



LEGEND

PRELIMINARY SERIES

QUATERNARY RECENT

9 9a, basalt and basalt breccia; 9b, volcanic ash

PLEISTOCENE AND RECENT

8 Till, gravel, sand, clay, and silt

TERTIARY

MIOCENE AND (?) PLEIOCENE  
7 Basalt, andesite, related tuff and breccia; minor conglomerate, greywacke, shale and diatomite; 7a, may be Pleistocene; 7b, mainly sediments

Eocene and/or Oligocene  
6 Basalt, andesite, related tuff and breccia; minor conglomerate, sandstone, and shale

5 Conglomerate, sandstone, greywacke, shale, lignite; minor breccia, tuff, and basalt

PALEOCENE AND/OR EOCENE  
4 Rhyolite, dacite, trachyte; related tuff and breccia; andesite and basalt; minor sediments; 4a, mainly andesite and basalt

JURASSIC OR CRETACEOUS

3 Conglomerate, greywacke, and argillite

JURASSIC

MIDDLE JURASSIC  
HAZELTON GROUP (in part)  
2 Andesite, basalt; related tuff and breccia; conglomerate, greywacke, shale

PERMIAN AND (?) EARLIER  
CACHE CREEK GROUP  
1 Chert, argillite, limestone, greenstone; minor greywacke and conglomerate

Granodiorite, granite, gneissic granite, quartz diorite, and diorite

- Geological boundary (defined, approximate, assumed)
- Limit of geological mapping
- Bedding (inclined; vertical, tops not indicated)
- Fault (defined, approximate, assumed)
- Lineament (from air photographs)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Glacial striae
- Fossil locality
- Mineral occurrence

MINERAL SYMBOLS  
Copper . . . . . Cu Manganese . . . . . Mn  
Diatomite . . . . . diat. Nickel . . . . . Ni

- Geology by H. W. Tipper, 1957
- Main highway
- Other roads
- Wagon road
- Trail
- District boundary
- Indian Reserve boundary
- Intermittent stream
- Marsh
- Sand or gravel
- Contours (interval 1,000 feet)
- Height in feet above mean sea-level

Cartography by the Geological Survey of Canada, 1959

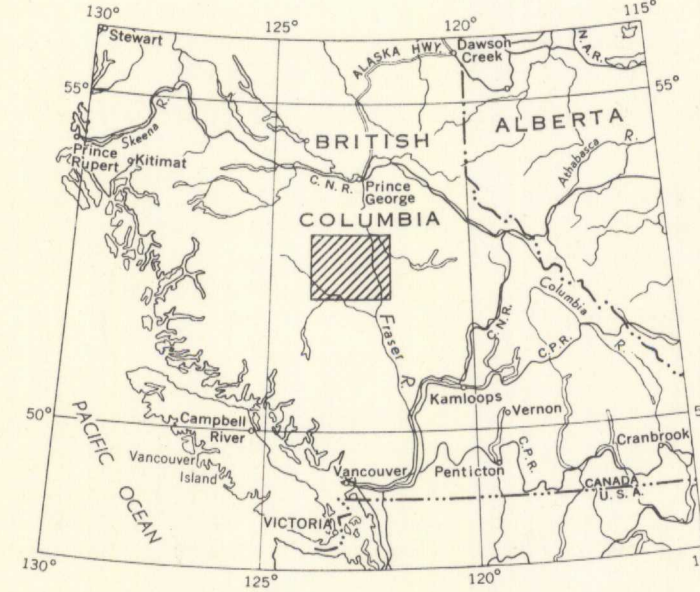
Approximate magnetic declination, 25° 40' East  
In response to public demand for earlier publication, Preliminary Series maps are now being issued in this simplified form, thereby effecting a substantial saving in time. There is no loss of information, but the maps will be clearer to read if all or some of the map-units are hand-coloured.

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



DESCRIPTIVE NOTES

Bedrock outcrops over less than 5% of the map-area. Rock is only well exposed along some creeks and rivers and on the steeper hills; elsewhere small, widely scattered outcrops rise above the glacial drift, which in most places is 25 to 50 feet thick.  
No fossils have been found in the Cache Creek group (1) but it is lithologically similar to the rocks of the type area. Along Fraser River and eastward the group is tightly folded, contorted, sheared, and metamorphosed, but between Meldrum Lake and Alexis Creek it is less deformed and comparatively unmetamorphosed.  
Hazelton group rocks (2) are in part a continuation of this group from Nechako River map-area and are lithologically similar but unfossiliferous.  
The Jurassic or Cretaceous sediments (3), at least 700 feet thick, are poorly consolidated and in general only slightly deformed. The chert pebbles of the conglomerates resemble the chert of the Cache Creek group. No fossils have been found in the unit.  
The early Tertiary rocks (4) rest unconformably on the Jurassic or Cretaceous rocks (3). The unit is faulted and folded but the structure is difficult to interpret. The group is characterized by light-coloured rocks, mostly cream-coloured but also mauve, green, grey, and salmon-coloured. The thickness of the group varies from 1,500 feet or more north of Meridian Hill. No diagnostic fossils were found but the group is lithologically similar to fossiliferous early Tertiary rocks to the northwest.  
Sedimentary rocks (5), occurring mainly in Fraser River valley, underlie the volcanic rocks (6) conformably and in part are interbedded with them. The sediments are poorly consolidated but are folded and faulted. Near Australian Creek they are not less than 1,200 feet thick. Fossil plants are found at several places. Although these sediments appear to be confined to Fraser River valley, the group may extend westward to Puntchesak Lake.  
The Eocene and/or Oligocene volcanic rocks (6) rest unconformably on the early Tertiary rocks (4) in the west half of the area. This unit is believed to occur in broad, northwest-trending folds in the south half of the area and to plunge gently southeast. In the north half the structure is unknown.  
The comparatively undeformed plateau-type lavas (7) are similar to those of the Endako group to the northwest. They rest with angular discordance on the older groups but at several places, particularly in Fraser River valley, are underlain conformably by poorly consolidated sediments (7b), including diatomite. Much of the drift-covered plateau west of Fraser River is believed to be underlain by rocks of this group. Some lavas (7a) mapped with this group may be as young as Pleistocene. Although the group covers a large area it is not thought to be very thick in this map-area, probably 500 to 1,000 feet at most.  
Glacial drift and recent alluvium (8) cover most of Quesnel map-area to depths of 25 to 50 feet, and in some places to as deep as 600 to 700 feet. Along Fraser River the drift is composed of two and probably three distinct till sheets can be recognized.  
One small volcanic cone and the accompanying ash and debris comprise the Recent volcanic rocks (9), and these rest on glacial till. The cone is extinct and these rocks may be only slightly younger than the flows mapped as (7) which occur in the same area.  
The granitic rocks (A) have been mapped as a single unit, but the various bodies may be unrelated. All the granitic masses west of Fraser River are coarse-grained, equigranular, biotite granites and granodiorites whereas the two masses east of the river are coarse gneissic granodiorites, diorites, and quartz-diorites. These rocks are deeply weathered and, with the exception of Granite Mountain, are topographically subdued. Little is known of their origin or their precise age.  
The linear feature extending up Fraser River valley from the south to Soda Creek and thence northward through McLeese Lake valley and along the straight front of the Granite Mountain-Dragon Mountain range appears to be a zone of faults and of tight folds, at least along the southern half of the feature. No single, large fault has, however, been traced along it.  
The area has been prospected without noteworthy success. The Tertiary rocks of the western two-thirds of the area generally appear to be barren of ore minerals. The Cache Creek rocks, particularly near the granitic masses, and the granite pluton of Granite Mountain are the only rocks in the area in which ore minerals were observed. Thus around Granite Mountain and to the south of it, copper minerals were noted at several places and a nickel occurrence is reported south of Williams Lake. These have all been investigated recently by mining companies. Fallo-melane occurs filling fractures in cherts north of Baker Creek.  
Diatomite has been known in the Quesnel area for many years but the occurrences near and to the south of Buck Ridge have not previously been described. The diatomite there is exposed only in road cuts and is a light weight, cream-coloured, compact material as much as 25 feet thick; in places probably much thicker.  
Lignite is common, occurring in the Eocene and (?) later sediments (6). Seams over 40 feet thick are known along Fraser River. Various types of clay of Tertiary to Recent age occur in Fraser River valley, between Macalister and Quesnel. These are of various origins. Some of these clays may be suitable for bricks, tile, pottery, or other uses.



12-1959 MAP 12-1959  
GEOLOGY  
QUESNEL  
CARIBOO DISTRICT  
BRITISH COLUMBIA

Scale: One Inch to Four Miles = 1/253,440  
Miles 4 8 12

PUBLISHED, 1959  
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MAP 12-1959  
QUESNEL  
BRITISH COLUMBIA  
SHEET 93 B