

C GEOLOGICAL HISTORY (post PreCambrian)

This section refers specifically to the Lynch Creek area. With the formation of the Mt. Read Volcanic Arc, andesite volcanics were extruded followed by a variety of tuffaceous rocks and finally acid volcanics. The environment of deposition was rapidly changing. Unstable basins were forming with accumulation of volcanic rocks in partly submarine conditions,

At Mt. Lyell, as a result of more intense metamorphism, the sequence of volcanics is difficult to determine, although geologists consider the dark chlorite rich schists to represent more intermediate tuffs and the leucocratic sericite and quartz rich schists to represent acidic volcanics.

At Lynch Creek, the sequence is clearer. By a process of magmatic differentiation, andesitic volcanics are followed by Intermediate Crystal Tuffs, possibly submarine in part, and then by acid tuffs and finally acid volcanics.

Contemporaneous to the accumulation of the volcanics, deposition of flysch type sediments was occurring as represented by the sequence of shales which appear to lense with the Intermediate Crystal Tuffs. Towards the end of the Cambrian, there was a change to more molassic sedimentation as represented by Dundas Group arkoses to the south-east of the area. This change probably coincided with the cessation of volcanism.

Horst and graben type faulting was followed by the formation of rift valleys with the subsequent deposition of the terrestrial Jukes Conglomerate as the reworked products of the Mt. Read Volcanics. Terrestrial deposition of the Owen Conglomerate as scree and conglomerate derived from PreCambrian rocks continued. This was followed by a slow marine transgression with the deposition of the basal units of the Gordon Limestone, as represented at Lynch Creek.

The Siluro-Devonian saw the deposition of a monotonous sequence of quartzites and shales. During the late Devonian, the whole area was subjected to the Tabberabberan Orogeny, Overthrusting and overturning of the Owen Conglomerate, and complex folding and cleavage development in the volcanics occurred. At Mt. Lyell, the most important structures formed were the north-south trending Great Lyell Fault Zone and the west-north-west trending Linda Fault Zone. Earlier formed east-west faults at Lynch Creek were probably reactivated. Sulphide mineralization in the Cambrian Volcanics was remobilised and redeposited in fault zones; generally at the intersection of east-west faults with north-south trending shear zones or faults. At Mt. Lyell, the richest ore shoots occur within the sheared volcanics (and Jukes Conglomerate?) close to the Owen Conglomerate.