

limestones and gneisses of the Grenville series. "The discovery of so large an area of the Grenville series in this district," Dr. Adams says in his report, "is most encouraging, as indicating the probable occurrence in it of large and valuable mineral deposits." An extensive and remarkable mass of nepheline-syenite was discovered in the townships of Faraday and Dungannon, which was traced for a distance of over seven miles in an east and west direction. Dr. Adams says:—

"This is a rare rock, found in but few places in the world, and never before discovered in our Laurentian system. The nepheline is very abundant, forming in many places an almost pure nepheline rock. The mass is flanked on the south, along a considerable part of its course, by crystalline limestone, and it is also intimately associated with a fine-grained reddish rock, resembling aplite. It is of a prevailing gray color, and often has a distinct foliation, coinciding with that of the associated rocks."

The beautiful blue mineral sodalite was also found in a number of places, associated with the nepheline-syenite, in the form of veins and irregular masses; but no occurrence of corundum was observed.

During the past three seasons Mr. Barlow has been associated with Dr. Adams on the work of this field, and a very interesting and valuable report may be confidently looked for upon some of the most intricate questions of Archean geology. Dr. R. W. Ells has also been engaged at intervals in surveying portions of the Ottawa valley east of the area on which Messrs. Adams and Barlow have been working, into which the corundum belt is known to extend as far at least as the Ottawa and Opeongo road. The two map-sheets, however, as well as the accompanying reports, will deal with the general geology of the districts, and notwithstanding the importance of the corundum discovery it is not likely that prominence will be given to that subject, if the usual practice of the survey is followed.

During the last two seasons Professor W. G. Miller, of the Kingston School of Mining, has been employed by the Ontario Government to make a special report on the field. Beginning last year with the study of the occurrence of the mineral at the place of first discovery in Carlow, he has been able to trace the corundum-bearing rocks eastward across that township, through Raglan and Lymbach, to the shores of Clear lake, near the eastern line of Sebastopol, a length of about 30 miles. The breadth of the band varies from half a mile to three or four miles, and its total area embraces about 60,000 acres. The prevailing country-rock of the district is gneiss, composed chiefly of hornblende, biotite and felspar, and it is probably an altered gabbro. Numerous dykes or masses, consisting largely of felspar, cut through the older rocks, which sometimes have the character of coarse syenite, passing in places into nepheline-syenite. In both of these rocks corundum was found, as well as magnetite, pyrite, garnets, zircon and sodalite. In continuing his work this year Professor Miller has succeeded in tracing the syenite band continuously for about 75 miles, from the township of Glamorgan, in Haliburton, to the township of South Algona, in Renfrew, besides tracing it to a considerably greater width over the region explored last year. Corundum was found at a number of places in the western part of the belt, and a large and apparently rich deposit in a ridge of nepheline-syenite near the middle of it in the township of Dungannon. But as the rocks, over nearly the whole of their extent, are covered with sand, it is probable that many valuable deposits remain to be discovered. The total area of this band is about 300 square miles; and, as it lies in a Free Grant district, the mineral rights are reserved by the Crown in almost all the lots that have been taken up for settlement. In a few cases, where lands were sold more than thirty years ago, the mineral rights went with the surface rights; and since that time some lands have no doubt been sold or leased as mining lands. But it is safe to say that the Crown holds for disposal the minerals in at least 90 per cent. of the whole tract.