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THE SIMILKAMEEN STAR

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SIMILKAMEEN RICH ABOVE and BELOW

THE ROCKS OF SIMILKAMEEN

LOCAL GEOLOGY

SIMILKAMEEN is geologically young. It is at the southern end of the extensive Interior Plateau which is of Triassic origin—about 200,000,000 years old.

The northern end of the valley shows distinct plateau-like features but to the south it rises into the Hazameen, Okanagan and Cascade ranges.

There followed a period of marked disturbance and volcanic activity, when our mineral intrusions were thrown up.

Then an era of quiet and inundation when the valley was part of a great, shallow inland lake or sea; here our coal measures were deposited.

Then another period of disturbance and vulcanism.

Followed by an ice age—the Interior Cordilleran Glacier.

This shaped the terrain as it stands to-day, only modified by fifty million years of water and weather and a brief but busy century of the works of man.

The Interior Plateau runs far to the north. Our basic rocks are those known as the Nicola group of the Triassic age Mesezoic era, when all the land west of the Rockies took shape.

Our oldest rocks are the Roche River Schists, exposed n the canyons of the upper Roche and Pasayten rivers. They form an interesting study.

A chist is a crystalline rock, igneous in character, thrust up by volcanic action, chiefly silica crystallized by vulcanism, layered, and usually intruded by gold.

The Big Fire

mineral—here chiefly copper and True batholiths — deep basi rocks — can be followed from Copper Mtn. to Hedley, intruded or covered by later vulcanites.

Associated with the schists and of about the same age are sedimentary limestones, indicating that relatively rapid changes were taking place at surface and depth. The basic Copper Mtn rock is monzonite. intruded later by iron and copper sulphides, while the Hedley diorites gathered chiefly arsenical gold.

This era of disturbance was followed by one of quiet, when the chief changes occurred in the Princeton basin.

This was the period of inland lakes or seas of the Tertiary era, and their chain nature is evident from separate but similar formations at Coalmont and Nicola.

The waters were shallow and the climate was warm, the vegetation lush and semi-tropical. Great sequoias, a different and older species than that found in California abounded as evidenced in the fossils, which, with coal and clays, were deposited on a grand scale in that calm, serene age, perhaps 35 million years ago, but much later than the general coal age.

Princeton basin was probably much as it is now, but a lake into which many streams emptied from the surrounding hills. Vegetation subsided, well mixed with silt, and formed the coal and the fossils and the clays which are so abundant.

The Big Water

Similkameen has always been a land of lakes and streams and hills and forests, but in changing panorama.

This cycle of calm was followed by another of violent volcanic activity. At the edges of the basin the coal was tilted to a 30 degree pitch, but the centre was not greatly disturbed.

The most radical effect was the flow of lava from the south which blocked the old channel of the Similkameen river, which had formerly flowed by Wolf Creek, and set it in approximately its present course.

But signs of intense valcanic activity are evident all over the valley, lava overflowing the older rocks. This can be seen clearly in the Tulameen canyon just above Princeton.

At Coalmont the eruption upturned a coal lake into a coal mountain and baked the coal of much of its moisture.

There is no evidence that the Princeton "sea" was marine. Indeed, fresh water shells are found. Consequently, since it is formed from marine animal life there is little likelihood of oil in this area.

Hard upon tropic calm and hot vulcanism came an era of ice. The Cordilleran Glacier covered all of British Columbia but Similkameen was at its southern edge. While there is marked evidence of its grinding grip, its most notable legacy was the wilderness of glacial drift, gravel and boulder, where it shed its tail in local overburden.

(Page Ten please)

BOLD, FAR-SIGHTED POLICY AND CO-OPERATION NEEDED IN PRINCETON COAL INDUSTRY

300 Million Ton Deposit Hardly Scratched; Mechanical Loading, Cleaning Hold Key

THE old adage of classic stupidity carries coals to Newcastle. But Princeton premises which stand on 300,000,000 tons of easily accessible, good quality coal are in one case out of ten—and growing—heated with American oil imported with scarce dollars. And coal has been brought in from Alberta and even from Utah.

Alberta coal for Hedley was trucked from railhead at Penticton. The trucks, after unloading drove on to Princeton, loaded up with Princeton coal, and took it back to Penticton.

There is a graphic cameo of the tragi-comedy that has cost Princeton—and British Columbia—unseen sums both in lost revenues and heating premiums

Only two small mines are operating, both precariously; the huge deposits give work to fewer than 100 men.

Development of Princeton coalfield is manifestly disapting. There is a good 300,000,000 ton coal deposit in the Princeton basin. There is an inviting market to be exploited, both locally, in the Okangan and at the coast. Since the Hope-Princeton road has been opened some trucks have been taking Princeton coal to Fraser Valley points—simply an instance of the possibilities.

But fewer than 100 men find employment through this vast resource. More coal could be used right in Princeton than is the total production. Even some whose livelihood depends directly on the coal mines use oil in their homes. Perhaps one premises in ten burns imported oil. Perhaps not one in five depends basically on coal. Alberta coal has on occasion been shipped in for industrial use.

HOT STUFF WITH A LOW TEMPERATURE

Where is the joker?

The coal industry at large is sick. America, with vast bulk, largely dictates the overall picture. There the problem is one of hyper-efficiency. The rest of the coal-producing world suffers by influence and in contrast

America has huge deposits of excellent quality and science and keen business administration have keyed production to amazing efficiency. Production per man is two to four times that of other coalfields, including this, due to extensive and intensive mechanization.

If American mines produced at full-time capacity there would be two to three times what the market could consume.

Both labor and management want a seller's market, controlled production. But inherent in this situation is the struggle for control of production.

Profits and wages have both benefitted by efficiency. With this ability to over-produce, management could hold the whip hand over labor. The struggle is for that advantage—conrol over production which gives the baraining whip.

This situation naturally has ramifications throughout the coal-producing world, where the local conditions are very different. Britain has large high-grade coalfields, but under semi-feudal economy administration has been far outstripped by the American counterpart; and in mechanical efficiency even moreso. Britain, under nationalization, is now making frantic efforts at mechanization.

The local problem has these and different angles. General trends throughout the industry are inevitably reflected. Both labor and mangement want control of production, though here it is a very different factor than in America, which sets the pattern for the contest.

By and large labor-management struggle has been no great factor in the local problem.

But a miner in Princeton wants something relative in wages and standards to a miner in Kentucky. But the Kentucky miner, thanks to mechanization and superior coal deposits averages ten tons a day; the Princeton miner less than three, of a much inferior product.

GOOD VALUE BUT LIMITED VALUE

It is not the local miner's fault; he works just as hard.

This tends to drive product on to the superior coalfields. Moreover, higher wages set by the American pattern are reflected in the price of coal, and this reduces its attractiveness in competition with other fuel values.

So Princeton has 300,000,000 tons of coal, a large potential market, and not one healthy mine. It is faulty economy, for what is abundant and available is truly the best value.

Where is the joker? No one is particularly to blame, for all sides have a logical case. The miner wants his due, the operator his, the consumer his. And the industry declines and we all lose.

The answer is that competitive efficiency can divert natural economy, and laying no fault the local coal operation is not efficient. The approach is not geared to the conditions.

There is cheap heat — our cheapest—beneath our feet, if we approach it in the natural economy, in sheer value.

British Columbia coal deposits are valuable but by no means the world's best. The fields are relatively small, the grade not particularly high. This stands in direct relation to production costs and market value.

Coal is formed by the subsidence of vegetation in an earlier geologic age Geological factors determine the quality of the coal, its cost of recovery.

Princeton deposits belong to the Tertiary era, "the last coal God made"—one of a series of pre-historic lakes in which lignite—a young, soft coal — was deposisited.

A NEW COAL: ASSET AND LIABILITY

It is relatively green, soft, high in moisture and ash and only average in carbon or heat content.

The Princeton basin is an irregular ellipse about 12 miles from north to south and six at its broadest point, extending from Nine Mile to beyond Jura, outcropping at many points, laid on basic rocks of the Triassic age, with more recent sedimentaries.

There are advantages and disadvantages of geology.

Because our coal is green and of lake deposit, moisture content is high—average about 15 per cent. Some coal carries less than five per cent.

And because of lake deposit Princeton coal is dirty—much of the vegetation possibly carried into the prehistoric lake long distances by streams, and at any rate mixed with silt.

It is only the carbon compounds that burn and the more water and foreign matter the less burning material per pound Pure carbon leaves no ash.

This dirt is part of the coal; it is the inevitable ash of any fuel But geology was not particularly kind to the Princeton basin in another way either, for often the seams are narrow and broken by bands of clay or rock. This means that the deposit of coal was erratic. Surface changes took place. Vegetation disappeared and re-appeared or streams feeding the lake changed their courses and to the bottom of the lake went now silted vegetable matter and now silt.

All Princeton seams are fouled by such bands, and in some coal and clay or rock alternate so thinly that they are not worth mining. On the other hand there are thick relatively clean seams and the coal is shallow, easily mined and not badly disturbed by faulting.

Two kinds of dirt make ash from coal—the dirt that is built into the coal when it is formed, and the dirt that gets mixed with the coal when it is mined. The first you can do nothing about, the second can be taken out. It is not coal. It costs the mine money to take it out. It costs the consumer money when they leave it in. Both are inevitable factors in the cost—and value of coal.

No coal is made pure. Virtually none is mined without rock. But there are seams which can be mined virtually free of rock and dirt. But none in the Princeton basin. And it costs as much to mine rock as coal; and more on top of that to take it out. But it also costs money to leave it in, in terms of competition with other other fuels.

You burn carbon and carbon volatiles (gases.) They govern the heat value of the fuel. You pay the same for dirt and water. And you waste heat in driving off the water. Dirt, rock and clay do not burn; they deter combustion. There in a nutshell is the Princeton problem.

Princeton coal averages 15 percent moisture, about the same ash — outside of rock and dirt mined with the coal Some coals run well below five per cent.

What is left is what burns In terms of b.t.u.'s (heat units) Princeton coal averages about 1000. some coals double that.

Princeton carbon is as good as any; our built-in and mixed in dirt and our water no better than any other. It is simply a a matter of relative values

OUR COAL HAS SPECIAL PROBLEMS

But Princetoc coal can be very good value. It is close to its market and to transportation. It is shallow and relatively easily mined. There is some faulting, or disturbance of coal measures by valcanic and other geologic action, but these are not severe. Bentonite is quite prevalent and with moisture causes bad heaving. Neither gas nor water conditions are bad but the coal is frangbile—it does not store well, tends to pulverize and is subject to spontaneous combustion. It is a domestic rather than an industrial coal and because the demand is seasonal and it does not store well, and. moreover, the workings do not stand idle well, this brings special problems which are reflected in costs. And the miner who produces a ton of coal does not produce the same heat value—or sales value as a miner in a higher grade field. The consumer buys value; the miner wants value for work. And values must balance.

But they are total values and Princeton coal can be good value

Mining the coal is only part of the cost of producing heat where it is wanted. In a city where coal sold for $12 a ton the cost broke down as follows: mine $4, transport $4, dealer $4. Wherever coal is sold, there is always a corresponding computation. Princeton coal should enjoy a big advantage in the adjacent market.

Further, mine, delivery and dealer costs must be broken down and justified against corresponding costs in competitive fuels. It seems hard to justify that California oil can compete in Princeton. But it does. Heating salesmen guarantee you cheaper heat with imported oil than with local coal. They do it reluctantly, but they have to face business facts

SO NEAR AND YET SO FAR

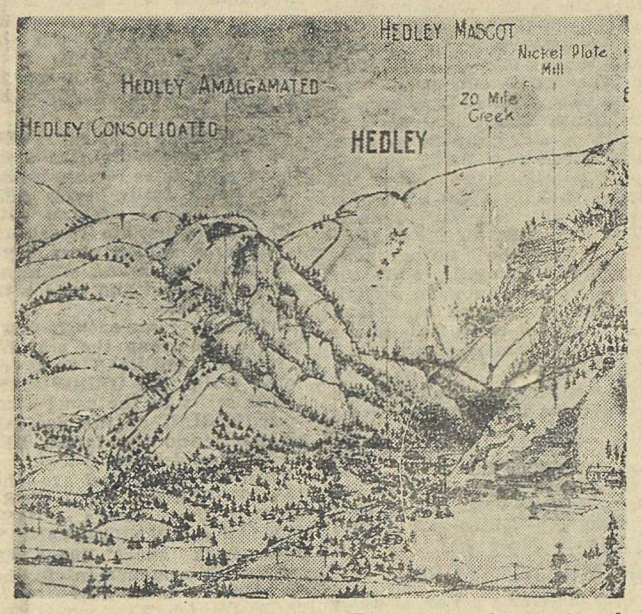
Somewhere there is an economic flaw when it is better value to import fuel than burn what is at our feet. Yet the consumer cannot be blamed too much for choosing the best value —in confort and convenience, in price. Sentiment has a business value too.

And by and large public opinion, or at least apathy, brings the same verdict.

Coal was found at obvious outcroppings by the first settlers in 1858 They used it because it was good value. It still is.

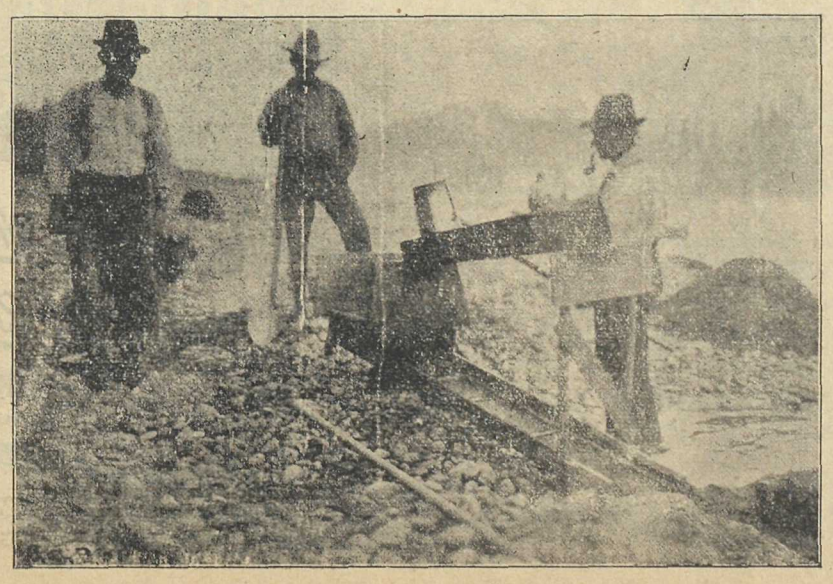
The first colliery was opened by the townsite company in 1909 on the flat above the highway bridge—from the same outcropping from which the early settlers had drawn. In 1910 they produced 11,868 tons. But up to 1950, with 300,000,000 tons available, the coalfied has yielded less than 2,000,000 tons. 1949 production was 51,000 tons. This 300,000,000 ton deposit provides a living for fewer than 100 men. British Columbia imports millions of dollars worth of fuel every year, Princeton itself many thousands.

Where Hedley Mines Are Situated



He Hews for You

Early Placer Scene In Similkameen



STRANGE TALE IN STONES

WORLD GEOLOGY

IN the beginning God created the heaven and earth and from the darkness brought forth light. Geology does not dispute divinity; it scientifically agrees that the beginning of the earth, in the evidence of its oldest rocks, goes far beyond those rocks, which began before the earth. It is content that its light should begin with the oldest rocks.

But broader science goes back to cosmic nebula. However it all began there was an infinity of universal vapor out of which masses formed in space and broke up to form under gravitational forces ordered constellations. of which our own solar system is a relatively minor one, and our mighty earth but a dust drop from one small sun, shedding in turn its own obedient moon; of which the dust on your piano and the gold dust in the river sands and the stardust in a baby's eyes are of the same vital cosmic mist.

Out of the cosmic vapor emerged molten masses, of which suns still turn, an as they cooled pieces broke off and formed stars and planets and moons, shaped into spheres when whirled by mighty forces. And each as dictated by these universal influences, took on a character of its own.

Out Of The Mist

The days of Genesis are vast eons in the puny count of man, but less than microcosmic dust in the boundless pit of eternity, even as are trips to Mars in the infinity of space, and atomic blasts in the incomprehensibleness of cosmic force.

The infinite has neither beginning nor end, and science simply collects the earliest evidence. It knows the process was going on before and is going on inexorably to-day unperturbed by man's mighty little panic after power. There are earthquakes and eruptions and subsidences, and rocks and soil are being formed and rivers and continents are changing, and throughout the universe evolution is endless. In the record of the rocks is the evidence of these changes, as valuable as it is fascinating.

The earth as a separate body began as a ball of fire. It is still molten within, its crust only 500 miles thick in a diameter of 8,000 miles.

As the mass cooled and crusted whirled by universal forces, it was shaped as a sphere and the heavier matter went to the center, a core of molten metal 7000 miles in diameter. The cooling process also formed water and atmosphere which gathered on the crust, the water layer five miles thick, the atmosphere 200 But because the crust is uneven, oceans alternate with land masses, or we should all be fish.

Every 100 feet into the earth the temperature rises one degree and we are now tapping the depths as a source of heat.

Because of continued activity in the earth's interior and as a result of pressures from within and the action of water and weather and chemistry the surface is constantly changing too

A Crust Of Earth

Surrounding the molten metallic centre is a layer of rock, formed at the first cooling — really three layers, the upper a crust zone.

Perhaps at one time these layers were regular and water covered the earth. But internal activity caused upheavals and subsidences, and continents and oceans appeared. The pattern has certainly changed more than once.

The land was at first solid rock, but some was harder than other. Wind and rain and heat and cold in time began to break down the rocks. Water coursed down the slopes and the rocks had a share in the grinding process and soil was formed.

With soil came the miracle of vegetation — plant life and as plants emerged when there was soil to support them, in turn animals appeared to feed on vegetation, and thenceforth life played its part in the earth's changes—both by habit and by volition.

Original factors persist; new ones constantly emerge.

The deaths of the earth are still angry; there are still geysers and volcanoes and quakes. On the surface there are still storms and glaciers. And at first the earth was much more violent.

Water and life are always busy. They move things, they work chemical changes. And water, gathers silt and animal and vegetable matter and mixes and digests it. and deposits new

(Page Four please)

Beer

AT ITS BEST

PRINCETON
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A ROMANTIC RIDDLE IN ROCKS

From Page Three

materials of its own making, some of them rocks.

The tendency is for erosion to reduce the earth's surface to the plane. The depressions fill up with massive weight of soil over the thin rock crust and are vulnerable to the folding action of the earth. Mountains may burst forth in their place or there may be a new and greater subsidence, upon which the sea encroaches.

Rocks change, but resist well, and so in them we can read the chronicle of the changing earth.

Water, weather and life set about decorating the surface they tenant to their own liking. Streams carve out valleys and form deltas. Resisting rocks form mountains and soil drifts into plains. Water gathers in lakes and forests rise. Water deposits sedimentaries. And then the angry entrails of the earth rear up and overturn the playhouse and its children of the hour.

And leave the surface quiet again, but changed, and the process begins anew, in a mode adapted to changed conditions.

But mother earth folds in her bosom the memory of her changing children.

The earth periodically heaves and thrusts and sometimes great heat breaks through from the core. This is vulcanism, and molten rock is thrust out, often veined with mineral. These are the IGNEOUS rocks (Latin, fire; Vulcan, the Roman god of fire)

MERELY ONE BILLION 260 MILLION YEARS

The dissolving action of water combining chemical processes forms rocks which are deposited from the surface — SEDIMENTARIES. By vulcanism or weather or chemical action or from other causes both types of rock can be altered. These are known METAMORPHIC rocks (meta, change).

Diorite and gabbro are examples of igneous rocks; slate and sandstone of sedimentaries. Granite, a conglomerate, and quartz are examples of metamorphic igneous rocks and altered limestone of metamorphic sedimentary.

From these rocks much can be learned about the conditions under which they were formed. Sedimentaries are naturally horizontal and regular in deposit, unless upset by subsequent action.

Though the earth is changing continuously, its development falls into five main stages—archeozoic, proterozoic, paleozoic, mesozoic and cenozoic.

The ARCHEOZOIC era really groups into a period—probably many periods — in which the earth was too young to leave much real evidence — before there was any life, and the dawn of life. For with life came fossils which are as revealing as the rocks.

Gneiss is the oldest rock and the oldest part of the world is the Laurentian area.

THE BEGINNING OF LIFE—A MOLLUSC

Life of course began in the shallow, warm prehistoric seas, first as a sort of sea fungus, dividing into plant and animal. Spreading to the land, each evolved into many species. The first true animal life was the mollusc, or tiny shellfish.

The earth's origin is judged to go back a billion, two hundred million years.

Equally vague is the PROTEROZOIC era (before-life). The Lake Huron area dates to this period.

Knowledge really begins with the PALEOZOIC era (ancient-life) and the first life traces back six hundred million years. Here are found the earliest sedimentary rocks—sand and mud with occasional lime.

Evidence is clear enough, however to sub-group the era. We have the CAMBRIAN rocks of North Wales, the ORDOVIIIAN, a later series in the same area, the SILURIAN of the Scottish highlands and the famed DEVONIAN sandstones.

Then the great coal age—the CARBONIFEROUS era — PERMIAN in Ural Russia, MISSISSIPIAN and PENNSYLVANIAN going back about 300,000,000 years, with a monument in the Appalachian mountains.

TACEOUS (chalk) period the Rockies were thrown up.

Though there is no evidence of the romantic dinosaur tribe, Similkameen evolved in the Mesozoic era. Its earliest rocks are Triassic, about 200,000,000 years old.

The Paleozoic was the age of fishes, the MESOZOIC the age of reptiles—the romantic days of the dinosaurs and similar strange beasts.

WHEN OUR MOUNTAINS WERE MADE

The Coast and Cascade ranges appeared in the earliest of its three divisions, the TRIASSIC. Intermediate was the JURASSIC noted for its limestones of the Jura mountains in France and Italy. The Sierra Nevadas are also of this origin. In the CRE-

The CENOZOIC (new life) era marks the emergence of modern times—a mere 60 million years ago. The first division is appropriately EOCENE, new life. From the OLIGOCENE (little-new) period date some of the rocks in the Princeton area, thirty-five milloin years old. Next the MIOCENE (less-new) and the PLIOCENE (more-new). This half of the Cenozoic era is grouped as the TERTIARY period—the real origin of the Similkameen and western interior. About the same age as the Alps and the Pyrenees. It is also the age of mammals.

The later division of the Cenozoic period is the QUARTENARY, subdivided into PLEISTOCENE (most new) and RECENT.

With the Quartenary era emerges the earliest man, completing the eolution of life — two million years ago but less than

a tenth of the earth's existence.

In the meantime the evolution of plant life had gone on. Although man's development has been complete for many thousands of years, some evolution continues in plant and animal life, and geological change is continuous.

Similkameen Geology

From Page Three

The glacier, however, rounded off the hills and wedged the valleys into which it dumped its detritus and changed the courses of many smaller streams.

It left thick deposits of clay, and the soil to which we owe our agriculture in a rock clad region.

Similkameen is a land of hills and streams. Eruptions have left our hills well mineralized, but water has contributed too. Similkameen placers are of considerable importance.

The explanation of placer metal is obvious. The rocks containing ore are broken up by the action of the streams, the mineral is washed clear and carried down the stream. Ever placer wealth goads search for the lode, but though gold ore is common enough, no placer lode has been found.

But stranger, though platinum is commonly associated with our river gold, and the eminent geologist Camsell declared Similkameen to be the most important source of the rare metal in North America, we have no record of platinum ore.

But surely the whole story of the changing earth is passing strange—and wonderful.

Haven't *You* Been Missing Something?
Harwood's
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Are you thinking about YOUR NEXT JOB?
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THE STAR

Calvert
Mount Royal
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A Distinguished Member of a Distinguished Family
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LET NOTHING COME AHEAD OF THIS

First of all, when you are paid, pay yourself.

Unfailingly, set aside a definite percentage of your earnings, deposit it in a savings account with us—and leave it untouched.

Then plan to live comfortably on the balance of your earnings.

In this way you are bound to succeed—to enjoy life much more, to be independent when independence means most.

Be generous to yourself.

THE CANADIAN BANK OF COMMERCE
PRINCETON BRANCH
G. M. HARMAN, Manager

100-to-1 You'll like the New MARGENE
BETTER THAN ANY OTHER MARGARINE...

Here's why: You housewives had a hand in making the NEW MARGENE. You were asked what you like best in margarine and now the NEW MARGENE is exactly what you want. It's new in flavor . . . new in texture . . . better than ever. Try it today!

A PRODUCT OF CANADA PACKERS LIMITED

More people drink Burnett's than any other dry gin
BURNETT'S White Satin
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LONDON DRY GINS
Distilled in Canada and distributed by The House of Seagram
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OUR COAL NEEDN'T BE SO BLACK

From Page Three

Highest production was in 1942 —112,041 tons.

Largest production at any mine was 81,780 tons at the Granby property in 1940.

First mine was on the Allenby flat above the river. In 1920 the townsite company opened a second mine—only shaft in the history of the coalield—below the school.

About 1920 Charlie Hunter and Benny Bowen worked an outcropping on a soldier settlement grant just beyond Allison Flats and from the grass-roots this became the biggest producer in Princeton's history—the original Tulameen colliery. Just Princetonwards is the Lind mine.

Farther up the river in 1931 W. R. Wilson, a noted figure, opened the Pleasant Valley, most ambitious enterprise in the history of the field. But he was unfortunate in his location and the whole development of the field was undoubtedly changed.

About 1945 the property was taken over and a new mine driven as the present Tulameen Colliery.

Half-way bewteen the Tulameen and Similkameen rivers are the Jackson and Taylor properties, both being developed on a modest scale.

In the same area is the Black mine, which has been worked at intervals for 30 years.

Nearby is the Bromley Vale, which in 1945 was taken over by the Granby Company but is not operating.

At the extreme south of the field the Blue Flame (Nine Mile) opened in 1928 showed excellent promises until faults (geological disturbances) were encountered.

From 1910 the United Empire mine has been periodially worked, at the northern end of the basin. near Martin's Lake but never in serious production.

There are several prospects throughout the basin.

Two strip (surface) mining enterprises have been attempted by responsible firms, but the dip of the measures is not generally favorable for surface mining.

The Princeton coalfield covers about 40 square miles. This is exclusive of Coalmont and Nicola

The basin runs south-west, outcropping at the edges at an almost vertical pitch, but averaging bewteen 12 and 30 degrees over the area—good mining conditions. The main Princeton seam varies in thickness between five and 18 ft., thickest at the south-west. It has not been determined whether there is more than one seam or merely variations in the seam.

The seams dip towards the centre of the basin.

Rapid changes of seam is a characteristic of Tertiary deposits

Because the seams are not uniform and the workings have been scattered, there has been no proper correlation of coal measures, and exploration is necessary to the intelligent development of the coalfield at large.

THOROUGH SURVEY IS FIRST NEED

Most mining has been shallow. Whether the seam improves with depth is speculative but in the two larger operations where cover has been gained the quality of coal is better and the clay partings thinner.

Princeton coal is new and shallow. Most mines have been small and shallow, though there is promise that thee coal improves at depth. Though the upper measures are depreciated by bands of clay. this makes for easy mining, the property paying its way in quick returns, with encouragement to deeper development. An extensive drilling program over the coalfiield is however most desirable.

At one point in the Blue Flame mine the seam was 24 feet thick

An 860 foot drill hole at Bromley Creek passes through 17 seams aggregating 51 feet.

Record of a 280 foot drill hole gives a good picture. A 4 ft seam of coal was encountered at only 35 feet—14 gravel, 21 shale. In the 280 feet seven seams of commercial coal were found, aggregating 34 feet; the thickest. usually called the Princeton seam being 18 feet thick.

Analysis of two samples:

	A (%)	B
Volatiles	28.50	28.76
Fixed Carbon	45.02	42.64
Moisture	13.26	15.72
Ash	13.22	12.80
B.t.u.'s	9,118	8,371

Tertiary volcanoes occurred both below and above the basic rocks which have in places been thrust through the coal measures but such faulting is not general. In some places vulcanism has burned the coal to a red ash; in others some of the moisture has been driven off.

Blakeburn coal is in the same series but by favorable volcanic action much of the moisture has been driven off.

Prominent gravel beds are evidence of glacial drift, though a local phenomenon and not of the great continental ice age.

Vulcanism played a prank in laying down considerable quantities of bentonite at the same time as it drove moisture from the coal. This is a volcanic clay with a great affinity for water, which swells it tremendously and causes heaving. Thus the mines must be kept reasonably dry — water is no great problem in this basin—and seasonal operation is difficult. Moreover, large blocks of coal must be left to support the roof. The solution is to work out small sections that can be finished quickly

Saturated. bentonite is known to swell to 14 times its size, and since it is prevalent throughout this basin, dry workings and solid coal pillars are demanded.

Bentonite in itself has attractive properties. It is a clay formed from volcanic ash.

NO OCEAN LINERS AND NO OIL HERE

On the other hand. bentonite is in itself useful and some has been mined here—from separate deposits—and marketed. But it is bad company for coal.

Oil is also a carbohydrate, but derives from animal matter, coal from vegetable, and is a product of marine topography. Similkameen is not of marine formation, and the the presence of commercial oil is unlikely, though some signs are said to have been found near Bromley Creek.

Efficient operation should make Princeton coal good value over a considerable contiguous area. Sensible salesmanship should sell it. In the 30's considerable sale was built for our coal in the Okanagan and Coast markets. Now virtually no coal is shipped out and much of the home market has been lost; and Princeton coal has acquired a bad reputation which is a barrier to future expansion. It is an understandable reputation but not a fair one. Poor coal has been sold that was not worth the price.

Properly prepared, Princeton coal is a good domestic fuel and could be sold at a price which would make it attractive value. But you can't hope to compete against fuel oil with water and ash and rock, and you have to compete in dollar values with heat units, with allowance for convenience.

That is Princeton's problem. Against the liabilities which must be frankly evaluated there are assets of cheap supply and accessibleness and there the values must compare.

Now the operator has made no killing, nor has the miner. In this big coalfield few choose mining as an attractive career. mining as an attactive career. Very few sit for officials' papers

And it is not an attractive investment for capital. Some 15 properties ihave been operated by various enterprises. Only three are modestly active. And there have been some big names —W. R Wilson, Granby, Mannix, Marwell, American interests. One or two exploiters perhaps, but sound operators too.

Take local confidence in the coalfield. Not long ago the Lind mine was for sale; a going concern. in good coal, right on our doorstep. But $15,000 could not be found to buy it. Many a local merchant, a trucking firm. has an investment of more than that Yet such an operation could mean a community payroll for more than a hundred men.

In the isolated new Peace River coalfield small operations employing a handful of men are working on a shoestring. Three months elapse beween the time they sell the coal and the time they get payment. They have to meet the payrolls fortnightly—and not on credit. Though perfectly sound, they could not operate. That would finish the trucking firms and the merchants and halt the development of the coalfield and its communities. So the business folk, in as much sense as sentiment, band together and finance the payrolls, and development progresses smoothly.

Perhaps in Similkameen we are just too well off for resources

The best mining heads say that Princeton coal could compete successfully if the facts are sensibly faced.

The best coal should be mined and in the best way. That means careful exploring and planning.

Eventually the world will need all its coal. The best values, in accessibleness as well as quality will naturally be taken first.

The most efficient way to use the small. broken seams of the Princeton basin would be to fire them where they lie and pipe out the gas. This process has been successfully developed but it is a monumenal operation and the Princeton deposit, with appropriate markets, is still many years from it.

But there is ample attractive and accessible coal for an assured contiguous market for many years, and with intelligent management and some community co-operation it could be a valuable community asset. It has been shamefully neglected, to our cost—in lost payroll, in fuel bills.

Coal is a vital public resource.

(*Page Ten please*)

Captured flavour of the Indies....

OLD INSPECTOR RUM

OVER 4 YEARS OLD

R-9

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ME . . . And 13,999 Others

Advertising Illustrations used in The Star are truly sales-getting Attention Compellers. Over 14,000 "cuts" to choose from.

Use Star Sales Skill

TELEPHONE SYSTEM SETS GREATEST 3-YEAR RECORD IN HISTORY

More Than 48,000 New Telephones Installed Despite Continuing Equipment Shortages

From January 1, 1946 to January 1 this year the B.C. Telephone Company and associated companies operating in B.C. installed 48,280 new telephones. The B.C. Telephone Company alone gained nearly 46,000 new telephones.

During that same period approximately $15,000,000 was spent on central office and outside plant equipment, the greatest three year expenditure in the history of the system. Expenditures planned for 1949 will exceed those of any other year in the system's history.

Last year alone we added 15,633 new telephones to our system.

This substantial gain was made in the face of the most severe spring floods in B.C. history, heavy year-end w[illegible] snow storms and continued shortage of all [illegible] equipment.

Damage caused by flood and storm cost the company approximately $220,000 in 1948, retarding to a considerable extent the sentral office and outside plant programme.

During these emergencies the telephone banner of service was held high by employees in all branches of the system. Plant men and operators gave their utmost in efforts to maintain communications. In many cases repair crews worked all night and through week-ends and holidays to restore lines.

Despite these setbacks, however, new equipment in some form or other was added to most exchanges areas in our territory.

The system now has a total of 216,735 telephones, highest total in our history, but demand for service continues at a high level, due largely to B.C.'s record population growth. Despite a record three-year gain in telephones, there were 24,165 applications on hand for telephone service at January 1 this year.

BRITISH COLUMBIA TELEPHONE CO.

And Associated Companies

"Captain Morgan's in town!"

For a new drink that's really exciting, try a Captain Morgan Rumhatton'. . . To one jigger of Captain Morgan Gold Label Rum add ¼ jigger of dry Vermouth. Add plenty of cracked ice and stir well.

Captain Morgan

GOLD LABEL

RUM

The rich flavour and full body of Captain Morgan Gold Label Rum result from master blending of carefully selected rare old rums.

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OUR COAL NEEDN'T BE SO BLACK

(From Page Nine)

It gives best value, pays best all round, when society gets the minimum price. That is natural maximum service from it at the economy, and in the long run it pays best—labor and management too.

It is not the policy of modern business, which prefers the quick kill and the golden egg. The consumer pays it too. He drives the best bargain, and control of bargaining power and monopoly of supply are the aces of the modern business game. A surplus gives the consumer an utterly disproportionate bargaining power because competitive selling cuts prices. The psychology of shortage is exactly opposite. Thus the operator would rather curtail production —and sales than leave a buyer advantage. It is of course anti-social, for over the world picture society goes short. Artificial factors of politics and finance enter in; business is not sociology.

From financier to consumer, emphasis is not on true value but bargaining power and the structure breaks down when that emphasis is distorted too far. Model efficiency in American production has not meant better service to society, but a short-sighted and selfish arrogation of the advantage within the industry, and an internal struggle for that advantage that has weakened the competitive power of the industry. The many selfish gains have enabled other fuels to cut into the coal market and with all this efficiency the over-all picture shows a hollow victory, for the mines can produce twice as much as can be sold at present prices and the miner's daily wage is high but his annual income no higher because he works fewer days, and management increasingly seeks new ways to reduce dependence on him. And the narrower and more intense the inner selfish struggle the more the industry suffers from competition

THERE'S ALWAYS A FUTURE IN COAL

Coal is still and will continue to be the basis of our economy. Artificial and local factors do influence values, but over the world picture coal is the main source of power, even in America, from which Princeton imports oil. When a dealer can guarantee better value from oil than local coal, it is an artificial economy and an expensive one.

There is cheap and abundant coal in the Princeton field and an eager market for it in true values in the natural economy.

But just as a short-sighted view has boomeranged against the American coal industry, so has penny economy cost us dollars in community development

The first essential is a realistic approach. A cent of value in price, convenience and comfort may mean an invisible cent lost in the neglect of a potentially thriving local coal industry And a cent saved in poorly prepared coal the same.

Princeton coal is not the perfect natural fuel, but its reputation does not do it justice; its value is more than it is rated it compares quite well with many coals, including some Alberta grades which enjoy very differonomic production of an attractive fuel, plant designed according and commodity priced according. The advantages of accessibleness and close market leave all the advantaeg against competing fuels.

WE CAN COMPETE WITH THE BEST

But the standard of wages and prices is set by top efficiency and obsolete mining methods are no more economical in this mechanized age than is the hand loom. The Princeton miner, who works just as hard and requires equal pay for equal effort, produces half as much coal as his Alberta counterpart, a quarter as much as his American. And it is fairly coal, over which even many Princeton folk find better value in oil.

Our coal must be assessed at its fair value, used at its best efficiency. It is a good grade fuel averaging 1000 B.t.u's — an ideal domestic rating. It runs 15 per cent ash and 15 per cent moisture. These are not prominent repute. That is bad salesmanship, economy and efficiency, rather timid than vicious.

Nobody has made big money out of Princeton coal. The principle has been to mine it cheaply and offer it at a little less than other coals. There has never been a bold policy of offering a standard fuel at its fair value. Emphasis has been on economy of production and Princeton coal has got a poor name, because it has been poorly presented. Nor is crudeness of production economy. Design of plant has been thrifty. What is needed is a conception of the over-all picture of efficient, economic operation in the larger view. Efficiently presented, the values of Princeton coal are competitive, compare not at all badly Everybody knows that when you get a good load, Princeton coal is a dandy fuel. Granby uses it with high efficiency to produce large scale electric power.

BUT IT MUST BE EFFICIENT COMPETITION

Our carbon and volatiles are as good as any. Our water and ash no worse. And our rock no better.

Overall design of plant apart, the crying disadvantage in local production is lack of mechanization. There are now portable units which are ideal for the small and expanding mine; and manual labor cannot compete with them. A small paragraph or a big item.

But efficient extraction is not the only, or even the big problem. We must have cleaner coal. The bugbear is the rock that gets mixed in, not the ash that comes built in.

Rock is removed by hand. It is little more than a gesture; no efficient attempt is made to give rock-free coal. It is impractical by the picking table method, where a man tosses out the rock as the output goes to the chutes.

Many mines have the same problem. Coal is rarely quite rock free. Here the prevalence of rock is relatively bad.

Rock of course makes for bad firing. In mechanical stokers it is especially a nuisance. It fouls the chain disturbs the automatic action. And Princeton coal's best salespoint is as an ideal stoker fuel.

Washing is not the answer. It would break down Princeton coal, aggravate the moisture content and would not remove the rock. Recommended is air treatment, on gravity lines. The heavier rock would fall through the air blast which would support the coal; and of course the dust would be blown off.

This of course would cost something. But so does trying to burn—or sell—rock.

The process is practical for even mines of our present size.

BUT IT COULD BE BUILT UP AGAIN

With the Vancouver Island mines running out, Princeton has a great opportunity. with a large market and no competition nearer than Alberta. Coal is the basic fuel, and can compete successfully in our economy with any other.

But our market is largely domestic. That means seasonal demand and summer slack. Princeton coal does not bunker; the mines do not stand idle well. And of course even all-year operation is better for management and community.

Granby has set a significact example. The ideal would be a large coal-power electric generating plant in the Princeton coalfield, the power cheaply carried to the Coast and Okanagan markets.

And by pulverization Princeton coal could also be directly adapted to industrial use.

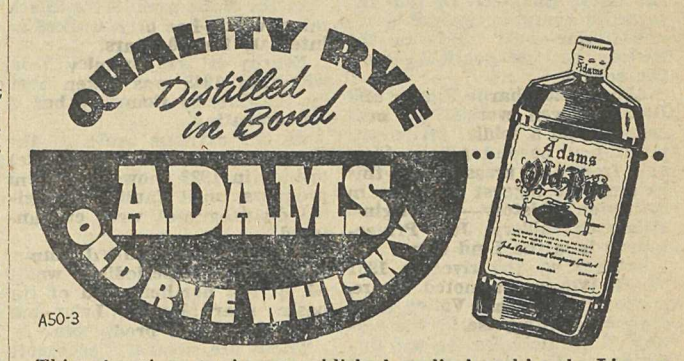
The Princeton coal industry is neither healthy nor happy. In half a century we have used only two million of our 300 million tons and it is a dog with a bad name. But it is not a bad dog—under a good master. There are local problems but they can be mastered by efficient engineering and methodical management and sound salesmanship.

Princeton's neglected coalfield constitutes a valuable part of British Columbia's natural resources; and especially to Princeton; and no sound community foresight can afford to prolong the neglect.

Men! Want pep, vim normal vitality?

Thousands Regain Vigor, Easy Way

Quit feeling weak, pepless, worn-out, rundown, older than your years. Try a little "pepping up" with stimulating, invigorating, revitalizing, blood-regenerating Ostrex. Especially advised for men, women of 40, 50 or 60. Costs little. New "get acquainted" size only 50c. Try Ostrex Tonic Tablets to renew pep, vigor, vitality and feel years younger, this very day. At all druggists.



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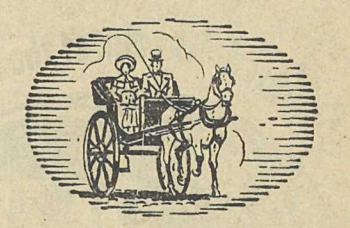
Yesterday . . .

Today . . .

Tomorrow . . . ?



You would not buy a buggy . . . or a coal oil lamp. Your horn gramophone is up in the attic. Plastics and nylons . . .

And projected is an ultra-modern pipe-line through Princeton, bringing cheap, convenient Natural Gas to your door.

Think now about gas — and when you think about gas think about the Iron Fireman-See it

The Iron Fireman Double Duty Unit

is designed for both coal and gas ... you change over in a jiffy without added expense. See it!

Here is the answer to your heater · now . then

Think Now About

GAS

RELIANCE SERVICES

Vermilion Avenue — J. E. Gott — Phone 58-K

From $50 to $5000 — at better jewellers across Canada

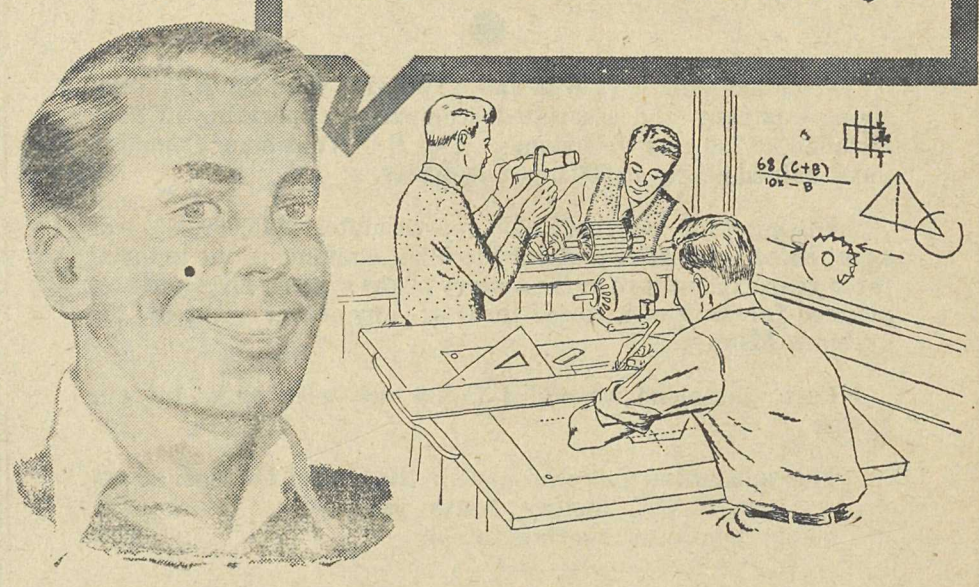
Long Distance 'Phone Circuits Increased In' 49

The installation of additional long distance telephone facilities featured a record expansion and improvement program in the B.C. Telephone Company system last year.

Sixty long distance circuits were added in B.C. and between B.C. centres and outside points in 1949.

B.C. TELEPHONE CO. and Associated Companies

I earn while I learn!



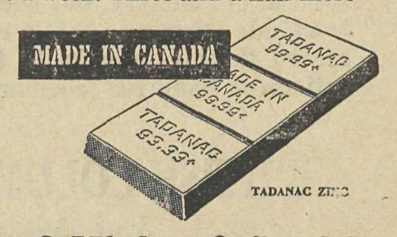
You're looking at a tradesman of tomorrow!

Thirty-one years ago Dad started "serving his time" with an Engineering firm in England. Now he's a shop foreman with *Cominco.

I had a talk with Dad when I graduated from High School and what he said made good sense to me, so now I'm enrolled in Cominco's Apprentice Training Program. I had the choice of several courses, painter, carpenter, plumber, electrician, boilermaker and others, but decided I'd become a machinist like Dad.

I've been taking the course now for nearly a year. We attend two 2-hour classes each week during working hours. I get paid for all the time I work plus half the time in class—that's better than Dad did—he started at about $1.00 a week, I started at over $20.00 a week. Three and a half more years and I'll be through then I'll have my trade; how far I go after that will be up to me.

**Cominco—that's the quick way of saying "The Consolidated Mining & Smelting Company of Canada, Limited."*



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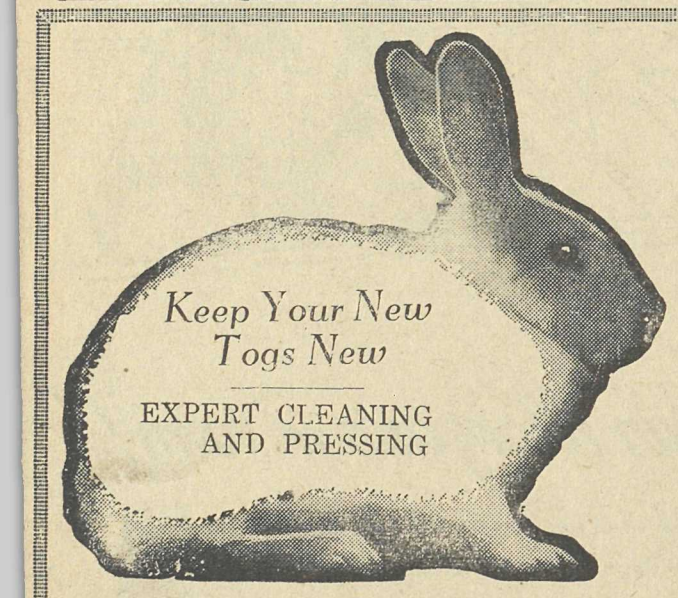
The Consolidated Mining & Smelting Company of Canada, Limited



ROBERTSON'S CLEANERS

BRIDGE ST., PRINCETON : : PHONE 123

Haven't You Been Missing Something?

Harwood's

Canada's Finest Whisky

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EASTER BEAUTY

Is Milady's Duty

ELIZABETH BEAUTY SALON

Princeton 57