

DEPARTMENTAL REPORT ON THE RE-INTERPRETATION OF THE GEOLOGY
OF THE READ-ROSEBERY DISTRICT BY THE ELECTROLYTIC ZINC COMPANY.

This work is controlled by H.J.C. Conolly, a very successful mining geologist, who is consulting geologist to the Company, and it was to take the opportunity of discussing and studying the methods used, and to determine the effect of this re-interpretation of the geology on the stratigraphical succession of Tasmania that the writer was instructed to collaborate with Mr. Conolly at Rosebery.

In the search for ore, the first essential is a detailed geological structure map and the preparation of such a map was undertaken immediately; work was commenced in January of this year, and R.R. McGhie, of the Company's staff, has been engaged wholly on detailed mapping, assisted in part by J.D. Campbell and Dickenson, attached to Conolly's staff.

The Hercules-Mt. Read centre was selected as the first area for the detailed mapping, chiefly because of the excellent facilities for the mapping of structure owing to good surface exposures and the amount of underground development. Ultimately, all productive centres such as the Ring P.A., Jupiter, Koonya, Dalmeny and Rosebery will be mapped and the mine series (those rocks in which ore bodies occur) will be extrapolated beyond each centre until the whole pattern is known and the controls determined in the course of the survey will provide a practical means for promoting and guiding exploration for the extension and repetition of known deposits.

The method adopted in the detailed mapping was to divide the surface into a 100 foot grid by means of compass and abney, with a theodolite control; then field sheets were prepared on Durallz tracing paper on a scale of 40 feet to one inch, that adopted for the work, to enable the data on the field sheets to be transferred directly to interpretation plans, sections, projections and also to the fact record which is prepared on tracing linen for permanency.

The fact record contains a record of all observable facts such as rock structure, rock texture, wall rock alterations, ore distribution or even a completely new set-up, then all the facts are available for the new interpretation.

Broadly speaking, the structure at Mt. Read-Hercules is one of simple cross folding and roll overs with a little faulting (maximum recorded displacement 60 feet).

As the basis of Conolly's work is structure, he is not concerned with the true petrological conceptions of rock types so that he does not go beyond a field name for his type; he regards the mine rocks, based on bedding and cleavage readings, grain size etc. as a bedded series of tuffs, breccias and slates, with good structure phenomena, with intercalated layers of very dense fesslites and quartz schists, which are structureless and a big transgressive mass of E.M.F. (eastern fragmental) which corresponds to Finucane's sheared porphyry.

The structural controls at Mt. Read-Hercules are the cross folding which pitch north on a general bearing of north 60° west, and the roll overs. The ore-bodies bottom

on the quartz schist and upper limit is marked by one of the felsite layers; these layers are not continuous and lense in and out with great rapidity.

The prospects of this area have been fairly well tested and only a few areas offer sufficient warranty for further prospecting; one of these is known as the "east of Mt. Read" prospect where it is proposed to put down a deep drill-hole under the E.M.F. - a curtain lifter, to determine the possibility of ore-bodies on structures masked by that rock. Several other prospects will be drilled from the underground workings.

Regarding the effect of this new interpretation of the geology of the Read-Rosebery district, it will be advisable to wait until the survey is completed before attempting to determine its full effect on the stratigraphy. On the evidence at present, it suggests that some modification of the controversial porphyroid series will be necessary along the line that the passive intrusion of porphyritic material into the sediments without destroying their original character, such as the breccia-conglomerate at Lyell, was more widespread than was at first thought.

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