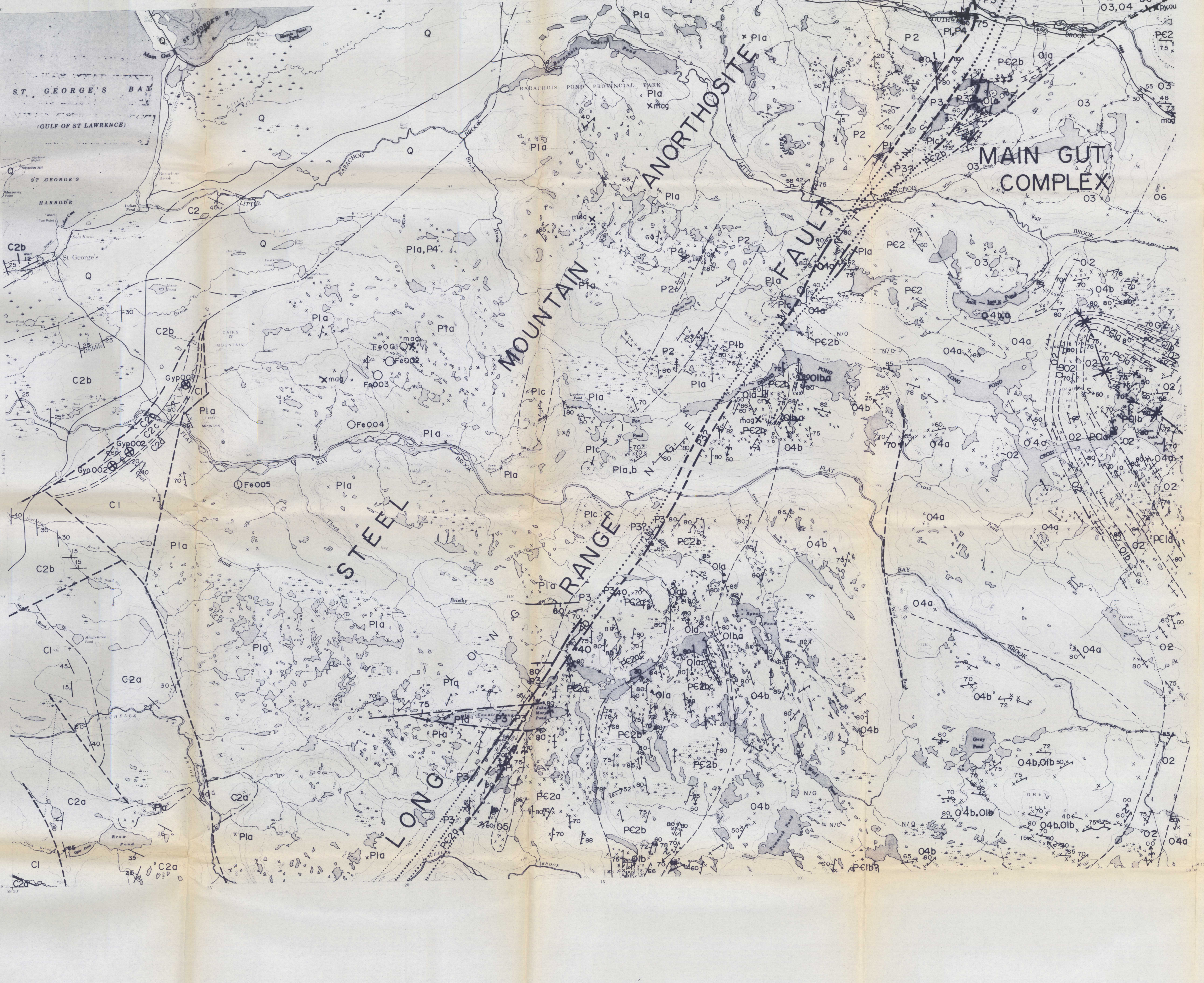


Major fault (ductile and/or brittle) or fault zone (defined with dip, inclined, vertical; approximate; inferred; assumed)

Minor fault (ductile and/or brittle) or fault zone (defined with dip, inclined, vertical; approximate; inferred; assumed)

Macroscopic plunging syncline

Mesoscopic ductile shear zone (inclined with lineation, vertical)

Mesoscopic multiple folds

S-, Z-shaped mesoscopic folds

Bedding, top known (inclined, vertical, overturned), top unknown (inclined)

Foliation (inclined, vertical, with various strike directions)

Lineation (with plunge)

Igneous layering (inclined)

Mafic dyke (inclined)

Geologic boundary (defined, approximate, inferred, assumed)

Unconformity (approximate, assumed)

Inclusion

Visited rock outcrop (individual outcrop, area of outcrop)

N/O No outcrop

Quaternary

Q drift-covered area

Carboniferous

Upper Mississippian to Pennsylvanian

C3 Barachois Group, undivided: sandstone, pebbly sandstone and siltstone; minor shale, mudstone and coal

Mississippian

C2 Codroy Group
a, b, Robinson River Formation
a, Brown Pond lentil: pebbly arkosic grit and sandstone
b, Jeffreys Village Member: predominantly red siltstone and sandstone
c, Codroy Road Formation: siltstone and mudstone; minor sandstone, dolomite, gypsum and anhydrite
d, Ship Cove Formation: limestone and shale

C1 Anguille Group
Fischells Conglomerate Member: cobble and pebble conglomerate and sandstone

Ordovician

06 South-west Brook Complex* (456 Ma): diorite

05 medium grained biotite leucogranite

04 a, biotite granite; b, hornblende-biotite granodiorite

03 Main Gut Complex*: diabase

02 gneissic biotite granite;

01 Ophiolite*(?): a, serpentinite, dunite, harzburgite, pyroxenite; b, metagabbro

Late Proterozoic to Cambrian

P€2 metasediments: a, psammitic and, b, quartzitic and semipelitic rocks; c, amphibolite

P€1 Cormacks Lake Complex: a, leucocratic quartzofeldspathic rocks, minor pelitic and quartzitic rocks; b, amphibolite

Upper Proterozoic (Grenvillian)

P4 amphibolite dykes

P3 intermediate and granitic gneisses; minor amphibolite, anorthosite and marble

P2 meta quartz diorite – meta-tonalite

P1 a, anorthosite*; b, minor gabbroic anorthosite; c, norite

(py,au,cp,mag,il,cr,gyp) X Mineral occurrence (pyrite, gold, chalcopyrite, magnetite, ilminite, chromite, gypsum)

	NAME	STATUS	MINERALS PRESENT
Fe 001	Bishop North	Prospect	mag, il
Fe 002	Bishop South	Prospect	mag, il
Fe 002	Bishop No. 3	Prospect	mag
Fe 003	Hayes Prospect	Prospect	mag, cp
Fe 005	Hudson Prospect	Prospect	mag, cp
Gyp 001	Sheep Brook	Developed prospect	gyp
Gyp 002	Coal Brook	Developed prospect	gyp

Geological compilation by J.T. van Berkel, 1986 (pre-Carboniferous rocks and I. Knight, 1983 (Carboniferous rocks).

Geology of the pre-Carboniferous rocks by J.T. van Berkel and M.A.J. Piasecki, 1985, 1986, K.L. Currie, H.P. Johnston, J.C. Martin and S. Dawson, 1985, and D. Fox, T. van Nostrand and G. Goucher, 1986. Geology of the Carboniferous rocks by C.C.K. Fong, 1973-1975.

An asterisk in the legend indicates that the age of the unit is reasonably well known. All other age assignments are speculative. Zircon ages of units 03 and 06 after Dunning, written communications, 1986.

Information from this publication may be quoted if credit is given. It is recommended that reference be made in the following form:

Van Berkel, J.T.
1987: Geology of the Main Gut map area (12B/8), southwest Newfoundland. Geological map (scale 1:50 000) with descriptive notes. Geological Survey of Canada, Open File Report 1467.

DESCRIPTIVE NOTES

INTRODUCTION

The Trans Canada Highway (Route 1), the Burgeo Road (Route 480) which connects the town of Burgeo on the south coast of Newfoundland with the Trans Canada Highway, and some privately owned logging roads provide access to portions of the western and northern part of the map area. The greater portion of the map area is easily accessible only by aircraft.

The topography is dominated by the Long Range uplands, a gently rolling surface with an elevation between 300 and 650 meters, which is deeply dissected by rivers and streams. Much of the map area does not support forest cover above an elevation of 300 to 350 meters, except a more or less dense growth of stunted spruce ("tuckamore") and is characterized by bogs between barren peaks and ridges. The degree of bedrock exposure is high in the barren uplands, although exposure in areas underlain by granite is restricted to the top of large rounded hills. Except in streams, exposure is poor to non-existent in the wooded valleys.

All of the map area has been glaciated, with ice movements dominantly to the northwest.

The map area was previously covered by 1:250 000 reconnaissance mapping (Riley, 1962). In the 1985 field season most of the present map area and the adjacent map sheets to the east, south and north were mapped on a 1:100 000 scale (Van Berkel et al., 1986; Van Berkel and Currie, 1986). During the 1986 field season a large part of the map area was covered on a 1:50 000 scale and key areas were studied in more detail. Mapping on a 1:50 000 scale of the adjacent southern (Dashwoods Pond, 12B/1) and southwestern areas (St. Fintan's, 12B/2) was also done in the 1986 field season (see Van Berkel, 1987a) and is published as a separate open file report (Van Berkel, 1987b). The adjacent northern area (Harrys River, 12B/9) was mapped on a 1:50 000 scale by Currie (1986, 1987). The Carboniferous rocks of the Bay St. George Subbasin are described by Knight (1983) and the reader is referred to this memoir for a detailed description.

GENERAL GEOLOGY

The Long Range Fault divides the pre-Carboniferous rocks into two contrasting terranes. The western terrane (Humber Zone of Williams, 1979) consists of a Grenvillian basement with a late Proterozoic to early Paleozoic sedimentary cover, locally veneered by easterly derived early Paleozoic ophiolitic allochthons. The eastern terrane consists of felsic to mafic volcanics, clastic sediments and ophiolitic rocks, all cut by granite and granodiorite ranging in age from Ordovician to Devonian. This eastern terrane is part of Williams' (1979) Dunnage Zone. Along the entire length of the Long Range Fault granitic to intermediate gneisses (unit P3) form a continuous strip of Grenville basement(?) across the Main Gut, Dashwoods Pond and St. Fintan's map areas. The gneisses (unit P3) continue southwestwards into the Grandys Lake area (110/15; see Chorlton, 1983).

The dominant rock type northwest of the Long Range Fault is anorthosite (Steel Mountain anorthosite, unit P1) which contains minor facies of norite (unit P1c) and meta quartz-diorite to tonalite (unit P2). Carboniferous sedimentary rocks (units C1 to C3; Knight, 1983) unconformably overlie or are in fault contact with the anorthositic rocks (unit P1) and intermediate to granitic gneisses (unit P3).

Southeast of the Long Range Fault, medium to high-grade metamorphic, generally leucocratic quartzofeldspathic rocks of the Cormacks Lake Complex (unit PC1; Herd and Dunning, 1979) and psammitic, pelitic and quartzitic metasediments (unit PC2) are invaded by syntectonic biotite granite (unit 02). They are all intruded by large late-tectonic plutons of granite (unit 04a) and granodiorite (unit 04b), and smaller post-tectonic plutons of biotite leucogranite (unit 05). The metasediments (unit PC2) contain numerous inclusions and strips of serpentinite and metamorphosed ultramafic rocks (unit O1a), and metagabbro (unit 01b). One well-preserved diabase body (unit 03) occurs in the map area, and is also intruded by late-tectonic granitoids (unit 04).

DESCRIPTION OF ROCK UNITS

Upper Proterozoic (Grenvillian) rocks

Anorthosite of the Steel Mountain complex (unit P1) dominates the Grenvillian rocks. Anorthositic rocks terminate in the adjacent northern Harrys River (12B/9) map area (Currie, 1986, 1987). Much of the anorthosite has massive, partly recrystallized, medium grained (up to 10 cm long) feldspar and even larger (up to 3 m) pyroxene crystals. Pyroxene is altered to hornblende and may have a rim of biotite. Relict layered igneous textures occur rarely. Most anorthositic rocks (unit P1a) have colour indexes less than 5 (unit P1a) but locally gabbroic anorthosite (CI = 10-30) (unit P1b) and norite (CI= ± 50) (unit P1c) are present. Pockets and layers of titaniferous magnetite locally up to a few hundred metres long are common (Baird, 1943, 1954). Brittle faults and fracture zones are widespread. Narrow ductile shear zones have been observed in a few outcrops but probably have a limited extent. Epidotization has been observed in many exposures along the Burgeo Road (Route 480). Amphibolite dykes (unit P4) are uncommon, generally 0.25 to 3 m thick and trend between northwest and northeast. The Steel Mountain anorthosite is a massif-type anorthosite (Simmons and Hanson, 1978; Emslie, 1978) and can be correlated with the Grenvillian Indian Head anorthosite (Walthier, 1949; Heyl and Ronan, 1954; Colman-Sadd, 1974) located some 15 km to the west, east of Stephenville.

Several very coarse grained norite bodies (unit P1c) up to one kilometre across are more mafic facies of the Steel Mountain anorthosite. Poorly foliated quartz diorite-tonalite (unit P2) is present within the eastern margin of the Steel Mountain anorthosite and field relations suggest intrusive contacts with anorthositic rocks (unit P1), whereas the intermediate and granitic gneisses (unit P3) have tectonic contacts with the anorthositic rocks (unit P3).

Intermediate and granitic gneisses (unit P3) containing inclusions and large bodies of amphibolite occur within and between the Long Range Fault zone and the Steel Mountain anorthosite. A low-grade metamorphic overprint often forms an incipient mica-rich foliation in these gneisses and the strike of the foliation is parallel to the trace of the Long Range Fault. Locally, spectacular platy schists are produced in shear zones. The intermediate and granitic gneisses (unit P3) are identical to the composite gneiss complex in the Harrys River map area (12B/9; see Currie, 1986, 1987), and are assumed to be Grenvillian on the basis of composition, structural style and high grade metamorphic textures. The age of the low-grade metamorphic overprint is probably late Proterozoic or early Paleozoic.

Late Proterozoic to Cambrian rocks

Across the Long Range Fault rock types change dramatically. The oldest rocks east of the Long Range Fault form two north-south trending belts, one with generally leucocratic quartzofeldspathic rocks (unit PC1) of unknown origin and one with metasedimentary rocks (unit PC2). The belts are separated by late-tectonic granite and granodiorite (unit 04).

Leucocratic quartzofeldspathic rocks of the Cormacks Lake Complex (unit PC1; Herd and Dunning, 1979) contain minor amounts of quartzitic to pelitic rocks and amphibolite. Locally gedrite which develops characteristic sheafs, is present. The leucrocratic quartzofeldspathic rocks usually occur in large enclave zones within gneissic biotite granite (unit O2), e.g. around Cross Pond. Large bodies of amphibolite (unit P€1b) are grouped with the Cormacks Lake Complex (unit P€1) but may represent metamorphosed equivalents of the ophiolitic rocks (unit 01). The unit (P€1) extends into the adjacent eastern Puddle Pond (12A/5; Herd and Dunning, 1979) and King George IV (12A/4; Kean, 1983) map areas, and to the south into the Dashwoods Pond (12B/1; Van Berkel, 1987a, 1987b) and the La Poile River map areas (110/16; Chorlton, 1980).

The metasedimentary rocks (unit P€2) can be subdivided into a western portion dominated by psammitic sediments and a much smaller eastern portion of quartzitic and semipelitic sediments. All were deformed and metamorphosed during medium to high-grade metamorphism. The psammitic sediments (unit P€2a) exhibit a medium grained granoblastic texture with abundant feldspar porphyroblasts (Van Berkel et al., 1986, Fig. 19.5) that commonly obliterate primary sedimentary features. Amphibolite (unit P€2c) inclusions are common and locally large bodies of amphibolite are present but no recognizable ultramafic bodies were observed. Trains of amphibolite inclusions may be highly deformed and disrupted dykes.

Lithologically monotonous quartzitic and semipelitic metasediments (unit P€2b) form a narrow zone along the eastern edge of the metasedimentary belt (unit P€2), have undergone severe deformation, and contain strips and inclusions of tectonized serpentinized dunite and other metamorphosed ultramafic rocks (unit 01a), and gabbro (unit 01b). Microstructural evidence for strong deformation is obliterated by recrystallization but numerous foliation-parallel quartz veins and lenses (Van Berkel, 1987a, Fig. 41.3) are preserved in certain zones and probably formed in shear zones by tectonic segregation (Piasecki, 1980; Temperley, in press). The origin of the ultramafic slivers is uncertain. They could mark the traces of major thrust faults (Van Berkel et al., 1986). Alternatively, severe deformation of a sedimentary ophiolitic mélange (cf. Williams, 1977) could give similar field relations. A detailed study of this unit (P€2b) and the ultramafic-mafic rocks (unit 01a) was initiated in the 1986 field season (D. Fox, M.Sc. Thesis Project, Memorial University). The nature of the contact between the two metasedimentary units (PC2a and b) is not well established, but appears to be a gradual change over a distance of a few hundred metres.

The quartzitic and semipelitic metasediments (unit P€2b) may be medium to high metamorphic grade equivalents of the quartzite and pelitic schists around the southwest tip of Grand Lake in the Harrys River map area (12B/9; Currie, 1986, 1987) which have been correlated with the Fleur de Lys Supergroup (Knapp et al., 1979; Kennedy, 1981; Hibbard, 1983 a, b; Williams, 1985).

Ordovician rocks

Mafic and ultramafic rocks of possible ophiolitic affinities (unit 01) not only occur in the metasediments (unit PC2) but also as enclaves in gneissic biotite granite (unit 02). Metagabbro (unit 01b) is generally altered to amphibolite and variably epidotized, but locally, moderately strained, coarse grained original textures are preserved, e.g. south of Portage Lake in the Dashwoods Pond (12B/1) map area (van Berkel, 1987a, Fig. 41.4) and north of Cross Pond. Dunite, harzburgite and pyroxenite (unit 01a) are well preserved in a large outcrop south of Portage Lake (Dashwood Pond map area, 12B/1; see Van Berkel, 1987b) where moderately to highly strained metagabbro (unit 01b) encloses a large (300 by 200 m) tectonic sliver of partially serpentinized dunite, harzburgite and pyroxenite. From southeast to northwest dunite with minor harzburgite passes abruptly into pyroxenite veined by harzburgite. Other tectonic slivers enclosed by metagabbro (unit 01b) in this region contain harzburgite and pyroxenite. Small amounts of chromite are found as dispersed euhedral crystals in dunite south of Portage Lake, and also as thin seams in serpentinite inclusions and layers in the metasedimentary rocks (unit P€2; see Van Berkel et al., 1986, Fig. 19.7).

Syntectonic biotite granite (unit 02) invaded the quartzofeldspathic (unit P€1), metasedimentary (unit P€2) and ophiolitic rocks (unit 01). The field relations are well exposed around Cross Pond. Quartzofeldspathic rocks (unit PC1) and complexly folded metagabbro (unit 01b) form enclaves within structurally less complex gneissic granite (unit 02). Inclusions composed of fine grained biotite-plagioclase and amphibolite are common around Cross Pond (Van Berkel, 1987a, Fig. 41.5). The fine-grained biotite-plagioclase rock appears to be metasomatised amphibolite. Some of the better preserved amphibolites in this exposure form recognizable dykes (Van Berkel, 1987a, Fig. 41.5), are less consumed by the granite and could represent synplutonic dykes. The gneissosity in the granite is best developed where the granite contains numerous enclaves. In many exposures away from the enclave zones a poorly foliated medium grained texture is visible. Close to the ultramafic ophiolitic rocks (unit 01a) of Portage Lake (Dashwoods Pond map area, 12B/1; see Van Berkel, 1987b) structural complexity increases in the gneissic granite (unit 02) and xenoliths of the ophiolitic rocks are common (Van Berkel, 1987a, Fig. 41.6).

The Main Gut Complex (unit 03) in the northeastern corner of the map area consists of fine and medium grained diabase. At the eastern edge of the complex at the Burgeo Road (Route 480) medium grained diabase locally exhibits an igneous layering defined by magnetite-rich layers. Zircon dating (Dunning, personal communications, 1985) and K-Ar determinations (R.K. Herd, in Stevens et al., 1982, p. 46 and 47) indicates a lowermost Upper Ordovician age for this body.

Late-tectonic, massive to weakly foliated plutons composed of a variety of granitic rocks (unit 04) invade the previously described rock units. Dominant rock types are medium grained biotite granite (unit 04a) and medium to coarse grained hornblende-biotite granodiorite (unit 04b). Their regional distribution is confirmed by radio-element mapping techniques (Broome et al., in press). Offshoots of the granitic rocks (unit 04) into the country rocks, generally composed of a medium grained biotite leucogranite, are common in the area around Cross Pond. Hornblende-biotite granodiorite (unit 04b) often contains amphibolite inclusions, expecially in the region south and southeast of Grey Pond where inclusions form 5 to 30% of individual exposures.

Medium grained, massive homogeneous biotite leucogranite (unit 05) occurs as one small pluton in the southern part of the map area.

A massive diorite intrusion (unit 06) occurs in the northeast corner of the map area. This massive diorite pluton is the edge of the diorite-tonalite intrusions of the Southwest Brook Complex (Herd and Dunning, 1979) in the adjacent Puddle Pond map area (12A/5).

Carboniferous rocks

Carboniferous sediments of the Bay St. George Subbasin (units C1 to C3) have been described in detail by Knight (1983) and were not mapped by the author. They unconformably overlie or are in fault contact with the Steel Mountain anorthosite (unit P1) to the southwest but are only in fault contact along the northwest margin.

ECONOMIC GEOLOGY

The Steel Mountain anorthosite contains numerous small pockets of titaniferous magnetite. Baird (1943 and 1954) described large lenses of magnetite north of Flat Bay Brook, which contained about 7 percent TiO_2. The metasedimentary rocks (unit P€2) locally contain accessory amounts of magnetite or pyrite, or both. Quartzo-feldspathic rocks of the Cormacks Lake Complex (unit P€1a) may be particularly rich in pyrite, resulting in a distinctive rusty weathering surface. A concordant magnetite layer 3-20 cm wide and more than 2 m long was observed in quartzitic and semipelitic rocks (unit P€2b) south of Dennis Pond. One outcrop of layered diabase (unit O3) on Burgeo Road (Route 480), 7.5 km east of the Long Range Fault, contains layers rich in magnetite. A brittle fault cutting diabase (unit 03) with minor granite offshoots (unit 04) in the northeast corner of the map area is exposed in a stream and contains quartz veins with minor pyrite. A quartz vein sample (6VMGPTS4) with about 2% pyrite has a content of 190 ppb Au. Another quartz vein sample (6VM 413) of the same exposure contains about 30% pyrite and gave 646 ppb Au.

Serpentine layers and inclusions (unit O1a) locally contain up to 10 percent chromite and magnetite in the form of thin seams (Van Berkel et al., 1986, Fig. 7) or as dispersed euhedral crystals. Au-Pt-Pd analyses (Van Berkel et al., 1986, Table 1 and unpublished data) of various serpentinite layers and inclusions (unit O1a) yield up to 40 ppb Au, up to 54 ppb Pt and up to 36 ppb Pd.

REFERENCES

Baird, D.M.
1943: Titaniferous magnetites in anorthosite, east of St. Georges, Newfoundland; unpublished M.Sc. thesis, University of Rochester, Rochester, New York, U.S.A., 102 p.
1954: The magnetite and gypsum deposits of the Sheep Brook-Lookout area. Geol. Surv. Can. Bull. 27, p. 20-41.

Broom, J., Carson, J.M., Grant, J.A. and Ford, K.L.
1987: A modified ternary radio-element mapping technique and its application to the south coast of Newfoundland; Geological Survey of Canada, Paper , in press.

Chorlton, L.
1980: Geology of the La Poile River area (110/16), Newfoundland; Newfoundland Department of Mines and Energy, Mineral Development Division, Report 80-3, 86 p.
1983: Geology of the Grandys Lake area (110/15), Newfoundland; Newfoundland Department of Mines and Energy, Mineral Development Division, Report 83-7, Part 1, 116 p.

Colman-Sadd, S.P.
1974: Iron deposits of the Indian Head Range; in Metallogeny and Plate Tectonics. A Guidebook to Newfoundland Mineral Deposits (edited by D.F. Strong). NATO Advanced Studies Institute, p. 150-158.

Currie, K.L.
1986: Harrys River (12B/9E) and part of Little Grand Lake (12A/12) map areas, southern Long Range, Newfoundland. Geological map (scale 1:50 000) with descriptive notes. Geological Survey of Canada, Open File Report 1406.

Currie, K.L.
1987: A preliminary account of the geology of the Harrys River map area, southern Long Range of Newfoundland. In: Current Research, Part A, Geological Survey of Canada; Paper 87-1a; p. 653-662.

Emslie, R.F.
1978: Anorthosite massifs, rapakivi granites, and late Proterozoic rifting of North America. Precambrian Research, v. 7, p. 61-98.

Erdmer, P.
1986: Geology of the Long Range Inlier in the Sandy Lake map area, western Newfoundland; in Current Research, Part B, Geological Survey of Canada, Paper 86-1B, p. 19-27.

Herd, R.K. and Dunning, G.R.
1979: Geology of Puddle Pond map area, southwestern Newfoundland; in Current Research, Part A, Geological Survey of Canada, Paper 79-1A, p. 305-310.

Heyl, A.V. and Ronan, J.J.
1954: The iron deposits of Indian Head area; in Contributions to the Economic Geology of Western Newfoundland, Geological Survey of Canada, Bulletin 27, p. 42-62.

Hibbard, J.
1983a: Notes on the metamorphic rocks in the Corner Brook area (12A/13) and regional correlation of the Fleur de Lys Belt, western Newfoundland; in Current Research, Newfoundland Department of Mines and Energy, Mineral Development Divison, Report 83-1, p. 41-50.
1983b: Geology of the Island of Newfoundland; Newfoundland Department of Mines and Energy, Mineral Development Division, Map 83-106.

Kean, B.F.
1983: Geology of the King George IV Lake map area (12A/4); Newfoundland Department of Mines and Energy, Mineral Development Division, Report 83-4, 67 p.

Kennedy, D.P.
1981: Geology of the Corner Brook Lake area, western Newfoundland; unpublished M.Sc. thesis, Memorial University of Newfoundland, 370 p.

Knapp, D.A., Kennedy, D.P., and Martineau, Y.A.
1979: Stratigraphy, structure and regional correlation or rocks at Grand Lake, western Newfoundland; in Current Research, Part A, Geological Survey of Canada, Paper 79-1A, p. 317-325.

Knight, I.
1983: Geology of the Carboniferous Bay St. George Subbasin, western Newfoundland; Newfoundland Department of Mines and Energy, Mineral Development Division, Memoir 1, 358 p.

Owen, J.V.
1986: Geology of the Silver Mountain area, western Newfoundland; in Current Research, Part A, Geological Survey of Canada, Paper 86-1A, p. 515-522.

Piasecki, M.A.J.
1980: New light on the Moine rocks of the Central Highlands of Scotland. Journal of the Geological Society of London, v. 137, p. 41-59.

Riley, G.C.
1962: Stephenville map area, Newfoundland; Geological Survey of Canada, Memoir 323, 72 p.

Simmons, E.C. and Hanson, G.N.
1978: Geochemistry and origin of massif-type anorthosites. Contributions to Mineralogy and Petrology, v. 66, p. 119-135.

Stevens, R.D., Delabio, R.N., and Lachance, G.R.
1982: Age determinations and geological studies. K-Ar isotopic ages, Report 16. Geological Survey of Canada, Paper 82-2, 56 p.

Stukas, V. and Reynolds, P.H.
1974: $^{40}AR/^{39}AR$ dating of the Long Range dykes of Newfoundland. Earth and Planetary Science Letters, v. 22, p. 256-266.

Temperley, S. (in press)
Vein systems and porphyroblasts in high temperature high strain zones: their bearing on the nature of shearing. Journal of Structural Geology.

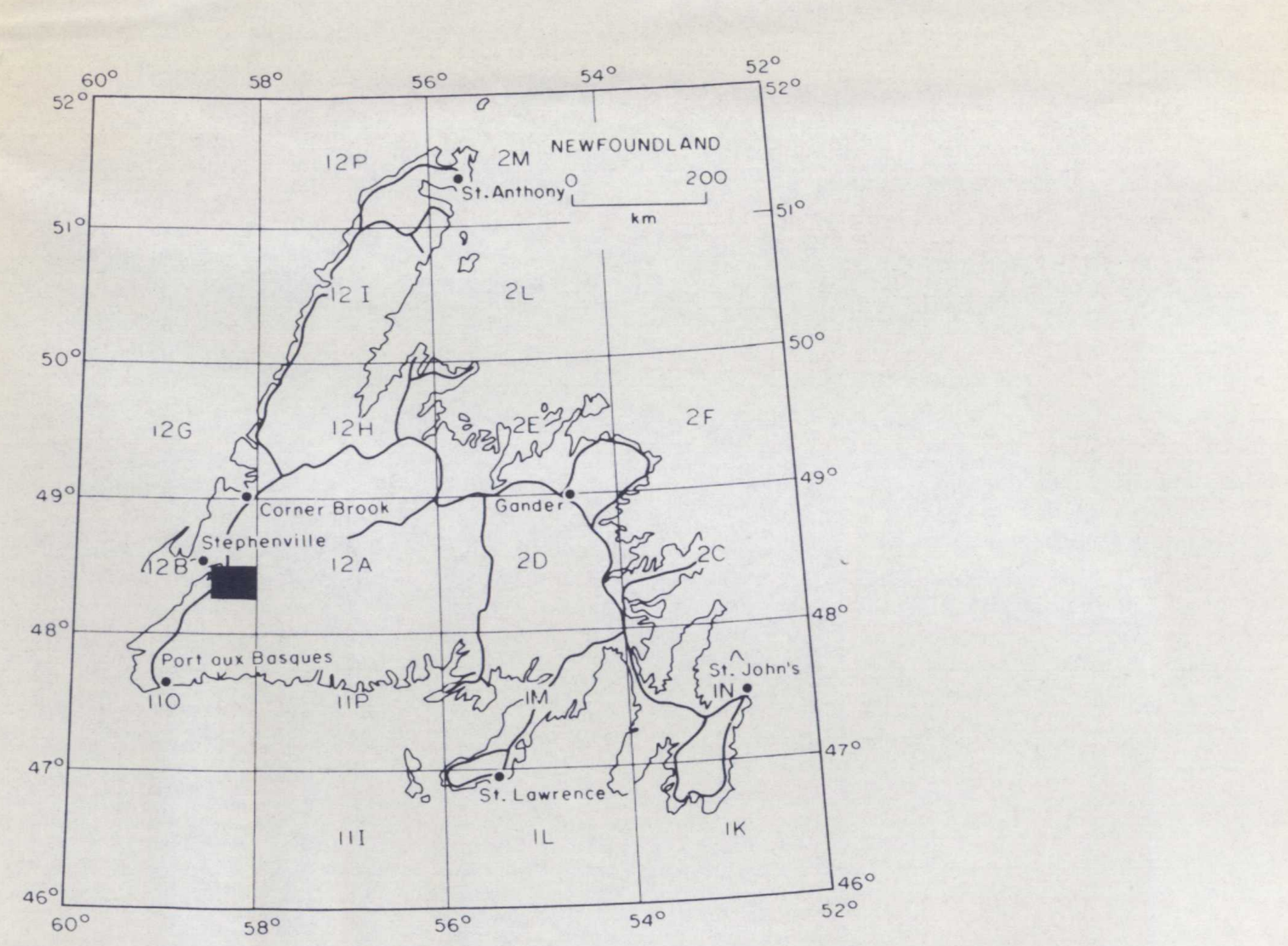
Van Berkel, J.T.
1987a: Geology of the Dashwoods Pond, St. Fintan's and Main Gut Map areas, southwest Newfoundland; in Current Research, Part A, Geological Survey of Canada, Paper 87-1A, p. 399-408.
1987b: Geology of the Dashwoods Pond (12B/1) and part of St. Fintan's (12B/2) map areas, southwest Newfoundland. Geological map (scale 1:50,000) with descriptive notes. Geological Survey of Canada, Open File Report 1466.

Van Berkel, J.T., Johnston, H.P. and Currie, K.L.
1986: A preliminary report on the geology of the southern Long Range, southwest Newfondland; in Current Research, Part B, Geological Survey of Canada, Paper 86-1B, p. 157 to 170.

Van Berkel, J.T. and Currie, K.L.
1986: Geology of the southern Long Range, southwest Newfoundland (12B/1, 12B/8, 12B/9, 12A/5, 12A/2). Geological map (scale 1:50 000) with descriptive notes. Geological Survey of Canada, Open File Report 1328.

Walthier, T.N.
1949: Geology and mineral deposits of the area between Corner Brook and Stephenville, western Newfoundland; Newfoundland Geological Survey, Bulletin 35, Part 1.

Williams, H.
1977: Ophiolitic mélange and its significance in the Fleur de Lys Supergroup, northern Appalachians. Canadian Journal of Earth Sciences, v. 14, p. 987-1003.
1979: Appalachian Orogen in Canada; Canadian Journal of Earth Sciences, v. 16, p. 792-807.
1985: Geology, Stephenville map area, Newfoundland; Geological Survey of Canada, Map 1579A (scale 1:100 000 with descriptive notes).



INDEX MAP

GEOLOGICAL SURVEY OF CANADA — COMMISSION GÉOLOGIQUE DU CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES
MINISTÈRE DE L'ÉNERGIE DES MINES ET DES RESSOURCES

GEOLOGY OF THE MAIN GUT MAP AREA, SOUTHWEST NEWFOUNDLAND

12 B/8

Scale 1:50 000

Kilometres 1 0 1 2 3 4 Kilometres

Universal Transverse Mercator Projection

Contribution to Canada-Newfoundland Mineral Development Agreement 1984-89, a subsidiary agreement under the Economic and Regional Development Agreement. Project funded by the Geological Survey of Canada.

DEPARTMENT OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Energy, Mines and Resources Canada — Énergie, Mines et Ressources Canada
Geological Survey of Canada
Commission géologique du Canada

Canada

OPEN FILE
DOSSIER PUBLIC
1467
GEOLOGICAL SURVEY OF CANADA
COMMISSION GEOLOGIQUE DU CANADA
OTTAWA
1987