

trolled. It is greater in extent than all the other lakes in the Ottawa basin put together, and capable, owing to the character of the country, of being raised, not 4 or 5 feet, but 15 or 20 feet.

A stream 100 feet wide and 3 feet deep, running 1 foot per second, or two-thirds of a mile an hour, would fill 1 square mile a foot deep in 24 hours: in other words, 322 c.f.s. will fill or empty a square mile in one day. Now, if a reservoir is 100 square miles in extent and a layer 20 feet in depth is stored on it, there would be 2,000 square mile-feet of storage. This is just about the capacity of each of the three lakes, Timiskaming, Kipawa and Quinze-Expanse, so that, altogether, their storage would amount to 6,000 square miles 1 foot deep. It would take a flow of 18,000 c.f.s. to empty the three reservoirs in 100 days, or a flow of 12,000 c.f.s. to empty them in 150 days—the average low-water period of the river. If we encroach upon the spring flood and allow only a normal flow to pass, these three great reservoirs would be filled up with a reserve supply to be fed out during November, December, January, February and March, and would, thereby, double the present insufficient low-water flow.

This conservation is necessary, not only to augment the winter flow, but also to restrain the flood and prevent unduly strong currents in the navigation scheme. The scheme is, briefly, to dress the river up in convenient reaches by large rock-fill dams provided with sluice openings to pass the flow from basin to basin, locks being provided at each dam. It would be possible to build the dams required at any point as soon as the reservoirs are completed, and offer, in advance of a navigation project, sites for power development with a guaranteed steadiness of flow, and a constant head without ice difficulties.

The river being thus arranged by dams, power would be developed on a general scheme, which could be enlarged to utilize the whole flow at each point in years to come, when transmission may convey to unheard-of distances, and when large blocks of power will be required for heating, for nitrogen fixation, for smelting and for other electro-chemical processes.

The key note of conservation is not only to prevent waste, but also to encourage useful development. Our winters furnish snow, that is, water in the best form for storage, and it is following the trend of nature to create reservoirs for its conservation. The ultimate result will be that the territory from Labrador to Fort William must become a great power centre, and, by improved transmission, distribute power to great distances. Indeed, by the end of the twentieth century, the Ottawa valley may be the power heart of the world and the centre of a delightful district unsullied by coal smoke and beautified by reservoirs of unrivalled natural beauty.