

to the cylinder. The cylinder shall then be completely filled with creosote, and the pressure applied so that such additional creosote may be forced into the cylinder from the measuring tank as is required. During this operation the temperature of the creosote shall not be less than 160° F. nor more than 180° F. The creosote shall then be returned from the cylinder to the measuring tank and a vacuum of not less than 22 ins. applied to the cylinder and maintained for at least 30 minutes or until such time as the exterior surface of the block is free from drippage. The remaining creosote in the cylinder shall then be returned to the measuring tank and the net amount of creosote retained by the blocks determined.

17. Blocks for pavements having extremely heavy traffic, where 15 years' life is expected, shall be treated with 15 lb. of creosote per cubic foot. Where a longer life is expected from the blocks, 16 to 18 lb. of creosote per cubic foot is recommended.

18. After the creosote pressure treatment, the spring wood shall show a thorough penetration. In order to accomplish this, the pressure should be gradually applied and then maintained for a reasonable length of time, depending on the condition of the wood.

19. The net amount of creosote retained by the blocks may be either 10 per cent. under or 10 per cent. over that specified.

**Inspection and Rejection.**—20. The blocks, before treatment, shall be inspected as they are leaving the block machine, and all blocks that do not meet the specifications will be rejected.

## POLLUTION OF BOUNDARY WATERS.

The International Joint Commission held public hearings at Buffalo June 21st and at Detroit June 26th for the purpose of receiving evidence concerning Dr. Phelps' report re pollution of boundary waters.

Very little new information was brought out at Buffalo. That city is now engaged in an investigation of Dr. Phelps' report and of the data concerning Buffalo which has been secured by the commission, and will report on their findings to the commission at a later date. The findings of the commissioners will not be given out for several months, pending the completion of Buffalo's investigation.

At Detroit the city officials appeared well pleased with Dr. Phelps' work and are willing to co-operate in every way possible to carry out whatever the International Joint Commission may find to be in the best interest of the people residing on both sides of the border. T. Chalkley Hatton, chief engineer of the sewage commission of Milwaukee, appeared before the commissioners at Detroit and gave an interesting statement regarding the results of activated sludge experiments. There is no doubt but that this method of sewage disposal will be given careful consideration by the commission in preparing their findings.

The Canadian municipalities in the Windsor district are taking the preliminary steps toward an organization which will put into effect the requirements of the commission. The Essex Border Public Utilities Commission has been organized with William Woollatt, mayor of Ojibway, as chairman, and J. E. Doane, of Walkerville, secretary. This utilities commission represents the six Canadian municipalities that are interested. Appointment of a board of engineers was discussed, with the intention of preparing plans for joint sewerage and water systems.

## LAKE OF THE WOODS LEVELS AND OUTFLOW.

(Continued from page 5.)

prevailing to be "very unusual," and stated it was probably the result of control of the outflow from the lake. He further stated:—

"It would be perfectly possible by proper works at the outlet to maintain a good depth of water in the Lake of the Woods at all times. In this particular, however, the interests of navigation and those of power development are directly opposed, the one requiring constant level and very variable discharge, and the other a constant discharge with greatly varying fluctuations in lake level. It is my belief that the Canadian government has decided for the latter alternative; intends to develop power at the outlet, and has made its channel (referring to the mouth of Rainy River) sufficiently deep to offset the bad effects of fluctuations of lake level. It is certainly to be recommended that this matter be brought to the attention of the International Joint Commission."

As an outgrowth of this recommendation, the three questions contained in the official reference previously quoted, were submitted to the International Joint Commission, under the provisions of Article IX. of the treaty of January 11th, 1909, between Great Britain and the United States.

Everything in the nature of final conclusions or recommendations has been purposely omitted from the consulting engineers' report, in order to allow the International Joint Commission the fullest latitude in preparing their reply to the questions of the official reference. The purpose of this is evident; also no final recommendations would be warranted until all parties concerned had been heard by the commission. But the parties could not present their cases until they had received the commission's data as assembled and analyzed by the commission's engineers. This was why the Advance Sheets of the report were printed.

[NOTE.—This review of the consulting engineers' report will be continued in further articles. In next week's issue the subjects of reservoir control in general and regulation of outflow from Rainy Lake will be discussed.—EDITOR.]

The Bradford, England, tramways committee, has under consideration a scheme which it believes will open up a new era in local transportation. It is proposed to carry merchandise of every description and weight on the street railways. An experimental vehicle has been built at the Bradford tramway works, and its trials have been declared successful. It is run on the trackless trolley principle, but an important additional feature is that it is fitted with accumulators which will take their supply of current from the overhead wires, and will enable the vehicle to leave the tramway route at any point in order to reach its destination and deliver goods. These vehicles are to be run between the ordinary passenger cars.

Japan is about to widen its railway gauge at a cost of \$150,000,000. The original gauge was three feet six inches. The railways are operated by the State in great part. The reconstruction will take a period of years, and so many millions will be allotted each year. Japan is going in for a heroic railway policy. There are parts of the country still to be served by railway lines, but the Government is showing great energy in supplying these as fast as possible. Japan builds her own railway systems now and supplies her own equipment—largely at any rate. In this matter of railways Japan has adopted every Western accommodation or improvement, while she has given thought to betterments of her own devising.