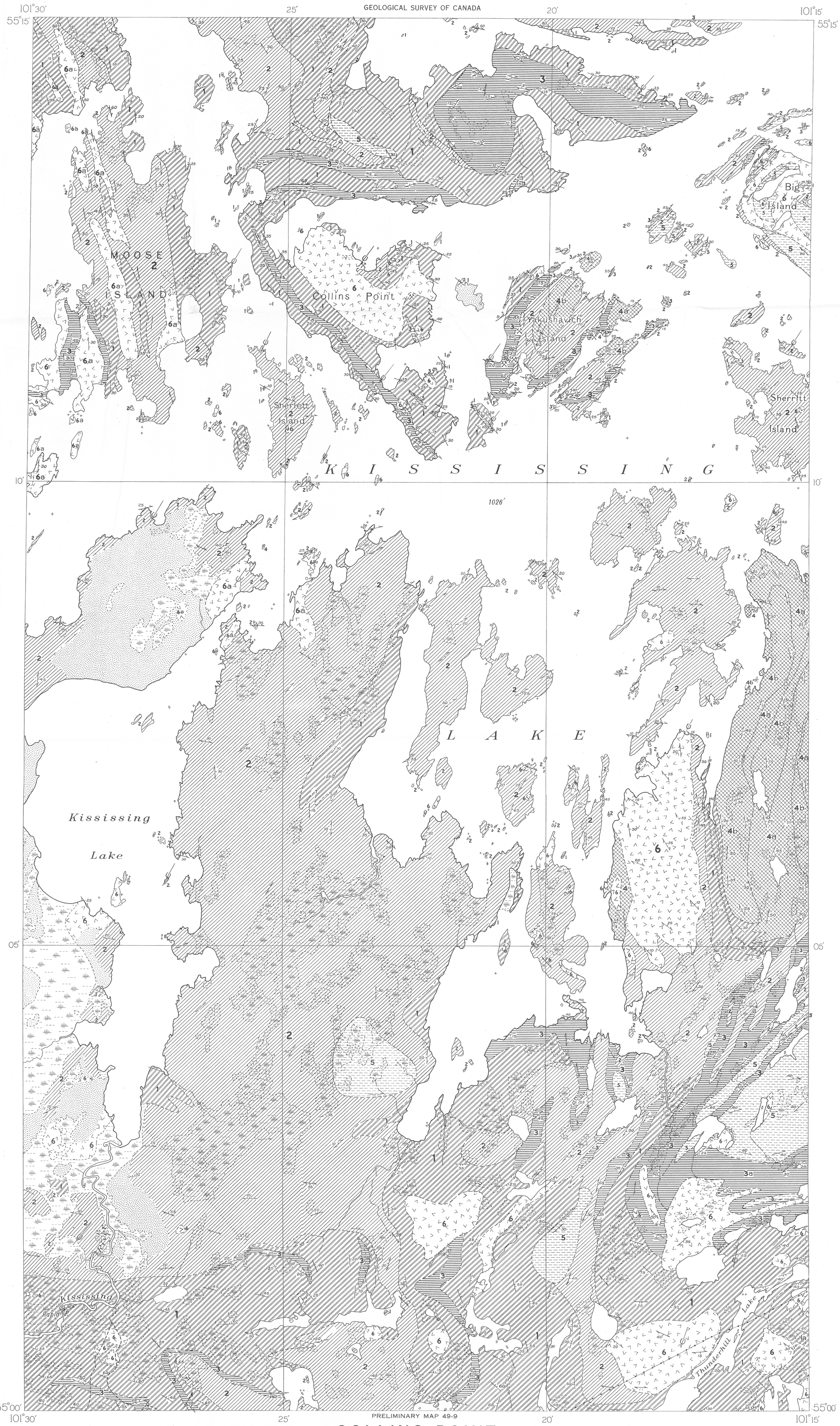
CANADA

DEPARTMENT OF MINES AND RESOURCES

MINES, FORESTS AND SCIENTIFIC SERVICES BRANCH

GEOLOGICAL SURVEY OF CANADA



DESCRIPTIVE NOTES

The map-area is easily accessible via Kississing Lake from the town of Kississing, about 9 miles by water from the eastern boundary. All rocks in the map-area, except granite, have been subjected to metamorphism, commonly of high grade, and evidence of their relative age is generally difficult or impossible to obtain; the legend, therefore, is not to be regarded as representing a normal stratigraphic sequence.

Most of the map-area is underlain by Kisseynew gneisses of the type widely distributed in northern Manitoba. The quartz-biotite gneisses (1) are grey and brownish grey, and in places have retained original bedding structure. Locally, small pink garnets are numerous. Sillimanite-bearing bands occur in the southeastern part of the map-area, but are not sufficiently persistent to be mapped separately. Relatively unmetamorphosed greywacke and arkose are of limited occurrence. Narrow quartzite bands also occur locally, and resemble the Sherridon quartzite of the adjoining map-area; due to interbedding with the quartz-biotite gneiss and their limited extent, they could not be mapped separately. The conglomerate (1a) is characterized by small quartz pebbles and interbeds of quartz-biotite gneiss.

Over wide areas, the quartz-biotite gneiss has been injected by numerous bodies of granite and pegmatite, which vary greatly in size. Most of these are irregular, discontinuous stringers, lenses, and wisps, occurring typically as closely spaced injections. The whole comprises a mixed gneiss (2).

Hornblende-plagioclase gneiss (3) is intercalated with the quartz-biotite gneiss complex (1); it commonly presents a speckled, 'salt and pepper' weathered surface, but dense bands, weathering bluish black, were also observed. In places, the gneiss has a bedded appearance and relatively low amphibole content, and is probably in part of sedimentary origin.

Granitized gneiss (4) has been widely and intimately affected by metasomatic processes, and may be considered as a separate rock type. Although it has been permeated by granitic material, it is still usually possible to determine whether the original gneiss so affected was the hornblende-plagioclase (3) or quartz-biotite type (1). The granitized gneisses (4) may be considered as having resulted from a more thorough granitization process than characterized the mixed gneiss (2). Boundaries of both these map-units are necessarily arbitrary.

Granitoid oligoclase-quartz gneiss (5) is a coarse-grained, grey, rock, containing irregular biotite-rich streaks and lenses, which are probably due to assimilation of pre-granitic rock. These masses are roughly alined, so that the gneiss has a foliation that generally conforms with structural trends of adjacent rocks. A granitoid, pegmatitic phase was observed, which has gradational contacts with the gneiss. The presence of this pegmatite suggests a primarily igneous origin for the rock.

Granite and granite-gneiss (6a) are pink, but the oligoclase granite (6b) weathers nearly white. In some outcrops, rose-quartz is abundant, and in others, particularly in bodies of pegmatite, blebs of magnetite are numerous. The pegmatite commonly contains cream-coloured microcline in addition to pink orthoclase feldspar. No evidence of age difference between pink and white granite was noted.

A few small hornblendite dykes were seen in the area; their age relation to other intrusive rocks is unknown.

Close folding characterizes the structure of the gneisses, with overturning common. Owing to the lack of definite horizon markers and evidence as to the direction in which tops of beds face, the character of individual folds is difficult to determine. One sharp synclinal fold, however, is recognizable on Yakushavich Island, with the northwest limb overturned. There appears to have been little faulting in the map-area.

Several occurrences of copper and zinc sulphides, with varying amounts of pyrrhotite, galena, and pyrite are known on Yakushavich Island and Collins Point, but none is evidently of sufficient size to be economically important. They are not restricted to any particular host rock, but rather occupy local shear zones in various rock types.

Most of these occurrences have been described by Wright.

REFERENCES

Bateman, J. D., and Harrison, J. M.: Geol. Surv., Canada, Map 862A, with descriptive notes 1946.

Wright, J. F.: Kississing Lake Area, Manitoba; Geol. Surv., Canada, Sum. Rept. 1928, pt. B, pp. 102-103 1929.

LEGEND

ARCHAEAN OR PROTEROZOIC

- 6a, 6b — 6a, granite, granite-gneiss, pegmatite; 6b, oligoclase granite
- 5 — Granitoid oligoclase-quartz gneiss
- 4 — Granitized gneiss; 4a, stratiform sedimentary gneiss; 4b, hornblende-plagioclase gneiss
- 3 — Hornblende-plagioclase gneiss; hornblende-biotite-plagioclase gneiss; 3a, mixed hornblende-plagioclase gneiss and irregular granitic injections
- 2 — Mixed sedimentary gneiss (1) and irregular, lit-par-lit granitic injections (6)
- 1 — Sedimentary, quartz-biotite gneiss, commonly garnetiferous; minor sillimanite gneiss; minor greywacke, arkose, and quartzite; 1a, conglomerate

Drift-covered area

Bedding (vertical, overturned)

Bedding (direction of dip known, upper side of bed unknown)

Gneissosity, schistosity (inclined, vertical, dip unknown)

Foliation (inclined)

Synclinal axis

Direction of plunge

Glacial striae

Fault or shear zone

Test pit or trench

Trail, portage, or winter road

Power transmission line

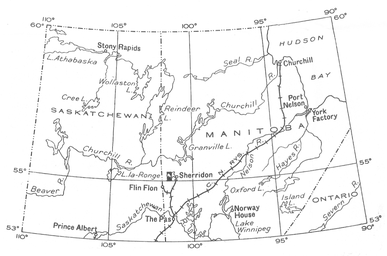
Muskeg, marsh

Geology by M. J. Frarey, 1948

Cartography by Geological Mapping Division, 1949

Base-map surveyed by Topographical Survey 1945

Approximate Magnetic Declination 22°-55′ West



PRELIMINARY MAP 49-9

COLLINS POINT

WEST OF PRINCIPAL MERIDIAN

MANITOBA

Scale 2 Inches to 1 Mile

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