STRATIGRAPHY AND STRUCTURE IN AND ADJACENT TO THE TALISKER FORMATION (NAIRNE PYRITE EQUIVALENT) IN THE EASTERN MOUNT LOFTY RANGES.

by

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DEDICATION

To my parents,

whose often unseen help

is much appreciated.

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ABSTRACT

In order to understand the relationships between the top of the Backstairs Passage Formation (dominantly laminated arkoses), the Talisker Formation (Nairne Pyrite equivalent) and the basal portion of the Tapanappa Formation (interbedded psammites and pelites) the stratigraphy was compared on both sides of the Kanmantoo Synclinorium. An upper member of the Backstairs Passage Formation occurs in both areas studied, and in the eastern area (the Rockford Heights area) a very rapid facies change was interpreted to have occurred beneath the Rockford Heights Syncline. It was found that faulting alone could not account for the change in lithologies.

Although there was an association between all of the lithologies present a facies model relating these to a deepening basin (e.g. Mancktelow, 1979a) was insufficient. Evidence suggests a combination of sources to account for the abundance of plagioclase in the Upper Member of the Backstairs Passage Formation, the Talisker Formation and the Tapanappa Formation.

In the Rockford Heights area, evidence for 5 deformations was observed. The first deformation D_1 involved major upright folding and formation of a slaty cleavage. Metamorphism began during the first deformation and reached a peak during the second. There are no macroscopic effects of the D_2 crenulation deformation. The subsequent deformations were not pervasive throughout the area.