

III. GEOLOGY

A. Introduction

The Mt. Read Volcanics occupy a palaeo-rift valley or trough extending from Elliott Bay in the south, northwards through Queenstown and Rosebery, to link up with the Dial and Fossey Mountain troughs (Campana and King, 1957; Williams et al, 1975). The portion of the Volcanics examined during this project extends from near the Henty River, 20 kilometres to the south of Rosebery, to the Tertiary basalt cover, 23 kilometres north of Rosebery.

The Mt. Read Volcanics are Cambrian in age and are reported to be up to 3000 metres thick (Solomon, 1965). Based on photogeological evidence they are made up of a series of intercalated volcanic piles and sedimentary horizons. The trough is bounded in the east by the Precambrian rocks of the Tyennan Metaquartzite and in the west partially by Proterozoic rocks, and partially by contemporaneous Cambrian sediments. The Volcanics are mainly potassic brecciated rhyolites, dacites and minor andesites, agglomerates and tuffs, overlain by sodic volcanic breccias, tuffs, keratophyres and quartz keratophyres. There appears from photogeological evidence to be an hiatus between the lower potassic and upper sodic volcanic units.

The base of the Mt. Read Volcanics is probably represented by the Anthony Creek Volcanics (Success Creek Phase), seen in the east, whilst the top is marked by the base of the Crimson Creek Formation argillite. The Rosebery Group and Farrell - Que River slates are regarded by this author to be part of the Mt. Read Volcanics. This is based on evidence seen on the aerial photographs, details of which are mentioned below.

Campana and King (1963) suggested that the Mt. Read Volcanics are overlain unconformably by the Dundas Group and Crimson Creek Formation, however this author suggests that the volcanics lie disconformably under the Crimson Creek Formation and are partially overlain by, and partially interdigitate with the Dundas Group. An example of a disconformable contact is the contact between the Crimson Creek Formation and the Bulgobac Group north-west of the Burns Peak. (CR 3/13)