

The great tributary of the St. Lawrence, the Ottawa river furnishes domestic supplies to various towns from New Liskeard to Montreal, a distance of 400 miles. Haileybury and New Liskeard pump by steam from lake Timiskaming; Pembroke pumps by steam from Alouette lake; Ottawa has its supply led through two miles of steel pipes laid in the bottom of the river and pumped direct throughout the city by water-power.

IRRIGATION—Notwithstanding the fact that the farm districts of Ontario and Quebec suffer annually, from drought during the summer, yet no attempt is made to irrigate, although many suitable creeks are to be found. This is remarkable because the whole population is accustomed to building small dams for lumbering and milling purposes and also to digging ditches for drainage purposes. It is a natural step to conduct water in ditches from a dam above, for use as a fertilizer, as well as for a source of moisture.

DRAINAGE—If the people of central Canada do not resort to irrigation, they undertake extensive drainage schemes. Kent and Essex counties in Ontario are remarkable in this regard, and other districts are constantly extending the area of tillable land. This is beginning to have an effect upon the rivers. Swamps are reservoirs, just as lakes are reservoirs, in which the upland drainage is collected to seep slowly through the muck and earth toward streams and rivers. When the drainage is led past these valuable reservoirs by free flow in ditches, it sweeps forward without restraint, and the rivers receive a great bulk of water in a short time, causing the annual floods that scourge many districts. Again, of the water that falls from the clouds, 50% is "fly-off," or evaporation, 33% is "run-off," or stream flow, and the remainder, 17%, is "cut-off," or stored in the ground. This ground storage serves to keep the land moist and also to maintain the stream flow during the late summer until the autumn rains restore the supply. It will be seen, therefore, what an important part the swamps play in the regulation of our streams, and I submit that they should be jealously guarded as reservoir and a forest reserves throughout the whole Dominion.

NAVIGATION—The Great lakes and the St. Lawrence afford the greatest inland navigation route in the world. Jacques Cartier and Champlain could reach Montreal only in row boats, but, since 1850, an immense amount of dredging has been done in the St. Lawrence, so that, to-day, ocean liners of 30 feet draft freely ascend to Montreal. West of Montreal, a great system of canals has been con-