# Section 1

# Economic and General Geology

NOTE: Numbers immediately before titles refer to localities on the Locality Map, fig. 1.

TR11_11_13

## 1. GEOLOGY OF MR D. LEWIS'S PROSPECTOR'S CLAIM, COLES BAY AREA

by G. Urquhart

### INTRODUCTION

A diversion was made while en route to the Blue Tier on Monday, 10th January, 1966, to inspect Mr D. Lewis's tin claim in the Coles Bay area. The writer was accompanied by the lessee and field assistant E. Leckie.

The claim lies in hilly country within 1½ miles of the cliffs forming the coastline along this sector. Access is by way of the Coles Bay road for a distance of 17 miles, thence northward along a bush track for 5 miles. The track is negotiable only by 4-wheel drive vehicles.

### GEOLOGY

The country is undulating, the greatest relief being approximately 100 feet. Different types of granite consist of a medium-grained equigranular leucocratic rock grading into a grey porphyritic biotite-bearing granite in the southern part of the claim. A finer grained muscovite-bearing granite is present farther to the N.

Old workings along the section consist of a number of shallow trenches, a pit, and a shaft excavated at intervals over a distance of about 400 yards along the strike of altered granite.

Yellowish-green fine-grained greisen "float" consisting of an aggregate of quartz, sericite and possibly prosopite can readily be seen in places along the strike. Sections through bedrock, provided by the pit and other excavations, show that the granite is greisenized only in localized areas and for the most part consists of incompletely greisenized rock in which blebs, shreds, knots and bunches of altered mineral impregnate and impart a blotchy appearance to the rock.

The apparent structural control for the alteration of granite is a strong, closely spaced (up to 9 inches apart) joint set which may reflect a shear zone or a zone of differential movement. The joints strike in a direction which ranges from 325° to 345°, the overall trend being 335°, and dip at an angle of 75°-80° to the SW.

Some of the joint fissures are filled with narrow stringers of quartz, or quartz-tourmaline. Elsewhere the rock is homogeneously silicified and in places quartz crystals line cavities.

The maximum width of alteration is not known, but partly greisenized granite is exposed over a distance of 10 feet in the walls of the pit. Both the width and extent of alteration are suspected to be irregular.

Cassiterite is not visible under the lens in hand specimens of altered granite, yet was identified by the Mines Department in a concentrate which purportedly derived from the rock in this claim. Cassiterite must therefore be in a very finely disseminated state, and may also be sparse.

## RECOMMENDATIONS

Mr Lewis was advised that rather than incur the hire cost of a compressor at this stage, as he may have intended doing in order to jumper drill the lode, as much information as possible on the tenor, width and extent of tin mineralization should first be obtained from the available surface excavations. In this respect it was suggested that he:—

(*a*) Dolly altered rock from the trenches, pit or shaft and pan for tin.

(*b*) Channel sample suitable exposures, such as those found in the pit, and submit the samples to the Mines Department Laboratory for tin assay.

Should the assays prove sufficiently encouraging the hire of a compressor to assist in trench cutting and perhaps jumper drilling the lode could then be envisaged.