

- LEGEND**
- CENOZOIC**
- QUATERNARY**  
PLEISTOCENE AND RECENT  
13 Fluvial gravel, sand, and silt; glacial outwash; till and alpine moraine
- TERTIARY**  
12 Coal and clay
- MISSISSIPPIAN**  
LOWER AND MIDDLE MISSISSIPPIAN  
11 Limestone, chert-nodule limestone, sandstone, siltstone; minor black, calcareous argillite, shale, and sandy limestone in lowest beds
- DEVONIAN AND MISSISSIPPIAN**  
UPPER DEVONIAN AND MISSISSIPPIAN  
10a, grey and black shale, slate, argillite, siltstone, sandstone; 10b, black slate and argillite; minor dark grey, coarsely crystalline limestone; 10c, grey and black, graphitic siltstone and calcareous sandstone; may be older
- DEVONIAN**  
MIDDLE DEVONIAN  
8 Upper unit: light and dark grey, fine-grained and crypto-grained limestone, crinoidal limestone and dolomite  
Lower unit: well-bedded, medium grey and dark grey, feld dolomite and calcareous dolomite; 8a, light and dark grey, platy, crypto-grained and fine-grained limestone; buff, argillaceous limestone; north of Long Mountain Lake includes minor areas of undivided 4-7
- LOWER (?) DEVONIAN**  
7 Buff, orange, and yellow, limestone breccia; minor laminated light grey dolomite
- LOWER DEVONIAN**  
6 Distinctively banded, dark and light grey, fine- and crypto-grained, locally laminated dolomite; minor buff, argillaceous and calcareous siltstone; 6a, probably includes some 5; 6b, may include some 5a
- SILURIAN**  
MIDDLE SILURIAN  
5 Grey and black, feld dolomite, cherty dolomite, calcareous dolomite; minor limestone, sandstone; 5a, probably includes some 6
- CAMBRIAN AND ORDOVICIAN (mainly)**  
4a, thin-bedded, grey and buff, argillaceous and silty limestone and calcareous phyllite; limestone; intruded by greenstone sills and dykes; includes minor (?) dark grey granitoid siltstone and shale of early Silurian age along Turmain River; 4b, black and grey slate, siltstone, sandstone, chert, limestone, calcareous phyllite; may locally include 4a; 4c, undivided 4a, 4b, and 1
- CAMBRIAN**  
LOWER AND (?) MIDDLE CAMBRIAN  
3a, dark weathering, laminated argillite, siltstone, sandstone, and sandy limestone; buff, brown, and reddish sandy dolomite; crossbedded dolomitic sandstone and pebble conglomerate; quartzite; argillaceous sandstone, siltstone, and limestone; 3b, polymictic pebble and cobble conglomerate
- LOWER CAMBRIAN**  
2a, light grey, well-bedded to massive limestone; includes sandy and argillaceous beds near Gundahoo River; 2b, quartzite; minor silt and shale; 2c, quartzite-pebble and cobble conglomerate; white, buff, purple and reddish brown, feldspathic sandstone, siltstone, and argillite
- CAMBRIAN AND OLDER**  
1 Impure grey and green quartzite, siltstone, sandstone, and argillite; calcareous sandstone; brown and black, laminated siltstone; quartz-pebble conglomerate; red and green slate and shale; limestone; cobble and boulder conglomerate; grit, greywacke; intruded by sills and dykes of gabbro and/or diorite
- INTRUSIVE ROCKS**
- A Green and purplish weathering chloritic greenstone
- B Buff and purplish weathering, quartz-rich, fine- to medium-grained granitic rock
- Geological boundary (defined, approximate or assumed) . . . . .
- Bedding (inclined, vertical, overturned) . . . . .
- Cleavage (inclined) . . . . .
- Fault (defined, approximate, assumed) . . . . .
- Fault (direction of dip, downthrown side) . . . . .
- Anticline (defined, approximate) . . . . .
- Syncline (defined, approximate) . . . . .
- Anticline (overturned) . . . . .
- Glacial striae, drift ridge or rock groove (showing direction of ice-movement) . . . . .
- Fossil locality . . . . .
- Mineral occurrence (barite, bar; witherite, bar(w); fluorite, fl) . . . . .

**DESCRIPTIVE NOTES**

The Alaska Highway and Smith River Road provide access to the northern and eastern parts of the map-area. Good pack-train routes lead westerly from the Alaska Highway into Terminal Range. The southwestern part of the area can be reached by the Davie Trail which runs southeasterly from Lower Post, 37 miles to the northwest, or via the trail that runs from the mouth of Turmain River to McDame Post on Dease River. Large burned areas make foot travel extremely difficult in many parts of Liard Plain. Liard River is easily navigated downstream from a point 3 miles southeast of the mouth of Coal River, but upstream from this point the river contains many dangerous rapids. Lower Kechika River includes several hazardous stretches that are best navigated during high water. Landings can be made by small float-equipped aircraft on parts of Liard, Kechika, and Coal Rivers, and on numerous lakes throughout the area.

West of Gundahoo River a conspicuous Lower Cambrian limestone member (2a) occurs within a thick succession of impure clastic rocks (1) that are cut by numerous gabbroic and/or dioritic sills and dykes. In the southwestern part of the map-area, Lower Cambrian rocks (2a, 2b) include a lower quartzite member and an upper limestone member, each more than 1,000 feet thick. Clastic Lower Cambrian strata (2c), including coarse conglomerate, are in fault contact with Silurian dolomites (5) 4 miles southeast of Smith River airport. Similar rocks occur unconformably by Silurian beds (5) 7 miles south-southwest of the airport. Cambrian rocks (3), more than 3,000 feet thick, outcrop in Terminal Range. The succession is dominantly clastic and includes a coarse conglomerate member (3b) as much as 700 feet thick.

Incompetent calcareous and argillaceous strata of mainly Cambro-Ordovician age (4) are widespread in the map-area. These rocks are more than 5,000 feet thick near the headwaters of Gundahoo River. Fossils of Canadian (Early Ordovician) and Eodian (early Late Ordovician) have been collected from beds stratigraphically high in the map-unit in the northern Rocky Mountains.

Silurian and Devonian strata (5-8) underlie much of the northern and eastern parts of the map-area. The base of the succession is marked by an unconformity, and a discontinuity separates map-units 3 and 6. Estimated thicknesses are: Middle Silurian (5), 1,000-1,700 feet, including basal sandstone (10-150 feet); Lower Devonian (6), 1,600-1,700 feet; Lower (?) Devonian (7), 500 feet; and Middle Devonian (8), 1,600 feet. The Middle Devonian unit (8) and the upper member of the Middle Devonian unit (8) are highly fossiliferous, but the intervening beds (6, 7) contain few fossils. An early Devonian age for map-unit 8 is based on the presence of fish fragments. Dolomite is characteristic of Silurian strata in most parts of the area but limestone is dominant on Long Mountain. A facies change probably accounts for the lithological difference between map-units 8 and 8a.

Clastic Devonian-Mississippian strata (10a) unconformably overlie Middle Devonian carbonate rocks (8) north of Liard Hot Springs, and are in fault contact with similar rocks southwest of Liard River in the same area. Black slate and argillite (10b) exposed along Coal River about 7 miles north-northwest of its mouth presumably overlie carbonate strata exposed nearby, but the contact was not observed. Clastic rocks (10c) exposed along Turmain River in the Rocky Mountain Trench have not been satisfactorily dated.

Lower and Middle Mississippian strata (11), tightly folded in Cambro-Ordovician strata (4a) north of Turmain River, include a basal unit, as much as 300 feet thick, of sandstone, siltstone, and minor black shale, and an overlying carbonate unit more than 900 feet thick.

Coal and clay of Tertiary age (12) form small outcrops on the west bank of Coal River about 3 miles north of the bridge.

During Pleistocene time an ice-sheet advanced northeasterly and easterly from the Cassiar Mountains across most of the map-area. Glacial erratics occur on Mount Hallett at an elevation of about 5,000 feet, but no evidence was obtained to suggest that ice covered the higher mountains in Terminal Range south of latitude 59° 20'. Drumlinoid ridges, glacial grooves, eskers, and kettles are abundant in Liard Plain. Glacial-lake silt are well exposed in the valley of Kechika River west of Gemini Lakes and in the valley of Rabbit River near the mouth of Gundahoo River. Easterly trending abandoned channels are deeply incised in bedrock east of Coal River. These and other less-spectacular channels in Liard Plain were apparently cut by streams that were diverted by ice occupying parts of the valleys of Kechika, Liard, lower Coal, and lower Smith Rivers.

In general, the structural trends south of Liard River are northwest whereas the trends north of the river are north to northeast. Except near faults, the rocks north of Liard River occur in relatively simple, open folds. Strata in the northern Rocky Mountains, on the other hand, are more tightly folded. Cambrian and Precambrian strata (1) have been thrust northeasterly over Cambro-Ordovician strata (4a) west and south of Long Mountain. Rocks immediately east of the fault have been deformed into a northwesterly plunging syncline, overturned to the northeast. Rocks of Cambrian and Precambrian age (1) near Gundahoo River and east of Taitano Creek have been tightly folded and the latter locally exhibit plunging folds overturned to the north. Most of the thin-bedded, incompetent Cambro-Ordovician rocks are tightly folded-in particular, along Kechika, Turmain, and Red Rivers.

Placer gold has been obtained from bars along Liard River, mostly during the latter part of the nineteenth century. A barite, witherite, and fluorite deposit, about 2 miles north of Liard River bridge, has been explored. The mineralized zone occurs in Middle Devonian carbonate rocks along and near a gently dipping contact with overlying Devonian-Mississippian clastic rocks.

Geology by H. Gabrielse, 1958, 1960, and 1961

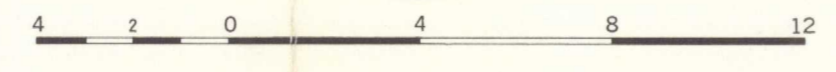
Cartography by the Geological Survey of Canada, 1962

Mean magnetic declination, 31° 36' East decreasing 3.8' annually. Readings vary from 31° 01' E in the SW corner to 32° 13' E in the NE corner of the map-area.

PUBLISHED, 1963  
COPIES OF THIS MAP MAY BE OBTAINED FROM THE DIRECTOR, GEOLOGICAL SURVEY OF CANADA, OTTAWA

MAP 46-1962  
GEOLOGY  
RABBIT RIVER  
BRITISH COLUMBIA

Scale: One Inch to Four Miles =  $\frac{1}{253,440}$  Miles



- LEGEND**
- Highway . . . . .
- Road and buildings . . . . .
- Trail . . . . .
- District boundary . . . . .
- Intermittent stream . . . . .
- Marsh . . . . .
- Falls and rapids . . . . .
- Contours (interval 500 feet) . . . . .
- Height in feet above mean sea-level . . . . .

Base-map by the Surveys and Mapping Branch, 1952 and partially revised 1960. Minor additions and alterations by the Geological Survey of Canada, 1961

MAP 46-1962  
RABBIT RIVER  
BRITISH COLUMBIA  
SHEET 94M

G  
3401  
.05  
1956  
G4  
omvfc  
c.2

46-1962  
c.2