

and volcanics, the relationship between the older and younger Precambrian is not clear. The main difference is that the younger rocks are relatively undeformed, whereas the older rocks have undergone at least two pre-Cambrian deformations. Precambrian sedimentation was interrupted by the Penguin Orogeny which included the intrusion of dolerites and gabbro, e.g. at Savage River, and possibly the intrusion of the Granite Tor stock.

Following the Penguin Orogeny, sandstones, siltstones and dolomites were deposited in a relatively stable basin between the Rocky Cape Geanticline and the Tyennan Geanticline. The sediments of this transgressive phase include the Success Creek phase at Renison, the Smithton dolomites, the Mount Bischoff sequence and possibly the siltstone dolomite sequence in the core of the Just-in-Time anticline in the Ramsay area, and the siltstone dolomite sequence in the Heazlewood area. The dolomites are economically important since they host the replacement tin deposits at Renison, Cleveland and Mount Bischoff, and the tungsten deposits on King Island. Deepening of this relatively stable basin during early Cambrian times was accompanied by a thick deposition of the greywackes and submarine basic volcanics of the unfossiliferous Crimson Creek Group.

There would appear to be a marked change in sedimentation in middle Cambrian times. The greywackes give way to black pyritic shales with interbedded acid pyroclastics and only minor greywackes of the fossiliferous Dundas Group.

An important feature of the Cambrian Basin was the development of a thick acid volcanic pile, the Mount Read Volcanics, which formed an island arc around the western and northern margins of the Tyennan Geanticline. Interbedded siltstones within this volcanic pile at Sock Creek contain fossils of lower middle to middle upper Cambrian age. Archetarcs from the Rosebery Shale, however, indicate a pre-Cambrian age to those rocks.

Sedimentation ceased abruptly in the upper Cambrian with the onset of the Jukesian Orogeny which produced arcuate folds parallel to the margins of the Tyennan Geanticline. Major rift faulting, which uplifted the Rocky Cape and Tyennan Geanticlines, also occurred. It is possible that this Orogeny accounts for the faulted emplacements of ultramafic bodies at Renison, Pieman and Huskisson. The rift valley left by the faulting was filled initially