

populations and distances above the intake at Montreal are as follows :

Kingston.....	20,000	185 Miles.
Gananoque.....	3,600	150
*Clayton.....	4,400	430
*Prescott.....	2,920	120
Ogdensburg.....	11,062	120
Cornwall.....	6,085	70
*Valleyfield.....	3,315	35
*Beauharnois.....	1,500	20

Towns marked \* are on the south side of the river.

The river averages fully one to two miles in breadth during the whole of its course, and expands into Lake St. Louis, 4 to 7 miles wide, just above the intake, and into Lake St. Francis, 8 miles wide, 35 miles above. There are rapids at points 20, 25, 30, 35, and 80 miles above the intake.

The St. Lawrence water is clear and light green in colour, and is fairly hard.\*

In both these rivers the temperature falls to the freezing point in winter, even at points near the bed of the stream.

### I. MONTHLY EXAMINATION OF WATER SUPPLY.

*Microscopical Analysis.*—The method employed was, at first, that of simply allowing the sediment to settle in a conical glass, and by means of a pipette placing a little of it under a microscope. This gives a general idea of the constituents of the sediment, but affords no information as to the quantity in which the different organisms are present. In the Sedgwick-Rafter method (which unfortunately only became known to me after the analysis was completed) a given

\* The following table compiled from Dr. Rutton's analyses shows the average chemical composition of Ottawa and St. Lawrence water (quantities in part per million) :

	Color. Lovibond scale.			Solids.			Nitrogenous Matter.			Oxygen con- sumed on 80°F.		Hardness (as Cal- cium Carbonate.)		Chloride (as Chlorine.)
	Red.	Yellow.	Blue.	Total.	Loss on ignition.	Ash.	Free Ammonia.	Albumenoid Ammonia.	Nitrates.					
										15 min.	4 hrs.			
Ottawa. ....	1.7	5.4	0.01	52	24	28	0.02	0.12	0.03	3.7	6.1	55	1.5	
St. Lawrence.	0.1	1.0	0.47	112	60	74	0.01	0.09	0.09	0.5	1.2	102	3.5	