MINERAL DEVELOPMENT DIVISION
DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

DEPARTMENT OF ENERGY, MINES AND RESOURCES
DEPARTMENT OF REGIONAL ECONOMIC EXPANSION
GOVERNMENT OF CANADA

LEGEND

PROTEROZOIC

NEOHELIKIAN

Flowers River Igneous Suite (18, 19)

19 — *Peralkaline granite;* **19a,** *medium to coarse grained equigranular phase;* **19b,** *aphanitic to fine grained porphyritic phase.*

18 — *Felsic volcanic rocks;* **18p,** *quartz and quartz-feldspar porphyry;* **18f,** *massive to flow-banded felsite, locally containing a few quartz phenocrysts;* **18t,** *welded ash-flow tuff;* **18b,** *volcanic breccia and agglomerate.*

Olivine diabase dikes, may be equivalent to the Harp dikes.

PALEOHELIKIAN

Nain Igneous Complex (14 to 16)

16 — *Pyroxene-amphibole-fayalite granitoid plutons;* **16a,** *medium grained granite and minor granodiorite;* **16b,** *medium grained quartz syenite, quartz monzonite;* **16c,** *fine grained porphyritic equivalents of Units 16a and 16b;* **16d,** *hornblende-biotite and biotite granite, granodiorite.*

15 — *Intermediate plutons;* **15a,** *diorite, monzodiorite, quartz monzodiorite;* **15b,** *monzonite, quartz monzonite;* **15c,** *syenite, quartz syenite;* **15d,** *altered plagioclase cumulate.*

14 — *Gabbroid plutons;* **14a,** *Outer Border Zone - plagioclase-phyric olivine gabbro, gabbronorite, monzogabbro;* **14b,** *Inner Border Zone - olivine leucogabbro;* **14c to 14h,** *Cumulate Zone - cumulus phases are: plagioclase* **(14c),** *plagioclase-olivine* **(14d),** *plagioclase-olivine-clinopyroxene* **(14e),** *plagioclase-orthopyroxene* **(14f),** *olivine-oxide* **(14g),** *plagioclase-olivine-apatite* **(14h);** **14i,** *miscellaneous gabbro and norite dikes and sills.*

APHEBIAN (and older?)

Churchill Structural Province (6 to 13)

Altered diabase dikes, may be early Paleohelikian in age.

12 — *Metatonalite, metagranodiorite.*

11 — *Meta-anorthosite.*

10 — *Leucocratic biotite-hornblende granite and granodiorite orthogneiss;* **10a,** *medium to coarse grained granite to granodiorite augen gneiss;* **10b,** *fine to medium grained mylonitic granite to granodiorite gneiss;* **10c,** *medium grained granitoid-biotite-muscovite-garnet gneiss.*

9 — *Leucocratic biotite-garnet tonalite to granite orthogneiss;* **9a,** *coarse grained biotite-garnet tonalite to granite augen gneiss;* **9b,** *fine to medium grained biotite-garnet granite gneiss.*

8 — *Banded tonalite gneiss;* **8a,** *biotite-garnet tonalite gneiss, contains minor thin bands of quartzite and biotite schist;* **8b,** *biotite-hornblende tonalite gneiss, contains bands of amphibolite, diorite schist and minor marble;* **8c,** *medium grained unbanded tonalite to granodiorite gneiss.*

7 — *Diorite to quartz diorite gneiss and schist, includes bands of tonalite gneiss and amphibolite.*

6 — *Amphibolite, includes minor bands of diorite and tonalite gneiss and schist.*

M — *Banded and veinitic migmatite, formed by pretectonic injection of numerous dikes and stringers of leucogranite (correlated with Units 9 and 10) into Units 6 to 8.*

ARCHEAN

Nain Structural Province (1 to 5)

Diabase dikes, includes dikes of Aphebian age and younger.

4 — *Metagranite and metagranodiorite.*

3 — *Banded pyroxene-hornblende-biotite tonalite gneiss, locally grading to granite gneiss. Typically intruded by dikes and lenses of leucogranite pegmatite;* **3a,** *tonalite gneiss without inclusions of mafic gneiss;* **3b,** *tonalite gneiss containing numerous rafts and inclusion trains of mafic gneiss.*

2 — *Amphibolite, locally intruded by leucogranite pegmatite.*

1 — *Finely banded, fine grained gabbro to tonalite gneiss;* **1a,** *pyroxene-hornblende-biotite gabbro to diorite gneiss;* **1b,** *pyroxene-hornblende-biotite tonalite gneiss, locally containing bands of Unit 1a. May be in part equivalent to Unit 2a;* **1c,** *biotite-garnet tonalite gneiss, intruded by biotite-garnet leucogranite.*

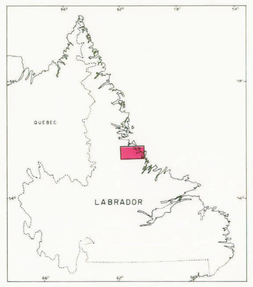
NOTE: THIS IS A COMPOSITE LEGEND FOR MAPS 81-136 AND 81-137 AND ALL UNITS DO NOT APPEAR ON EACH MAP.

SYMBOLS

- *Geologic boundary (observed, approximate, assumed, dip indicated, gradational)*
- *Primary igneous mineral lamination (horizontal, inclined, vertical)*
- *Primary igneous layering (horizontal, inclined, vertical)*
- *Primary igneous flow banding (horizontal, inclined, vertical)*
- *Primary igneous mineral lineation (inclined)*
- *Schistosity, slaty cleavage (inclined, vertical, S_1, S_2, S_3)*
- *Augen gneissosity, mylonitic foliation (inclined, vertical, S_1, S_2 S_3)*
- *Gneissic banding (inclined, vertical, S_1, S_2)*
- *Plunge of minor fold axis (F_1, F_2 F_3)*
- *Metamorphic mineral lineation (L_1, L_2)*
- *Minor shear planes (inclined, vertical, sense of movement indicated)*
- *Fault plane, shear zone (observed, assumed, movement direction indicated)*
- *Dike or sill (unit number and dip indicated, observed, assumed)*
- *Outcrop containing xenoliths (unit number of xenoliths indicated)* — △14
- *Intrusive agmatite (number of exotic unit indicated)* — ▲9
- *Outcrop containing autoliths* — ▽
- *Volcanic and intrusive breccia* — ▼
- *Single outcrop of one unit in another (unit number indicated)* — □15
- *Roof pendant (unit number indicated)* — ■15b
- *Mineral occurrence* — ×
- *Drift covered area*

Abbreviations

uranium	*u*
molybdenite	*mo*
fluorite	*fl*
chalcopyrite	*cp*
galena	*gn*
sphalerite	*sp*
pyrite	*py*
pyrrhotite	*po*
total count scintillometer anomaly	*ra*



INDEX MAP

MAP 81-136

Sheets 13N/10,11,12,13,14 and 15

Geology by J.D. Hill, C.A. White, M.S. Pinsent, J.M. Hill, A. Kerr; compiled by J.D. Hill, 1981.

To accompany report 82-6.

This map is subject to revision and correction.

Geological cartography by Mineral Development Division, Department of Mines and Energy, government of Newfoundland and Labrador.

Copies of this map may be obtained from the Publications and Information Section, Mineral Development Division, Department of Mines and Energy, P.O. Box 4750, St. John's, Newfoundland, A1C 5T7.

FLOWERS RIVER AREA
LABRADOR

SCALE 1:100,000 ÉCHELLE

Miles 1 0 1 2 3 4 5 Miles
Kilometres 1 0 1 2 3 4 5 6 Kilomètres

13N/6
& parts of 13N/08, 13N/06

Base map at scale 1:50,000 published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, 1971.

Approximate magnetic declination 1981, 31°30', decreasing about 9.7' annually.

Elevations in metres above mean sea level.

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