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TUNGSTEN PROSPECT, HAMPSHIRE

While constructing a logging road for his timber mill, south of Hampshire, Mr. J.C. Cumming noted a magnetite deposit. Samples sent in by him for assay showed percentages of tungstic acid ranging from 0.3% to 0.9%.

An examination of the prospect has revealed the following facts:

I. Location and Access.

This magnetite deposit is located five miles south of Hampshire Siding (of the Emu Bay Railway) and twenty chains from the Emu (or Old Park) River. A good motor road leads off the Natone Road at the Hampshire Hall and runs south for a mile and a half. From this point to the mill, (1½ miles) the road is metalled but deeply rutted by timber lorries. A board road leads from the mill to the deposit (a further 1½ miles).

II. Geological Relations.

The Magnetite occurs at the contact of granite with a series of slates and quartzites and is doubtless a result of such intrusion. Small patches of basalt occur in this district but are not germane to this matter.

III. Extent of the Magnetite.

Magnetite outcrops and boulders can be traced over an area of ten acres and form the summit of a small heavily timbered hill. The vertical extent of the magnetite cannot be estimated but it is expected that it would continue downward until the granite is reached and not merely form a crust on top of the hill.

IV. Tungstic Acid Content.

The form in which the tungstic acid occurs is not, at this stage, known, although its most likely form is that of wolframite. The tungsten mineral which is under 1% is in a very finely divided state and may even be contained in the magnetite. A thin section showed about 90% magnetite and the remainder a clay mineral stained by iron oxide. In order to determine the presence of wolframite, a polished section would have to be examined.

V. Development.

Mr. Cumming has had a small cut, six feet in depth, put down in the magnetite from which he has taken the various assay samples. A composite sample taken from this cut showed a tungstic acid content of content of 0.4%. Three chains north north east of this is an old trench, 70 feet in length and up to 10 feet deep. A sample taken over 8 feet vertically from here showed on assay 'tungstic acid - possible trace'.

VI. Recovery of Tungsten

A sample of 30-40 lbs. weight was obtained from the cut and forwarded to the Chief Chemist so that any recovery tests could be made.

VII. Origin and extent of the Tungsten Content.

The source of the tungsten is the granite magma, portion of which outcrops in the vicinity of the magnetite. It is unfortunate that the sample taken from the old trench showed almost a negative result as this suggests that the tungsten content of the magnetite is not approximately constant over the whole area. There is nothing to suggest that the tungstic acid content would improve at depth, although this could be.

VIII. Similar Deposits.

Similar small areas of magnetite doubtless exist in this district and one such, three miles to the east has been described by A.M. Reid (21.2.24) in connection with its magnetite possibilities. A grab sample taken from here during the present investigation showed, on assay 'tungstic acid - possible trace' and 'tin - trace'.

IX. Conclusions.

Magnetite deposits occur in the Hampshire district and one such of almost 10 acres in extent and unknown depth has been shown by assay to contain tungstic acid in amounts up to 0.9%. It is not yet known definitely in what form the tungsten occurs but the mineral is disseminated throughout the magnetite and does not occur in any vein, lode or wall system.

The assay values of samples taken from the material exposed by the recent work are not high enough to consider the magnetite an ore of tungsten. From a geological point of view there is nothing definite to indicate an increase in tungsten content at greater depth. However, as the granite roof is approached this may be so and if Mr. Cumming decides to continue with his development I should first recommend the deepening of the present cut and the taking of further samples. If these showed a higher tungsten content, then a laboratory investigation could be made into the separation of tungsten and magnetite.

Signed: Terence D. Hughes

GEOLOGIST.
12.12.50