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ADVANCE REPORT ON LAKE SIMARD MAP-AREA, TEMISCAMINGUE COUNTY

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P.R. 115

# ADVANCE REPORT

# ON LAKE SIMARD MAP-AREA

# TEMISCAMINGUE COUNTY

PROVINCE OF QUEBEC

DEPARTMENT OF MINES AND FISHERIES

BUREAU OF MINES

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# ADVANCE REPORT

# ON LAKE SIMARD MAP-AREA,

# TEMISCAMINGUE COUNTY

by

BERTRAND-T. DENIS

1936

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QUEBEC

APRIL 1937

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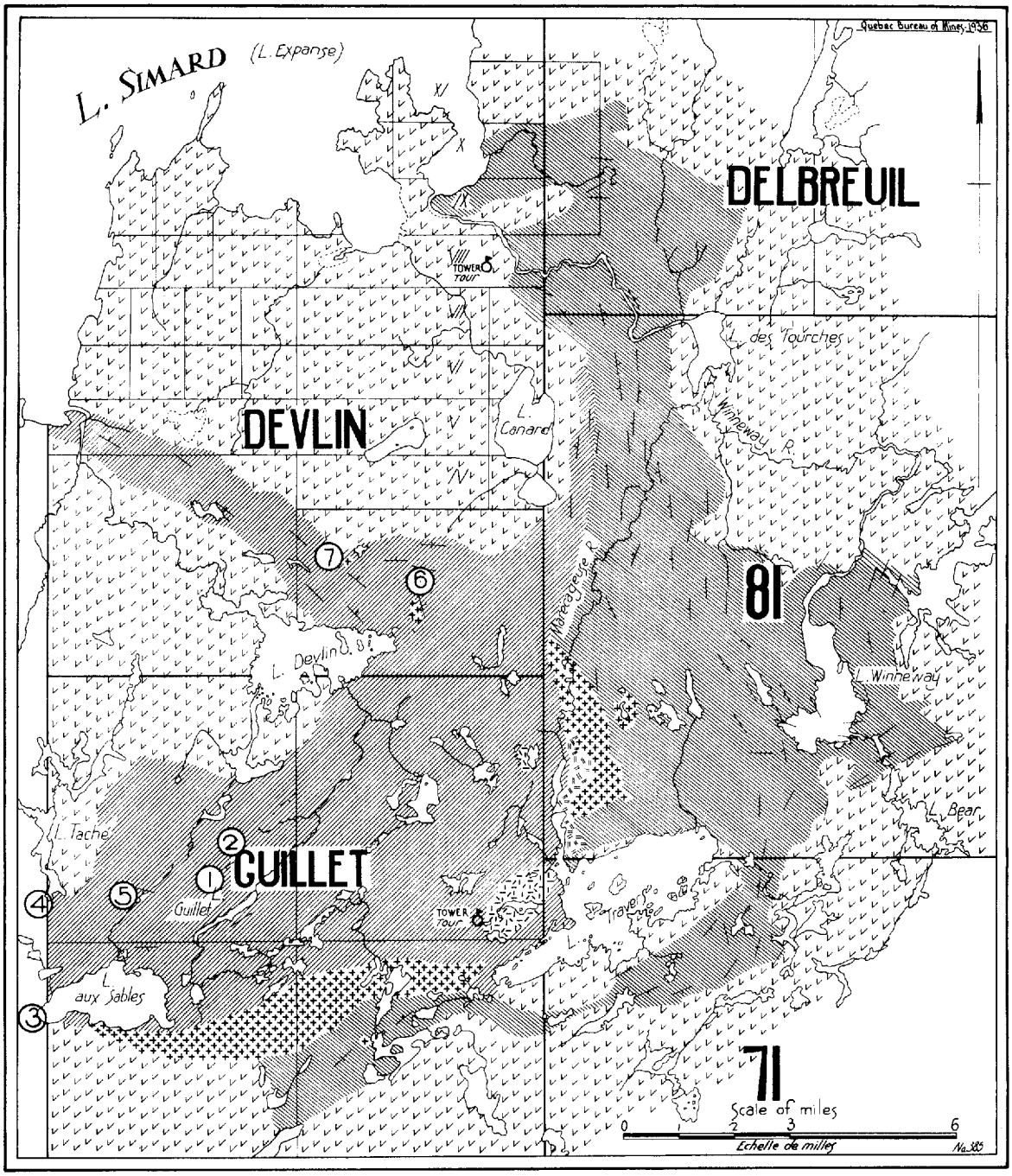


Granodiorite

Granite porphyry
*Porphyre granitique*

Granite

**TEMISCAMIAN-TÉMISCAMIEN**

Mica and hornblende schists, greywackes, etc.
*Schistes micacés, schistes à hornblende, greywackes, etc.*

Acid rocks, mostly porphyritic; flows, intrusives, sediments.
*Roches acides, pour la plupart porphyriques; roches volcaniques, intrusives, et sédimentaires.*

**KEEWATIN-KEEWATINIEN**

Greenstones, diorites, etc.
*Roches vertes, diorites, etc.*

1. BELLETERRE MINES, LTD. (MC. INTYRE PORCUPINE)
2. BEAUPLACE MINES, LTD. (MC. INTYRE PORCUPINE)
3. IRIS GOLD MINES, LTD.
4. VANTAGE MINES, LTD.
5. GAINS MOOR GOLD MINES SYND. LTD.
6. PERCY WHITE VEIN
   *FILON PERCY WHITE*
7. CLAIMS NORTH OF DEVLIN LAKE
   *CLAIMS AU NORD DU LAC DEVLIN*

# ADVANCE REPORT ON LAKE SIMARD MAP-AREA, TEMISCAMINGUE COUNTY

by

Bertrand-T. Denis

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## INTRODUCTION

During the 1936 field season, the writer was instructed to trace the extension, toward the north and east of Guillet township, of the formations in which an important gold discovery had been made the previous year. The work was essentially the continuation of that accomplished in 1935 (1).

The area lies about 60 miles south of Rouyn, and 35 miles east of Angliers, the terminus of the Mattawa-Angliers branch of the Canadian Pacific railway. It includes Devlin township, part of Delbreuil township, and parts of townships 81 and 71.

The area can be reached most easily by air, either from Rouyn or from Haileybury. From Angliers there is an all-water route to either Klock's bay or Winneway bay on Simard lake and canoe routes up Devlin creek, or the Winneway and Marécageuse rivers, provide access to the different portions of the area.

## GENERAL GEOLOGY

The essential feature of the geology of the region is a belt of Keewatin greenstones overlain by sediments of Temiscamian type, enclosed within granitic rocks such as constitute the greater part of the Canadian shield. As far as is known, all the rocks are of Precambrian age, but overlying these there is a discontinuous mantle of Pleistocene and recent deposits of unconsolidated moraine, clay, sand, and gravel.

In the northern half of Devlin township there are very few outcrops; the almost continuous mantle of drift, locally stratified, covers an area which is shortly to be opened for colonization. The general topography of the rest of the area is of the hummocky Laurentian Plateau type; in general,

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(1) Advance report on Guillet Township, Témiscamingue County, Que. Bur. Mines, 1936.

rock exposures are poor, despite the fact that a large part of the eastern half of the area has been swept by a forest fire in 1922, but on some of the hills the resultant destruction of soil and vegetation has given rise to more extensive exposure of the bedrock.

## KEEWATIN VOLCANICS

The greenstone belt of Keewatin volcanics which swings across Guillet township from west to northeast has a width, on the Guillet-Devlin township boundary, of about four miles. The regional strike along this line is slightly west of north and the normal extension of the formation would be northward across Devlin township in the general direction of Poverty bay on Simard lake. A glance at the map which accompanies this report reveals, however, that the granitic extensions have disturbed and cut off the greenstone belt and that at about two and a half miles from the southern boundary of Devlin township it is suddenly reduced to two narrow bands extending north and northwest, respectively. The latter band is the larger; it extends to the south end of Klock's bay on Simard lake, a length of five miles along which the width is about one mile. There is granite on both sides of the band. The band extending to the north lies close to the western boundary of township 81; its length is about two and a half miles and the width is less than half a mile. To the west of the band is granite, but to the east are sediments. The greenstone belt occupies, therefore, a much smaller area than had been hoped for.

The typical greenstones are fine grained andesitic flows, frequently showing pillow structure, more or less obliterated. Amygdaloidal, banded or massive facies are also found, and dioritic, fine and medium grained rocks with crystalline texture are common. The field evidence is very conflicting as to whether these diorites are relatively coarse-grained volcanics or intrusive masses or sills.

Within the greenstone belt, there are a few narrow bands of bedded tuffs; these are mostly acid rocks, very fine grained, composed chiefly of quartz with a little sericite, and they are useful structural guides, as the attitude of thin beds can be readily determined, whereas the attitude of the flows is rarely apparent in the limited exposures which are the rule. Acid flow-rocks, rhyolites, are rare in the greenstone belt proper, but toward the top of the Keewatin they are more

frequently found, accompanied by tuffs, agglomerates, ash beds, and some interstratified sedimentary schists. Only a great deal of detailed study, quite beyond the scope of the present work, could establish the exact succession.

## ACID ROCKS, MOSTLY PORPHYRITIC

Overlying the Keewatin there is an extensive development of sediments, mostly micaceous schists of Temiscamian type. Between the typical greenstones and the typical sediments, there is a discontinuous zone of acid rocks, mostly porphyritic, which apparently include flows, intrusives, and pyroclastics, of which some are bedded. These rocks are generally relatively light coloured, grey, and the weathered surface is cream to buff. In some types, phenocrysts of quartz, frequently bluish, and less often of feldspar, are conspicuous, but very often no minerals can be determined by inspection of hand specimens.

The field relations shown by these rocks point to great diversity of origin. Sometimes an intrusive origin seems to be obvious; other occurrences apparently establish beyond doubt a sedimentary origin; and very often the rocks are massive and structureless. These seemingly conflicting observations, together with the distribution of certain relatively small occurrences within areas of Temiscamian and Keewatin rocks, suggest the possibility that a general similarity in aspect may have resulted in the grouping, under a single geological heading of rocks of quite different origin and even of different ages.

Careful weighing of the field evidence has led to the belief that, in large part at least, this zone represents a period of acid igneous activity toward the close of the Keewatin, during which quartz rhyolite porphyry flows and associated pyroclastics were formed at the surface, while dykes and possibly small intrusives of similar composition were injected at shallow depths.

## TEMISCAMIAN SEDIMENTS

Overlying, insofar as we have been able to determine, the essentially volcanic Keewatin formation there is an extensive development of an essentially sedimentary formation,

which we correlate with the Temiscamian. Although there are occasional volcanics of the greenstone type among these sedimentary rocks, they are for the most part micaceous, rather fine grained rocks rich in quartz, schistose and finely bedded to massive. Sometimes needles of hornblende with regular to random orientation are present with or instead of the mica.

Limited in Guillet township to a relatively narrow band traced over a length of five miles to the south of the Keewatin, this sedimentary formation extends for another five miles around the southeast side of Travers lake, outcropping at a distance of from a quarter of a mile to one mile from the lake shore, which is in granite. To the north, however, in township 81, the area underlain by these rocks is much greater, occupying about thirty square miles and extending northward beyond the township boundary into Delbreuil township.

In this report we are including in this formation an unusual type of rock characterized by a linear schistosity strikingly outlined by numerous inclusions, pebbles, replacements, or injections roughly cylindrical in form. In outcrop sections normal to the elongation of the "pebbles", the rock has the appearance of a conglomerate, but these "pebbles", which in normal conglomerate are to a certain degree equidimensional, are in this case elongated to 8 to 10 times their diameter, and plunge uniformly in a common direction. The pebbles and the matrix differ somewhat in composition. The distinctive character of the rock seems to be structural rather than lithological.

## INTRUSIVE ROCKS

### Granite

The granites which enclose the assemblage of older rocks described above extend for undetermined distances beyond the limits of the area examined. They are very variable in composition and texture and quite possibly include more than one period of intrusion.

The granites are usually ordinary pink or grey types, but porphyritic granites and white mica granites are common; gneissoid facies are rare.

### Granodiorite

Two small stocks of granodiorite outcrop in Guillet township, near the eastern boundary.

### Granite Porphyry

Two small bodies of granite porphyry outcrop to the east of the north arm of Travers lake. The rock is grey and contains numerous phenocrysts of feldspar, and sometimes of glassy quartz, in a very fine-grained matrix. On the west side of the north arm of Travers lake there are large dykes of similar rock.

### Diorite

Crystalline rocks, whose texture suggests an intrusive origin, are widely distributed throughout the greenstone belt. These rocks present many of the characteristics of the "older gabbro" of the Rouyn-Harricana gold-bearing belt, but the field evidence suggests that some at least are but coarse grained facies of the volcanics.

### Acid Dyke Rocks

There are numerous dykes of feldspar porphyry, quartz porphyry, aplite, and fine granitic rocks throughout the area. The age relationship and distribution of these dykes are being studied.

### Lamprophyres

Lamprophyric dykes of varied types are common in both the volcanic and the sedimentary portions of the belt and it is hoped that further study will establish types and age relationships.

## STRUCTURAL GEOLOGY

The belt of volcanics and sediments describes a broad arc, convex toward the east. The strike of both the bedding and the schistosity of the formation follows, with certain local complications, the trend of the surface outcrops, and the general direction of the dips bears out the conclusion that the belt as a whole is a portion of an anticline plunging toward the east. Around Winneway lake, and in the southeast corner of Devlin township and the southwest corner of Delbreuil, the general structure is obscured by cross-folding and the disturbance wrought by the injection of the granite batholith.

## ECONOMIC GEOLOGY

Following the discovery of gold in the region by William Loken, the district was the centre of a "rush" in 1934-35. This interest was greatly stimulated by the discovery and the rapid development of economic ore-bodies on ground held by McIntyre-Porcupine Mines, Limited, in the vicinity of Guillet lake. Intensive exploration by mining companies and by prospectors failed to disclose other deposits of economic value, so that, despite the remarkable achievement of the establishment of a producing mine within little more than a year, there was much less activity in the district during 1936. It can, however, be safely stated that the possibility of the discovery of further economic deposits is by no means exhausted.

McIntyre-Porcupine Mines, Limited.- In the northeast corner of claim R-20433, about three-quarters of a mile to the northwest of Guillet lake, surface stripping had uncovered, in 1935, an irregular gold-bearing quartz vein, 400 feet long with an average width of 15 feet, expected to carry 0.4 ounces of gold per ton. Following diamond drilling, underground development work was undertaken and a 100-ton mill constructed. The mill was placed in operation in October, 1936.

The surface outcrop of the vein is irregular and discontinuous, suggesting in general outline a reversed "S". It was found that these irregularities persist underground to the lowest level explored (375 feet). In October, it was reported that the vein had been intersected in workings on the 500-foot level.

In the working facies which were inspected, the vein-zone is formed of quartz and andesitic greenstone, and neither the vein nor the enclosing greenstone show any features to support the view that the vein is related to a narrow tuff band in which another vein, No.1, was traced for a length of 1,500 feet to the northeast. At the surface, however, the projection of this tuff band along its strike would so nearly meet the end of the main vein that a relation between the two veins seemed plausible.

The quartz is very fine grained, bluish and white, and but slightly mineralized. The gold is in tiny grains, sometimes visible but only on the closest inspection.

Belleterre Mines, Limited, a company controlled by McIntyre-Porcupine Gold Mines, has been organized to work the

deposit. Another vein, on claims optioned from O'Leary Malartic Mines, Limited, has been partially developed by McIntyre-Porcupine Gold Mines. While construction and development were being pushed on the Belleterre ground, work was suspended on this other vein. Beauplace Mines, Limited, also controlled by McIntyre-Porcupine Gold Mines, has been organized to develop the O'Leary-Malartic claims, but the ore will be treated in the Belleterre mill. The two deposits are about three-quarters of a mile apart, and geologically, they appear to be independent of one another.

The Gaines-Moor Gold Mines Syndicate carried out diamond drilling on the Sharpe vein, which has been traced for a length of about 2,000 feet across claims R-20377 and R-20378. The general strike of the vein is slightly south of east. The width exposed by trenches and test pits was distinctly encouraging, but it has been reported that, at the surface, gold values were in general low. The vein is about a mile and a half to the west of the Belleterre Mines vein. Four holes were drilled to depths of 440, 250, 516 and 343 feet, respectively, but as the present owners are reported to be in bankruptcy, the property has been inactive since the drilling was done.

Vantage Mines, Limited, carried out surface exploration work and some diamond drilling on a group of 15 claims to the south and southeast of Taché lake. The greater part of the work was on claim R-24818 to the immediate south of Taché lake, at the western boundary of Guillet township. This claim covers a section of the contact zone between the greenstone belt and a quartz porphyry which is possibly a border facies of the granite batholith which extends northward. The local geology is so complicated by intense folding and the injection of dykes and apophyses of granitic rocks that, despite the fact that much trenching and stripping was done, it would be very hazardous to try to correlate the several exposures. A number of quartz veins were uncovered, but no body of any economic dimensions was outlined at the surface. Work has been suspended.

Percy White Vein, Devlin Township.- On claim R-25515, about a mile and a quarter northeast of the east end of Devlin lake, a system of parallel stibnite-bearing quartz-carbonate veins has been traced over a length of more than 1,000 feet. The vein-zone, whose strike is N.40°E., cuts across the original strike of the schistosity of the enclosing greenstone, which is about N.68°W. in this vicinity. The quartz is white, coarse, and glassy, and it is accompanied by a cream coloured carbonate which is particularly abundant in the borders of the veins, but

which is also found as masses within the quartz itself. In the quartz and the carbonate, but closely associated with the latter, there are a few needles, up to two inches in length, of stibnite. Pyrite and chalcopyrite are also sparingly present.

Claims to North of Devlin Lake.- Some exploratory trenching has been done in the vicinity of the boundary between claims R-26107, R-26108 and R-26109, and claims R-27677, R-27676, and R-25947. An acid zone of quartz rhyolite porphyry and associated pyroclastics has been traced over a distance of about a quarter of a mile. The formation is locally and irregularly mineralized, chiefly with pyrite.

At one point, the pyrite is very abundant over a width of about two feet. The general strike of the zone, northwest-southeast, conforms to the regional strike of the enclosing greenstones. The contact between the Keewatin and the granite is but a few hundred feet to the north.

In the northeast corner of claim R-27672, a little work has been done on a zone essentially similar to that described above. This occurrence is about one mile to the northeast of the other. A mile farther to the southeast, about 200 feet to the west of claim-posts 2-(R-26937) and 1-(R-26936), a similar formation with the same pyritic mineralization is exposed.

The regional structure suggests the existence of a continuous horizon of these acid rocks, but, because of the distance which separates the occurrences, caution demands that this tempting hypothesis be considered with due reserve.

Iris Gold Mines, Nadon-Renaud Claims, Blondeau Township.- On the eastern boundary of the township, at the west of Aux Sables lake, exploratory trenches and pits on claim R-20673 have disclosed the existence of two or three rusted zones, somewhat mineralized with pyrite, accompanied in places by quartz. The width of the zones varies from three to twelve inches. They are approximately parallel and twenty-five feet or more apart. The zones have been traced over a length of about 1,000 feet.

Sandlac Gold Mines, Limited, has carried on exploratory trenching on a group of ten claims (R-20597 to R-20606) to the northeast of Aux Sables lake. These claims were previously held by Lake Expanse Mines, Limited.

Exploratory trenching was also undertaken on another group of fifteen claims (R-20303 to R-20316) in the vicinity of Caribou lake. This group is on the contact between Temiscamian sediments and the granite, which extends far to the south.

Connell Mining and Exploration Company, Limited, prospected a group of claims near Kelly lake in Blondeau township, where, according to a report kindly furnished by the Company, prospecting over a length of 400 feet exposed a series of lenses, some of which are almost solid pyrrhotite, with minor chalcopyrite. The sulphides are nickeliferous. According to the same report, sampling, diamond drilling, and a magnetometer survey established that the sulphide bodies are of limited dimensions and that the nickel content is far below commercial grade. Work was therefore discontinued. The nickel-bearing sulphides are reported to be in small masses of gabbro, within the Keewatin, and while the occurrence was not proved to be of economic importance, the presence of nickel in the district is worthy of note and should be borne in mind by prospectors.