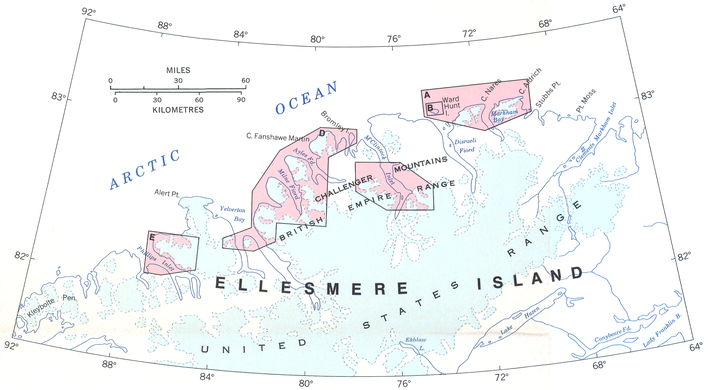
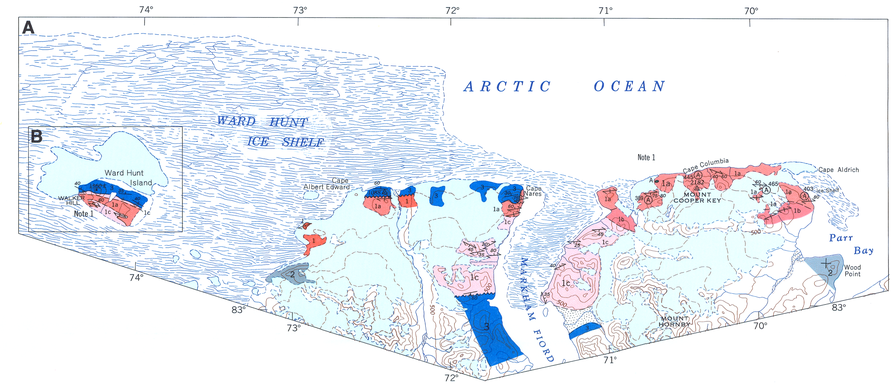
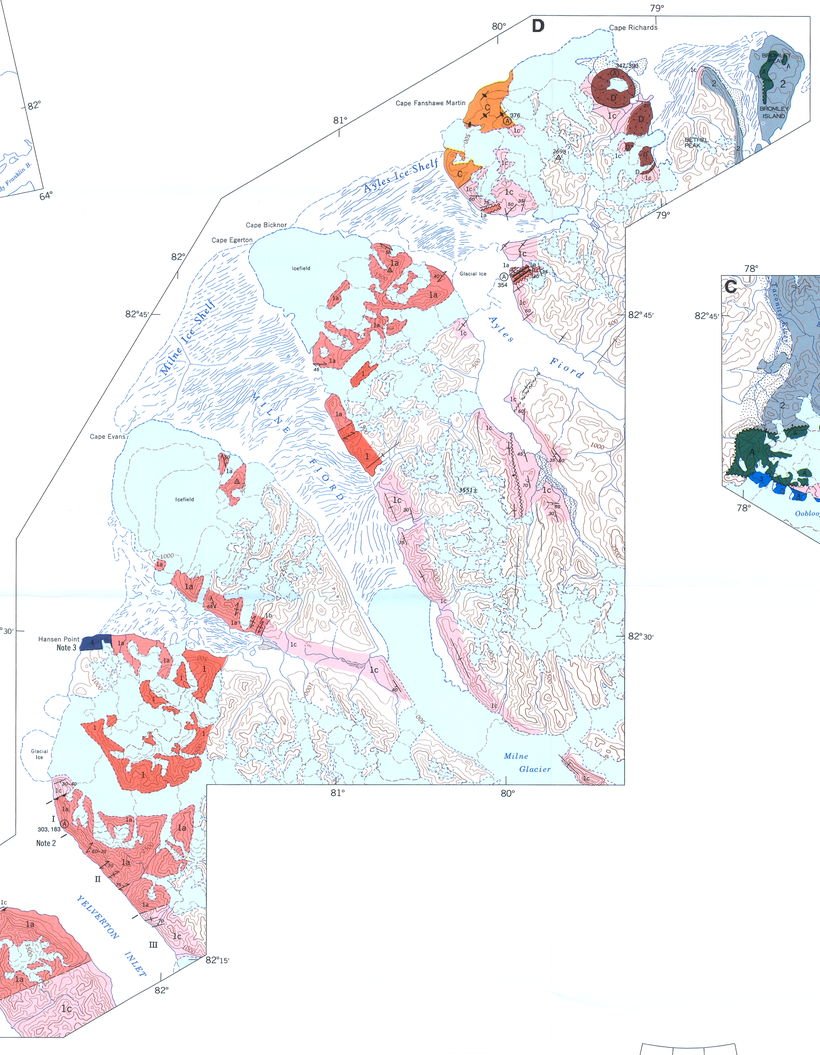
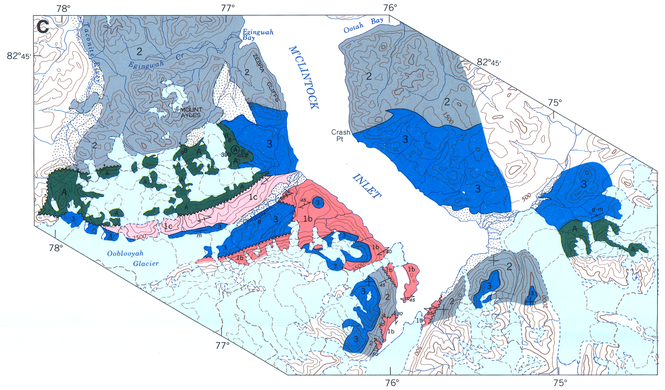
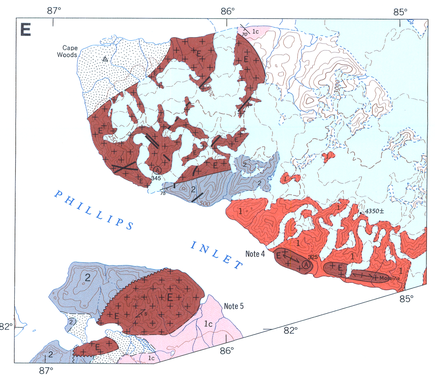










GEOLOGICAL SURVEY OF CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES

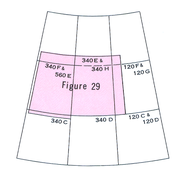
Figure 29. Geology of metamorphic and plutonic rocks, northernmost Ellesmere Island

Scale 1:250,000

Miles 4 0 4 8 12 Miles

Kilometres 6 0 6 12 18 Kilometres

INDEX MAP



NATIONAL TOPOGRAPHIC SYSTEM REFERENCE

LEGEND

METAMORPHIC, SEDIMENTARY AND VOLCANIC ROCKS

PALEOZOIC OR YOUNGER

4 — *Volcanic rocks*

PENNSYLVANIAN AND PERMIAN

3 — *Sedimentary rocks*

ORDOVICIAN AND SILURIAN
UPPER MIDDLE ORDOVICIAN TO UPPER SILURIAN

2 — *Sedimentary and volcanic rocks (metamorphism lower than greenschist facies)*

LOWER PALEOZOIC AND/OR OLDER

1 1a 1b 1c — *Metamorphic rocks;* 1, *amphibolite and greenschist facies undivided;* 1a, *amphibolite facies: mica-quartz-feldspar gneiss (including augen gneiss), hornblende-bearing gneiss, amphibolite (all units commonly garnetiferous), minor marble; metasyenite on Ward Hunt Island;* 1b, *amphibolite to greenschist facies: mica schist, commonly garnetiferous and muscovite-rich; calcareous biotite schist; minor staurolite± kyanite schist and amphibolite east of Hansen Pt., marble and minor staurolite and sillimanite schists on M'Clintock Inlet;* 1c, *greenschist facies: chlorite-quartz schist, phyllite, slate, marble, quartzite; minor amphibolite on Ayles Fiord*

INTRUSIVE ROCKS

PALEOZOIC AND YOUNGER

Mafic dykes, chiefly gabbro and diabase

DEVONIAN OR MISSISSIPPIAN

E — *Quartz monzonite, granodiorite*

DEVONIAN
LOWER (?) DEVONIAN
CAPE RICHARDS COMPLEX

D — *Quartz monzonite, granodiorite, syenite, minor quartz diorite*

LOWER DEVONIAN

C — *CAPE FANSHAWE MARTIN INTRUSION: gabbro, peridotite, minor granitic rocks*

B — *Diorite, granodiorite, syenodiorite*

DEVONIAN OR OLDER
LOWER DEVONIAN OR OLDER

A — *Serpentinite, serpentinized peridotite, wehrlite, minor gabbro; metamorphosed peridotite at Cape Columbia*

Drift covered area
Geological boundary (defined, approximate, assumed)
Bedding, tops known (horizontal, inclined)
Bedding, tops unknown (vertical)
Bedding, estimated dip (gentle, moderate, steep)
Primary flow structures in igneous rock (vertical)
Foliation (inclined, vertical)
General trend (vertical)
Structural trend (vertical dip; partly from air photographs)
Fault (defined, approximate, assumed; solid circle indicates downthrow side)
Thrust fault (defined, approximate; teeth in direction of dip)
Locality where K/Ar age has been determined, in millions of years 325

Geology by R.L. Christie 1954, T. Frisch 1965-1967, H.P. Trettin 1962, 1965-1967

To accompany Bulletin 229 by T. Frisch, 1973

NOTES

1. Map-units 1a and 1b in insets A and B comprise the type area of the Cape Columbia Complex but the term is not applied elsewhere. Most metamorphic rocks are probably older than map-unit 2 but younger strata may be present in map-unit 1c on Yelverton Fiord and Phillips Inlet.
2. Numerals I, II and III refer to metamorphic units described in the text.
3. The volcanic rocks west of Yelverton Fiord are probably correlative with those at Hansen Point, described by Christie (1957).
4. Hybrid complex of schist, amphibolite, marble, etc. of uncertain, probably pre-Silurian age, with numerous concordant sheets of granitic rocks of probable Middle and/or Late Devonian age (Trettin, 1971).
5. Silurian and (?)Ordovician sediments metamorphosed to greenschist facies (Trettin, 1971).

Geological cartography by the Institute of Sedimentary and Petroleum Geology, Geological Survey of Canada, 1972

Any revisions or additional geological information known to the user would be welcomed by the Geological Survey of Canada

Copies of the topographical maps covering these areas at 1:250,000 may be obtained from the Canada Map Office, 615 Booth Street, Ottawa, Ontario, K1A 0E9

The daily change of the North Magnetic Pole causes the magnetic compass to be very erratic in this area

Elevations in feet above mean sea-level

Printed by the Surveys and Mapping Branch, 1973

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