

THE PRE-CAMBRIAN GEOLOGY OF SOUTHEASTERN ONTARIO

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INTRODUCTION

From time to time during the last six or seven years, when opportunity offered, the authors have made a study of the pre-Cambrian rocks of part of southeastern Ontario. Owing to the necessity for field work in other sections of the Province, time has not permitted of the mapping and detailed examination of all of the district described in the following pages. Seven distinct areas were selected, along a strip of country sixty-five miles in length, which were considered to present the best conditions for the study of the characters and relations of the rocks. In other words, these may be called key areas for the district.

The areas lie in the counties of Peterborough, Hastings, Addington and Frontenac, within thirty or forty miles of the north shore of the east half of Lake Ontario. Their relative positions and their location are shown on the index map, Fig. 1. They have been mapped on scales varying from 800 feet to one-half mile to the inch. A geological map of each of the seven areas accompanies this report.*

The region, embracing the district under review with its continuation into the adjoining Province of Quebec, is classic ground to the student of pre-Cambrian geology. To its rocks was first applied the name Laurentian, which received world-wide recognition. The descriptions of the characters and relations of these rocks and of the Huronian, found farther to the northwest beyond the region, made the work of the early Canadian geologists famous.

While the Laurentian, as first defined, has been shorn of most of its members, not now including crystalline limestones and certain other rocks, and while there are some geologists who would even discard the term, it still has great significance in Canada. The name is retained for the oldest granites and granite gneisses which occupy vast areas in this country.

Within this region was also found, at several somewhat widely separated localities, the *Eozoon Canadense*, Fig. 2, which appealed strongly to the imaginations of geologists and biologists of a past age and led to many animated discussions and a few acrimonious controversies.

In addition to being of such interest from the standpoint of pure science, the rocks of the district are of economic importance. Many mineral deposits, and structural and decorative materials, are found in association with them. Ores, or metallic minerals, that have been or are being mined, include those of gold, lead, zinc, iron, copper, arsenic and sulphur. Within the areas mapped, or at no great distance from them, have also been produced talc, mica, feldspar, corundum, sodalite, graphite and actinolite. Beautiful marble is quarried, and trap, the best of road materials, is being shipped from the dis-

* Maps Nos. 22a, b, c, d, e, f, g. Most of the maps contain notes giving summaries of the geology of the areas. They were distributed during the meeting of the Int. Geological Congress in Toronto, in August, 1913.