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The Kootenay Mail.

THE OLD ESTABLISHED PAPER.

Vol. 9.—No. 17.

REVELSTOKE, B. C., JULY 25, 1902.

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CAMBORNE.

Northwest Development Company's Operations.

Successful Installation of Power Plant and Electric Drills.

The Northwest Development Company, who have the Camborne group under development, have installed the most successful power and mine development plant operated in the province. It is a marvel of expedition, economy and efficiency. The Camborne group is two miles north of Fish River, on the right bank of Fish River. On the property are extensive showings of gold-bearing quartz. The management of the property has been entrusted to H. Z. Brock, who took charge in April last. Having arranged for the erection of a cook house, bunk house, and office, Mr. Brock's first proceeding was to install a first class up-to-date power plant with view to proving up the company's ground at least cost. With this object he communicated with the Hammond Manufacturing Company, of Portland, Ore., with whom he contracted for the erection of the plant, the firm guaranteeing its efficiency and to maintain it in running order for a certain time. When Mr. Rosenberg had a bond on the property he secured rights to 500 inches of water at the falls on Menhinick Creek near where it empties into Fish River, and the Northwestern Company have taken over these water rights and have utilised them in providing power for all kinds of operation in connection with the property. A substantial power house has been built on the flat below the falls, and in this building are placed the water power and electric generators.

THE PLANT.

The plant consists of a Pelton wheel of 120 h. p. made by the Oakland Ironworks. The wheel is fitted with an ingenious self-acting governor which secures uniformity of speed, and operates by raising and lowering the nozzle according to the pressure of water. The foundations for the wheel consist of timber 12 inches square, sunk five feet underground, and embedded in rock so as to constitute absolute rigidity. The Pelton operates an Edison dynamo of 70 h. p. which supplies power for running the drills, lighting the camp, and will also run the stamp mill which is proposed to install.

THE PIPE LINE.

The water is conveyed to the power house by a pipe line 340 feet in length and consists of 14 inch pipe, which was delivered on the ground in lengths of 17 feet, and is bound together by slip joints and lugs which fit so tightly that there is no leakage. From the power house to the sandbox at the head of the pipe line is a vertical elevation of 185 feet this constituting the head of water. The sand box is set on solid rock and is a good piece of workmanship. Connected with it are an automatic shut-off operated from the power station and a waste flume 300 feet in length. From the sandbox a length of 490 feet of wooden flume with fall of 27 feet in total length connects with the dam, and is at present carrying twice the water required to operate the plant at the power house. The flume is 12 inches deep and three feet wide. The dam in the bed of Menhinick Creek is a substantial affair. The timbers are let into solid rock, and consist of two tiers of 14 inch squared timber, with sheelting between the tiers. These timbers are held together by drift bolts. The dam is 30 feet wide and 18 feet high. Timber has been felled into the stream to prevent gravel washing down and filling the dam.

ELECTRIC DRILLS.

While the blaze of electric light in the evenings is a novel feature in the new camp, the operation of the electric drills is the most wonderful feature of mining yet seen in this part of British Columbia. The drill installed is that known as the Durkee Electric Lightning drill, manufactured by the Mining and Smelter Supply Company, of Denver, Colo. With this drill the ordinary Sullivan air drill column and bar are used. The drill is in itself a simple machine. There is nothing about it that a local machinist could not repair. Although not long on the market it has undergone severe tests and has been attended with successful results. For instance at the Dead Pine mine at Colorado a shaft 11 feet by 16 feet was sunk a depth of 300 feet and station cut, all inside of four months and seven days. The Durkee drill is directly operated by a 2 h. p. electric motor. It gives a rapid short stroke and will not stick in the hole. It can be speeded to 600 strokes a min-

ute. The first cost of the machine is the heavy item, the catalogue price for a drill being \$750, but once installed there is nothing to heat it for expedition and economy of working.

CHEAP MINING.

On the occasion of our visit to the mine the machine bored two rounds of five feet holes equivalent to 50 feet in eight hours, or at a cost of \$2.50 per foot for a 5 by 7 tunnel. That is the cheapest development yet done in the province. The Durkee electric drill has the advantage over the air drill in that it is warm and clean to handle. J. E. Clow, representative of the manufacturers, installed the drills and had them running at the time of our visit. F. Freeman, of Hancock, Mich., was in charge as electrician. The fact that Mr. Brock had this fine plant installed and in operation within 70 days of starting on it shows a measure of enterprise that it would be hard to beat.

PEAK OF WORK.

The lead on which development will be done outcrops at several points on Menhinick Creek. No. 1 crosscut has been run to cut this lead. It is intended to run other crosscuts every 500 feet along the lode, and to drift on the vein wherever sufficient values to warrant extraction are disclosed by the crosscuts. Mr. Brock estimates that with two shifts he will be able to run 9 feet a day.

BLACKSMITH SHOP.

Adjacent to the power house is a well equipped blacksmith shop in charge of J. Cook. A novel feature of this shop is a trough hewn out of a log, and capable of holding 500 gallons of water. This trough is 11 feet long, 24 feet wide and two feet deep.

FIRE PROTECTION.

Another feature of the equipment is an excellent fire protection service, piping and hose being connected with the pressure main so that in the event of a fire occurring in the power house or buildings it could be extinguished in short order.

STAMP MILL AND TRAMWAY.

A mill site has been cleared convenient to the power house and here it is proposed to install a 10-stamp mill of the Hammond type. This mill is set in an iron frame fitted together all ready for mounting, and is guaranteed to withstand the crystallisation which has hitherto been a weak point in iron or steel frame mills. Mr. Brock estimates he has in sight on the Goldfinch claim 2000 tons of free gold ore which will run \$100 a ton, and he has undertaken to be producing bullion within 90 days of receiving authority from the directors to instal the mill. An aerial tramway has been ordered to connect the mill with the outcrops of ore on the Goldfinch. The cable will weigh nearly 12 tons, and Government Agent Fraser is taking steps to have the roads and bridges put in shape between Comaplix and Camborne so that the Northwest Company may be able to get in their tramway and mill in safety.

D. J. Kennedy is mine superintendent at the Camborne group.

THE LABORERS CO-OPERATIVE.

Information Wanted.

Referring to the Laborers Co-operative Mining Association, operating at Sicomous and Golden, a Golden correspondent of the Outcrop says:

"This company is some kind of a laborers co-operative company and have asked the assistance of the Board of Trade, I believe. Now, I have asked members of this Board questions, and they seem to know very little about the company they are assisting. Some of my fellow-workmen, I understand, have bought shares in the company and it seems like a good thing. A smelter here should prove a good thing for the whole district and a paying investment.

What I would like to know, and others here ask the same questions, is the company one entirely capitalized by laboring men and is it incorporated? In fact, I would like to see a prospectus of the company and don't think that is asking too much. The company is going into development claims, erect a smelter, install an electric light plant and run a newspaper, and, I suppose, a co-operative store eventually."

Says the Nelson News: H. Z. Brock, managing director of the Northwestern Development syndicate, left last evening for Camborne, to superintend the erection of the sawmill, stampmill and other plant to be erected by the company at the Camborne group. Mr. Brock returned on Monday from his trip to Portland, to purchase the machinery necessary in the carrying out of the development planned. The sawmill machinery is to be shipped Saturday and the rest to follow shortly.

THE CANOE RIVER TRAIL

Government Wages Adjusted—Fish Creek Trail to be Built.

When Chief Commissioner Wells visits the district and inquires into public grievances these invariably are remedied. The points on which most dissatisfaction has existed have been the extension of the Big Bend trail to Canoe River, the wages paid men employed on government work and the opening of a trail on the east side of Fish Creek to give more convenient access to Boyd and other creeks.

When Mr. Wells was here this week these grievances were brought under his notice and all settled satisfactorily. The trail to Canoe River will be put in hand at an early date and rushed to completion. This work will prove an immense public convenience, and will do much to open up the lumber resources of the upper country, besides giving the best route to Canoe River and Tete Jaune Cache.

With reference to wages on government work T. Taylor M. P. P. has been endeavoring without success to have \$3, the general rate in Lardeau, made also the rate for government works, without success. After going fully into the question Hon. Mr. Wells has made this adjustment: \$3 to be paid in Lardeau and north of Carnes Creek, rate elsewhere \$2.50.

A trail on the east side of Fish Creek will be commenced at once and pushed on to give access to properties as far as possible this season.

This will be very pleasing news to the whole district.

LARDEAU MINES.

A New Deal—Operations to be Vigorously Conducted.

Messrs Kirby and Walker, representing the English syndicate who have invested so heavily in the Lardeau through Messrs Pool and Young by going into the Kettle Lake and Silver Gulch groups, have purchased the interests in these properties of Messrs Pool and Young. The deal went through on Monday and was favorable to the latter gentlemen. G. S. McCarter acted for Messrs Kirby and Walker, and W. de V. le Maistre for Messrs Pool and Young. The properties have been fully reported on by G. Atwood M. P. of London and South Africa, and it is intended to go ahead with mining operations. Air compressors and tramways will be put in both mines as soon as possible.

BENNISON MINE.

Work to be Resumed.

One of the most promising mineral properties in Kootenay is the Bennison, on the divide between east and west Kootenay and near the head waters of the Beaver and Duncan rivers. This property has now been taken over by Mrs. Mitchell, of London, England, who were heavily interested in the company which originally operated the property. G. S. Gardiner, of Everett, is now looking after the mine and went to Golden this week to investigate the property with a view to its further development. The transportation question forms a serious problem in handling this mine. It was originally proposed to build a wagon road from the mine down the Beaver to Bear Creek station, and to ship the ore from there, but now the Duncan is being made available for navigation, it is probable Mr. Gardiner will consider that route the most accessible.

THE MINES.

A strike of 18 inches of solid ore is reported on the Guinea Gold.

A rich deposit of carbonates has been discovered in the North Star.

The Sullivan has 10,000 tons of the dump and 200,000 tons blocked out.

Copper continues to decline slightly but silver has risen another cent.

The dredge working at Tranquille is taking out three ounces of gold a day.

Three feet of high-grade ore has been struck on the Outcrop claim at Wind-emere.

During the past half year the tonnage of ore shipped by Kaslo has doubled.

The Galena Farm Property is to be re-opened at Silverton by a Montreal syndicate.

The Northwest Development syndicate are packing out six tons of ore from the Goldfinch for a mill test.

There is a placer excitement on Salmon River and at Eric it is said 50 cents to the pan is being taken out.

The Crows Nest Coal company's No. 2 mine took fire this week, the cause being attributed to lightning. The fire was suppressed before much damage was done.

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The place where you spend all your life may be as pretty as any in the land if you will only make it so. There are furniture stores and furniture stores. Here we sell good honest furniture at reasonable prices. We guarantee satisfaction. If you buy anything here and it isn't just as represented, we want you to come and tell us. We will make it right.

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The Kootenay Mail

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EDWARD A. HAGGEN, MINING ENGINEER. (Mem. American Institute Mining Engineers) (Mem. Canadian Mining Institute) REVELSTOKE, B. C.

WILLIAM A. BAUER, DOMINION & PROVINCIAL LAND SURVEYOR. Surveys of Mineral Claims, Timber Berths and Care of J. D. SIBBALD, REVELSTOKE, B. C.

J. A. KIRK, DOMINION & PROVINCIAL LAND SURVEYOR. REVELSTOKE, B. C.

The Kootenay Mail

FRIDAY, JULY 25, 1902.

Even Scotland admires the great liberal leader of Canada, Sir Wilfrid Laurier, for Edinburgh has conferred on him the freedom of the city.

The Western Mining World truly remarks: "The fearless, sturdy miner, who, from the rocky vaults brings forth untold wealth, without the loss of one dollar's worth of previous accumulation, is certainly a public benefactor, and the industry he represents, entitled to the fostering care of a just and appreciative people and government."

Joe Martin will earn the gratitude of the press and people if he will take steps to shear the Supreme Court of its power to imprison people who have offended it without trial by jury. It has remained for British Columbia judges to show the necessity of this great palladium of British liberty in a more demonstrative form than since the days of the star chamber.

The report of the Provincial Mineralogist for the year shows there is nothing to be discouraged about in regard to the mineral industry of British Columbia. This province produced within \$174,507 of the total mineral productions of the whole of the rest of the dominion including the great coal mines of Ontario. When a province with the small population of British Columbia can produce mineral to the value of \$19,686,780 in one year, and that under the most adverse conditions, there is nothing to be discouraged about. The remarkable feature of the year was the increase in copper which rose 175 per cent. Placer gold showed a falling off of 27 per cent and lead of 25 1/2 per cent.

JUDICIAL TYRANNY.

Editor McAdam, of the Sandon Paystreak, has been sentenced to nine months imprisonment for articles written concerning the judiciary. We do not know McAdam, have not seen his articles, and know nothing of the grounds he had for writing or publishing them, so cannot discuss these phases of the question. But what all are concerned about is the fact that any citizen can be hauled before the persons he accuses, tried by them without intervention of a jury, and sentenced to a punishment such as might be meted out to the worst criminal. That this can be done on British soil is an outrage on the administration of justice, and steps should be taken to remove from the judiciary the power of abusing its privileges. The severe sentence imposed on McAdam indicates it was vindictive and the result has been to create intense indignation through a large section of the province. No doubt petitions to the Minister of Justice will be at once circulated and the release of McAdam from such an outrageous sentence insisted on by the public, who are,

after all, the true judges of the matter. One result of this affair should be to demand amendment of the law by which contempt of court shall be dealt with by a jury in the same way as other offences against law and order. Indeed procedure by injunction and contempt of court are really powers often used by courts to over-ride the first principles of liberty of the subject, and these powers of the bench should be curtailed.

SUPREME COURT REFORM.

The Supreme Court looks as if it might have all the editors of British Columbia on its hands over the McAdams case. While our contemporaries agree that McAdams acted wrongly, they point out the danger to the liberty of the subject by the action of the judges in themselves sentencing summarily to such cruel and unnecessarily severe punishment a man who had attacked them. In an article headed "Dangerous Authority" the Columbian remarks: "It is dangerous authority to leave with the court to thus summarily deal with persons offending it. Members of the court are only human, and they are moved by the same impulses that act upon men not on the bench. Right or wrong is often a matter of opinion. Some of these days the Supreme Court of British Columbia may do an act that appears to merit popular condemnation. But anyone lifting voice or pen against the questionable action of the bench, may be cited to appear—just as McAdams was—before the very men accused to be told by them that he had no business to launch accusation, and be committed to goal for an indefinite period. The power to act in this way should be taken from the court at the very first opportunity." The Nelson News says: "The punishment meted out to Editor McAdams, by the full court, in connection with the contempt proceedings, is unnecessarily severe. Taken under review together, the offence and the punishment, it will appear to most reviewers that the verdict of the court will do more to bring the court into contempt than the offence which it sought to punish. Exalted though they be, supreme court judges are but humans. They make mistakes like other people, and cutting out needless palaver about the dignity of the court, and that sort of thing, they would add to such measure of respect which they enjoy, if when called upon to pass upon the mistakes of other mortals, they kept their own shortcomings in view and did not pinch merely because they happen to have the power."

PROVINCIAL REVENUES.

The provincial premiers in London have a very important problem on their hands, namely the amendment of the North America Act to provide for the Dominion returning to the provinces a larger proportion of the federal revenue. The movement will meet with the sympathy and support of the whole people. As matters stand the provincial governments have to bear the lion's share of the expenditure, while the Dominion has by far the greatest proportion of the revenue. Dominion expenditure is mainly confined to navigation, the mail services and defence, though it should also have all-railways in the dominion. Meanwhile the provinces have to provide most of their own railways. An amendment should be made in federal terms which would rectify these anomalies.

IMMIGRATION.

Sales of Land to Syndicates.

The fact that Canada is offering special inducements to immigrants has not been unnoticed by Americans. During the past few weeks immense sales have been made to American capitalists. It is stated on good authority that officials of the Canadian Pacific Railway Company are planning to take 25,000 American farmers into the Canadian Northwest, where the company has several million acres of land. Arrangements are being made by the Manitoba Provincial Land Department and the Immigration Department of the Dominion for the sales of 80,000 acres of Provincial lands to Nebraska capitalists. The lands are near Lake Manitoba, and are being sold for the purpose of settling a large number of Americans who have been farming in Nebraska for many years, and now wish to get out and move to Manitoba.

THE RIFLE ASSOCIATION.

Opening Practice.

The first practice of the Revelstoke Rifle Association was held Saturday last, the 200 and 500 yard ranges being fired over. The principal scores were: 200 yards, W. W. Foster 31, 500 yards, R. A. Upper 27, C. Lawrence 26.

Additional targets are being prepared and the firing butts put in better order as the present accommodation is inadequate to the large membership. It is intended to proceed with erecting a new range immediately site has passed inspection, in the meantime there will be practice every Saturday afternoon at 2 p. m. Members wishing to practice at any other time will be able to do so by arrangement with Captain, and engaging their own target.

John Shaw has been appointed marker for the association. Members are reminded that the annual meeting of the British Columbia Rifle Association will be held at Victoria, July 31st, Aug. 1st and 2nd. Special rates are being made by transportation company, of which full particulars can be obtained from Secretary.

GLACIER.

A Crowded Hotel—Recession of the Great Glacier.

Glacier House, a favorite C. P. R. mountain resort, which is ably managed by Mrs. Young, is exceedingly well patronized this season. Every available room is taken. The building will have to be enlarged by another season to meet the demands of tourists. Mrs. Young has tried the experiment of using coal oil to kill mosquitoes. Some oil placed in the basin of the fountain, killed a pair of mosquitoes in a short time. The glacier behind Glacier House shows a steady recession. Mr. Walker, C. E., estimates the rate at which it is melting away at its base at eight feet a year, and Mr. Vaux of the Scientific Research Society, put it at 56 feet in eight years or seven feet a year. At this rate the time is not far distant when this once great glacier will disappear as far as positions at the head of the south fork of the Illecillewaet are concerned, but its extension to the slope of the Heaver and the Asulkan glacier which covers the mountain to Fish Creek are of such magnitude that they will outlive history for centuries to come.

FINANCIAL.

We have received the annual report of the Birbeck Building Society for which Lark Bros. are local agents. The company's business appears to be in a flourishing condition. Of the company's assets of \$10,931,295, 48,608,807 is invested in British consols and other prime securities. The profits for the year were \$20,353, and the permanent and guarantee funds increased to \$533,576.

INDUSTRIAL NOTES.

A bricklaying machine has been invented to do the work of six men.

British Columbia lumber is coming to the front. Five vessels are at the coast loading for South America.

The wood pulp industry of Canada has a great destiny. Already this country supplies a sixth of Britain's demand.

Mr. B. Post has, at the request of the residents of Ferguson, decided to put in a town water supply and has the work in hand.

BABY'S OWN TABLETS.

A POSITIVE CURE FOR HOT WEATHER AFFECTIONS.

In the hot weather the little ones suffer from fever, troubles, are nervous, weak, sluggish and irritable. Their vitality is lower than that of any other season. Prompt action at this time often saves a valuable little life. Baby's Own Tablets is the best medicine in the world for little ones at all times. They are perfectly pure, and give relief, refreshing sleep. The Tablets should be in every home where there are little ones. They are sold by all druggists.

Mrs. E. Ferguson, 405 Main St., Sandon, B. C., writes: "I have found Baby's Own Tablets the best medicine I have ever used for children. My boy was attacked with dysentery and was hot and feverish. I gave him the Tablets and they promptly cured him. Before this he had been rather delicate but since using the Tablets he has been much better. In every way I can sincerely recommend the Tablets to all mothers with ailing children."

Baby's Own Tablets are guaranteed to be absolutely free from opiates and harmful drugs. Children take them readily, and crushed to a powder they can be given to the youngest infant with perfect safety. They are sold in all drug stores or will be sent post paid at 25 cents a box by writing direct to Dr. Williams' Medicine Co., 600 North Schenck St., N. Y.

"Amber" Plug Smoking Tobacco winning our its merits. "Have you tried it?" "Save the Tags, they are valuable."

WATER SUPPLY.

Scheme From Eight Mile Creek Report.

Gentlemen:—In accordance with your instructions issued to me on May 1st, I have made a searching examination of the vicinity of Revelstoke, having in view the best means of furnishing the city with a permanent and adequate water supply. I now beg leave to report as follows:

POSSIBLE SOURCES OF SUPPLY.

There are several streams in the vicinity of Revelstoke, which would afford an efficient supply of water for domestic and fire protection purposes, namely, the Illecillewaet River, the Columbia River, the Jordan River and Eight-Mile Creek.

The Illecillewaet River may be utilized in two ways, namely, by tapping it at a point sufficiently elevated to admit of a gravity system, or by pumping its waters from a point near the city into a reservoir, also elevated sufficiently to admit of a gravity system.

The Columbia River can be utilized only by pumping. The Jordan River is a stream of considerable magnitude, discharging into the Columbia River, about one mile west of the Canadian Pacific Railway bridge. Inspection of the valley of this stream showed that the slope of the river bed was gradual, and that a supply from this source would necessitate a line of considerable length. The river, being situated on the west side of the Columbia River, a crossing by means of flexible pipes would be necessary, and as the bed of the Columbia River in this vicinity is inaccessible to divers at high water, owing to the rapid current, an accident to the submerged line would deprive the city of all water supply until the period of low water, at which period only could repairs be effected.

Eight-Mile Creek is a prehistoric mountain stream, apparently fed by glaciers, situated about 6 miles due north of Revelstoke, and discharging a large volume of water into the Columbia River. When the volume becomes large enough to show that this stream flows with undiminished volume throughout the year. As a source of water supply it is superior to the Illecillewaet, the Columbia and the Jordan Rivers, and has therefore been selected as being the most suited to the needs of Revelstoke.

Several small streams discharge into the Columbia River in close vicinity to Revelstoke, which, to the cursory observer would appear to afford an adequate supply. If combined together, the short length, the narrow width and rapid descent of the gullies through which these streams flow are proofs, however that they are merely channels for snow water, and most, in seasons of light snowfall followed by drought, dry up entirely. Nevertheless these streams are of value to a certain extent. They could be combined together and utilized as a water supply for such periods of the year as they furnished sufficient volume. When the volume becomes insufficient, or ceased altogether, which would not probably exceed a longer period than two months, a supply for that period might be obtained by pumping from the Illecillewaet River.

SURVEYS.

Having decided that Eight-Mile Creek offered the best facilities for a water supply, a careful instrumental survey with levels was made from a point on the creek selected as the point of supply, to the intersection of McKenzie Avenue and Second Street. As this survey was made solely for the purpose of demonstrating the practicability of the proposed water supply, and for obtaining the necessary data upon which to base a report and an estimate of cost, the lines were run by surveying purposes, and do not represent the actual course of the proposed pipe line. At some future date, a careful location based on the information now obtained and shown on the accompanying plan must be made. And in this connection, it may be mentioned that in the event of construction, the line of the water supply, the location of the pipe line and the preparation of plans, designs, estimates, and all the numerous details of a waterworks system, require months of assiduous labor.

The present survey has demonstrated the fact that any required elevation above the City of Revelstoke can be obtained within a distance of 1.2 miles from the center of that center as the point, although a considerable portion of the distance to be traversed is rough and broken, no special difficulties as to works of construction will be encountered.

PHYSICAL FEATURES.

Eight-Mile Creek is a mountain torrent flowing through narrow rock canyons. With heavy vertical walls. The inclination of the bed is very irregular, being broken by numerous falls. The distance from the point of supply to the intersection of McKenzie Avenue and Second Street is 1.2 miles, and the depth between the point of supply and the intersection of McKenzie Avenue and Second Street is 120 feet.

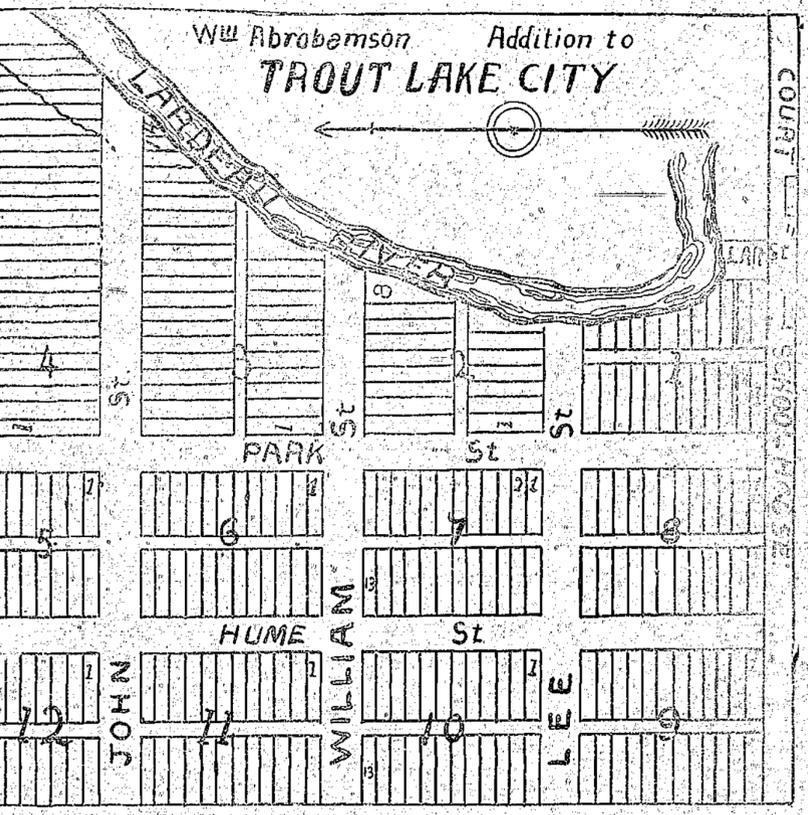
Water of vertical fall is carried with terrific force, and is accompanied with a loud roar. The water is so turbulent that it is impossible to see the bottom of the canyon, and the lack of proper appliances for the measurement of discharge would not be practically feasible. An approximation was made however, by measuring the total discharge on the 10th of May, 1902, to be 200,000 imperial gallons. This is a conservative estimate, and may be exceeded.

Leaving Eight Mile Creek, the pipe line passes over heavily timbered hills and irregular hills for a distance of one and three-quarters miles, south of the city, and then descends to the intersection of McKenzie Avenue and Second Street. The pipe line is to be laid on a level of 20 feet above the intersection of McKenzie Avenue and Second Street.

It is proposed to lay the pipe line within the right-of-way of this road, not only to avoid any possible obstruction, but also to avoid any possible liability of the building of a road, the transportation of mains and pipe line, and the construction of a reservoir.

CLEARING AND GRUBBING.

As the pipe line is now of less heavy construction, the pipe of the 12 inch diameter will be carried from 12 to 24 inches in diameter, and will be carried in a right-of-way 25 feet wide and 25 feet high. The pipe will be carried in a right-of-way 25 feet wide and 25 feet high. The pipe will be carried in a right-of-way 25 feet wide and 25 feet high.



For Terms and Particulars as to Sale of Lots, apply to

H. N. COURSIER, AGENT, REVELSTOKE.

EMBANKMENTS AND TRENCHES.

In all waterworks systems it is desirable to bury the main in trenches varying in depth with the temperatures through which they are exposed. Generally throughout British Columbia a depth of 3 feet covering has been found sufficient. Where the excavation of trenches, however, would necessitate blasting operations, embankments over the pipe may be substituted for excavations, where the district traversed is hilly country between the dam and McLeod's hotel, at 3.4 miles south, and also throughout that between Robinson's logging camp 5 miles south and the sand flat at 5.1-2 miles south. It is proposed with one exception, to level the surface of the ground, in the main thereon, and embank above it to such a depth as may hereafter be determined upon. On all downhill ground, the embankment will be retained in place by rough cutwork made from the trees cut down in clearing the right-of-way. The exception referred to is at the sand flat 5.1-2 miles south. The summit of the slide being 40 feet above the crest of the dam, and the body of the slide being clearly unstable, the only alternative is to pass below the slide at high water mark of the Columbia River. As before stated, the base of the slide rests on solid rock. It is proposed to excavate a gallery about the face of this solid rock in which the main will be enclosed. Any slide occurring will therefore, pass safely over the main. The approaches to the gallery will also be in solid rock, and be from 200 to 300 feet in length. With this exception, all other rock excavation may be eliminated by shallow trench crossings. These streams vary from one foot to six feet in width, and from one to three inches in depth. In most of these crossings neither embankments nor excavations will be possible. Instead, the main will require to be enclosed in log culverts filled with gravel or fine loose rock.

PROPOSED SYSTEM.

In any system of water works it is undesirable to draw direct from the main. A well constructed system carries the supply from the headworks to a reservoir, situated, if not in the center of the city, as near that center as possible. From this reservoir, both the domestic and fire supply is drawn, the latter being supplemented, should occasion be required, by a direct connection with the main. The reason for this is obvious. If a city is supplied directly from the main, the supply may be cut off at any moment by one of the many accidents to which mains are liable, and which cannot be foreseen, and the greater the length of main, the greater the possibility of accident. Whereas, if the supply comes from a reservoir in the vicinity of the city, the possibility of accident is limited to the comparatively short main leading from the reservoir.

No service can be reliable without a reservoir. Many cities, however, take the risk attendant on a long line of mains, depending with a reservoir until such time as the finances of the city will admit of its construction. The initial cost of the construction of the works is thereby materially lessened. It may be pointed out, however, that the source demands a much greater volume of water than a domestic supply, and as a long line of mains would naturally be designed for a domestic supply only, the fire protection, therefore, would be inadequate until a reservoir was constructed.

In the case of the City of Revelstoke it is assumed that a thoroughly reliable supply is desired. The accompanying plan shows a system with headworks, a line of mains furnishing a domestic supply for 10,000 people, a reservoir containing at least two days' present supply, a distributing main leading into the city, and a distribution system sufficient for present needs.

This appears to be the system ultimately required by the City of Revelstoke, although at present, as the population of the city does not exceed 2,000 people, the construction of a reservoir might be deferred, and the main, for the time being, be carried directly into the city.

VOLUME OF WATER REQUIRED.

In non-manufacturing towns, 60 gallons per head of population is a very usual daily allowance for domestic purposes, but, at certain hours of the day, the rate of consumption is much greater than the average daily rate. It is usual to allow at least 25 per cent in addition. The domestic supply to be provided for in the summer months is, therefore, 75 gallons per head of population. The present population of Revelstoke is estimated at from 1,500 to 2,000 people. Hence, a total supply of 120,000 gallons would meet the present domestic needs.

It is reasonable to suppose that a thriving and progressive young city such as Revelstoke will rapidly increase in population. A water supply constructed with a view to an adequate future service should, therefore, provide for at least 10,000 people, and this provision, at 75 gallons per head, would be 750,000 gallons daily, or 81 cubic feet per minute.

To obtain an efficient fire service it is customary to assume the possibility of two serious fires occurring simultaneously. In large cities of from 25,000 to 50,000 inhabitants (the usual provision made for two simultaneous fires is 40 cubic feet of water per minute. A much less allowance can be made, however, for small towns, consisting of framework buildings. Probably 100 cubic feet per minute would amply suffice to extinguish any two fires likely to occur in Revelstoke. The combined volume for domestic and fire purposes in the case of Revelstoke is, therefore, 181 cubic feet per minute.

THE RESERVOIR.

For the purpose of economic construction, the corporation may, however, make provision for the total cost of the domestic supply during the progress of fires. The minimum volume required at any period is, therefore, limited to 100 cubic feet per minute, or 37,408 imperial gallons per 24 hours.

THE DAM.

The dam will be constructed as near the crest of the fall as possible, and will be of the simplest possible character. It need consist only of a line of masonry piers 10 or 12 feet high, secured together by a concrete filling, and the longitudinal seams cemented.

Above the dam the floor of the creek will require to be cleared of boulders down to bed rock, and possibly lined with concrete for a distance of 25 feet, with concrete for a distance of 25 feet, with concrete for a distance of 25 feet.

The pipe outlet will require a diameter of 25 feet, long, and a concrete pipe 25 feet long. It is proposed to place the crest of the dam at an elevation of 421 feet above the intersection of McKenzie Avenue and Second Street.

THE RIGHT OF WAY.

Inasmuch as the proposed system is situated within the Canadian Pacific Railway belt, a right-of-way 25 feet wide will require to be purchased from the Company, at such points as the pipe line deviates from the right-of-way of the nine-mile pipe wagon road.

Where possible, it is proposed to lay the pipe line within the right-of-way of this road, not only to avoid any possible obstruction, but also to avoid any possible liability of the building of a road, the transportation of mains and pipe line, and the construction of a reservoir.

CLEARING AND GRUBBING.

As the pipe line is now of less heavy construction, the pipe of the 12 inch diameter will be carried from 12 to 24 inches in diameter, and will be carried in a right-of-way 25 feet wide and 25 feet high. The pipe will be carried in a right-of-way 25 feet wide and 25 feet high.

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Under the above conditions, the discharge per 24 hours of the following pipes, calculated by Kutter's formula, using n=0.12, is as follows:

6 inches diameter, 219,456 imperial gallons, or sufficient for the domestic supply of 2,926 people.

8 inches diameter, 458,021 imperial gallons, or sufficient for the domestic supply of 5,852 people.

10 inches diameter, 901,608 imperial gallons, or sufficient for the domestic supply of 11,711 people.

These discharges show that a 6-inch pipe for discharging into a reservoir will fully supply the population of Revelstoke, but that a 10-inch pipe will be required to meet the demands of the estimated increase of population.

Again, if a reservoir is dispensed with, and the main laid directly to the intersection of McKenzie Avenue and Second Street, the total length will be 3,578 lineal feet, and the total fall 437 feet. As previously shown, the demand for the estimated fire service is 100 cubic feet per minute, or 297,408 imperial gallons.

Under the above conditions, the discharge of the same series of pipes per 24 hours is as follows:

6 inches diameter, 211,901 imperial gallons, or sufficient for the domestic supply of 4,159 people.

8 inches diameter, 455,229 imperial gallons, or sufficient for the domestic supply of 5,274 people.

10 inches diameter, 1,220,816 imperial gallons, or sufficient for the domestic supply of 17,211 people.

These discharges show that if an adequate fire service is required from a main without a reservoir, a pipe 10 inches in diameter will be required, as in the case of the main with a reservoir, but that if only a domestic supply for 10,000 people is required, an 8-inch pipe will be sufficient, and that a 10-inch pipe will furnish a domestic supply for more than double the present population of Revelstoke.

In making a choice between these various pipes, it must not be forgotten that the pipes without a reservoir will be exposed for a greater distance to heavy pressure and water ram, than the pipes with a reservoir, and must, therefore, be stronger and consequently more costly.

It is universally acknowledged that the best water main is of cast iron. The severe pressure to which the proposed system is subject for the greater part of its length, renders cast iron prohibitory, both on account of cost and handling. Various manufacturers of mains other than cast iron are largely used on the west coast, of this continent, among which may be mentioned the converse lock joint, the steel spiral weld, the steel spiral riveted, and the steel straight seam riveted.

Where the utmost economy is desired, the steel straight seam riveted pipe is adopted for mains. They are manufactured to resist all pressures up to 200 vertical feet, in diameters from 4 inches to 72 inches, and in lengths up to 75 feet. They can be purchased in made-up lengths, both in the United States and British Columbia, or for reasons of still further economy, they can be purchased in prepared sheets, which can be riveted together into suitable lengths on the site of the works.

For the above reasons only, and not because of superiority over any other manufacture, the steel straight seam riveted pipe is recommended for adoption as the main in the proposed Revelstoke Water Works system. It must, however, be borne in mind that the contractor for such steel main should be made responsible for its maintenance, and that, without leakage, for a period of at least one month, before final acceptance by the city. The riveting and joining of such mains must be perfect, otherwise extensive leakage will occur, which, in sandy soil and on steep sidehills would cause damage, not only to the neighborhood, but to the main itself. The following are the specifications for the steel straight seam riveted main required for the proposed Revelstoke Water Works:

Total length to reservoir, 36,012 lineal feet (total fall to reservoir, 204 vertical feet). Velocity of discharge, 3.083 feet per second. Total discharge per 24 hours, 301,096 imp. gal. Thickness, 1/8 in. B. V. G. - 0.103 in. Weight per lineal foot, 14 pounds. Maximum head, 107 vertical feet. Maximum static pressure per square inch, 24.46 in. 100 lbs. Safe head, 107 vertical feet. Bursting pressure per square inch, 244 lbs. Factor of safety, 1.52.

The above main, if properly manufactured and properly laid, with coating both inside and outside, perfectly intact, will last for at least 25 years.

THE DISTRIBUTION SYSTEM. A distribution system consists of a supply main from the reservoir to some central point in the city, and a series of smaller pipes laid in a systematic manner along the streets.

pounds per square inch. The diameter of the supply main must, therefore, be not less than 10 inches.

As a distributing supply main, riveted steel pipes are not desirable. Cast iron, or tap-welded wrought iron are in more general use. However, with due care in manufacturing, they can be rendered serviceable.

The following are the specifications for a steel straight seam riveted main, 10 inches diameter, designed for distribution purposes:

Total length—1,000 lineal feet. Total fall—224 vertical feet. Thickness No. 12, B. V. G.—0.103 in. Weight per lineal foot—16 pounds. Maximum head—234 vertical feet. Maximum static pressure per square inch—102 pounds.

Safe head—613 vertical feet. Safe pressure per square inch—255 pounds. Bursting pressure per square inch—1,053 pounds. Factor of safety—10.42.

The smaller or distribution pipes should be laid along the populated streets in the form of parallelograms, enclosing one or two more blocks. Dead ends should be avoided as much as possible, and a continuous circulation be maintained for the purpose of affording the fullest supply in case of fire, and also to prevent the decay of stagnant water. Hydrants should be placed not less than 200 feet apart in the thickly populated parts of the city. Gates or stop valves should be in sufficient number to admit of the supply being shut off from any desired point, without interfering with the supply to a large area or a long distributing pipe. Ample provision should be made by means of blow-off valves to flush out the sediment which gathers in the principal depressions of distributing mains.

The diameters of the distributing pipes should be designed with due regard to the density of population, and the volume required in any particular locality. The existence of a partial distribution system in the City of Revelstoke, and the expressed intention of the city to utilize this system so far as possible, prevents strict adherence to this rule. The difficulty may be overcome, but at greater cost, by laying pipes parallel to the existing system. The accompanying plan shows all existing pipes, and all proposed additions and extensions.

The existing pipes, hydrants, and gates which can be utilized in the proposed new system are as follows:

4-inch converse lock joint pipe—16,589 lineal feet. 4-inch galvanized wrought iron—5,910 lineal feet. 4-inch galvanized wrought iron—1,250 lineal feet. 2-nozzle Ludlow hydrants—27. 4-inch Ludlow valves—3. Services—25.

The existing pipes which cannot be utilized in the proposed new system, but which might be dug up and used elsewhere, are as follows:

1-inch pipe on Second Street, from Robson eastward—210 lineal feet. 1-inch pipe on Third Street, from McArthur eastward—500 lineal feet. 1-inch pipe on Fourth Street, from McKenzie eastward—470 lineal feet. 1-inch pipe on Vales Street, from James northward—290 lineal feet. 1-inch pipe on McKenzie Street, from Second northward—200 lineal feet.

Or a total of 2,330 lineal feet of 1-inch galvanized pipe. In this connection it may be stated that the existing 6-inch supply main and the existing reservoir cannot be utilized in their present positions.

The proposed additions, the positions of which are shown on the accompanying plan, are as follows:

6-inch converse lock joint pipe—5,170 lineal feet. 4-inch converse lock joint pipe—5,600 lineal feet. 2-nozzle Ludlow hydrants—10. 6-inch Ludlow valves—4. 4-inch Ludlow valves—12. Blow-offs—2.

The existing pipes and the proposed additions make a total of 5,135 miles, which, taking into consideration the area of Revelstoke and its scattered population, is by no means an excessive mileage.

Cast iron pipes are superior to all other pipes for distribution purposes. The thickness of shell is seldom less than half an inch, which admits of service taps being screwed in, and their short lengths, generally 9 feet, lessen the necessity of frequently cutting them for the insertion of specials. For reasons of economy other manufacturers, rendering good service, may be substituted.

THE ESTIMATE. The subjoined estimate is compiled with a view to the utmost economy in materials and construction, consistent with a first-class system. It has been calculated with more than usual detail, in order that, so far as possible, no misleading conception of the cost of the works should be conveyed. Considering the length of the main, and the character of the country to be traversed, and more especially the excellent character of the works proposed, the estimate is reasonable, and there is little doubt but that the works can be accomplished satisfactorily for the amount.

SUMMARY OF COST OF WORKS. Dam, pipe line and reservoir... \$720.00. Head works on Eight Mile creek... 1,111.20. Purchase of right-of-way... 1,111.20. Excavation... 28,540.00. 10-inch steel main (complete)... 1,676.71. 4-inch specials... 3,353.41. 4-inch specials... 669.91. Mechanical works for 10-inch steel main... 2,175.00. Excavation, refilling and water tanks... 8,125.00. Reservoir... 3,063.32. Add for unforeseen occurrences, engineering, surveying etc. 5 per cent... 2,960.01. Total cost... \$51,082.17.

Distribution service (additional to estimate). Distribution supply main... 2,122.00. 10-inch specials... 28,540.00. 4-inch specials... 1,676.71. 6-inch sub-main (complete)... 3,353.41. 4-inch specials... 669.91. Fitting... 29,049.00. Hydrants, (complete)... 7,100.00. 12-24 inch... 1,250.00. Buildings and real estate... 2,000.00. Office furniture... 340.00. Add for unforeseen occurrences, engineering, surveying, etc. 5 per cent... \$18,157.99. Total cost of the proposed works is, therefore, estimated to be \$79,240.17. Full details of the above summary are appended.

I have the honor to be, Gentlemen, Your obedient servant, HENRY B. SMITH, M. Inst. C. E. etc.

excavation at base of mud slide, owing to the lack of data for such purpose. Should an additional amount be required to be added to the estimate, it cannot exceed a few hundred dollars.

ILLECHEWAT RIVER PLAN. GENTLEMEN.—In accordance with your instructions issued to me on May 1st, I have investigated the possibility of furnishing the City of Revelstoke with a water supply from the Illecilwevat River, by means of pumps, and now beg leave to report as follows:

PRELIMINARY REMARKS. This report need not be detailed, inasmuch as the report already made in connection with a proposed water supply from Eight Mile Creek deals with many of the subjects connected with the proposed pumping system. It is assumed that the corporation desire to make use of the power plant now installed by the Revelstoke Water, Light & Power Company on the Illecilwevat River, and such portions of the water works system of that Company as can be advantageously incorporated in a new system.

The power plant is essentially temporary, so far as the dam, flume, and wheel pit are concerned, and will require not only extensive repairs made immediately, but also to be renewed in the course of a few years.

A pumping system of water supply is not usually adopted by cities, where a gravity system can be obtained at any reasonable outlay, the principal objections being the cost of pumping works, the continuous cost of pumping and maintenance, and the liability to accident, causing a stoppage of the city's water supply.

In the case of the Illecilwevat River, there are two grave objections to its employment as a source of supply. In the winter months the river is subject to accumulations of frazil or slush ice, a remedy for which has not yet been discovered. This ice entering the flume would cause temporary stoppage of the power wheels, and, as a consequence, the city's water supply. Again, in the summer months earth slides frequently occur along the course of the river, rendering the water unfit for consumption. Both of these objections may be obviated by the construction of a reservoir large enough to contain, say, 20 days' supply. In this case, it would be a costly undertaking.

PROPOSED WORKS. There will consist of the power plant of the Revelstoke Water, Light & Power Company; this plant will operate electric motors, which in turn will operate pumps by means of which water will be elevated through a force main into a reservoir, elevated sufficiently to afford an adequate domestic and fire service. From the reservoir, water will be conveyed by means of gravity to the city in a main terminating at McKenzie Avenue and connecting with the existing distribution system and such additions to that system as are necessary to render a competent service.

THE POWER PLANT. The power house is situated about 2 miles south easterly from the fire hall on McKenzie Avenue. It is supplied with twin horizontal turbine wheels, the present capacity of which is 800-horse-power. This capacity can be increased to 800-horse-power by additional wheels. The dynamo operating the present electric light system is 134-horse-power. Hence the present capacity of the power plant for pumping purposes is 366-horse-power, and with additional wheels, 668-horse-power. The power plant is, therefore, capable of furnishing sufficient power for the proposed pumping system. The existing plant will be in two sets, each of sufficient capacity to supply the present population. This is absolutely necessary. In case of accident to one set, the other set can render service until repairs are effected.

THE FORCE MAIN. This will be 10 inches diameter, and as it will be subject to constant shock and vibration, due to the action of pumps, it must be of good pattern and unusual strength. Cast iron is recommended in preference to steel or wrought iron, but its cost is prohibitory. Lap-welded converse lock joint pipe, No. 32 B. V. G., or 0.137 inch thick, may be substituted.

Owing to the sandy nature of the soil and the steep ascent of the sidehills over which the force main must pass to reach the reservoir, it cannot advantageously be laid in a straight line. Leaving the pump house, it will extend easterly for 1,000 feet, then northerly for 300 feet, then westerly for 200 feet, to connection with the reservoir, the total length being 1,500 lineal feet.

THE RESERVOIR. This will be situated on a level sandy flat, about 1,300 feet due north of the power house, and will be of sufficient capacity to meet the present needs of Revelstoke. It will consist of two square, concrete tanks, each 150 feet long, 20 feet deep, and 10 feet deep. The available capacity of each tank will be 185,261 imperial gallons. The two tanks combined will furnish two days' domestic supply.

Taps flat being sandy, leakage from the tanks must be prevented at all costs, otherwise earth slides will take place, causing damage to the vicinity. No attempt will be made to connect with the existing water supply, as it may be found necessary to convey surplus waters to the Illecilwevat River in an artificial channel.

It is proposed to place the waste outlet of each tank at an elevation of 52 feet above the floor of the power house, and 24 feet above the intersection of McKenzie Avenue and Second Street.

THE MAIN. This will be 10 inches diameter. A straight seam steel riveted pipe is recommended. Leaving the reservoir, the main will be laid in a north-westerly direction on the north side of and approximately parallel to the Canadian Pacific Railway for a distance of about 7,000 feet. Here a divergence to the south side of the railway will be made, and the main will be laid in a south-westerly direction to junction with Second Street at the extreme eastern limit of the city. It will then pass along the north side of Second Street, terminating on McKenzie Avenue, the total length being 10,200 lineal feet.

The strata to be traversed is irregular in character, being either steep sidehills or broken knolls. The soil is generally gravel and sandy loam. Timber is sparse and of small diameter. The main will supply by gravity the domestic and fire services required by a population of 10,000 people, and it may be stated that the city's supply will be dependent on the factiveness of a main nearly two miles long. Any of the accidents common to long pipes will cut off all supply until repaired. The light, sandy character of the soil renders such accidents especially liable.

The length of the main being 10,200 feet, and the total fall from the waste outlet of the reservoir to McKenzie Avenue being 246 feet, the discharge, without pressure will be 23.4 cubic feet with a non-permissible velocity of 6.497 feet per second. With a permissible velocity of 3.3 feet per second, the discharge with pressure will be 108 cubic feet per minute.

Inasmuch as 100 cubic feet of water per minute are required for fire service, retaining a pressure of \$3.15 pounds per square inch. This pressure is amply sufficient to throw an ordinary hose stream over the highest building in Revelstoke.

DISTRIBUTING SYSTEM. The distributing system proposed for the waterworks supply from Eight Mile Creek is exactly the same as proposed for the present works. As this system has already been described in detail, it is now only necessary to recapitulate. The sub-mains, hydrants and gates in the existing system which can be utilized in a new system are as follows:

2-nozzle Ludlow hydrants—27. 4-inch Ludlow valves—3. 4-inch galvanized wrought iron pipe—5,910 lineal feet. 4-inch galvanized wrought iron pipe—1,250 lineal feet. 2-nozzle Ludlow hydrants—27. 4-inch Ludlow valves—3. Services—25. The existing sub-mains and proposed additions, not including the smaller galvanized pipes, make a total of 5,135 miles. The whole combined will make a thoroughly efficient service for present needs.

THE ESTIMATE. The following estimate is compiled with a view to the utmost economy in materials and construction, consistent with a first-class system. It has been calculated with more than usual detail, in order that, so far as possible, no misleading conception of the cost of the works should be conveyed. Considering the length of the main, and the character of the country to be traversed, and more especially the excellent character of the works proposed, the estimate is reasonable, and there is little doubt but that the works can be accomplished satisfactorily for the amount.

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Full details of the above summary are appended. I have the honor to be, Gentlemen, Your obedient servant, HENRY B. SMITH, M. Inst. C. E. etc.

NOTE.—In the above estimate, no extra provision has been made for rock excavation at base of mud slide, owing to the lack of data for such purpose. Should an additional amount be required to be added to the estimate, it cannot exceed a few hundred dollars.

TIME TABLE S. S. "Archer" or S. S. "Laradeau" Running between Arrowhead, Thomson's Landing and Comox, commencing Oct. 1st, 1901, will sail as follows (weather permitting): Leave Arrowhead for Thomson's Landing and Comox twice daily at 10K and 12.30. Leave Comox and Thomson's Landing for Arrowhead twice daily at 7.15K and 12.15K. Making close connections with all C. P. R. trains and boats. The owners reserve the right to change times of sailings without notice. THE FRED ROBINSON LUMBER CO. LTD. F. ROBINSON, Managing Director.

The Revelstoke Navigation Co., Ltd. TIME TABLE (During season of high water.) Leave Eight-Mile Landing each TUESDAY AND FRIDAY at 6 a.m. Leave La Forte each TUESDAY AND FRIDAY at 2 p.m. SPECIAL TRIPS will be made between dates of regular sailing whenever business offers warrants same. The Company reserve the right to change time and days of sailing without notice. A. FORSLAND, R. W. TROUP, Master, Pursers.

OCEAN STEAMSHIPS Royal Mail Lines. Cheapest Route to the Old Country. ALLAN LINE—From Montreal. Tumbler... July 10. Tumbler... Aug. 2. Dominion Line—From Montreal. Dominion... Aug. 2. From Portland. July 12. Beaver Line—From Montreal. Lake Manitoba... July 12. Lake Superior... Aug. 3. Lake Champlain... Aug. 3. Lake Ontario... Aug. 7. Passengers ticketed through to all parts of Great Britain and Europe at specially low rates to all parts of the European continent. Apply to nearest railway or steamship agent or to T. W. BRADSHAW, Agent, Revelstoke.

CANADIAN PACIFIC RY. Trains leave REVELSTOKE Daily Sun, Wed. and Fri. Eastbound 8:30 4:35 Southbound 8:40 Mon, Wed. and Sat. Westbound 17:15 21:00. THE IMPERIAL LIMITED Carries all Classes of Passengers. 8 1/2 Hours to Montreal. TOURIST CAR SERVICE. St. Paul... Daily. Toronto... Tuesdays & Saturdays. Boston... Thursdays. MONTREAL (via Imperial Limited) Sundays, Wednesdays & Fridays. For full information and particulars apply to nearest agents: E. J. COYLE, T. W. BRADSHAW, A.G.P.A., Agent, VANCOUVER, REVELSTOKE.

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Cook's Cotton Root Compound. Is successfully used monthly by 100,000 Ladies. Safe, efficient, Ladies ask your druggist for Cook's Cotton Root Compound. Take no other, as all mixtures, pills and liniments are dangerous. No. 1, 41 per box; No. 2, 10 degrees stronger, 48 per box. No. 1 or 2, mailed on receipt of price and two 8-cent stamps to Cook's Compound, Windsor, Ont. No. 1 and 2 sold and recommended by all responsible Druggists in Canada.

Wood's Phosphorine. The Great English Remedy. Sold and recommended by all druggists in Canada. Only reliable medicine discovered. Sizeable medicine guaranteed to cure all forms of Secular Weakness, all effects of abuse or excess, Mental Worry, Excessive use of Tobacco, Opium or Stimulants. Mailed on receipt of price, one package \$1.00, 25. One will please, etc will cure. Pamphlets free to any address. The Wood Company, Windsor, Ont.

Sanial Midy. Standard remedy for Gleet, Gonorrhoea and Runnings in 48 HOURS. Cures Kidney and Bladder Troubles.

Summer Goods! Hardware Stoves Tinware. Screen Doors, Adjustable Screen Windows, Screen Wire, Refrigerators, Ice Cream Freezers, Garden Hose, Nozzles, Sprays, Cullingers, Lawn Mowers, Water Coolers, Water Filters, Coal Oil Stoves, one and two burners. EVERYTHING IN THE HARDWARE LINE.

W. M. LAWRENCE. P. BURNS & CO. Wholesale and Retail Meat Merchants. Head Office, Abattoir and Cold Storage, Calgary, Alberta.

Coming to the Front! Camborne has been called the Rosland of the Lardeau. Many believe that Camborne has a greater future than any mining camp in the West. Those who are wise and can size up a "good thing" are getting in on the Ground Floor. Some of the best lots have already been snapped up. Don't you want one? 'Twill Make Money for You While You're Sleeping.

THE CAMBORNE TOWNSITE CO., H. S. WALLACE, MANAGER, CAMBORNE, B. C.

Muralo Wall Finish. This finish is more popular this year than ever, and has won its popularity by its durability, pretty tints, and the easy mode of mixing and applying. Put up in 23 beautiful shades and White. Ask your dealer for a color card or send direct to McLennan, McFeely & Co., Ltd., Wholesale & Retail Merchants, 122 Cordova Street, Vancouver, B. C.

Weiler Brothers. Furnishers to all Classes. Victoria, B. C. Comfortable and Beautiful Furnished Homes. are made possible without great expense by choosing from our large and varied stock. Golden and Flemish Oak Furniture, Crossley's Superb Carpets and Rugs, Scotch and English Linoleums 50c to \$1.50 yd., Silverware that wears—1847 Rogers Bros., French, Swiss and English Lace Curtains. Large Illustrated Catalogue or Samples free of Charge.

RIPANS. I have been taking Ripans Tablets for the Dyspepsia, and they have helped me wonderfully. I do not know any way they effect me, but they seem to give vigor to the entire system. I had a sort of languid feeling, but since taking the Tablets I feel spirited and have not that melancholy way about me. I think they are good for a general build-up of the system, as they seem to act like a tonic. AT DRUGGISTS. The live-cent packet is enough for an ordinary occasion. The family bottle, sixty cents, contains a supply for a year.

RIDER AGENTS WANTED. one in each town to ride and exhibit a sample 1901 model bicycle of our manufacture. YOU CAN MAKE \$10 TO \$50 A WEEK besides having a wheel to ride for yourself. 1901 Models High Grade \$10 to \$18. '00 & '99 Models Best \$7 to \$12. 500 Second Hand Wheels \$3 to \$8. taken in trade by our Chicago retail stores. We ship any bicycle ON APPROVAL to anyone without a cent deposit in advance and allow 10 DAYS FREE TRIAL. You take absolutely no risk in ordering from us, as you do not need to pay a cent if the bicycle does not suit you. DO NOT BUY a wheel until you have written for our LIBERAL OFFER has never been equaled and is a guarantee of the quality of our wheels. WE WANT a reliable person in each town to distribute catalogues for us in exchange for a bicycle. Write today for free catalogue and our special offer. J. L. HEAD CYCLE CO., Chicago.

B. C. Leather Co. Vancouver, B. C. British Columbia Agents for the celebrated "PENETANG" Sole Leather, Cut Soles and Heel Pieces. Harness Leathers, Bridle, Saddle and Stirring Leathers, Lace and Luggage Leathers, Upper Leathers, all kinds. Manufacturers of Closed Uppers of all descriptions. Shoemakers' Tools and Findings, Saddlery Hardware, Hides and Oils. Two thousand Deer-skins Wanted. Catalogues and price lists on application.

C. Outhett, A. R. C. Sc. Analytical Chemist, Provincial Assayer. Gold... \$1.00. Silver... 1.00. Lead... 1.00. Copper... 1.50. Gold and Silver... 1.50. Gold, Silver and Copper... 2.50. Control assays; Complete analysis of Ores, Coals, etc., Concentration and Amalgamation assays. Results of assays by return of mail. CORRESPONDENCE SOLICITED. Inland Assay Office, Kamloops B. C.

HALCYON HOT SPRINGS SANITARIUM. The most complete Health Resort on the continent of North America. Situated amidst scenery unrivaled for grandeur. Boating, Fishing, Excursions, Hunting and Shooting, Resident Physician and Nurse, Telegraphic communication with all parts of the world. We make arrival and departure every day. Its baths cure all nervous and muscular diseases, its waters heal all Kidney, Liver and Stomach ailments, and eliminate all metallic poisons from the system. Its waters cannot be surpassed for their healing virtues. Special Winter Terms: \$12 to \$15 Per Week.

Lemonade Tablets

ONLY 25c A BOTTLE

Makes a Delicious Drink of Lemonade.

CANADA DRUG & BOOK CO., Revelstoke B. C.

BORN.

On July 18th, to Mr. and Mrs. Joseph Skinner, a daughter, Mary.

DIED.

At Ballard, Wash., July 18th, Robert James, only son of Mr. and Mrs. A. Johnson, aged four years and two months.

LOCAL & GENERAL.

The floods have occurred on the Mississippi.

Losses by Mississippi floods are estimated at six millions.

Governor Ross of the Yukon has been seized with paralysis.

J. W. Mackay, the American millionaire, died in London on Sunday.

Russia proposes that international action be taken to suppress trusts.

The Bank of Commerce will open branches at Calgary and Edmonton.

A man named Geo. Hardin was drowned in Woodbury creek on Friday.

The Ilceilivnet school trustees invite applications for position of teacher.

An excursion steamer was run into Lewis at Hamburg and 50 persons drowned.

Calles attempted suicide at Falmouth and was arrested and taken to Trout Lake.

P. Burns and Co. have bought 150 acres in the American Okanagan to ship to Calgary.

Tenders are invited by the school trustees for a brick school building for Revelstoke.

The Montreal telegraph system will begin operation between Canada and Britain by Christmas.

The French government has closed all church schools, numbering 250 and attended by 150,000 pupils.

The school trustees have received the plan of the proposed brick school from J. Henderson, architect, for the work.

Genelle is again under arrest on a new warrant connected with the alleged burning of steamers on the Yukon.

Some sammytymen intend fighting the city on the proposal to restrict their industries to an area with the city limits.

E. Smith, E. E. of Roslund, has been engaged to report on a water supply by Armstrong and superintendent of putting in same.

Sam McGroarty of Vancouver, won the 10th prize in the Prince of Wales match at Fishy with a score of 99, or within two points of the top score.

The Union Club held their weekly dance on Saturday when the following were the winners: J. Guy Barber, A. Smith, and H. A. Brown, H. A. E. Phipps 10.

Chief Justice has been appointed by the Supreme Court Registrar of the Elk Park Ranch Co. at Golden, Ontario to \$1000 to be put up before end of 1912.

The Dominion government have decided making in all dominion Postmaster McLae and his assistant Atkins will have to resign and retire.

The Water Light and Power Commission has taken up the case of the Sardon editor, and the provincial will be asked to consider the purchase of the city for the purchase of water and light property.

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and timber saturated with kerosene and when the structure was enveloped in flames threw the preparation on it. The effect was magical. The fire was instantly suppressed and a few finishing touches with the powder completely extinguished it. G. Sutherland has been appointed agent for the city.

The Dominion Forestry department has issued a circular warning persons against starting fires and stating the regulations will be strictly enforced. Penalties running up to \$200 besides damages. Persons camping out are particularly warned to clear their camp site of inflammable material to extinguish fire before leaving, and not to throw down cigar stubs or matches while alight. Employees are reminded to warn their employees for whose acts they will be held responsible.

J. D. Walker, who is interested in the Great Western and Double Eagle companies, had one of his ribs broken on Tuesday while jumping off the steamer Archer at Thomsons Landing, on his way to attend the company meetings at Ferguson. He returned to the Hotel Revelstoke, to have his injuries attended to.

There is exhibited in the window of E. M. Allum's jewelry store several ornaments made at the Standard mine by A. Duchemin from soapstone. The workmanship is very clever. A piece of blister copper is shown, also a sample of native copper panned and melted down at the mine.

A special meeting of the city council will be held on Friday next to receive reply from Water Light and Power Company as to whether they will accept the offer for the water and light property, and to consider what further action shall be taken in the matter.

On our second and third pages today appear in full the reports of H. B. Smith C. E., on a water supply for the city, reviewing alternative proposals of bringing in a supply from Eight Mile creek or by a pumping system from the Ilceilivnet.

Sir Wilfred Laurier is of the stuff of which true patriots are made. The Montreal Star, referring to the movement to secure an increase on the Premier's salary says Sir Wilfred refused to accept any increase.

E. L. Kinnaman, government inspector of roads and trails, is looking over the various government works in the district with a view to getting them put in good shape. Today he went over the Big Bend road.

A shocking tragedy occurred at Seattle, when a miner named S. H. Lake killed his brother-in-law and wife and committed suicide, all because his wife refused to allow him to buy her an \$18 hat.

Chinese have purchased the building opposite the police station on Front Street and are enlarging it. They will open it as a tailoring establishment.

A terrible cyclone in Ontario, last week, travelled through Winchester, Finch and Osnabrock, doing \$200,000 damage and killing five persons.

The World considers that in the McAdams case the judges used "the opportunities at their command" to vent their personal anger.

Consternation again prevails in St. Vincent owing to terrible earthquakes, people having fled from their homes in their nightclothes.

The application to the courts to nullify the warrant for the arrest of J. Genelle was rejected, and he will go to Yukon to stand trial.

The city council have made an excellent job of the work of protecting McKenzie Ave. from encroachment at Lawson's corner.

The Dominion government has arranged to establish a mint for Canada with distinctive Canadian gold and silver coinage.

The judge demands that contempt of court be taken out of the hands of the judges and tried by jury as a matter of course.

Another street fight is reported from Camborne. It is time the authorities arranged to have a constable stationed there.

It is officially announced that there will be no public holiday to mark the King's Coronation on August 6th.

Government Agent Fraser is arranging to open a road to connect the lower town with Big Bend.

The King has sufficiently recovered to attend a meeting of the council.

Oats reached 64 cents at Chicago, the highest price since 1874.

The Ladies Auxiliary are busy furnishing the hospital.

The new fire ladder for No. 1 Engine has arrived.

The socky run at the Fraser is a ported pool.

NEW METHOD.

Ingenious Method of Teaching the Different Languages.

W. H. McDougall, of Nelson, representing the International Correspondence school of Scranton, Pa., and who was in the city last week collecting pupils, exhibited a most ingenious method of teaching languages. It consists in the use of the photograph and the instructor is so well off that the pupil gets his lesson as clearly as by a personal teacher. The advantages are even greater as the records are repeated as often as required to enable the pupil to obtain correct pronunciation. The student also speaks his answers into records which are sent to the instructor who is thus able to correct any inaccuracies. We should say this method of teaching is very likely to prove the most successful ever introduced.

"Amber" Plug Smoking Tobacco is winning on its merits. "Have you tried it?" "Save the Tags, they are valuable."

USE ROYAL CROWN SOAP

The Best in the World. Mail us 15 Royal Crown Soap Wrappers, and in return we will mail a beautiful Picture size 10x20, or for 25 Wrappers your choice of over 100 books. Drop us a post card asking for a catalogue of premiums to be had FREE for Royal Crown Soap Wrappers. Address: The Royal Soap Co., Vancouver, B.C. Limited.

Social and Personal

A. H. Holdich is rusticiating at Haley.

Dr. Lazier has started practice at Camborne.

E. Edwards left yesterday on a trip to Nelson.

H. Coursier returned this week from a trip south.

C. R. Skene returned from Comaplix last evening.

Miss B. Sawyer left yesterday for Coldwater, Ont.

Mr. J. McLean left Wednesday on a visit to Nelson.

Capt. Taylor and Fred Taylor went to Nelson yesterday.

J. Doyle returned on Saturday from a visit to Trout Lake.

Dr. Neumbe, of Ferguson, has been married at Vancouver to Miss Fraser.

Mrs. Batho and family, of Ferguson, have gone to Okanagan lake for a holiday.

Rev. S. H. Kechurst, of Kamloops, is quarantined at Harrison Hot Springs.

The Irish Social and Benevolent society intend having another social shortly.

W. Morrison has sufficiently recovered from his recent illness to be able to leave bed.

J. Doubt, of Ross Peak, wears on his watch chain a magnificent nugget of gold from Smith Creek.

There are thirty guests at St. Leon Hot Springs, including Capt. Gifford and family, of Nelson.

B. Lamont, of the Canada Drug and Book Co., Nelson, was on a visit to Revelstoke Wednesday.

G. Beave, who had one of his arms severely injured at the C.P.R. shops by a bar of iron falling on it, has gone to Vancouver for treatment.

Mon. W. C. Wells was in Revelstoke on Tuesday night on his way to Nelson and will return tomorrow.

Mr. and Mrs. P. W. McGeary returned to Ilceilivnet on Wednesday after their holiday trip to Eholi.

A. E. Miller, brother of Mrs. H. J. Bourne, has arrived from Toronto to take a position in G. P. Curtis's drug store.

Messrs Spurling, Holden, Downs, Sutherland, and Messrs Spurling and Atkinson, are on a visit to St. Leon Springs.

Capt. Kane, of the Dominion dredge, expects his wife and family, from Oregon to join him at Revelstoke in a few days.

Professor Fay, with a party of 16, and Mr. Vaut of Philadelphia with his family are en route to spend a few weeks at the C. P. R. mountain resort.

G. L. Graham, formerly of Revelstoke, who was sergeant in Mounted Police in 1885, has received his medal for services in the field during the rebellion of that year.

The ladies who organized the sale of work done in aid of the Catholic church for Thursday last are to be congratulated on the results which added \$130.47 to the funds.

Louis Allard, head of the well known firm of Allard Bros., was manufacturer of the new motor boat which was the only one to start through the city yesterday. He has been importing the new motor boat from Boston.

Miss Edwards, sister of H. W. Edwards, arrived from England on Friday morning and will be in the city on Saturday. Miss Edwards, who is a talented model and sculptress, has been invited to take up modeling in Revelstoke.

At the meeting of the Epworth League on Monday papers were read by Miss Laidlaw and Pettipiece, and E. M. Allum in "Our Program", postscript and nature. At next meeting W. H. Hays will read a paper entitled "Epworth League in China".

G. S. McCarter, accompanied by Messrs Paul, Young, Kiley and Walker left by the South train on Tuesday night for Vancouver. The party will be in the city on Saturday night at which a number of ladies are expected to be present.

Captain Armstrong, of the Upper Columbia Navigation Company, was held temporarily on Saturday night at Whiter's corner while awaiting a boat to take him to the city. He is a member of the Kootenay Club.

H. J. Smith, Vice-President of the Prince, Mining and Development Company, arrived from the south by Tuesday and left this morning by the steamer Revelstoke to go to his home in the States. He was accompanied by J. M. Smith, secretary to the company.

Miss Fee left for Lindsay, Ont., yesterday, on Friday evening Mr. Knapp, on behalf of the choir and congregation of the Methodist church, presented her with a handsome silver pocket-dish as a token of appreciation of her services in the choir and church work. Rev. C. Ladner gave a final address on the occasion.

BUSINESS LOCALS.

Go to L. Schneider for a set of harness. See the latest Coronation Suitsing's at Cressman's.

Large variety of Saleboards selling cheap at R. Howson's.

Summer suitsing's at cost for the next 30 days at Cressman's.

A splendid assortment of umbrellas and canes at J. Guy Barber's.

Call and see the large line of Tamey Rockers at R. Howson & Co.'s.

Social hop at the rink tomorrow night. Good music. Admission 25c.

Oppenheimer Bros. and Co. and A. Macdonald and Co. of Vancouver have amalgamated.

R. H. Trueman and Co's photographic studio is now open daily in charge of W. F. Montgomery.

Travellers visiting Revelstoke will find the best accommodation at the Central Hotel, Abrahamson Bros. & Co.

When you come to Revelstoke land the Central Hotel, bus to take you to a good hotel. Abrahamson Bros. Props.

Sale of household furniture by private sale at residence of Mrs. C. E. Shaw. Call any day between 2 p. m. and 9 p. m.

You can get Cucumbers, Potatoes, Strawberries, Cauliflowers, Cabbage and Carrots at J. Malley's store, opposite post office.

The W. Abrahamson Addition to Trout Lake stands ready to offer every inducement to those who wish to purchase lots for private or business purposes.

Messrs. McCarter, Harvey and Pinkham offer for sale two residences on McKenzie avenue, two residences on Third street and one residence on First street.

The Montreal Daily Herald-Kootenay Mail for balance of 1902 with picture of King Edward, will be mailed to new subscribers remitting \$1.50 to Kootenay Mail office, Revelstoke.

If you want to have a good time late in the concert and dance at the rink tomorrow night. Revelstoke Independent Band in attendance. Admission 25 cents. Commencing at 8:30 o'clock.

We have received a letter, from the east from one who advertised in the Kootenay Mail for a lost relative, expressing appreciation of the widespread circulation of this paper, which enabled the advertiser to reach the person desired. Advertisers in the Mail are always pleased with results.

LOCAL INDUSTRIES

New Inventions. Rowland Britton Patent Attorney, Vancouver reports the following Patents received this week by British Columbia inventors.

J. H. Casswell, Vancouver, on a milk cooler, in which the milk is carefully strained and aerated before being lowered in temperature by being brought into contact with the cooling area of the ice vessel. The device throughout shows careful thought and special knowledge of the requirements of milk treatment for storage, and we are pleased to learn that arrangements are now being made for manufacture for the general market.

W. E. Vanstone, sanitary and heating engineer, of New Westminster, has obtained a patent on a self-contained water heater suitable for small installations, in which are embodied the same general principles of design which have made such a marked success, in efficiency and economy of fuel, of the larger heater patented last year by Mr. Vanstone and placed in several of the public schools and buildings of the Province.

W. G. Macdonald, of Vancouver has invented a simple little device which should find a ready sale as it supplies a want which is frequently felt. It is a door or window fastener which while it may be carried in the vest pocket, yet on being placed to secure a door or window on attempt from the outside can't remove it, and the door may be broken or torn from its hinges before the fastener will yield.

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CITY COUNCIL.

Regular Meeting. CORRESPONDENCE.

A. G. Fuller stating fire truck at Vernon cost \$90. The Mayor said W. Morrison wanted \$100 for same thing made here. Referred to P. W. and L. committee.

W. L. and P. C. requiring time to convene meeting of stockholders to consider offer of city for company's property, and asking confirmation of Mayor's action. Request granted, company to reply to offer by August 5th.

KOOTENAY MAIL offering to print 500 copies of H. B. Smith's reports on Water and Light for use of council and taxpayers. Accepted.

H. B. Gilhousie re-supplying rock crusher for city. The Mayor said the only way to have good streets was to have crusher. Ald. McMahon agreed. Referred to works committee.

W. A. Foote and J. McMahon, requesting grading on First Street be extended. Referred to works committee.

GENERAL. Works committee was instructed to have streets cleared near hospital and arrange with Messrs. Caley to remove building on street.

Ald. Law reported No. 1 fire hall completed. P. W. and L. committee instructed to have wires connected.

The Mayor reported the health officer, city clerk and he had met Dr. Pagan, provincial health officer, and he had agreed that government should pay costs of recent smallpox quarantine. Several aldermen expressed much gratification at result.

The Mayor reported Ald. Hume had ordered a site for city offices. Council then adjourned.

SAD AFFAIR.

Funeral of R. J. Johnson.

On Saturday morning news reached here of the death of Seattle's Robert Johnson, only son of A. Johnson, of the Herald. The boy had been suffering from measles and whooping cough, and while M. S. Johnson, who was on a visit to her parents, was scrubbing a floor, he fell into the bucket of water she was using, and which, though not very hot, caused a shock to the system from which the boy never recovered.

The body was brought to Revelstoke for interment and the funeral took place Monday. Rev. C. Ladner conducted the burial services. Wreaths were sent by Mr. and Mrs. Nettie, Mrs. B. C. Clark, Mrs. D. M. Rae, Cora Lillian and Tommy Lee, Mr. and Mrs. C. E. Shaw, Mr. and Mrs. Floyd, Mr. and Mrs. Bradley, Messrs Howson, Durridge, Kennedy and Doyle acted as pallbearers.

This is the second death in the family within a month and Mr. and Mrs. Johnson have the sympathy of the community in their affliction.

C. E. SHAW

Intends Returning to England.

C. E. Shaw, the popular city clerk of Revelstoke, will probably leave here about the end of September to take up his home in England. During his residence in Revelstoke Mr. Shaw has always taken an active interest in every movement calculated to advance the best interests of the city. He has been an ideal official as city clerk and city treasurer and has done good service as secretary to the Board of Trade. His departure will be a loss to Revelstoke, but as the move is to Mr. Shaw's advantage, his many friends will wish him all success in returning to again make his home in the mother country.

S. S. REVELSTOKE.

Passenger List.

The following were the passengers on Monday's trip: North—Jas. Anderson, J. Lawson, South—Ed McGinnis, W. Charlton, Frank Hardy, Geo. Talorine.

GRIP AND PASSWORD.

The following are the officers installed by Selkirk Lodge for ensuing half year: J. Outfield, N. G.; S. H. Manning, V. G.; J. Matthe, sec.; J. O'Brien, treas.; P. Donaldson, warden; A. E. Kincaid, conductor; J. McGinnis, L. G.; J. McLeod, R. S.; X. G.; T. Bain, R. S. to V. G.; H. Seigfried, L. S. to V. G.

At the meeting of Gold Range Lodge on Wednesday night the following officers were installed for ensuing half year: C. L. H. A. Brown, V. G.; B. Vancouver, Prop.; R. Lloyd, L. G.; A. George, G. G.; H. Howie, M. and V. W. Farrell, M. and P. H. Cook, M. of V. L. Burridge, K. and R., and S. W. Whispe.

At the meeting of Kootenay Lodge A. and V. M. on Monday night the officers of D. G. M. were conferred on P. M. Bro. Fred Fraser, R. W. Bro. C. A. Prosser being conducting officer.

RAILROAD WATCHES.

Watches and Elgin, Hamilton and Hamilton, 17 and 21 Jewels, Vanguard, Elgin, Marine, Grand, St. Fisher, Time, C. P. R. Special, E. W. Raymond, Appleton, Through, 151 Special. Sold by price.

LYTTLETON BROS.

Watch Specialists, Vancouver, B. C.

QUEENS HOTEL

COMAPLIX Proprietor.

Best brands of Wines, Liquors and Cigars. Travellers to Fish Creek will find excellent accommodation at this Hotel.

RAIL AND STEAMER

A Well Regulated Jewelry Store

Locomotive Inspector R. Evans has charge of the C. P. R. shops in Mr. Temple's absence. Vice-President McNeil and Traffic Manager Kerr are on their western tour of the C. P. R. The C. P. R. chateau Emerald Lake has been completed and will be opened to tourists as soon as the furniture arrives. The C. P. R. Telegraphs have let a contract for poles and construction of telegraph line between Lardcan and Trout Lake.

J. Hamilton chief dispatcher, is to be appointed station agent at Nelson and E. W. Drew, present agent, will be removed to Rossland.

Brokers were surprised to find C. P. R. earnings showing a falling off of \$7,000 last week as compared with same period of previous year.

Superintendent Marpole and Engineer Cambie passed through on Tuesday to Nelson to meet General Manager McNeil on his annual tour of inspection. On Wednesday the party went to Gerard and Trout Lake and are expected in Revelstoke about Monday.

When the troubles of Lardcan merchants in regard to delay of shipment over the new Lardcan railway came to the notice of Super. Dawie, that gentleman promptly took steps to remedy the trouble and succeeded in doing so to the satisfaction of all concerned.

On Monday C. H. Temple, foreman of the C. P. R. shops at Revelstoke, left for a trip east. He was accompanied by Mrs. and Miss Temple. Mr. Temple has been in the service of the company for 16 years, and has been in charge of the locomotive department