

Rosebery Group and Crimson Creek Fm indicates that reducing conditions suitable to sulphide deposition were not uncommon. There are numerous minor sulphide deposits (mainly Ag-Cu-Pb) but these are fissure-fillings thought to be associated with Devonian granitic intrusions (Blissett, 1962). This category is unlikely to contain any deposits of sufficient tonnage for economic exploitation by E.Z.-Getty but this possibility should not be ignored.

The most attractive target within the area is the cassiterite-pyrrhotite metasomatic replacement type orebody similar to those at Renison Bell, Cleveland and Mt. Bischoff. The proximity to the Renison tinfield (3-5km) and the presence of favourable host rocks suggest that the Natone area has good potential for this type of deposit. Indeed, the Colebrook deposit is considered to be a deposit of this type (except that Sn is apparently absent). This is evidenced by the similarity of ore and gangue mineralogy to that of the above mentioned deposits, and the mineralisation occurring as replacement of calcareous/dolomitic sediments. Like Renison Bell, Cleveland and Mt. Bischoff orebodies, pyrrhotite is the dominant sulphide. Abundant axinite occurs in the Colebrook workings and its occurrence has been noted adjacent to the Renison Bell deposit, in Gormanston Creek, in the Ring River, and in the old Cornwall tin workings (Ward, 1909) so the association between axinite and tin deposits known to be in this district seems well-established. The Colebrook Mine lies 5km from the nearest quartz porphyry associated with tin mineralisation near Renison Bell. Calcareous/dolomitic sediments are known to occur within the Natone area, mainly within the Crimson Creek Fm. and 10m (apparent thickness) of impure dolomite was intersected within Westcott Argillite by the Mines Department drill hole. These lithologies may provide favourable sites for replacement orebodies where structure forms a suitable plumbing system for mineralising fluids.

Cassiterite occurring in fissure veins was mined from the Exe River workings west of Colebrook Mine just outside the E.L. boundary. A small amount of cassiterite is associated with pyrite in fissure veins at the Olympic and Athenic Mines to the immediate south and south-east of Colebrook Mine. These may represent conduits for mineralisation.

Relatively small-tonnage Sn mineralisation may also occur in a style similar to that at the Razorback Mine northwest of Mt. Dundas. Here sheared ferruginous talc (altered serpentine), partly dolomitised, contains irregular sulphide-quartz-cassiterite veins and disseminated cassiterite. Strongly dolomitised zones have been mapped within the serpentinite in the Colebrook Grid but the lack of any distinct Sn soil anomalies decreases the likelihood of such mineralisation. Previous geophysical and geochemical surveys within the study area provide patchy coverage but offer encouragement for further exploration in particular areas. Some areas have received very little attention and further work is required to properly evaluate their mineral potential.

The Natone Grid I.P. survey located two anomalous zones. Drilling established that one of these is a 6-15m (apparent thickness) zone of pyrite and pyrrhotite (aver 11-13%) in veinlets within black shales. However, 6' of 3.8% Zn was intersected in one of the holes and further work is required to assess the possibility of stratiform Zn-Pb mineralisation associated with this anomaly. This mineralisation may be of the "fahlore" type but its remoteness from known deposits of this type, lack of Cu, Pb and Ag, and its north-south trend parallel to lithological strike suggest that it could represent syngenetic mineralisation remobilised by later tectonism (most likely Tabberabberan). It may be significant that the Zn-rich intersection lies on or very close to the Natone Creek photo-lineament, and thus this lineament and its possible association with mineralisation should be given closer attention. The second I.P. anomaly is untested and remains a prime target although it may be solely due to pyritic black shales such as outcrop along strike adjacent to the Murchison Highway.