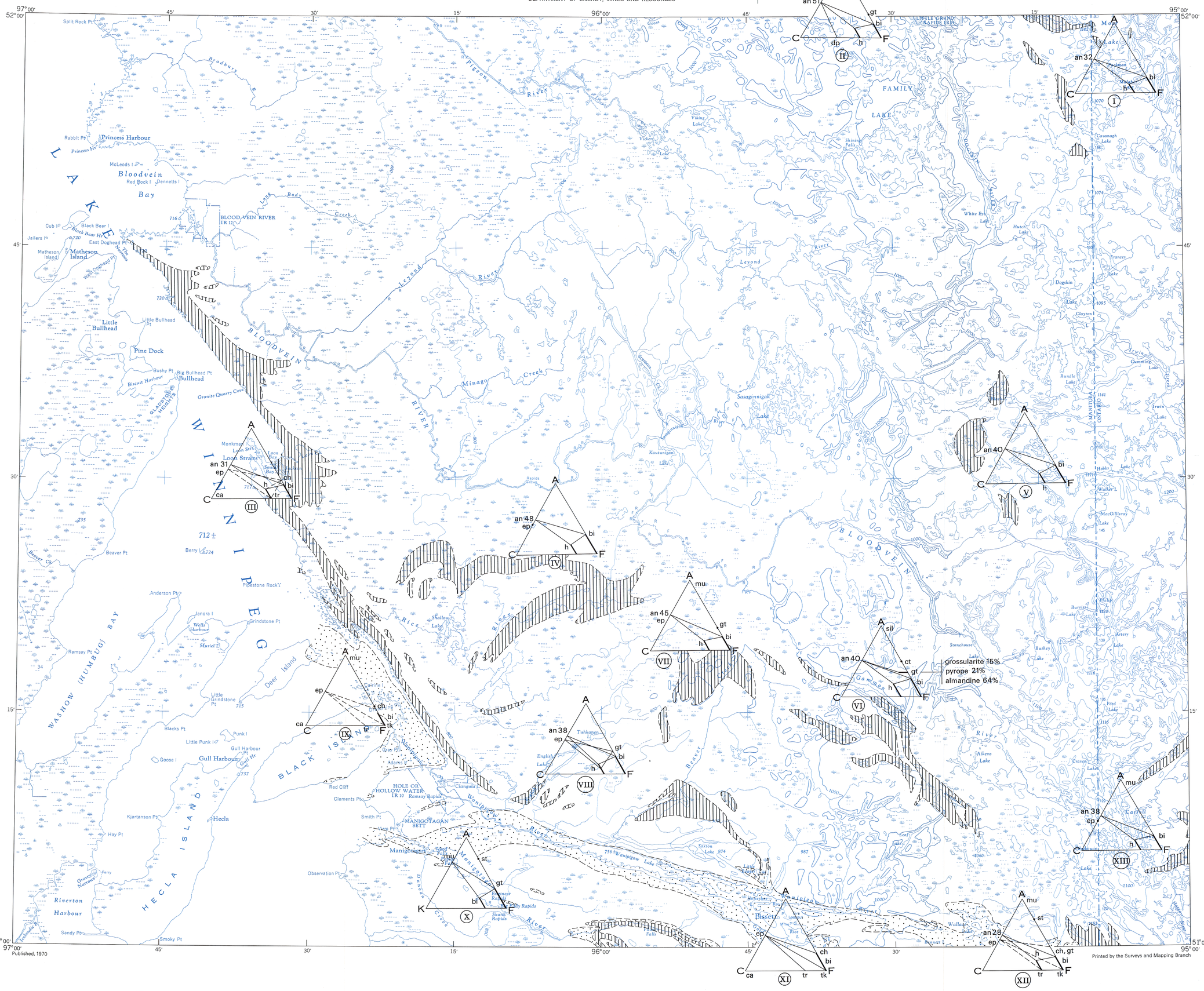
GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES



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LEGEND

Altered volcanic and sedimentary rocks of the Rice Lake Group

Coarsely crystalline hybrid lit-par-lit gneisses and schists

Domain . . . . . (XI)

Domain	Observed Mineral Association
I	biotite + hornblende + andesine + quartz ± alkali feldspar
II	hornblende + diopside + andesine + quartz; biotite + muscovite + garnet + oligoclase + quartz
III	biotite + hornblende + plagioclase + quartz ± epidote; (epidote + tremolite + chlorite + quartz); (epidote + tremolite + calcite)
IV	biotite + hornblende + andesine + quartz; hornblende + andesine + quartz ± epidote
V	biotite + hornblende + andesine + quartz
VI	biotite + hornblende + andesine + quartz; sillimanite + cordierite + garnet + andesine + quartz
VII	biotite + garnet + andesine + quartz ± muscovite; biotite + hornblende + andesine + quartz
VIII	biotite + hornblende + andesine ± quartz; amphibole + garnet + epidote (alteration of pyroxene gabbro, an 55)
IX	(muscovite + quartz); (epidote + chlorite + talc); (epidote + tremolite + calcite ± biotite)
X	biotite + garnet + muscovite + oligoclase + quartz; biotite + muscovite + staurolite + feldspar + quartz
XI	(green biotite + chlorite + epidote + quartz); (epidote + talc + tremolite /actinolite ± calcite)
XII	biotite + hornblende + oligoclase + quartz; (amphibole + muscovite feldspar + quartz ± epidote); (tremolite + talc + epidote); biotite + garnet + oligoclase + quartz ± alkali feldspar
XIII	biotite + muscovite + oligoclase + quartz ± alkali feldspar; (biotite + amphibole + epidote + quartz); (biotite + chlorite + garnet + epidote + quartz); hornblende + andesine + quartz

Tie-lines on ACF and AKF diagrams show observed mineral associations (grains touching); mineral associations in parentheses are from low-grade metamorphosed volcanic rocks.

Abbreviations

anorthite	an	garnet	gt
biotite	bi	hornblende	h
calcite	ca	muscovite	mu
chlorite	ch	sillimanite	sil
cordierite	ct	staurolite	st
diopside	dp	talc	tk
epidote	ep	tremolite	tr

Geology by I. F. Ermanovics, 1968

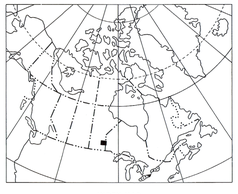
To accompany GSC Paper 69-42, by I. F. Ermanovics

Geological cartography by the Geological Survey of Canada

Base-map from parts of maps published at the same scale by the Surveys and Mapping Branch in 1963, 1965

Magnetic declination 1969 varies from 07° 8' easterly at centre of east edge to 00° 27' easterly at centre of west edge. Mean annual change decreasing 0.5' annually

Elevation in feet above mean sea-level



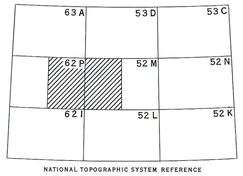
INDEX MAP

Figure 15. Contiguous mineral association of metasedimentary, metavolcanic and granitized gneissose rocks of the Hecla-Carroll Lake map-area, Manitoba and Ontario.

Scale 1:250,000

Miles 4 0 4 8 12 Miles

Kilometres 6 0 6 12 18 Kilometres



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

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