Geological Survey of Canada

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Joins Sheet N° 153

Sheet N° 122

Explanation of Colours and Signs

Cambro-Silurian

- Dsb — Trenton.
- Dsa — Black River.
- Dcb — Chazy limestone.
- Dca — Chazy shales.
- Dlb — Calciferous.
- Dsa — Potsdam sandstone.

Archæan

- A — Amphibolites, schists, etc.
- A — Crystalline limestone.
- A — Gneisses, etc.
- Anor. — Anorthosite.
- Strike and dip.
- Faults.
- Glacial striæ.
- Gold.
- Iron.
- Argentiferous Galena and Zinc blende
- Mica.
- Quarries.
- Marl.
- Molybdenite.
- Ochre.
- Asbestos.

Joins Sheet N° 123

Joins Sheet N° 121

Joins Sheet N° 119

C. O. Senécal, B.A.Sc., Geographer & Chief Draughtsman.
J. Keele, B.A.Sc., Draughtsman.

Magnetic Declination 9° to 11° W.

QUEBEC AND ONTARIO

Parts of Counties of Ottawa and Pontiac, Que.
Carleton and Renfrew, Ont.
(Pembroke Sheet N° 122)

Scale, 4 miles to 1 inch = 1/253,440

1 0 1 5 10 15 Miles

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

N° 660

Sources of Information

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

GEOLOGICAL NOTES

Note 1.

The crystalline rocks of the district comprise both the so-called Fundamental gneiss and associated granite and the upper series of well-banded gneiss with quartzite and crystalline limestone; the latter are well seen in the eastern portion of the map-sheet while the older series have the largest development in the western half of the area. Here the limestone is generally absent and when it does occur, it is in the form of narrow overlying bands resting on well-bedded quartzose gneiss which sometimes, as on the upper Coulonge river, forms cliffs in which, at some distance, it presents a bedded aspect similar to that seen in some portions of the Potsdam sandstone. A similar bedded aspect of this upper gneiss is seen along the upper Nation river in the Grenville area.

The Fundamental gneiss is well seen in the western part of the map-sheet as along the Petawawa and north of Allumettes island. In this there is often a well-defined gneissic structure but the rock is frequently granitic and the regular series of banded gneisses is not seen. These rocks apparently represent the oldest known geological formation of the Ottawa district.

No economic minerals have as yet been recognized in this lower portion, while in that part of the gneiss associated with the quartzite and limestone, deposits of mica, apatite and graphite are numerous and of great value. These are frequently found in the area adjacent to the Gatineau river.

The limestones occur generally in basins of greater or lesser extent and represent the upper portion of the Archæan rocks. They usually rest upon well-bedded masses of white quartzite as seen near the Ottawa near Montebello. In the southern portion of the area as at the Bristol mines they are associated with hornblende-schists and kindred rocks which are more conspicuously seen in the area comprised in the map-sheet adjacent to the south (Perth sheet.)

Note 2.

The Palæozoic rocks range from the Potsdam sandstone upward to the Trenton, both inclusive. Of the first named, a small outcrop is seen a short distance north of the village of Quio where the stone is quarried for local use. Here the formation passes up into and through the Calciferous into Chazy shales which occupy a considerable part of the village itself. Crossing the Ottawa river at this place the upward succession is continued unbroken through Chazy limestone and Black river formation into the lower part of the Trenton limestone which forms the plateau to the south.

Along the Ottawa river westward similar Palæozoic rocks are found, sometimes in isolated areas of small extent resting on the crystalline rocks but generally along the valleys of the rivers. The largest of these areas of sediments is seen on the Ottawa between the western end of Calumet island and the upper end of Allumettes island. In this area the lowest member of the series, the Potsdam, is not seen, nor is the upper or Trenton division. A similar outlier is exposed along the Bonnechere river to the south between Adamston and Golden lake, and this also forms a considerable area to the east of Lake Doré in which also the Trenton is found. Fossils are abundant in many localities and considerable collections have been made from time to time, the results of which are given in the appendix to the accompanying report.