

LEGEND

- ARCHAEO-PROTEROZOIC**
- 16 Pink biotite granodiorite
  - 15 Gneissic diorite and syenodiorite, in part porphyritic
  - 14 Gneissic biotite granodiorite; 14a, foliated, very gneissic granodiorite
  - 13 Gneissic hornblende-biotite quartz diorite to granodiorite
  - 12 Grey gneissic hornblende diorite
  - 11 Quartz-eye granite; 11a, grey gneissic rocks derived mainly by granitization of basic volcanic rocks (1); age uncertain, possibly older than Kisseynew complex (5-8) (occurs on Map 1072A, "Elbow Lake" only)
  - 10 Meta-gabbro and meta-diorite; 10a, meta-pyroxenite, younger than 3, older than 10; relation to Kisseynew complex (5-8) unknown (occurs on Map 1072A, "Elbow Lake" only)
  - 9 Porphyritic rhyolite and rhyolite, in part younger than 13; relation to Kisseynew complex (5-8) unknown
  - 8 KISSEYNEW COMPLEX (5-8)  
Granodiorite; 8a, pegmatite (8a occurs on Map 1072A, "Elbow Lake" only)
  - 7 Granitized gneiss derived from both biotite gneiss (5) and hornblende-plagioclase gneiss (6)
  - 6 Hornblende-plagioclase gneiss, in part banded
  - 5 Biotite gneiss, in part garnetiferous
  - 4 Interbedded argillite and greywacke; 4a, hornblende-biotite schists and gneiss; relation to Kisseynew complex (5-8) unknown (4 occurs on Map 1072A, "Elbow Lake" only)
- ARCHAEO**
- 3 AMISK GROUP (1-3)  
Hornblende-plagioclase gneiss, probably altered volcanic rocks (occurs on Map 1072A, "Elbow Lake" only)
  - 2 Garnetiferous biotite schist and gneiss, garnetiferous staurolite gneiss, probably altered sediments; minor quartzite (occurs on Map 1072A, "Elbow Lake" only)
  - 1 Basic volcanic rocks, pillow lavas, minor acidic volcanic rocks, minor pyroclastic rocks, cherts, iron-formation; undifferentiated basic intrusions; 1a, basic volcanic rocks with thin bands of garnetiferous hornblende-plagioclase gneiss; 1b, banded hornblende-plagioclase gneiss derived from 1; 1c, coarse-grained amphibolite derived from 1 (1a occurs on Map 1072A, "Elbow Lake" only)
- A** Grey gneisses and migmatites derived from basic volcanic rocks (1, 3) and sedimentary rocks (2) by biotite granodiorite (14) (occurs on Map 1072A, "Elbow Lake" only)
- B** Grey to buff gneisses and migmatites derived from basic volcanic rocks (1) and sedimentary rocks (4a) by hornblende-biotite granodiorite (13) (occurs on Map 1072A, "Elbow Lake" only)
- Schistosity, gneissosity (inclined, vertical, dip unknown) .....  
Foliation (inclined, vertical, dip unknown) .....  
Lineation (direction and amount of plunge determined from linear elements) .....  
Drag-fold (form and direction of plunge) .....  
Fault or shear zone .....  
Glacial striae .....  
Mineral property ..... X

DESCRIPTIVE NOTES

The oldest part of the Amisk group (1) consists of basic volcanic rocks and their metamorphic equivalents. Pillow lavas are found locally; and bands of basic pyroclastic rocks and a little acidic volcanic rock occur. The basic volcanic rocks are dark greyish green, fine grained, and commonly schistose. South of Peterson Lake, the assemblage is highly sheared and chlorite-carbonate or chlorite-epidote schists are widespread. Around Syme, Fay, and Saddle Lakes the volcanic rocks are foliated with bands of hornblende alternating with bands of plagioclase (1b). Locally these gneisses contain garnet. Near Paton Lake the basic volcanic rocks are converted to coarse-grained amphibolites (1c) containing large porphyroblasts of hornblende in a groundmass of hornblende and plagioclase. Numerous intrusions of meta-diorite or gabbro have been mapped with the volcanic rocks and are probably roughly equivalent in age.

The narrow band of meta-sediments (4a) south of Saddle Lake continues east into the Elbow Lake map-area. They are younger than the Amisk rocks (1) but their relationship to the Kisseynew complex (5-8) is uncertain.

The Kisseynew complex (5-8) occurs only in the north. The biotite gneiss (5) is a fine-grained, light grey to brownish grey, thin-banded rock containing quartz, plagioclase and biotite; commonly it is garnetiferous. The hornblende-plagioclase gneiss (6) is a fine-grained, dark grey, well-banded rock consisting of alternating bands of hornblende and plagioclase with minor quartz. In both rock types, banding is contorted in shear zones. The granitized gneisses (7) vary in composition and texture, and grade into both granodiorite and biotite gneiss or hornblende-plagioclase gneiss. The granodiorite (8) is a pink, fine-grained, fairly gneissic rock with plagioclase, microcline, quartz, and minor biotite. North of Fay and Saddle Lakes, Kisseynew biotite gneisses (5) overlie Amisk rocks (1) without recognized intervening structural break, erosional unconformity, or angular discordance.

The gneissic hornblende diorite (12) is a grey weathering, fine- to medium-grained rock consisting of green hornblende, plagioclase, and less than 1 per cent biotite, quartz and epidote. The gneissic hornblende-biotite granodiorite (13) is grey on the weathered surface, and contains characteristic lavender-coloured quartz. The rock is a fine-grained aggregate of biotite and green hornblende, pink to reddish plagioclase, quartz, and minor amounts of chlorite and epidote. The gneissic biotite granodiorite (14) is a buff weathering, fine- to medium-grained rock consisting of flesh-coloured plagioclase, pink microcline, quartz, and biotite, with epidote and magnetite as minor constituents. It has a very strongly schistose phase (14a) with many inclusions of basic volcanic rock.

In the south these granitic rocks are cut by gneissic hornblende syenodiorite and diorite (15). This rock is grey weathering, fine to medium grained, and is characterized by prominent oriented laths of basic plagioclase which give the rock its gneissic structure. Some phases contain plagioclase phenocrysts.

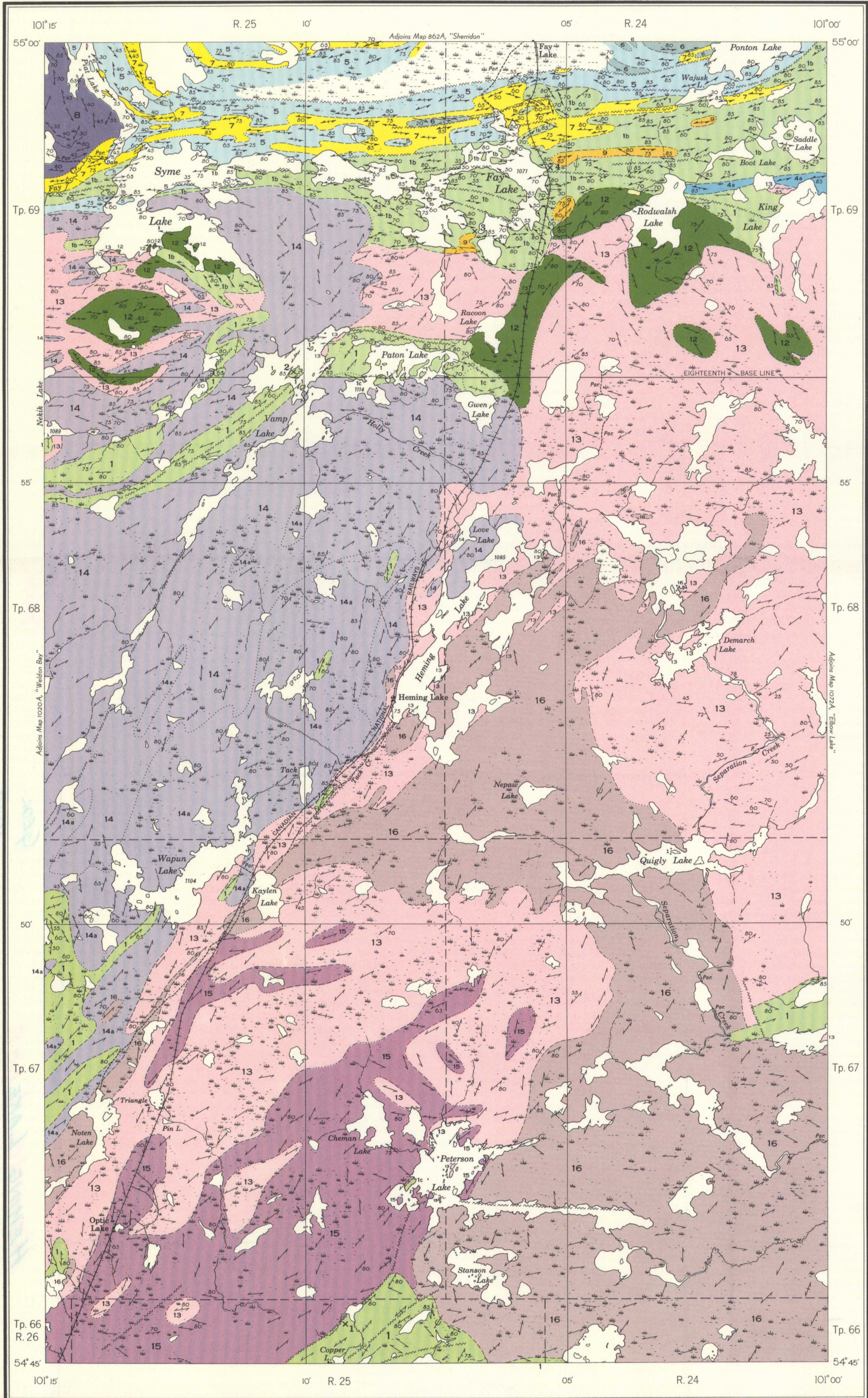
Dykes of pink weathering biotite granodiorite (16) are numerous near large bodies of the granodiorite. The rock is slightly gneissic to massive, pink, fine grained, and consists essentially of plagioclase, microcline, quartz and about 2 per cent biotite.

Amisk and Kisseynew strata are intensely folded. The general trend of the folds in the central and southern parts of the area is east of north. Folds in the Kisseynew (5-8) and Amisk rocks (1) in the north trend east and plunge east at about 30 degrees. These folds probably are overturned to the south similar to those of the Sherridon map-area adjoining on the north.

The faults are marked by zones of intense shearing. Commonly in volcanic rocks, chlorite and epidote are developed, whereas in biotite-gneiss and granite, white mica occurs in the sheared rock. Crenulation and drag-folding are common in the schists. Crushed quartz and feldspar occur along fault zones in granite and to a lesser extent in volcanic rocks. In the north, east-trending faults occur both in Kisseynew (5-8) and Amisk strata (1). The extension of one of these faults to the west is designated the Weidon Bay fault by Kalliokoski<sup>2</sup>. Minor structures on these faults such as striations or alignment of mineral grains, crenulations and drag-folds of schist in the fault zone, indicate thrusting from north to south. The rocks, particularly the biotite gneisses and granitized gneisses, are intensely sheared.

A study of the gold deposits and sulphide zones suggests that the most favourable areas for prospecting are those underlain by basic volcanic rocks. Particular attention should be given to sheared zones in these rocks and in sedimentary rocks, especially those in which chlorite is present in noticeable quantities.

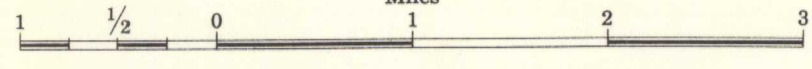
<sup>1</sup>Bateman, J. D., and Harrison, J. M. (1946): Sherridon, Manitoba; Geol. Surv., Canada, Map 862A, with descriptive notes.  
<sup>2</sup>Kalliokoski, J. (1949): Weidon Bay Area, Manitoba; Geol. Surv., Canada, Paper 49-5.



PUBLISHED, 1959

MAP 1071A  
**HEMING LAKE**  
WEST OF PRINCIPAL MERIDIAN  
MANITOBA

Scale: One Inch to One Mile =  $\frac{1}{63,360}$



COPIES OF THIS MAP MAY BE OBTAINED FROM THE DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA

REFERENCE

- Portage, trail or winter road
- Building
- Township boundary (surveyed)
- Township boundary (unsurveyed)
- Intermittent stream
- Ditch
- Marsh
- Reef or small island
- Height in feet above mean sea-level

Base-map compiled by the Topographical Survey, 1945.  
Cartography by the Geological Cartography Unit, 1958

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

NOT TO BE TAKEN FROM LIBRARY  
NE PAS SORTIR DE LA BIBLIOTHÈQUE



1071A