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LEGEND

PALEZOIC
12 Gabbro, olivine gabbro dikes, ophitic texture, coarse grained, generally north-northeast trending.

HADRYNIAN
11a Double Mer Formation
11c Conglomerate: rounded, subrounded and locally angular clasts of (mostly) gabbro and gneiss; rocks, in pebbly unsorted matrix.
11s Shale and arkose, well bedded, characteristically red and maroon weathering.
10 Fault and shear zone breccia and other cataclastic rocks. Extensively epidotized, hematitized; commonly interlayered mafic rocks and microgranite. Postdates Double Mer Formation in part.

NEOHELKIAN-HADRYNIAN
9a 9p
9e Equigranular diabase/metagabbro, gabbro/metagabbro dikes, medium and coarse grained, ophitic texture preserved.
9p Pleioclase porphyritic diabase/metagabbro dikes, medium grained, ophitic texture commonly well preserved.
8 Microgranite, apite and pegmatite dikes, and irregular intrusions; various ages.

HELKIAN (cf. ELSONIAN but probably includes earlier intrusions)
7a 7i 7m 7r 7y (includes Michael Gabbro)
7a Amphibolite or granite associated with metabasaltic rocks, commonly gneissiferous, medium grained, foliated to gneissic.
7i Leucogabbro, leucocratic, minor anorthosite, medium and coarse grained.
7m Monzonite grading into monzodiorite, medium and coarse grained.
7r Gabbro, norite, commonly olivine-bearing, minor ultramafite, medium to coarse grained.
7y Syenite grading into monzonite, quartz-bearing in part, medium to coarse grained.

(includes Mealy Mountains Intrusive Suite)
6a 6i 6m 6n
6a Alkali feldspar granite, grading into quartz monzonite, coarse grained.
6i Leucogabbro, leucocratic, anorthosite, fine grained to very coarse grained.
6m Monzonite to monzodiorite, coarse to very coarse grained.
6n Leucocratic, layered plagioclase-rich rock with minor garnet, pyroxene, hornblende and quartz, medium to coarse grained.

5a 5m 5y 5p 5g
5a Diorite, quartz diorite, grading into monzonite, hornblende-bearing, medium to coarse grained.
5m Monzonite, quartz monzonite grading into dioritic, granitic or syenitic varieties, clinopyroxene (and rarely orthopyroxene) bearing, medium to coarse grained.
5y Alkali feldspar granite, quartz syenite, syenite and monzonite, clinopyroxene-bearing in part, medium to coarse grained, characteristically pink weathering.
5p K-feldspar megacrystic granite to granodiorite, medium to coarse grained.
5g Biotite-rich granite to alkali-feldspar granite, medium to coarse grained.

HELKIAN (cf. KETILDIAN)

4a 4b 4g 4h 4p 4s
4a Amphibolite schists, lenses and layers, possibly remnants of former mafic dikes.
4b Biotite ± hornblende granodiorite, medium to coarse grained, weak to strongly foliated, generally not gneissic, includes granodiorite associated with 3d.
4g Biotite granite, medium to coarse grained, weak to strongly foliated, not gneissic.
4h Hornblende granite, grading into quartz syenite, medium to coarse grained, weak to strongly foliated.
4p Granodiorite to granite with K-feldspar megacrysts, medium to coarse grained, augen fabric in part.
4s Granodiorite to granite with Unit 2 relict, rare sillimanite and/or kyanite, extremely gneissiferous. Usually with K-feldspar megacrysts; equivalent to 4p in part.

HELKIAN and/or APHERIAN

3a 3d 3m
3a Amphibolite, melanitic, minor quartzofeldspathic leucosome, fine to coarse grained, foliated.
3d Diorite, quartz diorite, hornblende ± biotite, commonly with irregular quartzofeldspathic leucosome patches.
3m Monzonite, monzodiorite, quartz-bearing with hornblende ± biotite, irregular quartzofeldspathic leucosome patches.
2a 2c 2k 2z 2s 2u 2v 2w 2x 2z
2a Amphibolite with quartz-feldspar layers; schistose or gneissic.
2c Calc-alciferous rock, marble, Grossularite ± calcite ± diopside ± forsterite ± plagioclase assemblage, fine to coarse grained.
2k Kyanite-bearing quartz-feldspar schist and gneiss, fine to coarse grained, grades into muscovite schist.
2q Quartzite, meta-arkose, thin to thick bedded. Thinly foliated partings. Fine to coarse grained.
2s Sillimanite ± orthopyroxene-bearing quartz-feldspar schist and gneiss, pegmatitic in part, rusty weathering. Fine to coarse grained.
2u Muscovite-rich quartz-feldspar schist; pelitic. Fine to medium grained, rusty weathering.
2v Biotite-rich quartz-feldspar schist; pelitic. Fine to medium grained; some could be relict from partial melting.
2w Quartz-feldspar schist, psammite, metagreywacke, fine to medium grained, some fragmental fabric suggesting derivation from pyroclastic protolith in part.
2x Diabase: coarse grained to porphyritic, white weathering quartzofeldspathic relicts with mafic relict, homogeneous varieties have abundant relict lenses and schlieren; homogeneous varieties have relict more uniformly dispersed. Unrelict locally.
2z Cordierite-bearing schist and gneiss, fine to medium grained.

APHERIAN-HELKIAN (includes many of above units reworked during Grenville Orogeny, as well as earlier gneiss remnants)

1a 1b 1d 1g 1h 1p 1t
1a Amphibolite, commonly with quartz-feldspar veins and segregations, fine to medium grained, massive, foliated or gneissic.
1b Biotite granodiorite, minor hornblende, fine to coarse grained, foliated to gneissic.
1d Biotite-hornblende diorite to quartz diorite, fine to coarse grained, foliated to gneissic.
1g Biotite granite, minor muscovite, fine to coarse grained, foliated to gneissic.
1h Biotite-hornblende quartz diorite to granodiorite, fine to coarse grained, foliated to gneissic.
1p Biotite granodiorite with K-feldspar phenocrysts, porphyroblasts or augen, arkose texture in part, foliated to gneissic.
1t Biotite tonalite, minor hornblende, fine to coarse grained, foliated to gneissic.



SYMBOLS

Geological boundary: defined, approximate, assumed, ...

Assumed unconformity

Bedding: inclined, vertical, ...

Inferred primary igneous layering

Foliation: horizontal, inclined, vertical, dip unknown, ...

Foliation to discontinuous gneissosity: horizontal, inclined, vertical, dip unknown

Gneissosity: horizontal, inclined, vertical, dip unknown

Lineation: horizontal, inclined, inclined but plunge unknown

Combined planar and linear measurements

S, Z, M and W folds, axial trace indicated by fold limbs, plunge direction by arrow

As above, plunge unknown

Fold style reflecting individual structures

Refolded folds

Fault: approximate, assumed

Fault or thrust: assumed

Thrust: defined, approximate, assumed

Shear zone

Antiform, synform; plunge indicated by arrow

Overturned antiform, overturned synform

Area of thick overburden

Esker

Mineral occurrence

Data station

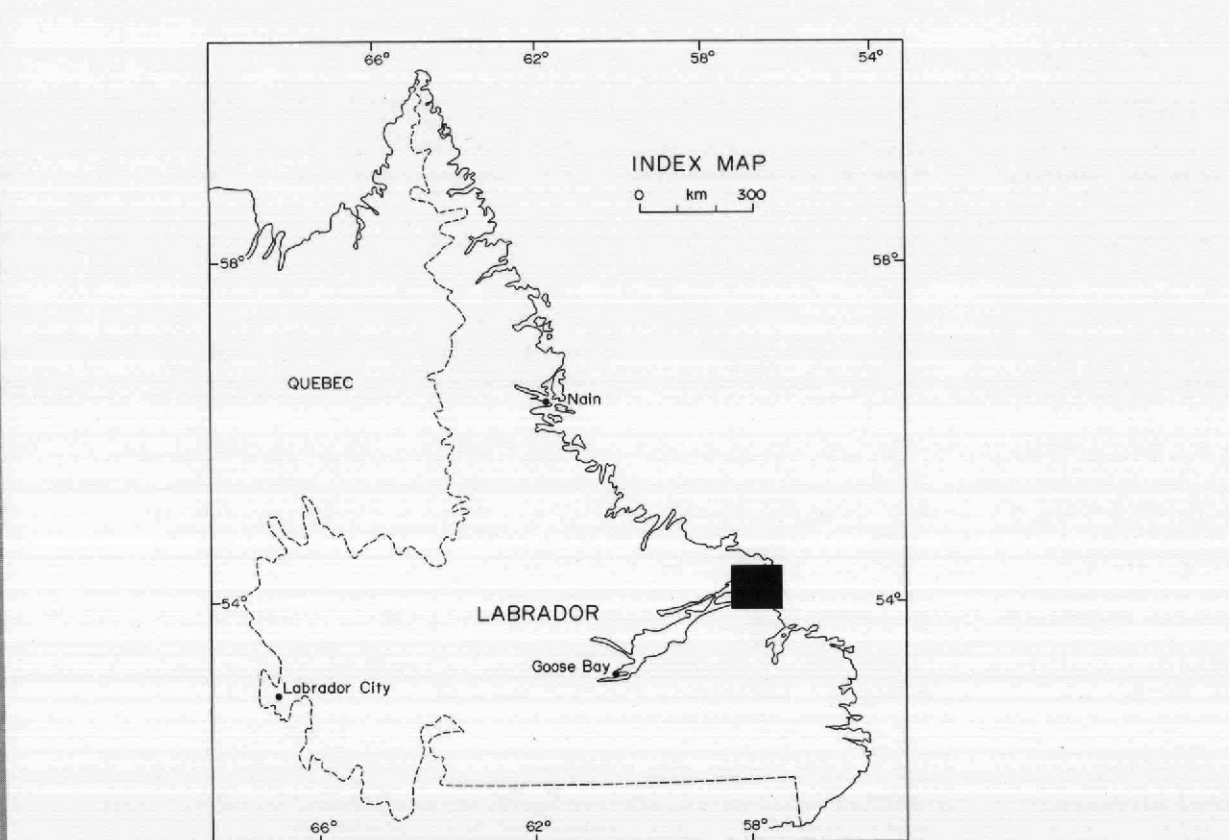
Geochronology Abbreviations

Rb-Sr Rubidium-strontium isochron
Sr Initial strontium ratio
K-Ar Potassium-argon date
W.R. Whole rock age
Musc. Muscovite age
Biot. Biotite age
Age interpreted as anomalously old
Age interpreted as reset during metamorphism

Mineral Abbreviations

Cu Chalcopyrite, malachite
Mo Molybdenite
Py Pyrite
U High radioactivity and/or secondary uranium mineralization

- NOTES:**
- Granitoid terminology follows IUGS recommendations (Streckeisen, 1976: Earth Science Reviews, Volume 12, pages 1-33).
 - Age relationships are not implied by the order in which units are presented within each group, and are poorly documented between groups.
 - This is a combined legend for 13J SE, 13I SW, 13G NE, 13H NE and 13H NW.
 - Units are indicated in order of decreasing abundance at each data station.
 - Unit symbols separated by slash, e.g. 3d/1d, indicate alternative designations, preferred unit given first.
 - Map users are encouraged to reinterprint map units with the same letter as possible equivalents, e.g. 7a = 1a.



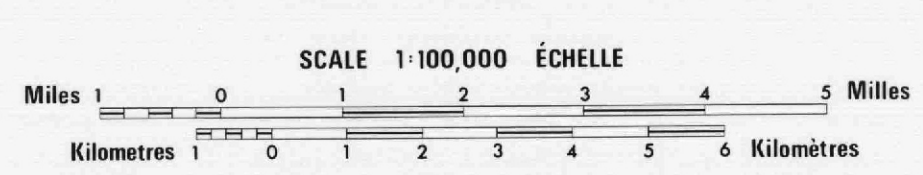
Geology on north side of Groswater Bay by C.F. Gower, 1979. Geology of remainder of area by C.F. Gower, N. Noel and R.T. Gillespie, 1980. Data from Stevenson (1970, G.S.C. Paper 69-48) have also been incorporated into the map.

This preliminary map may be subject to revision and correction.

Geological cartography by Drafting Section, 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.

GROSWATER BAY



MAP 83-43

Base map enlarged from 1:250,000 scale map published by Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa.

Magnetic declination at longitude 56° 00' in 1983 was 33° 09' westerly; annual magnetic change 4.1' easterly.

Elevations in feet above mean sea level.

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