

PRELIMINARY REPORT ON THE  
LOW ROCKY POINT DISTRICT.

Location and Access

This district is situated on the south-west coast of Tasmania about midway between Macquarie Harbour and Port Davey. The best means of access especially if large quantities of stores, provisions etc. have to be transported, is by small boats. In this case, landing is effected in the Lewis River upstream from its mouth, but the entrance to the river can only be made in calm and very moderate weather. The coastal track from Port Davey to Macquarie Harbour traverses the district.

Physiography

The district along the coast for many miles inland is a dissected plain with a gentle slope to the west. Cliffs occur along the greater part of the coast and have heights ranging up to 150 feet. The only prominent hill rising above the plain is Mt. Osmund (1210 feet) but to the east the plain gives place to numerous irregular hills and mountains the highest of which are the Lawson Range in the south and Mt. Lewis in the north. The streams have a general westerly direction from the hills to the ocean. The largest drainage systems are those of the Lewis and Hudson Rivers and the Mainwaring River.

GEOLOGY

Sedimentary Rocks

The oldest rocks occurring within, and which also occupy the greatest area in, the district are a series of ancient schistose ones. Many of these are of uncertain origin, but were probably all originally sedimentary rocks. Along the coastal section, such types as chlorite schists and talcose schists occur, while further north the youngest beds of the series are black slates. The schists have a general strike of 330 to 350 degrees and dip to the west at angles of 60 to 90 degrees. On Mt. Osmund, the schists are overlain by hard quartzose conglomerates resembling the West Coast Range conglomerates. They have a strike of 15 degrees and a dip to the west of 45 degrees. At many localities on the coastal plain the surface is occupied by coarse, well water worn quartz gravels. These are remnants of a more extensive formation which covered the plain, and which was deposited in Tertiary times.

Igneous Rocks

(a) Granite - Several areas of granite and the related rocks such as porphyries occur within the district. The largest is that outcropping along the coast to the north and east of Low Rocky Point and which extends in a general north-easterly direction across the Lewis River. Along the coast this granite is a very coarse grained type, but inland it is much finer in grain and at its north-eastern extremity is rather a quartz-felspar porphyry. This body of granite cuts across the strike of the schists and is therefore intrusive into them. Another belt of granite about  $\frac{1}{4}$  mile wide occurs to the east of Barrel Creek. This granite is gneissose and conforms to the bedding of the schists. Another area of granite crosses the Lewis River about 7 miles from its mouth, while porphyritic rocks are found to the east of Mt. Osmund. The granite and porphyries appear to belong to the Cambro-

Ordovician (porphyroid) period of intrusion rather than with the later Devonian one.

(b) Diabase - Diabase, identical with the Mesozoic diabase in other parts of the State, outcrops in the valley of a tributary of the Hudson River, five miles NE of Mt. Osmund.

### ECONOMIC GEOLOGY

#### Primary Deposits

The lodes of the district are of two main types:-

(a) Quartz Veins - These are by far the more numerous type. On the plain, outcrops of these veins are often prominent, as far as can be seen by eye, are barren. Some when broken into, however, are found to contain iron pyrite. From one such reef between the Hudson and Lewis Rivers, a representative sample of stained quartz yielded on assay, only traces of gold and silver, while a grab sample of quartz and pyrite yielded a trace of gold and 7 dwts. of silver per ton. From a similar reef between Lewis River and Wart Hill, a representative sample over 6 feet gave only traces of gold, while a grab sample of quartz and pyrite gave 1.5 dwts. of gold and 0.5 dwts. of silver per ton. The quartz veins are thus very poor in gold and silver and what values there are, seem to be associated with the pyrite.

Along the coast, numerous small veins of quartz containing metallic minerals are exposed. These contain in order of abundance galena, pyrite, hematite, chalcopryrite (copper pyrite) sphalerite (zinc-blende), arsenopyrite. Siderite is also present in some of these veins. These veins are of no economic importance as a source of any of the base metals contained in the above minerals as they are in every case too small for mining purposes. The metallic values are also low. One of the most promising occurs about a mile north of the entrance of the Lewis River, but not sufficient work has been done to prove the extent of this vein. The assay results were 6.4% lead, 0.05% copper, 1 dwt. of gold and 13 dwts. of silver per ton. One small vein between Drake and Barrel Creeks contained nearly 50% galena.

(b) Pyritic masses and impregnations in schists.- These appear to be restricted to the coastal portion north from Low Rocky Point. Pyrite is the predominating mineral, though small amounts of quartz and siderite and copper pyrite may be associated with it. The most important of these deposits is that known as Pender's Prospect, immediately to the south of the entrance to Lewis River. Two parallel formations about 20 yards apart, occur here and have a strike of 10 degrees. Two small open cuts, a shallow shaft and several trenches constitute the work carried out. The formations are 5 to 6 feet wide with the pyrite ranging over different proportions of this width. In the western formation, the widest part of the pyrite has been removed and faculties for sampling did not exist. A small amount of the eastern lode has been removed and a sample across 5 feet gave 0.16% copper, 2 dwts. of gold and 5 dwts. of silver per ton. The ore is thus of no value for its metallic contents, while its location deprives it of any possible use it might have as a flux or as a source of sulphur.

(c) Origin of the Primary Deposits - These deposits undoubtedly owe their presence to the granite intrusions

which outcrop at, and also underlie, the surface of the district. Mineralising solutions emanated from the granite during the final stages of its consolidation from the molten magma and penetrated the overlying and adjoining schists. Most of the veins are parallel to the planes of schistosity and these planes apparently formed the channels along which the solutions moved.

#### Secondary or Alluvial Deposits

These include the gravels along the present streams both in the bed and banks and on higher terraces, and also the Tertiary gravels of the plains. These deposits yielded on prospecting a considerable amount of rutile, a lesser amount of cyanite and almandite with only an occasional colour of gold. The only mineral which renders these deposits of economic importance is the rutile. This mineral is marketed in the form of concentrates (93 to 96% oxide of titanium) and the latest quotations in America were for granular (94 to 96% rutile, £56 to £67 per ton. The origin of the rutile was not determined, as it is derived from the country to the east of that examined, but its source is probable in the schists, or lodes therein, to the east.

#### Conclusions and Recommendations

The above descriptions prove that the district consists chiefly of Precambrian schists. Areas of granite protrude through these in several localities and undoubtedly underlies at depth much of the remainder. The conditions are thus extremely favourable for the occurrence of orebodies of metallic minerals. Those so far found are unfortunately small in dimensions and generally low in metallic values. Prospecting for other orebodies is however recommended in view of the favourable geological conditions.

The only mineral of economic importance in the alluvial deposits is rutile.

Sgd. P.B. Nye  
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