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**LEGEND**

**PALEOZOIC**

12 Gabbro, olivine gabbro dikes, ophiolite sequence, coarse grained, generally north-northeast trending.

**HADRYNIAN**

11a 11s Double Mer Formation

11a Conglomerate: rounded, subrounded and locally angular clasts of (mostly) gabbro and granitic rocks in a finely variegated matrix.

11s Shale and arkose, well bedded, characteristically red and maroon weathering.

10 Fault and shear zone breccia and other calcareous rocks. Extensively sandstone, hematite, commonly interlayered mafic rocks and microgneiss. Postdates Double Mer Formation in part.

**NEOHELKIAN-HADRYNIAN**

9e 9p

9e Equigranular diabase/mesodiorite, gabbro/mesogabbro dikes, medium and coarse grained, ophiolite texture preserved.

9p Plagioclase porphyritic diabase/mesodiorite dikes, medium grained, ophiolite texture commonly well preserved.

8 Microgranite, apatite 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 granulite associated with metabasoid rocks, commonly gneissiferous, medium grained, foliated to gneissic.

7i Leucogabbro, leuconorite, minor anorthosite, medium and coarse grained.

7m Monzogabbro grading into monzoniorite, 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.

6g 6i 6m 6n (includes Mealy Mountains Intrusive Suite)

6g Alkali feldspar granite, grading into quartz monzonite, coarse grained.

6i Leucogabbro, leuconorite, anorthosite, fine grained to very coarse grained.

6m Monzonite to monzogabbro, coarse to very coarse grained.

6n Leucocratic, layered plagioclase-rich rock with minor garnet, pyroxene, hornblende and quartz, medium to coarse grained.

5d 5m 5p 5q

5d 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.

5p Alkali feldspar granite, quartz syenite, syenite and monzonite, clinopyroxene-bearing in part, medium to coarse grained, characteristically pink weathering.

5q K-feldspar megacrystic granite to granodiorite, medium to coarse grained.

**HELKIAN (cf. KETILDIAN)**

4a 4b 4g 4h 4p 4s

4a Amphibolite: skialite, lenses and layers, possibly remnants of former mafic dikes.

4b Biotite ± hornblende granodiorite, medium or coarse grained, weak to strongly foliated, generally not gneissic, includes granodiorite associated with 3d.

4g Biotite granite, medium or 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, even fabric in part.

4s Granodiorite to granite with Unit 2 matrix, rare sillimanite and/or kyanite, extremely garniferous. Usually with K-feldspar megacrysts; equivalent to 4p in part.

**HELKIAN and/or APHERIAN**

3a 3d 3m

3a Amphibolite: meladiorite, minor quartzofeldspathic leucosome, fine to coarse grained, foliated.

3d Diorite, quartz diorite, hornblende ± biotite, commonly with irregular quartzofeldspathic leucosome patches.

3m Monzonite, monzoniorite, quartz-bearing with hornblende ± biotite, irregular quartzofeldspathic leucosome patches.

2a 2c 2k 2q 2s 2u 2v 2w 2x 2z

2a Amphibolite with quartz-feldspar layers; schistose or gneissic.

2c Calc-alkaline rock, marble, Grossularite ± calcite ± diopside ± forsterite ± plagioclase assemblages, 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. Thin phyllosilicate 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 restite from partial melting.

2w Quartz-feldspar schist, psammite, metagraywacke, fine to medium grained, some fragmental fabrics suggesting derivation from pyroclastic protolith in part.

2x Diabase: coarse grained to pegmatitic, white weathering quartzofeldspathic rocks with mafic restite. Inhomogeneous varieties have abundant restite lenses and schlieren, homogeneous varieties have restite more uniformly dispersed. Unferruginous 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 1r

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, seriate texture in part, foliated to gneissic.

1r 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**

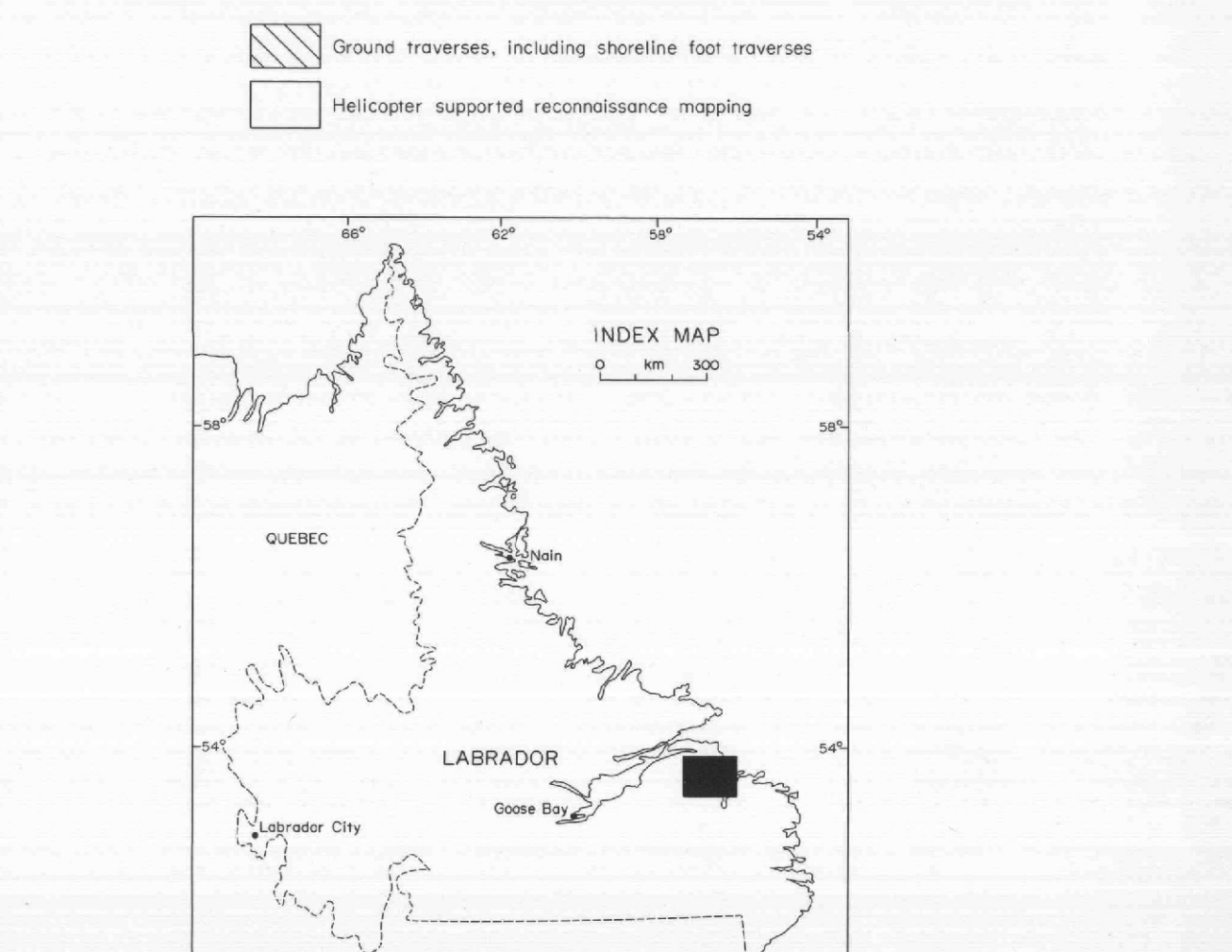
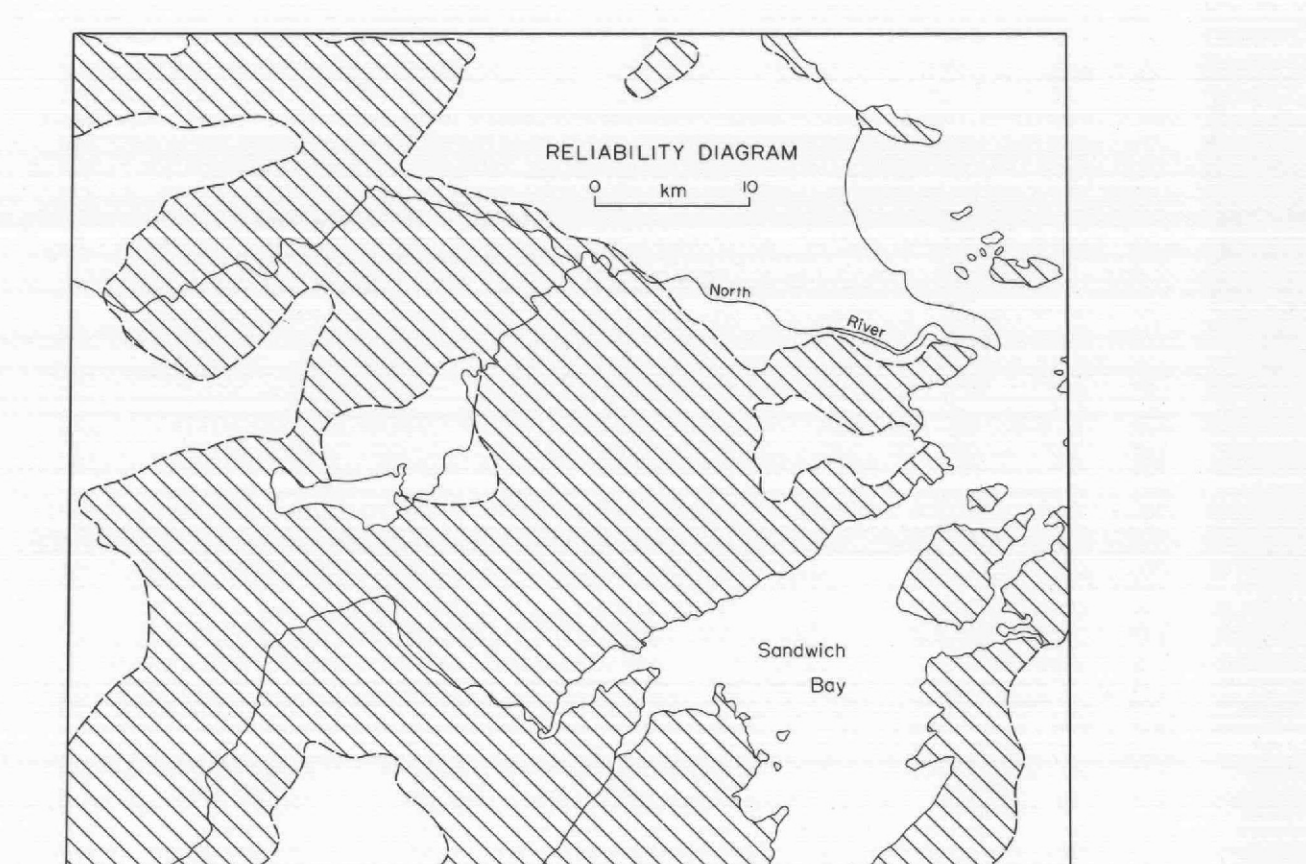
Cu Chalcocyprite, malachite

Mo Molybdenite

Py Pyrite

U High radioactivity and/or secondary uranium mineralization

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

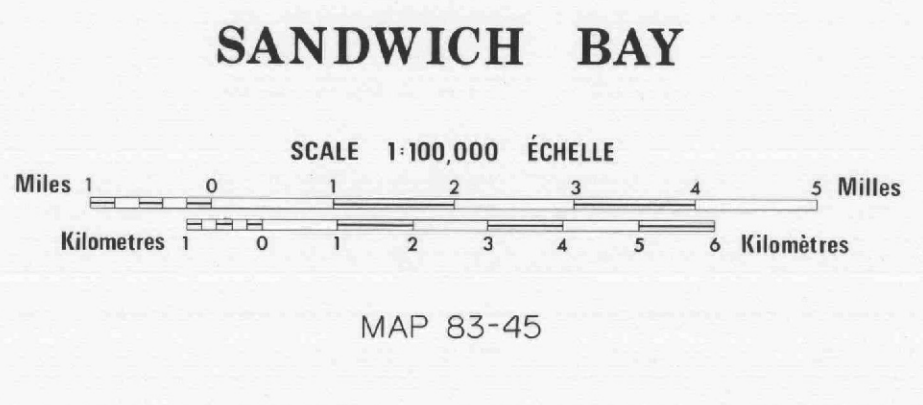


Geology by C.F. Gower, N. Noel and R.T. Gillespie, 1980, and C.F. Gower, G. Finn and V. Owen, 1981. Data from Cherry (1978, Newfoundland) and Department of Mines, Map 78176) have also been incorporated into the map.

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.



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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