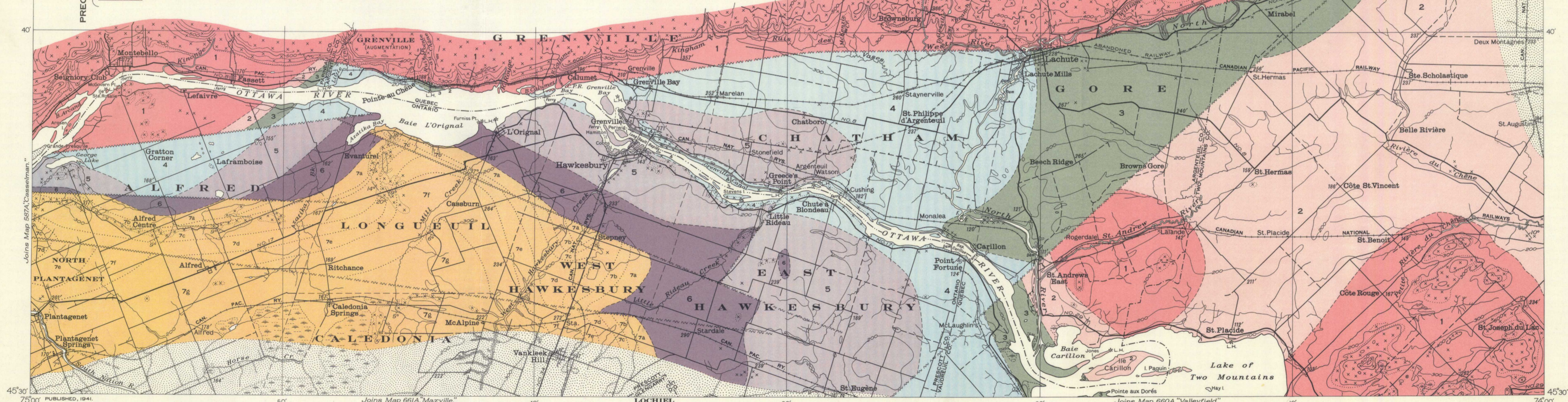
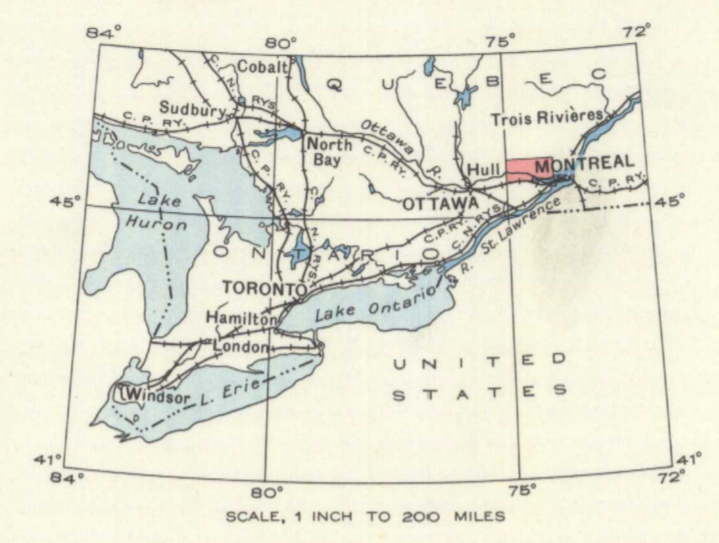


75°00' 50' 40' 30' 20' 10' 74°00' 45'30'

LEGEND

PALAEOZOIC	7	ORDOVICIAN BLACK RIVER AND TRENTON OTTAWA FORMATION: chiefly grey limestone; 7a, Pamela zone: limestone, thin-bedded sandstone, shale, dolomite; 7b, Lowville zone: chiefly shaly limestone; 7c, Leray zone: limestone; 7d, Rockland zone: limestone; 7e, Hull zone: limestone; 7f, Sherman Fall zone: thin-bedded limestone with shaly partings; 7g, Cobourg zone: limestone	Heavily drift-covered area.....
	6	CHAZY ST. MARTIN FORMATION: limestone	Rock outcrop and area of outcrop.....
	5	ROCKCLIFFE FORMATION: grey-green shale, grey sandstone	Bedding (inclined).....
	4	BEEKMANTOWN OXFORD (BEAUHARNOIS) FORMATION: grey limestone, magnesian limestone, blue-grey dolomite	Fault.....
	3	MARCH FORMATION: calcareous sandstone, sandy, blue-grey dolomite	Provincial highway (with number).....
	2	CAMBRIAN OR ORDOVICIAN NEPEAN FORMATION: sandstone	Road well travelled.....
	1	PRECAMBRIAN Crystalline limestone, quartzite and gneiss of the Grenville series intruded by granite, syenite and allied rocks	Road not well travelled.....



DESCRIPTIVE NOTES

The undifferentiated PRECAMBRIAN rocks (1) have an unevenly eroded surface, upon which the Palaeozoic strata lie almost horizontally. Exposed areas are, in part, knobs projecting through a thin Palaeozoic covering, but, in part, have reached their present positions as a result of faulting.

The NEPEAN (2) is the oldest of the Palaeozoic formations and as far as known, everywhere forms the basal member of the Palaeozoic succession. It consists of thin and thick beds of coarse-grained, cream-coloured sandstone weathering grey with irregular brown stains. In several localities it has become a dense quartzite. The formation varies in thickness, since it was deposited on an irregular surface. It has been correlated with the Potsdam of New York which is considered to be of late Cambrian age. But, to the west, there is no discernible break between the Nepean and the succeeding March formation, and the Nepean may be of Ordovician age.

The MARCH formation (3) lies conformably upon the Nepean, its lower boundary being placed at the base of the lowest dolomite layer. The formation is composed of rusty-weathering, thick beds of grey sandstone with a calcareous cement, alternating with thick and thin beds of sandy, blue-grey dolomite. Its thickness is not known. In places outcrops are of resistant sandstone beds closely resembling Nepean sandstone. In areas to the west the formation is a known, water-bearing horizon. It grades into the overlying Oxford and for this reason is considered to be of Beekmantown age.

The OXFORD formation (4) contains a few, thin dark argillaceous layers near the top but, for the most part, is made up of thick, rusty-weathering beds of dove-grey limestone, magnesian limestone, and blue-grey, dense dolomite. Irregular cavities in the dolomite, one-half to two inches in diameter, have commonly been filled with fine, pink or white calcite crystals. No wells penetrate the Oxford and its thickness is not known. The formation contains fossils of Beekmantown age.

The ROCKCLIFFE formation (5) rests disconformably upon the Oxford. It consists of beds of grey-green shales enclosing lenses of fine-grained, grey sandstone. In places the basal sandstone lenses are coarse, almost conglomeratic. They range in thickness from a few inches to as much as 20 or 30 feet and in their lateral dimensions, from a few feet to more than half a mile. The maximum thickness of the formation is probably about 155 feet. Fossils have not been found in the map-area but are present farther west and indicate that deposition was in late Chazy time. The Lower and Middle Chazy beds of the Lake Champlain area were probably laid down during the erosional interval represented by the disconformity at the base of the Rockcliffe.

The ST. MARTIN formation (6) conformably overlies the Rockcliffe. It is composed of grey shale containing limestone bands, comparatively thick beds of limestone, and occasional, thick, silicious and dolomitic beds. Its maximum thickness is probably about 150 feet and increases to the east. Some beds contain abundant *Camarotoechia plena*, indicating a late Chazy age.

The OTTAWA formation (7) rests disconformably upon the St. Martin but the contact is not exposed in this map-area. The interval represented by the disconformity is probably short. Lithologically, three indistinctly separated divisions can be recognized. Interbedded shales, thin sandstones, and limestone bands at the base gradually give place to impure, thin limestones; thin and thick, rusty-weathering dolomites; and fine-grained lithographic limestones with thick shaly partings. This group of interbedded strata is succeeded by heavy-bedded, pure, crystalline limestone. This in turn is overlain by thin beds of impure limestone, with thick, shaly partings, that grade upward into thicker, and on the whole, the purer limestone beds containing occasional shaly partings. West of the map-area the Ottawa formation is known to be 700 feet thick and, since this thickness is also recorded at Montreal, it is probably maintained across the present map-area. There is no evidence of a break in the deposition of the formation but, in the past, it has been divided, on the basis of its contained fauna, into 7 sub-divisions, three of these (7a, 7b, 7c) representing Black River and four (7d, 7e, 7f, 7g), Trenton time. The close of Black River and beginning of Trenton time came during the deposition of the pure, crystalline limestone; the shallowing of the sea, represented by the overlying, thin limestone beds, occurred well within Trenton time.

A mantle of drift, consisting of till, marine clay and sand, and alluvium, conceals much of the Palaeozoic rocks. It is mapped only where bedrock outcrops are scarce and the drift is known to be deep.

MAP 662A
L'ORIGINAL
ONTARIO AND QUEBEC
Scale, 1/25000 or 1 Inch to 2 Miles
Approximate magnetic declination, 12°30' to 15°30' West.

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L'Original, Ont.
Geol. map 662A