

to the detailed geological history of the region.

The region is dominated by two Precambrian massifs, the essentially unmetamorphosed Rocky Cape massif in the north-west, and the strongly metamorphosed Tyennan massif of the Central Highlands region. These two blocks have had a profound influence on the Palaeozoic geology of the region.

Between the two Precambrian nuclei, a broad arcuate trough developed (Dundas Trough), which now consists of a thick sequence of Palaeozoic sediments, volcanoclastics, basic to acid lavas and intrusives. The whole has been subjected to strong orogenic movement, particularly during the Tabberabberan Orogeny in the Devonian. There was also a late Cambrian phase of uplift and gentle folding, but there was probably continual movement within, and peripheral to, the Dundas Trough from Lower Cambrian times through to Devonian.

The Dundas Trough contains a great thickness of Cambrian Sediments, approximately 7500m, overlain in part by Ordovician clastic rocks (Jukes and Owen Conglomerates), in turn overlain in part by Ordovician-Devonian shelf sediments, up to 2000m of limestone, mudstone and sandstone. Tertiary flood plain basalts extend northwards from north of the Que River, and effectively mask the underlying geology in the northern part of the Dundas Trough.

The major base metal deposits in the region, as represented by Mount Lyell, Hercules, Rosebery, Tullah-Farrell, Que River and Chester-Pinnacles, are associated with acid to intermediate volcanic rocks of Cambrian age, the Mount Read Volcanics. The relationship of the Mount Read Volcanics to the Cambrian Sedimentary sequences is not clear. Many learned treatises have been published on the geology of the region, but it is impossible to find any reference to a non-faulted contact between the volcanics and the sediments.

The Cambrian Sedimentary sequence has been broadly sub-divided into three "groups"; the Success Creek Group (oldest), the Crimson Creek argillites and the Dundas Group (youngest: middle to upper Cambrian). The Success Creek Group consists of quartzite, sandstones and shales and is conformably