

REVIEW OF THE GEOLOGY OF THE MT. MAGNIFICENT AREA

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ABBREVIATIONS

S. : Station
H.S. : Hand Specimen
T.S. : Thin Section
M.P. : Microphotograph
P. : Photograph

ABSTRACT

For this thesis work an area in the Mt. Magnificent - Kuitpo region was mapped and studied with respect to stratigraphy and rock types, metamorphism, structure and the relationships between various rock sequences.

Sequences represented are the Archaean 'basement' of augen gneisses, schists and quartzo-feldspathic rocks with tourmaline and magnetite mineralizations, the Proterozoic Adelaidean Series consisting of sequences of shales, phyllitic siltstones, phyllites and quartzitic sandstones with thin, clean quartzites, the 'basal' Cambrian beds of limestone, calc-schist and blue shale and the Cambrian Kanmantoo Group rocks, meta-greywaches and phyllitic siltstones with a single, broad marble member.

The sequence was found to be basically conformable throughout, though disrupted by faulting and perhaps indicating periods of non-deposition of some beds. The overall grade of metamorphism is Amphibolite Facies, retrograded to Greenschist Facies. The area is included in a regionally overturned anticlinorium, with fold axis plunging shallowly to the South, basement and cover having been folded together.

The boundary between PreCambrian Adelaidean and the first Cambrian beds is found to be apparently conformable, although slight non-deposition or strike faulting is suggested to explain minor incongruencies in correlation with the type section in Stockyard Creek. The subdivision of the Adelaidean in this area into Torrensian, Sturtian and Marinoan is discarded and the whole is treated as a single sequence for the most part.

Thinning of beds in the southern part is as a result of two factors, repetition in the northern part due to thrusting and strike faulting in the southern part causing a disappearance of part of the sequence. Associated with this is a general thinning out of individual beds in a southerly direction due to increase in the distance from the source of material.

FIG. 1.

J.E.H.

LOCALITY
MAP

