

DESCRIPTIVE NOTES

Three primary physiographic subdivisions of the Canadian Cordilleran region are represented in Dezadeash map-area. The St. Elias Mountains occupy the southwest part of the area, the Boundary Ranges of the Coast Mountains cover the southeast part, and the area north of Dezadeash and Frederick Ranges is the southeast part of the Klane Plateau, which is a part of the greater Yukon Plateau. The trench-like Shikwak Valley separates Klane Plateau from the St. Elias Mountains. The Icefield Ranges, which comprise the main mass of the St. Elias Mountains, lie west of Alsek River, so that only their eastern fringe lies within the map-area. The Alsek Ranges form the front of the St. Elias Mountains east of the Alsek and south of Bates River, with Mount Beaton their northeast bastion. Elsewhere the Klane Ranges form the outer front of the St. Elias Mountains, but are separated from them by a northwesterly trending plateau-like belt known as the Duke Depression, which occupies much of the southwest quarter of the Dezadeash area.

In Pleistocene time most of the map-area was covered by glacial ice; only those peaks more than 6,000 feet high stood above the great moving sea of valley glaciers. The ice accumulated in the towering Icefield Ranges of the St. Elias Mountains, and moved east, northeasterly, and north into the valleys of Kaskawulsh, Dusky, and Alsek Rivers. The lower Alsek Valley was choked by a deep accumulation of glacial ice that precluded movement to the south except in a zone close to the Pacific Ocean.

Tatshenshini River Valley formed a gathering ground for glacial ice moving down from the Alsek Ranges on the west and the Squaw Range on the east, and the resulting great valley glacier also moved northerly. Another large valley glacier flowed northwesterly down the valley of the upper part of Tatshenshini River, having originated among the high mountains at the head of Parton River, 20 miles south of the Yukon-British Columbia boundary. Great ice-fields that abounded on the high mountains of the Boundary Ranges in the southeast part of the map-area moved northerly via the valley of Kusawa Lake. At the time of maximum glacial activity, Dezadeash Valley was ice-filled to an elevation of about 6,000 feet, and this ice-sheet spread northward, gradually thinning to cover the greater part of the adjoining Aishihik district.

Towards the close of the Glacial Epoch, a great glacial lake occupied Dezadeash and Takhini River Valleys, and arms of this lake extended north of the map-area along Aishihik and Mendenhall River Valleys. There were three southern arms of the lake: one of these extended southwest from the present site of Champagne to Dezadeash Lake; another arm reached up Takhini River Valley and joined with the waters of a greater Kusawa Lake; and the third arm extended southerly up Kathlamet River Valley to Dezadeash Lake. Dezadeash and Kusawa Lakes were united at that time by a connecting channel along the valley now occupied by Frederick Lake. The name Glacial Lake Champagne is proposed for this extinct lake. Beach deposits of sand and gravel and boulders that mark the old shorelines of Glacial Lake Champagne are widespread about the valley walls that retained the lake. They are best developed on steep exposed slopes, between elevations of 2,300 and 2,800 feet, where wave action was most pronounced, and the positions of some of them are shown on this map. Both Takhini and Dezadeash River Valleys are floorstone beds, thick deposits of stratified silts that settled from the glacial meltwaters of Lake Champagne. These glacio-lacustrine beds provide rich arable land.

In comparatively recent years, Alsek River was dammed at least twice by an advance of Lowell Glacier across its path. The glacial ice became tightly packed against the steep west face of Goat Head Mountain, and the resulting ice-dam caused Alsek to back up and form an elongated lake for which the name Recent Lake Alsek is proposed. The old shorelines of Lake Alsek are marked by well-developed beach deposits of sand, gravel, and boulders. West of the big bend on Dezadeash River, the uppermost beach is at an elevation of 240 feet or 265 feet above present river level, and several driftwood-littered strand lines are exposed at elevations up to 125 feet above Dezadeash River. The condition of the partly decayed driftwood suggests that the last phase of Recent Lake Alsek may have ended little more than 100 years ago. The approximate outline of the upper shoreline of this lake is shown on the map.

The Yukon group(1) includes a wide variety of schists and gneisses derived from sedimentary strata, as well as some hornblende and chlorite schists of probable volcanic origin. These rocks are probably in large part of Precambrian age, but may include some altered Paleozoic rocks. The group is considered to be at least 12,000 feet thick.

No fossiliferous rocks were found in the sedimentary strata of the Kaskawulsh group(2) within the map-area, but their age has been assigned to the Carboniferous or Permian on the evidence of fossils collected in areas to the south and northwest. This Permian-Carboniferous assemblage is thought to range in thickness from 8,000 to 10,000 feet.

Both sedimentary beds and volcanic flows of the Mush Lake group(3) thicken or thin rapidly along strike, and exposed sections in different parts of the area exhibit a variety of differing successions of lavas, tuffs, greywacke, slate, argillite, and limestone beds. No diagnostic fossils were found among its members. The group may be more than 20,000 feet thick in the southwest part of the area, but is less than half this in the mountains adjacent to Kimberley and Sugden Creeks. Several copper-bearing veins occur in volcanic rocks of this group.

A few thin coal seams were observed in the Klane Ranges west of Dezadeash River in the eastern half of the map-area, and stocks of grey granodiorite intrude Lower Cretaceous strata in the mountains 4 miles west of the south end of Dezadeash Lake. The porphyritic hornblende granite stock(7b) west of Mush Lake contains small bodies of intruded grey granodiorite, and in the northeast corner of the map-area, another stock of porphyritic granite is cut by a smaller stock of acidic granite(7a). Similar granite intrudes the grey granodiorite(7) on the west side of Kusawa Lake 4 miles south of the north end of the lake. The Coast intrusions of the map-area are apparently all of Lower Cretaceous or later age.

No coal was seen in the Paleocene sedimentary rocks(9) of the map-area, but coal has been found farther west in very similar Paleocene strata near Klane Lake. Small stocks, sills, and dykes of white-weathering soda syenite(10) intrude the Paleocene succession in the mountains east and southwest of Bates Lake.

Tertiary volcanic rocks(11) cap the mountains north of Marble Creek on the west side of the Alsek and extend north for 15 miles to Kaskawulsh River. They may have partly protected gold-bearing placer gravels from ice-erosion during the Glacial period.

During Pleistocene time, when all of the main valleys in Dezadeash area were choked by northerly moving glacial ice, enriched gold-bearing placers in the path of the moving ice were swept aside and scattered over a wide area. Those pre-glacial placer deposits that remain owe their survival to local physical features that protected the gravel beds from erosion. The gold placers of Squaw (Dollis), Beloud, Sugden, and Shorty Creeks are illustrations of this. The last is an easterly flowing stream protected by a mountain ridge on both south and west. In the case of Sugden Creek, a southerly flowing stream, protection was afforded by the bulwark of high mountains in which the stream heads.

There has been very little prospecting for lode deposits in the map-area, and only a few discoveries have been made to date. Many small, epidiotized zones in the volcanic rocks near Mush Lake contain chalcocite stringers and veinlets, and one zone is finely impregnated with native copper. Numerous nuggets of native copper were recovered during placer operations on Beloud Creek. Six miles south of Mush Lake, altered andesites adjacent to the north end of a granodiorite stock are sheared and replaced by small amounts of chalcocite. Several borate-rich veins occur in andesite 2 miles southeast of Sockeye Lake. Some black cobbles picked up in the stream bed incised in the peridotite stock(5), 4 miles north of the mouth of Dezadeash River, contained as much as 45 per cent chromite. A hand specimen of augen-gneiss(1d) collected 12 miles north of Champagne and 3 miles west of the Hutsh trail, was found to contain approximately 0.026 per cent U₃O₈ equivalent, which is somewhat above the average uranium content of granites.

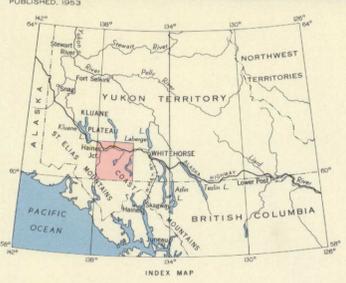
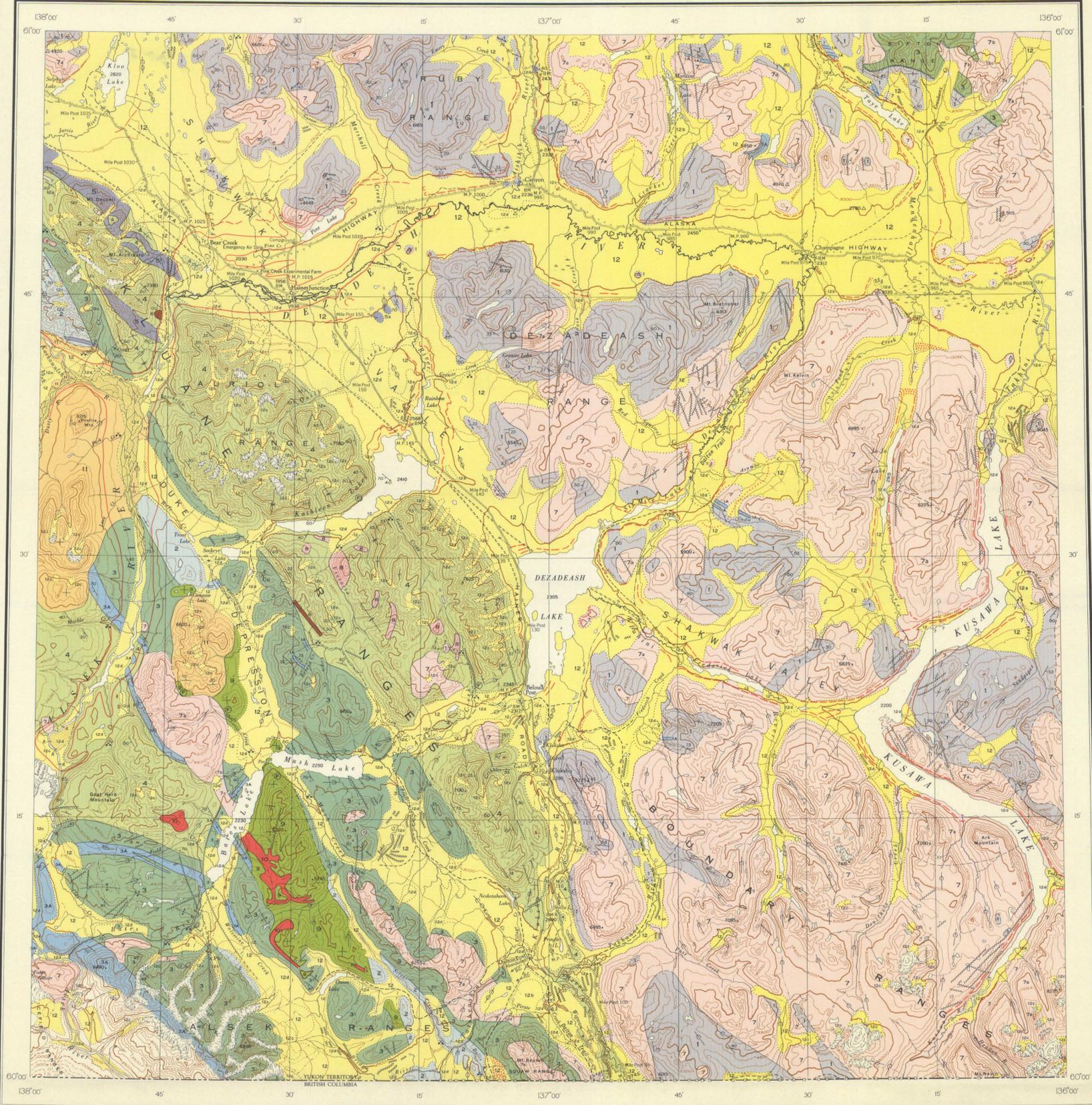
LEGEND

- QUATERNARY**
PLEISTOCENE AND RECENT
12 Mainly till and stratified silts; 12a, glacial outwash, sand and gravel; 12b, terminal moraine; 12c, alpine moraine; 12d, fluvialite gravel, sand, and silt.
- TERTIARY**
POST-PALEOCENE
11 Volcanic breccia, tuff, rhyolite, dacite, andesite, basalt; some sandstone.
10 Soda syenite.
- PALEOCENE**
9 Conglomerate, sandstone, shale.
- CRETACEOUS**
LOWER CRETACEOUS OR LATER
8 Granite porphyry, quartz porphyry.
7 COAST INTRUSIONS (?) Mainly granodiorite; 7a, granite; 7b, porphyritic granite; 7c, diorite; 7d, augen-gneiss.
6 Gabbro.
- MESOZOIC**
5 Peridotite, serpentine; 5a, dunite.
4 LOWER CRETACEOUS GROUP DEZADEASH GROUP Conglomerate, shale, sandstone, tuff, argillite, chert, greywacke, coal.
3 TRIASSIC AND JURASSIC (?) MUSH LAKE GROUP 3A Andesite, basalt, rhyolite, volcanic breccia, tuff, argillite, slate, limestone; some quartzite, slate, argillite.
- PRECAMBRIAN PALEOZOIC**
2 CARBONIFEROUS OR PERMIAN KASKAWULSH GROUP Limestone, marble, slate, quartzite, argillite, chert, andesite, schist.
1A YUKON GROUP Quartz-mica schists, gneiss, slate, quartzite, crystalline limestone, greenstone, hornblende, chlorite, and garnetiferous schists. 1A. Crystalline limestone.

- Esker
Kames and kame terraces
Pleistocene lake beach
Shoreline of Recent Lake Alsek
Bedding (horizontal, inclined, vertical, overturned)
Schistosity, gneissosity (inclined, vertical)
Fault (defined, assumed)
Anticlinal axis
Synclinal axis
Glacial striae
Drift ridge
Fossil locality
Mineral occurrence
Placer deposit (mainly gold)

- MINERAL SYMBOLS**
Copper Cu
Lead Pb

Geology by E.D. Kindie, 1946, 1947, 1948, 1949, and 1950
Cartography by the Geological Cartography Division, 1952



MAP 1019A
DEZADEASH
YUKON TERRITORY

Scale: One Inch to Four Miles = 253,440



- REFERENCE**
- Road
 - Cart road
 - Trail or portage
 - Building
 - Post Office
 - Trading post
 - Telephone line
 - Triangulation station
 - Bench-mark
 - Provincial boundary
 - Boundary monument
 - Intermittent stream
 - Stream in dry river bed
 - Braided stream
 - Dry stream channel
 - Rapids
 - Marsh or swamp
 - Glacier or snowfield
 - Contours (interval 500 feet)
 - Contours (position approximate)
 - Height in feet above mean sea-level

Approximate magnetic declination, 31° of East

Base map compiled and drawn by the Surveys and Mapping Branch, 1951

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1019A

5.1.11 Dezadeash, Yukon.
A.9.101. Map 1019A.