

but as a rule these are of more recent date than the limestone and gneiss with which they are associated; and it is in connection with these later intrusive masses that, in our search for economic minerals, we are particularly interested, since in some of these our most important deposits occur, among which may be mentioned the several ores of iron, the gold of Hastings and the nickel of Sudbury.

The determination of these areas is therefore very important from the economic standpoint, and much time and study has been, and is still being, devoted to the study of this group of rocks by the officers of the Geological Survey. In connection with the upper gneisses also, or rather with the intrusive masses of pyroxenic rocks associated with these, are the great deposits of apatite, mica, &c. found both to the north and south of the Ottawa River. The asbestos of this district is associated with serpentines and generally with the crystalline limestone, and were it not for the enormous deposits found in the Eastern townships of Quebec, the occurrence of this mineral would be of much greater importance than is now the case.

For though mineral deposits may theoretically have the same value at different places and times, this value does not always hold in practice. Thus the apatite deposits which were at one time extensively mined and of great economic importance, have, since the development of the more easily obtained phosphates of the Southern States, become practically valueless, since they cannot now be mined at a figure to enable them to enter into successful competition with the cheaper output of the south. A somewhat similar case is afforded in the micas, though here the results are not so disastrous to the persons engaged in the industry. At one time the price of this material was governed, to a certain extent, by the size and colour of the crystals obtained, but the market value of the mineral, in regard to the largest sizes, has now greatly diminished, owing to the discovery of a process by which sheets of almost any required size can now be built up from small pieces, by a process of interlamination, cementing and pressure, so that the high prices once obtainable for large crystals cannot at present be realized,