The above table is calculated from Hughe's English formula—$H = \frac{2.3\ V^2}{D}$

Where H = Head per mile in feet necessary to overcome friction.

Where V = Velocity in feet per second.

Where D = Diameter of pipe in feet.

This formula comes nearer perhaps to practical results than the more elaborate ones of Prony or Weisback, based to a large extent on experimental pipes, always more perfect than those laid for actual service.

Estimate of cost for enlarging the Distribution.

13,700 feet of old 12 inch pipe, relaid, at $2 50,		$34,250 00
1,500 feet of new 12 inch pipe, at $2 50,		2,250 00
15,000 feet of new 9 inch pipe, at $1 50,		22,500 00
19,000 feet of new 6 inch pipe, at $1 00,		19,000 00
6,500 feet of old 6 inch pipe, relaid, at 40c.		2,600 00
16,000 feet of old 3 inch pipe, relaid, at 35c.		5,600 00
		$86,200 00
10 12-inch stop cocks, at $75,	$750 00	
30 9-inch do at $60,	1,800 00	
70 6-inch do at $35,	2,450 00	
107 fire-plugs and hydrants, at $30,	3,210 00	
		8,210 00
Miscellaneous and contingent expenses,		5,000 00
		$99,410 00

Note.—In place of relaying the 3 inch pipe, to lay down new 4 inch, would increase the cost about $7500.

4th. High Service.

The following plans have been suggested for supplying the upper part of the city, each based on furnishing 600,000 gallons per day.

1st. To bring water from Ragged Lake.

2nd. To pump water by steam power from near St. Andrew's Cross into a Reservoir on Shaffroth's Hill.

1st. From Ragged Lake.

Ragged Lake lies 2¼ miles westerly from the gate-house at Chain Lakes and contains about 100 acres. It is elevated 325¼ feet above tide. Its surplus waters now run to the west into Indian Lake and Nine Mile River, but by excavating a canal of about 1600 feet in length can be discharged towards Halifax. From its lying near the summit level of the country it has a limited drainage area, and will not supply the same quantity of water in proportion to its surface as Long and Chain Lakes. The amount running from it March 7th, 1860, when I examined it, did not exceed 120 cubic feet per minute, or about one-tenth of that running from Long Lake on the same day.—Should its drainage area prove to be less than 700 acres, I would not consider it a reliable source to furnish the quantity required.

There is also another feature connected with it which would require minute investigation. The water had, at the outlet of the Lake, a perceptible stale taste—something like that first drawn from a wooden pump or old cistern.

The shallow depth of a large portion of the Lake, its muddy bottom, the numerous islands in it covered with vegetation, and part of the drainage coming from bogs, I think sufficiently accounts for its present impure character. The same peculiarity of taste, I am informed, has been noticed in the Autumn, of the water from the Chain Lakes, and the Water Company, to correct it, have been in the habit of drawing them down and allowing them to fill from Long Lake. The causes in both instances are probably alike. The hot weather of summer promoting a rapid and extensive decomposition of the vegetable matter on the borders and in the shoal portions of the Lakes. There are no constant streams running into Ragged Lake. Two small springs were noticed along its margin, they appeared to be clear and excellent water. Probably by raising the surface 8 or 10 feet, which can be done at a moderate cost, and clearing the margin, and the islands which will be submerged, of vegetable matter, the water would be rendered comparatively pure, and would continue so unless drawn down so low in the summer or autumn as again to expose the shoal portions to the deleterious action of the sun. The quality of the water however is a point of so much importance, I could not recommend this source until it had been thoroughly examined and tried during the summer and autumn months.

The works required will be as follows:

A Dam at the outlet to raise the water say 10 feet. The proper outlet of the stream is confined between narrow banks, and can be easily dammed, but there are several other places which will require raising, probably in all there will be 7 or 800 feet in length of embankment required, averaging 12 feet in height.

A Canal will have to be cut through the ridge to drain the waters towards Chain Lakes. This Canal will be about 1600 feet in length, having its bottom at the level of the present