

#### IV.—Report of W. D. Campbell, A.M.I.C.E., F.G.S., Topographical Surveyor.

The following Report deals with the work performed by myself during the year 1899 at Menzies, Kalgoorlie, and Coolgardie:—

##### MENZIES GOLDFIELD.

I had the honour of resuming my work as Topographical Surveyor on the 13th March, 1899. I left Perth on the 16th March with a staff man, and on arrival at Menzies, formed a camp at Merry's Well, four miles in a South-Easterly direction from the town. I commenced field work on the 21st March using a Colonel Woodthorpe's tacheometer of four inch diameter, and level staff with circular vanes, 12 inches diameter, fixed at five and 10 feet on the staff; an arrangement which I had previously ascertained by experiment was best suited for bush work. The micrometer constant, and check readings of the staff at each 100 feet up to three-quarters of a mile distance having also been obtained, a table of feet equivalents of micrometer readings from 150 to 1,100 was made, and tested on a trial line of one and a-half miles, starting from a previous survey station on the track Southwards from Merry's Well to another station near Woolgar, the levels closed with a difference of 17 feet, which was satisfactory; the distances also plotted out well. This vertical angle levelling proceeded uninterruptedly to the close of the work. A larger area of country was included than was at first anticipated for the sake of preserving continuous contour lines.

The ground was hilly, ranging from 1,330 to 1,660 feet above sea level, and mostly covered with low bush, which necessitated some of the hill stations being cleared. A few check measurements were made by the chain, all other distances were obtained from the tacheometer readings. The season was very favourable to the work, and scarcely any stoppage occurred on account of stormy weather.

The field work was finished on 22nd June, when tracings of the underground workings were put in hand, every facility being afforded me by the various mine managers. There are thirteen sets of tracings, comprising twenty-seven sheets.

I left Menzies on 7th July, and was occupied in Perth till 14th of that month completing tracings of mine drawings; after which a reduction of the field plan of eight chains to an inch, to 20 chains to an inch was made, this being the scale found most convenient for publication. A reduced copy of this plan is attached (Plate VII). All the plans and field notes were handed to you on 16th of August. Monthly reports of the work were made during the above period, and four cases of samples of rocks were made up and sent to you as the survey proceeded.

Two additional reports were also furnished, one on a contamination by the brewery at Kensington of the well water supply, the other recommending the establishment of a public park, one square mile in extent, embracing the ridge to the Southwards of Jowett's, and Eastward of Merry's Wells. The former of these reports was occasioned by my finding that refuse and sour brews from the brewery were allowed to run into a sump adjacent, and was as follows:—

The Brewery, situate near the Picton and numerous other wells supplying water to the town of Menzies discharges its liquid refuse into an open pit about 20 feet deep, about four chains to the Westward of the brewery, and it is left to soak into the soil. The effluvia from it was most offensive at the time I noticed it, about two months ago. The subsoil and rock about there is to a great extent porous, for the latter, though hard, has frequent partings of decomposed rock, and it is highly probable that if this soakage is allowed to continue, the water supply of the neighbourhood will be seriously contaminated. One of the wells in Clarke's Water Right, No. 120, adjoining the brewery ground, has already become polluted, and there is every reason for attributing this to the brewery refuse. The relative positions of the brewery soakage pit, and wells adjacent, are shown in the sketch below.\* The remedy would be to have the liquid refuse conducted by a pipe drain laid with cemented joints to some point further Westward down the valley.

The second of these reports was an endeavour to secure the establishment of a public park, one square mile in extent, and is as follows:—

While executing the topographical survey of Menzies, I noticed that there was a remarkably picturesque change in the general character of the country about four miles to the South-East of the town, where the rocks are of a very hard sericite schist and banded quartzites forming in places cliffs of a strikingly beautiful green tint, with bright red ferruginous weathering. These rocks are very hard, and form a ridge about 100 feet elevation, and three-quarters of a mile long, thickly covered with scrub; and I beg to submit a proposal that the place be made a public park, one square mile in area, so as to preserve the hill from the disfigurement wrought by timber cutters, etc. The moderate distance of the proposed park from Menzies would be favourable to the preservation of its natural beauties, and for rural retirement a consideration which is largely acted on in the selection of public recreation reserves in most countries. The reserve would be necessarily subject to mining, but there is only a remote probability of auriferous veins occurring there to any extent. The gold mining leases on the Western side of the hill have long been forfeited, and some new ground has lately been taken up by prospectors on the East side; but mostly if not all, are clear of the proposed limits of the park shown on the accompanying tracing.†

In this district mallee hens' mounds, and also the stony mounds built up by some small animal can be found. I could find no traces of the animal, but, on taking some blacks to them, they said that the mounds were made by a small light coloured animal, which they called the "Yallee," and stated that it burrowed between the roots of the trees round which the stones were piled, and that they used to burn them out, but that there were none to be found there now. The mounds are usually about 12 inches high and six feet in diameter at the base. I saw eight of these in this neighbourhood.

\* This sketch is not reproduced here.

† This plan is not reproduced here.