NOTES ON THE TRAFALGAR LEASES - UPPER SCAMANDER DISTRICT.

INTRODUCTION.

The object of the present brief examination of the Trafalgar leases, 55 acres in the name of E.N. Waterworth, was to determine the geological structure of the area in order to assist in the formulation of a comprehensive scheme of development. The area is heavily overgrown with bracken fern and scrub; all workings are more or less inaccessible, therefore direct observations were limited.

LOCATION AND ACCESS.

These leases are situated approximately ten miles south west of St. Helens, near a tributary of the Upper Scamander River, known as Steel Creek, and are reached by way of Hogan's Track, a distance of approximately 19 miles; for 16 miles it is passable, with care, for motor traffic, but beyond this it is kept open only as a bridle track, being overgrown with ferns, scrub etc., and strewn with fallen timber.

GENERAL GEOLOGY.

Two rock formations only are represented in the area. A sedimentary group, Cambro-Ordovician slates and sandstones, in part altered to quartzites and an underlying igneous intrusive complex of Devonian age, which has been exposed as a result of prolonged denudation.

CAMBRO-ORDOVICIAN.

The rocks of this sytem form the high, steep hills to the north and south of Steel Creek in the vicinity of the area being described, and consist principally of slates, sandstones and quartzites. The unweathered slates may be black to light grey in colour, but at the surface they weather to various shades of brown. The quartzites may be light or dark coloured and generally contain mica along bedding planes. The general strike is N.W. - S.E. with south westerly dip. Numerous small quartz veins ramify the series. The above rocks yielded no fossils but are referred to the Cambro Ordovician (Mathinna series) system by analogy with similar rocks in north-eastern districts of the State.

DEVONIAN.

Granitic rocks occupy the lower portion of the area and underlie much of the remainder. Various types occur throughout the district; the most frequent type is the usual medium to coarse-grained one containing quartz, plagioclase with lesser orthoclase and biotite. This type often contains numerous large porphyritic crystals of felspar and is the typical rock of the north-eastern districts of Tasmania.

It has already been shown above that the granite is intrusive into the Cambro Ordovician sedimentary rocks. No other evidence of age is available but in conformity with other granites in Tasmania it is regarded as having been intruded in Devonian times.

ECONOMIC GEOLOGY.

The ore deposits under examination are essentially a contact metamorphic phenomenon. Contact metamorphism began after the intrusive rocks had become consolidated, so as to permit of extensive fracturing, though under great pressure;

along these fractures the metamorphosing solutions rose from below, and attacked and replaced intruded and intrusive rock alike.

At one location only was it possible to observe the contact metamorphism in place, namely Beahrs Adit. It was apparent that silification of the granite and slates and sandstones had taken place but with far more reaching effects in the case of the sedimentary rocks. The arsenopyrite occurs as masses in the quartz. Microscopically it can be seen that the arsenopyrite occurs as a replacement of the quartz; a hydrous ferric arsenate, scorodite, an alteration product associated with arsenopyrite is plentiful. In the granite the felspars have been altered to sericite and quartz and the biotite to chlorite etc. containing inclusions of arsenopyrite.

MINE WORKINGS.

Included within the boundaries of this lease are the following workings, the main Trafalgar shaft 200 feet deep, a small prospecting shaft, reported to be approximately 30 feet deep, two adits Beahr's and the Carthage, and two small prospect holes.

Trafalgar Main Shaft:-

This shaft is filled with water and no examination of the shaft or connected workings was possible, but it was apparent from a cursory inspection of the spoil dump that the shaft had been sunk in normal granite; that later workings had been driven through to the slates and quartzites could be gleaned from the fact that another dump of slates etc. was situated approximately 120 feet west on the other side of the creek near the old battery site and had been previously connected by means of a high tresling, now collapsed. Although the site of the old battery was located no evidence of a tailing dump was to be seen.

The Carthage Adit:-

This adit is inaccessible, having collapsed for a considerable distance in from the portal, and is heavily overgrown with scrub.

No. 1 Prospect Hole:-

This hole is situated approximately 350' feet north west of the Trafalgar main shaft, and probably 100 feet north of the 30 feet prospect shaft. Owing to the relatively deep soil at this point it had caved and completely maskes the exposure. An examination of material apparently thrown out of the hole indicates that the hole was sunk in granite near the contact. Some specimens show a development of quartz with arsenopyrite, sericite etc. merging with imperceptible gradations into the unaltered granite, while others exhibit structure suggesting a re-opening of the fissures.

30 ft. Prospecting shaft:-

Situated approximately 80 feet south of the above prospect this shaft is filled with water and could not be examined. It is reported to be 30 feet deep and it was apparent from the spoil that the shaft was sunk in slate; no evidence of mineralisation was observed.

Another prospect hole is located on the north side of Steel Creek, but requires unwatering to permit a thorough examination.

Beahr's Adit:-

This adit could be examined only in part as the workings have collapsed where driven upon the contact. It is driven in slates and sandstones in a general south to south-westerly direction for approximately 200 feet where granite was cut, at 60 feet a small quartz vein was intersected and a crosscut was driven on it in an easterly direction for approximately 40 feet; the vein shows little or no mineralisation. It is most irregular, ranging in width from a quarter of an inch to a maximum of two inches and pinching right out as followed and is not visible in the face.

The drive was continued westerly along the contact an hard quartzite forming the north or hanging wall and decomposed granite the south or footwall. The lode consists of masses of arsenopyrite, in part altered to scorodite, and quartz merging imperceptibly on each side into the country rock. The actual width of the "lode" could not be determined.

CONCLUSIONS AND RECOMMENDATIONS.

Owing to the lack of facilities for direct observation, it was difficult to arrive at a true conception of the extent and value of the arsenopyrite bearing formations. Generally speaking the quartz is patchy, and there is not much encouragement at present for any outlay designed to yield an immediate return.

On these leases no other work beyond those described has been carried out on these formations, and in view of the nature of the deposits, and the relative ease with which the contact may be traced, trenching at intervals to ascertain the ore deposits continuity from No. 1 Prospect hole will provide data which will be useful in determining if a more comprehensive scheme for opening them up at depth is warranted. The collapsed portion of Beahr's Adit should be picked up and re-timbered to permit a more thorough examination of the lode.

The field is essentially a prospecting one.

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