

Map No. 30a.

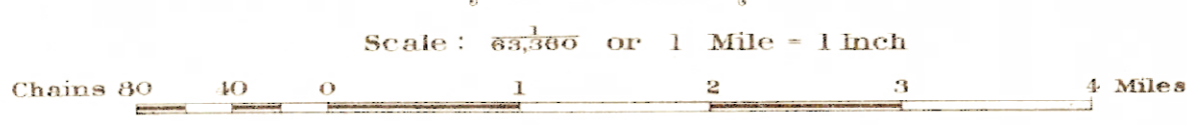
SCHREIBER-DUCK LAKE AREA

DISTRICT OF THUNDER BAY

To accompany report by P. E. Hopkins, in Volume 30, Ontario Department of Mines Report, 1921

- Gold Claims**
- T.B. 1686—Beaver or McQuaig.
 - T.B. 1861, 1955—Sjolander-McKirdy.
 - B.J. 122 McKellar-Longworth.
 - T.B. 3554, 3326—Jackson.
 - T.B. 3412 (A.L. 217)—Otisse.
- Pyrite Claims**
- R. 600—Morley.
 - T.B. 1948—Mudge.
- Zinc Claims**
- 30 T—Zenith.
 - R.S. 79—Gestic.
- NOTE—All claim numbers having four digits are T.B. (Thunder Bay) claims, the letters "T.B." having been omitted on the map.

- Sources of information**
- Plans from Surveys Branch, Department of Lands and Forests, Ontario.
 - Lakes shown in solid lines were surveyed by micrometer and prismatic compass.
 - Magnetic and astronomic north are approximately identical.
 - Topography and geology of area from Lynx to Birch Lake, Copper island and Rope Lake by T. L. Tanton, Geological Survey of Canada.
 - Chart from Department of Naval Service of Canada.
 - Geology by P. E. Hopkins.
 - Drawn by P. A. Jackson and H. C. Smith.



Map No. 30b.
PART OF THE
GOWGANDA SILVER AREA
DISTRICT OF TIMISKAMING

To accompany Report of A.G. Burrows in Volume 30, Ontario Department of Mines Report, 1921.

Scale: 89,360 or 1 Mile = 1 Inch
Chains 80 40 0 1 2 3 4 Miles

First Edition, 1910.
Second Edition, 1921.

LEGEND

- Glacial and Recent
Sand and Gravel.
- PRE-CAMBRIAN
Post-Keweenawian.
Olivine diabase, quartz diabase.
- INTRUSIVE CONTACT
- Keweenawian (Nipissing)
Quartz diabase.
- INTRUSIVE CONTACT
- Animikean (Cobalt series)
Arkose, quartzite, and conglomerate.
Conglomerate, greywacke, quartzite.
- UNCONFORMITY
- Laurentian?
Granite, syenite, gneiss.
- INTRUSIVE CONTACT
- Keweenawian
Quartz-porphory.
Complex of highly altered volcanic rocks, basalt, andesite, etc., tuffs, iron formation.
- Diabase dikes older than Animikean.
Serpentine younger than Keweenawian.
- Symbols**
Road.
Trail.
Transmission line.
- P. or Por. Passage.
F. Fall.
R. Rapid.
Hill.
Swamp.
1125' Elevation above sea level.
Shafts.
Glacial Striae.
- Magnetic declination N. (8°-9°) W.

SOURCES OF INFORMATION
Geological Map Gowganda Silver Area, Vol. XIX, Part II, Ontario Department of Mines, 1913.
Plans of Surveys from Surveys Branch, Department of Lands and Forests, Ont.
Geological Survey of Canada, Gowganda Mining Division 1909, W. H. Collins.
Special Surveys of Lakes, Roads, Elevations, Etc., by W. R. Rogers.
Additions by A. G. Burrows, 1920.
Compilation of map by P. A. Jackson and H. C. Smith.

Mining Claims
HAULTAIN AND NICOL.
R.S.C. 90, 91, 93, 94, 95—Miller Lake-O'Brien.
R.S.C. 83 to 89—Bonsall.
H.S. 351—Symmes-Young.

HAULTAIN
R.S.C. 101, etc.—Castle.
R.S.C. 102—Everett.
S.W. 8—Barbara.
H. S. 350—Miller Lake Syndicate.

NICOL
R.S.C. 106, etc.—Castle.
R.S.C. 98—Walsh.
R.S.C. 135-6—Hart.
T.C. 313—Northern.
H.R. 204—Canadian Gowganda.
T.C. 220—Collins.
W.J. 1—Silver Bulion.
W.J. 17—La Fayette.
H.R. 715—Chapelle.
W.D. 961, etc.—Big Four.
W.J. 8, etc.—Leroy.

MOREL
L.O. 305, etc.—Bishop.
E.D. 4, etc.—Donaldson.
W.D. 12A, etc.—Boland.

MILNER
H.R. 249-252—Mann.
S.W. 3-5—Reeve-Doobie.
H.F. 221-4—Creus-McFarlan.
H.F. 225—O'Brien.
P.B. 154-5—Wetsh.
H.S. 723-4—South Bay.
H.S. 343—Larick.
T.C. 118—Milne.
H.S. 339—Crawford.
T.C. 136, etc.—Bishop.
H.R. 292, etc.—Gowganda Lake.
J.S. 282—Northcliff.
H.S. 335—Silvers.
H.S. 371—Boyd-Gordon.

LAWSON
H. R. 408—Sanderson.
L.O. 357—Caleta.
L.O. 313—Bishop.
H.R. 397, etc.—Powerful.

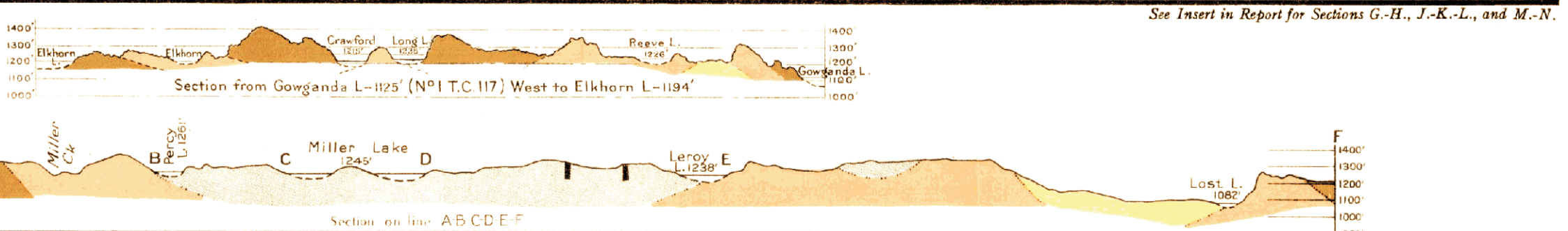
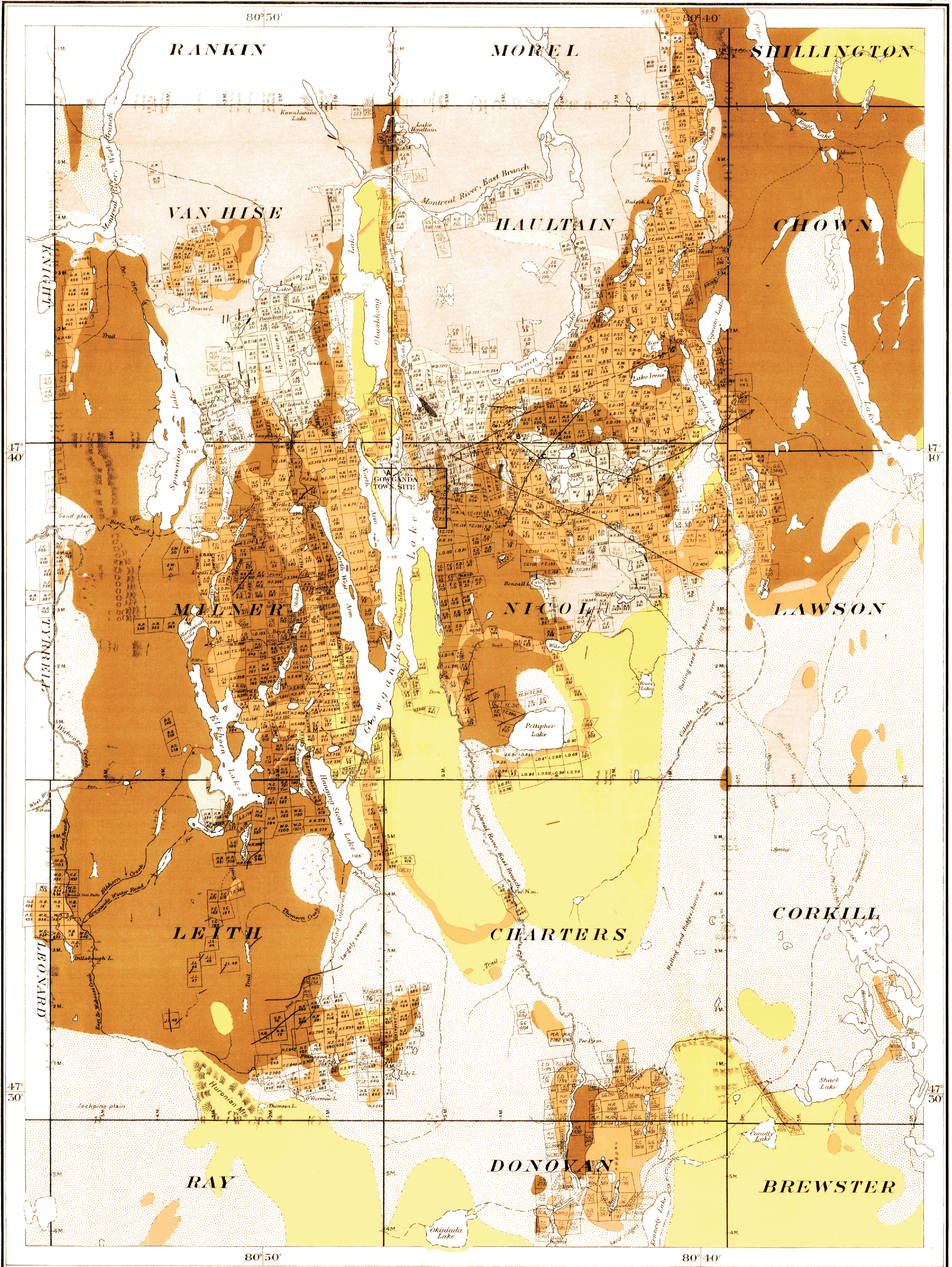
VAN HISE
H.R. 458—Alpine.
T.C. 141—Hedlund.

DONOVAN
H.R. 720—Duggan.
G.G. 3542—Wilder.

CHARTERS
E.D. 123—Garvey.
H.R. 439—Haines.
G.G. 17, etc.—Willans.

CORKILL
G.G. 3780—Kel.

LEITH
H.S. 716, etc.—Hudson Bay.
H.S. 693, etc.—Silverado.



See Insert in Report for Sections G-H, J-K-L, and M-N.

Scale Horizontal 1/4 Mile = 1 Inch. Vertical 300 ft = 1 Inch.

NOTES
The Black River area is in the district of Timiskaming contiguous on the west to the Ben Nevis area and on the north to the Kirkland Lake gold area. The Black River area occupies the divide between the Hudson Bay slope and the drainage basin of the St. Lawrence river. The greater portion lies to the north of this height of land. The area has an average elevation of about 1,000 feet above the sea-level. Hills and ridges here and there throughout the area rise to elevations seldom in excess of 350 feet above the surrounding country.

Geology
Keewatin. The dominant rocks of the area are basic lavas of the Keewatin series consisting of basalts and andesites. In the Keewatin there is a widespread occurrence of diabase fairly fresh-looking, but readily distinguishable from the Nipissing diabase by its more altered character. From the free distribution of pillow lavas, amygdaloidal basalts and other rocks possessing the structural characteristics of lava flows, the Keewatin formation in the entire area is thought to represent a succession of lava flows.

Iron formation was noted in only a few localities and then in quite minor quantities.
The Keewatin rocks are mostly massive, being rarely altered to schists. Schistose areas have been noted on the map.
Timiskaming Series. East of Nettie lake in Morrisette township is a small area of classic rocks and their schistose derivatives which, from their similarity to certain rocks of adjacent areas, have been classified as Timiskaming. The upper horizon of these sediments is a hard conglomerate comprised of ellipsoidal water-worn pebbles of greenstone, banded chert, an occasional granite, and fragments of a bright red jasper, all of which readily separate from the matrix. Along the eastern shore of Nettie lake lower horizons consisting of schistose classic rocks outcrop. The strike of the schistosity is north 40° east magnetic.

The Nettie lake classic rocks comprise the only occurrence of the Timiskaming series in the area.
Pre-Algonian Intrusives. In many localities rocks of the Keewatin series have been intruded by dikes and bosses of diabase and lamprophyre. The relationship of these to the Timiskaming series in the area is unknown, but these rocks are thought to be the correlative of the Halesburgian intrusives in other areas in northern Ontario.
An interesting outcrop of fragmental rock may be seen just east of Nettie lake. The outcrop consists of a hill of pseudo-conglomerate 80 feet in height. The matrix is a basaltic rock having a prevailing green colour. The pebbles and boulder contents consist not only of greenstone and amygdaloidal grey lava, but also of pink weathering granite, syenite, porphyries and, occasionally, red jasper.

Similar peculiar occurrences have been observed near Kirkland lake, on lot 4 in the fifth concession of Maisonneville township and at Cobalt.
Algonian. The granite, syenite, granodiorite (monzonite) intrusions, and the feldspar-porphphy and quartz-porphphy dikes occurring throughout the area are thought to belong to the Algonian series. The eastern extension of the Winnipeg lake-Maisonneville batholith of hornblende-granite occupies the southwest quarter of Bernhardt township. This batholith varies quite locally from a hornblende-granite to a pink syenite, or to a quartz-diorite. These two latter seem to be the border facies of the granite, as the occurrence was particularly noted near the border of the batholith.

The granite passes gradually into a syenite or granodiorite without material change in texture, and this is indicative of some process of differentiation subsequent to the entry of a single body of the present magma into its chamber rather than successive intrusions of different magmas.
The dikes of feldspar-porphphy vary from a few feet to 100 feet in width, and many of these occurrences have either been necessarily omitted from or exaggerated on the accompanying map.

Cobalt Series. The Cobalt series represents the latest classic sediments of the area overlying the older rocks. This series consists of conglomerate, greywacke, argillite, arkose and quartzite. In a general way there is an orderly succession from a basal conglomerate through slate-like greywacke and argillite to greywacke, or more rarely to an impure quartzite, or an arkose which in turn overlies by an upper conglomerate. The bedding planes in nearly all the outcrops seen were horizontal or nearly so. There was little or no fracturing of these rocks and the beds appeared undisturbed.

Keewatin (?) Nipissing Diabase. The youngest rocks of the pre-Cambrian in the Black River area are dikes and small intrusive masses of diabase, trap, and gabbro, which intrude all the above-mentioned rocks. The rocks vary in texture from aphanitic to coarse gabbro-like. A microscopic examination of them shows that they are augite diabases in respect of texture. The colour and texture are variable according to conditions of solidification. Small dikes and marginal masses are black; elsewhere the general colour is greyish-green to dark green and the texture medium. The percentage composition (microscopically) of the ferrous minerals varies somewhat, and from the one outcrop, specimens differing greatly in appearance may be obtained. In some only a very minor amount of pyroxene is present. There are two types of diabase, one with olivine and the other olivine free, the latter being by far the more common type.

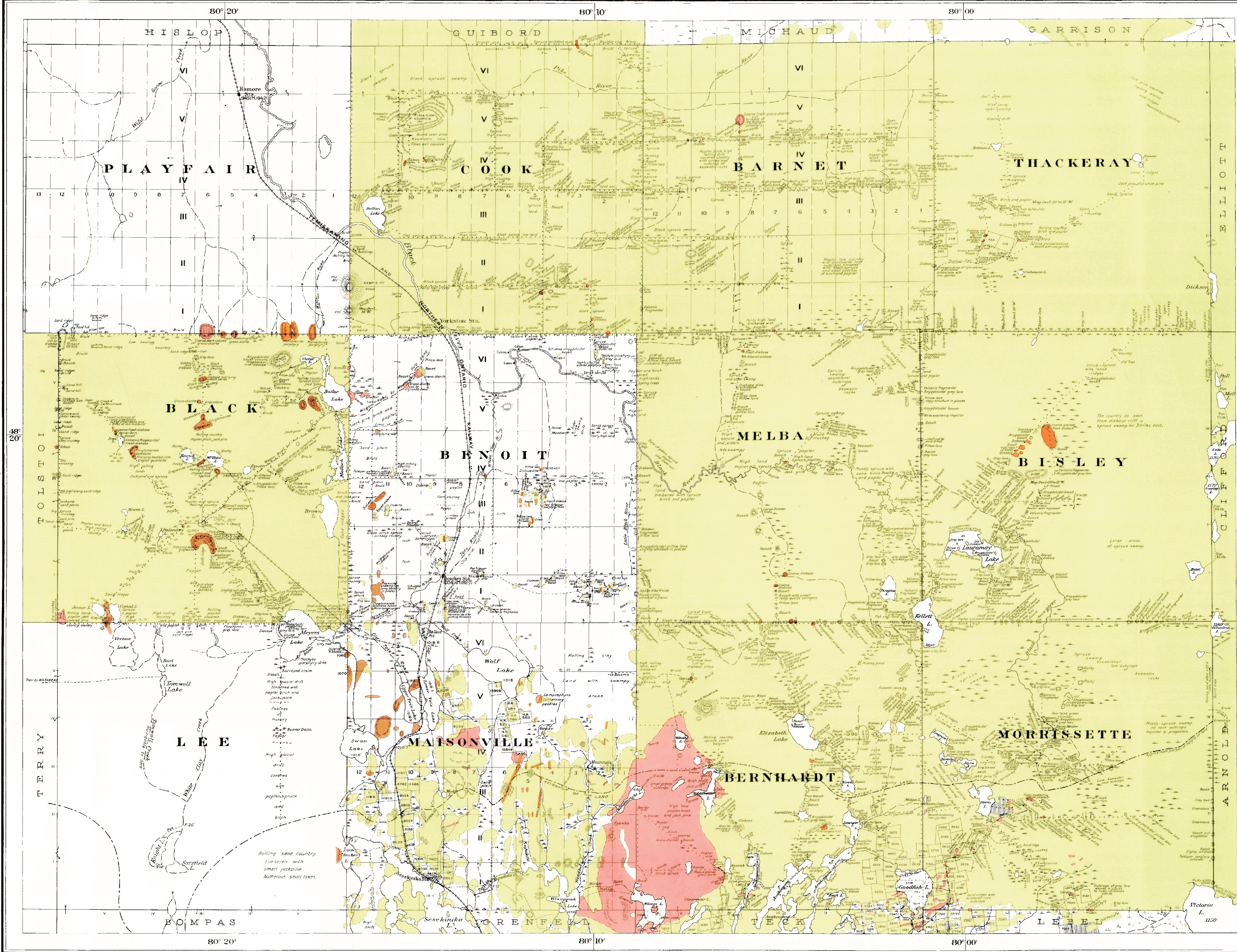
Economic Geology
The rock formations of the Black River area are akin to those of neighbouring areas already proved to be of great economic importance, i.e. Porcupine and Kirkland Lake gold mining camps. The older formations have been intruded by Algonian granite, syenite and porphyries with which the deposition of the precious metal, gold, is said to be associated.

The vicinity of these acid intrusions and areas of schistose rocks noted on the accompanying map are promising localities which should be prospected for gold.
The borders of acid (granitic) intrusions should be carefully prospected for tin (cassiterite). Cassiterite may occur in small stringers and veins bordering granite knobs, in the granite itself, or as grains disseminated through the rock. Quartz, topaz, tourmaline and fluorite are associated minerals, as are also wolframite, scheelite and other contact minerals.

The pyrrhotite deposits should be tested for nickel and platinum.
Veins of calcite, usually under 12 inches in width, carrying some sulphuric and galena, were frequently seen in the area. The deposits of this nature which were observed were not considered to be workable for their value in zinc and lead; but it was noted that these deposits frequently carried values in gold and silver, particularly the latter, which, in one instance, ran as high as 37 oz. of silver per ton.

All serpentine, i.e. metamorphic rocks composed chiefly or wholly of the mineral serpentine, should be prospected as possible sources of nickel, platinum, chromium and asbestos. Serpentine areas usually show local attraction, due to the presence of iron ore, pyrrhotite, or other magnetic minerals.

Rolling sand country
Limestone with small pebbles
Numerous small lakes



LEGEND

Glacial and Recent
Beaver clay, stratified clay, sand, gravel, peat.

UNCONFORMITY
PRE-CAMBRIAN
Keewatin? (Nipissing)
Diabase and gabbro.

INTRUSIVE CONTACT
Cobalt series
Conglomerate, arkose, greywacke, slate-like greywacke.

UNCONFORMITY
Algonian
Granite, syenite, granodiorite, red and grey feldspar-porphphy, quartz-porphphy.

INTRUSIVE CONTACT
Pre-Algonian **
Diabase and lamprophyre dikes and boss-like masses which intrude the Keewatin and are pre-Algonian; the relationship to the Timiskaming series is unknown.

INTRUSIVE CONTACT
Timiskaming series?
Conglomerate, quartzite, greywacke and schistose derivatives, some of which may be Keewatin.

UNCONFORMITY
Keewatin
A series of basic to acid lavas, i.e. basalt, diabase, andesite, grey lava, pillow lava, amygdaloidal. Volcanic fragmental rocks and tuffs occur.

Symbols
Geological boundaries.
Altitude in feet above sea level.
Altitude in feet above general level.
Hill or Mountain.
Swamp.
Road.
Trail or Portage.
Cabin or Building.
The heavy dotted lines indicate the location of the exploration traverses made during the examination of the rocks. They were run by compass and the distance measured by paces. The position of these traverses is shown so that prospectors and others will know exactly what parts of the area have been examined.
*Asteroid determinations (approximate).

Sources of Information
Geology, with the exception of Maisonneville and part of Benoit townships, by D. G. H. Wright, 1920.
Topography, from plans of surveys from the Department of Lands & Forests, Ontario, also compass and micrometer surveys by D. G. H. Wright and assistants.
Map No. 23a-Kirkland Lake and Sunnyside Gold Areas, by A. G. Burrows and P. E. Hopkins, 1914.
Map No. 23b-Maisonneville, Grenfell & Eby, by A. G. Burrows and P. E. Hopkins, 1914.
Map No. 25-Goodfish Gold Area, by A. G. Burrows and P. E. Hopkins, 1916.
Map No. 28b-Abitibi-Night Hawk Area, by C. W. Knight, A. G. Burrows, P. E. Hopkins and A. L. Parsons, 1919.
Map No. 29a-Ben Nevis Gold Area, by C. W. Knight, 1920.

** Only a few occurrences have been noted and some diabase mapped as Nipissing may be pre-Algonian.

Map No. 30c.
BLACK RIVER AREA
DISTRICT OF TIMISKAMING
To accompany Report by D.G. H. Wright in Volume 30, Ontario Department of Mines Report, 1921.
Scale: 6250 or 1 Mile = 1 Inch
Chains 80 40 0 1 2 3 4 Miles

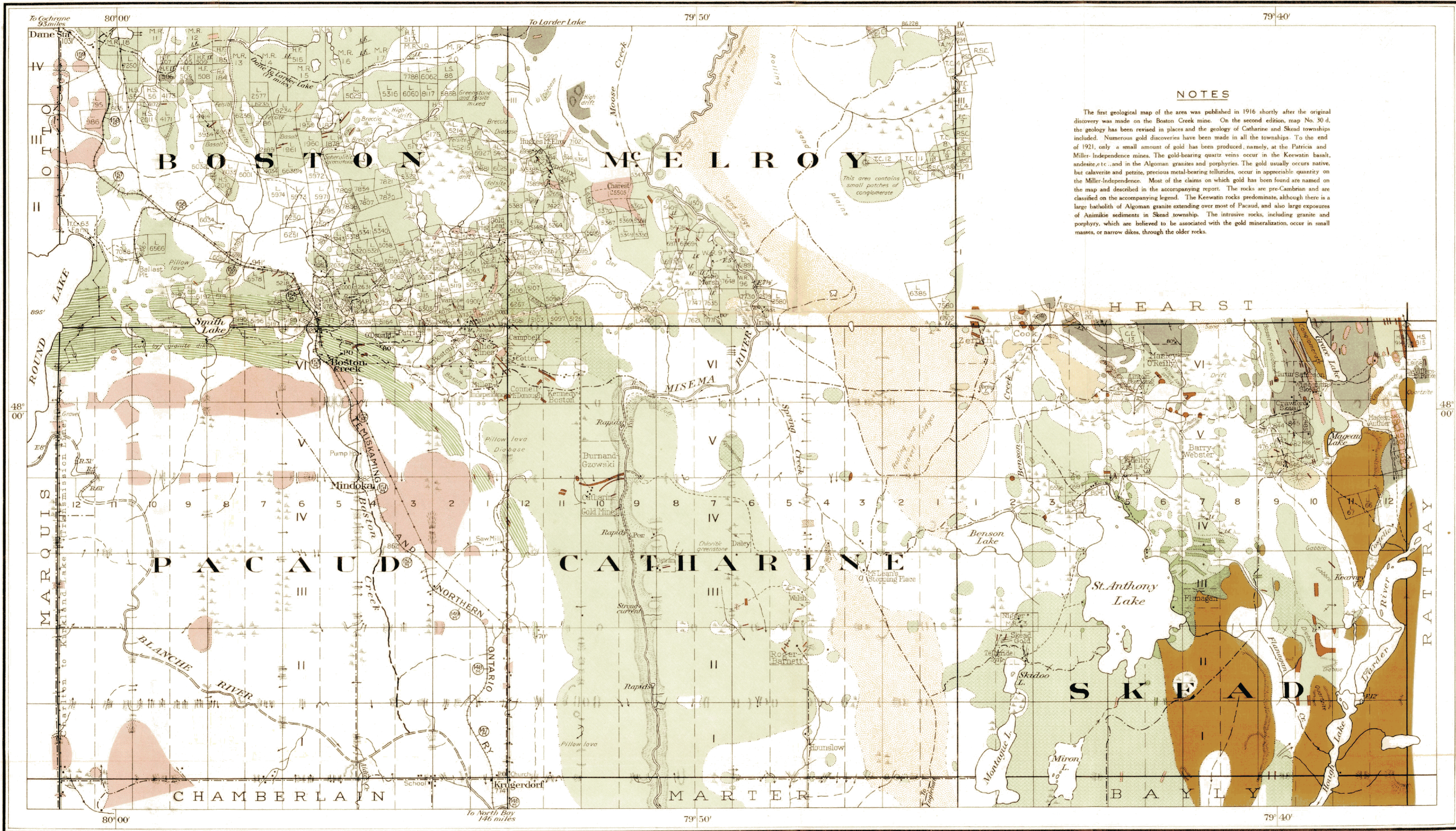


PROVINCE OF ONTARIO
DEPARTMENT OF MINES

HON. CHARLES McCREA, Minister of Mines.

Thos. W. Gibson, Deputy Minister.

A. G. Burrows, Provincial Geologist.



LEGEND

PLEISTOCENE

- Clacial and Recent
 - Sand and Gravel
 - Boulder clay, stratified clay, swamp and sand

PRE-CAMBRIAN

- Keeweenaw
 - Quartz diabase, olivine diabase.
- Intrusive Contact
 - Animikie (Cobalt Series)
 - Conglomerate, quartzite and greywacke.
- Unconformity
 - Algonian
 - Feldspar-porphry, quartz-porphry, lamprophyre.
 - Biotite and hornblende granite, syenitic in places.

Intrusive Contact

- Halleyburian (?)
 - Serpentine.
- Intrusive Contact
 - Timiskamian (?)
 - Schistose conglomerate, greywacke and slate.

Unconformity

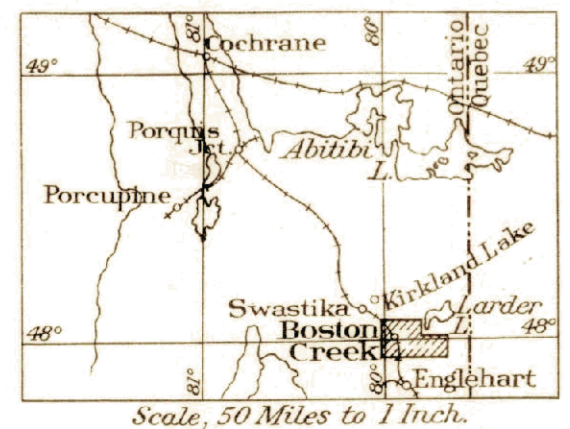
- Keewatin
 - Rusty weathering carbonate.
 - Iron formation
 - Diorite or diorite porphyry
 - Andesite
 - Volcanic fragmental
 - Ellipsoidal, amygdaloidal and spherulitic lavas, altered in places to hornblende and chlorite schist, diabase, tuff, iron formation and andesite.

Signs

- Hill.
- Swamp.
- Creek.
- Trail or Portage.
- Road and Building.
- Electric Transmission Line.
- Elevation in feet above sea-level.
- Railway with Station and Mileage north of North Bay.
- Glacial Striae
- Strike and Dip.
- Shaft or Prospect Pit.
- Geological Boundary, defined.
- Geological Boundary, assumed.
- Vein.

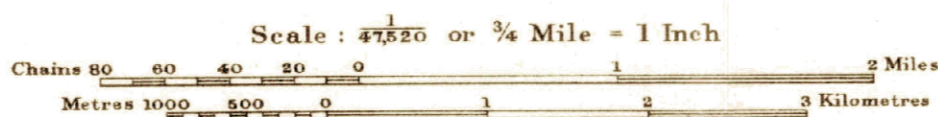
NOTES

The first geological map of the area was published in 1916 shortly after the original discovery was made on the Boston Creek mine. On the second edition, map No. 30 d, the geology has been revised in places and the geology of Catharine and Skead townships included. Numerous gold discoveries have been made in all the townships. To the end of 1921, only a small amount of gold has been produced, namely, at the Patricia and Miller-Independence mines. The gold-bearing quartz veins occur in the Keewatin basalt, andesite, etc., and in the Algonian granites and porphyries. The gold usually occurs native, but calaverite and petzite, precious metal-bearing tellurides, occur in appreciable quantity on the Miller-Independence. Most of the claims on which gold has been found are named on the map and described in the accompanying report. The rocks are pre-Cambrian and are classified on the map and described in the accompanying legend. The Keewatin rocks predominate, although there is a large batholith of Algonian granite extending over most of Pacaud, and also large exposures of Animikie sediments in Skead township. The intrusive rocks, including granite and porphyry, which are believed to be associated with the gold mineralization, occur in small masses, or narrow dikes, through the older rocks.



MAP No 30 d.
BOSTON-SKEAD GOLD AREA
DISTRICT OF TIMISKAMING, ONTARIO.

To accompany Report by A.G. Burrows and P.E. Hopkins in Volume 30, Part 6, Ontario Department of Mines Report, 1921



Sources of Information.

Plans from Survey Branch, Department of Lands and Forests, Ontario.
Map No. 25 4 - Boston Creek Gold Area accompanying Volume XXV, Part 1, Ontario Bureau of Mines Report, 1916.
Elevations based on Timiskaming and Northern Ontario Railway surveys.
Geology by A. G. Burrows and P. E. Hopkins.
Drawn for Photo-lithography by P. A. Jackson and H. C. Smith.

First Edition, 1916.
Second Edition, 1921.
Reprinted, Feb. 1928.