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CONTENTS OF THIS NUMBER:

THE HAMILTON WATER POWER AND CANAL SCHEME.

MR. GOLDING'S IDEAS MORE IN DETAIL.

In the last number of THE CANADIAN ENGINEER, Wm. Golding, C.E., of New Orleans, La., and formerly of Hamilton, gave an outline of the scheme for bringing water from Lake Erie to Hamilton for water power and navigation purposes In the same number J. H. Killey, of Hamilton, took up the subject and gave facts to show the impracticability of the enterprise. Mr. Golding, who is an engineer and inventor of more than local repute in Louisiana, now sends us further details of his scheme, with two diagrams showing the route and plan of works. In support of his case Mr. Golding says:

"When all of the machinery of Hamilton is being run by electricity, the required water supply will be greatly diminished; and since the power to operate the pumps now in use may be furnished from the electric plant, the matter of river water cuts no figure. The bed of the Grand River presents no difficulties whatever, as it will be only necessary to deepen the channel, the river being of an average width of 1,000 feet. The bed of the river at Caledonia is very little, if any, higher than the surface of Lake Erie, therefore the deepening of the channel will be a very small affair compared to the result; the cut from Caledonia to Hamilton will nowhere exceed 50 feet in depth and will not average over 30 feet.

"I have thoroughly investigated the conditions of Grand River for the purpose suggested, and am the more convinced that it is the true way of bringing water from Lake Erie to Hamilton; of course the distance from Caledonia to Hamilton could be tunnelled, but as a tunnel would be of no service for navigation, I favor the open cut, for the reason that to bring shipments from Lake Erie and for the purpose o distributing the manufactured articles and for assembling raw materials, the importance of a canal for navigation would be very great."

Louis A. Congdon, deputy reeve of Dunnville, Ont., writes Mr. Golding on the subject as follows:

"The width of the Grand River, from Dunnville to Lake Erie, is about 1,000 feet; depth, say 18 to 20 feet; distance by river, a winding course, 4½ miles, through a low-lying country. No rock in the channel or shores; mud bottom, easily dredged.

"From Dunnville to Cayuga, 17 miles, for three or four miles above the dam at this point the river is say three-quarters of a mile in width; depth average, 15 feet; balance of course, 300 to 600 feet in width; depth gradually lessening to 7 feet at Cayuga; clay banks and bottom.

"From Cayuga to Caledonia, 10 miles, width 300 to 600 feet; shallow, with several small rapids; rock bottom in many places; high banks.

"Current through its general course slow, except during spring and fall freshets, when the volume of water is larger, but am unable to give you any data as to the quantity of water passing through the river."

Mr. Golding goes on to say that the body of the Grand River in the part affected by this scheme is much greater than its present flow requires; that as it is not higher than Lake Erie, the cutting of a reverse channel in its deepest part to the point where the canal would tap it would be a comparatively small matter; that the use of the river for all purposes for which it is now used would not be impaired, and that this reverse channel could be made wide or narrow according to whether it is required for navigation purposes or not. He finally calls attention to the fact that a similar canal is now actually being cut from Cleveland, leading into the Ohio River—a canal which may affect the level of Lake Erie.

The cost of these canals and tail-races, as illustrated and described, I have estimated to be within $3,000,000 all told. To which add 100 turbines of 1,000 h.p. each, set up in position at the cost of say $2,000 each; total, $3,200,000. The cost of a steam plant at same station of same power for same service would be as follows:—100,000 h.p. of boilers set up complete with brick work and chimneys, $16 per h.p, will be $1,600,000; 100,000 h.p. of steam engine, 1,000 h.p. each, at $16 per h.p., set up on foundations and piped complete, $1,600,000. Total, $3,200,000. Cost of coal for same at 3 lbs. per hour, 3,600 tons per day, worth $10,000, $3,650,000 per year. Assuming that all the other expenses are the same, and the cost of maintaining the canal and the cost of maintaining the boilers and engines, and the cost of attendance on both, we have a clear margin of gain in favor of the water-power plant over a steam plant of $3,650,000 per year. The steam plant would require to be renewed every ten years, while the water-power plant would continue indefinitely.

In a letter received at a later date, Mr. Golding says:—

I have read the paper of Mr. J. H. Killey, of Ham-