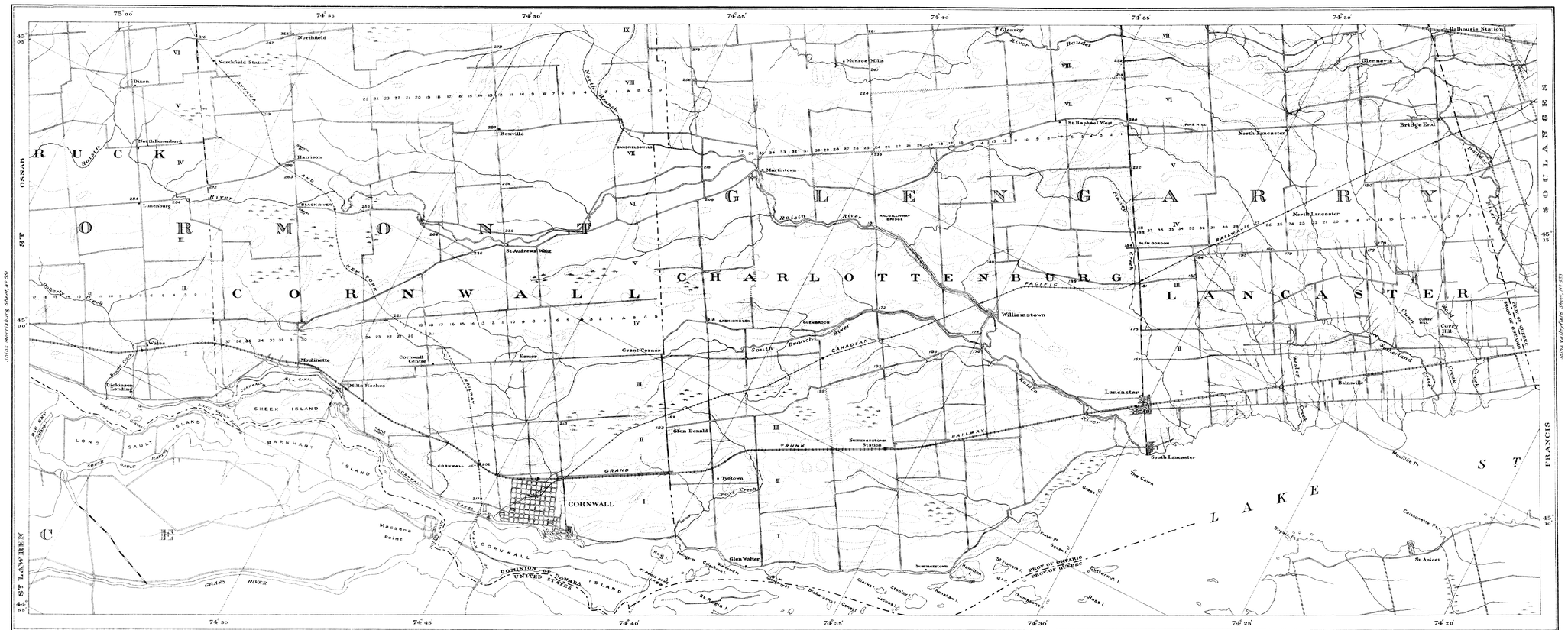
Canada
Department of Mines
HON. CHARLES STEWART, MINISTER; CHARLES CAMSELL, DEPUTY MINISTER

MINES BRANCH
JOHN McLEISH, Director
1922



LEGEND

RECENT
- Swamps
- Peat areas
- Sands — Champlain Sands and Dune sands
- Gravels — Marine beach and fluvio-glacial gravels

PLEISTOCENE
- Champlain clay (Marine)
- Boulder ridges (moraines)
- Boulder clay or till
- Thin drift cover over bedrock

PALAEOZOIC
- Bedrock outcrops

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Based on map published by the Department of Militia and Defence.

CORNWALL SHEET
St LAWRENCE RIVER SECTION
ONTARIO AND QUEBEC

Scale, 63,360 - 1 Mile to 1 Inch

Elevation in feet (1921) above sea-level

GEOLOGY
J. Keele
L. Heber Cole } 1919-1920

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EXPLANATORY NOTES

SWAMPS

The areas mapped as swamps are wet during the greater part of the year, and some of them are never dry even in the dryest summer. Nearly all the swamps are wooded, and some of them support a dense growth of trees. Swampy areas are constantly being drained, wherever possible, and if the underlying soil is suitable, the drained areas are cleared, and turned over to cultivation. Not all the land below the swamps, however, is suitable for cultivation.

SANDS

The areas mapped as sands are mostly extensive plains of Champlain or marine sands; but included with them are areas of small patches of silt or clay, with indefinite boundaries between them and the sand. Terrace sands along the St Lawrence river, in places and occasional mounds or ridges of wind blown sand are also included under the general colour for sand.

Ridges and mounds of sands which have considerable topographical relief, and which are believed to be of wind origin, and of a different origin to the above, are shown in a different colour.

Most of the sands are of fine grain, too fine for use even for mortar or sand lime brick. They are of little economic value. Small quantities of sand, suitable for use in mortar or in concrete aggregates can be obtained from the beach gravel deposits. The best sands of the region are those from the fluvio-glacial deposits.

GRAVELS

Most of the gravel deposits along the St Lawrence river are in the form of raised beaches of marine origin. They are never very extensive, but are widely distributed in some portions of the region, and are freely utilized for road material, or for concrete construction. Only a few of the deposits are of fluvio-glacial origin, but these are generally the most desirable gravels for concrete construction, being cleaner. Minor amounts of sand are obtained from both deposits.

CHAMPLAIN CLAY

This clay is widespread in the region, and sometimes forms continuous flat areas of large extent. This clay, which forms the subsoil of most of the land over which the Champlain sand is spread. The best farming lands in the region are underlain by Champlain clay.

This clay is very plastic, often sticky after rains, and is absolutely useless when mixed with a certain proportion of sand, it may be used for the manufacture of building brick or field drain tile.

BOULDER RIDGES

These ridges are more stony than the land in the surrounding country. They are frequently so fully strewn with boulders, boulder, or blocks of limestone as to render them absolutely unfit for cultivation, or even pasturage, but they can be used as a source of valuable hardwood. The boulder accumulations on these ridges can be used for road building or for farm buildings.

BOULDER CLAY OR TILL

This is the most widespread surface material in the region. It is a glacial deposit consisting of an unsorted mixture of stones, gravel, sand, silt, and clay, being somewhat similar to some of the best soils result from the weathering of the surface of the more clayey types of till, but where sand and stones predominate, it may be almost barren, especially in dry seasons.

The till or boulder clay is often known as glacial drift, and many of the stones contained in it have been moved for long distances from their original origin.

The lower parts of the till are frequently dense and hard, so that it is difficult to excavate. The name hard pan is often used for this formation.

BEDROCK OUTCROPS

Bedrock outcrops are not very numerous in the central area covered by these sheets the drift covering in this district being heavy. In the Morrisburg sheet and also the Waterford sheet the rock floor, in places, comes nearer to the surface and considerable areas are to be found with actual outcrops or with only a thin covering of drift over the rock. The rocks, with only one exception, are of Palaeozoic age, and consist of sandstones, dolomites, and limestones. One area of very small extent, about 1 mile N.N.E. of Prescott, will outcrop where Archean quartzite outcropped through surrounding Palaeozoic rocks. The limestone rocks are, in many localities, suitable for building purposes, and the sandstone in the Belleisle area district is of sufficient purity to be ground for glass manufacture, and for use in steel foundries, where convenient and available, the limestone or dolomite is being crushed for road surfacing, and in some localities has been used for the manufacture of lime.