

THE GEOLOGY
of
EWARARA INTRUSION,
GILES COMPLEX, CENTRAL AUSTRALIA

by

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ABSTRACT

Ewarara Intrusion is a layered ultramafic body which shows the initial stages of a differentiation trend similar to the Mt. Davies Intrusion. It is essentially a flat lopolithic sheet with usually a steep southern contact where the fissures and/or pipes of intrusion are possibly located. It consists of an olivine pyroxenite (Lower Layer) and a thicker pyroxenite (Upper Layer), together giving a visible stratigraphic thickness of about 500 to 600 feet. There appears to be a marked hiatus between deposition of the layers, possibly due to convectional overturn or, less likely, a fresh influx of magma. Both vertical and horizontal bandings are observed, and are not structurally related. They were possibly formed by viscous flow in vertical planes and by gravitational settling respectively. Current action is indicated in some cases by lineated textures. Both chilled and hybrid contacts are observed, the latter being more common. Contamination near the contacts is usual.

Smaller intrusions near the main body can be represented usually as plagioclase-rich variations of the two main rock types. The first reported occurrence of Giles Complex dykes is noted. An anorthosite body occurs discontinuously along a large shear to the north-west. This shear continues as a crush zone through the main body, dividing it into two lobes.

The metamorphic country rock consists predominantly of gneisses which maintain a reasonably constant attitude. They belong to the pyroxene granulite facies, both orthopyroxene-plagioclase and clinopyroxene-almandine subfacies assemblages being represented.

Post intrusive dolerite dyke-shear swarms crosscut the whole area.

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