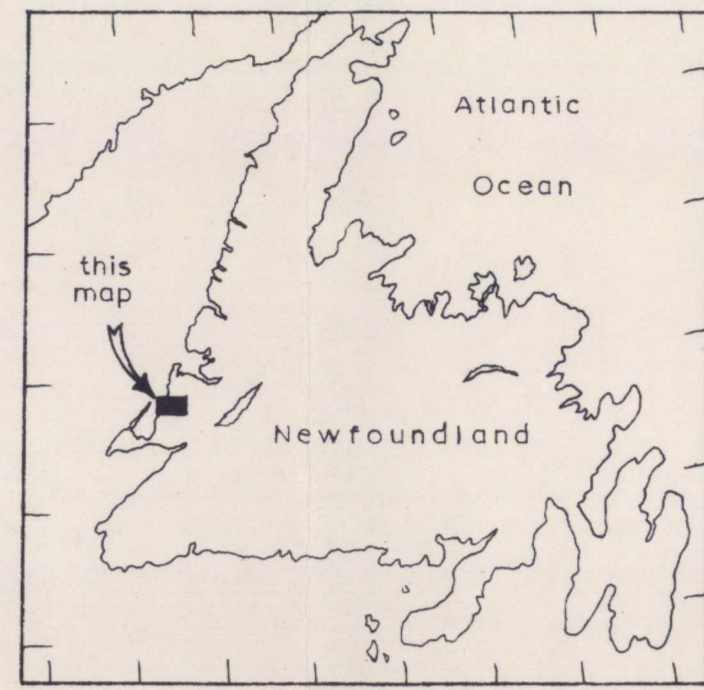
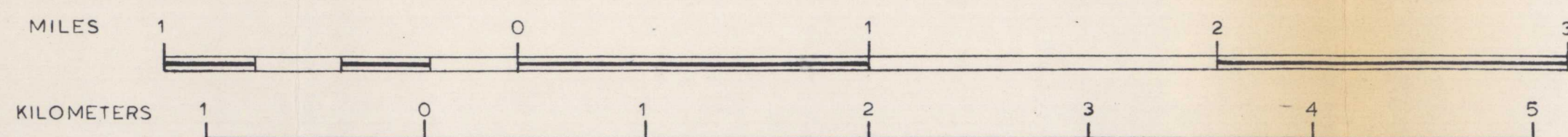
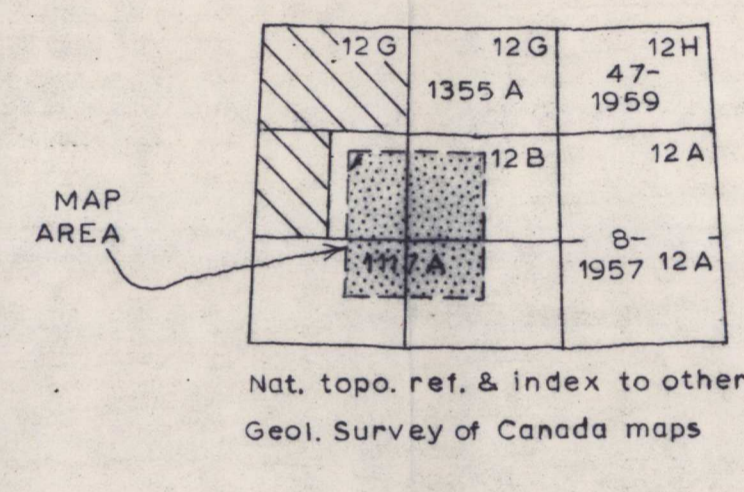


GEOLOGY of the LEWIS HILLS MASSIF  
western Newfoundland

Scale 1:25,000



INDEX MAPS



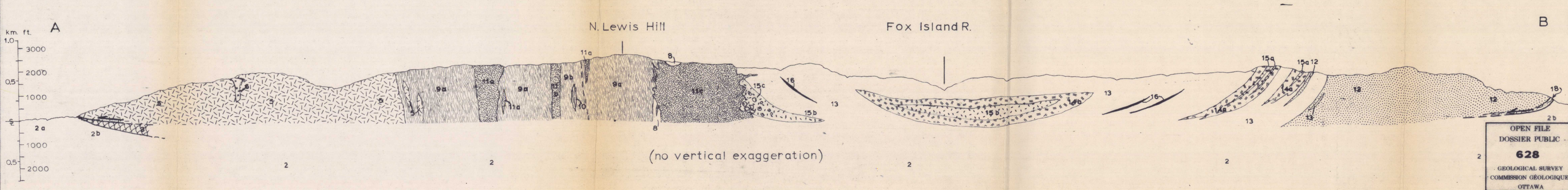
Explanation

- EARLY MIDDLE OROGENIC**
- Basal Metamorphic Aureole: Garnetiferous amphibolite, banded black to green amphibolite, perthitiferous mafic and pelitic schists; tectonic underthrusting welded to ultramafic rocks (12).
- LOWER OROGENIC AND OLDER**
- BAY OF ISLANDS OPHIOLITE (12-17)
- Coarse-grained hornblende-gabbro, often strongly rodolitized. Occurs as dikes and sills in ultramafic rocks in the vicinity of Mines Pond.
- Medium-grained hornblende- and clinopyroxene-rich diorite with lesser chromite and clinopyroxene. Chromite-rich rocks are strongly altered.
- Coarse-grained, strongly layered, variably altered gabbro, troctolite, feldspathic diorite and feldspathic wehrlite. 15a, strongly linedated and weakly foliated metamorphic tectonites; 15b, strongly foliated and weakly linedated cumulates; 15c, poorly non-combed(?) gabbro and anorthositic troctolite, found only near the contact with the Mount Barren Assemblage; units 15a and 15b both occur in "megaseams" of inter-layered gabbroic and clinopyroxene-rich ultramafic rocks. All are locally cut by anorthositic sills and veins.
- Coarse-grained, unaltered wehrlite and clinopyroxene, often strongly layered. 16a, strongly linedated and weakly foliated tectonites; 16b, foliated and weakly linedated cumulate-layered gabbroic and clinopyroxene-rich ultramafic rocks.
- Massive diorite with minor layers and veins of chromite and clinopyroxene-rich diorite and feldspathic diorite. All rocks are and weakly foliated to the east and south but foliated and/or weakly linedated to the west and north. Locally contains small chromite concentrations.
- Coarse-grained harzburgite with lesser diorite and orthopyroxene and minor hornblende metamorphic tectonites. Includes numerous veins of diorite and pegmatitic orthopyroxene. All rocks are commonly serpentinitized. Locally contains chromite concentrations.
- LOWER OROGENIC AND OLDER**
- MOUNT BARREN ASSEMBLAGE (8-11)**
- Therollite, feldspathic hornblende, wehrlite, and minor pyroxenite; 11a, strongly foliated and/or linedated ultramafic rocks in strongly serpentinitized lenses; 11b, serpentinite melange, including blocks of metagabbro and metabasite with tectonic contact in a matrix of schistose serpentinite; 11c, weakly serpentinitized coarse-grained and often porphyritic ultramafic intrusives with fine-grained margins. Units 11a and b have clearly been derived from rocks similar to those of unit 11c.
- Quartz-feldspathic gneiss with discontinuous layers of dark grey amphibolite and lenses of mafic gneiss, all strongly linedated and locally foliated.
- 9a, Coarse-grained, dark green to black, linedated, mafic gneiss and amphibolite, often strongly banded and foliated; 9b, fine-grained, grey amphibolite, with weak lineation, includes lesser coarse-grained amphibolite often in lenses; 9c, coarse-grained to mylonitic harzburgite, wehrlite and lesser pyroxenite, often with strong lineation and weaker foliation. 9a and b grade into and have been derived from Little Port Assemblage gabbro (unit 7).
- Mafic, granitic and gabbroic including anorthositic and pyroxenite veins and minor(?) pyroxene and hornblende hornfels.
- LOWER OROGENIC AND OLDER**
- LITTLE PORT ASSEMBLAGE (5-7)**
- Altered mafic sheet-dike complex (0-Mt diabase dikes) includes screen of variably altered gabbro to metagabbro and minor intrusive bodies and net veins of tonalite to trondhjemite.
- Medium to coarse-grained grey to pink quartz-diorite, locally well foliated and linedated.
- Gabbro, hornblende-gabbro, metagabbro, often weakly layered and/or weakly foliated. Degree of deformation and metamorphism increases eastward.
- LOWER OROGENIC OR OLDER**
- OLD MINE COVE ASSEMBLAGE:** Multiply deformed mafic schists with minor, thin, fine-grained, white to light grey carbonate lenses. Mafic schists are locally cut by undeformed mafic dikes.
- LOWES OROGENIC(?)**
- SKENNER COVE FORMATION:** Unaltered dark grey to reddish-grey pillow lava, agglomerate, and scoria; pink trachyte; mixed mafic volcanic rock/carbonate breccias; minor red sandstone, siltstone, and limestone.
- LOWER OROGENIC AND EARLY MIDDLE OROGENIC(?)**
- HUMBER AND SUPERGROUP (UNDIVIDED):** 2a, blow-me-down Brook Formation, grey to buff aphanitic gneiss and interbedded dark grey, grey-green, and red shale; 2b, chaotic sedimentary rocks (clams). Includes blocks of nearly all lithologies found in the structurally higher allochthon of igneous and metamorphic rocks and in some places gneiss or carbonate blocks. Blocks are set in a matrix of chaotically deformed dark grey, grey-green or red shale to slate.
- ST. GEORGE FORMATION:** Thin bedded limestones.

- Minor Intrusive Bodies (inclined, vertical, horizontal)**
- Diabase and porphyritic (plagioclase) diabase dikes, variably altered, may or may not have chilled margins. Undeformed in the Little Port Assemblage (units 5-7) but highly deformed and metamorphosed in the Mt. Barren Assemblage (units 9 and 10).
- Coarse-grained pyroxenite or diorite veins in ultramafic rocks of the Bay of Islands Ophiolite (units 12 and 13).
- Coarse-grained altered wehrlite, troctolite, and gabbro dikes and sills, some pegmatitic, in Bay of Islands Ophiolite (units 13-15).
- Fine- to medium-grained green to grey-green hornblende-gabbro dikes with chilled margins in the Coastal Complex (units 3-11) but no apparent chilled margins in the Bay of Islands Complex (units 13-15).
- High-strain zones with anastomosing foliation
- Geological boundary (defined, approximate, assumed)
- Bedding in sedimentary rocks (inclined, overturned, vertical)
- Compositional layering in igneous rocks (inclined, vertical, horizontal)
- Compositional layering in metamorphic tectonites (inclined, vertical, horizontal)
- Gneissosity (inclined, vertical, horizontal)
- Foliation, schistosity, cleavage (inclined, vertical, horizontal)
- Shear zones (inclined, vertical, horizontal)
- Joints, fractures (inclined, vertical, horizontal)
- Stretching lineation (plunging, horizontal, vertical)
- Mineral lineation (plunging, horizontal, vertical)
- Brag fold (in compositional layering, gneissosity)
- Minor fold (axis plunging, horizontal, vertical)
- Minor fault with strike or upper unit (defined, approximate)
- Mylonitic high-strain zone
- High-angle fault, with direction of dip and sense of strike-slip or dip-slip (defined, inferred)
- Direction of transport in structural cross-sections
- Chromatic occurrence
- Melange in Humber Area Supergroup
- Pegmatitic rocks

Car track  
Trail  
Lighthouse  
Horizontal control point  
Intermittent stream  
Marshes and bogs  
Contours (50 foot intervals)  
Elevations in feet above sea level  
Approximate magnetic declination, 1972, 27°50' west, decreasing 3.7" annually  
Base-map cartography by the Geological Survey of Canada  
Geological cartography by J.A. Karson  
Geology of the entire Lewis Hills Massif and surrounding areas by J.A. Karson 1971-1972. Geology of the Mount Barren-One Peak area by S. O'Connell. Reconnaissance geology of the sedimentary assemblages south of the Lewis Hills Massif and the location of some chromite occurrences after E.H. Smith (1959).

CROSS-SECTION along line A-B



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