Canada
Department of Mines
HON. W. A. GORDON, MINISTER; CHARLES CAMSELL, DEPUTY MINISTER.
GEOLOGICAL SURVEY
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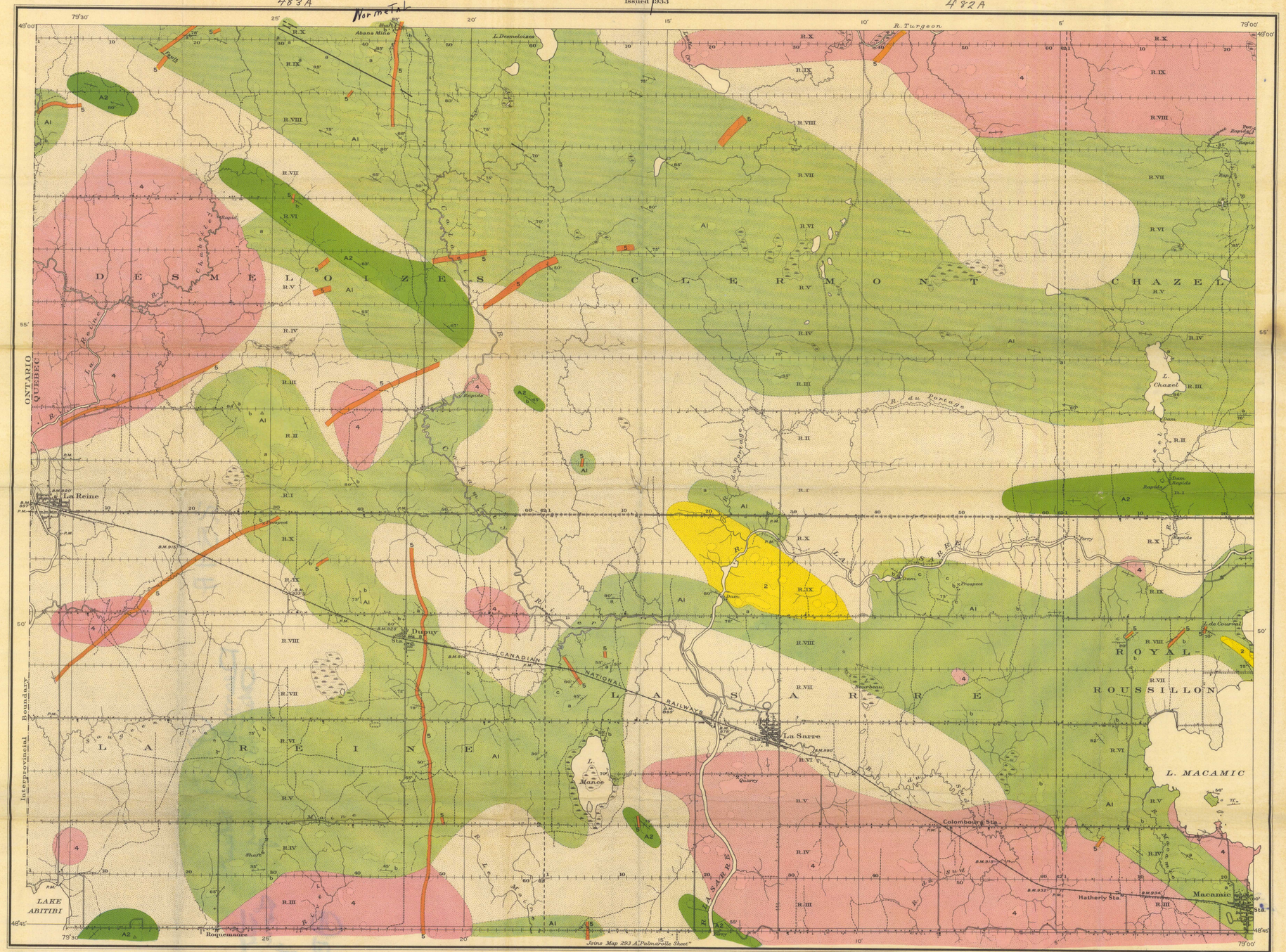
483A

Normetal

482A




## LEGEND

**RECENT AND PLEISTOCENE**

*Recent alluvium and glacial drift*

**PRE-HURONIAN (?) INTRUSIVES**

5 — LATER GABBRO
*Olivine diabase and quartz gabbro dykes*

**PRE-HURONIAN INTRUSIVES**

4 — *Granite*

2 — *Quartz diorite (older gabbro)*

**KEEWATIN SERIES (?)**

A2 — *Greywacke, quartzite, waterlain tuff*

**KEEWATIN SERIES**

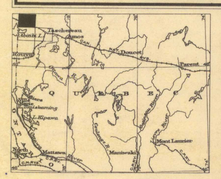
A1 — *Basalt, andesite, rhyolite, and tuff; tuff and normal clastic sediments interbedded with flows (a); granite dykes present (b); diorite or gabbro intrusives present (c). Iron formation shown by black line*

PRECAMBRIAN

### Symbols

- Geological boundary
- Bedding (inclined; may be overturned; overturned; vertical)
- Schistosity (inclined; vertical)
- Glacial striae

Geology by J.B. Mawdsley, 1928




Scale, 1 Inch to 100 Miles

Approximate magnetic declination.

MAP 284 A

# DESMELOIZES SHEET

ABITIBI COUNTY

QUEBEC

Scale, 63360 or 1 Inch to 1 Mile

Miles 0 ½ 1 2

Kilometres 0 1 2 3 4 5



**Legend**

| | | | |
|---|---|---|---|
| Road and buildings | | Power transmission line along road | |
| Road not well travelled | | Abandoned camp site | |
| Road on township boundary | | Cemetery | |
| Bush road, trail, or portage | | Triangulation station | |
| Railway | | Bench mark | BM 916 |
| Church | | Permanent reference mark | P.M. |
| School | | Township boundary | |
| Post office | | Marsh | |

*Surveys by S.C. McLean, 1926; J.V. Butterworth, 1928; and the Department of Lands and Forests, Quebec. Compilation of aerial photographs supplied by the Topographical Surveys, Department of the Interior. Triangulated positions and bench marks by the Geodetic Survey of Canada.*

Publication No. 2310

## PHYSICAL FEATURES

The map-area is a clay-covered plain, part of the clay belt of northern Quebec and Ontario. Its elevation ranges between 880 and 1000 feet above sea level; the slope is from north to south. Ridges and areas of rock, moraine, and sand, and rounded clay-covered knolls, break the surface but rarely rise more than 20 to 30 feet above the general level. The forest growth is varied, but black spruce predominates. Large sections have been burnt; others, in the southern part, have been cleared and are under cultivation. Open muskegs are few. In places peat deposits, 3 to 8 feet thick, occur under a sparse growth of tamarack and spruce. The rivers and streams are entrenched 10 to 30 feet in the stratified clay. They have a low gradient, and quiet stretches are separated by rapids and falls, caused by rock and moraine barriers. The large streams have smooth, sinuous courses, the smaller meander and have oxbows and cut-offs. The chief travel-routes are now roads and trails.

## GEOLOGY

The map-area is largely underlain by volcanic rocks, the oldest in the area and similar to rocks in adjacent districts, classed as Keewatin. The assemblage consists mainly of lavas amongst which light green to almost black andesites predominate. These and associated dark basalts exhibit various structures such as amygdules and pillows. Cream-coloured to dark grey rhyolites and acid porphyries are present but are mainly confined to northeastern Desmeloizes and southern Clermont townships. Dykes and sills closely related to the flows are common and are difficult to distinguish from them. The acid flows are, in most places, greatly sheared and have a pale colour and satin-like appearance. The original minerals of the basic lavas are largely altered but hornblende, not chlorite as in the volcanics of districts to the south and east, is the main dark constituent. Some coarse-grained amphibolites of secondary origin are present. Trending east-southeast across northeastern Desmeloizes and east across southwestern Chazel townships are two belts 1 to 2 miles wide, of sheared volcanics rich in carbonates.

Interbedded with the flows are narrow bands, some of coarse agglomerate; some of fine tuffaceous material, often banded, sheared, and usually green owing to chlorite content; and others of lean banded iron formation, composed of magnetite and fine quartz. Thin beds of squeezed conglomerate occur in a few places; normal, waterlain, fine sediments are more abundant and form bands from a few feet to 500 feet wide. On lot 45, range IX, Desmeloizes township, a 5-foot band of conglomerate holds pebbles of albite-hornblende granite. The parent body of the pebbles is unknown.

Greater widths of normal sediments containing subordinate amounts of volcanics are mapped separately. These lens-like masses give place along their strike to volcanics interbedded with minor amounts of clastics. The sediments are usually banded, the bands ranging from a few inches to many yards in width. Quartzite bands predominate. They are light coloured, or are brown due to the weathering of a content of iron carbonate. Slate bands, grey or brownish, often sheared and at times indistinguishable from fine grained tuffs, are present; conglomerates are almost wholly absent. Where the sediments and tuffs have been subjected to the contact action of the granitic intrusives they have been converted into schists rich in hornblende, mica and garnet, and in places banded gneisses have been developed.

The volcanics and sediments lie in large, compressed folds and are, therefore, either vertical or dip steeply. The flows in northeast Desmeloizes township face south and have a thickness of at least 4 miles; elsewhere their attitude is not as clearly evident. It is believed that the wide bands of sediments are near or at the top of the volcanic-sedimentary assemblage and nearly all lie along synclinal axes. The structural concordance between the wide sedimentary bands and the volcanics, the lack of basal conglomerates, the presence of volcanics, in minor amounts, interbedded with the sediments, and the prevalence of clastics, in minor amounts, interlayered with the typical volcanics are believed to indicate that the sediments as well as the volcanics are of Keewatin age but it may be that the strata of the east-west band in Chazel township are younger.

The granites are soda-rich and mostly light pink, some are cream or grey. They are usually coarse or porphyritic but gneissoid types are present. The feldspar are acid plagioclase with in some cases minor amounts of microcline. The common ferro-magnesian mineral is biotite, but a hornblende granite mass is present in southern La Sarre township, and in a syenite phase of the granite mass in western Desmeloizes township both biotite and hornblende are present. Dark marginal phases occur and are cut by the lighter coloured types which in places are cut by darker phases. Quartz diorite, possibly the "older gabbro" of adjacent areas, forms two small masses and numerous dykes. This rock is usually dark-with a green cast, medium to fine grained, and contains hornblende. The feldspar is oligoclase-andesine. The relative ages of the various granitic rocks is not clear, but more than one age is indicated. Quartz-feldspar porphyry dykes are cut by an altered quartz-albite granite dyke on lot 43, range X, Desmeloizes township. The quartz diorite may be related to some of the granite masses. All the granitic bodies intrude the volcanics and sediments, one at least appears to invade a pitching anticlinal fold, and others probably have the same structural relationship. Some or all may be post-Timiskaming and pre-Huronian, the age assigned to similar intrusives in neighbouring areas. In the vicinity of Dupuy village, dykelets of albite granite cut the Later Gabbro Abana dyke which in turn cuts granitic rocks. The dykelets are either offshoots of a granitic body, probably post-Huronian, or are acid differentiates of the gabbro dyke. A few narrow dykes of dark, white weathering, serpentinized peridotite cut the volcanics and quartz diorite.

The Later Gabbro dykes are fresh looking, dark, coarse grained, and basic plagioclase gives rise to a marked diabasic texture in most of them. The north-south Abana dyke crosses eastern La Reine and northeastern Desmeloizes townships. Phenocrysts of green plagioclase, as much as 1 inch in diameter, are scattered through this and a smaller parallel dyke, and the rock resembles the Cobalt diabase. Numerous quartz diabase dykes are present. They strike northeast; one is cut by a north-south diabase dyke that resembles the Abana dyke except for the lack of feldspar phenocrysts. A very fresh looking olivine diabase dyke, trends northeast through the west part of range II, Desmeloizes township to west part of range VI, Clermont township. The northeasterly trending quartz diabase and olivine diabase dykes appear to have been displaced by faults which may strike southeast, and apparently do not dislocate the north-south dykes.

## MINERAL DEPOSITS

Sulphide bearing deposits, in which zinc and copper are the most important metal constituents, are common, but valuable concentrations are few. The sulphides, massive or disseminated, occur in veins or lens-like bodies in the volcanics or sediments. The lens-like concentrations occur in sheared or brecciated zones. The sulphides, pyrite, pyrrhotite, sphalerite, chalcopyrite and galena, form mosaics in which all, or only some may be present, and may be associated with quartz, carbonates and a few other minerals. The sulphide rich bodies on the Abana property are cut by the Abana dyke and have subsequently been faulted. All the sulphide deposits are believed to have been derived at one general period from bodies of granite or quartz diorite, or from both.

## RELATED PUBLICATIONS

MAP 183A: Harricanaw-Turgeon Basin, Northern Quebec; scale, 1 inch to 4 miles, 1918.

MEMOIR 109: Harricanaw-Turgeon Basin, Northern Quebec; by T. L. Tanton, 1919.

SUMMARY REPORT, PART C, 1925 (*pp. 78-81*): Mineral Deposits in Desmeloizes and Trécesson Townships, Quebec; by W. F. James and J. B. Mawdsley.

SUMMARY REPORT, PART C, 1928 (*pp. 28-42*): Desmeloizes area, Abitibi District, Quebec; by J. B. Mawdsley.

MEMOIR 166: Geology and Ore Deposits of Rouyn-Harricanaw Region, Quebec; by H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931.

MAP 271A: Rouyn-Harricanaw Area, Abitibi and Témiscamingue Counties; scale, 1 inch to 4 miles, 1931.

MAP 293A: Palmarolle Sheet, Abitibi County, Quebec (*in course of preparation*); scale, 1 inch to 1 mile; (*joins south edge of Desmeloizes Sheet*).

MAP 285A: Taschereau Sheet, Abitibi County, Quebec (*in course of preparation*); scale, 1 inch to 1 mile; (*joins east edge of Palmarolle Sheet*).

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