GRAPHITE IN CANADA

By R. W. Ells.

Graphite or plumbago, as a mineral, is widely distributed both in Canada and the United States. It is found in rocks of widely different geological horizons in both countries, but, generally speaking, the largest and most valuable deposits from the economic standpoint, appear in all cases to belong to the older crystallines of pre-Cambrian age, which are referable to what has been usually regarded as the Laurentian system. Mode of occurrence in Canada and the United States similar.

In Canada, the largest deposits yet known clearly belong to the gneiss and crystalline limestones which mark the upper portion of the Grenville series, with which are associated numerous dykes or masses of eruptive rocks of various kinds. In the State of New York also, as at Ticonderoga, where the largest deposits at present worked in the United States are located, the mineral occurs in rocks similar to those in which it is found in Canada, the New York rocks being the extension southward of those which are so largely developed north of the Ottawa.

The celebrated deposits which have been mined for so many years in Ceylon, and the output from which forms the largest portion of the imports of this mineral into the United States, are apparently derived from crystalline rocks similar to those found in Canada. The mineral there occurs largely as the foliated and columnar varieties and is of great purity, and while the geological horizon of the containing rocks is not definitely stated they appear to represent some portion of the Archæan. Ceylon deposits.

The mineral graphite is composed largely of carbon with a certain variable percentage of iron. At a high temperature it burns without flame or smoke and leaves a red ash which is practically a red oxide of iron. It occurs principally in gneiss, mica-schist, crystalline limestone and in granite and diorite intrusions. Among the sedimentary series it also occurs with coal, forming a graphitic anthracite, in which form it is mined to some extent in Rhode island. Similar graphitic

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