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MEMORANDUM

The following notes on the Geological Structure of the Mt. Farrell and Stirling River Areas have been culled from earlier reports and are forwarded for your information. As shown on the accompanying map, the following formations outcrop in the area. -

The Cambrian "Porphyroid" Series consisting of lavas and tuffs intruded by Devonian porphyries.

Farrell Series of slates, conglomerates and schists occurring at the top of the Cambrian.

West Coast Range Conglomerate Series of conglomerates and sandstones forming the base of the Ordovician.

Recent glacial and river deposits.

In Bulletin 3, Ward says that the bedding of the slates is very difficult to ascertain as cleavage is far more prominent. However, the general dip seems to be to the West at 60°-70°.

Reid in Bulletin 28, does not give any information about the Stirling Valley Slates in his text beyond remarking that they are very folded, but on his plan, shows a strike of about 340° with a dip to the East. In a typed report (1927) he gives the strike in the southern part as East of North with a dip to the East at 73°.

Henderson considers that a section across the Farrell field consists of the western limb of an overturned syncline and as fig. 1 shows this would be consistent with the relationships of the various horizons in the Mt. Farrell Area.

However, further south in the Stirling Valley, from the relationship of the porphyroids and the slates, the single dip shown by Reid on his plan and his text figures of 1927, a normal type of folding is indicated (fig.2).

In relationship to this folding, faulting has occurred, (over-thrust faulting, at Mt. Farrell in sympathy with overturned folding) and the fracture zones developed, particularly in the incompetent beds - the Farrell Slates - has provided the fissures for the mineralising solutions from the Devonian magma.

The earliest veins formed were of barren quartz, but the lines of structural weakness probably remained the same and it is reasonable to suppose that the later lead lodes were formed in fissures parallel to the original ones containing the quartz.

The fracture system, and hence the lodes, seems to have been along the strike of the slates and to dip in the same direction.

Thus the lodes in the North of the Area are dipping to the West at 60° - 70° (Bulletin 3) and in the South, at the Stirling Valley Mine, to the East at 73° (Bulletin 28).

T.D. HUGHES

The Director of Mines,
HOBART.