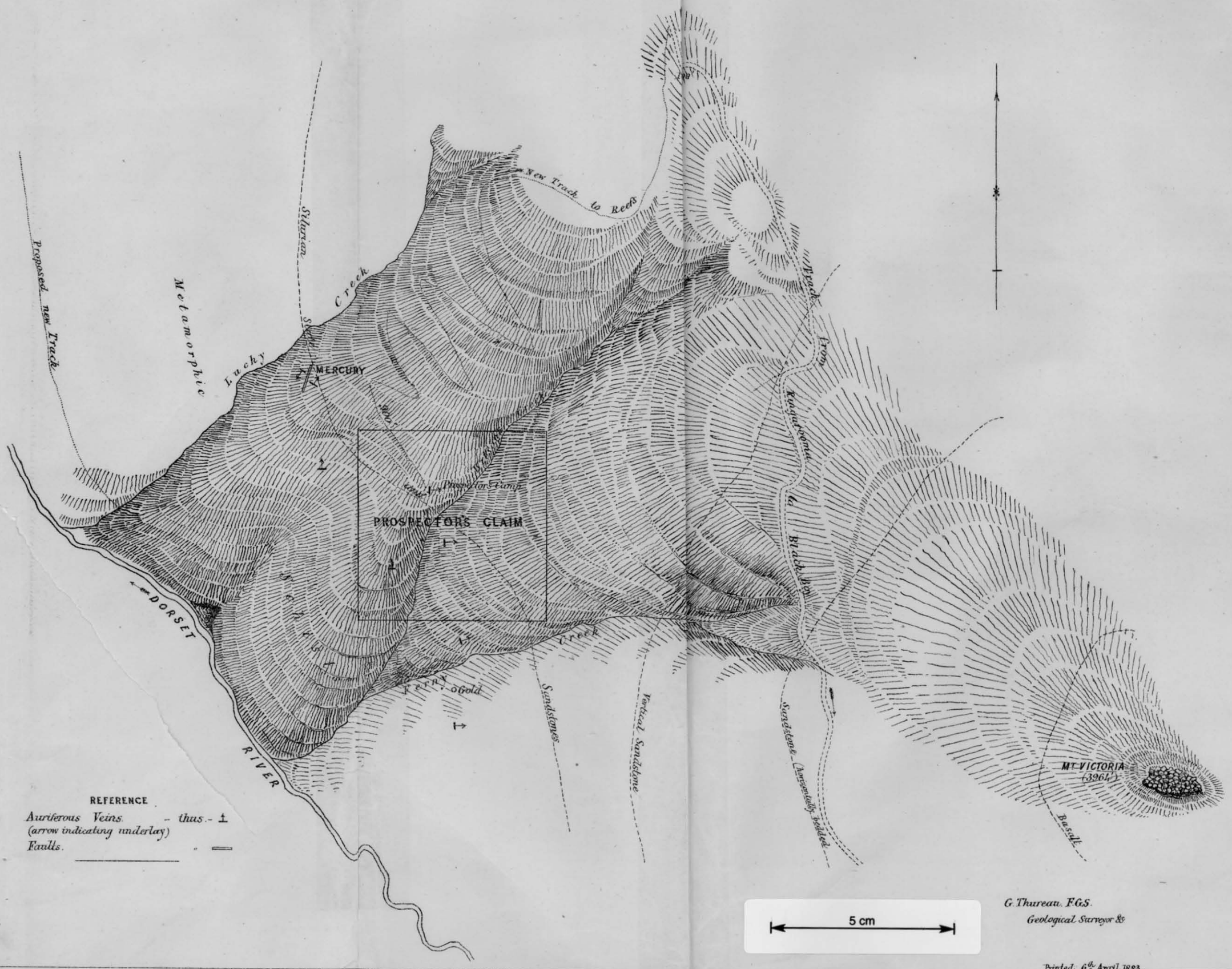
GEOLOGICAL SKETCH PLAN
OF THE
Mt VICTORIA GOLD FIELD



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