

WOOD PULP DEPARTMENT

VALUABLE MANUFACTURING SITE.

The attention now centred in water powers as a means of developing electricity, and the increasing adaptability of the latter for commercial purposes, justifies the following description and illustrations of the Chaudiere Falls. These falls are situated on the Chaudiere river, about two miles from its junction with the St. Lawrence river, six miles above the city of Quebec, and are said to offer excellent facilities for manufacturing pulp, etc. It is the only water power of any size now available on the south shore of the St. Lawrence in that vicinity, and will probably be utilized at an early date for supplying electric light and power to the adjacent municipalities.

The site is especially suitable for a pulp or paper manufactory, being centrally situated as regards both railway and water communication, and supplies of wood can be obtained in unlimited quantities at very low prices.

At the request of Messrs. Hall & Price, of Quebec, a report on the power of the river at the falls was made by Mr. W. A. Ashe, C.E., of Quebec. The report states that from the cross-section of the river, at the point A-B on the accompanying "plan of a part of the Chaudiere river," the river was discharging 1,365 cubic feet per second, or 5,118,750 foot pounds per minute, or the equivalent of 155.1 h. p.

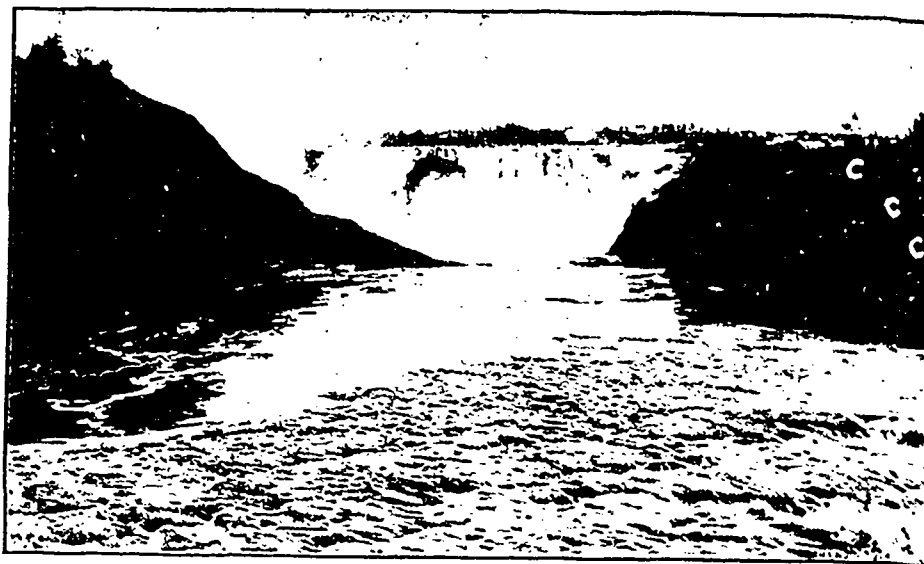
Mr. Ashe further says: "Ninety-four (94) feet of head could be obtained between the point marked "high water level" and the crest of the falls, and it is this head that I should recommend the use of, when the fullest power is required of

pendent on to furnish at the lowest stage of the river would be 4,750 h. p.

The head which I should recommend on account of convenience in situation, being some 350 feet nearer the falls than in the last case, would be at the point "C" (see plan of Chaudiere Falls). Here we should obtain a head of 79 feet, and the powers which we should obtain would be as follows: 12,253 gross, or 7,064 effective horse power. So that, assuming half this amount as being absolutely safe to count

the greater volume of water passing through the Chaudiere, not at any particular time, but at the lowest stages of either river.

The latest turbines being guaranteed to reproduce 80 per cent. of the gross horse power, and taking the gross horse power as calculated by Mr. Ashe as 12,253 at 79 feet head, we find the actual effective horse power to be 9,802; and taking one-half of this as he does for the lowest possible stages of the river, we get 4,901 effective h. p. This valuable water power is



CHAUDIERE FALLS—LOOKING SOUTH.

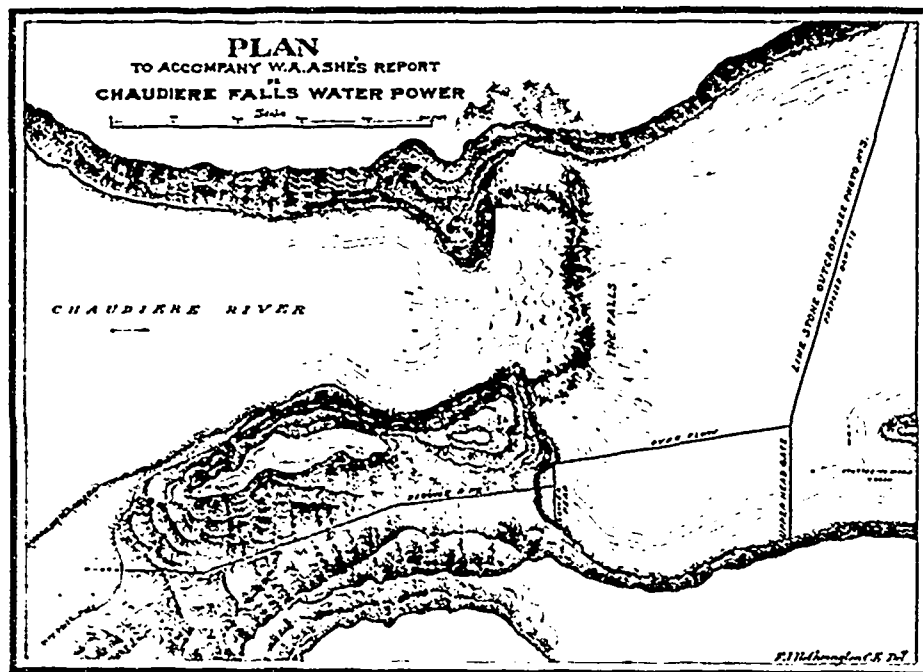
upon for the lowest possible stage of the river, we should obtain 3,980 effective horse power."

There is a natural trench through which the conducting pipe could be laid from the level of the top of the falls to the point "C," and at the lower point where the "lower head" with the intake to the conducting pipe would be made the river bed between the island and main land is only about 100 feet wide, and could be easily

owned by Mr. M. Price, of Quebec, and is in the market for sale.

FREEDING PULP-WOOD OF KNOTS.

A machine has been patented for taking the knots and foreign substances out of wood for sulphite pulp, says The Tradesman, of Chattanooga. The freer the wood is from knots and foreign matter the whiter and better quality of pulp it makes. The old method was to bore the knots out by a hand augur, but many of the knots ran cross-wise, and could be only partially removed. Hand picking of the knots was also resorted to after the wood had been chipped, girls and women being mostly employed for this purpose. Very few mills in America could afford the enormous expense of hand picking, but in Europe, where women and girls can be employed for a few cents a day, this laborious work was adopted. In consequence the European manufacturers have been able to furnish American markets with a much cleaner and better grade of pulp than is manufactured in this country. But the new machine will clean the chips better than 100 women and girls can do it in the same time. The method is simple and costs little. The wood is prepared in the usual manner by passing the blocks through the chipper. The chips are then taken up by a blower and discharged against a steel plate, which disintegrates them, after which they are passed through the machine which cleans out the knots. This is a tank or vat filled with water. After entering the water, the chips are submerged by machinery and taken to a carrier. The clean wood chips suitable for paper float and are taken out, while the knots and resinous matter sink and are carried off from the bottom of the tank. The claim of the patent is for an improved method of simultaneously moistening and assorting the clear wood chips for cooking in the digester.



the falls. With this head and the flow we have determined, we should obtain 14,610 gross horse power, and, assuming the effective horse power as being 65 per cent. of this (really 10 per cent. less than we should get from a properly constructed turbine), this head would give us 9,407 effective horse power; and, as we have decided to only count on half these amounts, the greatest horse power that these falls can be certainly de-

dammed, having an outcrop of limestone which would form an excellent foundation, while the overflow would discharge immediately into the falls without further expense.

Concluding his report, Mr. Ashe states that the Chaudiere Falls as a power is superior in every sense to that of the Falls of Montmorency. Great as is the total available head of the Montmorency river, this is more than compensated by