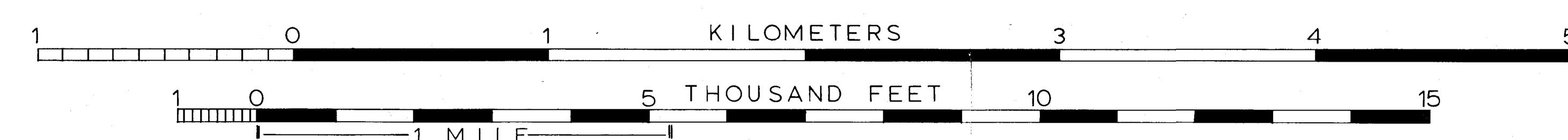


GEOLOGICAL MAP OF THE NORTH ARM MASSIF, NORTHERN PART BAY OF ISLANDS OPHIOLITE COMPLEX NEWFOUNDLAND, CANADA

APPROXIMATE SCALE 1:15840 // CONTOUR INTERVAL 250 FEET



LITHOLOGY

- | | |
|---|---|
| S Red and green cherts, brown mudstone, grey siltstone. | d Dunite. |
| B Basalt pillows, breccia, and flows, with intercalated red chert, argillite. | UI Layered cumulate ultramafics: dunite, pyroxenite, wehrlite, harzburgite, chromitite. |
| D Dolerite in the form of 100% dikes. | H Harzburgite. |
| Dp Massive plagioclase porphyritic dolerite. | Red (hematitic) weathering basalt breccia. |
| DG Gabbro containing greater than 10% dolerite dikes. | Veined and fractured dolerite and gabbro, gabbro in part foliated, altered to amphibolite. |
| Gi Coarse-grained isotropic gabbro. | Gray to black "sugary" weathering, foliated and lineated amphibolite. |
| dx Dolerite xenoliths. | A Basal metamorphic aureole: pyroxene-hornblende-garnet gneiss and garnet amphibolite. |
| t Trondhjemite, diorite | Ob Blow-Me-Down Brook Formation. |
| qd Diorite | Om Cleaved mélange of basalt, shale, grey and red sandy limestones. |
| u Troctolitic plugs. | |
| ux Ultramafite xenoliths. | |
| g Gabbro pegmatite. | |
| GI Layered cumulate gabbro; 0.1 to 1 m scale layering, increasing definition downward. | |
| GUI Interlayered cumulate gabbro, olivine gabbro, troctolite, less than 90% gabbro, 1 to 1 m scale layering. | |

MAP AND STRUCTURAL SYMBOLS

- | | | | | |
|--|--------------|---|--------------|--|
| Topographic contours; contour interval 250 ft. (75.1 m). | Inclined 34° | Strike and dip of: 1) sediment layering in sediments and basalts; 2) diffuse compositional layering in isotropic gabbro; 3) cumulate layering in layered gabbros/ultramafics. | Inclined 45° | Strike and dip of foliation defined by mineral flattening; weak and/or non-penetrative. |
| Ponds and streams. | Vertical 34° | | Vertical 45° | |
| Outcrop. | Inclined 67° | Strike and dip of pillow basalts (plane parallel to X and Y ellipsoid axes). | Inclined 34° | Strike and dip of foliation defined by mineral flattening; strong and/or penetrative. |
| Slump faults and fissures, tics on downthrown side. | Vertical 67° | | Vertical 34° | |
| Primary lithological contact, with estimated dip. | Inclined 70° | Strike and dip of basalt lava flows. | Inclined 12° | Strike and dip of ductile shear zones. |
| Gradational or diffuse lithological contact. | Vertical 70° | | Vertical 12° | |
| Secondary lithological contact. | Inclined 85° | Strike and dip of dolerite dikes and dike contacts. | Vertical 85° | |
| | Vertical 85° | | | |
| | Inclined 23° | Strike and dip of non-doleritic injections: trondhjemite or diorite, gabbro, gabbro-diorite (in harzburgite). | Inclined 23° | Trend and plunge of lineation defined by weak preferred orientation of minerals. |
| | Vertical 23° | | Vertical 23° | |
| | Inclined 42° | Strike and dip of gabbro/gabbro contacts. | Inclined 42° | Trend and plunge of fold and boudin axes of orthopyroxenite injections in harzburgite tectonite. |
| | Vertical 42° | | Vertical 42° | |
| | | | | Horizontal axis of thrust related folding. |
| | | | | Large, steeply dipping ductile shear zone separating basalts and dolerite, of oceanic origin. |
| | | | | Trace of faults, with measured and estimated dips. |
| | | | | Trace of crush zones (cataclasis, intense phacoidal cleavage), with measured dip. |
| | | | | Trace of basal thrust, with teeth on overthrust sheet. |
| | | | | Location of extensive sulfide veining. |
| | | | | Location of epidote veining. |
| | | | | Location of thin trondhjemite injections. |
| | | | | Manganiferous basalt. |
| | | | | Mine adit (abandoned). |

STRUCTURAL (CROSS) SECTIONS ARE ON A SEPARATE SHEET.



BASE MAP IS DERIVED FROM AREAL FOREST TYPE MAPS (1:15840) AND ENLARGEMENTS OF AREAL TOPOGRAPHIC SHEETS (1:50000), EXTENSIVELY AUGMENTED WITH AIR PHOTOGRAPH IMAGE. NOT TO BE USED FOR SURVEY PURPOSES.
 GEOLOGY BY ERIC ROSENCRANTZ, BASED ON FIELD WORK DONE DURING THE SUMMERS OF 1976, 1977 AND 1978. D. MEYER AND K. SCANLON PROVIDED ASSISTANCE IN THE FIELD IN 1977 AND 1978 RESPECTIVELY.
 SMITH (1958) REFERS TO C. H. SMITH, 1958, BAY OF ISLANDS IGNEOUS COMPLEX, WESTERN NEWFOUNDLAND. GEOLOGICAL SURVEY OF CANADA, MEMOIR 290, 132pp. PLUS MAPS.