

## KALGOORLIE GOLDFIELD.

On 17th August, pursuant to your instructions, I was able to take in hand the plans in connection with the underground survey of the Kalgoorlie goldfield, which had been prepared by the late Mr. S. J. Becher. My first work was to number and catalogue the numerous underground plans of Coolgardie and Kalgoorlie already in the office. I left Perth on 8th September, and found my staff man had prepared Mr. Becher's old camp in readiness for me. I presented my letters of introduction to Messrs. Hamilton and Porter, Presidents of the Kalgoorlie Chamber of Commerce and Mine Managers' Association, respectively, and then I proceeded with bringing up to date the records of underground workings, the busier portion of the field receiving my attention first, according to your wish. The very large amount of work done on this goldfield, both below and also above ground since Mr. Becher prepared his plans, has rendered a large portion of his work obsolete, and new and more skilled surveys of many of the mines have been made, so that fresh tracings of these mines were now required. Some of the larger mines have however supplied me with sets of sun prints of their places; these have greatly assisted me, and, with few exceptions, the various mine managers afforded me facilities for my work. I have now plotted most of the underground workings upon the topographical map of four chains to an inch. The tracings of mines have then been forwarded to you for reduction to a uniform scale for record.

The report of Mr. Becher published in the annual report of the Geological Survey for the year 1898 renders it unnecessary for me to further describe the locality. There is, however, a subject to which my attention has been drawn, and which I would like to refer to, this is the growing research by the Geological Surveys of other countries into the magnetic conditions of areas dealt with by them. By making a series of observations at numerous stations of the magnetic declination, dip and horizontal force, lines of equal intensity or isogonic lines are mapped; these lines are found to be deflected from the general course where disturbance or faulting of the strata below occurs. Thus there appears to be afforded a means by which the positions of lodes and dykes, which follow lines of disturbance, might be proved by the prospector. It would form a valuable adjunct to the work of the Geological Surveyor, and in view of the very great importance of this magnificent goldfield, I would urge that a systematic investigation of magnetic conditions be undertaken here, and extended to the adjacent districts, so as to ascertain whether a continuity of conditions can be traced between them, for the purpose of defining, as far as possible, the positions of the auriferous belts.

## COOLGARDIE GOLDFIELD.

Upon the receipt of your instructions of 14th December to make an examination of the prospecting work which had been done at Coolgardie for discovering deep leads, I proceeded there on the 17th, and, after making an examination, returned to Perth on 22nd December and submitted my report on the subject.

W. D. CAMPBELL,

Topographical Surveyor.

15th January, 1900.

The Government Geologist.