BRITISH COLUMBIA DEPARTMENT OF MINES

HON. J. H. CATES, *Minister* JOHN F. WALKER, *Deputy Minister*

Mining
IN BRITISH COLUMBIA

An Outline of the Development of the Industry

VICTORIA, B.C.
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This pamphlet deals principally with the history of mining activity in British Columbia to the end of the year 1950. The written account is supplemented by a selection of photographs.

Placer-mining in 1863 on Williams Creek, Cariboo.

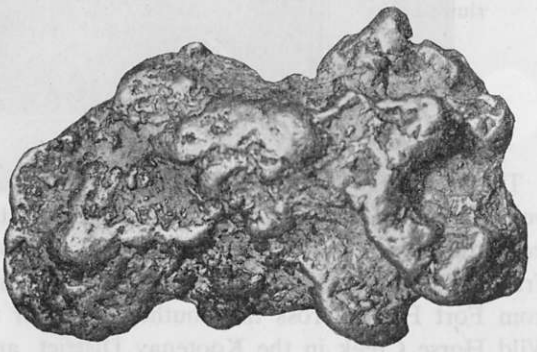
Mining IN BRITISH COLUMBIA

IT IS a curious fact that, although what is now British Columbia possessed a vast wealth of visible resources, little attention was paid to them in the eighty years following Captain Cook's visit to the west coast of Vancouver Island in 1778. Such interest as was aroused was mainly in furs. It was interest in furs that led John Meares to establish his short-lived post at Nootka, and interest in furs that spurred Alexander Mackenzie, Simon Fraser, and David Thompson to undertake their arduous expeditions into British Columbia from the eastern side of the Rocky Mountains. In the period from 1805 to 1849 fifteen posts were established along the routes of the fur brigades, and here and there the Oblate Fathers had planted churches among the tribes. But, apart from those few scattered outposts and their tiny local activities, the whole country lay dormant and almost unexplored, its real significance and the importance of its hidden wealth still unappreciated.

However, even before fear of being forced out of Oregon led the Hudson's Bay Company to establish Victoria in 1843, the Company had shown its interest in coal which was recovered from the beach at Suquash on the northern part of the east coast of Vancouver Island as early as 1836. The Suquash seams were disappointing and by 1852 were abandoned for more favourable ones at Nanaimo. In the same year small quartz veins containing visible gold were discovered at Mitchell Harbour, Queen Charlotte Islands. In 1857 the discovery of coarse placer gold at the mouth of the Nicoamen River initiated the gold-rush that led to the discovery of gold on bars in the Fraser River at Yale and at up-stream points in 1858.

In the next forty years the lure of placer gold, and later of ores containing gold, silver, copper, and lead, drew thousands of eager pioneers into areas that, until 1858, had been virtually or actually uninhabited. At the beginning of the gold-rush the white population numbered only six to seven hundred, but within two years more than 30,000 had entered the area that now forms the Province of British Columbia.

Keeping pace with the extremely rapid opening-up of the country, Governor Douglas and the colonial authorities took steps that were successful in maintaining law and order. Legal authority for government was provided when the Mainland was made a colony in 1858. In 1866 the Vancouver Island and Mainland Colonies were united and in 1871 entered Confederation as the Province of British Columbia.



Gold nugget weighing 52 oz. 15 dwt., found in 1937 on Vern Shea claim on a tributary of Boulder Creek in the Turnagain River area east of Dease Lake. (Illustration one-half natural size.)

By the end of 1858 the gold-rush had brought 8,000 men across the boundary from Washington and Oregon, and another 23,000 came from California via Victoria. These miners pushed their way up the Fraser River, and settlements at Fort Langley, Hope, Yale, Lytton, and Boston Bar sprang up in the path of the increasing number of gold-seekers. In the Cariboo rich placer-ground was discovered on the Quesnel River, Keithley, Antler, Lightning, Lowhee, and Williams Creeks in 1861 and 1862. Gold was obtained so readily by the thousands of individual miners working the shallow gravels of these streams that the greatest placer production was achieved in 1863. A small fraction of the production came from Wild Horse Creek and from other streams in the southern part of the Province.

Gold-pan containing gold dust and nuggets from clean-up of sluice-boxes.

To meet the needs of the gold-seekers, efforts were soon made to provide transportation routes from the Coast to the goldfields. The Cariboo Trail, leading to the Cariboo, the Dewdney Trail, from Fort Hope across the Southern Interior to Wild Horse Creek in the Kootenay District, and subsequently the Cariboo Road were the principal projects in the early period. To these projects, three detachments of the Royal Engineers, numbering 165 men, made important contributions. The Cariboo Trail was built with great urgency because of the obvious danger that winter would find thousands of ill-equipped miners cut off from the Coast except for the almost impassable route through the Fraser Canyon. Governor Douglas arranged free transportation to Fort Douglas, at the northern end of Harrison Lake, for the miners who volunteered to work on the road in return for their food. The site of Lillooet was reached late in 1858 by a lake and portage route that followed Lillooet River, Lillooet Lake, Anderson Lake, and Seton Lake.

Two years later Governor Douglas, realizing the need for roads to the Interior in order to prevent the Americans from controlling the trade, started his road-building policy. The Harrison–Lillooet Trail was made into a wagon-road which was continued over the mile-high summit of Pavilion Mountain and down to the Interior plateau at Clinton, and a road was built from Yale to Clinton. The latter road followed the Fraser through the tortuous canyons, sometimes touching the bank and sometimes clinging to the cliffs, and crossed the river at Spuzzum, where a suspension bridge—the first in British Columbia—was built in 1863. From Spuzzum the road followed the east bank of the Fraser to Lytton, where it turned eastward and struggled along the Thompson, crossing to the north bank at Cook's Ferry (now Spences Bridge) and continuing to Ashcroft. From this point it went through the valley of the Bonaparte to Clinton. From Clinton the road was pushed northward to the bank of the Fraser at Soda Creek. Travellers continued up the river from there to Quesnel by steamboat, and from Quesnel by road built eastward to the rich placer area centring about Barkerville on Williams Creek. From the Fraser at Quesnel the road climbed the divide and descended to Cottonwood, then continued up Lightning Creek, a tributary of Cottonwood River, and finally reached Williams Creek, a tributary of Willow River.

The completion of this road in 1864 marked an important milestone in British Columbia's history. Until 1921, when the Pacific Great Eastern Railway reached Quesnel, the road was the only route

The Lowhee hydraulic placer pit, which was operated from about 1900 to 1947, photographed in 1946.

Washing gravel on Spruce Creek with a rocker.

Dragline dredge, consisting of dragline shovel and floating washing plant.

to the Cariboo. Although relocated in many parts, the present Cariboo highway follows essentially the same route as the road planned by Governor Douglas in 1860.

By 1885 the placer-streams of the Cariboo, Omineca, Cassiar, and of many parts of Southern British Columbia had yielded most of their easily won wealth, but gravel rich enough to be worked by hand or as small hydraulic operations was still to be found. Important discoveries were made in 1898 near Atlin by miners on their way to the Klondike. Cedar Creek was discovered in 1921, Squaw Creek in 1927, and Wheaton Creek in 1932.

As early as 1880 some of the shallow diggings in the Cariboo had been worked out, and rather than leave the district, individual miners pooled their resources to buy hydraulic machinery. Deeper gravels were worked chiefly by hydraulicking operations, and also by underground mining. Hydraulicking is still being carried on on Pine, Otter, Boulder, McKee, and Lightning Creeks, and on Lowhee Gulch, the latter stream having been worked for eighty-four years.

In 1941 the first California-type dragline dredge, with floating washing plant, was installed at Alexandria Ferry on the Fraser River. From 1944 to 1948 much of the placer-gold output was recovered by dragline dredges operated in widely separated parts of the Province.

Production from the Atlin camp came principally from Pine Creek and its tributary Spruce Creek. A substantial part of the total has been recovered by drift-mining, the gold-bearing gravel being mined underground and hoisted to the surface, where the gold is recovered by washing the gravel in sluice-boxes. In 1950 more than half the placer gold recovered in the Province came from the Noland underground placer mine on Spruce Creek.

Placer operations have been carried on in many parts of British Columbia, mainly for gold, but the Tulameen River and its tributaries and some streams in the Cariboo area have also yielded placer platinum, and Boulder Creek near Atlin has yielded placer concentrates containing tungsten and some tin. There was little demand for the platinum in the early gold-rush days, the miner receiving less than a dollar an ounce for it, com-

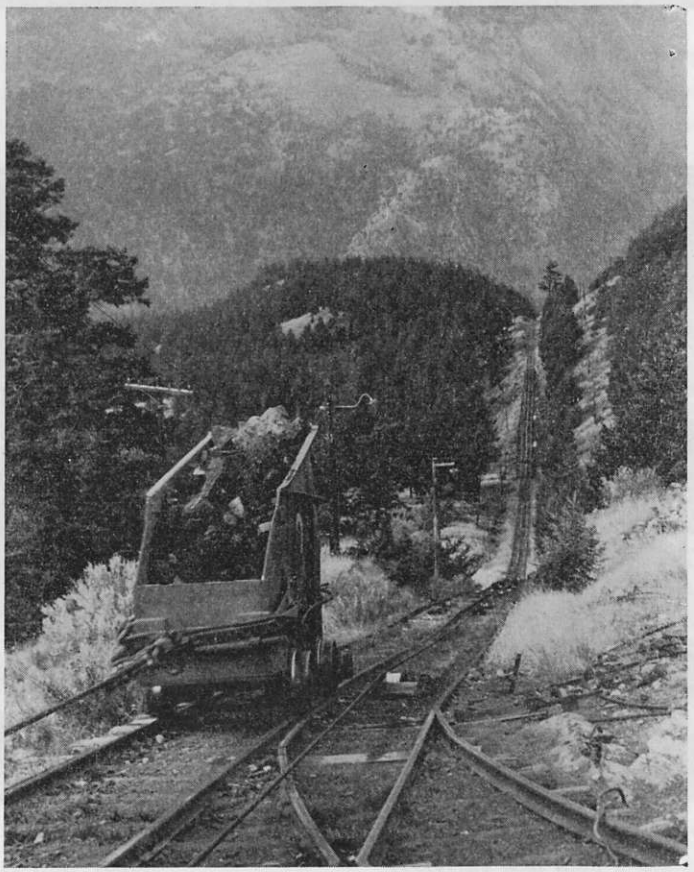
Outcrop of a quartz vein.

A prospect tunnel.

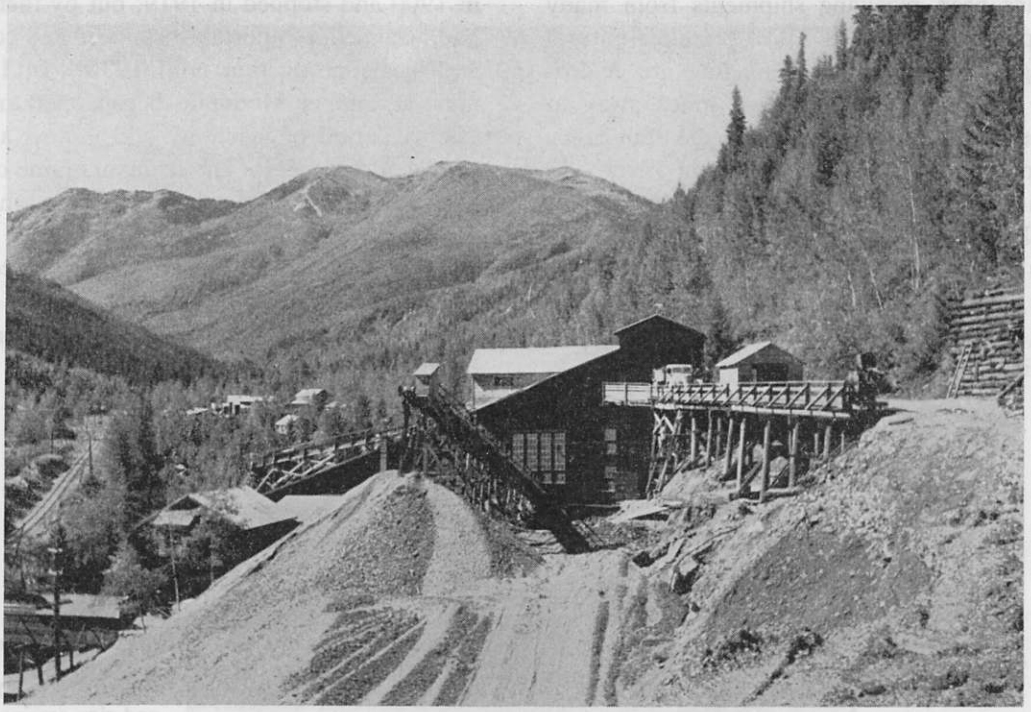
pared with the present price of about $90 an ounce.

Interest in lode deposits developed in the 1880's, and lode-mining soon became established. Search for lode deposits was encouraged by the building of main-line railways, and the discovery and mining of ores containing gold, silver, copper, and lead encouraged the construction of feeder railway-lines.

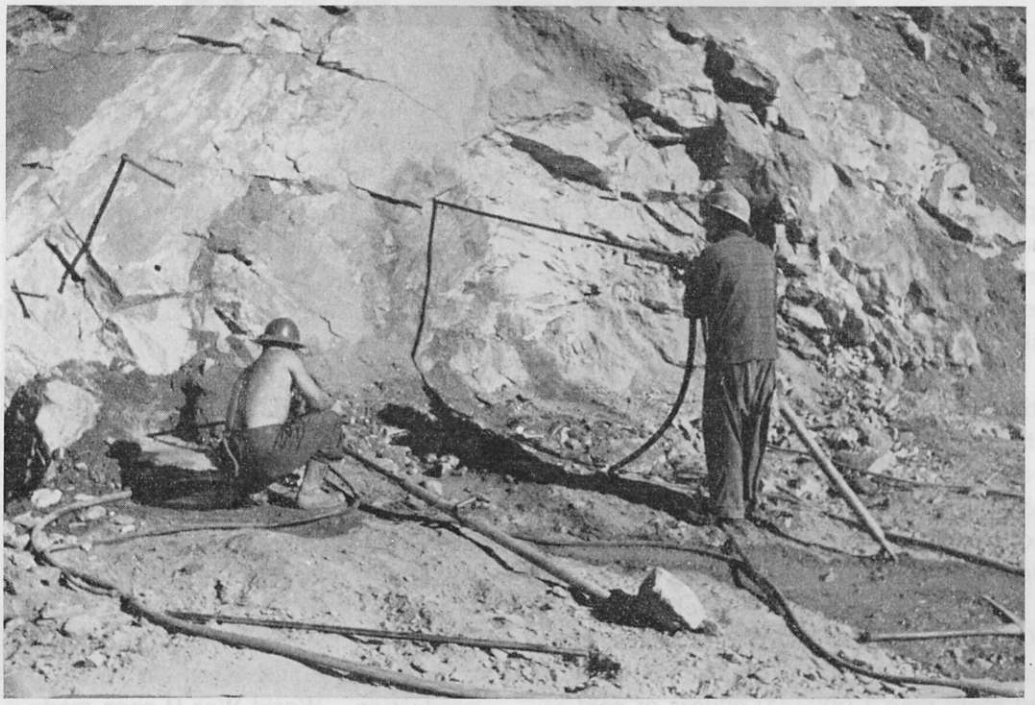
Undoubtedly some of the earliest white travellers in the Kootenays learned of the existence of lead ore. The Bluebell mine at Riondel is popularly reported to have been known before 1850. However, the deposit was not staked until 1873. Possibly the first production from a lode mine on the Mainland of British Columbia was silver ore shipped from the Eureka-Victoria property, 6 miles south of Hope, between 1871 and 1874. Many silver-lead-zinc lodes, then valued only for the silver and lead, were discovered between 1883 and 1893. In this period the Ainsworth and Slocan camps in West Kootenay, and the St. Eugene, North Star, and Sullivan mines in the East Kootenay were found. The Kootenays are still our principal sources of silver-lead-zinc ore, although important quantities of lead, zinc, and silver now come from properties in other parts of British Columbia. In the past few years the area south of Nelson, from Salmo to the International Boundary, has become an important producer of zinc, lead, and silver and seems destined to increase its output substantially. The Sullivan mine at Kimberley has for many years been one of the world's important sources of lead and zinc. The smelter at Trail, originally built to treat gold-copper ores from Rossland, is now one of the leading lead and zinc smelters in the world. It treats lead and zinc concentrates and ore from the Sullivan and from other mines in British Columbia. It also treats ores and concentrates from Yukon



Six-ton ore skip on surface tramway, Nickel Plate mine, Hedley.

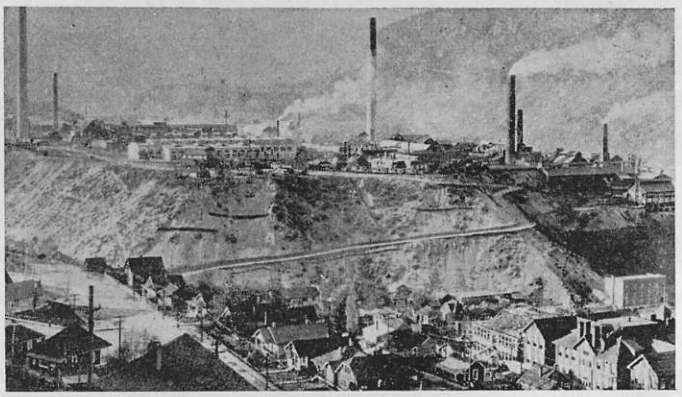


Whitewater mill at Retallack, sink-float plant in foreground, flotation plant in background.



Jack-leg drilling in glory-hole at Reeves MacDonald silver-lead-zinc mine.

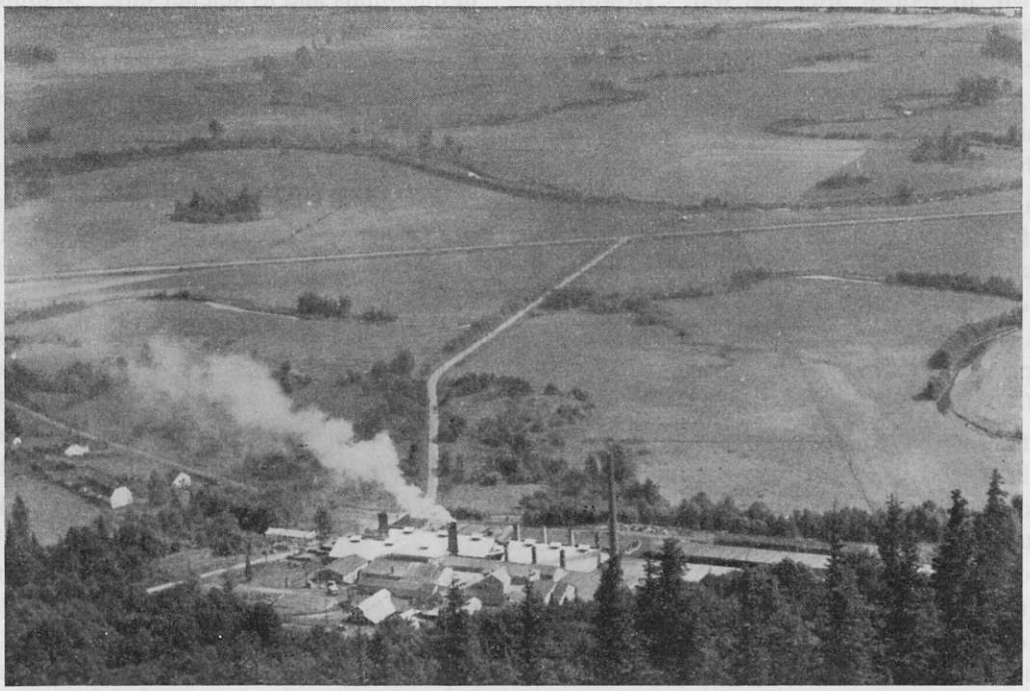
Territory, the Province of Quebec, and, in recent years, has been receiving shipments from many distant parts of the world. The principal natural advantages enjoyed by the smelter are hydro-electric power, developed a few miles away at plants on the Kootenay River, and the abundance of water available from the Columbia River. In addition to the large quantities of metal refined at Trail, plants there utilize sulphur obtained from the ores to manufacture fertilizers that find ready markets in the Pacific Basin, on the Canadian Prairies, and overseas, as well as in British Columbia.



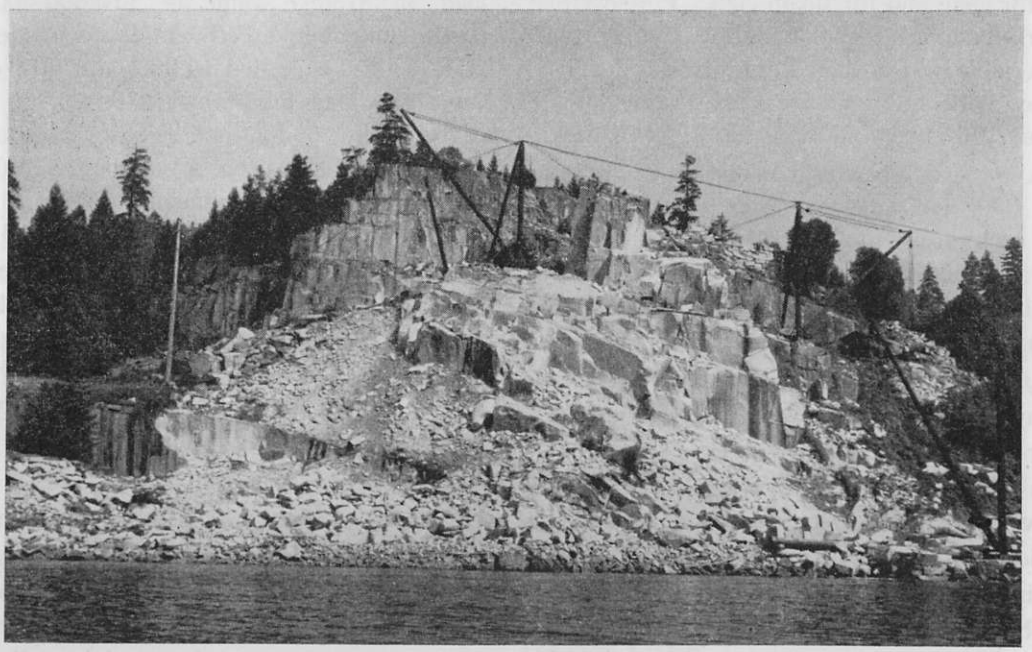
Plants at Trail as in 1930 for refining and smelting silver, lead, and zinc ores and concentrates.

Copper and gold have bulked large in lode-metal mining. The Silver King mine, discovered at Nelson in 1886, was an early producer of silver and copper, the ore being smelted at the Hall Mines smelter at Nelson. The Rossland camp, discovered in 1889, soon became an important producer of gold-copper ore. By 1896 the necessary railway connections had been built, and the smelter at Trail began treating Rossland ore. Production from the main Rossland camp was maintained at a high rate until about 1917 and was suspended in 1928, but revived again for a few years in the middle 1930's. More gold has been produced from the Rossland camp than any other lode-gold deposit in British Columbia. Bridge River, Portland Canal, Wells, Hedley, Sheep Creek, and Ymir have also been large producers of lode gold, and the Boundary camp produced more than 1,000,000 ounces of gold as a by-product from its large production of copper. Copper production in the Boundary camp began in 1900 and stopped in 1919, but by then Anyox had become an important producer and continued large-scale production until 1935. In 1937 the mine at Copper Mountain began operating again after a period of inactivity and is now a leading producer of copper. The Britannia mine on Howe Sound has been producing copper ore since 1905 and has yielded gold, silver, lead, and zinc, in addition to copper; currently it produces more zinc than copper.

Gold-mining declined during World War I. The output increased gradually in the 1920's, the Premier mine at Portland Canal making a large contribution. In its early years the Premier yielded ore rich both in silver and in gold. In the late 1920's the Bridge River camp became a substantial producer from the Pioneer mine, and interest in gold was being shown again. With the onset of the depression, interest in gold was intensified. The Bralorne soon joined the Pioneer, and the Cariboo Gold Quartz at Wells was joined by Island Mountain. The Hedley camp was revived with the reopening of the Nickel Plate mine, which was soon joined by the Hedley Mascot, and in the area south of Nelson, including Sheep Creek, Erie Creek, and Ymir, old mines were reopened and some new ones also began production. In the coastal area Surf Inlet was revived; the Zeballos camp on Vancouver Island and the Polaris-Taku mine on Tulsequah River far to the north began production. World War II soon made it hard for gold mines to hold their working forces and obtain



Plant of Clayburn Company Limited at Kilgard. The company makes firebrick, flue-lining, and other clay products.



The Vancouver Granite Company's granite quarry on Nelson Island.

necessary supplies. Consequently, many of them shut down, to reopen after the war. However, although it then became possible to obtain men, equipment, and supplies, the costs continued to increase. Many of the gold mines have shut down, and conditions now make it difficult for any but very rich gold mines to operate.

During the war years, mines at Hazelton and south of Nelson produced substantial quantities of tungsten concentrates, while other properties produced tungsten in lesser quantity. In the same period a substantial quantity of mercury was produced, principally from the mine at Pinchi Lake north of Vanderhoof.

The first mining activity recorded in British Columbia was coal-mining, which is still one of the major branches of the mining industry. The first extensive underground operations were at Nanaimo, where mining began in 1852. Nanaimo and near-by Wellington continue to be important sources of coal, but the Comox-Tsable River field now produces more than the Nanaimo-Wellington field. The Crowsnest Pass area, with mining centred near Fernie and Michel, has for some years been the most productive area in British Columbia, and for a long time has enjoyed a good market for coke and for steam-coal. For several years strip-mining near Michel has accounted for an appreciable part of the output. Lesser quantities of coal, principally for local use, are mined at Princeton, Telkwa, and in the Peace River District.

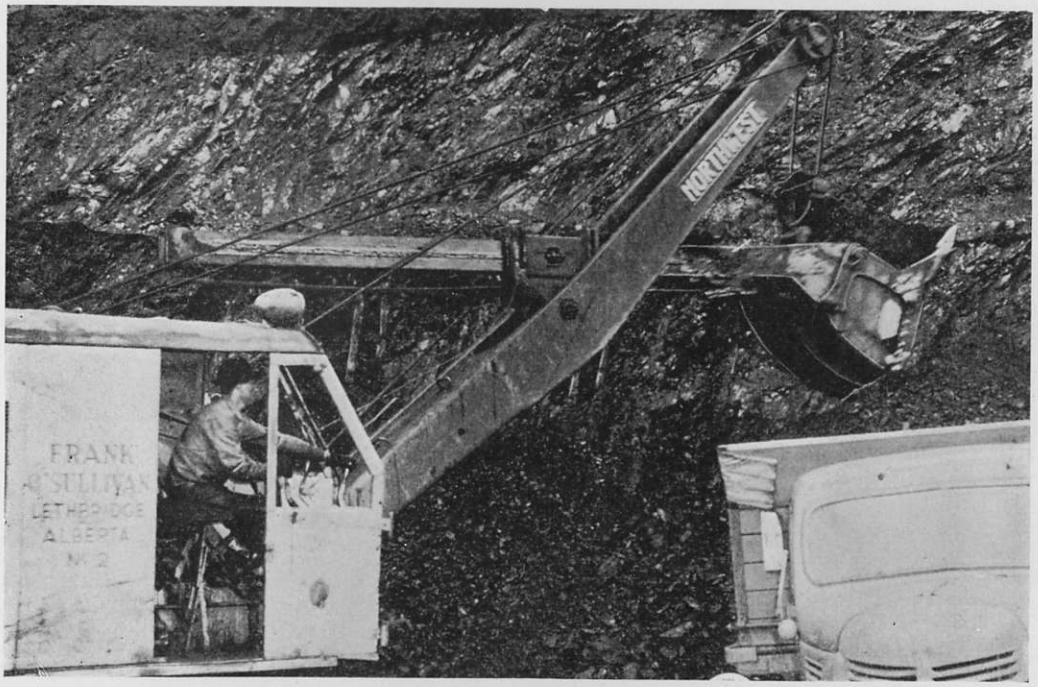
In recent years structural materials, including cement, lime and limestone, rubble, riprap and crushed rock, brick, tile, and other clay products, sand, gravel, and some other materials, have had a combined value ranging from $6,000,000 to $10,000,000. Brick was made and lime was burned in some rather remote areas in the very early days. Brick-making and the manufacture of other clay products is now concentrated near Victoria and in the Fraser Valley, tributary to Vancouver and the near-by area of concentrated population. Refractory clay mined on Sumas Mountain has for many years been manufactured into firebrick and special shapes. The same area produces tile and flue-lining. Limestone and lime are now produced mainly on Texada Island, but some limestone is quarried at other points for use in pulp-mills and as smelter flux. Manufacture of cement was begun in 1905 at Tod Inlet. All the cement manufactured in British Columbia is now made at Bamberton on Saanich Inlet, where the capacity of the plant is currently being expanded.

The present high prices for silver, copper, lead, and zinc have encouraged production at many properties and exploratory work at others, and preparations are being made to resume production of tungsten concentrates. Production of coal for metallurgical and other industrial uses and for the domestic market keeps most of the coal mines active. Production of fertilizer at Trail, based on sulphur from base-metal ores, has become a very large business. The value of the sulphur used and of other industrial minerals has ranged from $2,300,000 to $2,600,000 in recent years.

For the years 1947 to 1950 the combined value of placer gold, lode gold, silver, copper, lead, and zinc has averaged about $115,000,000 a year; antimony, bismuth, cadmium, tin, tungsten, and some others mainly recovered as by-products have averaged more than $3,000,000 a year; coal has averaged $13,000,000, while sulphur, industrial minerals, and structural materials combined have had an average value of $10,600,000. The average number directly employed in the mining industry has exceeded 16,000, and their earnings have averaged more than $39,000,000 a year. Expenditure for fuel and electricity has averaged $6,400,000; for process supplies, $15,000,000; and for freight and treatment on ores and concentrates, $16,300,000 a year. Taxes, paid directly to the Dominion, British Columbia, and municipal governments, combined, have averaged almost $20,000,000 a year, and dividends paid to shareholders have averaged $33,400,000. The total value of all mineral production in British Columbia to the end of 1950 amounts to almost two and three-quarter billion dollars.

Mining of coal, or of metals, or smelting, is the principal industry in Fernie, Kimberley, Trail, Hedley, Cumberland, Britannia Beach, the Bridge River District, Wells, and many other communities, and to many others mining directly or indirectly is of major importance.

Entrance to main-slope portal, Tsable River coal mine.



Loading coal at open-pit mine, Corbin.

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