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DEPARTMENT OF MINES.



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JAMES TRAVIS, ACTING SECRETARY FOR MINES, UNDER THE AUTHORITY OF
THE HON. HENRY FOSTER, M.P., MINISTER OF MINES.

REPORT ON THE EXTENT OF THE DEEP LEADS OF VICTORIA.

(By R. A. F. Murray, F.G.S., *ex-Government Geologist.*)

In reference to Mr. Foster's expressed desire that the extent and character of the mining resources of Victoria be brought more prominently under notice, I beg to submit the following notes with respect to the great aggregate length of deep alluvial leads as yet unworked, and requiring large capital for their development, but from all attendant conditions holding out rich promise of success to those who undertake their exploration.

Comparatively few, even among the mining community, grasp the real magnitude of these resources, and I think it would be well to bring the subject prominently under the notice, not only of Victorian, but of British capitalists, as, making due allowance for all uncertainties of mining as regards the amount of gold likely to be won, the existence of these leads is a fact conclusively demonstrated by the boring operations carried out by this Department, while the strong likelihood of their proving payable is warranted by the geological conditions, and in many cases by the actual returns of the pioneer mines now at work on them.

In these notes I mention only what may be regarded as main trunk-lead systems commencing with the westernmost, that of the Ararat gold-field. Here we have all the shallow and worked out leads of the field emptying into a great main lead system covered by basalt from 250 to 300 feet deep trending down the valley of the Hepkins, crossing and then following the concealed continuation southerly of the same auriferous belt of rocks, whence the leads worked northward obtained their gold supply. Two series of borings some miles apart have proved the position of this trunk lead, to explore which several attempts have failed, owing to insufficient appliances and bad choice of sites for shafts. The minimum proved unworked length of this lead is fully 8 miles, and it may extend much further beyond where it debouches from confined limits under the wide plains southward.

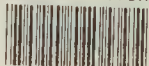
The next great system is that extending down from Mount Mitchell northward along the Bet Bet Valley, and thence across to the Avoca Valley. This has been tested exhaustively as regards the existence and position of the lead at three places several miles apart, namely, Caralulup, Lillieur, and Bung Bong, in each of which the existence of a large well-defined lead with heavy wash was conclusively proved. The valley is bounded on either side by Silurian ranges, in which are numerous and extensive alluvial workings. An attempt is now being made to explore this lead at Bung Bong, but so far the whole of its length is absolutely untested as regards payable gold. The length of this system is as follows:—From Mount Mitchell to Bung Bong 12 miles; from Bung Bong across the Rathscar plain to the Avoca Valley 6 miles (borings have been done on this section by private enterprise, and it also receives the Homebush lead). From where the lead joins the Avoca Valley, near Natte Yallock, down the valley to the plains 24 miles. This section is fed by the extension of the Avoca leads. Total for this system, 42 miles untested.

The next stretch of unworked ground is the up-stream portion of the Mount Greenock lead, between Mount Greenock and Evansford. This has also been proved by borings, but owing to the collapse of the last shaft sunk remains untested, though it crosses a well-known belt of auriferous Silurian rocks, and the depth is only 150 feet.

The down-stream continuation of the lead from Mount Greenock has been much worked, and at its lower extremity, near the junction of the great Lodden Valley system are the worked out Kong Meng and Napier mines at Majorca, and the Chalk's group of mines near Carisbree, all now yielding well. The length of the unworked portion above referred to is about 6 miles.

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Next to the eastward lies the most important deep lead system in Victoria—that of the Deep Creek and Loddon Valley, trending along, or close to, the northern prolongation of the Ballarat and Creswick auriferous belt. This may be divided into sections, at intervals on which the position of deep ground and the existence of heavy wash therein have been proved by means of the departmental borings. The first section is that which starts from the Midas and Dowling Forest group of mines, and has been proved by borings at Ascot, Tourello, and Clunes, beyond which it must join the extension of the Berry lead system. Total length from Dowling Forest to junction, 16 miles of unworked ground. The next section is the portion between the pioneer mines of the Berry group and their junction with the last-named section—a length of about 4 miles as yet unworked, and indicated as likely to be most valuable by the good results being obtained from the Berry Consols, and its position on the auriferous belt.

The next section is that from the junction of the two lead systems to the parallel of Carisbrook, where the Mount Greenock, Majorca, and Carisbrook leads come in from the west and the Loddon proper from the east. Here the borings near Moolort have proved a large and well-defined trunk lead, and the Charlotte Plains mine, though at present idle pending acquisition of capital, proved auriferous ground before being flooded out. The length of this section is 16 miles, unworked, and right on the course of the extension of the auriferous belt. The next section northwards is also a most important one, extending from Moolort to near Eddington, where the Bet Bet lead system joins it. The length of this portion is 8 miles, all unworked, on the auriferous belt, and within more confined limits than to the south. Here is evidently a very large and at the same time fairly concentrated trunk lead. From Eddington to Bridge-water the valley continues within comparatively narrow limits, and the trunk lead, formed by the combination of all the above-mentioned sections and branches of the system, has no other course than along it, still following the course of known auriferous country. This section is 20 miles in length, and the total for the whole system is 64 miles. There is thus in the various lead systems brought under notice an aggregate length of no less than 120 miles of deep lead all traversing auriferous rocks and likely to prove, in a large proportion at least, if not throughout, payably auriferous. The development of this great property will certainly require large capital, as the difficulties to be contended with in the way of water are undoubtedly heavy, but that they can be overcome is shown by the successful pioneer mines now at work. In addition to the above there are the lead systems of the Chiltern and Indigo district, besides many areas in which the existence of deep alluvial ground is a certainty, though the existence of payable gold is a matter of conjecture.

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