for half a mile. The whole surface, as far as I examined it, was thickly strewn with small crystals of corundum, ranging in color from pearl to blue; but here and there parts of it were altered into white mica. A sample of it, assayed for me under the direction of Dr. Coleman, carried nearly 10 per cent. of corundum, and was remarkably free from iron. An ore of this character ought to be well suited for the production of aluminium, especially as the nepheline itself, the gangue rock, contains about 30 per cent. of alumina.

Here it may be remarked that, owing to the presence of iron and other impurities, makers of aluminium assert that native corundum is unsuited for the production of that metal. But it is safer to keep an open mind on problems of this nature. When one reflects that by the adoption of new and improved processes the cost of producing aluminium has been reduced, within forty years, from its weight in gold to 30 cents per pound or less, one ought not to assume that it is impossible to find a process for producing pure corundum at low cost, if not a process to make aluminium out of an impure ore. Professor DeKalb, of the Kingston School of Mining, was able last winter, with a small experimental plant, to extract corundum (99.61 per cent. pure) from rock that carried five per cent. of magnetic iron ore. What, then, might be expected from a large and well-equipped plant, capable of treating 50 or 100 tons per day, supplied with every device that the wit of man can invent, and especially with a good quality of rock to work upon? In one particular the Ontario mineral appears to differ from the mineral of the Appalachian belt; the gangue is brittle, and is easily broken up and separated from the corundum.

It will certainly add greatly to the value of the corundum deposits of Ontario if they can be used in producing aluminium as well as the material for abrasives, if the history of that metal during the last ten years is a fair index of its future. In the ten years ending with 1897 its production in the United States has risen from 19,000 pounds, valued at $3.42 per pound, to 4,000,000 pounds, valued at 37½ cents per pound; and so much progress in so short a time seems to be ample justification for the statement of Professor Richards, made three years ago in the preface to his admirable book on aluminium: "The abundance of aluminium in nature, the purity of its ores, its wonderful lightness and adaptability to numerous purposes, indicate that the goal of the aluminium industry will be reached only when this metal ranks next to iron in its usefulness to mankind."

None of the discoveries hitherto made in Ontario seem to encourage the hope that gem varieties of the corundum are to be found, although in some localities an occasional crystal is to be seen with qualities not unlike sapphire, being semi-translucent and of bluish color. Perhaps, if search were made in the crystalline limestones, it might be rewarded with better success; not that corundum of any quality has yet been found in the limestones, but because their relations to the gneiss are not dissimilar to those which obtain in Burma. When the source of the limestones has been worked out, it may be shown that, like those of Burma, they have been derived by metamorphosis from the felspar of the gneiss, or perhaps from the felspar of the syenite; and if so, the analogy would suggest that these rocks are worth prospecting for corundum in some of its more valuable forms. In a note received from Professor Miller on this subject, he says:—

"It is quite possible that corundum may yet be found in considerable quantity in crystalline limestone in Ontario, as in India and Burma. In India the mineral occurs under various conditions in metamorphic (limestones, etc.), and igneous rocks. Of course there need be no connection between the occurrence of the mineral in these two classes of rocks. If corundum occurs in our crystalline limestones, it is of a different origin from that occurring in the igneous rocks (the syenites)."