

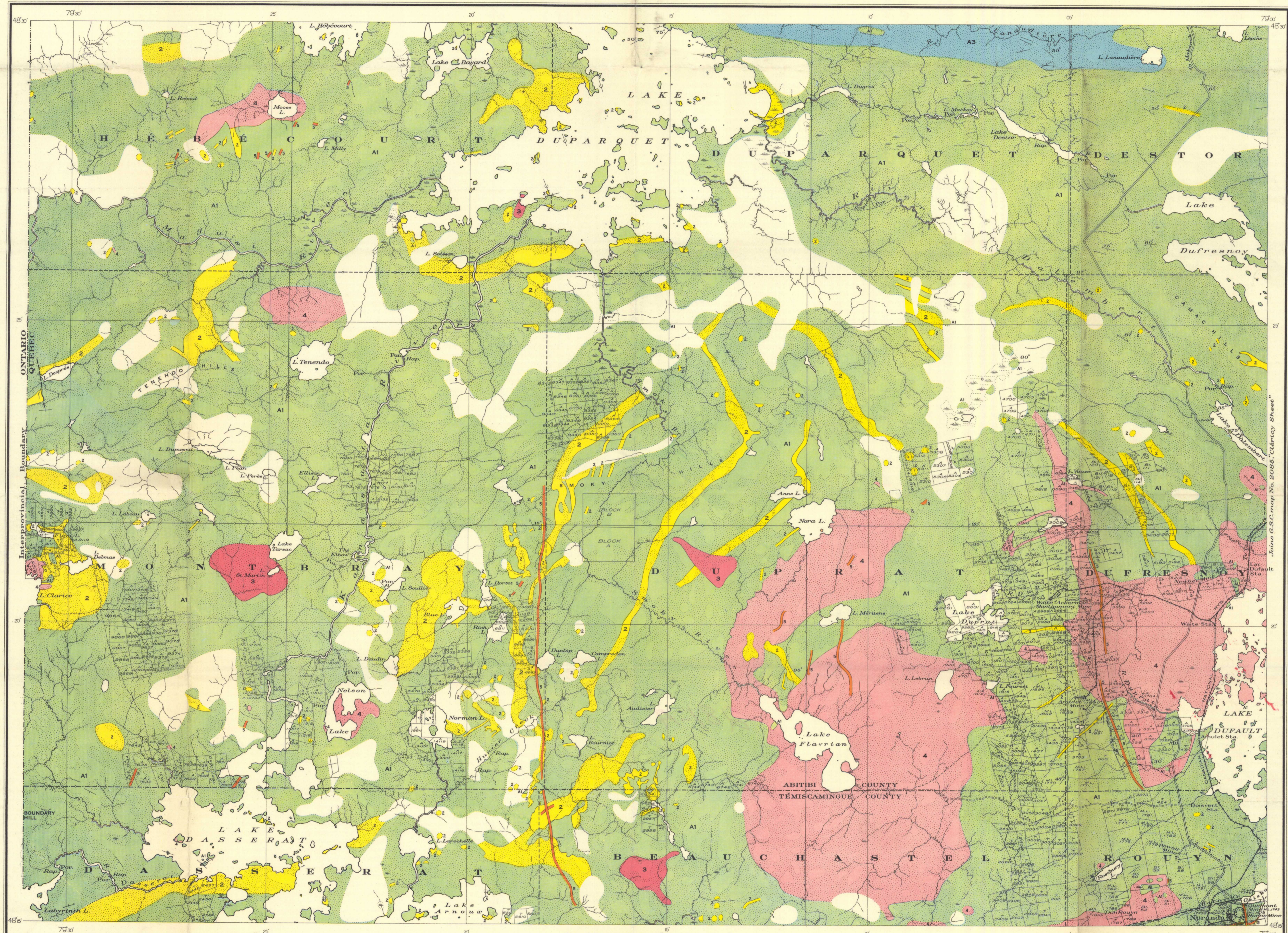
LEGEND

- RECENT AND PLEISTOCENE**
- Recent alluvium and glacial drift
- PRE-HURONIAN INTRUSIVES**
- LATER GABBRO
Olivine diabase and quartz gabbro dykes
 - Granite and granodiorite
 - Syenite porphyry
 - Quartz diorite
(older gabbro)
- TIMISKAMING SERIES**
- A3
Mainly interbedded conglomerate and arkose
- KEEWATIN SERIES**
- A1
Basalt, andesite, dacite, rhyolite, with some minor amounts of interbedded tuffs and small masses of basic and of acid intrusives
- Geological boundary**
- Geological boundary
 - Bedding
(strike, strike and dip, vertical, horizontal)
 - Schistosity
(strike, strike and dip, vertical)
 - Glacial striae
 - Fault
 - Shaft
 - Road
 - Road not well travelled
 - Trail or portage
 - Transmission line
 - Mile post
 - Mining claim numbers

SOURCES OF INFORMATION

Geology by W. F. James, 1922, 1927; B. S. W. Buffam, 1925; and H. C. Cooke, 1927, 1928.

Surveys by the Department of Lands and Forests, Quebec; and by R. Bartlett, 1926; R. C. McDonald, 1927; and H. N. Spence, 1929; together with compilation of aerial photographs supplied by the Topographical Survey, Department of the Interior.



PHYSICAL FEATURES

The map-area is one of the more rugged parts of the Clay Belt of Quebec and, therefore, the proportion of exposed rock is much greater than in adjoining districts. The area is largely a gently rolling, clay-covered tract. Large and small rocky knolls protrude through the clay and, in addition, there are a few rocky uplands whose summits rise 600 to 700 feet above the general level. The principal uplands are the Camac hills south of lake Dufresnoy; the Smoky hills in central Duprat township; about 7 miles long, 2½ miles wide and trending easterly; and the Tenendo hills extending intermittently from near Tenendo lake to and across the Ontario boundary. Other smaller areas are: the west end of the Abitibi hills in Deserret township; the Waite hills, 3 miles long and chiefly in Dufresnoy township; hills at the southeast corner of Duprat township; the Boundary hills in the southwest corner of Montbray township; and the Moose Lake hills extending west of Duparquet lake. These hilly areas provide the most easily prospected country. Outcrops are not conspicuous along the principal rivers nor are they numerous on the lake shores which, for the most part, consist of clay and other unconsolidated materials.

A highway leads west from Noranda a short distance south of the southern boundary of the map-area and provides access to the southern part of the district. Except for this highway and another running north from Noranda and various trails and wood roads, the water routes are the important means of access. These routes are easy of travel and the larger rivers and lakes provide access to within five or six miles of any point.

GENERAL GEOLOGY

KEEWATIN lavas and tuffs and the one band of TIMISKAMING sediments are the oldest rocks. The bulk of the lavas are andesites locally exhibiting pillow structures. Interbedded with them are fragmental rocks, mainly breccias. More basic flows, such as basalts, are less common; acidic types, rhyolites and trachytes, are the least abundant. Many of the fine-grained, acidic bodies are undoubtedly intrusive but have not been separately mapped.

The older rocks are cut by various types of intrusives all of which are considered to be pre-Huronian. Probably the oldest are the rocks designated QUARTZ DIORITE (Older Gabbro). They vary greatly in composition and size of grain and almost everywhere are greatly altered, the waxy granitic texture of the altered feldspars being a characteristic feature. Many of the bodies of this rock are dyke-like or sill-like in form.

The SYENITE PORPHYRY varies in composition. The commoner phase is reddish and coarsely porphyritic. The Tanac Lake (Hub lake) mass is largely a coarse rock with a granitic texture. The bodies in Beauchastel and Duprat townships are composed of a number of dykes varying in composition and cutting one another. The relative ages of the syenite porphyries and the granites are unknown. The GRANITE body bordering Dufault lake is largely a siliceous granite bordered on the west by diorite. The other granite bodies are light-colored, siliceous albitic granites in some cases varying considerably in composition.

The LATER GABBRO dykes are remarkable for their persistence and consistent north strike. They are the youngest rocks and possibly some are of Huronian or Keweenaw age. Quartz gabbro is more common than olivine gabbro and forms most of the smaller dykes.

STRUCTURAL GEOLOGY

The structure of the area is imperfectly known. The available evidence indicates that the axis of a broad, open anticline strikes south of east through Dufault lake. Away from the axial part of the fold, the dips steepen and the structures become synclinal, the axis of one major syncline being marked by the sand-like area of Timiskaming sediments in the north and the axis of the other synclinal passing through the southern part of Deserret lake. Locally the structure is complex due to minor folding and faulting. The drainage pattern shows several trends of which a northeast trend and a northwest trend are the most pronounced. North and east courses are less common. This lineal pattern is, with some warrant, assumed to express fairly large faults.

MINERAL DEPOSITS

Two general types of mineral deposits are known, sulphide deposits and gold deposits. The sulphides are pyrite, pyrrhotite, sphalerite and chalcopyrite. The proportions of the different sulphides vary greatly. The deposits are mainly replacement bodies and vary from sparse disseminations of one or more sulphides to lenticular masses of almost pure sulphide. Some gold deposits are quartz veins mineralized with gold-bearing pyrite that also occurs in the wall rocks; other deposits consist of disseminated auriferous sulphides. Experience has shown that sulphide occurrences are localized in chloritized rhyolite near intrusions of quartz diorite (Older Gabbro) and that rhyolite bodies adjacent to acid intrusives may hold disseminated, fine-grained auriferous pyrite in such quantities as to constitute low grade gold deposits. Later gabbro dykes are associated with some of the larger copper-bearing sulphide deposits but it is not yet known that the association is genetic. The several types of mineralization have taken place in zones of shearing or fracturing doubtless related to irregularities in the major geological structures. Areas near valleys marking the supposed major faults should be examined for evidence of lesser parallel faults along which where they intersect favourable host rocks, gold or sulphide deposits may have developed.

RELATED PUBLICATIONS

- SUMMARY REPORT, 1922, PART D: Duparquet Map Area, Quebec, by W. F. James.
- SUMMARY REPORT, 1923, PART C1: Some gold deposits of western Quebec, pp. 108-120, by H. C. Cooke.
- SUMMARY REPORT, 1925, PART C: Gold and copper deposits of western Quebec, pp. 33-51, by H. C. Cooke.
- SUMMARY REPORT, 1926, PART C2: On the origin of the copper ores of Rouyn district, by H. C. Cooke, (with sketch map).
- MEMOIR 166: Geology and ore deposits of Rouyn-Haricourt region, Quebec, by H. C. Cooke, W. F. James, and J. S. Mawdsley, 1921.
- MAP 1987: Duparquet area, Timiskaming county, Quebec, (1923); scale, 1 inch to 1 mile. (Out of print).
- MAP 190A: Nottaway sheet, Quebec; scale 1 inch to 8 miles.
- MAP 271A: Rouyn-Haricourt area, Abitibi and Temiscamingue counties, Quebec; scale, 1 inch to 4 miles.

MAP 281A
DUPARQUET SHEET
 ABITIBI AND TEMISCAMINGUE COUNTIES
 QUEBEC

Scale, 63,360 or 1 Inch to 1 Mile
 Miles
 Kilometres

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