

LEGEND

MODERN RECENT

5 Sand, silt, gravel

MESOZOIC

4 QUESNEL RIVER GROUP: shale, argillite, greenstone

CARBONIFEROUS MISSISSIPPIAN

3 SLIDE MOUNTAIN SERIES: chert, argillite, conglomerate, limestone. Minor bodies of Mount Murray intrusives (Mesozoic)

PRECAMBRIAN

1 RICHFIELD FORMATION: quartzite, sericite schist, argillite, limestone

2 CARIBOO SERIES: (undivided)

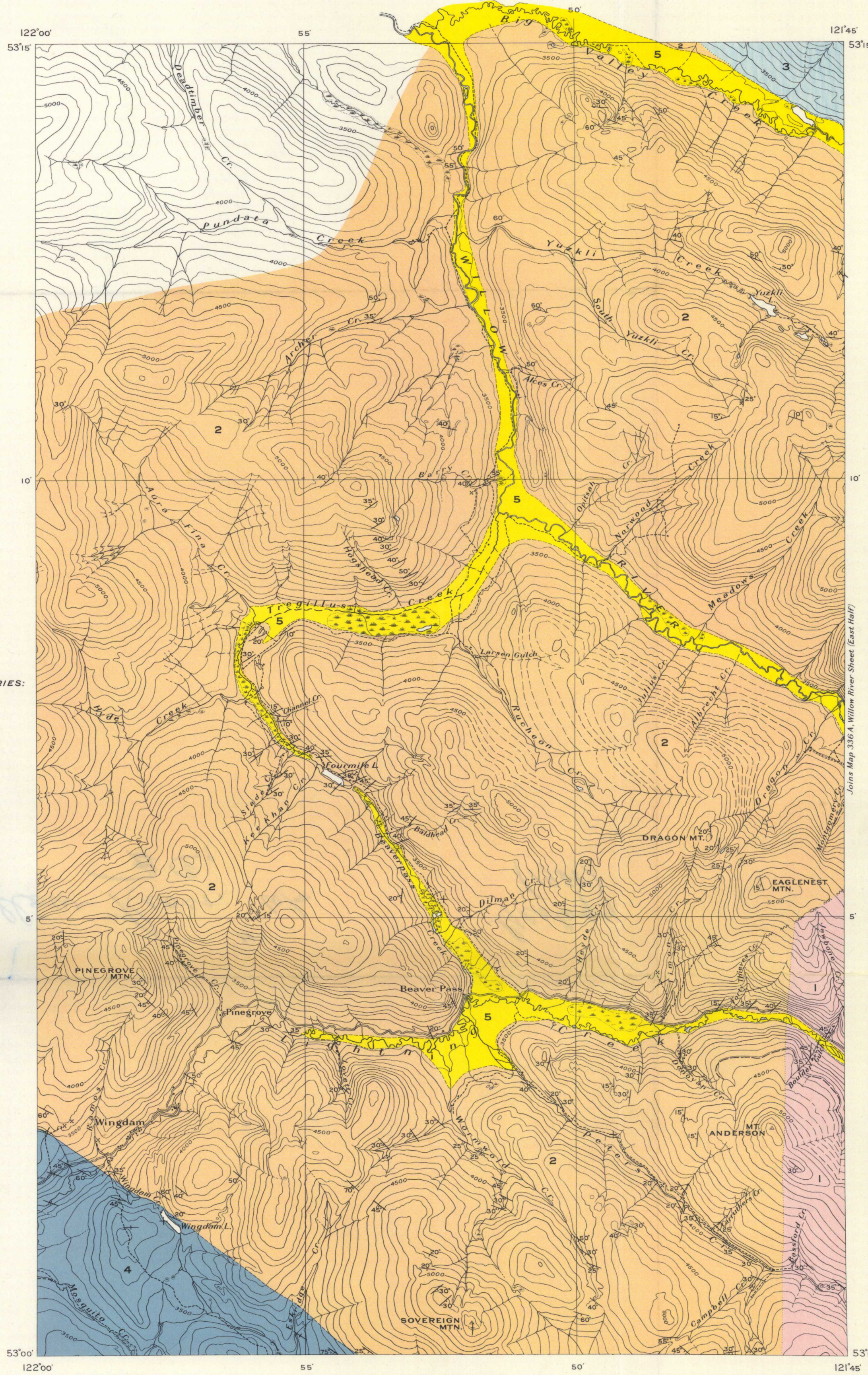
Symbols

Geological boundary (defined) ————
 Geological boundary (approximate) - - - - -
 Geological boundary (assumed) ······
 Fault (assumed) ———/———
 Bedding (inclined, horizontal, vertical) / + X

Sources of Information

Surveyed and reproduced by the Bureau of Geology and Topography, Geology by G. Hanson, 1933 and 1934.

Approximate magnetic declination, 27°30' East



GENERAL GEOLOGY

Bedrock, though largely concealed by rock debris and vegetation, outcrops on the tops of some mountains, on the steeper slopes, and here and there along most streams. The rock debris consists mainly of morainal matter and except in the main valleys is generally only a few feet thick. In various places on the sides of the main valleys lateral moraines are present a few hundred feet above the streams and some are more than 50 feet thick. The bottoms of the main valleys are floored with silt and glacial drift that is in places more than 200 feet thick. The general mantle of glacial drift signifies that the area was formerly covered with ice whereas the thick lateral moraines on the sides of the main valleys indicates that the last glaciers were of the valley type.

CARIBOO SERIES. This series is probably more than 10,000 feet thick. Its lithological units are in general discontinuous and outcrops are scarce so that the series cannot feasibly be divided into formations. In the adjoining map-area to the east the series is divisible into three formations, of which the middle one, the Barkerville formation, is characterized by thick limestone. In the present area the series is mainly sericite schist and quartzite, though limestone, in some instances changed to marble, occurs occasionally in beds 10 feet or less thick. Limestone that outcrops sparingly southeast and northwest of Beaver Pass may be the same geological age as the Barkerville limestone. The schistosity of the series conforms closely to the bedding and is only rarely intense enough to obscure the bedding planes.

SLIDE MOUNTAIN SERIES. Though the series does not outcrop so far as known within the map-area its distribution is inferred from outcrops in the adjoining map-area to the east. In that area the rocks comprise coarse, basal sediments, such as conglomerates and grits, and thick, fine sediments, such as argillites and cherts. A crinoidal limestone is also present there and furnished a few poorly preserved fossils, which indicate a probable Carboniferous age and with less surety a Mississippian one.

QUESNEL RIVER GROUP. The rocks of this group overlie the Slide Mountain series unconformably. Shales greatly predominate over the other rocks, which comprise basalt flows and a few thin beds of sandstone. Fossils of probable Jurassic age were gathered from strata of this group in the Quesnel Forks area to the south.

STRUCTURAL GEOLOGY

The major structure is a broad anticline in the Cariboo series, which plunges 20 to 40 degrees northwest. Its crest, about 2 miles wide, trends northwest from Dragon mountain through the central part of the area between Aura Fina creek and Willow river. Dips in the Cariboo series are in general 20 to 40 degrees and very rarely exceed 70 degrees. In contrast, shales of the Quesnel River group, which are folded into a minor, northwesterly striking syncline southwest of their contact with the Cariboo series, are contorted and commonly stand vertically. Notwithstanding their sharper folding the rocks of the Quesnel River group are not schistose whereas those of the older series are. It is inferred, therefore, that the Cariboo series was folded prior to deposition of the younger rocks and that the younger rocks were later compressed against the relatively unyielding Cariboo series.

Northeasterly trending faults are probably common for numerous steep-walled gullies with this trend cross ridges underlain by the Cariboo series.

ECONOMIC GEOLOGY

Placer gold has been taken from Lightning creek, Tregillus creek, Peters creek, and nearly all of the smaller streams. Placer gold undoubtedly exists also in Willow river and Big Valley creek though very little is known about the richness of these streams since their valleys are deeply drift filled. Although part of the gold in the creeks has been concentrated there from glacial drift brought from the east, much of the gold and possibly most of it was derived from gold-bearing deposits in the area. Some of the placers overlie glacial drift, some lie between layers of glacial drift, and some are presumably preglacial.

The present most extensive placer operations are being conducted at Wingdam where Consolidated Gold Alluvials of British Columbia, Limited, is sinking shafts to mine the gravels at the bottom of the drift-filled valley of Lightning creek. Ground sluicing is carried on every year on about a dozen creeks. A considerable quantity of gold occurs in Peters creek at a depth of about 30 feet. Recent exploration has located gold on benches along Beaverpass creek.

Gold-bearing quartz veins occur though no attempt has been made to mine them, and none has yet been shown to have economic value. Veins have been explored by surface openings at Yuzkli lake, Alces creek, Barry creek, Ramos creek, and in several places on Dragon mountain, all in rocks of the Cariboo series, and in one or two places in the southwestern part of the area in rocks of the Quesnel River group. The veins are a few inches to 10 feet wide, are only sparsely mineralized with pyrite and galena and have very low values in gold.

Because of meagre information about the value and distribution of the veins one can only speculate upon the most favourable areas for prospecting. Valuable ore deposits occur in the adjoining area to the east, and their modes of origin are of some value in suggesting what may be expected. There the known valuable deposits are all in the Cariboo series. Some of the ore-bodies are replacements of limestone and deposits of similar type may also occur here. But most of the known valuable vein deposits occur in the upper part of the Richfield formation. If this same ore belt extends into this area it should enter near Willow river and then swing to the west in conformity with the strike of the rocks.



MAP 335 A

WILLOW RIVER SHEET
 (WEST HALF)
 CARIBOO DISTRICT
 BRITISH COLUMBIA

Scale, 63,360 or 1 Inch to 1 Mile
 Miles
 Kilometres

Contour interval 100 feet

Legend

Road and buildings ————
 Road not well travelled, trail ······
 Post office ————
 Mine tunnel ————
 Prospect ————
 Shaft ————
 Triangulation station ————
 Dam ————
 Pipe line, ditch ————
 Sand bar ————
 Intermittent stream ————
 Marsh ————
 Contours ————
 Contours (position approximate) ————

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