The city was now supplied from Little River by the two cast iron mains, the 24-inch and the old 12-inch.

By the placing of the new supply main the service was much improved, but as the inside distribution was extended and consumption gradually increased, it was not long before the friction losses demanded that additional supply mains be considered.

With a view to increasing pressure and also to duplicating the large pipe running into the city, so that in case of accident to one pipe the city would not be wholly without water, it was decided to place another 24-inch supply main, which work was completed in 1874.

The Little River reservoir, assisted at times by Lake Latimer, while apparently being capable of furnishing an abundant supply, was not at a sufficiently high elevation to supply water to the summits of the city. The inconveniences arising from this low elevation of supply head were aggravated during the winter by water being too freely used in the lower levels, to keep services from freezing. The number of consumers kept increasing from year to year and such unwarranted quantities of water were wasted that each year marked a decrease in the pressure head through the entire city. This lack of pressure demanded that either a pumping plant be installed or that the supply mains be continued to some other source of sufficient elevation to assure adequate pressure over the entire city.

For a time a portion of the distribution on the higher levels was isolated and a water turbine-driven pump installed at Silver Falls. Within certain limits this pump was satisfactory, but its capacity was too small to allow for fire or any large demand and at these times it "raced." This condition might have been relieved by having it always pump against a definite head.

When the question of a gravity supply first came up it was recognized that Loch Lomond would be the ultimate source of supply, as the elevation, volume, softness and purities of the waters presented strong arguments in its favor and when the scheme of supply from Little River was adopted, it was realized that this was only a unit of a future larger scheme. The drainage area of the Little River basin is about 9,500 acres or about one-third the drainage of Loch Lomond.

In the year 1882 Gilbert Murdoch presented a very comprehensive report to the commissioners, discussing at considerable length the proposed schemes for improving the water supply at that time. Mr. Murdoch practically accepted Loch Lomond as the ultimate source, his report being a consideration of the several routes of reaching this lake. The routes considered were: (1) By way of Lake Douglas; (2) by way of Lake Donaldson; (3) by way of Lake Latimer. In summing up, Mr. Murdoch expressed the opinion that the Lake Latimer route was the superior one and this route was ultimately adopted.

Loch Lomond is situated about 10½ miles from the city in approximately the same direction as Little River reservoir. Surface elevation about 300 feet above city high-water datum, and area of Lower, Middle and Upper Loch Lomonds, which are all connected, about 2,480 acres. This may be further increased by converting the principal feeders (Lakes Otter, Terrio, Godsoe and Chambers) into storage reservoirs, as could easily be done were such required.

The drainage area comprises about 27,700 acres. The water is soft and of a very superior quality.

Lake Latimer is situated about $7\frac{1}{3}$ miles from the city in a line with the Little River supply, has a surface area of about 210 acres, great depth, and an elevation about 300 feet above city high-water datum. The drainage

area is only about 550 acres, much of its water originating from springs and the capacity of the lake is not sufficient to supply the requirements of the city.

Lake Douglas is between Little River reservoir and Loch Lomond, being almost directly north of Lake Latimer.

Lake Donaldson is between Lake Latimer and Loch Lomond, being northwest of the present concrete dam across the Mispec River, the outlet of Loch Lomond.

As the demand for a better service on the higher levels became more insistent, Snow and Barbour, consulting engineers of Boston, were called in to make a report. In general, their report was a confirmation of reports that William Murdoch had made in previous years. The recommendations as given by Snow and Barbour were adopted and they were authorized to prepare plans and specifications for a water supply extension.

In 1905 these plans and specifications were accepted, tenders for construction awarded and water has been used from this source since 1906.

A concrete dam was built across the Mispec River, the outlet of Loch Lomond, backing the water up and forming what is now known as Lake Robertson. From the dam a 48-inch horse-shoe shaped reinforced concrete conduit extends a distance of 6,916 feet and empties into Lake Latimer, keeping Lake Latimer at approximately the normal level of 298 feet above city high-water datum. A 39-inch horse-shoe shaped reinforced concrete conduit conveys the water from Lake Latimer to an open chamber at Finney's Hill, a distance of 7,480 feet. The level of water in this chamber is the head from which computations for pressures in the city are made. From this point the elevation of the ground drops rather abruptly and the water is carried through a 33-inch diameter wood-stave pipe, a distance of 9,880 feet, and the wood-stave pipe is connected at the Little River gate-house through 400 feet of 36-inch cast iron pipe with the three cast iron supply mains leading into the city, a distance of 23,000 feet.

The total value of waterworks of the city is nearly two and a half million dollars. This includes the two supplies.

THE CREOSOTE INDUSTRY.

During the past year, according to the Victoria, B.C., Daily Colonist, a shipment of 160,000 creosoted railway ties was made by the Dominion Creosote Company of Vancouver, to India, for the Bengal and Northwestern Railway Company. The Indian railways use annually large quantities of sleepers which have been supplied from Australia, but as Australian timber is becoming scarcer and prices are advancing, it is expected that the British Columbia product will come into more demand.

Although the preservative treatment of wood industry in British Columbia was established only five years ago, it has had a steady growth, particularly in export markets. At present only one plant is in operation, that of the Dominion Creosote Co., but a second is about to be established. The former covers twenty-two acres on the north arm of the Fraser River with river frontage of 1,300 feet. The company operates a sawmill with daily production of 55,000 to 60,000 feet per ten hours; a paving block mill with capacity of 1,600 yards of block paving a day and a creosoting plant with two retorts one hundred feet long.

The projected plant is that of the Vancouver Creosoting Co. This company has secured a site with five hundred feet of waterfront at North Vancouver, and expects to build a plant at a cost of \$150,000 by April next.

Including the Dominion Creosote Co., there are four producing plants in Canada, the others being the Dominion Tar and Chemical Co., of Sydney and Winnipeg; the Canada Creosoting Co., Trenton, and Alex. Bruce & Co., Fort Frances.