

menced. The Ottawa watershed is very similar to those of the north slope of the St. Lawrence basin, and a detailed description is of interest because the Ottawa is typical of this class of river.

The Ottawa basin is 56,000 square miles in area. Ten thousand of this lies south of the river, and is drained by the Petawawa, Bonnechere, Madawaska, Mississippi, Rideau and South Nation rivers. Five thousand square miles drain into the main stream through insignificant tributaries. Forty thousand square miles lie north of the river. The Dumoine, Black, Coulange, Carleton, Lievre and Rouge rivers drain 20,000 square miles of this, and the other 20,000 square miles, which includes the drainage area above Mattawa, forms the upper basin.

This upper Ottawa basin contains Grand lake Victoria, with an area of 40 square miles, and Quinze-Expanse, having an area of 100 square miles. The area draining into Grand lake Victoria, 1,500 square miles, contains twenty lakes aggregating 300 square miles of surface and several large rivers, the Kamiskania, Kapatachurin and Shoshokwan. At the outlet of Quinze-Expanse lake the watershed area has increased to 10,000 square miles, and the Kinojevis and Opasatika systems of lakes and rivers have increased the high-water flow from 25,000 c.f.s. to 80,000 c.f.s.

This stream now enters the north end of lake Timiskaming, having, in the intervening stretch of 15 miles, descended 300 feet over rocky barriers that present wonderful visions of water-power. All this power has, virtually, been disposed of by lease, for the remainder of this century. Lake Timiskaming extends 60 miles south from New Liskeard to Timiskaming wharf. Between Timiskaming wharf and Mattawa the river is broken by the Long Sault and Mattawa rapids with a fall of 40 feet each. To the west of lake Timiskaming is lake Timagami, part of which flows in *via* the Montreal river, and to the east of Timiskaming is lake Kapawa, draining a territory of 2,300 square miles. The latter has a surface of 100 square miles and is nearly 300 feet higher than Timiskaming. The whole basin is 20,000 sq. miles in area, and the run-off at Mattawa is 110,000 c.f.s. during floods, but dwindles down, to about 10,000 c.f.s. or less during the low-water period.

The regimen of a river, that is, the discharge at high water, at low water, and at intermediate stages, is studied by keeping a daily record of its surface at several points—lake expansions if possible—and then metering the flow at high water, medium water and low water. As the lake rises, the discharge increases in a regular ratio, and, as it falls, the discharge diminishes at a similar rate.