BUILDING BIGGER "KITIMATS"

BRITISH COLUMBIA, this year celebrating its 100th birthday, has been dubbed the symbol of bold enterprise. And appropriately so. Within its borders are cattle empires that rival any of the famed "spreads" in the largest beef-raising countries; a century-old mining industry that is still going strong; and the world's largest single lumbering enterprise.

Some of B.C.'s industrial developments, such as Kitimat and Anonas Island in the Fraser river delta, are obviously discussed by industrialists in many parts of the world. These men are aware, too, that B.C. engineers, technicians and workers have been responsible for some of the greatest engineering feats of the 20th century.

It is no coincidence that British Columbia's oil consumption has increased in proportion to its growth in primary and secondary industrial activity. Each day British Columbians are using nearly two gallons of oil per capita—25 percent more than the national average. For despite its tremendous hydro-electric power resources, B.C. relies on oil for nearly half its energy needs. To meet those needs, oil men have built their industry into the second largest in the province.

Nor is it any exaggeration to say that B.C.'s remarkable progress would have been impossible without oil. In its many forms—asphalt, bunker fuel, gasoline, diesel fuel and lubricants—oil is used to fuel, heat, lubricate or otherwise supply B.C.'s mines, power plants, ships, trains, planes, cars, trucks, factories, logging camps, sawmills, cattle ranches, farms and homes.

These demands for more and more oil products have prompted the oil industry to invest heavily in B.C., in marketing facilities and pipe lines, and in refining equipment which has made Vancouver area one of the nation's major refining centers.

This investment has been for one primary purpose—to enable the oil industry to serve British Columbia better than ever before. For no matter where the next Kitimat is built, oil will be needed. And oil will be there.

C. W. Jeffreys catches the spirit of early B.C. with this picture of the Cariboo Road.

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Canada's Unknown Cow Country

British Columbia's cattle barons run thousands of steers on spreads that rival the biggest ranches of Texas and Argentina.

Yet their 100-year-old industry is scarcely known outside B.C.

by EARLE BEATTIE

The first to climb out of their bedrolls in the bunkhouse of the Minnie Lake cow-camp that frosty morning last October, were the little young Australians, Jim Schofield, and the Indian youth, Stew Archachat. The day of the "beef drive" had arrived at Canada's—and one of the world's—largest cattle ranches, the Douglas Lake Cattle Company in British Columbia's Nicola Valley, a big grass basin some 140 miles northeast of Vancouver.

Steve and Jim had the job that morning of wrangling the horses—bringing them in from the pasture to the corral. The other cowboys moved along soon after to throw saddles and bridles on the high-spirited mares, sorting and rearing with rebellion at their loss of freedom.

Then came breakfast of flapjacks, bacon and eggs, toast and coffee, served up by Charlie, the cook, and his wife Rosie, and the nine men rode off to the cattle, grazing at the nearby Raspberry-camp. They had been rounded up the previous day and traded for TB, pink eye and foot rot and given an injection against shipping fever.

Here was Douglas Lake's prime beef—919 yearling steers, 18 months old—the first of 1,470 to be shipped from the Nicola station, 20 miles away, to St. Paul, Minnesota. They were part of a herd of 14,000 Hereford cattle, fattening all summer on the ranch's 650,000 acres—a "spread" so big that its fences would reach from Toronto to Montreal and back.

More than just a ranch, the Douglas Lake outfit is a merger of half a dozen ranches, a multi-million dollar property, an empire of grass with a village, mansions, homes, a school, its owners are British Columbia's lieutenant-governor, the Hon. Frank Ross, and former department-store magnate Colonel Victor Spencer of Vancouver; Col. Spencer, one of North America's great cattle barons, also owns two other ranches and a ranching Herdman farm at Earls Court.

From a small office at the home ranch, the Douglas Lake manager, a lean and kipper Australian named Brian Chance, can get in touch by radio telephone with the foremen in charge of his various spreads, 10 to 40 miles away. He can also dispatch orders from a radio-equipped jeep while driving over the range, or from his big, black Lincoln.

Chance had sold the cattle right unseen to a U.S. buyer, for 17 cents a pound, top price in the fall market for grass-fed steers. Now the cowboys, led by "cow boss" Mike Firguson, who stands six feet three without his high-booted boots, were moving them out. Riding in on the milking horses they gave seat to low whoops, saddle slaps and the old Mexican cry of "Che-chu-chi!" to get them started across the range.

Four hours later, they had driven them eight miles, as much as cattle can travel in a day without losing weight, and berded them into a holding ground for the night. It was a trip across gravel, sagebrush slopes, 4,000 feet above sea level, down through lightly-cumbered pines, splashing at one point across the Qualchena River. Often the animals balked, tried to run back, headed for the brush or stopped in their tracks, only to find the cowboys expertly pushing them on. Strung out across the range, the 700-old Herefords, brown-bodied and white-blazed, looked from the distance like an invasion of moose.
Similar cattle drives were taking place that month in widely separated parts of British Columbia, though many ranchers now truck their cattle to shipping points. About one third of B.C.'s 160,000 beef cattle go to market each year, sold privately to packing house buyers or at auction sales. They range on some 15 million acres of wild grasses in summer, eat hay all winter.

In April comes the "spring turnout" when the cattle are let loose from their winter pasture to feed on the grass again, the cows to give birth to their calves. By June it is branding time and the cowboys drive the young calves into a corral, rope them by the hind legs and apply a hot iron to their hides. The bewildered creatures are also ear-marked, de-horned and inoculated. Young bulls are converted into steers with a quick thrust of the knife.

Oddly enough B.C.'s cattle ranching industry, a major one, is little known outside the province. Yet here are some of the world's largest ranches, rivaling the huge spreads of Texas and the Argentine. Those in the Cariboo plateau of B.C.'s central interior and the adjoining Chilcotin run a total of 60,000 head; the Nicola Valley, centred at Merritt, around 30,000 and the Peace River district 15,000. The remainder are found in the Kamloops and Ashcroft areas on the south Thompson, in the fruit-growing Okanagan Valley, in the Kootenays and on the lower Fraser from Hope to Vancouver.

With miles of wild grasses, river beaches, alttas and Timothy fields, mountain parklands, irrigation systems, corral, fine homes, and hard-tiding cowboys, ranching is a color-ful facet of our present-prairie way of life. The men and women who live on the ranches, from rugged cowhands to English aristocrats, are as legendary as the land itself with rich personal histories and folklore to match. True, there is nothing fancy about our Forts and Cowsches.

They're engaged in an industry that's as old as B.C. It was exactly 100 years ago this June—just two months before the Mainland was proclaimed a Crown colony—that General Joel Palmer carried out the province's first cattle drive. He drove some longhorns over the border from the State of Washington up through the Okanagan to Fort Kamloops. B.C.'s first cattle barons were prosperous -list farmers from West Virginia, who drove stock 400 miles to supply the mining town of Bucker- ville in the heydays of the '60s and '70s and took up vast tracts of land for ranching.

Many of the pioneer ranchers were goldrush miners who put aside their paners to look for wealth in the grasslands. Generations have succeeded them. The Guichon family in the Nicola Valley is a good example. Joseph Guichon came to America from France, arrived with the miners in the '90s and drove pack trains of horses and mules. Wintering his stock in the Kamloops area, he gradually turned to the raising of horses and cattle, acquiring land in the Nicola area in the '70s and increasing his holdings down the years. He was in the posse that ran down the notorious Maclean brothers, horse thieves and murderers, who started a reign of terror in 1879, tried to ignite an Indian rebellion and ended up on the gallows. And he survived the terrible winter of 1886-87 that wiped out most of B.C.'s cattle.

Joseph had three sons and four daughters who took control of the big ranch in 1918. Until last year its operations were headed by one of the sons, Dr. Lawrence Guichon, recipient of an honorary doctorate from the University of British Columbia three years ago for his contribution to ranching. Today the ranch is split into two, one owned by Dr. Guichon's son Gerard who runs a thousand cattle and an equal number of sheep on his land, and the Lazy U ranch run by Guy Rose, a nephew, with 2,400 head.

The Nicola Valley is B.C.'s most modern ranching area and its machinery has lightened the burden for this younger generation compared with Grandfather Guichon's day. At his Beaver ranch, where cattle pommels between mountain ridges at the north end of Nicola Lake, Gerard Guichon has five tractors, three automatic hay balers and an array of other equipment. Last summer seven men used this equipment to put up 1,500 tons of hay, an operation that once required 30 men and many teams of horses.

But mechanized operations haven't destroyed the west's free spirit. The ranches' summer cow camp, 10 miles up the moun- tain, is maintained by a tophand named Harry Williams. When the cowboys and the cows come down in winter, Harry stays put, preferring to read books and let the world go by. Once when he found the legs on a new pair of trousers too long, he put them on a chopping block and cut them down to size with the swing of an axe.

For years the best known cow boss in the Nicola Valley was a sturdy individualist named Joe Couttie. One year, when his boss regretted his cagey, old Joe his holidays, Couttie bought a second-hand car and hired a man to drive him to Merritt at the busy round-up time. He returned to the camp each night in a high state of celebration, carrying his supplies with him. At a refusal to take a drink is regarded as a sharp insult in those parts, the camp was a merry one for 10 days until Joe gave up his holidays. The owner had waited grudgingly. Much time and three cooks had been lost. They were teetotalers.

Compared with the Nicola Valley, the story Cariboo to the northwest is a tougher, rougher region where the cattle roam farther in search of grass and ranchers work harder to raise enough hay. But it is B.C.'s biggest cattle country. Together the Cariboo and neighboring Chilcotin areas form a big square-shaped plateau some 180 miles long and 125 miles across, lying between the Coast mountains and the western ramparts of the Rockies. It's dotted with the Fraser. It starts at Pavilion Mount- ain, 130 miles north of Vancouver, where Colonel Spencer's Diamond S ranch lies in a spectacular alpine bowl a mile above the Fraser; it ends at Prince George and the Nechako River.

The Cariboo's oldest ranch is owned by the Pollard brothers and has in the family ever since John Pollard staked it out in 1859 near Clinton, stage-coach stop and junction of the Cariboo and Harrison roads from the coast. The Pollards now run 500 cattle and operate a guest ranch with 60 saddle horses.

The biggest outfit in the Cariboo-Chilcotin region is the Giang Ranch, founded by Theodore Harper in 1883 and so- named because it was the first to use a big gang plough in place of the walking plough. Like a lost continent of bunchgrass bills, valleys and tablelands, the Giang has 50,000 acres of dead- land and more than a million acres of leased land under grazing permit. This makes it B.C.'s largest, but in actual land owned and cattle—about 5,000 head—it's much smaller than the Douglas Lake ranch.

Two multi-millionaires from Montana, Bill Studdert, who made a fortune shipping salmon from Alaska to Seattle, and Floyd Skelton, bought the Giang from an English firm in 1944 for a reputed $275,000. Their new empire was so big they found far more cattle on it than the previous owners estimated and this, along with skyrocketing prices in 1950, helped them return a good part of their investment the first year. But they've had their share of bad luck, too. Two winters ago, hundreds of their cattle died when hay ran out and the animals were unable to forage for themselves.

That same winter, the Chilco ranch, just north of the Gang and almost as large, met the feed crisis by trucking in loads of pellets—inch-long capsules of grain, molasses, meal and min- erals. The ranch's 5,000 hungry Herefords had already eaten through 4,000 tons of hay, put up the previous summer by a score of ranch hands with 50 teams of horses, 12 tractors and other machines.

The Chilco's owner is John Wade, who has a magazine sub- scription agency and other interests in Hawaii and the south Pacific. Tall, good-looking and known as a super salesman, Wade commutes to the ranch by plane from Honolulu and Los Angeles.

Since 1947 when he acquired the Chilco, he has added ad- joining ranches and modernized operations to make his cattle domain one of B.C.'s best. Fifteen buildings grouped about the Chilco's large log Teedoff Farm House, fronted by an airstrip and enclosed by a white rail fence, make it a picture ranch. Manager Hale Aycock, a former colonel in the U.S. air force, takes off from the airstrip in a small Cessna to spot cattle straying far out on the Chilco's million acres that sweep west on both sides of the Chilcotin river.

Contrasted with this modern air-age operation is Pan Philip- pes' Home Ranch by the Itcha mountains, the Chilcotin plai-teaux's last big range before it passes into the massive barrier of the Great Divide. Phillips' former partner, Richmond P. Holson, has told the story of ranching in this area in the dra- matic, personal terms of two books, Grass Beyond the Moun- tains and Nothing Two Good for a Cow—stories of hard winters, gruelling trail drives and frontier fun.

Rancher Phillips and his wife Betty still carry through the longest and toughest trail drive in North America, a five-week
They've all quit laughing at the PGE*

by Joy Graham

Along the victorious advances being recorded by British Columbians in their centennial year of 1958, many found one particular feat almost unbelievable. It was the news that their once-bumbling little railway, the Pacific Great Eastern, had pushed its tracks 260 miles north of Prince George into the Peace River district of B.C.

Most people had come to treat old "Please Go Easy" with good-natured laughter. From the time the unfinished railroad went bankrupt in 1918 and was taken over by the provincial government, until recent years, the PGE had built up a continent-wide reputation as a quaint relic. Its rolling stock was called "a laughing stock" and its antiquated coaches, 15- to 25-mile-an-hour speeds, odd stopping places, rock slides, mechanical breakdowns, uneasy roads and shaky finances provoked merriment throughout the province.

Yet in the past three years, PGE engineers and construction workers, using some 300 vehicles along with rail and steel-laying trains and spiking and bolting machines did succeed in building the big northern extension. They spanned a dozen rivers, including the Fraser, Peace and the Parsnip, with huge steel bridges and crooked wooden trestles, and they dynamited five tunnels. They built the roadbed through muskeg as deep as 100 feet, crossed the Rocky Mountain trench and blasted their way through the Rockies via 3,000-foot-high Pine Pass.

From Little Prairie, twin branches run into Dawson Creek and Fort St. John. These carry the Pacific Great Eastern 730 miles north of Vancouver and bolster the claim of "the world's most scenic railway" that it is going places and doing things.

From the big port city of Vancouver, Canada's third largest, PGE freight and diesel passenger trains now move through four mountain ranges and past such scenery as the sheer east side of Howe Sound, the spectacular Fraser Canyon and the rolling range-land of the Cariboo. Its trains and stations will soon be linked by micro-wave radio, the only railway in Canada being thus equipped.

The farming, ranching and lumbering industries of British
Columbia's central and northern interior and its towns, villages and hamlets have changed little since it was built. Now its centennial-year arrival in the 53,000-square-mile Peace River block opens the way into one of North America's last frontiers. Lying between the eastern slopes of the Rockies and the Alberta and Yukon borders, this vast tranglcial prairie is rich in grain, cattle, lumber, coal and natural gas and shows potential as oil as well.

But it has depended almost entirely on Alberta for supplies and markets. Until the building of the Hart Highway from Prince George to Dawson Creek five years ago, it was all but sealed off from the rest of B.C. Rail shipments to the west coast went via the Northern Alberta Railways to Edmonton, doubling back westward along the CNR. Now the PGE has brought the whole region 255 rail miles closer to the B.C. coast and linked it to the central interior.

Because of this and other recent feats, British Columbians are beginning to call the railway "the new PGE"—with nostalgia for the passing of its "Tonerville Trolley" days.

The story of the old PGE can be told in the puns and wise-cracks that are the ore of the more inconsiderable epiphenyma, "Puff, Gurp and Expe," began to drop into the discard in 1920 when the railway started installing diesels to replace its clanking old steam engines. Today the line has 35 diesel locomotives which can haul up to 3,000 tons each, double that of the old steamers. Four full freight trains, with as many second sections, can be found on the single-track line at any time of the day. In the first six months of 1957 they moved 19,000 carloads, compared to a total of 15,500 in all of 1932. In the fiscal year just ended, traffic between Clinton and Prince George are the PGE's biggest freight items. Just as important to the local economy are the Hereford cattle that come off the range each July for the sale, and the machinery, oil products and hundreds of other consumer goods that go in to the Cariboo. In July 1957, the PGE traffic agent at Prince George booked 11,620 car-loads, as many as in the previous July. Half of them carried oil products.

This increasing freight, aided by a recapitalization of the railway, helped pull the PGE out of the red for the first time in 1954 and kept it ahead in 1955. "The PGE is the biggest railway in British Columbia," added to the $3 million in interest that it owed itself and issued bonds for the remaining amount. By 1956 the railway had shown a profit on all of its operations, thanks in large part to the change to diesel locomotives. In this same period, two more lonely little phrases that had bedeviled the railway years began to go by the board. They were "the horse is the engine" and "Everywhere and Endure Nowhere" and "Prince George Eventually." Both stemmed from the fact that the PGE started at Squamish, 40 miles from Vancouver, the city it was destined to end, and ran the 180 miles short of Prince George, its intended destination.

The grand scheme of its original builders back in 1912 was to link Vancouver with the Cariboo country and with the Grand Trunk Railway running through at Atlin. In building the line they postoned work along the difficult mountainous terrain outside Vancouver and started building north from a point north of the logging camp in 1916, and on to Atlin with 178 miles of track laid, the government took over and

carried on to Queest. For more than 30 years, no attempt was made to complete the missing link to Vancouver, and the PGE ran between two villages. To get to the southern terminal at Squamish, passengers had to have a four-hour steam train up Horseshoe Freight cars were hauled up the Sound to PGE rails that ran out to the coast.

Finally, in 1952, the PGE took up the challenge to go farther north and laid down heavy, modern rails over the northern gap from Queest to Prince George. The long-standing jibe, Prince George Eventually, fell by the right-of-way. Even then, as the first train rolled into Prince George, some wag wrote on its arrival board, "Train No. 1 from Squamish due 13.00 o'clock - 40 years late."

The salt-weather gap at the southern end remained for only two years after that. For on June 11, 1954, the late Ralph Chetwynd, provincial minister of railways, returned to his deputy minister, Joseph Broedel, and asked: "How long will it take you to build that line to Squamish, Joe?"

"Oh, two years!" Broadhead shot back.

"Good. I'll win it finished two years from today," Chetwynd held.

Later Broadhead, who is now general manager of the PGE, told friends, "I was only kidding about it taking two years. It should have been more like four."

But Chetwynd immediately hit by his pat publicly that the Vancouver-Squamish extension would be built on time and Broad- west went into a frenzy of activity. Half the 40-mile road had to be blasted out of rock or cut folded. Men and equipment were landed by boats on narrow ledges of the Coast range and the boats kept circling around below in case anyone fell off.

The first train ran over 114 miles in three days. "It was like playing a very man in the PGE, including the clerks, was out driving spics that last week," a railway official quipped.

Government and PGE officials were jubilant. A grand opening of the new block was held in early July as many as in the previous July. Half of them carried oil products.

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how bold enterprise is building B.C.

by STEPHEN COYNE

British Columbia, 100 years old this year, is world famous for its giant-sized industrial projects. And behind each of them, oil men stand ready with the fuels and lubricants that keep industry moving.

IF the people of some mountain village in British Columbia had gone to sleep for 100 years like the enchanted folk of Scotland's legendary Brigadoon, then awakened in 1958, their surprise at the changes around them would leave them too dazed to celebrate.

The year their long nap would have started—1858—was the year the British government proclaimed the Mainland Colony of British Columbia and named James Douglas as governor. It was formed because Douglas feared that the hordes of gold-seekers from the United States would take over the B.C. mainland as an American territory. (Vancouver Island, which became a Crown colony nine years earlier, carried on separately for another eight years.)

The fellow citizens of our 'Brigadoon' British Columbians in that founding year numbered only a few thousand. The port of Vancouver was yet unborn. Their highways were rivers, lakes, bush trails and a single road, the Cariboo Trail that led inland to the goldfields of the Fraser River and its tributaries. Steamboats took the miners up the lower Fraser as far as Yale.

Packhorses, mule trains and stage-coaches carried them and their supplies to the interior.

The awakened sleepers today would find that British Columbians are citizens of self-governing Canada, having joined Confederation as a province in 1871. They would see them as residents of scores of cities, towns, villages and fast-developing rural areas—all becoming increasingly dependent on a substance called petroleum, which they might recognize as the "rock oil" recommended in their day as a cure for all the external and internal ills of man and beast.

Because of its beauty of mountain, ocean, lake, river and forest, its wealth of natural resources, abounding wildlife and mild coastal climate, B.C. has become a mecca for new citizens and tourists. Its population increase of 82 percent since 1941 has been the highest of any Canadian province.

Today, British Columbians can cross their province—Canada's third largest—from east to west by two transcontinental railways, travel south to the U.S. by a third rail line or go north from Vancouver on the scenic Pacific Great Eastern. They can travel also on 23,000 miles of provincial highways in their 486,000 passenger cars and commercial vehicles.

Deep-sea ships take them and their products to major ports on the Pacific or, via the Panama canal, to Europe. Smaller vessels ply the 700-mile-long coast whose inlets, sounds and channels total 7,000 miles in length. Airlines connect Vancouver and Victoria with other parts of Canada and with the U.S., Europe, Mexico, Hawaii, Australia and Japan.

The province's oldest industry, forestry, which dates from a machine-operated sawmill set up near Victoria in 1848, is still the No. 1 job-provider in B.C. But gone are the oxen and the steam-driven dooryard engines. In their place, trucks, mills and men work in a systematic harvest of the forest.

At the same time the salmon, halibut, cod, sole, herring and other fish teeming along B.C.'s coast, account for 40 percent of Canada's fisheries wealth. In 1956, its fishing fleet—some 8,000 vessels—pulled in more than 600 million pounds of fish with a market value the fourth highest in its history. Gasoline, diesel fuel and lubricants are supplied to the fleet. Bunker fuel still
An Imperial crew strung a flexible pipe line to the shore from the bay. A supply barg, bustling from Princ Rupert, pumped gasoline by pipe line through the oil field and past the port. The Imperial\'s operations were on a large scale.

But the oil was not always first-rate. The company had to compete with other companies for the best oil. The company had to pay for the transportation of the oil to the market.

The company also had to deal with the weather. The company had to be prepared for storms and other natural disasters.

The company had to deal with the government. The company had to comply with the regulations and taxes.

The company had to deal with the community. The company had to be a good neighbor and provide benefits to the local community.

The company had to deal with the environment. The company had to be responsible and protect the environment.

The company had to deal with the economy. The company had to be competitive and profitable.

The company had to deal with the future. The company had to plan for the long term and invest in the future.

The company had to deal with the past. The company had to learn from its mistakes and continue to improve.

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plant, it was delayed in its opening until 1915 because German raiders in the Pacific captured its first cargo of crude oil.

Throughout the '70s and '80s, as the automobile and other gasoline-driven machines became a big factor in B.C. growth, Imperial helped meet the province's growing needs by building service stations and bulk plants and by organizing a coastal tanker fleet. The company put the west coast's first marketing tanker into service in 1926, when the late Capt. Murray Gerrard took the Marivelle, now the Imperial Nanaimo, on her maiden voyage. The Bebecelite, now the Imperial Nanaimo, was added in 1937, and the Imperial Vancouver, a motor vessel, came into service a year later.

Expansion of all but the most essential oil services was postponed during World War II, but with the postwar period came Imperial's discovery of oil at Leduc, Alta.—an event which was to have far-reaching effects on the growth and direction of the oil industry in B.C.

Leduc and the discoveries which followed made feasible the construction of a 718-mile crude oil pipeline from Edmonton through the mountains to Burnaby, B.C., just outside Vancouver. Completed in the fall of 1953, the $105 million Trans Mountain line meant that B.C. was no longer dependent on foreign supplies of crude. Today the line supplies crude to one refinery in the interior, three in the Vancouver area, including Loco, and two in the state of Washington.

Meanwhile, to help convert this crude oil into the many products British Columbians were demanding in increasing volume, Imperial spent $165 million between 1952 and 1956, modernizing loco and doubling its capacity. Now, B.C. motorists, like those in most other provinces, are following the trend toward high compression car engines, and loco is well along on another $6 million program of new installations to improve the quality of its gasoline and to increase capacity again, to 32,000 barrels a day.

Sitting picturequely at the foot of high mountains 10 miles east of Vancouver, Loco is today the fourth largest of Imperial's nine refineries. While Imperial has been expanding and modernizing its refinery, other companies have also been installing new equipment, and some have built entirely new refineries.

Long important among B.C.'s secondary industries, the oil business has only recently shown signs of becoming an important primary industry as well. Although the search for oil in B.C. dates back 50 years to a dry hole in the Fraser Valley, near Vancouver, the province's first important oil discovery was not made until February, 1955. This discovery well, in the Boundary Lake area of the Peace River district, was developed a year later, along with five other wells. By March, 1956, the search for oil in this area had become so intensive that Imperial moved its Peace River exploration office from the town of Peace River, Alta., to Dawson Creek, B.C. Its office staff of 110 now occupies a large modern building there, and many others work on drill and seismic crews. By mid-1957, the region had 18 oil wells.

Exploration crews, seeking gas and oil for a number of companies, have also been active in other areas of B.C., notably Kamloops, the Okanagan Valley, Fernie, the lower Fraser Valley, the Islands in the Strait of Georgia, and the Queen Charlotte Islands. By the end of 1957 they had drilled some 70 holes in these widely separated regions.

In the Peace River, B.C.'s only "hot" prospecting region, gas has so far proved more prolific than oil. Imperial completed the Peace River district's pioneer gas well near Peace Coulee in 1932, but the field was too remote from the nearest markets to be developed at that time. Since 1952, when Pacific Petroleum completed the area's first commercial gas well, Peace River natural gas has been proved up at two trillion cubic feet. By the middle of last year, the region had 150 gas wells.

Westcoast Transmission Co. Ltd. began piping the gas out last fall, after completing a $170 million pipe line from Taylor to Vancouver—a distance of 650 miles. Since then, a $30 million scrubbing plant to treat the gas and make by-products has come on stream at Taylor, midway between Fort St. John and Dawson Creek, transforming this one-time farmland flat into a bustling town.

Now with Phillips Petroleum as a partner, Westcoast has appropriated another $100 million for further expansion.

Regardless of the success or failure of B.C.'s oil seekers, as long as the province continues to grow, it is certain to need oil products in increasing volume. For despite great hydro-electric resources, British Columbians rely on oil products for nearly half the energy they use. Their current needs each day amount to nearly two gallons of oil for every man, woman and child in the province—20 percent more than the average for all Canada. By 1956, British Columbians were using a billion gallons of oil a year.

As trade and industry expand and living standards rise, oil—in such forms as bunker fuel, diesel fuel, gasoline and lubricants—continues to grow in importance, supplying many of the needs of the province's ships, boats, planes, trains, motor vehicles, mines, power plants, factories, logging camps, sawmills, farms and homes. Huge quantities of oil products also go into B.C.'s construction industry, which has contracted with $500 million in 1955. Millions of tons of asphalt are poured into new roads and highways yearly.

As a leading supplier of B.C.'s oil needs, Imperial's marketing division, with a staff of 500, today reaches into every corner of the province. Its kerosene and candles of the last century have been superseded by locally made products as diverse as aviation gasoline and asphalts; its pack trains have long since given way to trucks, tanks cars and ships; its tooled-up warehouse has grown to 96 bulk plants around the province, including 10 at airports. The company's investment has grown to $40 million. Dealers use 627 outlets, ranging from big, neon-lighted, multi-pump service stations to a single hand-pumper in the remote Chilcotin region.

Now on British Columbia's 100th birthday, Imperial looks back across 75 years of B.C. activities crowded with memories, friendships and achievements.
Ninety years ago some of Canada's richest ore deposits attracted thousands of miners and prospectors to southeastern British Columbia. Today there are a great many other attractions that help to explain

**THE LURE OF THE KOOTENAYS**

*by FERGUS CRONIN*

AFTER you pass through the little town of Lardeau, along the twisting road that clings to the mountains beside Kootenay Lake, you come to a road sign which says:

**GOLD HILL 1 Mile**

But when you have gone the mile, you find nothing but an abandoned building with a rusty sign reading "Miners' Hotel".

If you know anything about southeastern British Columbia, you realize the hotel is a relic of the boom times 50 years ago, when Gold Hill and dozens of towns like it were caught up in a frenzy of fortune-hunting and railroading.

But you have to be around the Kootenays for a while before you realize that the road sign directing you to Gold Hill is also a symbol—of the present spirit of the region. For in no other corner of Canada do residents point with greater pride to their colorful past. They find no need to apologize for their abandoned mines and ghost towns, for the region is the site of one of the major mining enterprises of the world.

Many present-day cities and towns of the Kootenays, such as Trail, Rossland, Nelson and Kimberley, trace their origins to discoveries of placer gold, silver or base metals, which lured thousands of fortune-hunters into the region from the northwestern States in the 1860s. Ever since, the Kootenay region—roughly a 20,000-square-mile triangle bounded on the east by the Rocky Mountains, on the south by the U.S. border and on the third side largely by a range of the Monashee mountains—has had its character shaped by mining. The region got its name from the Indian tribe living there; but many of its towns, like Silverton, Silverton, Argenta, Galena and Zincton, bear names that are part of its mining heritage.

The routes of many Kootenay roads were also determined by the needs of miners and prospectors. One such instance was the gold rush of 1863, when 5,000 fortune-hunters took $20 million worth of gold dust and nuggets out of Wild Horse Creek in less than a year. When the rush began, part of the route to the coast went through the United States. Travellers' provisions were sometimes seized south of the border; and goods that were allowed to pass were accompanied throughout the U.S. portion of the trip by an American customs officer who demanded $1 a day plus food. This situation prompted B.C.'s first governor, James Douglas, to extend the Dewdney trail, a pack route commissioned in 1860 to connect the town of Similkameen to the coast. By extending the trail 200 miles eastward to Fort Steele, near Wild Horse Creek, Governor Douglas gave the prospectors an all-Canadian route to the coast. At the same time he forecasted demands for annexation of the Kootenays by the United States, since thousands of Americans had swarmed into the region, and U.S. publications had begun including the Kootenays in references to "the Northwest".

By September of 1865 pack trains were operating the length of the Dewdney Trail. The placer fields soon became depleted, but the trail made possible further exploration which uncovered lode mines of lasting significance. The city of Rossland, near Trail, was born of one of these strikes. It took place in 1890 on Red Mountain, where two former placer miners found copper outcroppings and staked five claims. Lacking the funds to register them, they made a deal with Nelson's mining recorder, E. S. Topping, giving him one of the five claims in return for the $12.50 fee.

Ironically, Topping's claim, called the Le Roi, proved to be the richest of the group. By 1890 it had changed hands for $4,000,000, and its stock zoomed from 43 cents a share in 1895 to $16 in 1899. During that same period, another of the original five claims, the War Eagle, rose from 10 cents to $15.20. In the year 1901 alone the five principal mines of Rossland produced gold, silver and copper worth $2,804,758.

The Rossland find helped stimulate prospecting and settlement in the entire area. By 1899 Three Forks and Sandoned, new ghost towns, were booming, as well as Kaslo and New Denver, which survive today. The fever of the fortune-hunters was heightened by such actual windfalls as a 250,000-pound boulder found lying in a valley. It contained silver and lead worth more than $18,000.

Initially there was a smelting problem. The first seven tons of Rossland ore had to be shipped by pack train and barge to Northport, Wash., then by rail some 580 miles to Butte, Montana. The mines realized just enough to pay freight costs. Other
More than 120 miles of tunnels have been driven in the Sullivan mine, the world's biggest producer oflead-zinc-ore are

viously they needed a Canadian smelter if they were to make any money, and it was an aggressive young American who gave it to them. Frederick Augustus Heine, who at 25 already owned a smelter at Butte, laid a 14-mile narrow gauge railway from the Rossland mines to the Columbia River at the townsite of Trail and there built a smelter which started operations in 1896. Heine also owned part of the railway right-of-way from Trail to Vancouver. In 1898 the Canadian Pacific Railway, which had just built its history-making line to the west coast, bought all of Heine's Canadian holdings, including the right-of-way and the smelter.

Fortunes were made in the Kootenays, but many founds were quickly mined out. In 1902–03, with some mines already failing, a drastic drop in the price of lead and silver threatened to close many others. To survive, three mines, a power company and the smelter at Trail united to form the Consolidated Mining and Smelting Co., now familiarly known as Cominco. Then as now the CPR owned controlling interest (51 percent). At the time the purchase seemed like a minor venture into metallurgy; but the smelter was in fact the nucleus of what has since been called "the brightest jewel in the CPR's crown."

In 1910 Cominco bought the Sullivan Mine at Kimberley. It was a doubtful venture at the time because only part of its ore — the lead-bearing galena — could be refined. Zinc, iron and other minerals, also in the ore, were being wasted because they were combined in a manner that baffled metallurgists of the day. However, 10 years later, after considerable research, Cominco developed a good commercial method of isolating the zinc, and the Sullivan proved to be one of the most successful mines in Canadian history. Since its discovery in 1892, it has produced 73 million tons of ore — enough to build an eight-mile pillar as long and wide as a hockey rink; and the company's president, R. E. Stavert, reported recently that the mine can continue producing for several decades yet.

No use has been made yet of the Sullivan's iron tailings, now a lake-like deposit 40 feet deep and about a mile square. But Cominco officials have cast wistful glances at them for many years; and now, after two years of intensive research, they are fairly sure they have found a practical way of converting the pile's estimated 40 million tons of 45 percent iron into useful iron and steel. While planning goes ahead for an iron and steel mill the pile continues to grow by 900 tons of iron per day.

Cominco already accounts for about eight percent of the world's supplies of zinc and lead, about half of Canada's output of silver and significant quantities of gold, cadmium, bismuth, tin, antimony and indium. In the process, it uses 350,000 horsepower (more than the city of Vancouver), which it generates privately at six nearby dams.

While Cominco is the giant of the Kootenays, it is by no means the region's only attraction. There is good reason for the large numbers of American and Canadian cars to be seen on its rough-hewn roads each summer. At Deer Park on Lower Arrow Lake the tourist can see a limestone formation which makes a natural bridge strong enough to carry a train. Near Boswell on Kootenay Lake he can see "The Glass House," a fascinating five-room dwelling which L. H. Browne, an undertaker from Red Deer, Alta., built out of 107,000 embalming fluid bottles. He has had as many as 900 visitors in a single day and is so well known he has received mail from the U.S. bearing the address: "The Glass House, Saskatchewan, Alberta."

The most distinctive thing about the Creston area has been its discovery of uranium. Running into flats it has built up the valley floor with a 350-foot depth of glacial sill topped by alluvial soil, creating the most fertile land in the province and perhaps the most fertile 37,000 acres in the world. The district's 100-old farms produce mostly berries and other fruits, peas, wheat and coarse grains. Here, too, have been found remains of Kootenai Indian life, including their unique pointed canoe, believed to prove the theory that the North American Indian originally came from Asia via Siberia and Alaska because the only other part of the world where such a canoe is found is in the Himalayas.

A more notorious claim to fame can be made for the area around Castlegar, where half the population of 1,500 is Doukhobor, and the Sons of Freedom, a small and radical branch of the sect, sometimes bomb railroad tracks or burn schoolhouses to register a protest against authority, or fire their own homes in a ceremony of "purification."

Some of the best big game hunting in America is to be had in East Kootenay, where elk, moose, deer and grizzly are plentiful. In the early '30s this game attracted Theodore Roosevelt. The head of a caribou he shot at Rolyal Mountain was on display in the customs house at Ryrieiks for years.

Many of the attractions of the Kootenays recall a brawling past, such as the last decade of the 19th century when Donald A. Smith (later Lord Strathcona and Mount Royal) and his Canadian Pacific competed bitterly with a former associate with whom he had fallen out, Canadian-born James J. Hill and his U.S.-based Great Northern Railway. Both laid lines into the B.C. mining area in a race to win the ore-carrying contracts. As the mines petered out and trains entered the scene, the railways withdrew many of their tentacles. One of Great Northern's abandoned station houses, at Kuskunok (population, 8) on the east shore of Kootenay Lake, is now the home of Imperial Oil agent Sam Byouth, who has lived in the district almost all of his 74 years. Kuskunok, he remembers, hit its peak about 1895 — with six saloons and a population of several hundred — when both the CPR and GNR were pushing tracks north along the lake. The GNR had managed to get the right-of-way along the shore. "But," says Byouth, "The CP beat Hill by doing what couldn't be done. It drove pilings across the lake and filled them in with rocks and laid the line across. Also they had tugs on the lake which could carry ore to the railroad from as far as 60 miles up the lake."

The Great Northern couldn't compete for long. In 1913 its rails were lifted, leaving the CPR supreme, but dooming Kuskunok. Byouth was offered the Kuskunok station for scrap. He bought it, then decided to live in it. Today the baggage room is a small general store, a hole in his living-room ceiling shows where the telegraph wire once entered, and the ticket wicket has become a smart-looking bookcase in his living-room wall.

It was not always the CPR which won the race. Further north at Howser on Duncan Lake are piles of rotting railroad ties and several miles of CPR grading that never bore a rail. The CPR switched its route when it became obvious the Great Northern would beat it to the mines around Poplar, Ferguson, Cambourne, Beaton and Trout Lake — now all ghost towns.

Oldtimers at Howser, like 75-year-old Harry Tomkinson, remember how at one point the two railroads were working neck-and-neck on their gradings, and each night the GN gang would roll boulders down onto the CP right-of-way.

Maps still show Gerrard, at the south end of Trout Lake, but its permanent population is one: Mrs. Esther Brandon, whose late husband was the CPR agent there. She has lived in the same house since 1912. Not far from her home is a road that began as a rail bed. The trains were lifted in 1942, but the railroad grade is still to be seen along the highway. Mrs. Brandon can point out fire hydrants in the bush which has re-claimed her town, the foundations of a sawmill, of the loco-

Melton dog is handled in east iron pots at Cominco's Trail smelter, which produces about eight percent of the world's supply of lead

Imperial Oil Review, April 1958
move roundhouse and two hotels, and remains of the school her three boys attended.

She gets mail from her family by bus once a week, makes her own rolls and bread, catches and can the tasty Kokanee trout which flourish in the Lardeau River at the foot of her garden path, grows her own vegetables, makes a few dollars renting rooms to fishermen in the abandoned Lands and Forests staff house and knows everyone within a radius of 40 miles.

She can tell you about the rise and fall of Sandon where the main street was wooden, built over Carpenter Creek; about the marble mountain, 41 miles south, which yielded marble for the Winnipeg Stock Exchange and the Mormon Temple at Cardston, Alta.; about the gold rush at Poplar and how the Lucky Jack mine was found accidentally when a boy, waking up from a nap in the woods, found a rock rich in gold ore. Poplar grew to a town of several thousand, but it’s a ghost town today.

Some say places like Poplar became ghost towns because the ore gave out. Some say there were too many smokers which gobbed up the ore too fast; others say falling markets and strikes and depressions killed them. There is probably some truth in all these viewpoints. But Kootenay residents feel few regrets for the decline of mining—not when they can point to Cominco, whose operations are productive enough to justify all the years of searching.

One of Cominco’s mines, the Bluebell, at Riordan, on the east shore of Kootenay Lake, is the oldest operating mine in B.C. While many other Kootenay mines are now rich only in history and legend, the Bluebell is still rich in ore as well, producing 700 tons a day. Prospectors knew of lead ore there at least as early as the 1840s but considered the grade too low. Finally in 1927 an American company, Robert Evans Sproule, then restaked by Thomas Hamill, who fought Sproule in the first court ever held on Kootenay Lake. Sproule’s claim was upheld after a six-week trial but was lost to Hamill in appeal, whereupon Sproule shot Hamill dead. After a lengthy chase Sproule was caught, tried and hanged—despite, so the story goes, a personal appeal from President Grover Cleveland.

Some years later a cairn was erected over what was believed to be Hamill’s grave at the Bluebell, bearing a plaque which read: “Thomas Hamill, assisticd Oct. 6, 1885—Age 30 years.” Recently the monument had to be moved to make way for expansion of the Bluebell mill. A new one was erected a short distance away with a new plaque on which the word “assisticed” was spelled correctly. The old plaque is now cherished by a prospectors’ group in Nelson.

The center of Cominco’s activities is Trail, the Kootenay’s largest city, with a population of 11,295. Named after Trail Creek, which in turn owes its name to the Dewdney Trail, it is an attraction both for its past and its present. It began on a spot between the Columbia River and the Monarch Mountain range, and as it grew it encroached on both: smelter slag was used to extend the townsite beyond the original river basins, and houses were built on the hillside as well. At one point on the main street, five tiers of mountainous streets can be seen—one reason why Trail is among the most expensive cities in Canada to maintain. The new Trail is still rich in old settler loyalty for the slopes, and most new houses are built across the river, in East Trail. Another distinguishing feature is the income of Trail families. In recent years it has ranked as one of the highest non-farm families than residents of any other Canadian city. And only the automobile city of Windsor, Ont., has more cars per capita. TV sets are common, too, even though the surrounding mountains compelled set owners to use coastal cables connected to a mountain-top antenna, at an initial cost of $125 and a monthly rental of $125. Since World War II Cominco has waged a vigorous campaign of beautification at Trail, planting acres of gardens on its own properties and gradually restoring to their former splendor the hills left barren by fumes and fires—making amends, as it were, for the sins of the fathers. For with the company’s rapid expansion during the 30s came trouble. The amount of sulphur-bearing smoke from the smelter’s stacks increased proportionately with its production. Almost unnoticed at first, the sulphur began killing all vegetation up and down the once heavily-wooded Columbia River Valley.

As the Cominco Magazine put it: “Evergreens around Trail died, victims of acrid sulphur dioxide gas. Then the harder shrubs succumbed. Wild fires found ready fuel in dead, sun-dried wood. Roots rotted in the ground, loosing their foothold on a centuries-old accumulation of plant humus. Hillside erosion carried the free soil away. Eventually sand and rock offered almost the only available foothold for scattered, skinny patches of anemic greenery.”

With the smelter only 11 miles from the American border, farmers down the Columbia Valley in the State of Washington began to complain that their fruit trees were dying and their livestock was being rotted by green pastures. In 1929 an international tribunal ordered the company to pay $28,000 in damages and to eliminate the sulphur from the smoke. Cominco researchers learned not only how to get the sulphur out of the smoke but also how to put it to use. In 1933 the company started a plant which now makes 1,500 tons of chemical fertilizer a day, mainly from sulphuric acid extracted from the smoke.

Since 1945 Cominco’s beautification campaign has included the planting of 700,000 trees, mostly black locust and maples, which thrive well in the Kootenay climate. “Our aim,” says Hans Foug-Dohmstrud, foreman for the past 10 years of Cominco’s 25 full-time gardeners, “is to gradually cover the sandy hills.” Eight thousand trees and shrubs have also been donated by Cominco and planted by residents around their own homes.

Thus Cominco is leading the fight to correct in the minds of the rest of B.C., the outdated impression that Trail is a dirty, smoky city. “There is no place in the Kootenays where you will find more beautiful roses,” says Foug-Dohmstrud. However, the town’s senior and junior hockey teams and its baseball team still call themselves “The Trail Smoke Eaters”—and without shame, for in 1938 the senior team won the Allan Cup, symbolizing Canadian supremacy in amateur hockey, then the world hockey title in Europe the following year.

The wind still brings smoke down into the town at times but it is neither destructive nor noticeable as it once was. The amount of sulphur released to the air is now three parts per hundred million—less than it was in 1900. In fact, the company points out that rather than killing vegetation the sulphur fumes once did, the smoke carries with it small amounts of ammonium sulphate which actually serve as a fertilizer.

And Trailites, as they paint their houses without fear of the paint will flint off and plant their gardens with the same loving care that they give to their Kootenays will keep them there. And in staying, they will perhaps be obeying the same law of nature that has governed the history of the Kootenay, a species of land-locked salmon which has lost its instinct to migrate.

by Gordon Wesley

**Whitweny-Green Corporation engineers were beginning to investigate the possibilities of a half-billion-dollar development in the Rocky Mountain Trench of British Columbia, they made a series of bush-hush visits to the Pacific National Exhibition grounds in Vancouver.**

There they spent part of a day for a week clustered around the biggest relief map in the world, a three-dimensional study of B.C.: so large that a building had to be designed especially for it. Its size and effect so amazed one visiting British dignitary that he dubbed it the eighth wonder of the world.

The 86-by-76-foot replica of the province is the work of 78-year-old George P. Challenger, long a part-time geographer and formerly a professional cyclist, amateur wrestler and lumber and mining millionaire. With the help of his 33-year-old son Robert, Challenger built the map in the basement of his Van- couver home. Over a period of seven years they pieced together the map’s 996,400 plywood parts on four-by-eight-foot canvases. Since it was set up in the PNE’s British Columbia building in mid-1954, the map, covering an area equal to that of a fairly-sized residential lot, has attracted two million viewers.

Most of them have ridden the elevated moving platform that traverses the map in 3½ minutes, providing the equivalent of a flight over the province in 13,000 miles an hour. The ride offers an unobstructed view of 576,000 square miles of mountains, valleys, plains, rivers and lakes, including all B.C. and parts of Alaska, the Yukon, Alberta, Montana, Idaho and Washington. Lakes and rivers are blue. Roads, railways and boundaries are marked by colored tapes. Shades of green and brown mark off...
the altitudes of hills and mountains. The map has a horizontal scale of one inch to the mile and an altitude scale of one inch to 1,000 feet. A uniform scale would have made the mountains insignificant small.

Taking advantage of this spacevac’s view of the province, the B.C. Electric Co. has used the map to show where new power dams should be built—and why. B.C. Packers Ltd. has used it to show how dams in certain locations would affect salmon runs. Gen. A. G. L. McNaughton, chairman of the Canadian section of the International Joint Commission, studied the map for clues to best uses of Columbia River power.

Within minutes after directors of the Canadian Bank of Commerce landed in Vancouver for an annual visit, lumber tycoon H. R. MacMillan, whose firm donated the plywood for the map, hustled them out to see it. University of B.C. professors have held classes beside it for students of geology, mining, forestry, fisheries, geography, history and transportation. Vancouver school authorities have included trips to the map as part of their curriculum. The map’s rugged mountains have given many people—including some oil men—a new appreciation of the obstacles Trans Mountain pipe line crews overcame while building the line from Edmonton to the coast.

Challenger himself likes to use the map to demonstrate something which any layman can see now, but which engineers failed to realize when they built the Alaska highway: its natural route would have been west and north from Hatzehon, through almost continuous open-range country and valleys. But, pressed by wartime emergency and lacking any map like Challenger’s, they spent many thousands of extra man-hours and millions of extra dollars building the highway over muskeg and along the wall of a sheer canyon.

As a man who began, around the turn of the century, to win and lose one fortune after another in mining and lumbering, Challenger became interested in relief maps because they were useful in his work. Often his fortunes depended on convincing someone of the potential wealth of some mining claim or timber stand. To demonstrate the potential of various areas, he began building 3-D maps, developing his own techniques as he went.

“A relief map,” he says, “is even better than standing on a mountain top where you can see for miles, because there your perspective changes with the distance.”

In the mid-1930s he made such a map for the Fawn Mining Co., in which he was a major shareholder. The map convinced the directors they should renew activities in their Colorado mining properties. Later, when his three sons (who followed him into lumbering and mining) were about to abandon a logging region because it looked unprofitable, he built a map which convinced them they should carry on. The region yielded a million dollars in timber.

Challenger the map-maker has also gone "underground" and come up with some remarkable results. For an oil company he built a three-dimensional model of the limestone geology of Turner Valley. Using information gathered from several hundred drill holes, he reconstructed the field to a depth of 10,000 feet. The company’s geologists studied the map and saw some promising places to drill. Challenger also read the possibilities, bought stock in the company and cashed in profitably when the resultant discoveries boosted the price of the stock.

During World War II, he built maps for the Canadian Army’s Western Command. One of them, a 16-by-48-foot replica of the B.C. coast, now hangs in Canada House in London.

In 1945, using data gathered by RCAF and U.S. Army air reconnaissance, Challenger began working on the map of B.C.—the biggest of his career. Four years later he finished a 12-by-36-foot section and rented it to MacMillan and Bloedel Ltd. for an exhibition on pulp and paper resources. In 1950 B.C. Packers Ltd. rented a 24-by-76-foot section for a display to promote fish conservation. A year later the PNE used a section twice as big to publicize the need for a B.C. building on the fairgrounds. Impressed by the map, Vancouver taxpayers voted $1 million toward the cost of the $1,410,000 building in which the map is now displayed.

As the map neared completion, five firms offered to buy it. But Challenger preferred to sell it to the PNE for far less than the private companies would have paid. "I figured it would be more useful as an educational service for the city at large," he says. He wanted people to see how B.C.’s potential resources could be put to best use. "People are inclined to exaggerate obstacles unless they see them in proper perspective, and there’s no better way to see this province in proper perspective than by this map."

So anxious was he to have others learn all they could from his map that he agreed to sell it only if it would be housed in a suitable building open to the public the year round. Except on Christmas Day, the British Columbia building is open every day, including Sundays, from 11 a.m. to 5 p.m.

Since the map went on display, Challenger has had requests for similar maps of Canada, Alberta, the Yukon, Hawaii, Washington State, Oregon, California, Utah and Colorado. But he says he did not undertake the B.C. map as a profit-making venture and he doubts if it would pay him to make others. Without counting the data and know-how that went into the map, he estimates the materials and labor make it worth nearly $250,000. But he’s satisfied, he says, with the $50,000 which the PNE paid him for it.

His somewhat indifferent attitude toward money can be explained to a large degree by the fortunes and misfortunes of his earlier years. Born in Mitchell, Ont., near Stratford, he grew up in Toronto, where he played football, lacrosse and junior hockey and wrestled in the West End YMCA gym. By the time he was 17 he was earning up to $300 a week as a professional cyclist, racing in cities from coast to coast. One racing tour took him to Vancouver in 1926. Two years later he was back to stay, intrigued by the fortunes to be made in lumbering. He proceeded to make one for himself. Later he branched out into mining, which brought him new wealth, plus the distinction of having

His daughter, Mrs. Roth, lends Challenger with preliminary work.

Challenger Mountain, which straddles the B.C.-Washington border, named after him by the U.S. government in 1906.

He became a millionaire on several occasions, but he always put the money into other ventures—some of them doomed to failure. A single fire once cost his Challenger Timber Co. $700,000.

Today, with "enough money to live comfortably," he helps his three sons run their 11 machinery and logging companies. Though his five-foot, 8½-inch frame has been reduced by illness from a rotund 290 to 170 pounds, his face is still rugged, reflecting the hardships he endured while roaming parts of B.C. no white man had ever seen.

Those early expeditions inspired him in a way that he now hopes British Columbians are inspired by his map. And, having seen people come back to the map again and again, bringing their families and friends to gaze in wonder, he says: "I feel I’ve accomplished what I set out to do."
Forests that cover two-fifths of British Columbia provide the raw materials for the province's biggest industry. The men who convert the lofty trees into lumber, plywood, pulp and paper have had their ups and downs, but none would deny that they've done a booming business with tall timbers

by MAURICE GILES

Driving an eastern visitor around the logging country of Vancouver Island one day last fall, camp manager Jerry Wellburn of MacMillan and Bloedel Ltd. suddenly stopped his truck and motioned toward the woods.

"Come over here and I'll show you something," he said. Zig-zagging between stumps and young trees, he led the way to a magnificent Douglas fir 185 feet tall and about eight feet in diameter at the base. Then he took off his safety helmet and looked up.

"Isn't she a beauty?" he said. "I'm saving her just because it's so rare to get perfection in that size. She's about 600 years old and right in her prime—one of the soundest, healthiest, nicest trees I've ever seen."

You might not expect a professional woodsman to be any more sentimental about cutting down a tree than a farmer is about cutting a field of grain. But Wellburn's attitude is typical. Even most old-time loggers who built their muscles swinging axes feel some awe in the presence of the mighty Douglas firs, some of which took root 800 years before Columbus was born.

But British Columbians have good reason, other than sentiment, to take off their hats to their province's trees, among which the Douglas fir looms largest—both physically and economically. Two-fifths of the province is productive forest land, and industries built on forest products account for 12 cents out of every dollar earned by working members of B.C.'s population of almost 1½ million. In 1955, 70,000 workers earned $250 million producing forest products with a net value of $582 million.

A visitor to Vancouver is immediately impressed by the sight of log booms in the harbor and by the soaring trees in the city's famous Stanley Park, where enormous stumps testify to the size of yesterday's giants. In the same park, Lumberman's Arch, constructed of three gigantic sections of Douglas fir, stands as a tribute to the province's trees and the men who harvest them. Logging operations are going on full tilt within 40 miles of Vancouver and 20 miles of Victoria, and when the wind is right, Vancouver residents get a whiff of fresh sawdust from mills on the edge of the downtown district. The extent to which the cutting and converting of trees play a part in everyday life in B.C. may be surmised from a singing commercial heard over Vancouver radio stations: "You're in luck when you get a McCulloch chia-a-ain saw."

The fame of B.C.'s forests began spreading around the world early in the 18th century, when sailing men found that the
Douglas fir, named after Scottish botanist David Douglas, made a tall, strong mast. The first B.C. sawmill was set up near Victoria in 1848. By 1854 another island mill, operated at Nanaimo by the Hudson's Bay Company, was paying the Indians one blanket for every eight big logs (15 feet or longer) or 16 small ones which they dragged in from the forest.

These early mills cut lumber only for the island's few hundred residents. Then the island got many new settlers from among the 20,000 miners, merchants and adventurers who had taken part in the Fraser River gold rush of 1857-58. Their need for housing increased the demand for lumber, and the B.C. forest industry was well under way.

First on the island and later along the coast of the mainland, loggers felled trees by whatever method seemed easiest. Usually they cut the largest trees on a slope, used jacks, levers and gravity to skid them into the water, then towed them to seaside mills. They took only the largest and best trees, ignoring the rest or pushing them out of the way. They saw no need for conservation; it seemed obvious that there were far more trees than anybody would ever need.

Most settlers, too, saw the trees only as obstacles to be cut and burned to make way for crops. On June 4, 1862, the British Columbian, a New Westminster newspaper, commented: “Newcomers almost invariably complain of the big trees with which the suburban plot back of the city is timbered. But just make a calculation and see if after all these trees are not really valuable.”

People in other parts of the world already thought so. A year before this item appeared, the first export shipment of Douglas fir went to Callao, Peru, and other shipments went soon after to Australia, France, Holland and Russia.

Gradually the most accessible trees on the coast disappeared, and ways were devised for dragging logs a mile or more to water. Loggers began using oxen, yoking them in pairs to make up “bull teams” of as many as eight yoke, or 16 animals. According to one account, “The bulls were brought from great distances. . . . (and) goaded into effort by bellowing men who could be heard for miles. . . . Of all the types of power brought into the timber, only the bull teams served man’s stomach. The.

A mobile loader picks up salvage which will be made into pulp

Douglas fir

accident victims could be eaten. Loudest cut ever heard in a bunkhouse was when a logger bit into a yoke buckle in his roast beef.”

The oxen worked on skid roads, built by laying eight-foot logs along the ground like oversize railroad ties. The skids were aligned and levelled so that the logs, chained together in “turns,” would slide gently along without stubbing. On curves skids were skillfully angled to keep the “turn” centered on the road. As the “bull team” plodded along, pulling a turn of logs perhaps 50 or 100 yards long, a boy called the “grasser” walked ahead of the team, dipping a broom of tree branches into a bucket of grease and swabbing each skid to help the logs slip over it more easily.

In the 1890s oxen were replaced by horses, which were easier and less dangerous to handle. Horses in turn were gradually retired in favor of steam-driven “donkey” engines, which winched logs through the woods. Today diesel-driven “donkies” are used. Logging railways, with log tracks and wide-flanged wheels, were used extensively until trucks and roads were developed to provide cheaper and more flexible transport.

In the days of the ox-team, logging was hard, rough work that bred hard, rough men. Logging is still no cinch, but it is less dangerous and uncomfortable than it used to be, and it attracts a better class of outdoor men. Today’s loggers ride to work in personnel trucks called “crummers” instead of trekking miles through the woods; and instead of living in camps, many of them are able to have normal family lives in permanent homes near their work. “By comparison with the old days,” says one old-timer, “it’s a kindergarten today.”

Now, as the old-timers sit down with their home-made sand-wishes for a regulation lunch period, they remember such characters as “Paddy the Cook,” who used to jump into a river with all his clothes on about once a month because he found it the easiest way to wash his underwear, or “Roughhouse Pete,” who would show his displeasure over camp food by jumping onto the table and kicking the dishes onto the floor.

As well as being colorful, the old-timers were highly skilled. With a double-bladed axe some fellers could drop a tree anywhere they wanted by accurately positioning the undercut.

Logs are trucked to the sawmill to be made into boards.

Often they would fall a huge tree between two stumps with less than a foot to spare. With less accuracy, they might have splintered the timber, making it useless to the sawmill.

One of these old-timers is Nathan P. Douglas, 79-year-old farmer and woodsmen of Cobble Hill, Vancouver Island, who remembers Vancouver “when it was just big stumps.” He recalls that until the cross-cut saw first came out, about 1883, the axe was used for cutting a felled tree into suitable lengths. No logger ever chopped his way through the trunk of a Douglas fir several times without knowing he had earned his day’s pay. And nobody seemed to care, either, that this system wasted a lot of the timber—a foot per cut when the axeman squared off the ends of each log; all told, about 10 percent of each trunk ended up as chips on the forest floor. But, as most people pointed out in those days, the forests were obviously inexhaustible.

Little concern was ever voiced, either, over the waste that occurred in the process of selective cutting or “creaming,” whereby the best trees were logged at the sacrifice of all the rest in the area. Fire protection was almost non-existent, and some fires were even set deliberately by prospectors looking for outcroppings of valuable rock.

Waste born of greed and indifference continued to ravage the forests of B.C. until 1912, when the Forest Service branch was set up within the Department of Lands and Forests as the result of a Royal Commission. Even so, during its first 20 years, the Forest Service put most of its emphasis on protection and took few positive steps toward conservation. Foresters fought and prevented fires and did their best to stamp out insects and diseases which attacked the trees; but little was done to enforce good logging practices. There were conscientious logging operators who reaped the forest with an eye to the distant future; but there were many more who raped the forest with eyes only on immediate profit.

In 1937 a Forest Service survey showed that timber was being cut faster than it was growing. Before anything could be done about it, the war started. B.C. became an important wartime source of such wood products as the plywood used in Mosquito.
bombers. Then authorities realized that increased need meant that conservation was more important than ever. Chief Justice Gordon Sloan made a Royal Commission inquiry and recommended increasing public awareness. We must change over from the present system of unregulated and unregulated liquidation of our forested areas to a planned and regulated policy of forest management, leading to a programmed yield of a sustained yield from all our productive land." Emphasizing the importance of arranging for trees in abundance and forever, the commission recommended that the cut per section should not exceed the sustained yield of the land. "Emphasizing the importance of arranging for trees in abundance and forever, the commission recommended that the cut per section should not exceed the sustained yield of the land."

B.C.'s plywood plants are also utilizing much more of the trees than they used to, thanks largely to the ingenuity of 47-year-old John Benc, who was already experienced in plywood manufacture when he came to Canada in 1938. Interior trees, much smaller than those on the coast, were then considered unsuitable for plywood. However, Benc, now president of Pacific Western Plywood Co., Ltd., proved otherwise by organizing the Pacific Veneer Co. and building the Interior's first plywood plant. Others were quick to follow Benc's lead, and today plywood is made from 20 varieties of Interior trees.

Fifteen years ago, plywood makers were using only those Douglas fir which were 30 inches or more in diameter, peeling them with a large hand tool called a "penny" or using them for lumber. But Benc began making plywood from 12 inches or less in diameter, peeling them to four-inch cores that ended up as newsprint or pulp.

Benc is convinced that B.C.'s plywood production, which in 1956 amounted to about one billion square feet (computed on an average of six inches in diameter), may exceed 5 billion square feet by 1975. This will mean cutting at least twice as many trees as are cut for plywood now, but he considers this no problem. "In the harvesting of trees," he says, "we are still at a primitive stage. We still go out and collect what nature grows in 1938. No given set of fixed predictions, Benc is establishing plantations of poplar, a fast-growing tree which he was the first to use for making plywood in B.C. He is confident his plantations will be mature and take their first cut in ten years — three to six times as fast as the period evergreens need.

For all his pioneering, Benc still ranks as a newcomer alongside Harvey Reginald Millett, the tuff, public-spirited businessman who, with a board of feet of this material, either recovered from its own forest tracts or bought from other logging operators. This method saves anywhere from 15 to 50 percent of the timber as a log a stand.

Some anti-waste schemes have been less successful. Companies have tried leaving the odd tall tree to facilitate reseeding of a logged area, but the solitary trees, standing unprotected, have often blown down or been struck by lightning. And those that have survived have seldom been felled without smashing the younger trees around them. A more successful, and hence more popular, system is clear-cutting, in which patches of mature timber are completely logged off and the slash is removed to reduce the fire hazard and hasten reseeding from adjoining areas.

Generalization of the tree is not confined to the forests. In the sawmills, companies such as B.C. Forest Products and Macmillan Bloedel, which in 1912 had a wide range of products, have shut down many of the burners that generated steam and power from sawdust and scrap wood. Using fired burners.

To-day's woodchips can thus account for many more trees in a shift than its predecessors, and his higher wages reflect this efficiency. Experienced fellers, paid according to the number of board feet they cut, can earn $60 or more in a hard six-hour day. The rates are high also because it's risky work, although accidents are rare today, compared to the old days. One pair of fellers, working together last fall on one particularly well-wooded section, took home $1,100 apiece for 11 days' work. A fuller can usually expect to average about $28 a day.

Undoubtedly the most romantic job in the western woods is that of the "high rigger" — the man who ships up a tall tree like a monkey, cuts the top off and prepares it as a "spar tree." A spar tree is rigged with pulleys so that the donkey engine, at the other end of the cable, can drag logs to a central landing area. The rig high rigger, with climbing spurs strapped to his boots, carries an axe, a saw and a special wire-cored rope which he slings around the tree, pulling on it to help him climb. On his way up he trims the tree of its branches, a chore which explains the use of a wire-cored rope. (Before its invention a few high riggers accidentally chopped through their ropes and fell to their deaths.)

When he is about 150 feet up he sees off the top; and here again danger lurks. If the tree should split open it may expand enough to squeeze him to death between the trunk and its encircling rope.

But the high rigger has been traditionally carefree — like 52-year-old Jimmy Kerrice of Duncan, a wiry little Irishman who is supposedly grounded now by reason of his promotion to foreman. Jimmy can't resist slipping on his "climbers" occasionally and running up a tree, just to keep in shape. In his early days as a high rigger — before workmen's compensation laws forbade such antics — Jimmy used to stand on top of each tree he rigged and give out with a Tarzan-like yell.

But the B.C. logger scarcely needs such stunts to draw attention to his work. His contribution to the economic life of the province has long since made him top man on the British Columbian totem pole.