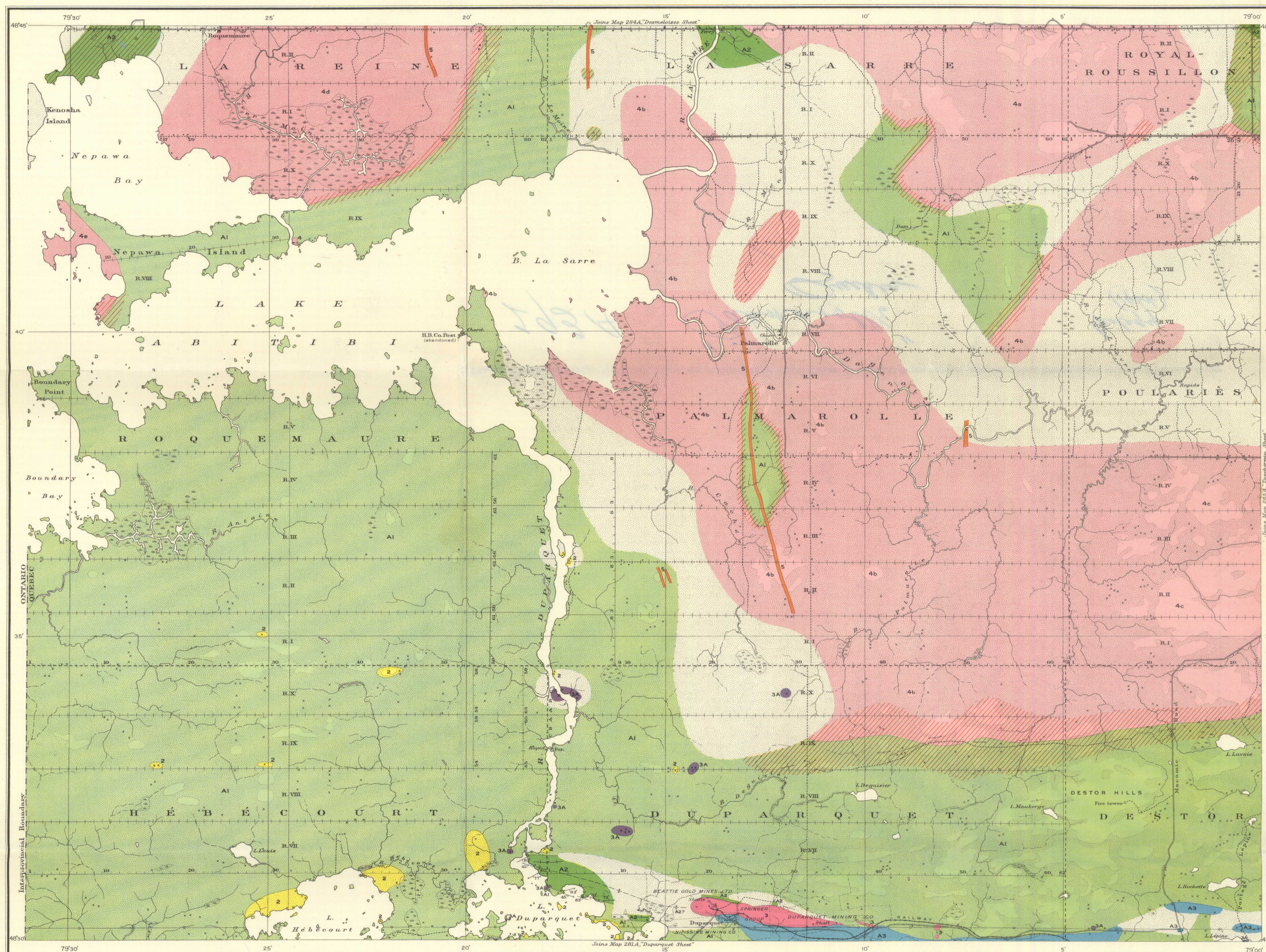


Issued 1934



LEGEND

RECENT AND PLEISTOCENE

Recent alluvium and glacial deposits. Small rock outcrops.

PRE-HURONIAN (?) INTRUSIVES

5 Quartz gabbro dykes (later gabbro)

PRE-HURONIAN INTRUSIVES (relative ages not definitely known)

4 Hornblende syenite, 4a hornblende-biotite granite, 4b porphyritic granite, 4c gneissic biotite granite, 4d hornblende granite, 4e diorite

3A Quartz porphyry

3 Syenite porphyry

2 Quartz diorite (older gabbro)

TIMISKAMING SERIES

A3 Chiefly conglomerate, some arkose, gneiss and slate

KEEWATIN SERIES

A2 Altered tuff and other sediments

A1 Chiefly altered andesite, some rhyolite, diorite and basalt, minor amounts of interbedded tuff and breccia, small bodies of basic intrusives

Symbols

Geological boundary

Bedding (dip uncertain, inclined, vertical)

Schistosity (dip uncertain, inclined, vertical)

Approximate position of synclinal axis

Contact zone

Note. South of Lake Abitibi and west of Duparquet river many more rock outcrops are present than are indicated. Those marked only represent the outcrops seen, along traverse lines one half mile or more apart. Elsewhere, it is believed, almost all the outcrops are indicated.

Geology by B.S.W. Buffum, 1925, 1926; revised by A.H. Lang, 1932.



MAP 293 A
PALMAROLLE SHEET
ABITIBI COUNTY
QUEBEC

Scale, 63360 or 1 inch to 1 mile
Miles
Kilometres

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Legend

Road and buildings

Road not well travelled

Road along township boundary

Road or water road, trail, or portage

School

Post office

Triangulation station

Township boundary

Marsh

Surveys by the Department of Lands and Forests, Quebec; and by E. C. McDonald, 1927, and J. Waterworth, 1929, together with compilation of aerial photographs supplied by the Topographical Survey, Department of the Interior.

PHYSICAL FEATURES

The map-area lies within the 'clay belt'. More than three quarters of the area is gently rolling, stands 900 to 1000 feet above sea-level, and is floored with clay. Over these clay lowlands rock exposures are scarce. They occur chiefly along the shores of the larger lakes or as infrequent rocky knolls. The uplands are represented by hills in the centre of Hébécourt township and by the Destor hills in Duparquet and Destor townships. The range is fairly rugged, rises 500 feet or more above the lowlands and continues easterly to form the Abijev hills. Bed-rock is well exposed, the mantle of clay being missing and recent fires having removed much of the vegetation. Deposits of sand, gravel and boulders of glacial origin and beach deposits of interglacial or postglacial lakes occur chiefly within and bordering the Destor hills but also form low ridges on the clay lowlands. A series of beach deposits at successive levels occurs in the southern part of Pouliariés township. The largest sand plains are in Hébécourt township.

GEOLOGY

South of Lake Abitibi and west of Duparquet river bedrock outcrops are small and can be located only by closely spaced traverses. In this district, therefore, the outcrops indicated on the map are only a small proportion of those believed to exist. Elsewhere the country being more open and outcrops or areas of outcrops being more conspicuous, it is believed that nearly all outcrops have been located.

The oldest rocks are steeply folded KEEWATIN greenstones (A1) accompanied by minor amounts of altered tuffs and breccias forming small, lenticular bodies interbedded with the flow rocks. The lavas are mainly andesites and in many places original textures and structures such as pillows, are preserved but, as a rule, the original minerals have been largely destroyed and the rocks are now chiefly composed of chlorite or hornblende schists, and hornblende schists, and locally have been sheared. Some rocks of a rhyolitic nature are probably flows but others of this variety may be intrusives. Minor quantities of altered basalt and altered trachyte or dacite occur, the latter principally in Hébécourt and Roguenaure townships. What are believed to be the youngest Kewatin rocks (A2) are altered, fine-grained tuffs and minor quantities of highly altered rocks resembling phyllites. These sediments are believed to lie in steeply folded synclines and are conformable with the adjoining lavas. Much altered sediments, in part tuffaceous, are exposed on the shore of Duparquet lake east from Duparquet river. These are grouped with the Kewatin sediments but include an exposure of altered, fine-grained conglomerate at the entrance to Duparquet river. The conglomerate lies where a synclinal axis is thought to occur and it may be that the conglomerate is an infolded remnant of the Timiskaming series. The contacts of Kewatin volcanics and sediments with the larger intrusive bodies are in some places sharp but as a rule broadly developed CONTACT ZONES intervene. Within these zones many inclusions of the Kewatin rocks lie in the intrusive and many tongues and other irregular shapes of the latter invade the Kewatin, or the Kewatin rocks are so recrystallized and, apparently, impregnated with matter given off by the intrusives that the intrusive rocks seem to grade into the volcanics or sediments.

The sediments classed as TIMISKAMING (A3) occur in one area only and apparently form a closely folded syncline. The rocks are mainly deformed conglomerates. These are accompanied by slate and arkose, greywacke and quartzite types grading into one another. The strata rest unconformably upon the Kewatin volcanics and resemble those that to the south have been assigned to the Timiskaming. The boulders and pebbles of the conglomerate are very largely Kewatin rock types but granite, syenite, etc., are well represented. Along part of the northern border of the area of Timiskaming strata, the sediments are in contact with a body of syenite porphyry ('felspar porphyry') which either has so altered and replaced the adjoining conglomerate as to produce a zone of rock resembling a conglomerate holding fragments of the porphyry, or the zone is one of residual weathering.

The Kewatin strata are intruded by small and large bodies of different types of rocks all of which are believed to be post-Timiskaming, with the possible exception of some of the porphyries, but whose ages relative to one another, in most cases, are unknown. What are believed to be the oldest intrusives are small, irregular bodies of QUARTZ DIORITE (2), the so-called older gabbro. These occur mainly near Duparquet lake and in Hébécourt township. These bodies, because they are poorly exposed, are probably more irregular of outline and more numerous than the map indicates. They are part of a swarm of quartz diorite bodies lying in the country to the south but dying out to the north and east.

The age of the syenite porphyry (3) relative to the other granitic rocks is unknown, and it is considered by some to be pre-Timiskaming and by others to be post-Timiskaming. The rock is in general purplish grey and varies from dense through various phases to augen porphyry and to a porphyry with feldspar phenocrysts up to 1 inch in length and lying parallel to one another. The rock is presumably related to the syenite porphyry more extensively developed to the south.

Small dykes and bosses of quartz porphyry (3A) occur in the south cutting the Kewatin strata. The rock consists of quartz phenocrysts up to half inch diameter lying in a fine-grained, greenish grey, feldspathic ground. The quartz porphyry is not known to be related to the syenite porphyry; intrusions of a somewhat similar but possibly unrelated type cut the batholithic rocks. Additional small exposures of syenite and quartz porphyry have been uncovered between the Duparquet Mine and the Macamic road, after the map was drawn.

Various types of granite and syenite are imperfectly exposed in the eastern part of the area. The oldest member of this composite batholith is a Hornblende Syenite (4a), even-grained and with a relatively large amount of hornblende. This rock is mainly confined to the northeast. It is cut by stringers of granite. Grey, hornblende-biotite granite (4b) is probably the largest component of the batholith but in the southeast pinkish, porphyritic granite (4c) is abundant; stringers of it cut the grey granite. Dioritic rocks richer in hornblende occur towards the southern edge of the batholith. The granite body north of Lake Abitibi is poorly exposed, it is a gneissic biotite granite (4d). Hornblende granite (4e) forms the intrusive body on Nepawa Island.

Numerous small basalt or lamprophyre dykes (not represented on the map) are present, particularly in the western part of Pouliariés township. Larger dykes of quartz gabbro (5) occur in various localities and some can be traced considerable distances. No olivine diabase dykes have been found. The quartz gabbro dykes are the youngest of the igneous bodies. Some may be pre-Huronian and others of Huronian or later age.

MINERAL DEPOSITS

The most important mineral discoveries as yet made (to the close of 1933) are gold-bearing quartz-pyrite deposits occurring as replacements or along shear-zones in the neighbourhood of syenite porphyry. The ore body undergoing most development is that of the Bestie mine, which is now producing. It lies along the north edge of the large body of syenite porphyry. It is bounded on the north by what are, apparently, highly altered tuffaceous sediments and to the south grades into unaltered syenite porphyry. The ore consists of totally or partly silicified rock impregnated with fine grains of pyrite, a little arsenopyrite, and evenly disseminated gold practically invisible to the naked eye. The mineralization is apparently related to the syenite porphyry and, therefore, prospecting might profitably be directed to the neighbourhood of the porphyry body or of any other similar body that might be discovered. The quartz porphyry bodies so far as known small but the vicinity of any far-sized body deserves investigation. Most of the porphyry bodies of both types lie near the synclinal axis marked by the area of Timiskaming sediments. This structure appears to have been a zone favourable to the development of small, intrusive bodies and since mineralization seems linked with the occurrence of such bodies, this zone and its continuation into Hébécourt township appears to be the most favourable prospecting area. Quartz veins, arsenic and silicified or carbonated shear zones with pyrite, chalcocopyrite, etc., occur in or near the contact zones bordering the large bodies of granitic rocks. The surveyed groups of mineral claims are indicated on the map.

RELATED PUBLICATIONS

SUMMARY REPORT, PART C, 1925: Destor Area, Abitibi county, Quebec; by B. S. W. Buffum.

SUMMARY REPORT, PART C, 1928: Desmeloizes Area, Abitibi District, Quebec; by J. B. Mawdsley.

MEMOIR 166: Geology and Ore Deposits of Rouyn-Harricana Region, Quebec; by H. C. Cooke, W. F. James, and J. B. Mawdsley, 1931.

MAP 271A: Rouyn-Harricana Area, Abitibi and Témiscamingue Counties, Quebec; scale, 1 inch to 4 miles, 1931.

SUMMARY REPORT, PART D, 1932: Palmarolle and Taschereau Map Areas, Quebec; by A. H. Lang.

MAP 281A: Duparquet Sheet, Abitibi and Témiscamingue Counties, Quebec; scale, 1 inch to 1 mile, 1933.

MAP 284A: Desmeloizes Sheet, Abitibi County, Quebec; scale, 1 inch to 1 mile, 1933.

MAP 285A: Taschereau Sheet, Abitibi County, Quebec; scale, 1 inch to 1 mile, 1934.

MAP 298A: Macamic Sheet, Abitibi County, Quebec; scale, 1 inch to 1 mile (in course of preparation).

293A