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The Ben Lomond Mining Company is interested in a pyrite prospect at Branch Creek near its entrance to Port Sorell. At the time of my visit, 28th October, no apparent work had been done on the prospect, though members of the Company claim that they have obtained high percentages of pyrite from chip samples taken from place to place from the slates, which outcrop along the creek bed.

These outcrops occur within a few chains of the Seven Mile Beach Road at a Point three miles from the Frankford Highway. This road leaves the highway at the 16 mile peg from Devonport so that the distance from the deposits to the Devonport Wharf would be about 20 miles. A small arm of tidal water runs eastward from the East Arm of Port Sorell almost to the road at this point and it may be possible to construct a wharf for vessels of shallow draft within half a mile of the deposit.

The pyrite occurs in a series of well bedded slates and allied rocks which outcrop over a width of 1,600 feet across the strike, mainly in the creek bed. These rocks, which in places are intensely sheared, belong to the Carbine Group, that is they occupy a position somewhere near the top of the Pre-Cambrian and the base of the Cambrian; and they form part of the western leg of a large anticline in which there is a great thickness of Pre-Cambrian schists underlying this Carbine Group. At the immediate base of the slates, however, are some fairly narrow beds of grey-blue, very siliceous quartzites which may be seen outcropping to the east of the slates. These latter rocks then have a strike to the west of north averaging about 310° in this locality, although the general strike of the country rock is more nearly 330° . As they form the western limb of an anticline they usually dip to the west but minor folding is apparent and in one place along the creek the dip is easterly. The degree of metamorphism varies from place to place according to the composition of the beds and although narrow bands of, on the one hand schistose rock and, on the other of shaley rock, do occur, the general description of the rock is a black slate, containing much carbonaceous matter.

The first thing to make clear is that the pyrite is not the result of mineralization but is an original constituent of the rock. These black slates have been laid down in deep still water under extremely unaerobic conditions and the association of pyrite with this type of rock is very common. Indeed the black colour in this type of sediment is often partly due to the presence of very fine grained iron sulphides though in the main, of course, it is caused by carbonaceous matter.

As the pyrite occurs as a bedded deposit there should not be any doubts of the quantities of the parent rock available. On the other hand, because of its original nature, the percentages of pyrite in the individual beds will vary very much from place to place and careful sampling will be necessary to determine whether any part of the deposit is of economic value. Four samples were taken during the present examination, rather at random, but where the eye showed the most pyrite occurring. However, it is rather dangerous to go by the look of the sample as some of the pyrite is in such a finely divided condition as to be invisible. The result of this sampling showed that although the percentage of sulphur in the various samples differed

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enormously from place to place, there was sufficient sulphur present to warrant further intensive sampling.

The hill behind the creek rises fairly steeply and after a certain amount of clearing of soil etc. the slate could probably be mined by open cut methods. The position here may be summed up as follows:-

1. The pyrite is original and not the result of mineralization.
2. Because of this, the percentage from bed to bed will vary considerably and before any definite appreciation can be made, careful sampling over various widths will be necessary.
3. The deposits occur adjacent to a good road but they are 20 miles from the nearest established port. However, the possibility of transporting by water should not be overlooked.
4. The slates may possibly be extractable by open cut methods.
5. Most of the pyrite occurs in a very finely divided state and methods of extraction of the pyrite may be difficult. Most of the remainder of the material of the slates appears to be carbonaceous material but, whether it is graphite or amorphous carbon is not possible to state at this stage.
6. It is, therefore, recommended that the company concerned investigate these slates more carefully. Trenches should be cut to the north side of the creek until solid rock is encountered. The recommended position of these trenches is shown in red on the attached plan. They should be at right angles to the strike of the beds and approximately parallel to the creek bed and in length of the order of 150 feet.

When these trenches are cut, channel samples of the beds can be taken.

(SGD) Terence D. Hughes

GEOLOGIST

Department of Mines,
HOBART

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