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ASSUP RIVER MAP-AREA WITH PROSPECTS IN VAUQUELIN AND TIBLEMONT TOWNSHIPS

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PROVINCE OF QUEBEC, CANADA

**BUREAU OF MINES**

Honourable J. E. PERRAULT, Minister of Mines

J. L. BOULANGER, Deputy-Minister

A. O. DUFRESNE, Director

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ANNUAL REPORT  
OF THE  
**QUEBEC BUREAU OF MINES**  
FOR THE CALENDAR YEAR  
**1932**

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JOHN A. DRESSER, Directing Geologist

**PART B**

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**THE ASSUP RIVER MAP-AREA: WITH  
PROSPECTS IN VAUQUELIN AND  
TIBLEMONT TOWNSHIPS  
ABITIBI COUNTY**

*By A. M. Bell*

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THE ASSUP RIVER MAP-AREA: WITH  
PROSPECTS IN VAUQUELIN AND  
TIBLEMONT TOWNSHIPS  
ABITIBI COUNTY

*by A. M. Bell*

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INTRODUCTION

GENERAL STATEMENT

During the field season of 1932 geological mapping and examination were carried on in the county of Abitibi east of the areas mapped the previous year. The main purpose of the work was to ascertain the extent of the greenstone and sedimentary formations and to delineate those parts which are most favourable for prospecting. An attempt was made to locate the areas of outcrop, particular study being given to the more favourable localities and to the ore-mineral occurrences. In addition to the work in this area, a number of prospects in the Vauquelin and Tiblemont districts were examined and are described in this report.

In conjunction with this work, a separate party under Dr. L. V. Bell, of this Bureau, traversed a wide area beyond the eastern limit of this map-sheet in search of any repetition of the gold-bearing series in that region. The results of his work are reported by him in a later part of this volume.

ACKNOWLEDGMENTS

Aerial maps and photographs supplied by the Department of the Interior, Ottawa, were of great assistance. The Department of Lands and Forests, Quebec, furnished the township plans used in compiling the base-map.

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The party was indebted to the prospectors in the areas covered and to the officials of Lacombe Gold Mines, Limited, for their co-operation and assistance. Thanks are particularly due to the fire rangers on the Mégiscan river for the many courtesies and aid they extended.

Capable assistance in the field was rendered by H. A. Belloc and A. Dugas. Particular mention must be made of the efficient work of H. A. Belloc, the senior assistant.

The season was marred by the drowning of Robert Méthot, a temporary assistant from Warwick, Que., who met his death in the Mégiscan river on August the 2nd. His untimely end is a loss to his wide circle of friends and relatives.

#### LOCATION AND ACCESS

The area mapped comprises some 190 square miles in the townships of Tavernier, Pershing, Haig, and Jurie. Mapping was continued eastward from the boundary of the Bell River Headwaters map-area ① at the 77th meridian to the end of the greenstone-sedimentary belt at the east side of Haig and Jurie townships. On the north, mapping was carried as far as the greenstone-granite contact.

There is convenient access to the centre of the area from the railway at Signaï by way of the Mégiscan and Assup rivers. Two small rapids are encountered on the Mégiscan and none on the Assup. The western part may be reached from Tavernier creek. This creek is small and winding, but can be ascended to Tavernier lake with only two short portages. There is a good four-mile portage between lake Matchi Manitou and the Assup river. Alternative routes to lake Matchi Manitou are by way of a good water-route from Senne-terre, or by ascending the stream flowing into Tavernier lake and portaging  $2\frac{1}{4}$  miles to Garden Island lake. The latter route is not recommended at times of low water. Trails were cut in Tavernier and Pershing townships to serve as a base for traversing.

① Que. Bur. Mines, Ann. Rept., Part. B, 1931; map No. 167.

In the southern portions of the area, the parts suitable for prospecting are all north of the Marquis river. In ascending the Marquis, a shallow, rapid stream, five short portages are encountered in Pershing township, and one portage and numerous pebble rapids, up which canoes can be pulled or poled, in Haig. From the Assup river, the greenstone areas in central Haig can be reached more easily overland than by crossing to lake Matchi Manitou and ascending the Marquis river. The Attic river provides access to the northeast section of the area, only two portages being encountered, in Jurie township.

#### DRAINAGE

The southeastern portion of the map-area is adjacent to the height-of-land between the Bell and the Ottawa rivers, that is, between the Hudson Bay and the St. Lawrence basins. The only large river is the Megiscan, which is in the northern part of the area. One tributary, the Assup, flows, with gentle gradient, through a swampy lowland. The Attic river and Tavernier creek wind through sandy country, with a multitude of cut-offs marking their former channels. The Marquis river, also, flows into the Bell River system. It passes close to the height-of-land and is rapid, but has only a small volume of water. There are several lakes along its course in Haig township, and a series of small lakes parallel it to the north along the south margin of a sand plain.

The only sources of water power for use in the area are certain rapids in the Megiscan river a short distance beyond the northern limits of the present map-sheet.

#### TOPOGRAPHY

Throughout the area, the land surface is generally a hummocky plain. The only high hills occur in a northeast-trending range which extends across Haig township. South of the Marquis river, these hills are composed of gneiss, whereas in the line of hills north of the river the rock is basalt and hornblende greenstone. These latter hills rise abruptly to 480 feet (barometer readings) above the plain and



have an approximate elevation of 1,650 feet above sea-level. A round hill east of the lower lake on the Marquis river is 410 feet above the lake level and some 1,600 feet above sea-level. The flat tops on these hills suggest they are erosional remnants of an old peneplain surface, other representatives of which would be the tops of the hills east of lake Matchi Manitou and numerous other hills in western Abitibi. These have a common elevation of between 1,600 and 1,800 feet above sea-level ①. With the exception of a few isolated rock and boulder hills, the region underlain by the greenstones and sedimentary rocks has slight relief. Granite hills some distance north and east form a rim around this lowland. W. J. Wilson ② gives the water-level at the east railway crossing on the Megiscan river as 1,158 feet, and at the west crossing 1,071 feet, so that the general level of the lowland region would be over 1,100 feet.

#### GLACIAL COVER AND SOIL

The area is east of the 'clay belt' formed by the large post-glacial lakes, and is from 100 to 200 feet above the clay plains. The drift cover, in consequence, is largely boulders, sand, and boulder-clay. There are numerous northerly-trending boulder ridges which were in part formed as eskers. In a general way, the northern part of the area has a cover of sand and boulders, while to the south are large tracts covered with wind-blown sand-dunes. That these were formed by prevailing easterly winds is clear from their shape, especially as seen in aerial pictures. The direction of ice movement was five degrees, more or less, west of south. Drumlins, boulder moraines, and many well-preserved eskers, were left by the ice. Even the highest hills are covered with glacial drift. Varved clays are seen in parts of Tavernier township where post-glacial lakes existed.

The sections suitable for cultivation are confined to the better drained portions of the beds of post-glacial lakes. There is one such lake-bed along the Assup and part of the Megiscan river. Here, peat-beds are covered with a thickness of silt and light sandy loam which should be suitable for cultivation in seasons of sufficient rainfall.

① See Geol. Surv. Can., Mem. 166, (1931), p. 19.

② Wilson, W. J., *Geological Reconnaissance along the Line of the National Transcontinental Railway in Western Quebec*, Geol. Surv. Can., Mem. 4, (1911), p. 51.

Tavernier creek and Sunday creek, north of the Megiscan, flow through low lands underlain by varved clays which in many places are covered by a layer of sand loam. Elsewhere, the heavy cover of sand and boulders makes the land unsuitable for cultivation.

#### TIMBER

Forest fires of recent years have destroyed the timber over a great part of the district. However, there are some good stands of spruce and jack-pine, mainly on the east side of the Assup river. Good white spruce occurs along the lower Marquis river. Black spruce, balsam, cedar, and young tamarack grow in the low ground, and jack-pine covers the sand plains. On the higher ground, the white spruce, white birch, poplar, and scrub maple are most common, with occasional white pine.

#### PREVIOUS WORK AND BIBLIOGRAPHY

In 1906 and 1907, W. J. Wilson made a geological reconnaissance along the (Transcontinental) railway, in the course of which he traversed the Attic and Megiscan rivers and the lower part of the Assup. The geological reconnaissance of M. E. Wilson, about ten years later, included the southwest border of the map-sheet.

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- Bain, G. W., *The Harricanaw and Bell Rivers*, Can., Inst. Min. & Met., Bull. No. 178, Feb., 1927.
- Cooke, H. C., James, W. F., and Mawdsley, J. B., *Geology and Ore Deposits of Rouyn-Harricanaw Region, Quebec*, Geol. Surv. Can., Mem. 166, 1931.

#### GENERAL GEOLOGY

The central part of the area is occupied by Keewatin volcanic rocks, and the southern part by sedimentary rocks of probable Témiscamian age. On the north, east, and south, these older formations are intruded by large granite batholiths.

TABLE OF FORMATIONS

QUATERNARY.	Recent and Pleistocene .	Sand, boulders, boulder clay, eskers, lake clays
PRE-CAMBRIAN....	Pre-Cobalt Intrusives...	Quartz gabbro dykes Pegmatite Granite and gneiss Quartz monzonite, quartz-feldspar porphyry Quartz diorite and diorite
	Pontiac Series (Témiscamian?)....	Conglomerate, greywacke, staurolite schist, iron formation, chert, sedimentary gneiss
	<i>Unconformity (?)</i>	
	KEEWATIN.....	Andesite, basalt, trachyte, rhyolite, agglomerate, tuff, hornblendite, altered diorite

## KEEWATIN

The rocks classed as Keewatin include all the volcanic rocks of the district and some associated basic intrusives. The lavas are similar to those found throughout the Keewatin belt to the west. They range in composition from rhyolite to basic basalt but have all been altered to such an extent that they must be classified by their alteration products rather than by their original constituents. Trachytes, andesites, and basalts are the most prevalent types. The andesites and basalts usually have well-developed pillow structure. Tuff is particularly common in the northern part of the belt, while coarse agglomerate bands have a general distribution. Hornblendites occur at the eastern end of the belt and near Tavernier lake. In part, they appear to be altered basic volcanics, and in part hornblendic intrusives. The rock typically contains over 75 per cent primary hornblende, and the associated feldspar is always highly altered. In addition to the above types, some altered diorites of uncertain age have been shown on the map as Keewatin. The only Keewatin iron-formation observed is at the western border of the

map-area, on lake Matchi Manitou, where it seems to grade into the overlying sedimentary series. In general, the several types of volcanic rock can be traced for great distances along the strike of the formation.

#### TÉMISCAMIAN (?)

The sedimentary rocks of the area have been tentatively considered to be all of the same age and to be the equivalents of those farther west which have been referred to the Témiscamian. The evidence supporting this assumption is not conclusive, owing to the complexity of the folding and the scarcity of outcrop.

There are two groups or bands of these rocks, separated by a sand-covered zone. They have similar lithological characteristics, but different directions of folding. The more northerly band is the southeastward continuation of the Garden Island Lake belt described in the Report for 1931, and its strike is no doubt influenced by the granite intrusive on its south side. On the north, the beds are in contact with Keewatin greenstones. Crossing the bank from north to south, thick beds of conglomerate are first met with. These have been but little deformed and contain pebbles of granite porphyry, grey granite, quartz, and some of banded sedimentary material. Greywacke follows to the south of the conglomerate. Near lake Matchi Manitou, where there has been intense metamorphism due to proximity to a granite intrusion, some beds are composed chiefly of garnet with no staurolite, while adjacent beds contain little garnet but much staurolite in crystals up to two inches in length. This would indicate that, in the original sedimentary rock, successive beds were thin and of different composition. The fact that the iron formation on the east side of lake Matchi Manitou grades towards the east into staurolitic schist suggests that this series of metamorphosed sedimentary rocks extends to the south beneath the sand plain east of the lake. Similar staurolite schist is exposed on the west of the lake.

The relation of this Garden Island Lake band to the similar rocks that are exposed a few miles to the southeast is not clear. The intervening country is occupied by deposits of sand. In these latter beds, however, folding is almost at right angles to that in the Garden Island Lake belt. Numerous strike and dip observations indicate

an anticline whose axis strikes N.40°E. This structure implies that the beds plunge under, and so are older than, the adjacent Keewatin volcanics, or, alternatively, that the volcanics have been thrust over them by faulting. The sedimentary rocks on the south and west of lake Matchi Manitou have a similar direction of folding. In the present map-area, the types represented are greywacke, staurolite and garnet schist, impure recrystallized chert, and narrow bands of iron-formation. Towards the south, metamorphism of the beds has been more intense and they grade into gneisses under the influence of deep burial and *lit-par-lit* granitic injections. In places, north of the fold mentioned, they have been hydrothermally altered to resemble fine-grained igneous rocks.

While the main band of sedimentary rocks on the west of lake Matchi Manitou, the Garden Island Lake band, and the similar beds in the present map-area, may all represent sediments that were deposited at about the same time, their present folding cannot all be of the same period. The folding in the beds north of the Marquis river conforms in direction to their contact with the granite and gneiss, and appears to have been later than the east-west folding which characterizes the rocks in the interior of the Keewatin belt. This later deformation accompanied the intrusion of the large granite batholiths. The best explanation that can be offered at present seems to be that the Garden Island Lake beds and the sedimentary series extending through Villebon, Denain, and Pershing are all post-Keewatin, and were infolded with the Keewatin during the main regional folding. Following this, a large granite batholith intruded on the south and highly metamorphosed the more deeply buried southern part of the sedimentary series, at the same time imparting to these rocks a folding in a different direction, roughly parallel to their contact with the granite.

#### PRE-COBALT INTRUSIVES

##### DIORITE AND QUARTZ DIORITE:

On the map, a number of dykes or sills ranging in composition from hornblende diorite to quartz diorite have been grouped together. All these are intrusive into the Keewatin volcanics, and some are cut by more acidic dykes of porphyry or aplite.

One such dioritic intrusion in southwestern Tavernier has a width of about ten chains and parallels the strike of the invaded formations. The southern margin is fine-grained and the interior is moderately coarse. The rock is a quartz diorite characterized by opalescent quartz 'eyes', and in thin section it shows a micropegmatitic intergrowth of quartz and feldspar. It has not been intensely altered.

A dyke farther southeast, in Haig township, has a width of five chains and for part of its length parallels the strike of the lavas it intrudes. It, also, is a quartz diorite, and, like the last, contains quartz and feldspar (albite) in micrographic intergrowth. A coarse phase of the rock is characterized by primary hornblende crystals up to half an inch in length. It is cut by finer grained and less hornblendic quartz diorite. This dyke is undoubtedly closely related to the one in Tavernier described above.

Hornblendic rocks at the east side of Tavernier lake, which have been marked '1C' on the map and grouped with the Keewatin, may be related to these diorite intrusives.

#### ACID INTRUSIVES IN INTERIOR OF KEEWATIN BELT:

Many dykes of quartz- and plagioclase-porphyry, as well as finer textured aplites, occur through northern Tavernier and in eastern Jurie and Haig townships, and in northern Tavernier, in particular, there are also dykes of granodiorite and quartz monzonite. North of Tavernier lake, some very light coloured dykes are so fine-grained as to have a porcelain-like appearance. By way of contrast are some porphyry dykes in which the feldspar phenocrysts are over a third of an inch long. In composition, all these acidic intrusive rocks have essential similarities which suggest they are derivatives of the quartz monzonite masses outcropping farther west. Porphyry dykes, however, cut the quartz monzonite in Tiblemont township. Fracturing and occasional shearing was noted in the porphyries.

In Pershing township there are a number of porphyry dykes that form the extension of a porphyry zone around Garden Island lake. These differ somewhat from the other porphyry dykes in that they consist almost entirely of quartz and feldspar, with little ferromagnesian mineral, and also in being more highly sheared.

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**GRANITE:**

Granite masses occur in the north, east, and south of the map-area, around the borders of the greenstone and sedimentary belt. The granite in the south is distinctly different from that in the northern part of the map-area. North of the Marquis river, near lake Matchi Manitou, is a fresh-looking intrusive mass of the quartz monzonite type. The pegmatite and granite dykes which extend eastward through Pershing township are related to this mass, as are the pegmatite dykes to the south and west, in Denain township. Thus, unlike the batholiths of similar composition in the Bell River area, this one has pegmatites associated with it and hence resembles in every respect the main granite batholith which intrudes the sedimentary rocks all along the south side of the belt. The pegmatites are a later differentiate of this granite, and, judging from the way they replace and grade into it, the granite could not have been completely solidified at the time the pegmatites were injected.

The banded gneisses on the south and east of the sedimentary greenstone belt will be discussed separately. They are for the most part sedimentary formations which have been recrystallized and filled with *lit-par-lit* injections of granite and pegmatite from the main southern batholith.

The granites which intrude the greenstone along the northeast side of the Keewatin belt are muscovite-biotite granites having a more acid composition than the southern type or than those intrusives occurring in the interior of the belt. Where seen, the contact between the greenstone and this acidic granite shows that the intrusion took place under conditions of high temperature and pressure, and that hydrothermal alteration such as is found around some of the interior batholiths is lacking. Complex rock-types have been formed near the contact by the assimilation of the greenstone.

This granite extends along the north side of the greenstones westward into Tavernier township, where a less acidic type, similar to the quartz monzonite, is found in places. North of the Megiscan, this is seen to be cut by the more siliceous granite. It is not known, however, whether the two types are to be regarded merely as phases of the same intrusive, or whether there is a significant age difference between them. If the latter, it might be inferred that the Vauquelin-

Pershing, Tiblemont, and Louvicourt intrusions are older than the great mass of acid granites on the north, and that they owe their deformation, and possibly also the associated mineralization, to this circumstance. Recent evidence suggests that in this and in the adjacent area to the west, there were several successive periods of intrusion, each intrusive being somewhat more acid than the previous one, with the result that the basic rocks have been more highly altered and sheared.

#### QUARTZ GABBRO DYKES:

Quartz gabbro dykes are the youngest intrusive rocks in the area. They are composed essentially of fresh labradorite and augite, the latter in part altered to green hornblende. Quartz is present in minor amount. They are similar in all respects to the later gabbro found farther westward, which Cooke considers to be pre-Cobalt in age<sup>ⓐ</sup>. In the present area, these dykes fall in two sets, one with north-south strike and the other striking about N.70°E.

#### STRUCTURE

The structure of the region has been discussed to some extent in connection with the folding of the sedimentary rocks.

In the southern part of the Keewatin area, away from contacts with the sedimentary rocks and gneisses, the direction both of folding and schistosity is about N.80°W. In the northern part, that is throughout most of Tavernier and Jurie townships, the schistosity has a more northerly trend, with observed range from N.70°W. to N.30°W., and the average direction of folding is around N.60°W.

Near the margins of the Keewatin belt, however, the strike of the schists parallels their contact with the granite or gneiss. Thus, within half a mile of the gneiss on the south, the normal east-west strike of the schists changes abruptly to a northeast direction to parallel the line of contact between the greenstone and gneiss and also the banding in the latter. This direction of folding appears to have been superimposed on the earlier east-west folding, which in places has been dragged sharply into the northeast direction. The granite

<sup>ⓐ</sup> Geol. Surv. Can., Mem. 166, p. 141.



injections to which the gneiss owes its origin followed the development of this northeasterly foliation in the schist. As has been stated on an earlier page, both directions of folding are found in the sedimentary rocks in this area and for some distance to the west. That part of them which has been infolded with the greenstones strikes north of west, while the southern extremities of these folds and the main body of sedimentary rocks on the south have been folded along easterly or northeasterly axes, that is, roughly parallel to the margin of the southern granite batholith. From this, it seems apparent that there have been two periods of folding, one in which the lavas and sedimentary rocks were folded together in a general direction  $10^{\circ}$  to  $30^{\circ}$  north of west, and a second disturbance which affected the rocks in the vicinity of the granite intrusions, and which was connected with, and for the most part preceded, the general period of these intrusions. However, the granites, and consequently the deformations that accompanied their intrusion, may differ somewhat in age.

The close folding which resulted from these movements was probably accompanied by a certain amount of overthrust faulting, in which the greenstones were shoved to the south over the sedimentary rocks in the synclinal areas. One such fault may occur along the sediment-greenstone and greenstone-gneiss contact in eastern Pershing and Haig.

These early deformations occurred under conditions of deep burial, in which shear-zones rather than open breaks were produced, and these shear-zones parallel closely the direction of folding.

At a later period, when the rocks now at the surface had become less deeply buried than previously, faulting displaced the strata along clean-cut fractures, which strike mainly in a northeast and southwest direction. Diabase dykes follow faults in this direction and locally in a direction  $N.70^{\circ}E.$ , as well as north and south. Most of the mineralization is of the deep-seated type and occurs along the shear-zones rather than along these later faults.

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## ECONOMIC GEOLOGY

### GENERAL CONSIDERATIONS

Prospecting in this region, as in all eastern Abitibi, is handicapped by the cover of drift. The drift in the present map-area consists more largely of sand and boulders than of clay. Where outcrops do occur, they are commonly large. The principal areas of rock outcrop are indicated on the accompanying map.

As no large mass of intrusive rock was found within the volcanic or sedimentary formations, mineral deposits in this area are naturally of a different type from those occurring within the intrusive masses in Vauquelin, Tiblemont, Pascalis, and Louvicourt townships. The contact between the volcanics and the main batholith of granite on the northeast does not appear to be a likely place for ore deposition. Along the contact in Tavernier township, although little rock is exposed, conditions may be more favourable, as some relatively basic and altered granite is found here. On the south, the sedimentary gneisses do not seem to be likely prospecting ground; suitable fracturing cannot be expected here, nor was any indication of sulphide replacement seen. Tourmaline occurs in some of the pegmatite dykes within or near the greenstones and sedimentary rocks, but no other rare-element minerals were observed.

In general, any rock exposures in sections of the map-area that are underlain by the greenstones and sedimentary formations are worthy of prospecting. That gold does occur in these rocks is known from the results of development work on the property of Lacoma Gold Mines, Limited. The occurrence of copper or zinc ores in commercial deposits is not impossible, as rather large bodies of iron sulphides, containing a little chalcopyrite, are found. The most favourable ground to prospect for gold is, generally speaking, in the vicinity of the intrusions of porphyry, quartz monzonite, and quartz diorite and diorite, and along shear-zones. All the intrusive rocks within the greenstone and sedimentary areas, with the exception of the late quartz-diorite dykes, are believed to be earlier than the main mineralization, the ore-bearing solutions probably having been the last phase of the granitic intrusions. The function of these intrusive rocks has been to afford a controlling structure along which the

solutions could ascend. Shearing tends to occur along the margins of the intrusives, either because these were lines of original weakness, or because of the lesser competency of the intruded rocks. The ascending solutions have deposited the mineral they carried wherever the fracturing or the conditions for rock replacement were most favourable. Replacements of the country rock by quartz, chlorite, albite, carbonates, and pyrite are evidence of the action of high-temperature solutions, some phase of which brought in the gold, and where such replacement is pronounced, it should be regarded as indicating favourable ground for prospecting.

Most of the mineralization is of the deep-seated type and occurs along shear-zones parallelling the direction of folding. However, in Senneterre township, it should be noted, some values are found along northeast-trending faults, and on the Peacock claims in Pershing township a northeasterly break is mineralized, though here the break may be connected with the older folding.

Since the diorites and quartz diorites form the only large intrusive bodies within the greenstone belt, it would be expected that they have played an important rôle in connection with the ore deposition. In Haig township, there is a zone of iron-sulphide replacement in the lavas near the south side of a body of quartz diorite. In southeast Tavernier, gold occurs in quartz veins in siliceous carbonate bodies which are not far south of a mass of similar quartz diorite. Again, in northwestern Tavernier, sulphides are found in the vicinity of a more basic, but possibly related, mass of diorite. As, however, sulphides also occur in marked association with the more acid rocks—porphyries and quartz monzonite dykes—it is believed that none of these intrusives were the direct source of the mineralization, but that they rather exercised a structural control on its distribution.

#### NOTES ON PROSPECTING CONDITIONS

##### SOUTHEASTERN TAVERNIER TOWNSHIP:

In the southeastern part of Tavernier township, rock exposures are found mainly in two localities, one east of lake Tavernier and the other in the southeast corner of the township. Near the lake, basic lavas and hornblende diorites are cut by acidic dykes. The condi-

tions in the southeast corner of the township are described in connection with the property of Lacoma Gold Mines, Limited. The country to the north of this property would seem to warrant prospecting. Bodies of carbonate schist are found nearly as far north as Mile 7. Possible extensions of this zone to the east and west are heavily drift-covered.

The Keewatin areas in the northeastern part of Tavernier township are unfavourable for prospecting, as little rock is exposed.

#### PERSHING TOWNSHIP:

Greenstone is plentiful in the northern part of Pershing township, at the west edge of the map-sheet. The rock is fine grained and very uniform in character. An east-west trending zone of sheared porphyries extends from the west into the map-sheet at a point about one mile north of the contact between the greenstone and sedimentary rocks. Here, and in a similar zone west of Garden Island lake, bodies of carbonate schist are found, and some gold values were obtained from quartz and pyrite stringers in them. The sheared porphyries were seen in the present map-area about one mile east of its western boundary, along the extension of this zone, but outcrops here are scarce. The greenstones, where seen near their contact with the sedimentary rocks, are well sheared. The conglomerate occurring near the contact is an unsheared competent rock which might fracture in a manner favourable for ore deposition. Outcrops of this rock are limited in this area, however.

South of Mile 4 on the Pershing-Haig line, and extending easterly into Haig, is the only other area of sedimentary rocks which is sufficiently well exposed to encourage prospecting. Conditions here are described in connection with the Peacock prospect. Where fine-grained, brittle rocks or carbonate rocks are found in these sediments, particularly in the area to the north of Mile 2, conditions should be favourable. As may be seen near Mile 2½ on the township line, the sedimentary rocks in places have been hydrothermally altered to a dark, fine-grained, homogeneous rock which can only be distinguished from volcanic rock by the freshness of its constituent minerals.

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**HAIG TOWNSHIP:**

Two mineralized localities in Haig township are described on a later page in connection with the Savard claims and the Peacock claims east of the Assup river. In addition to these, there is an interesting locality near the Assup a mile east of Mile 7 on the Pershing township-line. Here, in the southern portion of an extensive outcrop, rhyolites and andesites are intruded by quartz-feldspar porphyries. Both porphyries and volcanics are sheared in places and cut by northeast faults, and near the porphyries the volcanics are silicified and contain sulphides. While it is not known that any gold values accompany the sulphides, the geological conditions are favourable.

Outcrops in this region continue intermittently towards the east, and good exposures occur along the south side of a chain of small lakes. As far as could be judged, conditions of fracturing and mineralization in the greenstones here are favourable up to a quarter of a mile or so from the greenstone-gneiss contact. Some rock outcrops along the north side of the chain of high hills which extend to the northeast. With the exception of the localities mentioned, and such scattered outcrops as are indicated on the map, the cover of sand seriously hinders prospecting.

**JURIE TOWNSHIP:**

The most favourable locality in Jurie township would seem to be near a hill east of the Assup river and south of the Megiscan. Here tuffs and other volcanic rocks are cut by porphyry dykes, one of which, at the northeast of the hill, is fairly large. The rocks are sheared and cut by later east-west faults. A quartz vein occurring in this vicinity is mentioned elsewhere. South of the Attic river is an area of basic hornblendic flows. With the exception of the two hills on the west side of the Assup river, very little favourable rock was seen, the boulder drift being very heavy in the eastern part of the township.

## PROSPECTS IN THE ASSUP RIVER AREA

LACOMA GOLD MINES, LIMITED  
(Tavernier township)

Lacoma Gold Mines, Limited, was organized recently to continue development, previously financed by Messrs. B. W. Connor, R. L. Lamb, and F. McCauley, of a property in the southeast corner of Tavernier township, comprising claims Nos. 33319 to 33322, 35639 to 35643, and 35993 to 35997. Most of the work has been done on a mineralized zone approximately half a mile northwest of the township corner. The zone extends westward from the junction of claims 35640, 35995, and 35994. A road of sorts, made for taking in the diamond drill, leads to the workings from a small creek that flows into Peacock bay on the Assup river.

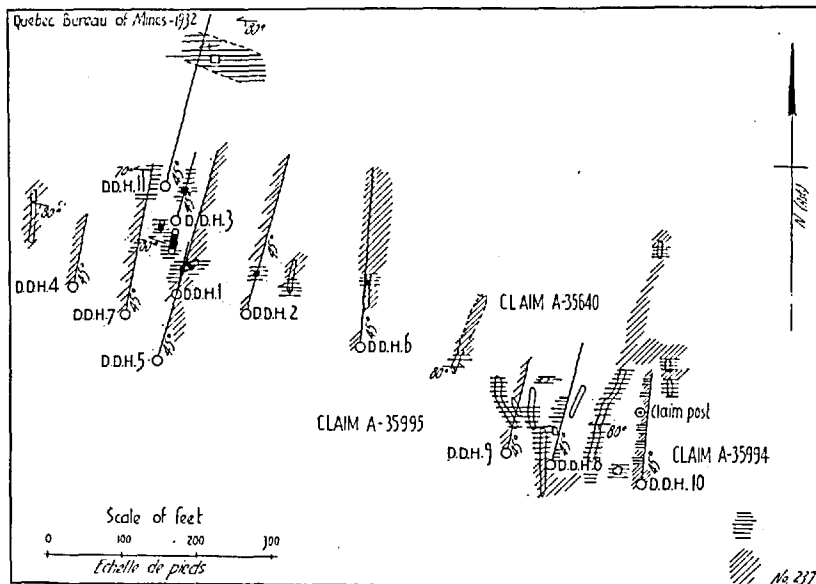


FIGURE 1.—Geology of claims of Lacoma Gold Mines, Limited,  
Tavernier township.

LEGEND:—Keewatin, inclined lines. Carbonate replacements, horizontal lines.  
Gold bearing quartz, heavy black.

Work of stripping, trenching, and shallow blasting has been carried out here on a siliceous carbonate body at various times during the past five years. During the winter of 1931-1932, diamond drilling totalling 2,773 feet in eleven holes was completed. As shown on the accompanying sketch-map, Figure 1, these holes were all drilled from south to north at an angle of 45 degrees.

#### GENERAL GEOLOGY:

The main mineralized zone is approximately eight chains south of a dyke, or elongated mass, of medium to fine-grained quartz diorite which is intrusive into Keewatin pillow-lavas. The diorite mass is 12 chains in width, strikes about 15° north of west, and has been traced westward for a distance of 30 chains. Within the greenstone are masses of siliceous carbonate rock which contains lenses of gold-bearing quartz and pyrite.

In some of the drill holes that were put down to the north of the carbonated rock, a relatively coarse type of greenstone was encountered that might be described as a medium-grained highly carbonated and epidotized diorite having scattered quartz 'eyes'. In thin section, this rock is seen to be composed mostly of secondary minerals, notably calcite, dolomite, quartz, epidote, and fresh albite. This relatively coarse type of rock has a width up to 100 feet and both to north and south it grades into finer, more chloritic material. While it may possibly be a part of the quartz diorite intrusive mentioned above, this is considered unlikely, especially in view of its intensely altered state as compared with the intrusive as seen elsewhere. It is here regarded as part of the Keewatin, and the relatively coarse texture is believed to be the result of carbonatization and albitization in the vicinity of the mineralized bodies.

Dykes of quartz diabase, the youngest rock present, are found a short distance south of the showings, striking 20° north of east.

#### MINERAL OCCURRENCES:

A number of masses of the rusty carbonate schist have been found on the property. The zone in which most of the work has been done has been exposed by cross-trenches over a length of 900 feet, and its continuation has recently been found 150 feet farther east.

The zone can be expected to extend through the low ground to both east and west. It reaches its maximum width, of over 150 feet, at the east. A narrower parallel body of the same type lies 150 feet to the north. Similarly, at 500 feet south of the most westerly trench, a rusty carbonate zone in the greenstone has been stripped over a width of 40 feet. The most northerly known occurrence of the carbonate schist is on the Tavernier-Jurie township line, near survey-plate 19, one and three-quarter miles north of the trenched zone.

In these occurrences, the strike of the schistosity may be different from that of the carbonate masses themselves, as may be seen in the occurrence near the Company's stable, where the schistosity strikes east and west, and the carbonate zone between 20° and 25° north of west. A similar difference seems to prevail in the main occurrences to the south.

At the eastern end of the trenched area, the carbonated material exposed in trench No. 10 appears to form the west end of a lens which widens towards the east. This lens has been traced over a length of 400 feet, and has an indicated width of more than 150 feet at the point where it disappears under drift. The fact that only a small amount of mineralization was encountered in hole No. 9 suggests that the drill passed beneath the nose of the lens. Within the lens, the country rock has been replaced, in varying degrees, to a mass consisting of carbonates, sericite, fine quartz, and 'cube' pyrite. Numerous lenses and irregular veins of white quartz with associated pyrite and some tourmaline and chalcopyrite occur through this. Some of the veins follow the schistosity while others cross it in a more northwest-southeast direction. Free gold is reported to have been found in a quartz stringer in trench No. 2, near the east end of the area.

The following gold values are reported from channel samples taken by R. Doal in trench No. 1:

Width sampled	Value per ton
5 ft. 0 in. ....	\$8.90
6 ft. 3 in. ....	3.50
5 ft. 4 in. ....	5.00
5 ft. 2 in. ....	1.60

This would give an average of \$4.75 across 21.5 feet. Values of \$2.50 over 8 feet are reported in trench No. 2. In drill hole No. 8,



sampling by H. C. Barton, Sudbury, gave \$3.20 from 130 ft. to 135 ft. Quartz and pyrite occur here. Elsewhere in this section, only low values were obtained from sampling of trenches and drill cores.

The most encouraging mineralization was found in the vicinity of trenches 14 and 15. In the deep trench, No. 15, a mineralized section 28 feet in width is exposed. Here, closely-spaced quartz stringers cut the highly silicified and carbonated rock, which, near the stringers, is heavily mineralized with light coloured pyrite in cubic crystals. Some green mica is also present. This section of the carbonated zone is more siliceous than any seen farther east. In trench No. 14, 25 feet east of No. 15, 8 feet of quartz is exposed, and in trench No. 16, 15 feet to the west, is more quartz. The strike of the schistosity and stringers in the main trench is 20° north of west, but on the surface a northwesterly trend of the zone is indicated.

In trench No. 15, channel sampling from north to south by A. Carr-Harris gave the following returns:

Width sampled	Value per ton
5 ft. 4 in.....	\$2.60
5 ft. 2 in.....	5.00
3 ft. 8 in.....	1.00
3 ft. 9 in.....	2.40

A plan prepared by P. E. Hopkins, Toronto, shows an average of \$5.82 in gold from channel sampling over 28.5 feet in this trench, and sampling by J. M. Wilson gave an average of \$3.47 over 19.8 feet, or \$4.58 over 9.2 feet. In trench No. 14, two samples taken by A. Carr-Harris from a channel 8 ft. 11 in. in length, cut from north to south, gave \$1.60 gold over 4 ft. 3 in. of the section, and \$5.00 over the balance of 4 ft. 8 in. Drill-hole No. 1 cut 20 feet of good mineralization 50 feet below trench No. 14. This is of a type similar to that seen on the surface. Samples taken by Barton and Carr-Harris from footage 50 to 71 gave an average of \$3.72 in gold. The average from 63 ft. to 71 ft. is \$8.05. Drill-hole No. 5, passing 100 feet below this, shows a 10-foot mineralized section. Five feet of this is reported to give \$4.60 in gold.

A drill-hole 70 feet west of these intersections shows little mineralization or values until near the north end of the hole. The hole 100

feet to the east shows 18 feet of mineralized core from which only low values are reported. This hole may possibly be too far north to intersect the extension of the ore in drill-hole No. 1.

Fifty feet north of trench No. 15, another mineralized section was encountered in drilling at a depth of 40 feet. The core shows quartz with pyrite and tourmaline over 8 feet, followed by 13 feet of well pyritized carbonate schist cut by quartz stringers. This 13 feet is reported to give an average assay of \$5.51. This mineralized zone does not appear on the surface, nor is it encountered in hole No. 5 which passes 200 feet below.

At the west end of the trenched area a short hole, No. 4, encountered only unmineralized greenstone. The westerly trench, No. 17, also shows only chloritized and carbonated lavas. Northwest of this again, stripping has exposed irregular smoky-quartz veins in carbonated rock, which carry some chalcopyrite.

These results would seem to indicate that the gold values are in rather discontinuous lenses of quartz and pyrite in the carbonated volcanics. The gold appears to have been deposited by a later and more siliceous phase of the solutions which produced the carbonate alteration. The individual veins composing the gold-bearing body near trench No. 15 strike about N.70°W. and dip 80° south, parallel to the schistosity. The body as a whole, however, appears to extend in a northwesterly direction and to dip vertically. There is a possibility that other lenses may occur along a zone trending in this direction.

Ten chains to the north of the occurrences described, quartz and calcite stringers, accompanied by some pyrite and chalcopyrite, occur along an east-west shear following finer inclusions in the quartz diorite intrusive.

#### CLAIMS NEAR TAVERNIER LAKE (Tavernier township)

Some prospecting was done in 1931 by R. Thompson on a block of claims on the east side of Tavernier lake. The rock here consists of basic volcanics, diorites, and a few acid dykes. Exposures are numerous. A little trenching was done on a pyritized shear-zone which occurs on a point on the east side of the lake, fifty chains from the south end.

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PEACOCK CLAIMS  
(Haig township)

A block of claims, Nos. 39353 to 39361, has been staked on a sulphide body two miles east of Mile VIII on the Pershing-Haig township-line. A trail leads southeasterly to the property from a small creek flowing into a bay on the Assup river.

Some development work, including stripping, trenching, and the opening of shallow test-pits, has been done on a large body of rusty sulphides which have replaced Keewatin pillow-lavas. The greenstones have been rusted intermittently along a zone extending for nearly three-quarters of a mile in a direction 20° south of east. Half a mile to the east of the trenches, a dyke or sill of hornblende diorite, six chains in width, parallels the strike of the formation, and it probably extends through a muskeg that is immediately north of the sulphide deposit. It seems probable that the mineralization is related to the diorite intrusive. The heaviest rust extends for about fifteen chains near the east end of the exposed area where the trenching has been done. These rusty areas, which are rather irregular, are exposed over a maximum width of 300 feet, in which the lavas are silicified and replaced by sulphides which in some places are quite massive. The sulphides present are pale-coloured pyrite, marcasite, and a little chalcopyrite. Irregular veins of rather barren-looking quartz are common. Values obtained in sampling the trenches are believed to be low for the most part. A sample taken by the writer across 12 feet of heavy sulphides gave no return in gold. More work and thorough sampling would be required to prove whether or not higher values exist somewhere in this zone.

SAVARD CLAIMS  
(Haig township)

A little stripping has been done on a group of claims, Nos. 38316 to 38324, in the northwest corner of Haig township, south of the Lacombe property. The rock here consists mostly of trachytic lavas. A quarter of a mile southwest from the Tavernier-Jurie corner, on claim 38317, a 3-foot vein of quartz and tourmaline has been found. Its extent has not yet been traced. A quarter of a mile west, and 400

feet south, of the corner of this claim, quartz and tourmaline float is found, suggesting the proximity of a vein. The blocks of vein material are as much as three feet across. A quarter of a mile south of the Tavernier line and five chains east of the Pershing township-line is a trench showing carbonated greenstone cut by quartz stringers.

#### PEACOCK CLAIMS

(Pershing township)

This group of claims is centred on the Pershing and Haig boundary between Miles III and IV, and extends east and west into both townships. The claims in Pershing are 39332 to 39346, and here, at a point 20 chains west and 30 chains south of Mile IV, some work was done in 1930 by the Consolidated Mining and Smelting Company of Canada. The claims were re-staked recently and extensive trenching was done by W. Peacock in the spring of 1932.

A deposit of iron sulphides was disclosed in sedimentary rocks not far south of their contact with Keewatin volcanics. The rocks are greywackes, with some bands of staurolite schist, chert, and cherty iron-formation. There are some small dykes of pegmatite to the south of the trenching. Owing to the cover of sand in the western part of the property, the regional structure cannot be definitely determined. The deposit appears to be situated on the west side of the nose of a major anticline which lies to the south, and whose axis strikes about N.40°E. The greywacke and associated beds here have an east-west strike. They are faulted, and along the fault have a drag which suggests a movement of the west side towards the north.

The line of faulting has been systematically trenched over a distance of approximately 700 feet. The best indication of ore is exposed in the southern 400 feet. Near the fault, the sedimentary rocks have been silicified to a more competent and brittle rock, which has been fractured under later movement and then further mineralized by quartz stringers and pyrite. The silicification extends over widths from 6 to 20 feet, and this zone contains pyrite and scattered quartz stringers throughout. A one-foot zone exposed in trenches for a length of 20 feet is quite heavily mineralized with fine pyrite, and is cut by small quartz stringers. There are some irregular tension-

veins of quartz, but their length is not assured. Pyrite and pyrrhotite occur in narrow bands of iron-formation, 400 feet to the southwest of the last trench on this break.

A chip sample from this zone, taken by the author across four feet and including six inches of heavy pyrite, gave only traces of gold. Assay results obtained by the owners are not known at present. This type of deposit, occurring as it does along definite breaks in the sedimentary rocks, would seem worthy of careful investigation.

#### CLAIMS NOS. 34996 TO 35005

(Juric township)

These claims are located near the east side of a rocky hill at a point three-quarters of a mile east of a bay on the Assup river, one mile south of the Megiscan. Quartz veins were discovered here several years ago and some trenching was done on claim 34996.

The country rock is Keewatin tuffs and lavas which strike N.35°W. There are dykes of quartz porphyry in the vicinity, and a fairly large mass of this rock occurs 15 chains to the northeast.

North of the claim-posts, a quartz vein 20 inches in width is exposed in a trench. On the east side of this vein are 3.5 feet of carbonated and pyritized rock, followed by another vein, 6 inches wide, which has pyritized walls. The veins strike along a depression, or 'draw', which trends N.35°W. On the south side of this draw, 110 feet distant, is another similar one-foot vein. A grab sample taken by the writer from the north vein did not show any values in gold.

#### PROSPECTS IN VAUQUELIN AND TIBLEMONT TOWNSHIPS

##### CLAIMS OF CARROLL-MEEN PASCALIS SYNDICATE

##### PROPERTY AT SOUTHWEST END TIBLEMONT LAKE:

Extensive trenching and shallow blasting was carried out during the summer of 1932 to test a large sulphide body situated just south of the portage from Bell river to Tiblemont lake. The property includes (September 1932) claims Nos. 38583 to 38594. More than 1,100 feet of trenching has been completed here.

The sulphides occur in light coloured dykes or masses of intrusive rhyolite and rhyolite porphyry. These cut a coarse-grained chloritic rhyolite which may or may not have been intrusive. Some basic Keewatin greenstone and a small mass of relatively unaltered diorite are also exposed on the property. The large mass of intrusive rhyolite in which the bulk of the sulphides occur has a probable width north and south of over 250 feet, and has been exposed in trenches over a length of 760 feet. The rock has a porphyritic texture in places. Numerous smaller dykes, with a general strike of N.70° to 80°W., occur to the north of this mass. All these rocks have been intensely sheared, the schistosity striking N.65° to 80°W. and dipping south. It has been suggested that an east-west fault follows the creek-bed at the north of the large rhyolite mass.

The rhyolite everywhere has been intensely altered through replacement by carbonate, sericite, and quartz, and pyrite is widespread in the altered rock. South of the creek bed, the rhyolite has been converted to a fine-grained siliceous mass over the greater part of a width of 150 feet. Pyrite is prevalent throughout this mass. In this zone, three trenches, covering a length of 350 feet, have each shown a section 15 to 50 feet in width composed of massive pyrite and silica. The sulphides present are pyrite and pyrrhotite, with chalcopyrite in some sections. A few quartz lenses occur, the largest being 3.5 feet wide and having an exposed length of 25 feet.

Sampling has shown that gold values in the sulphide sections are low. Two samples across an 8-foot section of the silicified rock which showed little sulphide are reported to have assayed \$4.00 in gold.

Pyrite in considerable amount occurs in the rhyolite exposed in the creek-bed to the north, and sulphide zones are found in the rhyolite dykes north of the creek bed. South of the trenches, the rock is drift-covered.

#### CLAIMS NEAR SURVEY-PLATE 65 ON EAST BOUNDARY OF VAUQUELIN:

Approximately 350 feet of trenching was done in 1932 on claims just east of survey-plate 65 on the Vauquelin-Louvicourt line. The rock here is a fine-grained rhyolite which, at the north of the west trench, is cut by a dyke of quartz-feldspar porphyry. The rhyolite has a blocky fracture, and has been silicified and pyritized along the cracks.

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**CLAIMS IN VAUQUELIN AND LOUVICOURT SOUTH OF MILE 11:**

A block of claims, Nos. 38914 to 38918, was staked by the Carroll-Meen syndicate in Louvicourt and Vauquelin townships, centring on the township-line between survey-plate 46 and Mile 11. Prospecting has revealed the presence of a mass of quartz diorite porphyry (granodiorite) in Vauquelin township, with Keewatin volcanics to the north and east of it. The volcanics are cut by dykes of the porphyry, which, locally, has albitized them. In the north part of the Louvicourt claims, the rock is a diorite, probably a relatively basic marginal phase of the granodiorite intrusion. The diorite and quartz diorite on these claims are no doubt an easterly extension of the granodiorite on which the Jowsey and Hollinger claims are located. Some fracturing was noticed in the quartz diorite. At the end of September (1932), several prospect trenches had been completed, and prospecting of the quartz diorite was being undertaken.

**REEVES CLAIMS**  
(Tiblemont township)

Work was carried on during the past season (1932) by Alfred Reeves in Tiblemont township, at a location one mile and 30 chains north, and 20 chains east, of Mile XIV on the Vauquelin-Tiblemont boundary (Claims 40664 to 40667, 40767 to 40772). A considerable amount of stripping and trenching has been done on claims 40666 and 40665. This property is of interest as it is situated within a granitic mass and is as much as a mile and a half from its southern contact with the Keewatin. At this point, the intrusive mass is seen to consist of rock of two distinct types—to the south, an older and highly altered quartz diorite, and to the north, a soda granite which intrudes it. The workings are near the contact, where the monzonite is clearly seen to be intrusive into the altered and sheared quartz diorite, and to be in turn cut by narrow porphyry dykes.

Veins follow three main intersecting sets of fractures. The quartz diorite has been sheared and fractured in an east-west direction. Near its contact with the granite, it is traversed by a vein, six inches to one foot in width, of quartz and calcite carrying an appreciable amount of chalcopyrite. This vein has been traced for 300 feet along an east-west shear. Farther towards the west, in an inclu-

sion of the sheared diorite in the granite, there are other veins parallel to this one. The vein first mentioned is intersected at the west end by a quartz vein that follows a fracture in the granite and strikes N.65°E. The quartz is from one foot to two and a half feet in width and contains but little sulphide mineral. This vein has been traced eastward for 260 feet, where it cuts quartz veins following fractures striking N.52°E. Quartz veins along this latter fracture system occur over widths of from two to ten feet, and extend northeast for 180 feet, where they appear to have been displaced or to terminate along another fracture striking in the N.65°E. direction. The quartz is milky, with only a little sulphide occurring along the veins. Chalcopyrite was noted in a shear in the quartz diorite a quarter of a mile farther south.

In general, shearing is developed in the dioritic phase, and in clean-cut breaks in the soda granite. In this section the most favourable place for the localization of fracturing and of quartz veins is in the more brittle soda granite near a contact with sheared diorite. Gold has recently been found in the granite at the northern border of this same intrusive mass. In view of this, the existence of a strong vein and fracture system and the presence of a moderately low-temperature type of mineralization at a distance of a mile and a half from the margins, suggests that discoveries may be made in the interior of the granitic mass as well as near the borders. The conditions prevailing in this part of the granitic mass seem to be rather favourable for ore deposition. Three-quarters of a mile south, on claim 40661 staked by P. Croteau, narrow intersecting quartz veins in the quartz diorite are well mineralized with pyrite.

#### STOREY CLAIMS

(Vauquelin township)

In the spring of 1932, prospecting was done on a group of claims staked by E. Storey at the northwest narrows of Guegen lake. The claims in this group include Nos. 38873-77, 39568-72, 41180-83, 41185-86. Twelve chains south of the north bay of the lake, on claim 38876, some trenching and blasting has been done on a narrow sulphide zone. This is in the highly sheared volcanics north of the sedimentary belt. A dyke or band of altered 'granodiorite' parallels the schistosity in an



east-west direction. It may be a quartz and albite replacement of the greenstone along a fracture. Crossing this band from south to north, the rock for the first four feet is coarse textured, and this is followed by ten feet of carbonate rock. The coarse textured portion, being the more competent, has fractured and is well mineralized with sulphides and traversed by quartz and calcite stringers. The mineralization is heaviest over a width of two feet at the south margin of the band. Pyrite is the principal sulphide present, but some chalcopyrite and arsenopyrite accompany it. This mineralized band or dyke has been traced for 70 feet east from the claim boundary, to where it disappears beneath drift. Values up to \$6 per ton in gold are reported from grab samples, but the mineralized section as a whole would assay much less than this. If the intrusive material should widen out along its strike, this type of mineralization could be expected to occur in bodies of more important dimensions.

East of the small bay between survey-plates 73 and 74, several trenches have been opened across the contact between the sedimentary rocks and the granitic intrusion. The intrusive here is a dark coloured, altered border-phase of the large quartz-monzonite batholith to the south and east. Both the sedimentary rocks, and numerous dykes of the intrusive cutting them, are mineralized with coarse pyrite and traversed by quartz stringers, although the mineralization exposed is nowhere heavy. Within the granitic mass, 20 chains east of here and a few chains north of Guegen lake, a number of large pieces of quartz and tourmaline float suggest the proximity of a vein. In this float, the wall-rock of the vein is replaced by heavy tourmaline and some carbonate, and has pyrite in cubes up to one inch across. This type of mineralization is not unlike that in the Louvicourt granodiorite

#### SPENCE AND BURTON CLAIMS

(Vauquelin township)

In September of this year (1932), prospecting was being done on an area of outcrop situated in Vauquelin township, a mile and a quarter south of the Tiblemont line, and extending east from a point half a mile east of the Bell river. The rock here is pillow-lava and diorite cut by numerous masses of light coloured quartz-albite porphyry. The latter is probably a relatively coarse phase of the rhyolite

occurring on the Carroll-Meen property to the northeast. The texture of the porphyry varies greatly, and in a large mass on the west the rock is exceptionally coarse. The small amount of prospecting that had been done at the time of the writer's visit had revealed the presence of quartz veins and pyritized bodies in and adjacent to these porphyry dykes.

Fifty chains east of the Bell river, a quartz vein was seen in an east-west shear on the south side of a porphyry dyke. The vein, which has been traced for 240 feet, ranges up to three feet in width. The quartz contains chlorite and a little tourmaline and sulphide, and for some distance on each side of it the sheared greenstone and the porphyry are pyritized. Along the north edge of the same outcrop, both greenstone and porphyry are silicified and mineralized with pyrite and there are some irregular injections of tourmaline and quartz. It is not known if any gold values are associated with the mineralization here.

CLAIM No. 39894  
(Vauquelin township)

Some 250 feet of trenching and stripping were done in the spring of 1932 on an outcrop located a little over a quarter of a mile east of the Bell river, at the bend opposite survey-plate 71, half a mile north of the Simon river. The rock here is a massive carbonated body, possibly originally an intrusive, with pillow lavas on the north side of it. Traversing the carbonated rock are two intersecting sets of irregular quartz veins. The main set strikes S.70°E., and is displaced along quartz-filled fractures with a northeast strike. The resulting distribution of quartz is irregular, the most persistent vein varying from 6 to 15 inches in width. The veins are of smoky quartz, with tourmaline present in some of them.

BLAIR AND MACDONALD CLAIMS  
(Vauquelin township)

Some trenching and blasting was done in 1932 on mineralized rocks west of Simon lake, near claim 37213, approximately 30 chains east of the Louvicourt line and 15 chains south of the Vauquelin centre-line. Here a body of cherty rhyolite appears to be intrusive into the

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surrounding acid lavas. The rhyolite has been sheared and altered, and is traversed by seams of pyrite with some chalcopyrite. A grab sample of some of the pyritized material is reported by the owners to give an assay of \$2.50 per ton in gold.

MAYBELL PROPERTY (CLAIMS 34634 TO 34638)  
(Louvicourt township)

Several pits were put down during the past winter (1932) on the claims of this Company in Louvicourt township. A pit ten feet wide was opened in the rock on the north face of a large outcrop in claim 34638, at a point a quarter of a mile west, and a little north, of Mile XIII on the Vauquelin township-line. The rock here is volcanic rhyolite, which, in the pit, is traversed by three small veins, two and three feet apart, dipping at 20° to the south. Between the veins, the rock is pyritized and has a granitic texture due to the development of secondary feldspar. Massive pyrite also occurs in cross-fractures between the veins. Two hundred and fifty feet south of this, another flat-lying quartz vein has been trenched. Its true width may not exceed two feet, and massive pyrite and chlorite occur at both upper and lower walls. Ten chains west of Mile XIII is a shallow pit in a 6-foot zone of feldspathized rhyolite containing irregular quartz stringers.

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