



LEGEND

PRELIMINARY SERIES

- PRECAMBRIAN**
- 11 Diabase, diorite, and gabbro dykes
  - 10 Leucogranite, leucogranodiorite, aplite, pegmatite
  - 9 Injection breccia (agmatite); 10 and possibly 8 enclosing 1, 7b, and 8e
  - 8 Grandiorite-tonalite-gneiss complex; 8a, biotite grandiorite-gneiss; 8b, biotite grandiorite; 8c, porphyritic biotite grandiorite; 8d, 8a with inclusions and relic fragments; 8e, hornblende tonalite-gneiss; 8f, 8e with inclusions and relic fragments; 8g, augen gneiss
  - 7 Basic and ultrabasic rocks; 7a, anorthositic and labradorite porphyry; 7b, gabbro and diorite, in places porphyritic, in places serpentinized; 7c, peridotite and serpentinite
  - 6 CROSS LAKE GROUP (4-6)
    - 6 Injection breccia (agmatite) and paragneiss; 6a, 30% to 75% of 10 in 4, 5 and 6b; 6b, quartz-feldspar-mica paragneiss and biotite-rich schist
  - 5 Quartzite, arkose, greywacke, argillite; minor pebble-conglomerate
  - 4 Conglomerate, pebble-conglomerate; minor grit, quartzite, arkose and greywacke
  - 3 HAYES RIVER GROUP (1-3)
    - 3 Transition rock: 1 and 2 containing more than 25% injected or secreted granite, pegmatite, or quartz; includes relic volcanic rocks within 8
  - 2 Sedimentary rocks: 2a, iron-formation; 2b, quartzite, greywacke, argillite, slate, and phyllite; 2c, conglomerate
  - 1 Volcanic rocks: 1a, crystal tuff, welded tuff; 1b, agglomerate, volcanic breccia; minor tuff; 1c, quartz eye schist and gneiss; 1d, dacite and related acid extrusions; 1e, andesite, hornblende-biotite-chlorite schist, amphibolite; in part contains up to 25% granitic material

- Drift-covered area . . . . .
- Area of sand . . . . .
- Geological boundary (defined, approximate, gradational) . . . . .
- Limit of ground traverse . . . . .
- Bedding, tops known (inclined, vertical, overturned) . . . . .
- Bedding, tops unknown (inclined, vertical) . . . . .
- Schistosity, layering in volcanic rocks (inclined, vertical, overturned, p indicates top determination by pillow structure) . . . . .
- Stratiform gneissosity; parallel alternating layers of different composition (inclined, vertical) . . . . .
- Gneissosity; parallel fabric caused by planar disposition of rock-forming minerals; to be distinguished from schistosity and stratiform gneissosity (inclined, vertical, dip unknown) . . . . .
- Lineation, plunge known; may be combined with other symbols . . . . .
- Drag-fold (arrow indicates plunge, relative movement suggested) combined with other symbols . . . . .
- Fault (approximate, assumed from lineaments) . . . . .
- Glacial striae (direction of ice-movement known) . . . . .
- Crevasse-filling kames . . . . .
- Drumlinoid ridges . . . . .
- Esker . . . . .
- Locality where age has been determined . . . . .
- Mineral occurrence . . . . .
- Pit, diamond drilling or other workings . . . . .

MINERAL SYMBOLS

Antimony . . . . .	.Sb	Molybdenum . . . . .	.Mo
Asbestos . . . . .	.asb	Silver . . . . .	.Ag
Copper (chalcopyrite) . . . . .	.Cu	Spodumene . . . . .	.spd
Gold . . . . .	.Au	Sulphides . . . . .	.s
Lead . . . . .	.Pb	Vanadium . . . . .	.V
Magnetite . . . . .	.mag	Zinc (sphalerite) . . . . .	.Zn

Geology by H. C. Horwood, 1931, 1932; T. L. Tanton, 1936; C. K. Bell, 1960

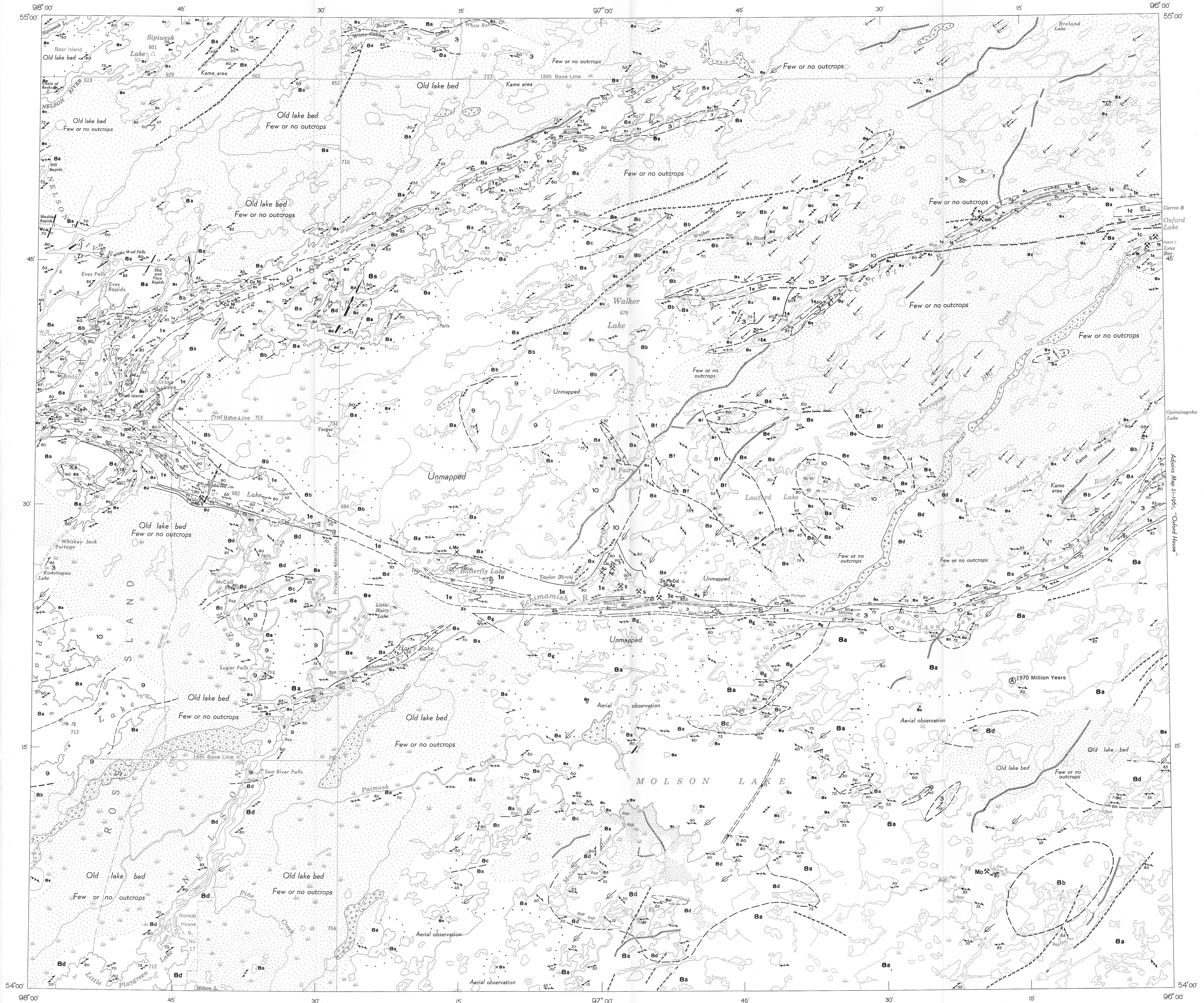
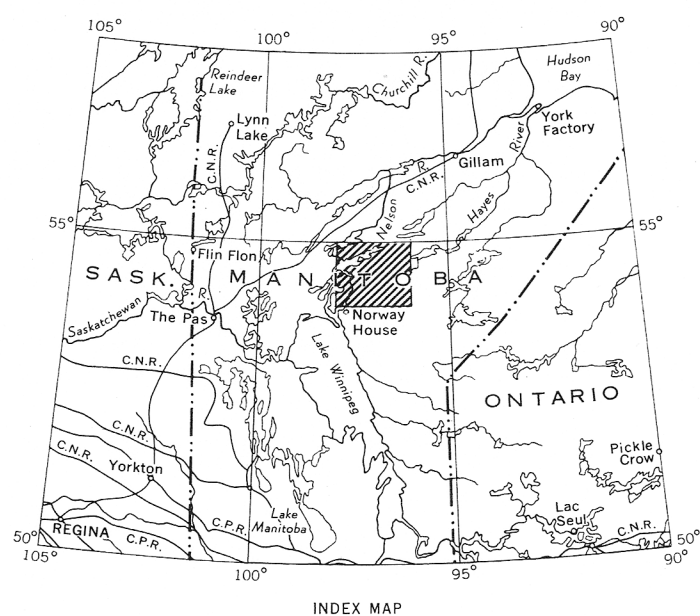
Geological compilation by C. K. Bell, 1961

- Building . . . . .
- Winter road . . . . .
- Trail or portage . . . . .
- Surveyed line . . . . .
- Indian Reserve boundary . . . . .
- Marsh . . . . .
- Fall and rapid . . . . .
- Height in feet above mean sea-level . . . . .

Cartography by the Geological Survey of Canada, 1961

Approximate magnetic declination, 9° 50' East

Air photographs covering this area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa



MAP 32-1961  
TO ACCOMPANY PAPER 61-22  
GEOLOGY  
CROSS LAKE  
MANITOBA

Scale: One Inch to Four Miles =  $\frac{1}{253,440}$  Miles

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Geographical names subject to revision

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