Base from U.S. Geological Survey
Teller B-5, B-6, C-5, and C-6; 1950

APPROXIMATE MEAN DECLINATION, 1969

SCALE 1:63 360

1 ½ 0 1 2 3 4 MILES

1 .5 0 1 2 3 4 KILOMETERS

CONTOUR INTERVAL 50 FEET
DATUM IS MEAN SEA LEVEL
DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER
THE AVERAGE RANGE OF TIDE IS APPROXIMATELY 1 FOOT

INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D.C.—1969—G68220

Geology by C. L. Sainsbury, 1960–64, assisted by Donald Grybeck, 1961, and T. E. Smith, 1962

## EXPLANATION

### QUATERNARY

*Recent*

**Qal** — Alluvium

**Qc** — Surficial cover
*Principally tundra and soil; locally includes frostbroken regolith and slopewash*

**Qb** — Beach deposits

*Pleistocene and Recent*

**Qf** — Alluvial fan deposits

*Pleistocene*

**Qlm** — Glacial moraine deposits
*Shown only where it almost completely mantles bedrock*
Qm, *ground moraine, terminal moraine, and smaller high-level moraine deposits of Recent age in cirques*
Qlm, *lateral moraine deposits*

**Qo** — Glacial outwash

**Qt** — Terrace deposits
*Includes deposits on marine platforms and younger stream-terrace deposits*

**Qtc** — Talus cones

**Qpc** — Conglomerate

### CRETACEOUS OR TERTIARY(?)

**TKm** — Mafic intrusive rock
*Principally dark augite-bearing plugs containing undigested limestone and dolomite*

**Dikes**
*Include rhyolite porphyry, feldspar porphyry, rhyolite, quartz diabase, or lamprophyre, and altered equivalents*
*Solid where continuous; dashed where discontinuous or approximately located; dotted where hidden*

### CRETACEOUS

*Upper Cretaceous*

**Kg** — Granite
*Includes coarse-grained porphyritic granite of Brooks Mountain and medium- to fine-grained biotite granite in Tin Creek and in the valley of Lost River*

### ORDOVICIAN

*Upper Ordovician*

**Oum** — Undifferentiated limestone of Late and Middle Ordovician age
u, *fossil collection of Late Ordovician age*

*Middle Ordovician*

**Odl** — Limestone
*Principally medium-bedded medium- to dark-gray fossiliferous limestone; exposed only in the klippe between the Mint River and the east headwaters of Skookum Creek*

**Olsh** — Limestone and shale
*Medium- to dark-gray fossiliferous limestone containing local chert lenses and nodules; grades downward into black sugary textured limestone; grades downward to basal black shale and limestone with graptolites. Shale ranges from 20 to 50 feet in thickness. In valley of Lost River rocks are completely dolomitized; elsewhere, partly dolomitized*

*Lower Ordovician*

**Ol** — Limestone and argillaceous limestone
*Massive to thick-bedded micritic limestone and minor interbeds of argillaceous limestone; locally limestone contains chert nodules. Fossils include sparse cephalopod siphuncles and brachiopods and, near top, trilobite fragments. Upper 200 feet distinctly white to pinkish gray*

**Oal** — Argillaceous limestone and limestone
*Thin-bedded ruditic argillaceous and silty limestone and dolomite limestone, carbonaceous limestone, and subordinate massive micritic limestone containing chert locally; abundant ripple marks, swash marks, casts of worm tubes, crossbedding, and limestone clasts. Local stromatolites in massive beds*

**Olu** — Undifferentiated argillaceous limestone

### PRE-ORDOVICIAN

**pOg** — Gabbro
*Sills and dikes of medium- to coarse-grained gabbro and olivine gabbro; locally contains noticeable magnetite and chromite*

**pOal, pOa, pOl** — Argillaceous limestone and limestone
pOal, *thin-bedded argillaceous and dolomitic limestone; light gray to olive gray on fresh fracture; some beds are silty limestone; weathers limonitic yellow orange. Unit subdivided only north of Brooks Mountain*
pOa, *upper part; lacks dark shaly beds and weathers distinctly redder than lower part*
pOl, *lower part; contains sufficient dark shaly beds that it weathers locally to a greenish-gray soil*

**pOlu** — Undifferentiated argillaceous limestone
*Between Mint River and Skookum Creek, includes some thin- to medium-bedded dolomitic limestones that are older than unit* Oal *and probably younger than unit* pOal

**pOs, pOsl, pOp, pOsg** — Slate of the York region
pOs, *undifferentiated shale, slate, graywacke, limy siltstone, and light-gray pelitic rock*
pOsl, *buff-weathering laminated siltstone, lenticular black limestone veined with white calcite, and schistose slate*
pOp, *fine-grained schistose pelitic rock that weathers a distinctive light gray with light bluish streaks*
pOsg, *slate, slaty limestone, and sheared graywacke*

**Tactite**
*Includes garnet-magnetite-hornblende-diopside rock, and massive idocrase rock*

**Breccia**
*Includes brecciated and locally dolomitized limestone near major faults*

**Veins**
*Not shown outside of Brooks Mountain area*
A, *tourmaline-fluorite, or sulfides-fluorite*
B, *quartz-tourmaline*

**Contact, showing dip**
*Dashed where gradational, approximately located, or inferred; dotted where concealed; queried where doubtful*

**High-angle fault** — U, *upthrown side*; D, *downthrown side*

**Thrust fault** — *Sawteeth on upper plate*

**Faults, showing dip**
*Dashed where approximately located; dotted where concealed; queried where probable or inferred*

Inclined — Overturned — Vertical

**Strike and dip of beds**
*Dip symbol in unconsolidated deposit indicates an isolated outcrop of bedrock*

**Strike and dip of crenulated beds**
*May show range of dips to either side*

**Strike and dip of cleavage or schistosity**

Anticline — Syncline — Horizontal fold axis — Overturned fold axis

**Folds**
*Showing crestline or troughline and direction of plunge. Dashed where approximately located; dotted where concealed*

**Direction and amount of plunge of dragfold axis**

U, T, B, BT, BX, MB

**Mineral prospects or occurrence of a rare element**
U, *uranium, tin, flourite, and sulfide minerals*
T, *tin, sulfide minerals, and fluorite*
B, *beryllium, fluorite, and sulfide minerals locally*
BT, *beryllium, tin, fluorite, and sulfide minerals*
BX, *large areas with beryllium-fluorite veins and veinlets*
MB, *location of a mineral that contains anomalous amounts of beryllium*

* Glacial erratic of granite of Brooks Mountain

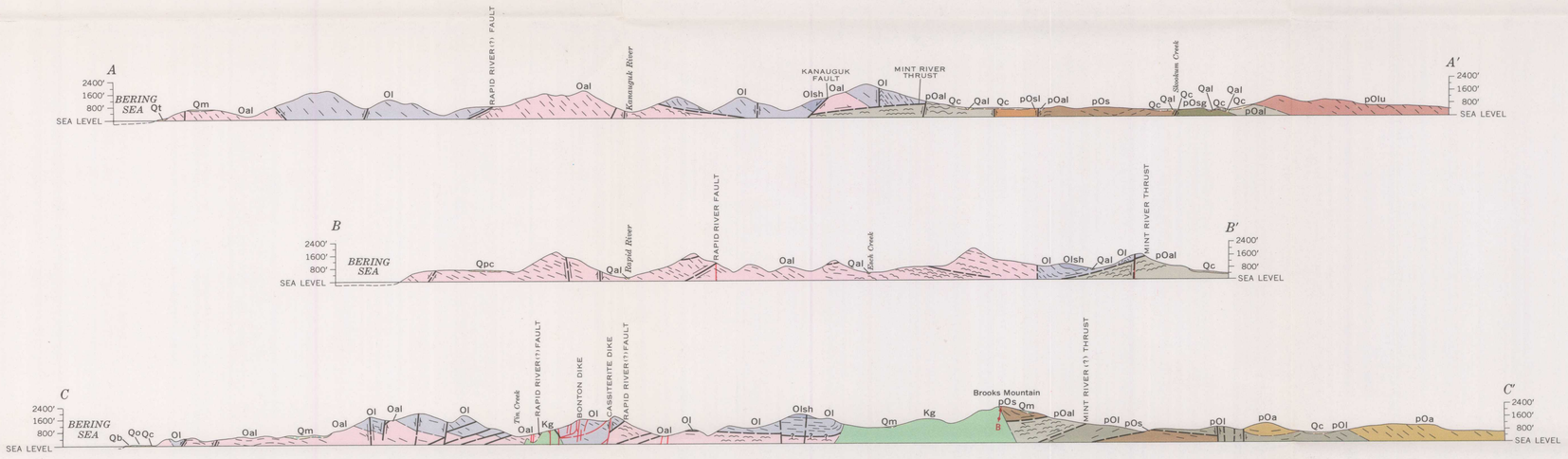
× Glacial erratic

▲33 Fossil-collection locality
*Number indicates collection with stratigraphic value as reported in tables in text. Unnumbered symbol indicates locality of collection without stratigraphic value, or station where fossils were observed but not collected*

M———M′ Line of measured section

P———P′ Line of projection where unit thickness was computed

Slightly improved landing strip
*Larger rocks removed*




# GEOLOGIC MAP AND STRUCTURE SECTIONS OF THE CENTRAL YORK MOUNTAINS SEWARD PENINSULA, ALASKA