

Explanation of Colours and Signs

Silurian

E1 Medina

Cambro-Silurian

D4b Lorraine

D4a Utica

D3b Trenton

D3a Black River

D2b Chazy limestone

D2a Chazy shales

D1b Calcareous

D1a Potsdam sandstone

Archean

A Gneiss, etc.

Strike and dip

Faults

Glacial striae

Pits

Boreholes

Quarries

Fossils

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Joint Sheet No 121

Average Magnetic Declination, 11°50' West

ONTARIO AND QUEBEC
Counties of Glengary, Stormont, Dundas, parts of counties of
Prescott, Russell, Carleton, Grenville, Lanark and Leeds Ontario.
Parts of Counties of Huntingdon, Soulanges, Vaudreuil
and Ottawa, Quebec.

(Ottawa and Cornwall Sheet No 120)

Scale, 4 statute miles to 1 inch = 16 km.

To illustrate report by
R. W. ELLS, LL.D., F.R.S.C.

Sources of information

Surveys by the Geological Survey staff; official
plans of surveys of the Crown Lands Department
of Ontario. Admiralty charts.

GENERAL NOTE

The area comprised in this map sheet between the Ottawa and St.
Lawrence rivers is for the most part, gently undulating. There are no pronounced
hill features, and large portions are comparatively level and covered with a
heavy mantle of clay, sand or gravel with occasional ridges of boulders. Marine
shells are abundant in many places and are frequently found in the lower part
of the gravels over the underlying clay rather than in the clay itself. These shells
sometimes occur in beds from two to four feet thick.

In consequence of the widely spread nature of the drift, rock outcrops are
comparatively rare, so that, in the delineation of the formations much uncertainty
exists as to their exact position. Advantage has been taken of all rock outcrops the
age of which is generally determinable from their contained fossils or their litho-
logical character. The intervening spaces have been determined from the direction
of the strike and dip wherever seen, as also to some extent from the direction in the
soils and other physical features. The basin-shaped character of the interior is
clearly defined, and the presence of several faults, some of which are of considerable
extent, has been recognized. Low anticlines are visible at several points but these
are probably local, the opposing dips rarely exceeding two to four degrees, except in the
western part of the area where, in the calciferous, reverse dips of twelve to
eighteen degrees are sometimes seen.

All the Silurian formations from the Medina to the base of the Potsdam sand-
stone are represented in this area. The former comprises a series of red shales and
sandy beds which occur in several small outliers about fifteen to twenty miles south
east of Ottawa City. The Lorraine formation comprises a considerable thickness of
generally grayish shale and sandstone, which graduate downward into the usually
dark brown, and sometimes bituminous shales of the Utica.

The rocks of the Trenton, Black River and Upper Chazy consist for the most
part of grayish and dark coloured limestone, generally highly fossiliferous, while
the Lower Chazy comprises a series of usually grayish or greenish shales and sand-
stone with thin beds of conglomerate. The calciferous is composed for the most
part of dolomitic limestone, brownish gray or buff coloured, which passes down
through transition beds that become gradually more siliceous into the Potsdam
sandstone which is frequently highly quartzose and in its lower part often
changes to a conglomerate made up of pebbles of the underlying crystalline rocks
in a siliceous paste. This conglomerate rests directly upon the Archean. The fossils

of this formation are usually found in the transition portion.

Estimates as to thickness of the several formations have been made; much
valuable information has been obtained from borings which have been put down in
the search for natural gas or oil at a number of points. From these the following
figures may be given:

Medina shales	75 feet
Lorraine shales and sandstones	360 to 400 "
Utica shale	350 - 450 "
Trenton limestone	600 - 650 "
Black River limestone	75 - 100 "
Chazy limestone	90 - 120 "
Chazy shale and sandstone	80 - 100 "
Calcareous dolomite and shale	75 - 100 "
Potsdam sandstone	20 - 100 "

Practically there are no indications of economic minerals throughout the
area of the map sheet. Quarries of excellent building stone are found in several
formations, including the Trenton, Black River, Chazy, Calcareous and Potsdam, more
especially at or near Winchester, where excellent flagging stone is also found, at
St. John's River and Alexandria, a short distance north of Cornwall and in Tipton
where the Potsdam is well exposed. These quarries are indicated on the map.

Borings for gas and oil have been made at several places as in Gloucester
Township south of Ottawa, near The Brook station, near Fourville, at Alexandria,
in the Township of Lancaster and near Winchester Springs. Up to the present time
none of these sites yet have been successful in finding either of the above in econo-
mic quantities though indications of natural gas have been met with in several of
these localities.

Large areas of peat bogs occur at a number of points, and some of these
have been exploited within the last two years with a view to the manufacture of peat
fuel. These efforts have as yet scarcely passed beyond the experimental stage, but
a full description of the progress of the industry with the details of the several dip-
osits and their approximate areas will be found in the Bulletin on this subject pre-
pared by D. F. Chalmers. The general outlines of several of the most important bogs
are given on the map sheet.

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