RP 103(A)

ADVANCE GEOLOGICAL REPORT ON THE GUILLET TOWNSHIP MAP-AREA

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ADVANCE GEOLOGICAL REPORT

on the

GUILLET TOWNSHIP MAP-AREA

by

Bertrand T. Denis

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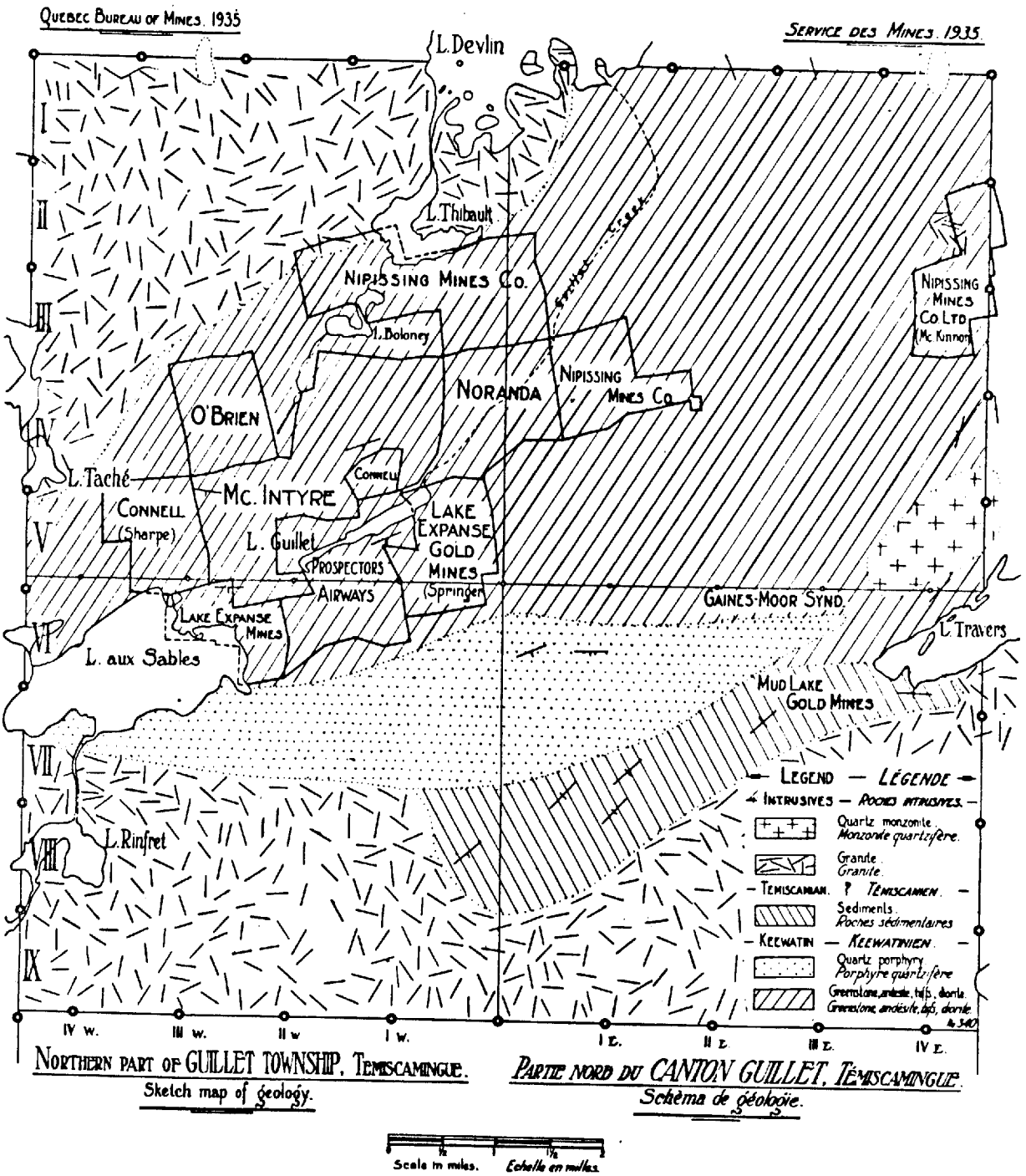
QUEBEC BUREAU OF MINES. 1935
SERVICE DES MINES. 1935
L. Devlin
L. Thibault
Spruce Creek
NIPISSING MINES CO.
L. Doloney
NIPISSING MINES CO LTD (Mc Kinnon)
NORANDA
NIPISSING MINES CO
O'BRIEN
L. Taché
CONNELL (Sharpe)
MC. INTYRE
CONNELL
L. Guillet
LAKE EXPANSE GOLD MINES (Springer)
PROSPECTORS AIRWAYS
LAKE EXPANSE MINES
L. aux Sables
GAINES-MOOR SYND.
L. Travers
MUD LAKE GOLD MINES
L. Rinfret
I
II
III
IV
V
VI
VII
VIII
IX
IV W.
III W.
II W.
I W.
I E.
II E.
III E.
IV E.
LEGEND — LÉGENDE
INTRUSIVES — ROCHES INTRUSIVES
Quartz monzonite. Monzonite quartzifère.
Granite. Granite.
TEMISCAMIAN. ? TÉMISCAMIEN.
Sediments. Roches sédimentaires
KEEWATIN — KEEWATINIEN.
Quartz porphyry. Porphyre quartzifère
Greenstone, andesite, tuffs, diorite. Greenstone, andésite, tufs, diorite.
4,340
NORTHERN PART OF GUILLET TOWNSHIP, TEMISCAMINGUE.
Sketch map of geology.
PARTIE NORD DU CANTON GUILLET, TÉMISCAMINGUE.
Schéma de géologie.
Scale in miles. Echelle en milles.

GUILLET TOWNSHIP

Notes on Geology (Preliminary)

by

Bertrand T. Denis

GENERAL STATEMENT

Guillet township, in Temiscamingue county, is 60 miles south of Rouyn, and 50 miles east of Haileybury, Ont. The nearest railroad station is Angliers, about 30 miles to the northwest of Lake Guillet (Mud lake) which is at present the centre of interest in the township.

Access is easiest by aeroplane, either from Rouyn or from Haileybury; but from Angliers there is a water-route, by Lake des Quinze, across Lake Simard (Expanse) to Klock's Bay, up Devlin creek (with a three-mile portage) to Devlin lake which is at the northern boundary of Guillet township. There is a winter road cut, from the road joining Latulipe and Klock's Bay, to the McIntyre property. The distance by the present road is about 22 miles from Latulipe. A shorter winter road is now being opened from Latulipe.

GENERAL GEOLOGY

A preliminary map, compiled by J.A. Retty in 1934, has been issued by the Quebec Bureau of Mines (Map No. 311).

The essential feature of the local geology is a remnant of Keewatin volcanics overlain by sediments (possibly Temiscamian) enclosed within the granitic rocks which constitute such a large proportion of the Canadian Shield.

Relief is moderate and exposures are poor; the best are to be found along the waterways and lakes. Although the waterways are mere creeks, the lakes are very numerous. The northeastern portion of the township (Travers lake and vicinity) has been swept by a forest fire in 1922 and some of the hills are still comparatively bare. Undergrowth is normally very dense, but there are no large areas of swamp or muskeg. Drift is boulder clay, gravel and sand. The area is to the south of the clay belt.

VOLCANICS, SEDIMENTS

The belt of Keewatin and of overlying sediments crosses the northern portion of the township. (The township measures 13 miles from north to south, and is 9 miles wide). At the western boundary (Sand lake and vicinity) its width is about $2\frac{1}{2}$ miles, and it outcrops from 4 to $6\frac{1}{2}$ miles to the south of the northwest corner

of the township. At the eastern boundary of the township the width of the belt is about 5 miles. The northern limit of the belt crosses the northwest portion of the township, passing through Thibault lake and Mile-post V on the northern boundary. The southern limit starting from about half way between Mile-post VI and Mile-post VII on the western boundary, extends eastward to within half a mile of the N.S. centre line where it swings abruptly southwards for about one mile, and then follows a northeast course to the southwest corner of Travers lake which is on the eastern boundary of the township.

The lower portion of this formation which, for convenience in the field, may be called the greenstone belt, is essentially an apparently continuous succession of andesitic flows with narrow interbanded tuff beds. The latter, light weathering, well-banded quartz-sericite rocks, are most useful guides to the structure, as the attitude of the beds can be readily determined, while that of the massive andesitic flows is seldom apparent in the field.

These tuff bands outcrop here and there throughout the width of the belt; all seem to be quite narrow, measuring only a few feet, but should occasion arise it is possible that close detail study would enable the tracing of some distinctive horizon throughou the belt. Some of them have already been traced by trenches and prospecting over lengths of half a mile.

The typical greenstones are usually fine-grained volcanic flows, probably andesites. Pillows are frequently observed, and still more often faint suggestions of an almost obliterated pillow-structure are discernible on weathered surfaces. In the vicinity of Travers lake several amygdaloidal flows are strikingly exposed, but such flows, with smaller amygdules, were also seen in the central portion of the area, in the vicinity of Guillet lake. (See paragraph on "diorites").

Generally speaking tuffs, and particularly the acid tuffs described above, seem to be more abundant towards the top of the "greenstone belt", where they are frequently associated with acid volcanics, such as agglomerates, ash beds and rhyolites. The amygdaloidal lavas exposed at Travers lake are interbedded with massive green schists and slaty sediments.

To an observer looking upon the belt from the western boundary of the township the prevailing strike at this point, slightly south of east, swings around to north or even west of north in the Travers lake section; while the dips, generally steep, are normally to the right or south where he is stationed and to the left or northwest (overturned) in the vicinity of Travers lake.

Although the exposures are usually too poor to permit satisfactory determination of tops and bottoms of flows or beds, it seems that "tops to south", (or in Travers lake section, to east) is the rule throughout.

To the south of the "greenstones" is a band of light weathering quartz porphyry with bluish quartz "eyes" up to $\frac{1}{4}$ inch in diameter. The greatest thickness of this formation is in the vicinity of the N.S. centre line, where outcrops of this rock are numerous over a width of about 5,000 feet. This band narrows both to the east and to the west of the centre line, and has been traced to within a mile of both the eastern and western townships boundaries. Although the evidence is conflicting, the main body of quartz porphyry appears to be of extrusive origin, while occasional outcrops of similar rock within the greenstone belt are presumed to be dykes and feeders related to the main extrusion.

To the south of the quartz porphyry and overlying both that rock and the greenstones are finely banded to massive sediments which are tentatively correlated with the Temiscamian. The contact between these and the granites to the south is quite irregular and is marked by lit-par-lit injection within the sediments while the granites enclose fragments of the older formation in all stages of digestion.

INTRUSIVES

Granite

The enclosing granites which outcrop both to the north and south of the belt for an undetermined distance, present no features of particular interest. While these rocks are quite variable in grain and in composition, it was not possible to devote to their study the time necessary for the determination of the mutual relations of the various facies, nor to attempt to establish the existence of more than one period of intrusion.

Quartz Monzonite

There is a small stock of quartz monzonite to the northwest of the southeast bay of Travers lake. This stock measuring about two miles by three-quarters of a mile was mapped by Retty (Map No. 311).

Granite Porphyry

To the west of the north arm of Travers lake there are dykes of granite porphyry and on the east side of this same arm, in township 81, there are larger bodies of this rock.

Granite or Granodiorites

On the south and west shores of Lily lake and on the southeast side of Loon lake a small body of granite intrudes the "greenstones". These two lakes are on the canoe route between Red Pine lake and Travers lake.

Diorites

Irregularly distributed within the belt of greenstones, throughout its length and width, are found rocks whose crystalline

texture suggests an intrusive origin. These rocks have been provision ally mapped as diorites. It is, however, probable that many of these are but coarser facies of the volcanics.

Feldspar Porphyry - Aplites

Small dykes of rather fine-grained feldspar porphyry are common throughout the belt, as are dykes of fine-grained aplitic rock the latter being more numerous in the vicinity of the granites.

Lamprophyres

Biotite rich lamprophyre dykes are also found throughout th belt. There are such dykes of at least two ages.

ECONOMIC GEOLOGY

Following the discovery of gold by William Loken, Guillet township was the centre of a rush in 1934-35. That portion of the township underlain by the belt of older rocks was completely staked and surface exploration was actively carried on by mining companies and by individual prospectors. The prospecting methods resorted to by the large companies will illustrate the difficulties which follow the lack of satisfactory exposures. Blind trenching on a large scale was necessary, and one company (Nipissing), after establishing picket lin at regular intervals over their holdings, dug trenches wherever a sounding bar struck rock within five feet of the surface, a highly systematized method of exploration necessitating some eight miles of trenching which, economically, gave only negative results.

While it can be safely said that few areas have been so thoroughly prospected as the Guillet township belt, it is equally certain that the possibility of the discovery of economic ore-bodies is by no means exhausted.

The tuff bands already referred to as useful structural guides are also of particular interest to the prospector, for in them are gold-bearing quartz veins, frequently accompanied by silicificati and replacement of these banded sediments.

McIntyre Porcupine Mines, Limited - Although most of the companies have either left the field, or suspended operations for the winter season, at least one discovery which promises to be of major importance was made during the past summer. This was made by the McIntyre Porcupine Mines, Limited, on claim R-20433, about three-quar of a mile northwest of Lake Guillet (Mud lake). In the northeast corn of this claim stripping has exposed an irregular gold-bearing quartz vein over a length of more than 400 feet, with an average width of 15 feet, which is reported to have a tenor of 0.4 oz. of gold per ton Exploration and development are being actively carried on by the owne and following preliminary diamond drilling, they were in October considering underground exploration and development.

This vein known as No. 11 vein appears to be the extension of a much narrower (2-18 inches) but persistent vein (No. 1) which ha

been traced in a 4-foot band of tuffs for a distance of about 1500 feet to the northeast (N. 65° E.). Although unexplored low ground separates the two discoveries, the evidence suggests that vein No. 11 is a local expansion, on a drag-fold, of vein No. 1.

The quartz is very fine-grained, bluish to white and but slightly mineralized with pyrite, pyrrhotite and chalcopyrite. The gold is visible in tiny specks. It is normally quite massive in appearance but local banding suggests replacement (silicification) of tuffs. No definite tuffs such as those which are characteristic of the No. 1 vein are to be seen on the surface.

Previous to the discovery of No. 11 vein, the same company (McIntyre Porcupine) had been carrying out development work on another vein, No. 2, which is about half-a-mile to the north of vein 11, and apparently quite independent. No. 2 vein, enclosed in andesitic greenstones, is an ireegular vein of dark grey quartz running east-west and therefore cutting the regional strike which here is approximately S.W. The vein dips at about 70° to the north.

At the end of the summer 1935 development work on No. 2 vein included a shaft 360 feet in depth and 1300 feet of drifting and crosscutting on the three levels which are at 125, 225 and 325 feet respectively

Other quartz veins are plentiful throughout the belt. Many of them are apparently quite barren, but gold-bearing veins and veinlets have been reported from many widely separated localities. None of these so far have been proved to be of economic value as either the grade is too low, or the veins are too small, but the widespread distribution of gold within the belt is a feature which cannot be ignored by prospectors.

Lake Expanse Gold Mines, Limited (Coniagas option on Springer claims) - A large amount of surface exploration was carried out on a group of 13 claims to the southeast of Lake Guillet. Although gold was found at numerous places further exploration failed in each case to outline bodies of economic value. Operations were abruptly suspended in September. The work was done under the supervision of James Bartlett.

Connell Mining & Exploration Company carried on surface exploration on 29 claims, and traced a vein of gold-bearing quartz over a length of about 2,000 feet. The quartz was bluish, locally well banded, and generally well mineralized. Width was variable but encouraging; [redacted]. Operations were suspended early in September. The 'blue quartz' vein is on the Sharpe claims, to the west of the McIntyre Porcupine group, and about a mile and a half from the No. 11 vein which is at present being developed by the McIntyre. Mr. MacDonald was in charge of exploration work.

Prospectors Airways Company, Limited, did surface exploration work on a group of 23 claims which lie to the south of the McIntyre.

Gold-bearing veinlets were found in a partially silicified tuff band on claims R-19877 and R-19879, about 200 feet to the northwest of Lake Guillet. The gold, some of which is visible, is reported to be practically confined to the quartz, whose width is but a few inches. Although the reported values were encouraging, even high, the deep overburden greatly handicapped surface exploration and operations were suspended after the gold-bearing zone had been traced over a length of from two to three hundred feet.

An essentially similar band was also found parallel to the one above described but near to the shore of Lake Guillet. In this band, however, the quartz veins, although a little larger, were reported to be barren.

On the southeast shore of the lake, gold was panned from a small stringer of quartz in diorite, but no economic value was attached to this occurrence. Mr. Patrick Taylor was in charge of the exploration work.

Noranda Mines, Limited, carried on exploration work on a group of 17 claims to the east of the McIntyre Porcupine group. Gold-bearing quartz lenses and stringers were traced over a length of about 100 feet on claims R-20699 and R-20692. The vein, in an acid tuff zone, is discontinuous, with width of from 4 inches to two feet. Mr. V.A. Oille was supervising exploration.

O'Brien Gold Mines, Limited, carried out surface exploration on a group of 20 claims to the north and west of the McIntyre group. Two approximately parallel veins were traced across claims R-20585, 20581 and 20578, a length of about 3,000 feet. The veins are irregular and it is reported that assays of samples were far below economic grade. Mr. Mercier was resident supervisor of operations.

Nipissing Mines Company, Limited, carried out systematic trenching on 75 claims. The method employed was simple and to a certain degree, effective. Picket lines cutting the presumed strike of the formations were established at intervals of 500 feet, and wherever a sounding bar disclosed the presence of bed rock within five feet of the surface a trench was dug. About eight miles of trenches were completed, and although many quartz veins were discovered none were deemed worth further prospecting.

The McKinnon claims in the vicinity of Travers lake were included in the Nipissing option. Free gold was found on claim R-17458 but there is nothing to add to Retty's (1) description of this find.

Among other operators and prospectors in the district during 1935 were Moneta Porcupine Mines to the south of Lake Taché; Lake Expanse Mines, Limited, to the northeast of Sand lake, Messrs. G. Anderson, A. Cook, W. Brennan, J. Martin, A.K. Grimmer, Loken, Jones, Carrière, Ranger, McCann, South Belt Gold Mines, Limited, Engineer's Exploration Co., Big Long Lac Mining Co., Ltd., Mud Lake Gold Mines Development Co., Gains-Moor Gold Mines Syndicate, MacLeod-Cockshutt Gold Mines, Limited.

(1)