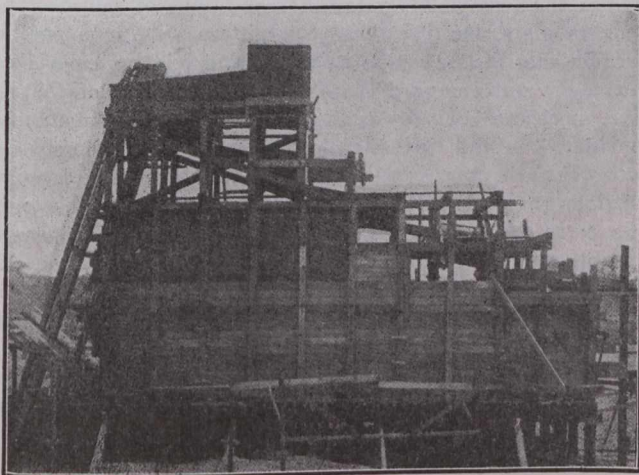


some years. Eventually, however, the construction of this tunnel will afford the development of 75,000 horse-power. At the point on the illustration marked "Power House No. 1" is seen a drop of 1,425 feet into Moccasin Creek, where 70,500 horse-power is developed. In addition to this it is proposed to construct a canal 8 ft. in diameter from the Hetch Hetchy Reservoir to the reservoir site in Cherry Valley, passing beneath the Lake Eleanor Reservoir site, with intake shafts at Cherry Creek and Lake Eleanor for the purpose of diverting their waters into the Hetch Hetchy reservoir. Only temporary dams are to be constructed at these two latter points, reserving for future demands a more permanent and substantial form of construction. The drop, as shown on the profile of this tunnel work, allows an additional development of power to the extent of 12,500 horse-power. Hence, in all, there is a total possible power development of 157,500. The entire project as proposed for immediate construction is estimated to cost \$38,500,000. Mr. Freeman makes note of the fact that standing water tends to purify, and hence the purest supply of water is to be expected from this high Sierra construction. Indeed, he has stated in public before the Commonwealth Club, of San Francisco, that in comparing the softness of this supply to the softness of supply that might be developed from the Sacramento rivers, the saving in soap alone to the community about the Bay would eventually pay the interest on a \$3,000,000 investment. To insure sanitary perfection and non-corrosion of the steel material in the pipe line, the pipe conduit is to be lined with concrete throughout its entire length.

#### A GRAVEL WASHING PLANT.

The gravel washing plant of the T. R. Nickson Company, which is shown in the illustration, is located within the business district of Vancouver, B.C., on the water front. Unwashed gravel is brought to the plant on barges, is washed and sized here, and delivered by teams as required in various parts of the city.



A Gravel Washing Plant at Vancouver, B.C.

As all towing is paid for by the yard, it is cheaper to bring in the raw material on barges than the sized, as in the former case, the fines fill the voids between the larger stones, allowing the unsized gravel to occupy about 20 per cent. less space and it is on this account that the plant is located within the city.

Gravel is unloaded from the barges by means of a grab bucket delivering into a receiving hopper at the plant. This hopper feeds an elevator, 56 feet centres, and equipped with 18 x 9 x 12-inch continuous buckets. The discharge from

this elevator passes into a double chute feeding two rows of 54 inch Gilbert washing screens. These screens are all of the improved type, being provided with removable inner wearing skirts; these skirts increase the capacity of the screens and practically double the service of the outer screen plates. The typical arrangement of the screens in each row is adhered to, each screen successively separating the larger sizes into the bins and passing the fines and the water to the next screen. The last screens each deliver to a single discharge settling tank for separating the sand from the clay and loam in the water.

The first screens reject all the stone over two inches back to a jaw crusher below. This crusher delivers to a crusher elevator, 40 feet centres, with 9 x 9 x 9-inch continuous buckets, discharging to a small revolving screen. From here, the stone is passed to three bins, which supply the trade with crushed gravel.

All bins are equipped with swinging cut-off valves, which are operated from the wagons. These valves are balanced so as to be self-closing and they are consequently very easy to operate. They are entirely of cast iron, giving a very simple, rugged construction that can not get out of order and that can not choke up or spill.

This plant was designed and equipped by the Stephens-Adamson Manufacturing Company, of Aurora, Illinois.

#### CAUSE OF THE DESTRUCTION OF THE CANADIAN TAMARACK.

The almost total destruction of the tamarack, or larch, which took place throughout Eastern Canada almost thirty years ago, was caused by an insect, the Larch Sawfly. It appeared again about eight years ago, and in its spread westward it is repeating its former devastation on the younger tamaracks.

To all who are interested in our forests the appearance of a comprehensive account of this insect entitled "The Large Larch Sawfly, with an account of its Parasites, other Natural Enemies and Means of Control," by the Dominion entomologist, Dr. C. Gordon Hewitt, will be welcome. This has been published by the Dominion Department of Agriculture as Entomological Bulletin No. 5 and Bulletin No. 10 of the Second Series of the Experimental Farms Bulletins, and may be had free, on application to the Publications Branch, Department of Agriculture, Ottawa.

Dr. Hewitt has studied the life-history, habits and means of control of this injurious sawfly, both in England and North America. In England, it was found that the natural enemies, especially parasitic insects, effectively gained control of outbreaks of the insect. Other natural enemies were mice and birds and a system of bird encouragement was started on a large scale. The devastating spread of the sawfly in North America was due to the comparative absence of the natural means of control. Several important species of parasites new to science were discovered and have been studied and described. To increase the number of natural enemies of the sawfly, attempts are being made to introduce and establish in Canada parasites which were discovered in England and which appeared to control the pest there. An account of these interesting experiments and of the methods devised to encourage the birds and other means of control are described in this bulletin which consists of forty-two pages and contains twenty-six figures, including a colored plate. The publication of this bulletin is indicative of the attention which the Division of Entomology is now devoting to the insect pests of our forests which are responsible for incalculable loss each year.