

GEOLOGICAL NOTES

Note 1

The areas of Paleozoic rocks are found principally in the eastern portion of the map-sheet and represent the westward extension of the great Ottawa and St. Lawrence basins of these deposits. All the formations are represented from the Trenton limestone down to the base of the Potsdam sandstone where the rock frequently becomes a conglomerate made up of the debris of the underlying crystalline rocks. The several formations lie in a nearly horizontal attitude, but they are at times affected by faults, which are especially noticeable in the townships of March, Hawley, Fletway and Ramsey, the Black River formation being sometimes in contact with the Potsdam sandstone. The transition beds between the sandstone and the overlying Calciferous dolomites extend upward in places for a thickness of thirty feet, and render the exact boundaries of the two formations difficult to determine. They have however been indicated as closely as possible, consistent with the features and with the wide-spread covering of drift which occupies large portions of the area in question.

The small areas of Paleozoic rocks found about Calabogie lake and around the west end of Clear lake are interesting, in that they occur at an elevation of 500 to 750 feet above sea-level. They probably represent the remains of a wide-spread series of these rocks, the greater portion of which has been removed by denudation. At Clear lake they embrace the Black River, Trenton and Utica formations.

Note 2

The western portion of the map-sheet is occupied principally by granites and gneisses, both reddish and grey in colour. These are generally regarded as representing, in part at least, the oldest or fundamental gneiss of the Laurentian proper. Their relations to the newer gneisses and other crystalline rocks of the Grenville or Hastings series have already been well stated in various reports and papers, by the writer and by Drs. Frank D. Adams and Alfred E. Barlow. They appear to form a series of anticlines, the newer series occupying the synclines between these, though sometimes forming isolated patches which rest upon the granite mass. As a rule these oldest rocks are for the most part destitute of minerals of economic importance.

Note 3

The newer crystalline rocks comprise amphibolites, limestones, pegmatites and schists of various kinds, with epidiotic and chloritic rocks. With the schists are sometimes included bands of conglomerate containing pebbles mostly of quartz, which are sometimes druse and along the lines of schistosity. These rocks were very fully described by Mr. H. G. Fenner in several reports ranging from 1869 to 1875, under the term Hastings series, and they closely resemble portions of what are now usually classed as Huronian. The limestones are frequently highly dolomitic, some bands being a pure dolomite. In certain areas the limestones present a comparatively unaltered aspect, with a dark bluish colour, but those, when they approach masses of the granite, frequently become highly crystalline. As a rule their distribution is somewhat irregular, resembling, in this respect, similar rocks north of the Ottawa river. They can sometimes be traced in broad bands for a distance of some miles, though even then, they are associated with masses and dykes of granite, but they often occur as narrow and irregular bands which are intimately associated with schistose rocks.

Wherever possible, these calcareous rocks have been separated as a distinct portion of the formation. Much of the country is however exceedingly difficult of access, being for the most part forest covered and often entirely unopened for settlement, so that the exact delimitation of these boundaries has been very difficult and of necessity, in some cases, unsatisfactory. The synclinal structure of these rocks, as a whole, is well defined in many places, and they are evidently a continuation of the formation seen to the northeast where it has long been known under the head of the "Grenville series."

In this group are found most of the economic minerals of the district. These include the several ores of iron, graphite, mica, apatite, etc., the last two being associated with pyroclastic rocks as in the area north of the Ottawa river.

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Explanation of Colours and Signs

Cambro Silurian

D4a Utica

D3b Trenton

D3a Black River

D2b Chazy limestone

D2a Chazy shale

D1b Calciferous

D1a Potsdam sandstone

Archean

A Amphibolites, schists, etc.

A Crystalline limestone

A Gneisses, etc.

Strike and dip

Faults

Glacial striae

Gold

Iron

Nickel

Copper

Argentiferous Galena

Mica

Apatite

Graphite

Corundum

Quarries

Marl

Peat

Elevations in feet above sea level

Water levels



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Magnetic Declination 9° to 11° W.

PROVINCE OF ONTARIO  
Parts of Counties of Renfrew, Lanark,  
Lennox and Addington, Frontenac and Carleton.  
(Perth Sheet, No. 119)

Natural Scale. 1:50,000  
Scale, 4 miles to 1 inch

To accompany Report by  
R.W. ELLS, LL.D., F.R.S.C.  
1903

Sources of Information  
Surveys by the Geological Survey staff; and official  
plans of surveys of the Crown Lands Department of  
Ontario.

To illustrate Part I. Annual Report, Vol. XIV.