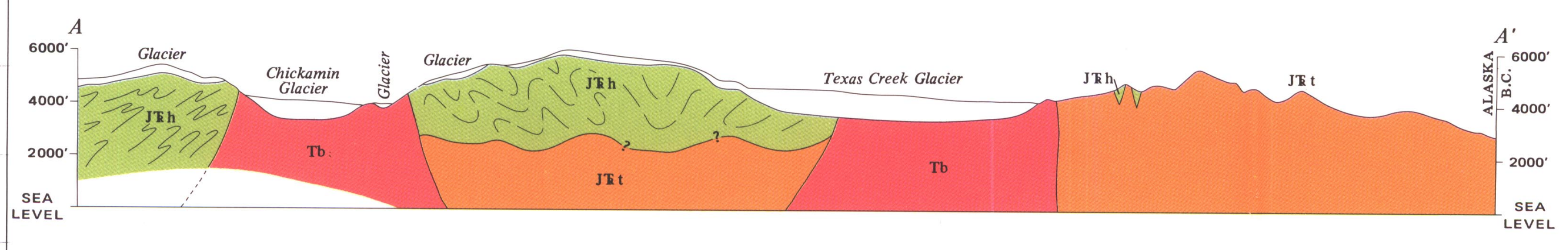


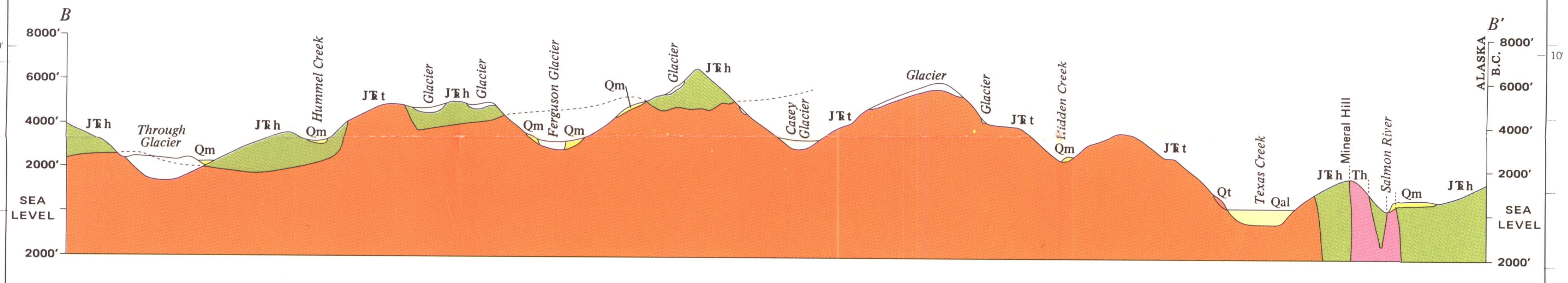


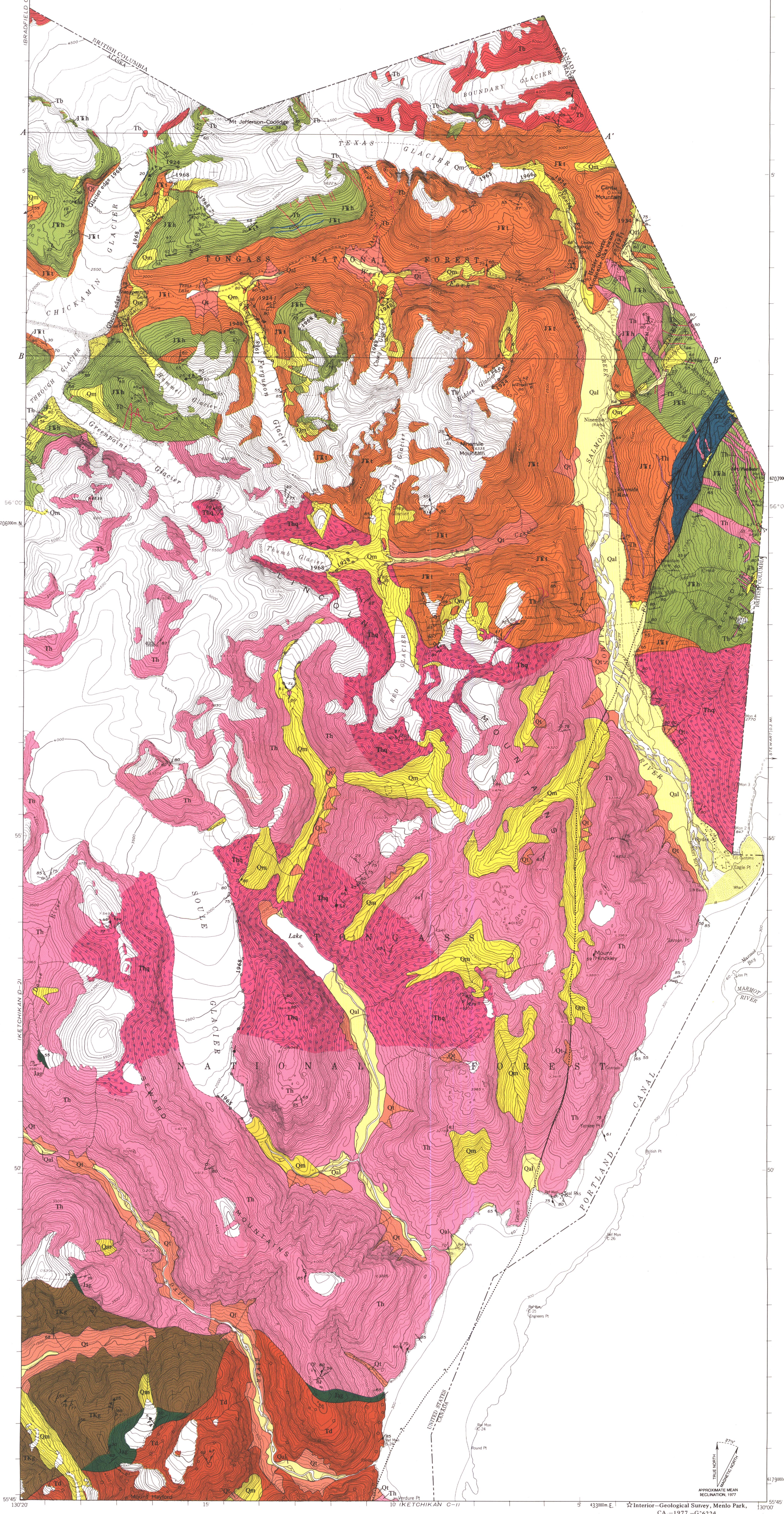


## CORRELATION OF MAP UNITS

| | | | |
|---|---|---|---|
| Age equivalence not implied | Qal, Qt, Qm | | QUATERNARY |
| | Th / Thq, Tb, Td | Eocene | TERTIARY |
| Age relationship unknown | TKg, TKc | | TERTIARY OR CRETACEOUS |
| | JTRt | Lower Jurassic or Upper Triassic | JURASSIC OR TRIASSIC |
| Age relationship unknown | JTRh | | |
| | Jag | | JURASSIC OR OLDER |

## DESCRIPTION OF MAP UNITS

SURFICIAL DEPOSITS

Qal — Alluvium

Qt — Talus

Qm — Moraines

Th, Thq — HYDER QUARTZ MONZONITE – Mostly granodiorite with local areas of quartz monzonite; also occurs as dikes in surrounding rocks. Thq, quartz monzonite. Age 49.2 m.y.[1]

Tb — BOUNDARY GRANODIORITE – Mostly granodiorite. Intrusive relations with Hyder Quartz Monzonite unknown. Also occurs as dikes. Age 49 m.y.[1]

Td — DAVIS RIVER PLUTON – Porphyritic quartz monzonite and granodiorite. Contains abundant phenocrysts of microcline to 5 cm long. Full aerial extent of pluton unknown. Intruded by Hyder Quartz Monzonite

TKg — SCHLIEREN GRANODIORITE – Foliated, partly migmatitic granodiorite and quartz monzonite containing abundant convoluted schlieren. Contains areas from a few centimeters to tens of meters across of orthogneiss and partly digested amphibolite-grade metamorphic rocks. Full aerial extent of pluton unknown. Intruded by Davis River Pluton and the Hyder Quartz Monzonite

TKc — CATACLASITE, SCHIST, AND MYLONITE – Crushed and sheared rocks, developed mostly from Hazelton(?) Group, but includes some sheared Texas Creek Granodiorite

JTRt — TEXAS CREEK GRANODIORITE – Porphyritic granodiorite with minor amounts of quartz diorite and quartz monzonite. Also occurs as dikes in Hazelton(?) Group. Locally sheared and hydrothermally altered. Pattern shows areas of cataclasis and shearing; density of overprint is proportional to amount of deformation

JTRh — HAZELTON(?) GROUP – Red and green volcanic conglomerate. Sandstone, tuff, tuff-breccia, siltstone, and mudstone and black shale and phyllite. Rare flows. Strongly contact metamorphosed near contacts with intrusive rocks

Jag — AMPHIBOLITE AND GNEISS – Dark green to black fine-grained amphibolite, gneiss, and schist. Often weathers rusty red owing to oxidation of minor amounts of pyrite. Contains varying proportions of hornblende, plagioclase, biotite, and quartz. Occurs as screens between intrusions and as roof pendants

[1] Ages of intrusive rocks determined by J. Von Essen using potassium-argon techniques

Contact – Showing dip; dotted where concealed

Fault – Dotted where concealed. Arrows indicate relative horizontal movement

1911 Margins of glacial ice and year of observation

Strike and dip of beds
- 50 Inclined
- Vertical
- 71 Overturned

Strike and dip of cleavage
- 45 Inclined
- Vertical

Strike and dip of foliation – Includes compositional banding, mineral foliation, and flattened clast foliation in metamorphic rocks, and mineral foliation in intrusive rocks
- 65 Inclined
- Vertical

Strike and dip of mineral-filled shears – Most common minerals in shears are chlorite, calcite, quartz, and epidote
- 75 Inclined
- Vertical

86 Dike, showing dip

Strike and dip of lamprophyre dikes and dike swarms. Individual dikes are too thin to plot at scale of map
- 47 Inclined
- Vertical

Strike and dip of joints
- 70 Inclined
- Vertical

Strike and dip of mineral-coated joints – Most common mineral is chlorite
- 81 Inclined
- Vertical

20 Bearing and plunge of mineral lineation

FA 20 Bearing and plunge of minor folds

Base by U.S. Geological Survey, 1955
Universal Transverse Mercator projection 1927 North American datum
1000-meter Universal Transverse Mercator grid ticks, zone 9

SCALE 1:63 360

1 ½ 0 1 2 3 4 5 MILES

1 .5 0 1 2 3 4 5 6 7 KILOMETERS

CONTOUR INTERVAL 100 FEET
DATUM IS MEAN SEA LEVEL
DEPTH CURVES IN FEET DATUM IS MEAN LOWER LOW WATER
SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

☆Interior—Geological Survey, Menlo Park, CA.—1977—G76224

Geology by James G. Smith, George C. Dunne, and William H. Condon, 1968

# GEOLOGIC MAP OF THE KETCHIKAN D-1 AND BRADFIELD CANAL A-1 QUADRANGLES, SOUTHEASTERN ALASKA