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Preliminary Survey, Pelion Copper Mines

by K. L. Burns

Introduction.

While surveying the Permian stratigraphy in the Du Cane Quadrangle, a day of heavy rain was utilised in mapping the workings of the Pelion Copper Mines. No attempt was made at a complete geological survey.

Locality.

The Pelion Copper Mines are situated in the vicinity of Emhlangana (Old Pelion Hut), the main workings being on the south bank of the Douglas River 800 feet E.N.E. of the hut.

Geology.

The country rock is Precambrian laminated quartzites and phyllites. The rock is tightly folded on axes striking west. A prominent A-C jointing is developed, striking generally south. These structures are of Precambrian age.

Intersecting the Precambrian structures is a system of shears and brecciated faults, with possibly a general southerly strike. The ore is contained in these younger fissures. The best example is the Main Drive, where the orebearing fissure is a brecciated gravity fault, subparallel to the older A-C jointing. There appears to be reworking of a pair of the joints drag-dipping the quartzite. The lower plane is the most important, forming a brecciated zone eight to 12 inches wide, dipping at 45° to the west. This plane forms the east wall of the drive.

5 cm

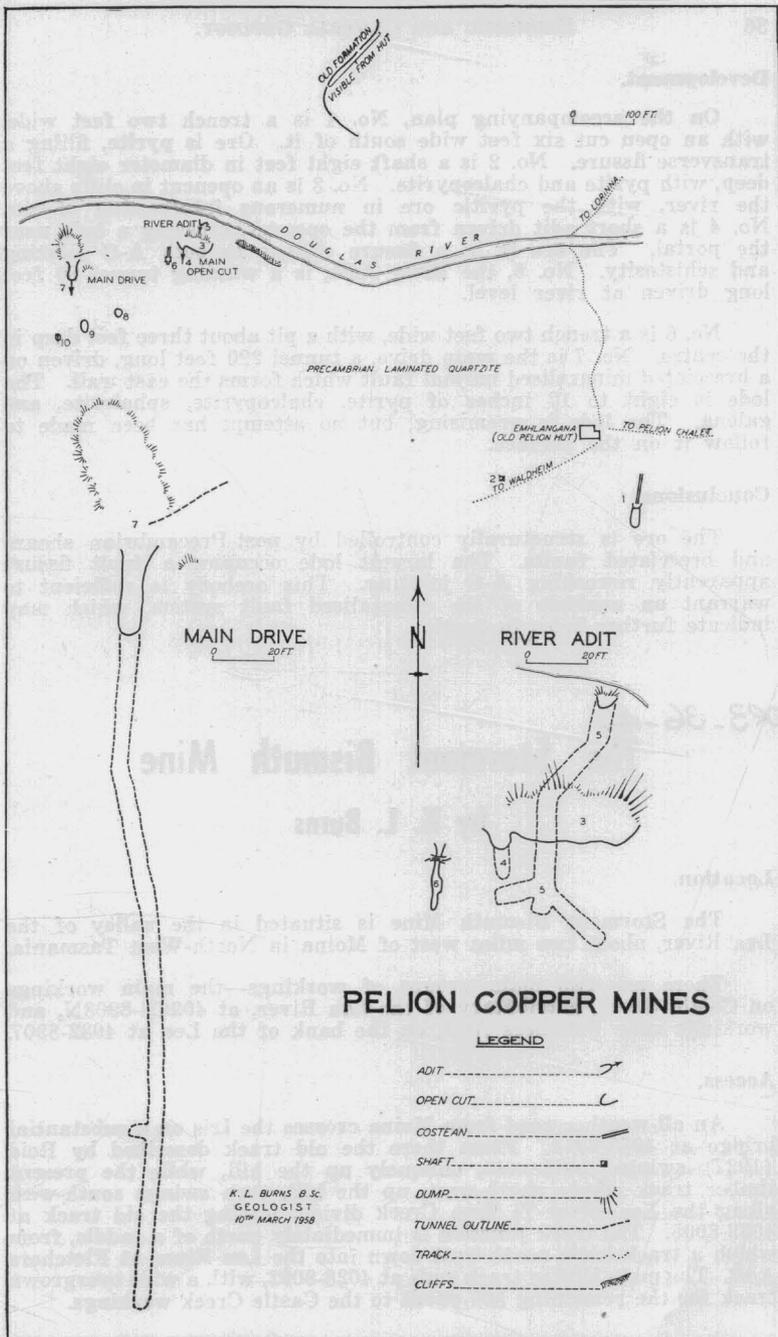


Figure 11

Development.

On the accompanying plan, No. 1 is a trench two feet wide, with an open cut six feet wide south of it. Ore is pyrite, filling a transverse fissure. No. 2 is a shaft eight feet in diameter eight feet deep, with pyrite and chalcopyrite. No. 3 is an opencut in cliffs above the river, with the pyritic ore in numerous intersecting shears. No. 4 is a short adit driven from the opencut, crossing a lode near the portal. The ore is in a fissure oblique to both A-C jointing and schistosity. No. 5, the River Adit, is a winding tunnel 80 feet long driven at river level.

No. 6 is a trench two feet wide, with a pit about three feet deep in the centre. No. 7 is the main drive, a tunnel 220 feet long, driven on a brecciated mineralised normal fault which forms the east wall. The lode is eight to 12 inches of pyrite, chalcopyrite, sphalerite, and galena. The lode is promising, but no attempt has been made to follow it on the surface.

Conclusions.

The ore is structurally controlled by post-Precambrian shears and brecciated faults. The largest lode occupies a fault fissure apparently reworking A-C jointing. This orebody is sufficient to warrant an analysis of the mineralised fault system, which may indicate further lodes in depth.