

(viz., year ending 30th June, 1883), nor during the six months ended December 31st last. The imports of that article came mainly from Germany and the British East Indies."

One chief reason of the utter collapse of our very promising trade in that mineral was the *uncertain* quality of the article shipped. I am assured by an American expert who used a good deal of plumbago from the Buckingham mines, that his company "tried a great deal of the graphite some years ago, but were obliged to give it up *because it did not run uniform*. Some of the crucibles made from it were as good as any, but others would crack. They gave it a thorough test, and used a great many barrels of it." He thinks that "it contained sulphur and other impurities."

Collapse of
plumbago trade
in Canada.

There is no excuse for dressed graphite containing sulphur, when the difference in the sp. gravity of plumbago (about 2.25 to 2.27), and pyrite (4.83 to 5.20) is taken into consideration.

In the very valuable report on Graphite, by Mr. Hoffman (Geological Survey Reports 1876.1878), a very simple and cheap method of destroying all other noxious impurities was pointed out and illustrated; viz: the digestion of the dressed graphites in a bath of hydrochloric acid. By this agent the carbonate of lime and oxide of iron are removed, besides alumina, magnesia, a little silica, and traces of manganese.

Until acid-chambers are erected in Ottawa county or at Montreal, the best plan of working our plumbago deposits would be to dress the plumbago as completely at the mines as mechanical skill can accomplish, and then ship it to Brockville in barrels for the further treatment with acid before its export.

As long as the price of dressed plumbago does not fall below \$40 per ton, many of our Canadian deposits could be profitably worked, always provided that they are managed by competent mining engineers. No mining company need hope to succeed in Canada or any other part of the world, unless its manager has had a careful technical training, or the ore is of phenomenal richness.

In the volume upon Mineral Resources, already so often quoted, there is an instructive article upon Graphite by Mr. John A. Walker. He says that:—"The only place in the United States where graphite is now mined successfully is at Ticonderoga, New York. The Dixon Company now mine a graphite schist 15 feet thick, carrying from 8 to 15 per cent, of graphite, practically an inexhaustible supply." In regard to ore dressing, he says:—"Several methods (both wet and dry) have been attempted. The process used by the Dixon Company at Ticonderoga owes its success to careful supervision. It is a wet process, in which the ordinary process is reversed, the 'tails' being the useful product, while the 'heads' are thrown away. All attempts at dry concentration have failed."

Ticonderoga
mines.