

# AN INTERESTING OCCURRENCE OF SCHEELITE IN NOVA SCOTIA.

By A. L. McCallum.

Early this summer, while engaged on some work in the Moose River district, I was shown a small sample of a yellow mineral in quartz, which had been found the previous autumn by Messrs. Reynolds & Currie, of Moose River.

I must confess that at first sight I did not recognize the mineral, and not having the means at hand for testing it, I laid it to one side.

Shortly after this Dr. T. L. Walker arrived in Moose River, looking for occurrences in Tungsten, in association with the Nova Scotia gold ores. Together we tested this mineral, and pronounced it Tungstite. Later, on coming to make an analysis of the mineral, I found it to be scheelite, partly altered to tungstite, the two minerals being present in nearly equal proportions.

I suggested to the finders that further search be made in the section where this was found, which was done, and resulted in the finding by Mr. Reynolds of several more pieces of quartz carrying tungsten.

I then recommended the taking up of the property under a prospecting license, which was done, and active prospecting commenced by Mr. Reynolds.

At first, search was made for the yellow altered mineral, but up to the present no more of this has been found.

Soon after starting prospecting, however, a boulder of nearly pure unaltered scheelite was found in the bed of a small brook. Subsequently a considerable quantity of drift was found in this brook, and in a larger one 600 feet further west.

At this point I wish to pay a justly merited tribute to the thorough, systematic, I was almost going to say scientific, manner in which Mr. Reynolds conducted the prospecting operations, with the result that two weeks after the first boulder had been found the vein from which it came was located and opened up in several places.

This is the vein on which, up to the present, most work has been done. It has been traced east and west for a distance of over 600 feet, and two small trial pits sunk on it, from which over two tons of ore have been taken. An average sample of this ore yielded the following result on analysis:—

Silica .....	29.29%
Tungstic acid (WO <sub>3</sub> ) .....	44.10 "
Lime .....	12.70 "
Arsenic .....	3.43 "
Sulphur .....	1.46 "
Oxide of iron and alumina.....	7.70 "

The vein occurs in a slate belt 3½ feet wide, between whin walls, dipping north at an angle of 75 degrees. The vein is situated on the foot wall, and occurs in a series of lenses of varying sizes. These lenses are of all sizes from seven inches down, and will average about three inches. The scheelite is intimately mixed with the quartz, and is evidently contemporaneous with it. There is also generally some mispickel present.

Frequently lenses of pure scheelite are encountered. An analysis of this yielded the following figures:—

Tungstic acid .....	79.84%
Lime .....	20.11 "
Specific gravity .....	6.10

The slate near the vein is heavily impregnated with crystals of mispickel, while that towards the hanging wall is practically free from it.

South of this vein four others have been located, running parallel to the first. Two of these are about the same size and quality as the first, and the other two are larger, 12-14 inches, and of lower grade, the scheelite occurring on the outside of the vein, and seems not to have penetrated to any great distance.

Quite recently some rich drift has been found north of the first-mentioned vein, thus indicating the presence of still another vein. As the glacial striae at this point runs almost direct north and south, I think it is safe to conclude that the vein from which this drift came is north of the point at which the drift was found.

I thought that this occurrence was of sufficient interest to warrant the foregoing brief description. It is the first time in Nova Scotia that a vein has been discovered in which the predominating mineral is scheelite. There was, I believe, an isolated occurrence of scheelite at Malaga, but not in convenient quantities.

There is no reason that I can see why it should not be found in some of the Nova Scotia gold districts, as there is no evidence of anything out of the ordinary in the formation when this scheelite occurs. The fact probably is that the mineral has been overlooked, as the only characteristic that would draw attention to it is its high specific gravity. In appearance it looks exactly like the calcite that frequently occurs associated with the quartz.

I have frequently had to test samples this summer before I could be sure whether they were calcite or scheelite.

## UNIFORM AND SYSTEMATIC COAL MINE SAMPLING.

In "Contributions to Economic Geology," published by the U. S. Geological Survey, J. S. Burrows takes up the question of uniform and systematic coal mine sampling.

The tendency in coal mine sampling is to secure samples that are much cleaner than the coal as it is mined. Thus the sample does not correspond to the commercial product. Exhaustive tests, covering a whole year's work, show that the usual method of mine sampling cannot be relied upon to represent the average commercial product of the mine.

One of the important features of the work of the Survey's fuel-testing plant at St. Louis was the careful sampling of carload lots, and the checking of each car by means of comparison with corresponding mine samples.

The cars of coal were unloaded into a roll crusher with the rolls set 1½ inches apart, the coal falling into the boat of a bucket elevator. As the buckets of the elevator moved upward to the storage bin a sample was taken by a man with a small shovel from about every eighth or tenth bucket. This was continued until the car was emptied. The sample in a tightly covered iron bucket of 80 to 100 pounds capacity, was sent to the laboratory, and there pulverized and quar-