



LEGEND

CARBONIFEROUS

CODROY GROUP

- 6 Woodville Formation Multicoloured siltstone, gypsum, limestone
- 5 Ship Cove Formation Laminated and massive-bedded grey limestone, argillaceous limestone with crystal molds, stromatolites

Disconformity

ANGUILLE GROUP

- 4 Spout Falls Formation Green-grey and red, arkosic and micaceous, friable sandstones and siltstones, some grey mudstones with thin siltstones
- 3 Friars Cove Formation Conglomerates at base interbedded with grey sandstones, overlain by green-grey arkosic and subarkosic sandstones with occasional red pebbly conglomerates, interbedded with grey shales with thin bedded sandstones, limestones, dolomitic limestones, stromatolite limestones occur at intervals throughout the formation
- 2 Mary Ann's Cove Formation Black slates and thin sandstones and siltstones with deformed bedding at base, overlain by grey sandstones alternating with black shales with thin beds of sandstones, siltstones and dolomitic limestone and mudstone
- 1 Kennel's Brook Formation Green and red, chloritic sandstones, conglomerates, cleaved red and green siltstones and mudstones Grey limestone (1a) No basal contact exposed

GEOLOGICAL SYMBOLS

Geological boundaries (defined, approximate, assumed)

Bedding, tops known (inclined, vertical, overturned)

Fault (defined, approximate, assumed)

Thrust fault (teeth in direction of dip, defined, approximate)

Anticlinal axis (defined, approximate)

Synclinal axis (defined, approximate)

Drag fold (arrow indicates plunge)

Cleavage (inclined)

Structural trend (from air photographs)

Mineral occurrence

Barium	Ba
Copper	Cu
Zinc	Zn

Geology by I. Knight (1974, 1975)

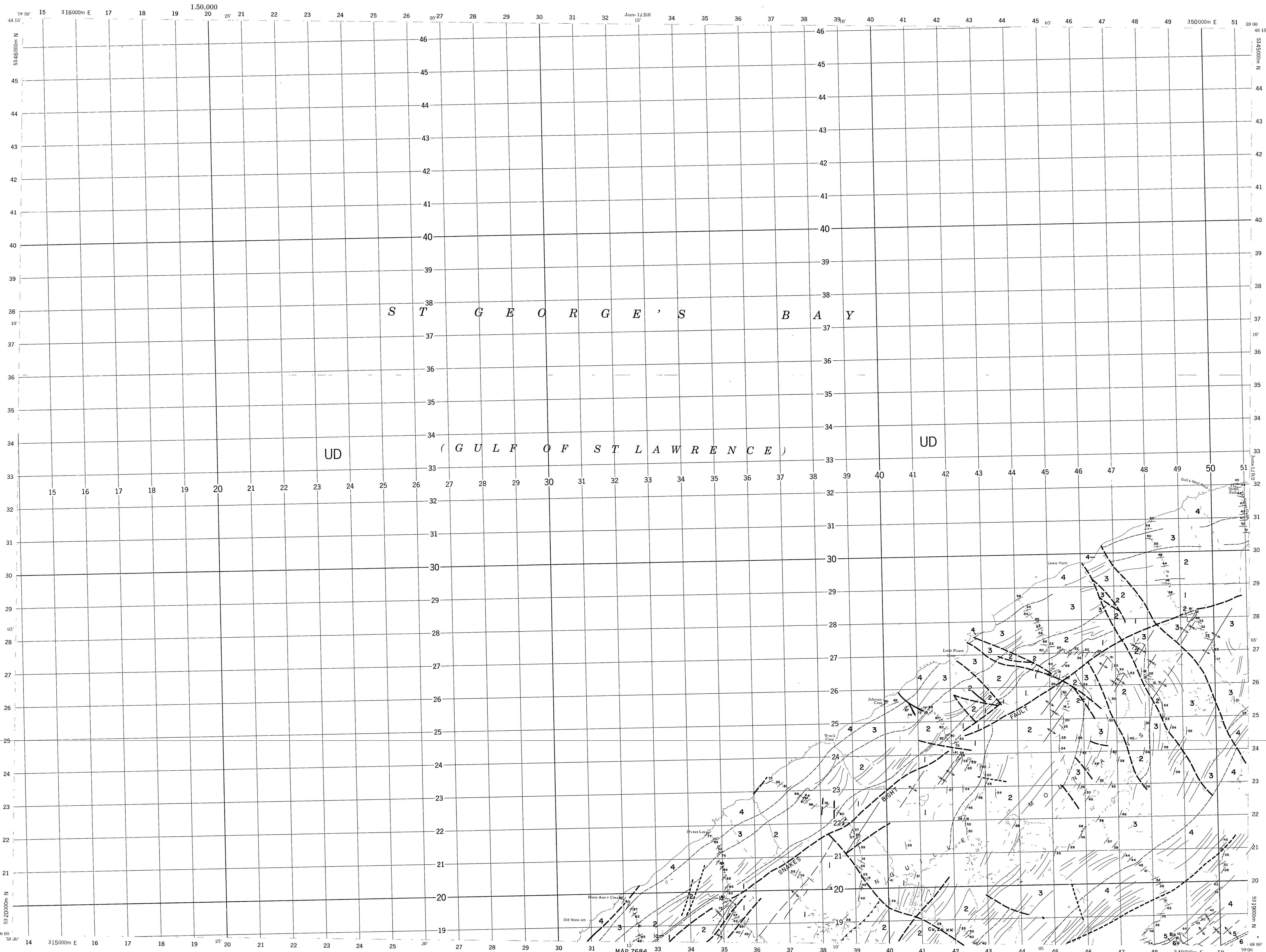
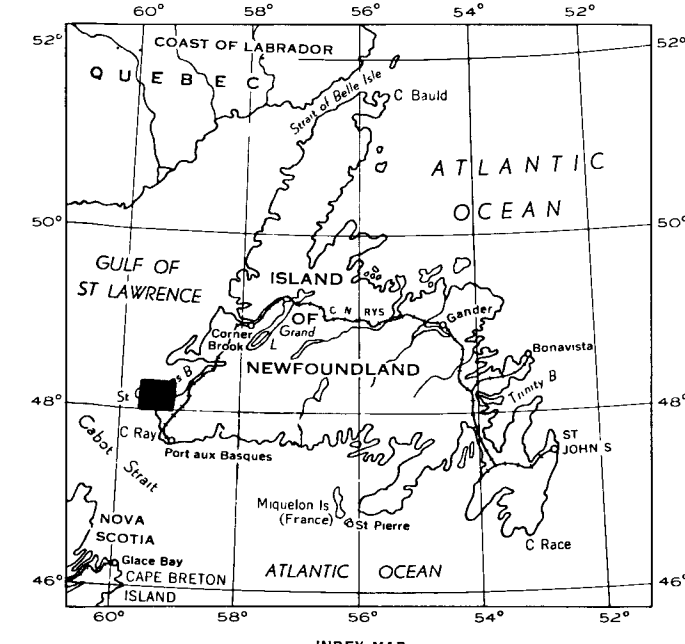
This map is available as Open File Release 12 B/3 (1999)

Geological cartography by Mineral Development Division, Department of Mines and Energy, Government of Newfoundland

Copies of this map may be obtained from the Mineral Development Division, Department of Mines and Energy, St. John's, Newfoundland

Base map at same scale published by the Surveys and Mapping Branch, Department of Energy, Mines and Resources, Ottawa, 1972

Approximate magnetic declination, 1969, 26°87' west, decreasing 2.5' annually



LITTLE FRIARS COVE

ST. GEORGE'S DISTRICT  
NEWFOUNDLAND

MAP 7684

Scale 1:50,000 Echelle



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DESCRIPTIVE NOTES

Ready access to the area is by boat or helicopter only. Hunting trails are present in places.

Topographically, the area is a dissected plateau of about 1,500 feet (450 m). Youthful, dendritic and rectangular valley systems are deeply incised into the mountains, with many gorges and waterfalls. The mountains slope steeply down to the sea and are truncated by a very steep scarp in the southeast corner of the map-area. The mountain top has extensive marshes and stunted conifer brush but valleys and mountain slopes are wooded, often thickly, with spruce and hardwoods. The coastline is rugged with 50-100 feet (15-30 m) sheer cliffs broken only by the stream valleys. Streams empty by waterfalls over the cliffs into the sea at several places.

The area is included in the reconnaissance geological maps of Riley<sup>1</sup> and Bard and Cote<sup>2</sup>.

The Kennel's Brook Formation (unit 1) consists of indurated, fine to coarse-grained, green-grey and red, arkosic and micaceous sandstones, with conglomeratic layers, interbedded with cleaved red and green siltstones and mudstones. The sediments form fining upward sequences. The conglomerates are composed of white quartz, granite and acid volcanic pebbles. Cross-bedding, channel features, ripple marks, mudcracks and calciche concretions are common. A pale grey, laminated, thin bedded, limestone (1a) occurs at the upper contact of the formation in the southwest, it is thin and appears to be internally faulted. The contact with unit 2 is a thrust fault to the south, in the Codroy map-area<sup>3</sup> and the contact, although rarely seen, is at least partly faulted in this map-area.

The Mary Ann's Cove Formation (unit 2) consists of a lower fine-grained member of black slates with thin, brown weathering, grey sandstones. Thick units of sedimentary deformation caused by slumping, and possibly overwinding of sediment in thrust faults, are common within this lower member. Dolomitic limestones and siltstones occur in these deformed deposits and dolomite also occurs as large concretions. The bulk of the formation is formed of alternating thick units of grey, calcareous, lithic, arkosic sandstones which are massively bedded, with abundant tool and current markings on the bases of beds. These are interbedded with thick units of mudstone which are massive and laminated and contain siltstone, sandstone and carbonate beds. Features typical of turbidity current deposition are common.

The Friars Cove Formation (unit 3) lies conformably upon unit 2. A basal conglomerate-sandstone member consists of pebbles and cobbles of white quartz, granite and acid volcanic lithologies in massive bedded conglomerates alternating with thin bedded and laminated sandstones. This is overlain by cycles of massive bedded, calcareous, arkosic sandstones rich in carbonate detritus passing up into thin bedded, rippled sandstones and overlain by grey shales and mudstones with thin lensoid sandstones. Oolitic limestones, calcarenites and dolomitic and stromatolitic limestones are common in both sandstones and limestones. A single unit of red sandstone occurs near the top of the formation.

The Spout Falls Formation (unit 4) is a fluviatile sequence of fining upward cycles. Sandstones are mostly red, arkosic and friable and form thick units grading up into red siltstones. Cross-bedding, mudcracks, plant rootlets and calciche indicate it is subaerial. The sandstones of the top of the formation are reworked to form a grey, thin bedded to massive bedded sandstone of probable marine origin.

The top of the Anguille Group (units 1-4) is overlain conformably by the basal unit of the Codroy Group, the Ship Cove Formation (unit 5). It consists of well laminated, pale-olivaceous and thin bedded mudrocks. Large spherical algal structures and large mudcracks occur on bedding surfaces in the upper part of the formation, vugs formed from dissolved gypsum crystals are common.

The limestones are overlain conformably by red, green and grey marls and mudstones of the Woodville Formation (unit 6).

The rocks were affected by an early phase of thrusting which possibly caused the slates of unit 2 to thrust over the hard indurated sediments of unit 1. This thrust contact is folded by the later northeast fold trend. The folding is associated with a well developed cleavage in the centre of the mountains. The major antiform structure in the centre of the mountains plunges northeast and is truncated by the Stokes Right Fault which is probably a reverse fault with some dextral strike slip movement. Northeast of the fault, the homoclinal sequence is overturned in the southwest but becomes upright northeastward.

Mineralization is scattered and poorly developed. Vein mineralization, consisting of copper, lead and zinc, in shear zones and tension joints is common in the Mary Ann's Cove Formation southeast of the Stokes Right Fault. It is associated with pyrites, calcite, and quartz. Vein mineralization associated with tension joints cuts the limestones of the Ship Cove Formation with barite the most common mineral.

REFERENCES

- <sup>1</sup>Riley, G. C. 1962. Stephenville map-area, Newfoundland, Geol. Surv. Can., Memoir 323, 72p.
- <sup>2</sup>Bard, D. M. and P. R. Cote. 1964. Lower Carboniferous sedimentary rocks in southwestern Newfoundland and their relations to similar strata in western Cape Breton Island, C.I.M.M. Trans., vol. 57, p. 509-520.
- <sup>3</sup>Knight, I. 1975. Geological mapping, Carboniferous rocks, Cape Anguille Mountains, southwest Newfoundland, Newfoundland Dept. of Mines and Energy, Min. Dev. Div., Rept. 75-1, pp. 31-41.
- <sup>4</sup>Knight, I. 1976. Geology of the Carboniferous of the Codroy Valley and northern Anguille Mountains, Newfoundland Dept. of Mines and Energy, Min. Dev. Div., Rept. 76-1, pp. 10-18.

HUGHES OWENS  
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DETAILS LITTLE FRIARS COVE  
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