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MINES AND GEOLOGY BRANCH

BUREAU OF GEOLOGY AND TOPOGRAPHY

GEOLOGICAL SURVEY

PRELIMINARY REPORT

EAST HALF WASWANIPI MAP-AREA QUEBEC

BY

J. C. Sproule

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Introduction

The southwest corner of Waswanipi map area is 11 miles east and 42 miles north of the town of Senneterre, which is on the Canadian National railway, 184 miles east of Cochrane, Ontario. The map-area lies between latitude 49°00' and 50°00' and longitude 76°00' and 77°00'.

The area may be entered either by water or by air. The principal water route is north down Bell river from Senneterre, thence through various parts of the area by way of Quévillon (Kamshigama), Wedding, Florence, and Baptiste rivers, or via Olga lake and Waswanipi river. Various commercial airways provide transportation to the region from bases at Senneterre, Amos, and Rouyn.

The purpose of this report is to present a brief account to date (1936) of prospecting and development in the area, and to point out features that are likely to help the prospector in his search for fruitful ground.

Previous to 1936, geological reconnaissance along water routes within Waswanipi area was done by Robert Bell in 1896,[1] by A.E. Barlow in 1911,[2] by J.A. Bancroft in 1912,[3] and by A.H. Lang in 1931.[4] Parts of the area were studied by G.W.H. Norman and

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1. Geol. Surv., Canada, Ann. Rept., vol. IX, 1896.

2. "Report on the Geology and Mineral Resources of the Chibougamau Region, Quebec"; Mines Branch, Dept. of Colonization, Mines, and Fisheries, Quebec, 1911.

3. "Geology and Natural Resources of the Basins of the Harricanaw and Nottaway Rivers"; Mines Branch, Dept. of Colonization, Mines, and Fisheries, Quebec, 1912.

4. "Waswanipi Lake area, Quebec"; Geol. Surv., Canada, Sum. Rept. 1932, pt. D.

J.A. Retty in 1935.[1] G.S. Mackenzie of the Quebec Bureau of Mines reported on the Puskitamika Lake area in 1934,[2] and on the Currie township area in 1935.[3] W.W. Longley, working for the same department, studied the southwest corner of the map-area in 1936.[4] The writer's party during the season of 1936

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1. Norman, G.W.H.: "Preliminary Report on the Waswanipi Map-Area, Quebec"; Geol. Surv., Canada, 1936.

2. "Pusticamica Lake Map-Area, Abitibi District"; Quebec Bureau of Mines, Ann. Rept., 1934.

3. "Field Report on the Currie Township Map-area"; Quebec Bureau of Mines, Preliminary Report, December 1935.

4. Quebec Bureau of Mines. Report in preparation.

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completed the mapping of the area by examining the parts not covered by earlier workers, and reviewed previously studied parts with a view to co-ordinating the results obtained with previous work.

The writer is indebted to the Quebec Bureau of Mines which supplied outcrop maps of the areas covered by the field parties of the department from 1934 to 1936. Much of the detailed information on the properties was supplied by the managements of the Lake Rose Mines, Limited, Florence River (Quebec) Gold Mines, Limited, Dubuisson Mines, Limited, Hollinger Consolidated Gold Mines, Limited, O'Brien Gold Mines, Limited, and by prospectors of the McKay (Quebec) Exploration Company, the Ceres Explorations, Limited, and the Cyril Knight Prospecting Company, Limited.

General and Economic Geology

The rocks of the area are divisible into four main groups:

The oldest is a group of acid to basic volcanics and related intrusives, with interbedded sediments. The volcanics include all varieties of flow, breccia, and tuff, common to Keewatin rocks in other parts of the Canadian Shield. They are cut in many localities by bosses, dykes, and sills, of related intrusives. Unless the rock is well exposed it is difficult to distinguish large, coarse-grained basic flows from related basic intrusives. Large bodies of both are well exposed in the vicinity of Capsisit lake. Sediments, interbedded with flows, are largely tuffaceous, although slates and crossbedded sandy sediments do occur as on lake Goéland (Gull); and bedded cherts occur in Wedding Lake region. Conglomerates and other sediments, west of lake Goéland, at McDonald lake, north of Puskitamika lake, and south of Madeleine (Rose) lake, may be of a later age.

The next is a metamorphosed complex of older gabbro and diorite with some anorthosite, cutting the aforo-mentioned volcanics. The anorthositic constituents of the mass occur in the form of small, irregular segregations. The action of compass needles testifies to the presence of many segregations of magnetic minerals as well. Possibly the most unusual feature of the complex is the abundance of the dykes of granite and pegmatite with which it is cut. Some of them are undoubtedly late phase differentiates of the same mass, whereas others are connected with the later granitic intrusions. The complex is best developed at the west boundary of the area southwest of lake Goéland.

The third group is a younger assemblage of granite, syenite, diorite, and gabbro intrusives. They are all mapped together here, even though they are not all of the same age. The

relations between two granites are best seen in the northwest corner of the map-area and on the shores of Maikasagi lake, where grey, gneissic granites are cut by younger masses and dykes of pink granite and pegmatite. There is no definite proof, however, that they are not different phases of the same intrusion.

The fourth and youngest group is a system of diabase dykes which extend across the area in a northeast direction.

Four belts of greenstone traverse the area in a general east-west direction, separated by irregular, to east-west disposed batholithic masses. These four belts have all been prospected to some extent, but to date (1936) only one of them has proved to contain gold-bearing deposits of potential value.

Northern Greenstone Belt

The most northerly belt passes from Waswanipi river near the outlet of lake Goéland to McDonald Lake region. There are within it several concentrations of metallic sulphides that have been prospected without encouraging results.

H. McDonald, prospector for the McIntyre Porcupine Mines, Limited, located a pyrite-pyrrhotite-chalcopyrite body (1)[1] on the south shore of McDonald lake in July 1936. It

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1. Numbers on the accompanying map show the location of the mineral deposits to which reference is made.

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occurs in a strongly sheared and silicified band of slates and schistose sediments over 60 feet wide, parallel to and on the south side of a 50-foot dyke of diorite, which in turn lies parallel to the south border of the granite mass occupying the basin of McDonald lake. The sulphides, present as solid layers up to 8 inches thick and as replacements within the sediments

are mainly pyrite, with some chalcopyrite, pyrrhotite, and bornite. Small, blue and grey quartz eyes are common throughout the mineralized rocks.

Sulphide bodies, barren of gold, similar to those at McDonald lake, are also reported from lac Inconnu, 12 miles east and along the same greenstone belt.

Late last season Prospectors Airways, Limited, explored a gold discovery on the eastward extension of this northern greenstone band, in the northeast embayment of lac La Treve. The gold occurs in the free condition along and in quartz veins in north-south trending cross fractures.

J.H. Harris, of the McKay (Quebec) Exploration, Limited, in 1936 explored a number of large quartz veins (2) 2 or 3 miles south of Capsisit lake. The veins were well mineralized with pyrite, chalcopyrite, and pyrrhotite, but lacked gold. Several north-south faults were observed in this neighbourhood.

Another occurrence (3) lies to the west of lake Goéland within a mile of the shore. Beds of intermediate to acid volcanics and associated sediments are intruded by sills and dykes of mineralized quartz-feldspar porphyry. The sulphide bodies in question consist chiefly of pyrite with chalcopyrite, and occur in both the porphyry and the adjacent volcanics and sediments. The relationship of the porphyry to the main granite mass is apparent on Waswanipi river to the north where porphyry grades into massive granite.

The sulphide body recorded by Lang[1] (4) from Ramsay

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1. Lang, A.H.: "Waswanipi Lake Area, Quebec"; Geol. Surv., Canada, Sum. Rept. 1932, pt. D.

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bay, lake Goéland, was observed last season and further samples were submitted to the Bureau of Mines to be assayed for gold, but with negative results. The sulphides, chiefly pyrite with

some chalcopyrite, are disseminated through a 5-foot shear zone containing stringers of quartz and coarse pyrite. The shear follows the bedding of volcanic rocks of intermediate composition striking south 45 degrees east.

Baptiste-Bachelor Lake Greenstone Belt

A second band of greenstone passes through the region from Baptiste lake on the west to Bachelor lake on the east side of the area, where it expands to join with the neighbouring bodies of greenstone to the north and to the south.

In Baptiste Lake region and east to the main fork of Iserhoff river numerous quartz veins and concentrations of metallic minerals (5) occur, and have been prospected for gold, but with negative results. The volcanics and intercalated sediments in this region strike east, and are cut by quartz sulphide zones and quartz veins running in two principal directions, east-west and north-south, and containing pyrite, chalcopyrite, and pyrrhotite. The north-south veins are most abundant in that part of the district south of the small lake 4 miles east of Baptiste lake; they apparently occupy part of a major fault and fracture zone described below under "structure". It is probable that the bodies of magnetite and iron sulphides that also occur in this region were introduced by way of this zone of faulting. The most noteworthy occurrence of magnetite (6) lies just inside the west boundary of the map-area about 5 miles south of Baptiste lake.

As a result of the discovery of a small but rich showing of free gold in north-south veins, just east of the map-area, in the north arm of Opawica lake,[1] some prospecting has been done in the nearby sheared and highly carbonated rocks between Bachelor lake and Waswanipi river. A gold showing is reported from Bachelor lake, but no major discoveries have been made.

[1] Main discovery by Ceres Explorations, Limited

Florence River - Opawica Greenstone Belt

The only one of the four greenstone belts in the map-area in which important gold discoveries have been made extends from Madeleine Lake-Florence River region, in a direction south of east for 12 to 20 miles, thence north of east through Puskitamika Lake area toward Opawica lake. Throughout this distance the greenstone is cut by numerous stocks, bosses, dykes, and sills of older diorite and gabbro and also by younger granite, syenite, diorite, porphyry, and diabase. A number of gold discoveries have been made within the belt, but only one of them, the Madeleine Lake discovery, is being worked at the present time (February 1937). Those discoveries that have come to the attention of the writer are described briefly as follows:

(7 and 8) H. Bush Claims

H. Bush of Senneterre holds a group of claims near Florence river 2½ miles south of mile 64.5 on the Desjardins - Franquet township line. To date (1936) only a small amount of development work has been done, but the results appear to warrant further exploration. A few shallow pits have been sunk along a ridge of sheared sediments and volcanics which strike north 50 degrees west and dip 85 degrees northeast. The gold occurs with pyrite and chalcopyrite finely disseminated through sheared sediments. Samples cut by G.V. Douglas for the Quebec Bureau of Mines yielded assays from nil to 0.138 ounce of gold a ton. The showing is continuous to the northwest with that of Ed. Chaput. "The full width of the zone has not been proved but the length is probably greater than one mile although it cannot be said to have been continuously proved over that length."[1]

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1. Douglas, G.V.: Professor of Geology, Dalhousie University, Personal communication.

Mr. Bush also holds a group of claims in the north of Franquet township, which contain a north-south quartz vein bearing some gold, cutting greenstone and diorite, about one-half mile southeast of mile 65 on the Franquet-Desjardins township line.

(9) Florence River (Quebec) Gold Mines, Limited

The Woods-Miller find (later taken over by the Florence River (Quebec) Gold Mines, Limited), made in September 1935, was the immediate result of the activity at Madeleine lake.[1]

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1. Mackenzie, G.S.: "Field Report on the Currie Township Map Area"; Quebec Bureau of Mines. Preliminary report, December 1935.

This property is located half-way between Cameron lake and Florence river, adjoining and to the north of the Franquet-Desjardins township line.

The Florence River Gold Mines ores occur in silicified and carbonated zones in a belt of highly sheared acid and basic volcanic flows with some interbedded tuffs, intruded by dykes of syenite and diorite and cut by stringers and veins of quartz from less than 1 inch to over 1 foot in width.

The syenite carries some secondary fluorite and tourmaline, and the diorite is characterized by an abundance of finely disseminated granular magnetite. The metallic minerals appear to be associated with the quartz. The quartz itself, however, may or may not be mineralized with sulphides, and sulphides may or may not carry gold. Free gold is rare; it occurs almost entirely invisibly associated with fine pyrite in silicified and carbonated tuffs and volcanics, and to a lesser extent in the contained quartz veins.

The Florence River Gold Mines ore-bodies have been traced intermittently for over 2 miles along a strong shear zone that crosses the Florence River property in an east-west direction. For convenience they are generally described as two occurrences, which lie in the western and in the eastern portions of the property. There are in addition to these several subsidiary shoots, the full extents of which are unknown.

The western occurrence comprises two zones 250 feet apart. The north shoot is about 400 feet long. In it the widths are narrow (2 feet), but the assays are high. The south shoot is over 500 feet long and 6 feet wide and has been proved by drilling to a depth of 300 feet.

The eastern or Cartwright zone is a small but high-grade body situated at the eastern edge of the property. This one has been drilled for a length of 550 feet, 400 feet of which is commercial over a width of 4 feet for 150 feet in depth.

Work commenced on the Florence River Gold Mines claims on October 12, 1935, and the company had an average of nine to sixteen men employed on the property from that date until work was suspended in October 1936. During that period ninety-nine holes were drilled through 15,500 feet of rock. The maximum length of the holes was 400 feet, but most of them were only from 25 feet to 300 feet long; the highly sheared and heterogeneous nature of the rock rendered the drilling of deep holes difficult. In addition to the drilling the company did 16,000 feet of trenching. Trenches were from 1 foot to 13 feet deep.

(10) Wedding River Gold Mines, Limited, Claims

Ed. Jolin made a small discovery about 1½ miles north of the Florence River Gold Mines camp in 1935, on what is now known as the Wedding River Gold Mines property. Free gold

was found in a quartz vein 1 to 3 inches wide along a north-south fracture.[1] The fractures cut across sheared carbonated

1. Mackenzie, G.S.: "Field Report on the Currie Township Map Area"; Quebec Bureau of Mines. Preliminary Report. December 1935.

and silicified acid and intermediate volcanics, intruded by syenite and diorite sills. Metallic minerals associated with the quartz veins include pyrite, pyrrhotite, and galena. A wide lens of barren pyrite and pyrrhotite occurs in the volcanics just south of the showing.

Considerable stripping and trenching were done on these claims by the Harricanaw Basin Mining Company in 1935, and by the Wedding River Gold Mines in 1936, but without encouraging results.

(11) Prospectors Airways, Limited (Cameron Lake) Claims

Cameron Lake showings are about 1¼ miles north-northwest of Cameron lake. The gold is in quartz stringers 3 inches to 12 inches wide following narrow shears in diorite. The quartz is mineralized with pyrite, chalcopyrite, and galena. At one place a north-south fault cuts the vein, offsetting the east side 15 feet north. Assays are reported as ranging from traces in gold across 1 foot 5 inches to 0.23 ounce across 1 foot 9 inches.

(12) Alonzo Cook - Granada Gold Mines, Limited, Claims

The Florence River Gold Mines ore zone continues eastward over parts of claims belonging to Alonzo Cook and to the Granada Gold Mines. On these properties it is cut by north-south trending faults, with a maximum observed horizontal offset of about 100 feet.

Overburden prevents the tracing of the zone east of the Cook-Granada claims.

(13) Noranda Mines, Limited, Claims

Noranda Mines reported a small showing in agglomerate at about the centre of their group of claims northeast of Cameron lake.

(14 and 16) O'Brien Gold Mines, Limited, Claims

O'Brien Gold Mines report two small finds in the Cameron-Beck region. One of them is in a rusty shear zone in greenstone beside a grey feldspar porphyry dyke, near the south boundary of their main group of claims, which lies south of the Cameron-Beck claims. This shear was traced for 450 feet along the strike, north 40 degrees west. It is slightly silicified and mineralized with pyrite, pyrrhotite, and chalcopyrite. Assays yielded nil to $1.05 a ton in gold.

The other O'Brien Gold Mines showing is in Currie township almost due north of the Cameron-Beck discovery, one-half mile north of the Currie-Franquet township line. There, channel samples from a highly pyritized shear assayed up to 70 cents in gold.

(15) Cameron-Beck Claims

The Cameron-Beck showing is located about 3 miles southeast of Cameron lake, practically due south of the Madeleine Lake deposit.

The main showing is in, and beside, quartz veins with some carbonate, which follow the bedding along the north shoulder of an east-west ridge and strike south 80 degrees east and dip 85 degrees north to vertical. Most of the gold occurs, however,

with pyrite in finely banded tuffs and volcanics, over a width of 250 feet. The strike length of this deposit has been proved to be over 900 feet.

The rocks in which most of the gold occurs are light to dark grey, very hard and brittle tuffs and banded cherts. They are difficult to distinguish from the cherty vein material which appears to have been introduced in lit-par-lit manner. Interbanded with them are highly sheared and silicified volcanic rocks which were probably originally acid to intermediate in composition. Some of the lavas have been epidotized and carbonatized.

Besides the above mentioned lit-par-lit injections of cherty material and quartz veins, the original assemblage is also intruded by sills and lentilles of syenite and aplite up to 2 feet in width.

Cross fractures with displacements of a fraction of an inch to 2 feet are fairly common. They carry quartz and fluorite and cut both the east-west quartz veins and the sills.

Considerable surface exploration was done in 1935 by the discoverers, D. Cameron and E. Beck. During the season of 1936 this showing was grouped with a number of more obscure prospects in the neighbourhood and explored further by the Engineers Exploration Company and O'Brien Gold Mines, Limited, but deposits of commercial size were not discovered.

(17) Lake Rose Mines, Limited (Prospectors Airways, Limited)

The discovery of free gold in Waswanipi area, on the south shore of Madeleine lake, a short distance south of the granite contact, was reported in the autumn of 1934 by John Wabononi of Granite narrows, Bell river. The Wabononi find was immediately taken over by Prospectors Airways. Development

work was commenced at once and later continued by the Lake Rose Mines, in which Prospectors Airways retains a controlling interest.

The present workings centre on a small, rounded, quartz diorite body intruding lavas of basic to intermediate composition. Sills and dykes of diorite porphyry intrude the volcanics and the quartz diorite. These rocks are cut by east-west trending, mineralized shear zones and quartz veins.

At the Lake Rose mine gold occurs in the free condition with pyrite, chalcopyrite, pyrrhotite, sphalerite, and iron carbonate, in and associated with fractured quartz veins. Values are in general high, but the widths are narrow. Work on the surface and underground has revealed two main shoots, No. 1 and No. 2. Both of these follow quite closely the bedding and shearing planes in the volcanics, which strike in general north 65 degrees west and dip 75 degrees to 85 degrees north. In one place shoot No. 2 conforms to the structure of a small drag-fold in the volcanics, pitching westerly at 35 degrees. A third shoot branches from No. 2 shoot and runs south 25 degrees west across the dominant structure for 62 feet.

Up until the time the writer visited the property in September 1936 the management had put seven diamond drill holes through a total of 1,500 feet of rock. They had driven a tunnel south from near the lake shore into the Lake Rose hill for 951 feet. A shaft had been sunk from the tunnel level for 187 feet with a station at 125 feet. They had also drifted and crosscut on the adit and 125-foot levels for over 2,000 feet. Since then the shaft has been continued to 250 feet and a third level established.

The workings show that shoots 1 and 2 extend from the surface to the 125-foot level with little change, but

according to the Northern Miner of January 14, 1937, the results at the 250-foot level have not yet proved encouraging. Possibly the shoots rake to the west in conformity with the plunge of drag-folds and the small diorite mass in the volcanics, and lie considerably west of the shaft on the 250-foot level.

(18) H. Boulanger Showing

A small showing on the south side of Wedding river, three-quarters of a mile below Esther lake, was staked in 1935[1] by H. Boulanger and his associate.

1. Mackenzie, G.S.: "Field Report on the Currie Township Map Area"; Quebec Bureau of Mines. Preliminary report, December 1935.

Quartz veins 1 inch to 4 inches wide cut the northern part of an east-west trending, carbonatized feldspar porphyry mineralized with fine-grained sulphides. The main quartz vein strikes south 5 degrees west and dips 50 degrees west. The quartz carries galena, sphalerite, chalcopyrite, and pyrite. The report of an assay made by the Buroau of Mines follows: silver, 0.80 ounce a ton; gold, trace; zinc, 0.53 per cent.

(19 and 20) Pat O'Leary Showings

In August 1936 Pat O'Leary stripped a pyritized and carbonated 12-foot band of quartz porphyry on the northwest shore of Wedding lake, one-third mile south of the mouth of the river. This body apparently carries low values all the way across. A sample assayed by the Bureau of Mines yielded 0.02 ounce of gold a ton.

Mr. O'Leary reports having panned gold from sulphide zones in banded chert associated with diorite and syenite sills in greenstone on a small island in the centre of Wedding lake. The banded rocks on this island are very similar to those on the

Cameron-Beck property and probably represent the same horizon swung northeast along the fault that runs northeast-southwest through Wedding lake.

(21) S. Mainville Showing

During the season of 1936 Simon Mainville did considerable work on a strong shear zone in Grevet township on Wedding river, 4 miles beyond the second portage above Bell river. The shear crosses Mr. Mainville's claims in an arc. At the river the strike is west; west of the river it swings to nearly north 60 degrees west, and east of the river to north 35 degrees east. The rocks traversed by the shear are highly carbonated, intermediate to acid, volcanics cut by numerous quartz veins parallel to and cutting across the shear planes. Mr. Mainville reports assays up to $1.70 in gold from the quartz stringers and the adjacent wall-rock.

(22) G.A. Thorne Exploration Showing

Late in 1935 the G.A. Thorne Exploration Company found some rich float on the south shore of Puskitamika lake about an eighth of a mile east of the south arm. It had obviously not moved far from its original position so the full season of 1936 was spent in stripping and drifting through the overburden to bedrock. Intrusive porphyry was encountered, strongly sheared near its contact with the greenstone. The direction of shear is south 78 degrees west. The bedrock porphyry is similar to the float in texture and is well mineralized with pyrite, chalcopyrite, and pyrrhotite, but carries only traces in gold.

Apparent offsets in the diabase dyke system to the south of this locality suggest the presence of a north-south fault. The dykes may be, however, in simple en échelon arrangement.

Quévillon-Wetetnagami Greenstone Belt

There is a large area of greenstone in Quévillon Lake-Wedding River area that narrows near the headwaters of Quévillon river and passes eastward as a thin band from 2 to 6 miles wide. This belt has not yet been proved to be gold bearing. It has been prospected, but due partly to its inaccessibility and partly to the thickness of drift over the greatest part of it, not as thoroughly as have the northern belts. Further prospecting should be done at least in that part of the belt between O'Sullivan and Wetetnagami rivers and near the western boundary of the area.

Structural and Economic Geology

Generally speaking, the above outlined greenstone belts occupy elongated basins between large granitic bodies. Dominant directions of shearing are parallel to the direction of elongation of the greenstone belts. There are two principal directions of elongation, east-northeast and west-northwest, and consequently two major directions of shearing. In addition to these, and to the local compression shears and tension fractures, there is a third direction of weakness in a north-south direction, as exhibited by faulting and cross fracturing.

In point of time the two major shearings may have been more or less contemporaneous, but where they cross the east-northeast shearing is the later. This later movement is exemplified in a fault that passes in a northeasterly direction through the south arm of Wedding lake. It has not been definitely traced southwest of Wedding lake, but to the northeast it can be extended tentatively at least through Burge lake and the north tip of Puskitamika lake, thence through Auger lake, to converge with a system of diabase dykes running in about

the same direction. It should be noted in this connexion that the late Precambrian diabase dykes of the region all trend in the same direction and that the two principal dyke systems join to the northeast with those mentioned by Norman[1] as the

1. Norman, G.W.H.: "The Northeast Trend of Late Precambrian Tectonic Features in the Chibougamau District, Quebec"; Trans. Roy. Soc. Canada, vol. XXX, 1936

Opawica Lake and Lac La Treve zones; to the southwest they are apparently represented by similarly oriented dyke systems in Cadillac and Rouyn townships, as suggested by Norman.

North-south breaks are best developed along a zone of weakness, which passes down the west side of the map-area in a direction slightly west of south. Crustal movements along this zone are later than the northwest-southeast shearing. Some of them at least are also later than the northeast-southwest trending diabase dykes, as the latter are in several places offset in a north-south direction. It seems fairly certain, therefore, that the latest movements of any magnitude are in a north-south direction. North-south movements probably do not, however, all belong to one period of time. The following evidence for this is based on the assumption that the gold is of the same age throughout:

At the Rose Lake mine gold-bearing, north-south veins in fissures and east-west veins in shear zones and along bedding planes are connected. There are, in addition to this, many other instances of gold occurring in north-south fracture veins in the Rose Lake-Florence River district. Some of these have been noted above.

In the Cameron-Beck region gold-bearing, east-west veins are cut by later barren veins in north-south fractures. The Bush showing near the northern boundary of Franquet township

is believed to be on a north-south break. Other faults, as on the Florence River Gold Mines property, are distinctly later than the east-west quartz veins and the mineral deposits.

The general trend of this north-south fault and fracture system within Waswanipi area has been indicated on the accompanying map. Although no attempt has been made as yet to trace it farther south it seems relevant in view of the potential economic significance of such a structural feature to point out that:

(1) The known deposits of gold and concentrations of other metallic minerals in the western part of Waswanipi area appear to lie in or near north-south fault and fracture zones cutting across the trend of the stratified rocks.

(2) The above fault system extended south of Waswanipi area passes through an area in which several discoveries of promise were made during the season and late in 1936. Finds were made north of Senneterre in the townships of Bartouille, Ducros, Montgay, and Carpentier. The Perron-Pascalis area is located farther south along the same line.

(3) The direction of weakness indicated is [illegible] reflected in the physiography and in the strike of the diabase dykes in the vicinity of Senneterre.

The inference to be drawn from the distribution of the mineral deposits as indicated above is that they are related to the fault and fracture zone outlined. The area, therefore, along the disturbed belt, at least as far north as Iserhoff region, deserves further prospecting.