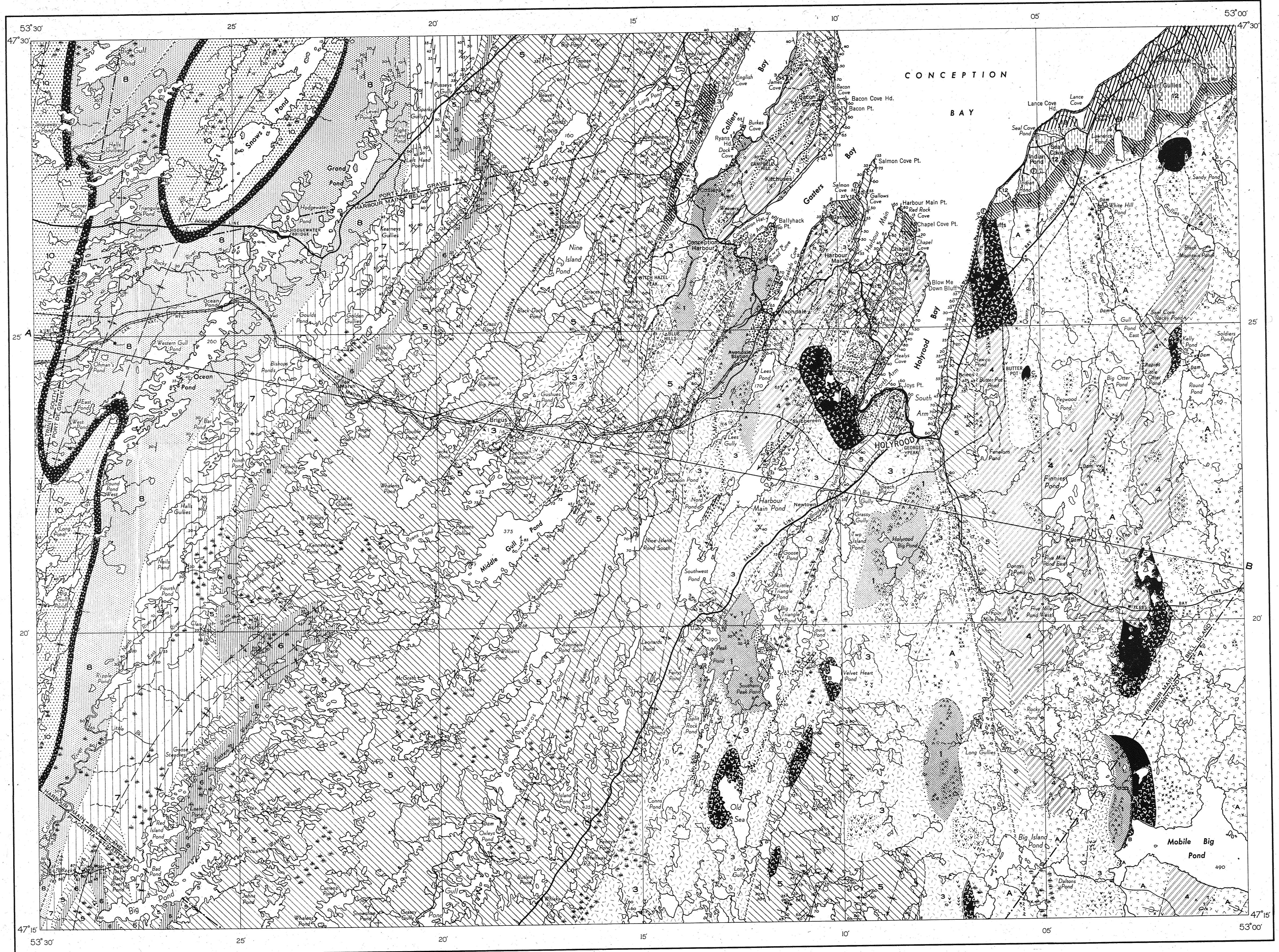
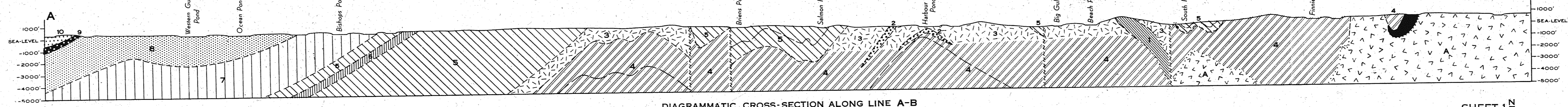


- LEGEND**
- CAMBRIAN**
- UPPER CAMBRIAN**
- ELLIOTT COVE GROUP
Black and dark grey shale with limestone nodules;
minor limestone, siltstone
- MIDDLE CAMBRIAN (ACADIAN)
- Black, grey, green shale, slate with limestone nodules;
manganiferous shale, slate
- LOWER CAMBRIAN**
- Red and pale green shale, slate, commonly with limestone
nodules; pink limestone; minor conglomerate
- PROTEROZOIC**
- HODGKINSON GROUP (7-10)
- SNOWS POND FORMATION: dark grey, wavy bedded
siltstone; grey to green greywacke, arkose
- WHITWAY FORMATION: red siltstone, slate, arkose;
minor olive green slate
- HALLS TOWN FORMATION: massive greenish grey arkose,
siltstone, slate
- CARBONIFEROUS FORMATION: dark grey slate, siltstone
- CONCEPTION GROUP (5, 6)
5. Greyish green slate, siltstone, greywacke; minor conglomerate,
red siltstone
6. HIBBS HOLE FORMATION: red slate, siltstone;
- HARBOUR MAIN GROUP (1-4)
1. Rhyolite; acidic pyroclastic
and intrusive rocks
2. Red sandstone, conglomerate,
slate; minor green greywacke
3. Andesite, basalt; related
pyroclastic rocks; minor
intrusive rocks
4. Harbour Main volcanic
and sedimentary rocks;
undivided
- HOLYROOD GRANITE: pink granite; minor apite and grey
granite; in part post-Conception
- Quartz monzonite, quartz diorite; mainly post-Conception
- Quartz gabbro, gabbro; post Harbour Main



DESCRIPTIVE NOTES

The topography is controlled by underlying bedrock and glacial action. Prominent bluffs and ridges, commonly smoothed and striated by northeasterly ice movement, are typical of the north-central part of the area. Northwest of Duff's soft Cambrianward into a barren, knobby highland, ranging in altitude from about 500 to 1350 feet underlain by granite. The southwestern half of the area is characterized by many lakes between low, rolling hills. Low, regular till ridges that trend southwest and extend into or separate many of these lakes probably represent washboard moraines laid down by a local ice-cap.

The oldest rocks of the area, the Harbour Main group (1-4) have been subdivided lithologically into map-units (1-3) that have little, if any, stratigraphical significance. In general, however, a sequence of andesitic rocks (3) lies immediately below the Conception group (5) and probably represents the youngest beds of the Harbour Main group.

Rhyolitic rocks (1) include rhyolite and quartz latite flows, associated porphyritic intrusives, breccias, and tuffs. Rhyolite flows, dull brick-red, sulphur red, buff or grey in colour, are commonly flow-banded, perlitic, or spherulitic. The tuffs are mainly brick-red crystal tufts, but lithic and vitric tufts are common and many show vitroclastic structure with numerous poorly sorted sandstones, siltstone, and boulders to pebbles. Sedimentary rocks (2) are mainly red, conglomerate, with some green greywacke and slate. Some green slate is lithologically similar to that in the Conception group (5), and in fact narrow bands of slate north of Lees Pond and between South and North Arms of Holyrood Bay that are mapped as Conception (5) may possibly belong to the Harbour Main group (2). Andesitic and basaltic rocks (3) are mainly lava flows, commonly amygdaloidal, and breccias. Where out-crops are sparse, where rocks are thin, and boulders to pebbles, or where silicification or moderate contact metamorphism masks the original character of the rocks, the Harbour Main group is undivided (4).

The contact between Harbour Main and Conception rocks west of Colliers Bay and near Salmon River does not display an angular discordance. Some evidence suggests an essentially contemporaneous origin for the lowermost Conception beds and uppermost Harbour Main rocks, although no interfingering of beds and Conception-type sediments was observed. Although the contact traced from the west shore of Holyrood Bay to the northeast of Harbour Main is complicated by minor shearing and severe distortion in the lower Conception beds, the apparent truncation of lithologic divisions of the Harbour Main (2, 3) at this contact suggests that an angular unconformity exists.

The Conception group (5, 6) is about 7,000 feet thick, and is composed mainly of well-bedded, white weathering, green to light grey slate and siltstone, some of which is cherty. Minor greywacke and conglomerate beds are commonly graded. Most bedding throughout the group is regular and continuous. A basal succession of conglomerate, coarse to fine-grained greywacke, and, in places, red siltstone and slate, is commonly present. The greywacke members are composed of about 50 per cent matrix, 30 per cent quartz, and 20 per cent feldspar, the last two in angular to subrounded clastic grains.

The Hibbs Hole formation (6) lies within the Conception group; it is mapped separately as it provides a succession of easily recognizable marker beds. Where best exposed in Back Bay, the formation is about 350 feet thick and is mainly red slate with lesser red siltstone and green slate.

The Hodgkinson group (7-10) overlies the Conception group with apparent conformity, and is named after the Hodgkinson Line or highroad. All component formations are conformable.

The Carboniferous formation (7) is about 3,500 feet thick and is mainly dark grey to black slate grading upward into grey siltstone. It can probably be correlated with the St. John's formation of the Cabot group. The Halls Town formation (8), about 3,000 feet thick, is probably equivalent to the lower member of the Signal Hill formation of the Cabot group. Beds that outcrop best are massive, dark to medium greenish grey arkose, commonly showing oscillation ripple-marks. Representative fine-grained arkose contains 55 per cent feldspar, 32 per cent quartz, 6 per cent rock fragments, and 7 per cent matrix. In contrast with greywackes of the Conception group (5), sorting is better and clastic grains are in contact. Slate and siltstone beds in the formation are common to the north, but do not outcrop well in this area. The Whitway formation (9) consists of distinctive red siltstone and slate with some green slate and red and green sandstone. It is poorly exposed in this area but is a useful marker horizon to the north, west, and south. In Collnet River 2 miles southwest of the area, the formation is about 450 feet thick. The Snows Pond formation (10) comprises the uppermost beds of the Hodgkinson group and west of this area is overlain by Random and Lower Cambrian rocks. The formation is about 4,500 feet thick and is composed of light greenish grey arkose, commonly cross-bedded with interbeds of grey to dark grey siltstones and silty slate. The arkoses are about 40 per cent feldspar, 42 per cent quartz, 2 per cent rock fragments, and 6 per cent matrix. The wavy bedding of the siltstone and slate is characteristic of this formation.

Lower Cambrian beds (11) underlie Harbour Main and Conception group rocks with marked angular unconformity. Their thickness varies from about 75 feet at Marquette, 2 miles east of the area, to about 400 feet west of Colliers Bay. The contact between Lower and Middle Cambrian shales is considered to be the base of the lowermost manganiferous shale. The contact between Middle and Upper Cambrian beds is not well marked, and is drawn on the basis of poor fossil material collected north of Lawrence Pond, and in Lower Gullies River.

The medium-grained pink granite that comprises most of the Holyrood batholith (A) intrudes the Conception group but is not found in contact with, or within the area of, Cambrian rocks. It presumably underlies the Cambrian beds, and no trace of contact metamorphism is discernible in the latter. At Duff's and at Chapel Cove Point, a grey quartz monzonite (B), possibly related to the granite, is believed to be overlain unconformably by lowermost Lower Cambrian beds. The presence of a pre-Conception monzonite is indicated by a basal Conception conglomerate 120 feet thick on the east shore of Holyrood Bay, which contains abundant angular boulders of monzonite similar to that exposed on the shore to the northeast. The rocks show little regional metamorphism except for well-developed flow cleavage in fine-grained, clastic rocks west of Duff's, and alteration of part of the mafic minerals to chlorite. Contact metamorphism is practically confined to roof pendants in the granite.

Faults transect both Precambrian and Cambrian rocks, but some are thought to have been most active in Precambrian time. Unaltered, fine-grained, manganiferous carbonate and shale beds lie in a zone, which appears to be continuous, at the base of the Middle Cambrian (12). They are of low grade. Limestone suitable for agricultural use is exposed at Bacon Cove and along the west shore of Colliers Bay.

Ross, E.R. Torbay Map-Area, Newfoundland; Geol. Surv. Canada, Mem. 266, 1952.

Area of outcrop

Rock exposures are indicated by a bedding symbol, by x (granite and quartz monzonite), by (gabbro), by v (basalt and andesite), by N (rhyolite), by a (breccia), by T (tuff), by (conglomerate), or by (sedimentary rocks).

Bedding (horizontal, inclined, vertical, overturned) + / / /

Fault (defined, approximate, assumed) - - - - -

Cleavage (inclined, vertical) / / / /

Anticlinal axis (defined, approximate) ~ ~ ~ ~ ~

Synclinal axis (defined, approximate) ~ ~ ~ ~ ~

Fold axis (arrow indicates direction of plunge) ~ ~ ~ ~ ~

Glacial striae ~ ~ ~ ~ ~

Fossil locality

Mineral occurrence (copper, Cu; manganese, Mn) x Mn

Geology by W. D. McCartney, 1951, 1952

Main highway

Other roads

Trail

Electric power line

District boundary

Rapids

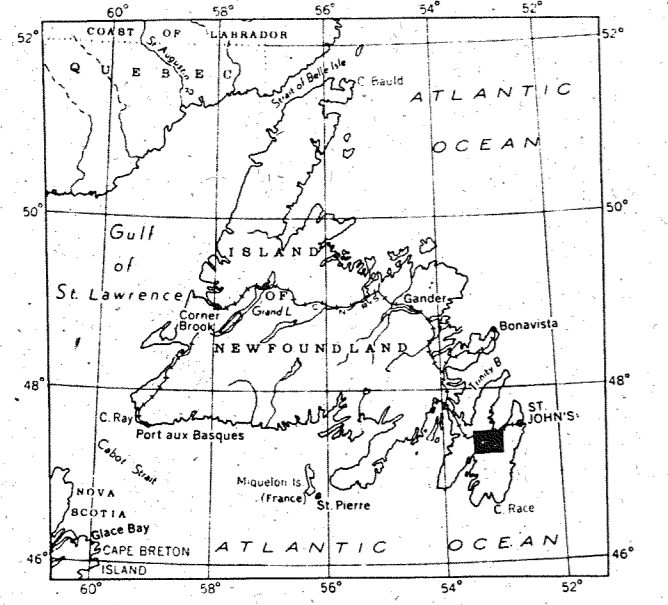
Marsh

Height in feet above mean sea-level 425

Approximate magnetic declination, 26° 45' West

Cartography by the Geological Cartography Division, 1954

Air photographs covering this map-area may be obtained through the National Air Photographic Library, Topographical Survey, Ottawa, Ontario



PRELIMINARY MAP 54-3
HOLYROOD
NEWFOUNDLAND

Scale: One Inch to One Mile = 1/63,360
Miles

00IN/06/0040

PRELIMINARY MAP 54-3
HOLYROOD
NEWFOUNDLAND
SHEET 1 N

GSC/CSC OTTAWA
00G 03039369

191/06/190
MMP 54-3 Holyrood

54-3