

GEOLOGY OF THE SOUTHERN PART OF THE ARCHEAN HUNT RIVER GREENSTONE BELT, HOPEDALE BLOCK (NAIN PROVINCE), EASTERN LABRADOR (PART OF NTS MAP AREA 13N/7).

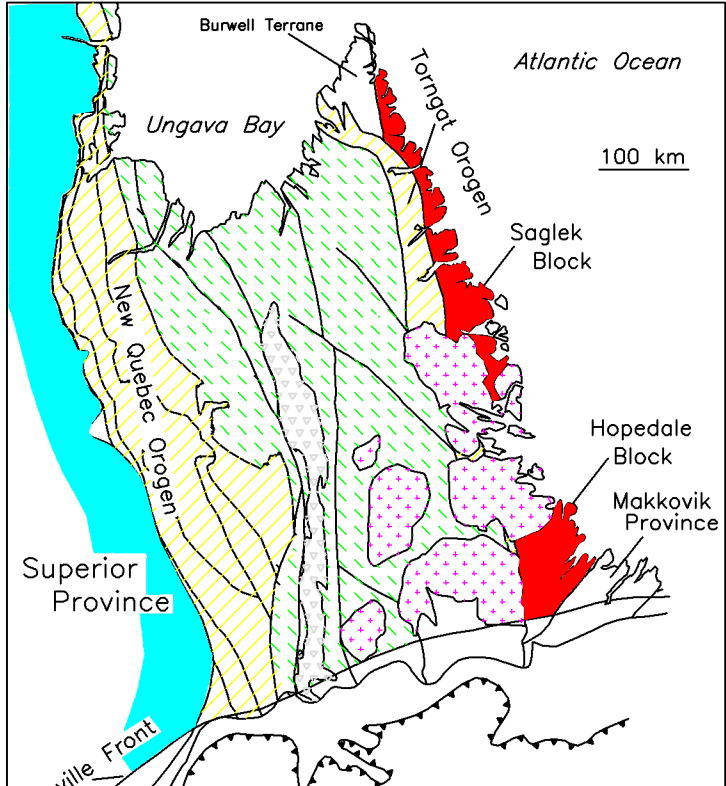
OPEN FILE: 013N/07/0073  
OPEN FILE MAP: 97-05

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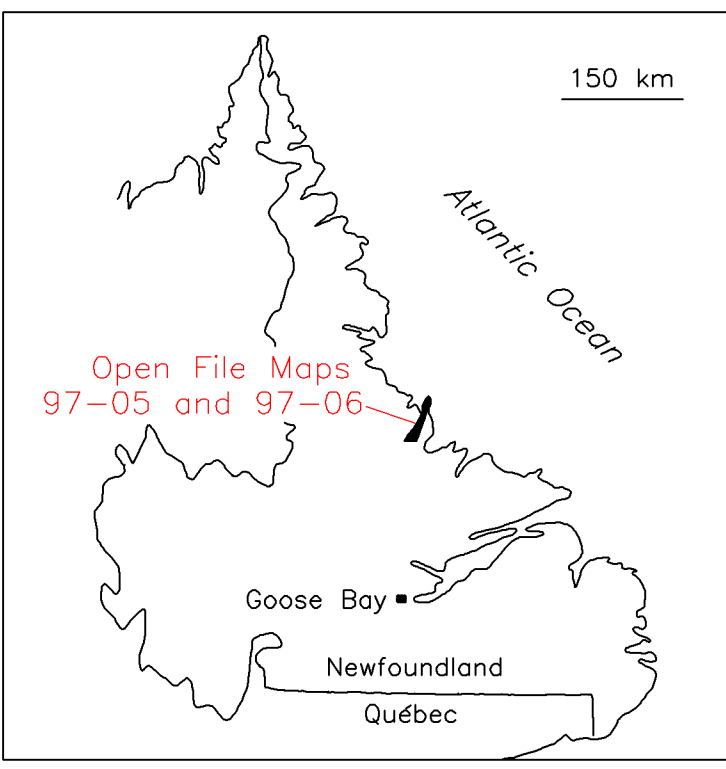
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This is a map of the bedrock geology of the southern part of the Hunt River greenstone belt, Hopedale Block (Nain Province), eastern Labrador (part of NTS map area 13N/7), Newfoundland Department of Mines and Energy, Geological Survey, Open File Map 97-05, which covers the northern part of the greenstone belt.

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Principal pre-1.8 Ga tectonic elements of Laurentia in northern Labrador and adjacent northeastern Quebec.



Index map showing location of Open File Maps 97-05 and 97-06.

- MESOPROTEROZOIC**
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- ARCHEAN AND PALEOPROTEROZOIC**
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  - 3 New Quebec and Torngat orogens
  - 4 reworked Archean and Paleoproterozoic rocks ("Roe crust")
- ARCHEAN**
- 5 Superior Province
  - 6 Nain Province

- LEGEND**
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- 2 Kikieravak Dykes: diabase and gabbro dykes
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- 3 Pegmatite: white-weathering pegmatite containing local muscovite, biotite and tourmaline
  - 4 Monzogranite and granodiorite: white- to grey- to pink-weathering, foliated monzogranite and granodiorite containing biotite
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- HUNT RIVER GREENSTONE BELT**
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  - 11 quartzite
  - 12 felsic volcanic rocks
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  - 15 Ultramafic rocks
  - 16a Peridotite: brown- to orange-weathering, variably serpenitized peridotite
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  - 18a Amphibolite: black to grey-weathering amphibolites containing variable amounts of hornblende, plagioclase and local garnet, biotite, and quartz; contains local relics of volcanic pillows and pillow breccias
  - 18b Amphibolite equivalent to subunit 1 containing abundant, thin (<2m) layers of ultramafic schist

- SYMBOLS**
- geological contact (approximate)
  - - - fault (approximate)
  - thin (10-20 m) ultramafic unit (Units 2a and 2b)
  - mafic dyke (Paleoproterozoic or Mesoproterozoic)
  - foliation, generation 1st, 2nd, vertical foliation
  - gneissosity, vertical gneissosity
  - foliation in ductile shear zone
  - mineral elongation direction
  - minor fold axis
  - massive or no structural data



Other Metasedimentary Rocks

The greenstone belt includes several occurrences of quartzite (e.g. UTM 654520E, 617547N and 652732E, 616801N; see Open File Map 97-06). The quartzites are white or grey weathering. They are extensively recrystallized, extremely fine grained, and consist of coarse quartz. The rocks are commonly massive, although they locally have layering defined by 1 to 10-cm-thick alternating grey- and white-weathering layers. The quartzites are poorly exposed in the field and their field relations are not well understood. In both locations, they occur in contact with ultramafic rocks, although it does not appear that the quartzites occur along basement-cover contacts.

The greenstone belt also includes several occurrences of chert - magnetite iron formation and associated cherty metasedimentary rocks. The iron formation consists of alternating 1 to 2 cm layers of grey- to white-weathering quartz and black-weathering magnetite. The associated cherty metasedimentary rocks are white- to tan-weathering, extremely fine-grained and have layering defined by colour variations, and occur in 1 to 2-m thick layers.

**ORTHOGNEISS AND VARIABLY FOLIATED GRANITOID INTRUSIONS: UNIT 5**

Unit 5 was not mapped in detail. It is a composite unit including foliated and gneissic granitoid rocks of unknown ages. It consists mainly of white- to grey-weathering granitoid orthogneiss and migmatite composed of variable proportions of quartz, feldspar, biotite and hornblende. The rocks are medium-grained and have granoblastic textures. Gneissosity is defined by mafic layers alternating with quartzofeldspathic layers, or by layers of white-weathering medium to coarse-grained gneiss. Locally, gneissic rocks are gradational into foliated metatolalite.

The gneisses described above are derived from tonalite to granite intrusions that have been metamorphosed to upper-amphibolite facies. Some of the gneisses, which do not contain inclusions of Hunt River greenstone belt rocks and are not in obvious intrusive contact with the greenstone belt, are provisionally interpreted to be older than the volcanic rocks.

However, some of these "old" gneisses contain locally deformed, pink-weathering leucocratic units that may postdate the volcanic rocks. In contrast, there are also occurrences of white-weathering tonalite orthogneiss that unequivocally intrude the greenstone belt.

**QUARTZ DIORITE, MONZODIORITE AND DIORITE: UNIT 6**

The volcanic rocks are intruded by pre-metamorphic intrusions of grey-weathering quartz diorite to monzodiorite containing hornblende and biotite. The rocks are medium grained, have granoblastic textures and are foliated. A sample of these rocks has been dated by U-Pb zircon to be ca. 2890 Ma (Watensteyn et al., 1995).

**MONZOGNEISS AND GRANODIORITE: UNIT 7**

In the northern part of the greenstone belt (see Open File Map 97-06), the volcanic rocks are intruded by white- to grey-weathering foliated and locally gneissic granodiorite to granite. The rocks are white- to tan-weathering, fine to medium grained and have granoblastic textures.

**PEGMATITE: UNIT 8**

The volcanic rocks are cut by late syn- to post-metamorphic dikes of pegmatite that are up to 50 m thick. The pegmatite is white weathering, medium to coarse grained and has a granitic texture. It consists of variable proportions of quartz and feldspar, and contains minor amounts of biotite. Coarse-grained tourmaline occurs locally. The pegmatite dikes cross-cut the principal foliation and metamorphic layering in the host volcanic rocks. However, some dikes have a weak foliation.

**STRUCTURE AND METAMORPHISM IN THE HUNT RIVER GREENSTONE BELT**

Contacts between units in the greenstone belt and occurrence of primary compositional layering are overprinted and transposed by a variably developed northeast- to north-northeast-striking foliation designated as S1 and defined by alignment of the metamorphic minerals. Isoclinal closures (F1) of unit contacts and primary compositional layering are observed rarely. The S1 foliation is deformed and folded into open to tight, northeast- and south-southwest-trending F2 folds that are the main, map-scale folds in the belt. Superposition of F2 folds on F1 structures produced local outcrop-scale Type II and Type III folds of the compositional layering. There does not appear to be a foliation associated with F2 folding. The ages of F1 and F2 folds are unknown, although field relations suggest that both are approximately synchronous with the peak of metamorphism.

The area contains several syn- to late syn-metamorphic high-strain zones which occur locally along the contacts between the greenstone belt and Unit 5 granitoid gneisses. The shear zones overprint the S1 foliation in the volcanic rocks and deform thin (<10 m), pink- to white-weathering gneissic sheets, which are included in Unit 5. The gneissic sheets are gneissosity in the host rocks. The shear zones are narrow (<10 m), and their kinematics and significance are unclear.

North-northeast- and east-northeast-striking faults deform the greenstone belt and surrounding granitoid units. The faults are mainly unexposed and are inferred from offsets of granitoid - greenstone belt contacts and topographic lineaments. Mylonitic granite and highly strained amphibolite occur along one of the north-northeast-striking faults, demonstrating that at least some of these structures are ductile high-strain zones which formed contemporaneous with amphibolite-facies metamorphism.

The greenstone belt is everywhere metamorphosed to amphibolite facies. Mafic rocks contain the assemblage hornblende, plagioclase, garnet and biotite. Gneissosity occurs locally in mafic rocks. Pelitic metasedimentary rocks contain garnet, biotite and sillimanite or cordierite; muscovite occurs locally. Metamorphic assemblages are consistent throughout the belt, although rocks in the northern parts of the belt. These differences may be due to the fact that the northern part of the belt is principally a narrow septum enclosed by syn- to late-syn-metamorphic granitoid intrusions, which may have locally elevated temperatures and produced slightly different metamorphic features than seen in the south.

**REFERENCES**

Watensteyn, H.A., Word, R.J., Krogh, T.E., and Ermanovics, I.  
1995: Preliminary U-Pb geochronology of the Ingrid Group and basement rocks in the Hopedale Block in the vicinity of the southern Nain craton/Torngat Orogen boundary. In Word, R.J., and Word, J. (compilers), Eastern Canadian Shield Orogens: Offshore Transect (ECSO07), Transit Meeting (November 1994), The University of British Columbia, LITHOPROBE Secretariat, Report 45, pages 206-216.

**DESCRIPTION OF ARCHEAN UNITS**

**MAFIC VOLCANIC ROCKS: UNIT 1**

The Hunt River greenstone belt consists mainly of amphibolite defined as subunit 1a. The rocks are black- to grey-weathering and composed of variable proportions of hornblende and plagioclase. Garnet, biotite and quartz are common accessory minerals. A minor amount of subunit 1a rocks are amphibolites composed almost entirely of hornblende; some rocks having coarse-grained hornblende porphyroblasts. Metamorphic textures in subunit 1a rocks are schistosity, although there are rare occurrences of relic volcanic features including pillows and pillow breccia. Subunit 1a rocks are typically fine to medium grained, and variably foliated. They occur as massive to weakly foliated amphibolites and as very strongly foliated mafic schists. The fact that relic pillows and pillow breccia occur locally, and that the unit is interlayered with pelitic metasedimentary rocks and local iron formation suggests the majority of subunit 1a amphibolites are derived from mafic volcanic rocks.

Subunit 1a also includes a subordinate amount of mainly medium grained and massive to weakly foliated amphibolite that contains relic gabbro textures. The metabasaltic rocks occur in well defined 1- to 3-m-thick layers, presumed to be relic dykes that intrude the previously described amphibolites. They also occur in isolated outcrops, which could be parts of relatively small (1- to 5-m-thick) dykes or larger intrusive bodies of undefined dimensions. The metabasaltic bodies are inferred to represent subvolcanic mafic intrusions that are approximately the same age as the mafic volcanism. Gabbro dykes may have fed mafic flows that were higher in the volcanic sequence.

A minor proportion of Unit 1 consists of compositionally layered rocks having alternating black and tan- or brown-weathering layers and defined as subunit 1b. Layering thickness varies from a few centimetres up to 1 m. The black rocks are similar to subunit 1a amphibolites, whereas the tan- or brown-weathering rocks have a mafic to ultramafic composition, and mainly consist of tremolite- or diopside and plagioclase. Locally, layers consisting of >80% coarse-grained diopside occur. Layering is inferred to be a metamorphic accentuation of original compositional layering; the protolith being a layered sequence of mafic and ultramafic flows.

**ULTRAMAFIC ROCKS: UNIT 2**

Ultramafic rocks occur throughout the Hunt River greenstone belt, although they are most common in the southern and central parts of the belt (i.e. in NTS area 13N/7; see Open File Map 97-05). They occur as 10 to 30-m thick layers that can be mapped continuously for several kilometres or as lens-shaped units that can be traced for only a few hundred metres.

In general, Unit 2 consists of two types of ultramafic rocks distinguished on the basis of compositional and textural differences. The first general common type (subunit 2a) is a tan- to brown- to orange- to green-weathering rock that is typically black on the fresh surface. Subunit 2a rocks are massive to weakly foliated, very fine grained and inferred to consist mainly of variable proportions of olivine, pyroxene, serpentine and minor amounts of quartz, plagioclase, biotite, garnet, and local andalusite stand out as prominent ridges. Locally, subunit 2a rocks have a "layered" structure defined by 1 to 2-cm thick tan or brown or black layers, or they have a structure defined by thin (1 to 2 cm) anastomosing tan- or grey-weathering zones. The "layering" and anastomosing structures are inferred to be a metamorphic feature produced during serpenitization.

Grey- to tan-weathering ultramafic schists defined as subunit 2b are the second type of ultramafic rock present in the belt. These rocks are very fine grained, foliated and are characteristically soft. The schistosity units are recessive and commonly occur in narrow valleys or along the sides of valleys. The rocks consist mainly of tremolite or talc. Thin (<1 m) layers of orange-weathering magnetite-rich rocks are contained in the ultramafic schists, locally.

Unit 2 ultramafic rocks are commonly associated with thin (1 to 2 m) sulphidic pelitic metasedimentary units, which are not shown on the map because of their small size. In addition, a few of the lens-shaped ultramafic units can be traced into sulphidic metasedimentary units, which themselves can be traced for several hundred metres and subsequently into the next lens-shaped ultramafic unit. The common field association between the ultramafic rocks and metasedimentary rocks, and a single occurrence of spinifer textures suggests the ultramafic rocks represent ultramafic flows. The continuous ultramafic units probably represent widespread sheet flows whereas the lens-shaped units may be restricted, channelized flows. A single occurrence of felsic volcanic rocks, which are interlayered with ultramafic rocks in the southern part of the belt, is consistent with the flow model.

**PELTIC AND SEMI-PELTIC METASEDIMENTARY ROCKS: UNIT 3**

Thin (1 to 5 m) units of pelitic and semi-pelitic rocks occur throughout the belt but are most common in the central and southern areas (i.e. in NTS area 13N/7; see Open File Map 97-05). Unit 3 rocks are commonly rusty-weathering and consist of variable proportions of quartz, plagioclase, biotite, garnet, and local sillimanite or cordierite. Pyrite and magnetite are common accessory minerals. Retic bedding occurs locally and is defined by 5 to 10-cm-thick layers containing relatively large amounts of biotite alternating with biotite-poor quartzofeldspathic layers. These rocks are interpreted to be derived from wacke or wacke-mudstone turbidites.

In several locations the unit includes rocks consisting of relatively high amounts of garnet, magnetite and pyrite (e.g. UTM 64089E, 612869N; see Open File 97-05). These rocks are interpreted to be metamorphosed silicate-sulphide facies iron formation.

Unit 3 also includes a 2-m thick layer of felsic volcanic rocks that is interlayered with pelitic metasedimentary rocks in the southern part of the belt (UTM 64119E, 613168N; see Open File Map 97-05). The felsic rocks are white on both fresh and weathered surfaces, are extensively recrystallized, very fine grained, and foliated. The rocks do not contain relic volcanic textures. The felsic layer can be traced for several hundred metres.

**QUARTZOFELDSPATHIC METASEDIMENTARY ROCKS: UNIT 4**

Quartzofeldspathic rocks defined as Unit 4 occur locally along the contacts between mafic volcanic rocks (Unit 1) and granitoid gneisses (Unit 5), and as 20 to 30-m thick units bound by mafic volcanic rocks. The Unit 4 rocks are grey weathering and composed of variable amounts of quartz, plagioclase, biotite, garnet and local hornblende. Layering in the rocks is defined by thin (1 to 2 cm) block layers, containing relatively large amounts of biotite and hornblende, alternating with 5 to 20-cm-thick quartzofeldspathic layers. The rocks are mainly fine grained and have granoblastic textures, although medium- to coarse-grained garnet porphyroblasts are common.

In several locations, Unit 4 quartzofeldspathic rocks are interlayered with thin (<1 m), rusty-weathering pelitic layers. The pelitic rocks are similar to those of Unit 3, although one outcrop contains abundant muscovite and sillimanite. In the southern part of the belt, Unit 4 rocks are associated with a 2-m thick ultramafic unit (e.g. UTM 64070E, 612724N; see Open File Map 97-05), which occurs along the western contact between Unit 4 rocks and Unit 1 mafic volcanic rocks.

The origin of Unit 4 quartzofeldspathic rocks is equivocal, although they are provisionally interpreted as being of sedimentary origin. The fact that they are locally interlayered with pelitic metasedimentary rocks is consistent with this interpretation. In locations where Unit 4 rocks occur along the contact between mafic volcanic rocks and granitoid gneisses (Unit 5), it is possible that they represent rocks that were deposited unconformably on a pre-volcanic basement. However, it may also be possible that some of the Unit 4 quartzofeldspathic rocks could be derived from felsic volcanic rocks. Alternatively, some of the rocks occurring along the contact between the mafic volcanic rocks and Unit 5 gneisses could be highly strained and extensively recrystallized equivalents of Unit 5 mafic volcanic rocks.

**NOTES ON THE LEGEND**

Stratigraphic markers and detailed geochronological data from the Hunt River greenstone belt are lacking. Thus, stratigraphy is undefined and the numbers assigned to lithologic units in the greenstone belt do not imply stratigraphic order or relative-age relations. Field relations demonstrate that granitoid units 6 and 7 intrude the greenstone belt, although their relative age to each other is unknown.

Unit 5 is a composite unit that was not mapped in detail. It includes foliated and gneissic granitoid rocks that may be younger than the Hunt River greenstone belt, and possibly equivalent to rocks defined as units 6 and 7, and gneissic rocks that are older than the Hunt River greenstone belt. Pre-Hunt River greenstone belt rocks may be equivalent to the >3.1 Ga Maggo Gneiss. However, some of the granitoid gneisses inferred to be older than the Hunt River greenstone belt are themselves composite units, which may include components of metamorphic leucosome and younger intrusive phases that postdate deposition of the volcanic rocks.

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**PELTIC AND SEMI-PELTIC METASEDIMENTARY ROCKS: UNIT 3**

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The gneisses described above are derived from tonalite to granite intrusions that have been metamorphosed to upper-amphibolite facies. Some of the gneisses, which do not contain inclusions of Hunt River greenstone belt rocks and are not in obvious intrusive contact with the greenstone belt, are provisionally interpreted to be older than the volcanic rocks.

However, some of these "old" gneisses contain locally deformed, pink-weathering leucocratic units that may postdate the volcanic rocks. In contrast, there are also occurrences of white-weathering tonalite orthogneiss that unequivocally intrude the greenstone belt.

**QUARTZ DIORITE, MONZODIORITE AND DIORITE: UNIT 6**

The volcanic rocks are intruded by pre-metamorphic intrusions of grey-weathering quartz diorite to monzodiorite containing hornblende and biotite. The rocks are medium grained, have granoblastic textures and are foliated. A sample of these rocks has been dated by U-Pb zircon to be ca. 2890 Ma (Watensteyn et al., 1995).

**MONZOGNEISS AND GRANODIORITE: UNIT 7**

In the northern part of the greenstone belt (see Open File Map 97-06), the volcanic rocks are intruded by white- to grey-weathering foliated and locally gneissic granodiorite to granite. The rocks are white- to tan-weathering, fine to medium grained and have granoblastic textures.

**PEGMATITE: UNIT 8**

The volcanic rocks are cut by late syn- to post-metamorphic dikes of pegmatite that are up to 50 m thick. The pegmatite is white weathering, medium to coarse grained and has a granitic texture. It consists of variable proportions of quartz and feldspar, and contains minor amounts of biotite. Coarse-grained tourmaline occurs locally. The pegmatite dikes cross-cut the principal foliation and metamorphic layering in the host volcanic rocks. However, some dikes have a weak foliation.

**STRUCTURE AND METAMORPHISM IN THE HUNT RIVER GREENSTONE BELT**

Contacts between units in the greenstone belt and occurrence of primary compositional layering are overprinted and transposed by a variably developed northeast- to north-northeast-striking foliation designated as S1 and defined by alignment of the metamorphic minerals. Isoclinal closures (F1) of unit contacts and primary compositional layering are observed rarely. The S1 foliation is deformed and folded into open to tight, northeast- and south-southwest-trending F2 folds that are the main, map-scale folds in the belt. Superposition of F2 folds on F1 structures produced local outcrop-scale Type II and Type III folds of the compositional layering. There does not appear to be a foliation associated with F2 folding. The ages of F1 and F2 folds are unknown, although field relations suggest that both are approximately synchronous with the peak of metamorphism.

The area contains several syn- to late syn-metamorphic high-strain zones which occur locally along the contacts between the greenstone belt and Unit 5 granitoid gneisses. The shear zones overprint the S1 foliation in the volcanic rocks and deform thin (<10 m), pink- to white-weathering gneissic sheets, which are included in Unit 5. The gneissic sheets are gneissosity in the host rocks. The shear zones are narrow (<10 m), and their kinematics and significance are unclear.

North-northeast- and east-northeast-striking faults deform the greenstone belt and surrounding granitoid units. The faults are mainly unexposed and are inferred from offsets of granitoid - greenstone belt contacts and topographic lineaments. Mylonitic granite and highly strained amphibolite occur along one of the north-northeast-striking faults, demonstrating that at least some of these structures are ductile high-strain zones which formed contemporaneous with amphibolite-facies metamorphism.

The greenstone belt is everywhere metamorphosed to amphibolite facies. Mafic rocks contain the assemblage hornblende, plagioclase, garnet and biotite. Gneissosity occurs locally in mafic rocks. Pelitic metasedimentary rocks contain garnet, biotite and sillimanite or cordierite; muscovite occurs locally. Metamorphic assemblages are consistent throughout the belt, although rocks in the northern parts of the belt. These differences may be due to the fact that the northern part of the belt is principally a narrow septum enclosed by syn- to late-syn-metamorphic granitoid intrusions, which may have locally elevated temperatures and produced slightly different metamorphic features than seen in the south.

**REFERENCES**

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1995: Preliminary U-Pb geochronology of the Ingrid Group and basement rocks in the Hopedale Block in the vicinity of the southern Nain craton/Torngat Orogen boundary. In Word, R.J., and Word, J. (compilers), Eastern Canadian Shield Orogens: Offshore Transect (ECSO07), Transit Meeting (November 1994), The University of British Columbia, LITHOPROBE Secretariat, Report 45, pages 206-216.

**DESCRIPTION OF ARCHEAN UNITS**

**MAFIC VOLCANIC ROCKS: UNIT 1**

The Hunt River greenstone belt consists mainly of amphibolite defined as subunit 1a. The rocks are black- to grey-weathering and composed of variable proportions of hornblende and plagioclase. Garnet, biotite and quartz are common accessory minerals. A minor amount of subunit 1a rocks are amphibolites composed almost entirely of hornblende; some rocks having coarse-grained hornblende porphyroblasts. Metamorphic textures in subunit 1a rocks are schistosity, although there are rare occurrences of relic volcanic features including pillows and pillow breccia. Subunit 1a rocks are typically fine to medium grained, and variably foliated. They occur as massive to weakly foliated amphibolites and as very strongly foliated mafic schists. The fact that relic pillows and pillow breccia occur locally, and that the unit is interlayered with pelitic metasedimentary rocks and local iron formation suggests the majority of subunit 1a amphibolites are derived from mafic volcanic rocks.

Subunit 1a also includes a subordinate amount of mainly medium grained and massive to weakly foliated amphibolite that contains relic gabbro textures. The metabasaltic rocks occur in well defined 1- to 3-m-thick layers, presumed to be relic dykes that intrude the previously described amphibolites. They also occur in isolated outcrops, which could be parts of relatively small (1- to 5-m-thick) dykes or larger intrusive bodies of undefined dimensions. The metabasaltic bodies are inferred to represent subvolcanic mafic intrusions that are approximately the same age as the mafic volcanism. Gabbro dykes may have fed mafic flows that were higher in the volcanic sequence.

A minor proportion of Unit 1 consists of compositionally layered rocks having alternating black and tan- or brown-weathering layers and defined as subunit 1b. Layering thickness varies from a few centimetres up to 1 m. The black rocks are similar to subunit 1a amphibolites, whereas the tan- or brown-weathering rocks have a mafic to ultramafic composition, and mainly consist of tremolite- or diopside and plagioclase. Locally, layers consisting of >80% coarse-grained diopside occur. Layering is inferred to be a metamorphic accentuation of original compositional layering; the protolith being a layered sequence of mafic and ultramafic flows.

**ULTRAMAFIC ROCKS: UNIT 2**

Ultramafic rocks occur throughout the Hunt River greenstone belt, although they are most common in the southern and central parts of the belt (i.e. in NTS area 13N/7; see Open File Map 97-05). They occur as 10 to 30-m thick layers that can be mapped continuously for several kilometres or as lens-shaped units that can be traced for only a few hundred metres.

In general, Unit 2 consists of two types of ultramafic rocks distinguished on the basis of compositional and textural differences. The first general common type (subunit 2a) is a tan- to brown- to orange- to green-weathering rock that is typically black on the fresh surface. Subunit 2a rocks are massive to weakly foliated, very fine grained and inferred to consist mainly of variable proportions of olivine, pyroxene, serpentine and minor amounts of quartz, plagioclase, biotite, garnet, and local andalusite stand out as prominent ridges. Locally, subunit 2a rocks have a "layered" structure defined by 1 to 2-cm thick tan or brown or black layers, or they have a structure defined by thin (1 to 2 cm) anastomosing tan- or grey-weathering zones. The "layering" and anastomosing structures are inferred to be a metamorphic feature produced during serpenitization.

Grey- to tan-weathering ultramafic schists defined as subunit 2b are the second type of ultramafic rock present in the belt. These rocks are very fine grained, foliated and are characteristically soft. The schistosity units are recessive and commonly occur in narrow valleys or along the sides of valleys. The rocks consist mainly of tremolite or talc. Thin (<1 m) layers of orange-weathering magnetite-rich rocks are contained in the ultramafic schists, locally.

Unit 2 ultramafic rocks are commonly associated with thin (1 to 2 m) sulphidic pelitic metasedimentary units, which are not shown on the map because of their small size. In addition, a few of the lens-shaped ultramafic units can be traced into sulphidic metasedimentary units, which themselves can be traced for several hundred metres and subsequently into the next lens-shaped ultramafic unit. The common field association between the ultramafic rocks and metased