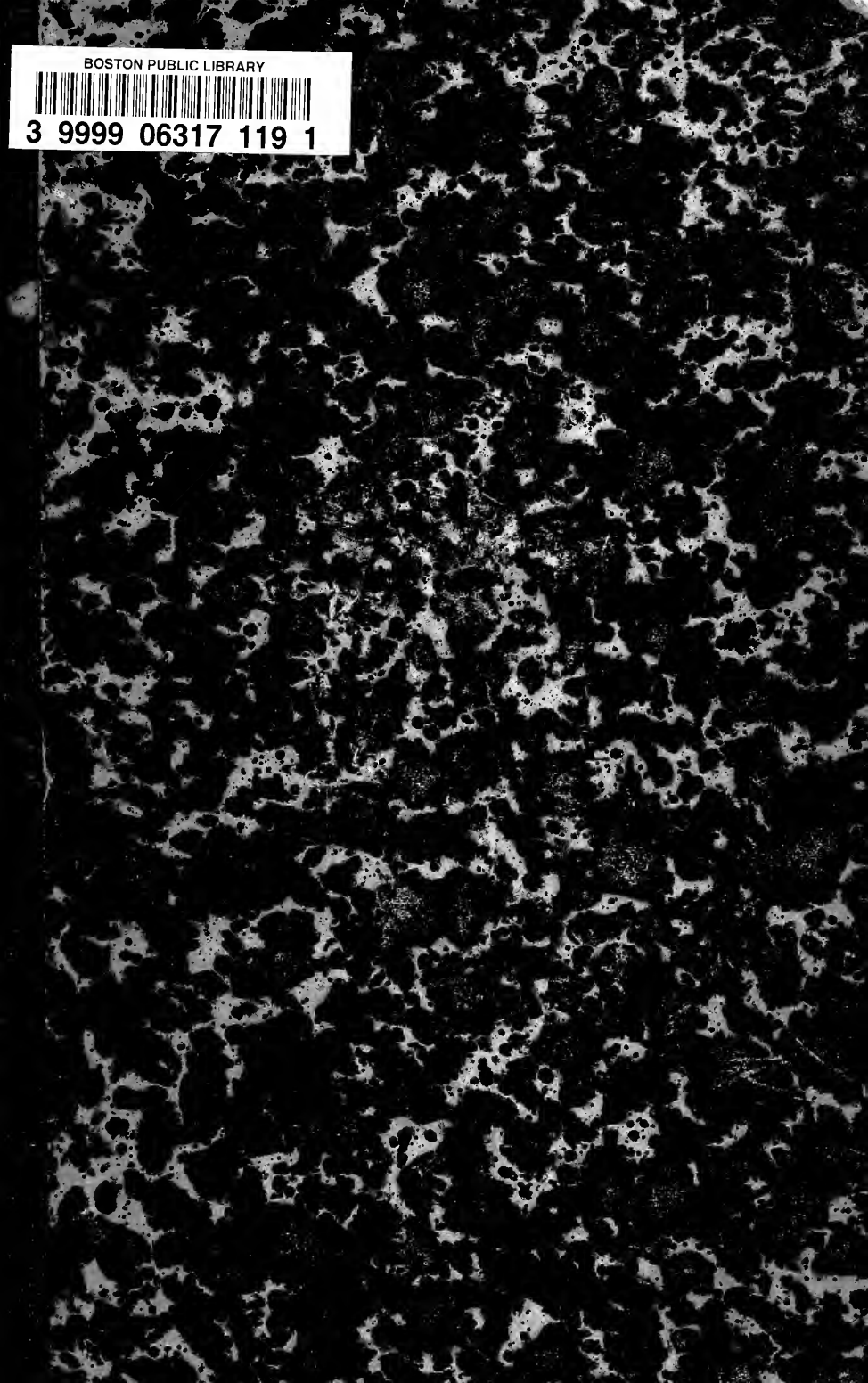

City Document. — *No.* 88.

CITY OF BOSTON.

REPORT

OF THE

COCHITUATE WATER BOARD

TO THE

CITY COUNCIL OF BOSTON,

FOR THE

YEAR ENDING APRIL 30, 1875.

CITY OF BOSTON.

In compliance with the provisions of the City Ordinance the Cochituate Water Board respectfully submits its annual report for the year ending April 30th, 1875, together with the report of the Clerk of the Board, the City Engineer, the Water Registrar, and the Superintendents of the Eastern and Western Divisions. To these reports the Board would refer the City Council for all detailed statements relating to the condition and progress of the works during the year.

The Board has the pleasure of reporting the works in excellent condition, with the exception of the conduit, which, however, is apparently in no worse condition than last year. The water has been drawn off twice during the year, and such examinations and repairs made as the limited time would allow.

The question of a further supply of water from the Sudbury river, which has been advocated by this Board during the past four years, has at last been settled by the action of the City Council at the very close of the municipal year. Owing to this delay the whole of last season and the early part of the present one has been lost, and nothing has been done towards obtaining an additional supply of water, with the exception of the construction of the rock tunnel through the Chestnut-Hill ridge. Immediately upon the passage of the order authorizing the Board to take the Sudbury river, the old sluiceway between the river and Farm pond, and between Farm pond and Lake Cochituate, was put in order, and the water from the river turned into the lake, and the Board hope with this additional supply to keep the lake at

high-water mark throughout the year. During the months of June and July of the present year a fourth pipe (40 in. diam.) will be laid across Charles river, enabling the present conduit to deliver into the reservoir from one to two millions of gallons more per diem than it can at the present time.

This, when completed, will make four pipes across the river, connecting the two parts of the conduit, viz.: two of 30 inches, one of 36 inches, and one of 40 inches in diameter. It is thought that with the addition of this 40-inch pipe, a supply of water can be brought to Chestnut-Hill reservoir sufficient to supply the city until the new works are completed.

The year opened with a full lake, which high point was maintained remarkably well during the spring and early summer months, but the extreme drought during July, August and September made it apparent that the supply for the city would fail unless it could be augmented from some source.

In October application was made to the Mystic Water Board for assistance, which was granted, and *that* water was turned into the Cochituate pipes; 57,000,000 gallons having been furnished, Mystic Lake became so greatly reduced that it was feared that a sufficiently large supply of water for its own legitimate purposes would not be left, should the drought continue.

During the winter every effort was made to check the waste and extravagant use of water by the citizens, by means of notices issued in the public papers, and by causing self-closing fixtures to be put on in all places where the waste was most apparent. During the month of October it became evident that pumping at the lake would have to be resorted to, the water having fallen below the top of the conduit.

The pumps and engines that had been used in 1871–72, having been carefully housed, were ordered to be put in readiness for use. They were set upon the platforms that

had been used in 1871–72, and pumping was begun on December 4th, 1874, the water at that time being at the height of 4 feet 8 inches in the conduit, from which point it continued to fall until January 30th, 1875, when it was 9½ inches below the bottom of the conduit, — the lowest level of the lake since its first use as a source of supply for Boston.

The sluiceway was opened and the water from Sudbury river turned into the lake, January 21st, 1875, but pumping was continued until March 4th, 1875.

From January 21st until May 1st, over 1,300,000,000 gallons were diverted from the river into the lake, equal to about 72 days' supply for the city, and during this time none had been wasted by running over the dam.

The total income received for water rates (including the amount received for shutting off and letting on water for non-payment of rates), for the year ending April 30, 1875, as per report of the Water Registrar, is . .	$1,005,117 10
Less amount paid Mystic Water Board as per contract	71,497 51
Balance	$933,619 59
Showing an increase of income over the previous year, of	$98,686 62
The total amount credited to Water Works by the City Treasurer for the year ending with April 30, 1875, is	$1,013,483 27
The total amount charged to Water Works for the year ending with April 30, 1875, is as follows, viz. : —	
Amount carried forward,	$1,013,483 27

Amount brought forward,		$1,013,483 27
To current expenses .	462,876 65	
To interest and premium on water debt . . .	540,858 77	1,003,735 42
Excess of income over expenditures .		$9,747 85

The amount expended for construction during the past year was	$321,975 21
Amount expended on account of Parker-Hill reservoir	106,106 23
Amount expended on account of additional supply	224,956 68
Amount expended on account of water-pipes, Wards 17 and 19	2,388 59
	$655,426 71
Less amount of income over expenditures	9,747 85
	$645,678 86
Add cost of works to May 1, 1874, as per previous report	10,141,060 33
Net cost of water works to May 1, 1875	$10,786,739 19

Owing to the imperfect system of keeping the books, the expense and construction accounts have not been properly separated, much that should have been charged to construction account having been charged to expense account.

This system has been changed, and in future the two accounts will show more correctly.

From this statement it will be seen that the works have earned $9,747.85 during the past year, after paying for Mystic water for the City Proper, $7,652.19; over $10,000

for pumping water at the lake, and fully $20,000 for thawing out service pipes and replacing main pipes that were burst by the extreme cold of the past winter.

Notwithstanding the large amount added to the cost of the works (fully one-third being for additional supply), the increased receipts compare very favorably with the increased expenditure for interest and premium, as, leaving out of account the amount expended on the Chestnut-Hill tunnel and expenses of surveying, the two accounts would just about balance each other.

EASTERN DIVISION.

This division is in charge of Mr. E. R. Jones, and embraces all that part of the work lying east of the Brookline reservoir.

Owing to the extreme cold of the past winter the work of the Superintendent has been much more laborious than usual. A large number of main and service pipes were frozen, over 13,000 feet of main pipe (some as large as 20 inches in diameter), and over 1,000 service pipes having been frozen solid, and, although a large force of men was employed day and night, many consumers were without water for weeks.

During the past year about 23½ miles of pipe have been laid as follows: —

185 feet, 36-inch; 109 feet, 30-inch; 8,294 feet, 24-inch; 11,531 feet, 20-inch; 2,718 feet, 16-inch; 48,934 feet, 12-inch; 680 feet, 9-inch; 17,364 feet, 8-inch; 33,424 feet, 6-inch; and 1,111 feet, 4-inch.

During the same period 358 stopcocks were put in.

The total length of pipe laid from the beginning of the works until May 1, 1875, was 285 miles 4,016 feet, the total number of stop-cocks 3,125, and hydrants up to the same date, 3,246.

The number of service-pipes laid during the year was 1,245, making a total to May 1st, 1875, of 40,088. All the gates and stop-valves used during the year, up to the size of 12 inches, have been made at the Federal-street shop, and preparations are being made for the construction there of gates of a larger size.

The work of enlarging the distribution pipes throughout the "burnt district" and other portions of the city has been nearly completed, so that very little pipe-laying will be called for, for some years, in the old part of the city; but much remains to be done in Wards 13, 14, 15 and 16, and in Wards 17 and 19 nothing has been done as yet; but an appropriation of $300,000 having been granted in December last, for extending the pipe service in these two wards, the work will be prosecuted with vigor during the present season, and it is probable that they will be supplied, to some extent, during the present year.

This continued extension of main and service pipes over so large a territory greatly increases the duties of the Superintendent of the Eastern Division and all of his subordinates; and, being so far from the centre of supply, makes it much more expensive to carry it on, as all the material must be carted from the Federal-street or Albany-street yards.

During the early spring serious complaints came pouring in from all parts of East Boston of the impurity of the water furnished the citizens by the Mystic Works, and the Board felt constrained to change the supply from the Mystic to the Cochituate. This change was effected April 21, and since that time the citizens of East Boston have been supplied entirely by the Cochituate Works, though, under the contract made with Charlestown in 1869, the Mystic Water Board is receiving its pay, just as though it was supplying the water as usual.

THE CITY RESERVOIRS.

Of the three low-service reservoirs, that in East Boston is the only one which will be needed for the future. The one at South Boston has been very little used for some years, and with two lines of low-service pipes, each 20-inch, and one of 12-inch for the high-service, it seems scarcely possible that it will be required again. The Board would therefore recommend that it be taken from their charge. In respect to the Beacon-Hill reservoir, it is the recommendation of the Board that it be sold as early as practicable, it having ceased to be useful since the completion of the high-service reservoir on Parker Hill.

This last reservoir was completed and the water let into it, November 2d, 1874, and is intended for the high-service only, Its capacity is about 7,000,000 gallons, and its elevation about 219 feet above tide marsh level. It has been in constant use during the winter and spring and proved to be perfectly tight, reflecting much credit upon the contractors Messrs. Tarbell and Hayes, who have executed their work in a very satisfactory manner.

The total cost of the reservoir, including gate-house and fence, but exclusive of the cost of the land, which has not yet been settled, is $138,797.01.

THE WESTERN DIVISION.

The Western Division comprises all that part of the works lying west of the gate-house of the Brookline reservoir, and is under the charge of Mr. Desmond FitzGerald. All the works belonging to this division are in good condition, with the exception of the dwelling-house occupied by the attendant who has the care of the lake and surroundings. It was the intention of the Board to have built a new house

during the last year, and an appropriation for that purpose was asked for and granted; but upon further consideration it was thought better to await the action of the City Council on the question of a further supply of water. It will be necessary, however, during the present season to make some repairs on the old house; but it is not deemed advisable at present to erect a new one, as the building of the new works will probably necessitate a change of locality for the house.

The duties of the Superintendent of this division have been considerably increased, during the past winter, in consequence of the continued pumping, day and night, for about three months, a detailed account of which, together with much other valuable information, will be found in his report.

THE DISTRIBUTING RESERVOIRS.

The Chestnut-Hill reservoir is in a very satisfactory condition. The level is 1.37 inches higher than at this time last year; the roadway has been covered in the best manner with broken stones during the past season, and it is hoped that the expense of repairs will be considerably lessened in the future.

The Brookline reservoir needs a thorough cleaning, but as it will be a work of some weeks, during which the water must be drawn off, it cannot be done safely until another pipe for supplying the city can be laid from the Chestnut-Hill reservoir, — there being only one pipe at present, a break occurring in which while the Brookline reservoir was empty would deprive the city of water.

This second main will be necessary very soon, and would have been recommended this year had not so much work, that seemed more pressing, been called for.

NECESSITY OF LEGISLATION TO MAINTAIN THE PURITY OF WATER.

There is a growing feeling in that portion of the community that has been called upon to consider the matter, that further legislation is needed to enable cities and towns to protect the purity of waters used for domestic purposes. As most of our cities and many of the the principal towns of the State are supplying themselves with public Water Works, it seems absolutely necessary that some measures should be taken to prevent the pollution of the water-courses of the State by sewage.

As the case now stands, a city or town gets permission and proceeds to erect Water Works, with very little thought of future sewerage; but as it becomes necessary to dispose of the increased amount of water used, it is emptied into the nearest brook or river, to be pumped up and used by some neighboring city or town for domestic purposes. Heretofore, in this State, water has been principally used for manufacturing purposes, which use legislation has been shaped to encourage. Now, its use for domestic purposes has become of great importance, and new legislation is required. The experience of the past year, in endeavoring to obtain an act for diverting Pegan Brook from Lake Cochituate, shows that the question has not yet fully impressed itself upon the minds of those not directly affected.

It is hoped that another year will not be allowed to pass without some measures being taken with a view of protecting all the water-courses of the State.

WATER REGISTRAR'S DEPARTMENT.

By reference to the report of the Water Registrar it will be seen that the number of water-takers for the year 1875 is 44,676, being an increase of 2,331 since January 1st, 1874.

The number of cases where the water was turned off for non-payment of dues during the year ending January 1st, 1875, was 1,112, of which number 231 still remain shut off, the balance having had the water turned on upon payment of dues. The total number of meters now in use is 1,092.

The daily average consumption of water from January 1st, 1874, to January 1st, 1875, was 18,231,590 gallons, against 17,842,700 during the previous year. Thus while the number of consumers increased during the past year 2,331, against 1,567 for the previous year, the amount consumed has increased but 388,890 gallons per day, against 2,779,300 for the previous year, showing a much greater percentage of increase of consumers than of the amount consumed, resulting principally from the new style of fixtures that have been placed upon hopper closets and urinals throughout the city. This saving could be considerably increased by placing self-closing faucets upon many other fixtures used in private dwellings.

The number of water-fixtures of all kinds on the premises of water-takers January 1st, 1875, was 186,874, showing an increase of 16,593 during the year.

Under the present ordinance the Water Board has no control over the water rates, with the exception of some discretionary power in the charges for hand hose and other trifling matters. The ordinances have been changed during the past year, giving the Board authority to charge extra for hopper closets and urinals, unless provided with self-closing fixtures, and discretionary power over the charges for hand hose. This is well so far as it goes, but the Board, having

charge of the Water Works, should have full authority over the rates, and also over the fixtures that are put into the premises of water-takers. This can be accomplished only by some act compelling all plumbers to be licensed, which would cause no hardship to any one, but would simply enable the Water Board to keep itself informed of any changes being made upon the premises of water-takers. Under the present system changes can be made without being reported to the Water Registrar, and discovered only by a visit of the inspector.

THOS. GOGIN, *President.*
EDW'D A. WHITE,
L. MILES STANDISH,
CHAS. J. PRESCOTT,
CHAS. R. McLEAN,
WM. G. THACHER,
AMOS L. NOYES.

REPORT OF THE CLERK.

OFFICE OF THE COCHITUATE WATER BOARD,
BOSTON, May 1, 1875.

THOMAS GOGIN, Esq.,

President of the Cochituate Water Board:—

SIR, — The following is a statement of the expenditures and receipts of this department for the year commencing May 1, 1874, and ending April 30, 1875: —

EXPENDITURES.

Carting	$530 00
Damage	504 82
Advertising	251 41
Stable	4,944 66
Taxes	453 96
Tools	7,395 77
Travelling expenses of the Board	157 50
Fountains	1,475 87
Postage and express	31 85
Aqueduct repairs	2,392 95
Printing for all departments	2,016 25
Eastern avenue wharf (rent and salary of agent)	2,999 97
Telegraph, repairing instruments and wire	164 25
Stationery for all departments	308 81
Salaries	21,346 93
Shutting off and letting on water for repairs	13,184 31
Inspectors	8,001 05
Amount carried forward,	$66,160 36

Amount brought forward,	$66,160 36
Upper yard (Albany street)	10,467 45
Miscellaneous expenses, including $7,652.19 for water furnished by the Mystic Water Board	10,433 84
Lake Cochituate	2,293 21
Maintaining meters	1,685 50
Meters	3,685 74
Hydrant and stopcock boxes	4,593 89
Blacksmith shop	209 59
Main pipe	256,123 77
Laying main pipe	38,972 13
Service pipe	12,759 68
Proving yard	1,475 28
High-service	12,672 43
Chestnut Hill reservoir	16,819 26
Beacon " "	813 59
East Boston "	618 38
South Boston "	274 15
Brookline "	1,104 27
Repairing stopcocks	505 97
Stopcocks	23,653 42
Repairing hydrants	6,783 16
Hydrants	43,219 85
Repairing main pipe	17,879 19
" service pipe	17,728 93
" streets	14,677 25
Wages, laying main pipe	68,355 58
" " service pipe	11,739 56
" blacksmith shop	1,840 13
" proving yard	9,098 30
" high-service	4,688 87
Laying service pipe	4,451 65
Pumping works at Lake Cochituate	11,388 55
Amount carried forward,	$677,172 93

Amount brought forward,	$677,172 93
High-service, South Boston	1,028 04
Wards 13 to 16, and Extension to Wards 17 and 19	104,250 89
Chestnut Hill driveway	13,096 13
Parker Hill reservoir	106,106 23
Water pipes, Wards 17 and 19	2,388 59
Additional supply of water	224,956 68
Total amount drawn for by Water Board	$1,128,999 49

And which is charged as follows: —

To Water Works	$678,200 97	
" Chestnut Hill driveway	13,096 13	
" Wards 13 to 16, and Extension to Wards 17 and 19	104,250 89	
" Parker Hill reservoir	106,106 23	
" Water pipes, Wards 17 and 19	2,388 59	
" additional supply of water	224,956 68	
	$1,128,999 49	
Amount charged to Water Works		$1,115,903 36

RECEIPTS.

Fire Department, for use of hydrants	$36,024 00	
Fire and elevator pipes, repairs, etc.	37,923 66	
Amounts carried forward,	$73,947 66	

Amounts brought forward,	$73,947 66	$1,115,903 36
Off and on water	2,455 00	
Fines	324 00	
Sale of old material	1,708 97	
Rent of part of E. ave. wharf	300 00	
Sale of hay at reservoirs	343 80	
Rent of land	91 00	
Three months' rent of house, No. 7 Waverly place	186 00	
Sale of horse at Lake Cochituate	50 00	
Sale of clay mill at Chestnut Hill reservoir	25 00	
		79,431 43
Net amount to Water Works		$1,036,471 93

Amount drawn for the Water Works, not including Chestnut Hill driveway, additional supply of water, Parker Hill reservoir, Wards 13 to 16, and extension to Wards 17 and 19, or Water pipes, Wards 17 and 19	$678,200 97

EXTENSION OF THE WORKS.

Main pipe, laying, etc.	$181,990 74	
Hydrants and stopcocks and boxes	35,733 58	
		$217,724 32
Amount of expenses from April 30, 1874, to May 1, 1875		$460,476 65

Expenditures and Receipts on account of the Water Works to May 1, 1875.

Amount drawn by Commissioners		$4,043,718 21
" " " Water Board in 1850		366,163 89
" " " Cochituate Water Board from January 1, 1851, to May 1, 1874		7,874,427 92
Amount drawn from April 30, 1874, to May 1, 1875, for Water Works		1,115,903 36
		$13,400,213 38
Amount paid the City Treasurer by Commissioners	$47,648 38	
Amount paid by the Water Board, 1850	8,153 52	
Amount paid by Cochituate Water Board to May 1, 1874	434,330 87	
Amount paid from April 30, 1874 to May 1, 1875	79,431 43	
		569,564 20
Net amount drawn from Treasurer		$12,830,649 18
Gross payments (including interest, premiums, etc.) for account of the Water Works to May 1, 1874	$22,743,169,99	
Gross payments from April 30, 1874, to May 1, 1875	1,659,162,13	
		24,402,332 12
Gross receipts to May 1, 1874	$12,602,109 66	
Amounts carried forward,	$12,602,109 66	$24,402,332 12

Amounts brought forward,		$12,602,109 66	$24,402,332 12
Gross receipts from April 30, 1874 to May 1, 1875	1,084,980 78		
Less amount paid Mystic Water Board for supplying East Boston, as per contract	71,497 51		
		1,013,483 27	
			$13,615,592 93
Net cost to May 1, 1875 . . .			$10,786,739 19

Respectfully submitted,

W. E. SWAN,

Clerk of the Cochituate Water Board.

REPORT OF THE CITY ENGINEER.

OFFICE OF CITY ENGINEER, CITY HALL,
BOSTON, May 1st, 1875.

THOMAS GOGIN, Esq.,

President of the Cochituate Water Board: —

SIR, — In compliance with the ordinance relating to the City Engineer's Department, the following report is respectfully submitted: —

SUDBURY RIVER AND LAKE COCHITUATE.

The Sudbury river has not been made of service in maintaining the supply during 1874, as authority to take its waters had not been granted by the City Council at the close of the year. The entire supply (with the exception of about 57,000,000 gallons from the Mystic works) has therefore been obtained from Lake Cochituate.

The monthly average heights of the water surface of the lake, above the bottom of the conduit, will be found in the table on page 45.

On Jan. 1st, 1874, the water in Lake Cochituate stood 9 feet 8½ inches above the bottom of the conduit. January 29th it had risen to 12 feet 6½ inches; and from that date it was allowed to waste over the dam, until February 14th, when it stood at 12 feet 3¼ inches.

During March, April, May and June, it was kept at very near high-water mark.

Waste has been allowed during the following intervals: —

From January 29th to February 14th; from February 22d to March 3d; from April 23d to May 6th; from May

16th to May 28th; and from June 6th to June 10th. The total waste over the dam for the year has been 1,145,852,000 gallons, equal to an average daily supply of 3,139,320 gallons.

June 22d the water stood at high-water mark, and since that time it has gradually fallen, standing, September 1st, 10 feet $2\frac{3}{4}$ inches; November 1st, 6 feet $4\frac{1}{4}$ inches; and on December 31st, 2 feet $2\frac{1}{4}$ inches above the bottom of the conduit.

In September a severe drought began, which lasted till February of this year. Early in November it became evident that it would soon be necessary to resort to pumping water from the lake, in order to keep up a sufficient supply to the conduit, and on the 11th of that month the Water Board ordered the pumps and engines to be put in readiness for operation at as early a day as practicable. At this time, and during November and a portion of December, the Mystic works were supplying the city proper with from two to two and a half million gallons per day, which, as the consumption for those months was much below the average, enabled the conduit, though running but partially full, to slowly increase the depth of water in Chestnut Hill reservoir.

December 3d the water was drawn from the conduit, to allow stop-planks to be put in at the gate-house. On the evening of that day the pumps were started, and were kept in constant operation, — with short stoppages for repairs, — till March 3d, 1875. From January 21st till February 10th the water surface was drawn below the conduit bottom, reaching the lowest point ($9\frac{1}{2}$ inches below) Jan. 30th. On May 1st of this year the lake stands at 12 feet 4 inches; 1,303,600,000 gallons from the Sudbury river having been turned into it since January 21st.

Both Dug and Dudley ponds have been drawn down to low-water mark. Dug pond was full in July, and on the last day of that month was emptied by the Water Commissioners

of Natick, to facilitate the construction of the pump well and engine foundations for the town works. Dudley pond, which has a small drainage area compared with its storage capacity, had only filled to within 4 feet of high-water.

The town of Natick has erected pumping works, and taken a supply for public use from Dug pond during the past year. As this pond is a tributary of Lake Cochituate, and has been used as a storage-basin (capacity 150,000,000 gallons), the supply for Boston will be somewhat diminished; but this is a matter of small consequence compared with the injury to the quality of the supply that will be caused by a sewerage system for the town, which is likely to be built when the use of water from the town works becomes general.

This subject has been reported upon (City Doc. No. 85, Appendix A), and various methods of diverting the sewage from the lake have been suggested.

Application was made to the Legislature, during the present session, for authority to divert Pegan brook (the natural outlet to a large portion of the sewerage of Natick) into Charles river, and, upon the refusal to grant this authority, a bill was introduced to divert it into Sudbury river, which has been referred to the next Legislature.

Conduit. — A thorough examination of the interior of the conduit was made December 3d, by Mr. Wightman and Mr. Cunningham, the latter passing through from the lake to Charles river; and the former from the river to the ventilator near Newton tunnel.

It was found to be in about the same condition as at the time of the previous examination, April 14th. The springs spoken of in the last report to the Water Board, found within 1,500 feet of the lake, seem to have increased somewhat in strength and volume of flow. During the time the water was drawn off, they brought in large quantities of fine sand. An attempt was made to stop their flow, but it met with little or no success. To make proper repairs in this portion of the

conduit, considerable time will be required, as short sections must be dammed off, and the water kept down by bailing or pumping.

The following table, extracted from Mr. Cunningham's report, gives a detailed statement of the condition of the conduit from the lake to the syphon chamber on the west bank of Charles river.

Station.	Measurements of Conduits.		Remarks.
	Height.	Width.	
Gate House.			Entered at 8.50 A.M.
0.50			Sand 4 in. deep.
1.50			Springs on right running into conduit.
2.00			Large spring bringing in sand; probe passed easily through joint at this place, 2 feet deep into spaces. Cut 26 ft. deep.
7.25	6.03	5.17	Hole in bottom; probed 4 in.; cutting 24 ft.
7.20			Crack top and bottom.
7.30	6.03	5.22	Two cracks in top from 7.10.
7.50			End of crack in top.
8.05	6.20	5.04	
10.12			Sponge growth bottom and sides.
17.50			Large spring in bottom. Cutting 12 ft. deep.
17.70	6.30	4.94	Bottom below grade.
20.50			Loose brick in bottom at manhole.
20.25			One inch sand in bottom.
66.10			Spring enters on right. Cutting 37 ft. deep.
71.40	6.22	5.12	
71.60	6.28	5.02	
71.72			Large springs in several places. Cutting 27 feet deep.
73.65	6.13	5.12	Large springs at left. Cutting 14 ft. deep.
88.			Slight springs at right. Cutting 18 ft. deep.
96.80			Spring in bottom. Cutting 16 ft. deep.
97.80			Sand in bottom, brought in from springs above.
100.	6.32	5.08	Brick out of bottom near Oak-st. crossing and a manhole.

STATION.	MEASUREMENTS OF CONDUIT.		REMARKS.
	Height.	Width.	
121.	6.34	5.05	Spring at left in bottom 21 ft. cut.
122.			Sand in bottom brought in from spring above.
134+			One in. of sand in bottom. Cutting 21 ft deep.
141 to 144			Old crack pointed last year has not started.
142.	6.31	5.14	Sand in bottom.
147.			Sand in bottom.
150.80			Old crack top has not started.
152.	6.32	5.04	Old crack top has not started.
153.			Roots at left.
154.	6.34	5.01	Crack at top begins.
154.50	6.31	5.05	Slight crack.
			Cracks from 154 to 155.20 were pointed Nov., 1873, and have not started. Conduit built on top of 5 feet of embankment.
155+20			Arrived at Dedman's Brook, Waste Weir, 11.45 A.M.
			Started on at 12.35 P.M.
157.	6.33	5.08	Old crack unaltered from 156 to 158.50.
167.70			Old crack unaltered.
168.	6.34	5.02	
168.20			
169.	6.30	5.07	Old crack in top started a little. Embankment 11 feet high.
169. to 170.20			Crack top and bottom. Bottom at right, loose a little at the crack; bricks may be sprung by pressure with the foot.
170.	6.33	5.06	
171.30 to .65			Slight crack, left in top, right in bottom.
173.40 to +70			Crack top, started again; 5 or 6 feet of embankment.
178.	6.35	5.00	
178.65			Paddock's Pond. Crack top and bottom $\frac{1}{8}$ in. wide.
179.			Crack top and bottom $\frac{1}{8}$ in. wide.
180.	6.35	5.02	Crack top and bottom $\frac{1}{8}$ in. wide.
181.			Crack ends.
181.75			Crack by manhole.
to 183.50			Crack $\frac{1}{8}$ by top and bottom.
			Embankment 15 ft. extreme height, extending from Sta. 178.50 to 183.50. Natural surface was 3 or 4 ft. below the grade line. There seems to be no change in these cracks.

	Station.	Measurements of Conduit. Height.	Width.	Remarks.
	206.60 to 208.20			Slight crack at top.
	207.	6.3	5.04	
	222.70			Crossing under B. & A. R. R.
	240.50 to 241.70			Small crack in top, has been partly pointed; no change.
	245. to 246.			Old crack, not started; 245 is opposite Wellesley depot.
	247.30			Crack top and bottom $\frac{1}{8}$ in. wide.
	247.50	6.27	5.15	Crack top and bottom $\frac{1}{8}$ in. wide.
	247.70			Crack ends.
	248.50 to 249.			Crack top and bottom $\frac{1}{8}$ to $\frac{1}{4}$ in. wide.
Morton's culvert embankment.	252.50 to 253.			Crack $\frac{1}{8}$ in. wide in top unaltered.
	254.	6.24	5.22	Mud in bottom and roots top and bottom.
	255.	6.34	5.07	Slight crack top and bottom.
	255.40	6.27		Wide crack in top.
	256.	6.33	5.06	Slight crack in top.
	256.20			End of crack.
	259 to			Slight crack in top.
	260.80			Slight crack in top.
	272 to 274.50			Old crack pointed, and has not started.
	283.50 to 284			Old crack unaltered.
				An error in numbering 282 in place of 289.

Embankment opp. Wellesley depot, from 246 to 247.20; height 9 ft.

Embankment from Sta. 251.30 to Sta. 256.80. Extreme height 14 ft. The natural surface is below grade from Sta. 253.10 to 255.20.

Embankment (14 ft. extreme height) from Sta. 271.90 to 275. The natural surface below grade from 271.80 to 274.10. Embankment 5 or 6 ft. high from 275 to 290.

SECOND DIVISION.

13.10			Slight crack top and bottom.
to 13.40			$\frac{1}{4}$ in. wide at top. Cutting 23 ft. deep.
to 13.50	6.09	5.08	Large spring in bottom, brings in sand.
to 14.			Crack ends.
16.			Crack top and bottom. (In Grantville.)
to 16.40			
17.30			Crack at top. Crosses road to Natick.

	STATION.	MEASUREMENTS OF CONDUIT. Height.	Width.	REMARKS.
	17.50	6.15	5.13	Two cracks in top.
	to 18.	6.21	5.03	Slight crack.
	to 18.40	6.14	5.21	$\frac{1}{4}$ inch at top.
	18.70			$\frac{3}{8}$ inch at top.
	19.			Crack ends.
	23.50			Cross Worcester Turnpike. Cutting 25 ft. deep.
	42.20			At Sta. 42.20 cutting is 39 ft. deep.
	49.50			Grantville Waste Weir; arrived at 3.35, P. M., left at 3.45, P.M.
	53. to 53.50			Crack top and bottom, embankment from Sta. 53 to 54.80. Maximum height 13 ft.
	54.	6.28	5.12	Crack in top 1-16th in. to $\frac{1}{8}$ in.
	to 54.60			Crack ends.
	56.70			Slight crack top
	to 57.			Slight crack top — Embankment 10 ft. maximum height from Sta. 56.10 to 58.50.
	59 to			Slight crack top
	59.80			Slight crack top ends. — Embankment from 58.50 to 59.80, 11 ft. maximum height.
	63 to			Slight crack in top.
	63.80			Slight crack in top.
	64.			Slight crack in top 1-16th inch.
	64.50			Slight crack in ends.
	76.			Road crossing near school-house.
	77 to			Slight crack top.
	77+30			Slight crack top $\frac{1}{8}$ in. wide.
	to 77.60			Slight crack, top ends.
	80.90			Slight crack, top ends.
	to 81.			Slight crack, top ends.
High Embankment.	105.30	6.27	5.05	
	107.	6.19	5.21	106+20 crosses arched road bridge; road to Upper Falls.
	107.50	6.04	5.24	
	108.	6.04	5.42	Started slightly at top and more at bottom. — *The very bad crack* that was repaired in November, 1873, has started very slightly, showing a crack in all the new pointing.
	108.50	6.07	5.38	Started slightly at top and more at bottom.
	109.	6.15	5.21	Top and bottom started slightly.
	109.50	6.22	5.15	Crack not started.

STATION.	MEASUREMENTS OF CONDUITS.		REMARKS.
	Height.	Width.	
110.	6.33	5.01	
110.70			Slight crack, more at top.
to 111.			
111.20			West pipe chamber Charles river, came out at 4.35 P.M.

In the last annual report it was recommended that a gate be placed in the Grantville waste weir to allow the conduit to be emptied by sections, and to afford a ready means of stopping the flow of water, should any accident happen near Charles river, the point where the greatest danger of accident exists.

With authority from the Water Board, Mr. Fitz Gerald, Superintendent of the Western Division, made changes at the waste weir during the time the conduit was emptied in December, which will allow the use of stop-planks at that point.

It was also recommended, in case the Sudbury river were used for the next few years to supplement the Cochituate supply, that a new siphon pipe be laid across Charles river. Authority to do this work has been given by the City Council; the pipes (40 inches diam.) have been contracted for, and the work of laying them, and the building of new chambers, will soon be begun.

LOW-SERVICE RESERVOIRS.

The tables on pages 38, 39 and 40 give the monthly and yearly average heights above tide-marsh level of the water in the several reservoirs.

The average height, for the year, of the water in Chestnut Hill reservoir has been 120.58 feet, or 0.18 foot higher than in 1873.

The average height, in the Brookline reservoir has been 119.96 feet or 0.05 foot higher than last year, and 0.62 foot less than in Chestnut Hill reservoir.

The Beacon Hill, South Boston and East Boston reservoirs, though partially filled with water, have been almost constantly disconnected from the street pipes for the past year.

Experiments have been begun at the Beacon Hill reservoir to determine the amount of the daily and yearly evaporation from water surfaces, but have not been continued for a sufficient length of time to give definite results.

DISTRIBUTING SYSTEM AND PIPE PLANS.

The work of enlarging the capacity of the pipe distributing system, which was commenced in the "Burnt District" in 1873, has been continued during the past season, and important changes have been made by replacing small pipes by larger ones, in laying sub-mains or feeders, and in setting Lowry hydrants, the details of which will be found in Mr. Jones' report. The new high-service mains for supplying South Boston and Beacon Hill have been completed, and the old 30-inch pipe on Tremont street, and the 20-inch pipe from Dorchester to South Boston, lately used for this purpose, have been returned to their original use as low-service mains, with a marked improvement in the pressure at the north and west ends, and in South Boston.

The enlargements and changes that have been made have very greatly increased the supply for fire purposes; in fact, at no time since water was introduced into the city have the works, in this respect, been in so good a condition as now.

In June an appropriation was made by the City Council, for surveying the West Roxbury and Brighton divisions of the city, with reference to a system of pipe distribution. The survey of Brighton is finished, and that of West Rox-

bury nearly so, and the pipe systems for such portions of those places as can be piped this season have been decided upon.

An appropriation of $200,000 for the pipes and appurtenances was made early this season (1875), and the pipes were at once placed under contract and are now being delivered; in fact, the work of laying the low service has begun.

Four new plans, on a scale of 100 feet to an inch, showing the sizes and location of the pipes in South Boston, have been made during the past year. We now have the whole distribution of the city, with the exception of East Boston, shown on this scale.

A large plan, giving, in skeleton, the distribution of the entire city, is practically completed. This will be found very serviceable in showing the relations that the mains and other portions of the pipe system hold to one another, and as an aid in fixing upon the diameter and location of pipes in future extensions.

HIGH-SERVICE RESERVOIRS AND PUMPING WORKS.

Parker Hill Reservoir. — At the time of the last annual report the work of building a high level reservoir on Parker Hill had begun, under a contract with Messrs. Tarbell and Hayes. On Nov. 2d it was so far completed that water was let in, and the process of filling commenced. Since that date it has been in daily use. The work is of very substantial character, and has been very faithfully carried out, under the direction of Mr. Wilbur F. Learned, one of the assistant engineers of this department, by Messrs. Tarbell and Hayes, contractors for the reservoir proper; Messrs. J. W. Coburn and Co., contractors for the gate-house, and the Boston Machine Co., contractors for the gates.

The reservoir will hold 7,200,000 gallons above a plane $2\frac{1}{2}$ feet above the bottom of the outflow pipe. The area of the water surface, when at high-water mark, is 1.47 acres,

and its elevation is 219 feet above tide-marsh level. The elevation of the top of the bank is 222 feet; of the bottom of the out-flow and in-flow pipes, 197.50; of the sills for the stop plank, 196.25; and of the lower floor of the gate-chamber, 196 feet.

The chamber, gates and pipes have been proportioned and designed for the use of the reservoir when it shall form part of a general high-service system for the supply of all the high lands of the city, as explained in City Doc. No. 38, 1873.

Pumps. — The pumping engines have worked very satisfactorily during the past year, and are now in good condition.

The following table shows the total and monthly work done by the engines during the year, and the quantity of coal consumed in doing it:—

Statement of Operations at the High-Service Pumping Works for the Year 1874.

1874.	Total pumping time.			Daily average pumping time.		Daily average am't pumped.	Hourly ave. am't pumped.	Ave. maximum hourly draft.	Ave. minimum hourly draft.	Greatest hourly draft.	Least hourly draft.	Ave. No. of revolutions per minute.	Ave. load on pump.	Ave. am't coal used per day.	Percentage ashes and clinkers.	Quantity pumped per lb. coal.
	Days.	H'rs.	Min.	H'rs.	Min.	Gallons.	Gall'ns.	Gall'ns.	Gallons.	Gallons.	Gall'ns.		Lbs.	Lbs.		Gall'ns.
January . . .	31	. . .	. . .	24	. . .	1,097,730	45,739	67,240	27,078	88,360	20,680	16.22	71.46	3,057	11.59	359
February . . .	28	. . .	. . .	24	. . .	1,312,274	54,678	76,769	37,138	93,295	28,670	19.39	71.67	3,668	11.02	358
March	31	. . .	. . .	24	. . .	1,160,748	48,365	71,324	30,414	85,070	26,790	17.15	71.35	3,143	12.83	369.3
April	30	. . .	. . .	24	. . .	1,119,266	46,636	67,873	28,740	79,900	26,555	16.54	71.31	3,013	11.20	371
May	30	18	40	23	50	1,171,483	48,812	72,468	28,951	87,655	28,200	17.43	71.25	3,005	12.21	389.9
June	30	5	30	24	11	1,253,333	52,222	76,735	30,448	91,180	14,570	18.38	71.29	3,251	11.84	385.5
July	31	. . .	. . .	24	. . .	1,212,880	50,537	74,078	29,201	110,920	26,320	17.92	71.16	3,168	12.80	383
August	31	. . .	. . .	24	. . .	1,206,111	50,255	73,215	29,693	92,590	17,625	17.82	71.33	3,107	12,41	388.1
September . .	29	22	50	23	58	1,283,630	53,487	77,924	31,326	102,695	27,025	19.00	71.10	3,053	13.43	420.5
October	31	. . .	. . .	24	. . .	1,094,729	45,614	70,811	23,818	88,595	18,800	16.18	71.33	2,965	13.03	369.2
November . .	30	4	. . .	24	8	1,649,481	68,728	80,315	56,118	104,340	28,200	24.24	77.46	4,735	13.84	348.4
December . . .	30	20	. . .	23	52¼	1,580,163	65,480	75,443	55,778	88,125	47,000	23.47	81.76	4,927	12.79	320.7
Total	364	23	. . .	24	. . .	1,260,700	52,529	73,683	34,059	. . .	. . .	18.63	73.00	3,421	12.48	369

Total number of revolutions	9,790,545
" " gallons pumped	460,155,615
" amount of coal used, lbs.	1,248,734
" " ashes and clinkers, lbs.	155,855
Average pressure on force main, lbs.	73
" " " supply " "	35
Pressure used in computing duty on engine, lbs.	38

Approximate duty per pound of coal (no deduction for clinkers or ashes), 269,387 foot lbs.

COST OF PUMPING.

Salaries	$4,830 25
Fuel	3,669 30
Miscellaneous repairs	846 61
Gas	356 40
Small supplies	116 56
Total	$9,819 12

Cost per million gallons raised one foot high, 24.4 cents.

During November and a part of December the reservoir was filling, which fact accounts, in part, for the large quantities of water pumped in those months.

The average daily quantity pumped for the year has been 1,260,700 gallons, an increase of $23\frac{1}{5}$ per cent. above the quantity in 1873.

CONSUMPTION OF WATER.

The table on pp. 41 and 42 gives the average daily consumption of water for each month since 1849. The figures for 1874 give the consumption from the Cochituate works alone; the average from these works for the whole year is 18,074,900 gallons daily. During November and December, 57,191,258 gallons were supplied to the city proper, from the Mystic

works, equivalent to an average daily supply of 156,690 gallons for the year. This quantity should be added to that given above, for comparison with the consumption of previous years; 18,074,900 + 156,690 = 18,231,590 gallons, or 388,890 gallons ($2\frac{1}{5}$ per cent.) in excess of the average for 1874. The greatest consumption was in July, when the daily average was 21,386,200 gallons.

The divisions of the city supplied by the Cochituate works are: Boston proper, South Boston, Dorchester, and the greater portion of Roxbury. (A small portion of Roxbury is supplied by the Jamaica pond Aqueduct Co.) Those supplied from the Mystic works are Charlestown and East Boston. The West Roxbury and Brighton divisions are not yet provided with a public supply.

The Jamaica pond works supply from two to three hundred thousand gallons per day (say 250,000 gallons) to its consumers in Roxbury; hence the average daily consumption for the year, in the four first-named divisions of the city, has been about 18,482,000 gallons.

ADDITIONAL SUPPLY.

A number of reports upon additional supply, with estimates of cost of various schemes of works for bringing water from several different sources, have been made and presented to the City Council during the past year.

The reports of Messrs. Kirkwood, Francis, and Horsford, upon the quantity and quality of the water to be obtained from the Mystic valley, together with one from Mr. W. F. Davis, Water Registrar, upon waste of water (City Doc. No. 134, 1873), were presented by the Water Board in January.

On February 3d, two orders were passed, one requiring the Joint Standing Committee on Water to "report upon the possibility and expense of adding to the waters of the Mystic pond a supply sufficient for the use of the city, by connecting said pond with Shawshine, Concord, and Mer-

rimac rivers, or either of them;" the other requiring the committee "to consider the expediency of making a permanent water connection between Farm pond and Lake Cochituate, build a conduit from Lake Cochituate to Chestnut Hill reservoir," etc. On February 17th, it was ordered, "that the Joint Standing Committee on Water ascertain, by analysis or otherwise, the purity of the water of Charles river, at the most expedient point of taking the same for the use of the City of Boston;" and on March 27th, it was further ordered that the same committee "be requested to have accurate surveys made, under the direction of the City Engineer, to ascertain the water-shed of Mystic pond."

In the latter part of April the committee transmitted to the City Council the report of the City Engineer upon the above subjects, and presented with it majority and minority reports; also a report of a sub-committee upon mill damages on the Sudbury and Charles rivers. (City Doc. No. 38, 1874.)

In May a preliminary report upon the cost of works to bring the waters of Charles river to the city was made to the Committee on Water, by the City Engineer, in obedience to an order passed by City Council May 4th.

On June 16th it was ordered "that the Joint Standing Committee on the Water Department ascertain and report whether the present source of our water supply from Lake Cochituate and Mystic lake combined can be so utilized as to give an adequate water supply to the city in a season of drought," etc.; and on July 3d it was ordered that the committee "be requested to examine the Charles river, and report in print, upon its availability as a source of supply," etc. The report of the City Engineer upon these subjects was made Oct. 10th (City Doc. No. 85), and was transmitted to the City Council by the committee in the latter part of that month.

In obedience to an order passed June 16th, a report (City

Doc. No. 102) was presented in December to the City Council by the commission of three physicians, appointed by His Honor the Mayor "to examine and report upon the comparative desirability on sanitary grounds of the Sudbury, Mystic, Shawshine and Charles river waters."

An order, approved June 23d, requesting the Water Committee to report on the expediency of using Lake Cochituate as a storage-basin for the Sudbury river water, etc., was referred by that committee to the medical commission, and the report upon this subject will be found in the above mentioned City Doc. No. 102.

In November an order was passed, requesting His Honor the Mayor to petition the Legislature for the right to take a supply of water from Charles river.

The request of the Water Board, made during the latter part of 1873, that it be authorized to take land and water rights, under the provisions of the Sudbury-river act, was refused by a vote of the Common Council, December 23d; but on December 31st the vote was reconsidered, and the Board was authorized to take the waters of the river, and also lands for building storage-basins, but was prohibited from incurring new liabilities for the construction of a conduit from the river to Chestnut Hill reservoir. This action was approved Jan. 2d, 1875.

On February 26th of this year an order was approved, which authorized the Water Board to construct the entire works, with the exception of a number of storage-basins on the upper branches of the river, on the plan and scale recommended in March, 1873 (City Doc. No. 29), and appropriated $1,500,000 to cover the estimated expenses of this year.

It being afterwards decided by the City Solicitor that the above order did not authorize the Board to place the whole work under contract this year, application was again made to the City Council, and the requisite authority was granted in an order approved April 12th.

Active preparations for placing the work under contract are making, and it is expected that advertisements for bids for building the greater portion of the conduit will be made early this month.

The work upon Beacon-street tunnel has progressed very favorably, and at the present rate of progress the various headings will meet in about three months.

At the date of this report 3,634 lin. feet of tunnel have been excavated, and 280 lin. feet of conduit at the west end have been built.

The two headings west of the shaft are still worked by hand drills.

FLAX POND, AND JAMAICA POND AQUEDUCT CO.

On November 21st, an order passed the City Council directing the City Engineer to make surveys and measurements to ascertain the actual amount of water that can be furnished from Flax, Sluice and Cedar ponds.

The measurements were taking during December, and a report was submitted Dec. 21st. (City Doc. No. 110.) The order grew out of an offer of the Flax-pond Water Co. to supply East Boston with water.

On December 21st, another report (City Doc. No. 108) was submitted, in answer to a vote of the Joint Standing Committittee on Water, referring "the petitions of John C. Pratt, and G. Winthrop Coffin, that the city would purchase Jamaica pond, to the City Engineer, with request that he report the facts as to the value of the property in question, and the best method of supplying West Roxbury and Brighton with water."

RAINFALL.

The usual tables, giving the rainfall at various points for the year 1874, will be found appended.

(Signed,) JOS. P. DAVIS,
City Engineer.

Average Monthly and Yearly Heights, in feet and decimals, of the several Reservoirs above "tide-marsh level," 1864–1874.

BROOKLINE.
Maximum high-water line, 124.60.

MONTH.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.*	1874.
January	122.37	123.31	122.28	122.00	123.29	122.58	122.83	121.89	118.64	120.46	121.06
February	122.61	122.82	122.47	123.12	122.79	122.64	122.60	122.54	120.48	119.86	119.52
March	123.62	123.26	123.19	123.05	122.33	122.48	122.77	122.08	122.04	119.71	119.27
April	123.82	123.38	123.45	123.00	123.04	122.60	122.56	122.00	122.10	121.36	119.59
May	123.62	122.65	123.04	123.07	123.04	122.77	122.75	121.79	122.29	121.84	121.70
June	122.66	123.23	123.29	122.34	122.77	121.85	122.64	121.98	122.25	120.90	121.83
July	122.87	123.33	122.97	122.98	122.77	122.10	122.50	122.19	121.25	118.79	121.08
August	122.64	123.39	122.80	122.23	122.75	122.19	122.23	122.06	122.14	118.48	120.50
September . . .	122.03	123.29	122.81	122.52	122.12	122.50	122.35	121.50	123.44	119.04	118.65
October	123.19	123.29	123.03	122.65	122.31	122.58	122.64	119.54	122.96	119.09	117.60
November	122.78	123.38	122.75	122.89	122.56	122.46	122.60	116.94	120.98	119.69	118.43
December . . .	122.29	123.24	122.64	122.37	122.00	122.92	122.50	117.71	121.06	119.71	120.17
Yearly Average .	122.87	123.21	122.89	122.69	122.65	122.48	122.58	121.02	121.63	119.91	119.96

BEACON HILL.
Maximum high-water line, 121.53.

MONTH.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January	117.72	119.18	119.20	119.11	120.20	118.51	118.63	119.26	116.20	119.01	120.88
February	117.54	118.91	119.65	118.59	120.11	118.72	117.78	118.95	116.38	119.32	121.01
March	116.38	120.58	120.72	119.45	120.57	118.30	118.07	119.38	116.49	119.63	121.13
April	117.21	121.28	120.70	119.86	120.57	118.82	118.34	119.59	116.72	119.01	120.95
May	116.53	120.31	119.53	118.50	118.65	119.68	118.63	119.09	116.70	120.28	120.26
June	115.31	120.56	118.53	118.34	118.45	117.13	118.03	. .	116.99	119.99	119.72
July	115.32	121.23	119.51	119.00	120.24	117.20	119.30	109.63	116.95	118.05	119.55
August	115.19	119.83	119.17	117.70	117.11	117.63	119.59	109.68	117.11	115.93	119.63
September	115.91	119.03	119.39	120.46	118.20	117.45	117.72	. .	117.65	116.20	119.40
October	118.17	118.43	119.50	120.46	118.61	118.36	117.80	. .	118.20	118.11	119.07
November	118.55	120.14	119.78	120.84	119.03	118.45	118.61	. .	118.36	120.59	118.99
December	117.35	120.50	119.37	120.02	117.78	118.36	119.38	. .	118.51	120.68	119.15
Yearly Average . .	116.77	120.00	119.59	119.36	119.11	118.13	118.49	116.51	117.19	118.90	119.98

* New gauge put in, with a zero point .08 of a foot higher than that of the old gauge.

Average Monthly and Yearly Heights, etc. — Continued.

SOUTH BOSTON.
Maximum high-water line, 122.86.

MONTH.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January	110.63	114.21	114.38	112.46	111.15	111.15	114.46	112.51	109.34	111.30	114.28
February	110.94	113.42	114.44	111.36	111.15	111.34	114.80	112.61	109.42	111.69	112.38
March	111.13	113.64	113.51	111.74	111.11	111.63	114.51	112.74	109.38	112.01	113.69
April	112.07	114.82	114.99	111.88	111.55	111.96	113.57	112.63	109.67	112.74	113.65
May	111.64	115.44	114.90	111.63	111.61	111.78	113.53	112.71	109.32	113.40	113.94
June	109.06	114.91	114.32	111.19	112.15	111.51	113.36	112.44	109.24	110.69	113.53
July	108.57	114.36	113.96	111.53	111.53	111.19	112.21	115.32	109.05	109.40	112.92
August	109.53	113.80	114.07	111.90	111.53	110.65	110.78	114.03	108.82	110.21	112.51
September	110.21	113.69	113.41	111.70	111.44	108.76	110.15	113.13	106.49	110.84	112.03
October	112.49	112.89	112.74	111.29	111.44	113.15	110.01	112.80	109.34	111.21	111.44
November	112.49	112.74	112.03	111.26	111.44	113.76	111.86	112.76	110.61	111.30	111.51
December	113.89	113.78	112.62	111.08	111.11	113.88	112.61	109.26	110.71	114.40	111.49
Yearly Average . .	111.05	113.97	113.78	111.59	111.44	111.74	112.65	112.74	109.28	111.60	112.78

EAST BOSTON.
Maximum high-water line, 107.60.

MONTH.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January	90.22	96.12	93.61	91.89	92.81	99.72	104.45	101.18	103.47	. .	. .
February	92.88	97.00	96.61	92.06	92.10	100.56	104.20	104.33	102.56	. .	103.33
March	93.50	94.83	94.22	91.69	91.14	100.60	100.89	106.12	100.41	. .	102.58
April	96.16	96.52	96.47	90.91	Shut off for repairs.	Shut off for repairs.	104.93	107.14	100.10	. .	104.77
May	97.68	96.04	95.85	89.63			105.91	106.50	101.54	. .	104.37
June	94.22	93.91	93.71	91.82			106.00	106.43	106.83	. .	103.56
July	92.34	96.82	95.35	94.60		100.60	103.87	106.47	. .	. .	105.06
August	92.84	95.78	93.85	94.16		95.08	104.25	105.22	. .	. .	105.52
September	95.00	94.52	Shut off for repairs.	99.40	Shut off for repairs.	94.87	102.77	104.91	. .	. .	105.25
October	97.55	93.38		96.85		96.97	105.20	104.81	. .	. .	105.27
November	98.14	92.23		93.47		101.12	104.75	104.56	. .	. .	103.93
December	97.27	94.34	92.29	92.57		102.06	105.18	104.58	. .	. .	102.87
Yearly Average . .	94.83	95.12	94.66	93.25	92.02	99.06	104.37	105.18	. .	. .	104.23

Average Monthly and Yearly Heights, etc. — Continued.

CHESTNUT HILL.
Maximum high-water line, 125.00.

MONTH.	1870.	1871.	1872.	1873.*	1874.
January	. . .	102.00	116.90	120.76	121.32
February	. . .	102.81	120.46	120.26	120.19
March	. . .	105.19	122.29	120.11	119.95
April	. . .	110.48	122.52	121.55	120.16
May	. . .	116.21	122.54	122.03	121.93
June	. . .	121.46	122.35	121.24	122.11
July	. . .	122.40	121.77	119.65	121.50
August	. . .	122.02	122.15	119.32	121.00
September	. . .	121.44	122.77	119.74	119.75
October	. . .	119.67	122.08	119.70	119.15
November	100.80	117.08	122.42	120.21	119.32
December	101.29	115.35	121.40	120.21	120.61
Yearly Average	101.04	114.67	121.64	120.40	120.58

* New gauge put in, with a zero point .18 of a foot higher than that of the old gauge.

Consumption of Water. Daily Average Number of Wine Gallons drawn from the Brookline Reservoir.

MONTH.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
January	1,700,000	5,181,700	7,233,700	8,280,900	8,050,500	10,695,200	9,702,700	12,669,000	15,089,000	12,160,000	14,512,000	17,862,000	21,106,769
February	. . . .	5,214,000	7,221,100	8,790,300	8,643,600	10,654,200	10,349,800	11,791,000	14,175,000	14,399,000	14,769,000	18,901,000	20,804,131
March	1,550,000	4,841,200	6,137,900	8,521,100	8,202,200	9,582,100	10,125,600	12,504,000	13,941,000	14,154,000	14,480,000	15,409,000	19,453,344
April	. . . .	4,961,000	5,365,200	8,048,700	7,903,600	8,738,500	8,540,000	10,800,000	12,454,000	13,465,000	13,760,000	14,621,000	17,151,593
May	3,600,000	5,346,100	6,238,400	8,350,000	8,123,400	9,685,300	9,103,800	10,378,000	12,414,000	11,423,000	11,302,000	14,790,000	16,687,832
June	4,300,000	6,906,500	7,925,000	8,033,100	8,945,900	11,745,200	9,984,400	11,223,000	12,504,000	10,867,000	11,639,000	17,838,000	17,231,984
July	4,800,000	8,514,200	7,180,200	9,608,000	8,809,200	10,613,800	11,056,600	13,167,000	13,551,000	13,621,000	13,219,000	17,239,000	18,897,809
August	4,100,000	8,004,600	7,235,000	9,709,300	8,461,900	10,028,100	11,120,800	12,664,000	13,077,000	13,141,000	12,704,000	19,297,000	18,272,365
September . . .	4,800,000	6,585,500	7,230,600	7,920,000	8,640,700	9,712,400	11,710,800	11,522,000	12,030,000	12,745,000	12,389,000	17,957,000	18,098,259
October	4,550,000	4,504,300	1,716,600	6,930,000	8,876,100	8,769,800	10,771,200	11,891,000	10,864,000	12,969,000	12,026,000	16,938,000	17,987,128
November . . .	3,800,000	4,960,500	6,473,500	6,637,900	8,624,700	8,030,200	10,383,200	11,691,000	11,372,000	12,143,000	12,715,000	16,862,000	16,604,076
December	3,600,000	5,037,000	7,663,400	7,195,800	9,228,400	10,597,600	11,307,200	13,284,000	11,241,000	13,075,000	14,586,000	19,151,000	15,976,362
Average for year	3,680,000	5,837,900	6,883,800	8,125,800	8,542,300	9,902,000	10,346,300	12,048,600	12,726,000	12,847,000	13,175,000	17,238,000	18,189,304

Consumption of Water. — Continued.

Month.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January . . .	17,000,000	16,112,000	18,954,000	13,412,000	14,850,000	13,511,000	15,992,000	15,426,000	12,525,000	14,110,000	12,203,900	17,639,100	16,651,300
February . .	17,000,000	17,328,000	18,846,000	13,318,000	13,385,000	13,831,000	16,927,000	14,731,000	14,052,000	15,070,000	15,172,000	18,461,000	19,103,850
March	17,300,000	16,681,000	16,841,000	12,027,000	12,284,000	13,100,000	13,722,000	14,789,000	14,646,000	10,162,000	15,788,500	15,983,700	17,657,300
April	15,300,000	15,125,000	16,506,000	11,975,000	11,251,000	12,770,000	12,636,000	14,650,000	14,703,000	11,814,000	12,281,000	14,781,800	15,929,600
May	14,300,000	15,407,000	16,094,000	13,660,000	11,076,000	12,301,000	13,846,000	13,902,000	13,759,000	12,222,000	13,830,600	17,637,400	16,731,900
June	16,600,000	16,138,000	17,730,000	14,391,000	11,878,000	13,625,000	14,351,000	14,252,000	14,824,000	15,695,000	14,617,600	20,100,600	19,239,750
July	16,400,000	15,954,000	18,112,000	13,207,000	12,668,000	14,250,000	14,676,000	18,378,000	16,392,000	15,748,000	16,377,100	20,917,100	21,386,200
August . . .	17,000,000	16,980,000	16,188,000	13,426,000	12,441,000	14,546,000	14,479,000	17,632,000	17,107,000	16,019,000	15,017,900	19,544,600	20,127,800
September . .	17,000,000	17,035,000	16,798,000	12,624,000	11,842,000	13,186,000	16,072,000	15.741,000	16,785,000	16,512,000	15,072,600	19,572,700	20,022,600
October . . .	17,300,000	15,779,000	15,479,000	11,273,000	12,396,000	13,518,000	14,954,000	14,096,000	16,528,000	13,856,000	15,544,800	17,113,800	19,320,900
November . .	17,100,000	16,028,000	14,079,000	11,750,000	11,262,000	12,707,000	13,975,000	13,608,000	14,677,000	13,574,000	17,591,400	16,633,400	14,319,500
December . .	17,000,000	16,295,000	14,547,000	10,877,000	11,412,000	15,434,000	15,600,000	13,640,000	14,094,000	12,564,000	17,263,700	15,727,100	16,407,950
Av'age for year	16,600,000	16,238,500	16,681,000	12,662,000	12,229,000	13,565,000	14,769,167	15,070,400	15,007,700	13,945,500	15,063,400	17,842,700	18,074,900

Statement showing amount of Rainfall on Water-shed of Lake Cochituate, amount of Water consumed and wasted, available amount received into Lake, available percentage of Rainfall, etc., from 1852 to 1874, inclusive. Water-shed of Lake = 12,077 acres.

YEAR.	Rainfall.	Amount of rainfall on Water-shed of Lake Cochituate.	Amount of Water drawn from Lake.	Amount of Water wasted from Lake.	Total amount consumed and wasted.	Rise of Lake during the year.	Fall of Lake during the year.	Total amount of R'nfall received into Lake.	Daily ave'ge am't of rainfall received into Lake.	Percentage of rainfall rec'd into Lake.
	Inches.	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	
1852*	47.93	15,759,207,000	2,974,042,800	4,020,566,885	6,994,609,685	. . . . .	261,360,000	6,733,249,685	18,396,857	43 per cent.
1853	55.73	18,366,561,000	3,117,939,500	3,166,417,500	6,284,357,000	239,580,000	. . . .	6,523,937,000	17,873,800	35 per cent.
1854	43.15	14,187,562,000	3,614,230,000	4,187,733,020	7,801,963,020	. . . . .	217,800,000	7,584,163,020	20,778,529	53 per cent.
1855	34.96	11,494,719,000	3,776,399,500	No acc't kept.	. . . . .	. . . . .	326,700,000	. . . . .	. . . .	. . . . .
1856	40.80	13,414,892,000	4,409,787,600	No acc't kept.	. . . . .	598,950,000	. . . .	. . . . .	. . . .	. . . . .
1857	63.10	20,747,052,000	4,644,990,000	10,625,900,000	15,270,890,000	32,670,000	. . . .	15,303,560,000	41,927,562	74 per cent.
1858	48.66	15,999,232,000	4,689,155,000	1,934,500,000	6,623,655,000	. . . . .	141,570,000	6,482,085,000	17,759,013	40 per cent.
1859†	49.02	16,117,602,000	4,808,375,000	7,569,000,000	12,377,875,000	283,140,000	. . . .	12,661,015,000	34,687,712	78 per cent.
1860	55.44	18,228,471,000	6,309,108,000	None.	6,309,108,000	174,240,000	. . . .	6,483,348,000	17,714,065	35 per cent.
1861	45.44	15,269,303,000	6,639,095,900	3,377,558,966	10,016,654,866	. . . . .	1,459,260,000	8,557,394,866	23,444,917	56 per cent.
1862	49.69	16,337,890,000	6,059,000,000	33,200,000	6,092,200,000	1,306,800,000	. . . .	7,399,000,000	20,271,233	45 per cent.
1863	69.30	22,785,586,000	5,927,052,500	2,165,696,470	8,092,748,970	762,300,000	. . . .	8,855,048,970	24,260,408	39 per cent.
1864	42.60	14,006,726,000	6,105,306,700	1,368,746,000	7,474,052,700	. . . . .	1,848,577,000	5,625,475,700	15,370,152	40 per cent.
1865	49.46	16,262,266,000	4,621,630,000	1,688,120,674	6,309,750,674	743,242,500	. . . .	7,052,993,174	19,323,270	43 per cent.
1866	62.32	20,490,455,000	4,463,585,000	None.	4,463,585,000	743,242,500	. . . .	5,206,827,500	14,265,280	25 per cent.
1867	56.25	18,494,795,000	4,951,225,000	2,482,041,000	7,433,266,000	. . . . .	698,811,000	6,734,455,000	18,450,600	36 per cent.

Statement showing amount of Rainfall on Water-shed of Lake Cochituate. — Continued.

YEAR.	Rainfall.	Amount of rainfall on Water-shed of Lake Cochituate.	Amount of Water drawn from Lake.	Amount of Water wasted from Lake.	Total amount consumed and wasted.	Rise of Lake during the year.	Fall of Lake during the year.	Total amount of R'nfall received into Lake.	Daily ave'ge am't of rainfall received into Lake.	Percentage of rainfall rec'd into Lake.
	Inches.	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	*Gallons.*	
1868	49.71	16,459,544,000	5,405,515,000	2,507,684,000	7,913,199,000	346,371,000	. . . .	8,259,570,000	22,567,160	50 per cent.
1869	64.34	21,099,808,000	5,500,696,000	1,635,570,000	7,139,321,000	480,882,000	. . . .	7,620,203,000	20,877,300	36 per cent.
1870	55.89	18,328,694,000	5,477,810,000	4,818,971,000	10,296,781,000	. . . . .	1,736,085,000	8,560,696,000	23,453,900	47 per cent.
1871	45.39	14,885,300,000	5,223,500,000	None.	5,223,500,000	. . . . .	250,933,000	4,972,567,000	13,623,470	33 per cent.
1872	48.47	15,895,364,000	‡5,775,151,200	None.	5,775,151,200	‡1,543,995,500	. . . .	5,642,480,300	15,416,610	35 per cent.
1873	45.43	14,898,419,000	6,511,826,900	2,917,977,000	9,429,803,900	. . . . .	515,132,000	8,914,671,900	24,423,760	60 per cent.
1874	35.93	11,782,967,000	6,623,972,900	1,145,851,700	7,769,824,600	. . . . .	1,367,715,000	6,402,109,600	17,540,030	54 per cent.
Average .	50.39	Average daily waste for 21 years 7,254,960			Average daily yield of Lake water-shed for 21 years, 21,067,890.					46 per cent.
		" " " " 6 years, '52-59 . 14,378,900								
		" " " last 15 years, '60-74 . 4,406,172								

* Observation of Rainfall at Lake Cochituate commenced 1852, and these observations are assumed as correct for the whole district.

† Lake raised two feet.

‡ Amount received from Sudbury River in 1872, 1,676,666,400 gallons.

Table of the average monthly and yearly heights of water in the Lake above the bottom of the Aqueduct.

MONTH.	1854.	1855.	1856.	1857.	1858.	1859*	1860.	1861.	1862.	1863.	1864.	1865.	1866.	1867.	1868.	1869.	1870.	1871.	1872.	1873.	1874.
January .	10.54	10.16	8.06	9.53	10.75	10.80	10.83	11.93	6.09	11.33	13.88	7.41	8.37	12.14	10.29	12.27	13.25	5.29	4.23	12.53	11.54
February .	10.95	10.65	7.59	10.28	10.05	12.17	11.36	12.77	6.57	12.85	13.71	8.24	8.73	13.14	9.75	12.96	13.19	5.40	2.52	12.31	12.71
March . .	10.93	10.68	6.96	10.67	9.35	12.45	12.67	13.21	8.65	13.95	14.33	12.28	10.58	13.57	10.96	13.21	12.81	7.96	1.19	12.06	12.98
April . . .	10.66	11.57	10.24	12.30	9.36	12.06	12.72	14.14	12.40	14.59	14.32	14.00	11.96	13.50	13.29	13.40	13.33	9.31	4.19	13.17	13.12
May . . .	10.87	11.35	12.05	12.05	10.67	12.06	11.52	13.88	14.45	14.01	14.26	14.00	12.01	13.44	13.67	13.65	13.12	10.37	5.10	13.17	13.33
June . . .	10.33	10.69	11.78	12.14	11.72	11.96	10.83	12.99	14.43	13.29	13.51	13.41	12.72	13.20	13.37	13.28	13.02	9.27	5.79	12.04	13.29
July . . .	9.00	9.86	10.67	11.41	11.74	10.22	10.42	11.50	14.05	12.82	11.33	12.28	11.84	12.12	12.46	12.62	12.12	7.83	6.33	10.25	12.25
August . .	6.67	9.01	11.59	11.70	11.30	10.24	9.42	10.27	12.97	13.73	9.65	11.18	11.79	12.17	11.70	11.04	10.37	6.27	7.04	8.87	10.94
September	6.64	7.52	10.82	11.72	10.40	9.84	9.42	8.71	11.33	13.43	7.91	10.09	11.59	12.00	11.61	9.73	8.67	5.00	10.02	7.60	9.37
October . .	5.90	6.42	10.10	11.10	8.72	10.15	10.35	7.79	10.30	12.94	6.46	9.02	11.72	11.10	11.83	10.58	8.10	3.81	11.46	7.29	7.50
November.	6.09	6.28	10.80	11.16	9.01	9.98	10.44	7.22	10.24	13.26	5.48	8.74	11.41	11.03	11.75	11.21	7.10	3.60	12.67	7.60	5.42
December .	8.38	7.29	10.97	11.02	9.85	10.54	11.17	6.88	11.70	14.06	5.41	8.48	11.68	10.51	12.33	11.77	6.40	3.83	12.40	9.08	3.60
Yearly av. .	9.00	9.29	10.14	11.26	10.24	11.04	11.93	10.94	11.10	13.52	10.84	10.76	11.20	12.33	11.92	12.15	10.96	6.50	6.91	10.50	10.50

* High-water mark raised two feet.

Table showing the height of water in the conduit at the gate-house, Lake Cochituate, the number of days it was running at those depths, and the average depth for each month.

1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Days.
0-0	..	..	...	...	...	...	...	...	...	...	...	1	1
0-10	..	..	...	1	...	...	...	...	...	...	...	...	1
3-11	..	..	...	1	...	...	...	...	...	...	...	...	1
4-8	..	..	...	...	...	...	...	...	...	...	...	2	2
4-9	..	..	...	...	...	...	...	...	...	...	3	...	3
4-10	..	..	...	...	...	...	...	...	...	...	2	...	2
4-11	..	..	...	...	...	...	...	...	...	...	3	...	3
5-0	..	..	...	...	...	...	...	...	1	...	3	...	4
5-2	..	..	...	...	...	...	...	...	...	...	2	...	2
5-3	..	..	...	...	...	...	...	...	...	...	2	...	2
5-4	..	..	...	...	...	...	...	...	...	...	1	...	1
5-5	..	..	...	...	...	...	...	...	...	...	4	...	4
5-6	..	..	...	...	...	...	...	...	...	...	2	...	2
5-7	..	..	...	...	...	...	...	...	...	...	1	...	1
5-8	..	..	...	1	...	...	...	...	...	...	1	...	2
5-9	..	..	...	...	...	...	...	...	...	...	1	...	1
5-11	..	..	...	...	...	...	...	...	...	...	2	...	2
6-0	31	28	31	...	...	...	...	12	29	1	1	1	134
6-1	..	..	...	...	...	...	...	...	...	1	1	...	2
6-2	..	..	...	1	...	...	...	...	...	...	1	...	2
6-3	..	..	...	...	...	...	...	...	...	1	...	...	1
6-4	..	..	...	...	...	...	...	...	...	1	...	...	1
6-5	..	..	...	...	21	19	...	1	...	2	...	1	44
6-6	..	..	...	6	...	1	...	...	...	2	...	2	11
6-7	..	..	...	...	...	...	...	...	...	1	...	...	1
6-8	..	..	...	1	...	...	...	...	...	1	...	1	3
6-9	..	..	...	...	...	1	...	...	...	1	...	...	2
6-10	..	..	...	1	...	...	...	...	...	1	...	1	3
6-11	..	..	...	...	...	...	...	...	...	2	...	...	2
7-0	..	..	...	16	...	9	1	...	...	17	...	10	53
7-1	..	..	...	1	...	...	1	...	...	...	...	...	2
7-3	..	..	...	...	...	...	29	18	...	...	...	1	48

Table showing the height of water, etc. — Continued.

1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total Days.
7-4 . . .	. .	. .	. . .	1	1	. . .	. . .	. . .	. . .	. . .	. . .	5	7
7-5 . . .	. .	. .	. . .	. . .	1	. . .	. . .	. . .	. . .	. . .	. . .	4	5
7-6 . . .	. .	. .	. . .	. . .	8	. . .	. . .	. . .	. . .	. . .	. . .	2	10

Average Monthly Depths.

1874.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Av. for Year.
	6-0	6-0	6-0	6-6¼	6-9	6-7¼	7-3	6-9	5-11¼	6-9	5-3¾	6-7½	6-4½

Annual Amount of Rainfall, in Inches, at Lake Cochituate, Boston and vicinity, 1849 to 1874, inclusive.

YEAR.	PLACES AND OBSERVERS.						
	Lake Cochituate, by Supt. of Western Division, B.W.W.	Boston, by J.P. Hall, to 1865, by W. H. Bradley since "	Cambridge, by the Director of the Observatory.	Waltham, by Agent Boston Manufacturing Company.	Lowell, by Merrimac Manufacturing Company.	Lowell, by Locks and Canals Co., J. B. Francis.	Providence, by A. Caswell.
1849	. .	40.30	40.97	40.74	51.09	. .	34.69
1850	. .	53.98	54.07	62.13	45.68	. .	51.49
1851	. .	44.31	41.97	41.00	41.00	. .	43.38
1852	*47.93	47.94	40.51	42.24	42.78	. .	38.58
1853	*55.73	48.86	53.83	45.04	43.92	. .	53.27
1854	43.15	45.71	45.17	41.29	42.08	. .	46.25
1855	34.96	44.19	47.59	40.63	44.89	48.41	39.05
1856	40.80	52.16	53.79	42.33	42.49	45.97	40.97
1857	63.10	56.87	57.92	44.04	49.38	52.02	44.75
1858	48.66	52.67	45.46	37.40	37.73	35.80	44.51
1859	49.02	56.70	. .	48.49	47.51	48.41	45.16
1860	55.44	51.46	46.95	45.97	46.91	46.67	38.44
1861	45.44	50.07	50.14	36.51	43.32	42.95	44.25
1862	49.69	61.06	57.21	46.42	44.26	44.61	50.14
1863	69.30	67.72	56.42	53.66	52.37	57.81	55.17
1864	42.60	49.30	39.46	36.56	38.11	40.64	36.83
1865	49.46	47.83	43.59	35.84	37.38	38.82	44.69
1866	62.32	50.70	. .	43.46	38.18	41.36	46.02
1867	56.25	55.64	41.71	41.40	45.54	45.87	47.04
1868	49.71	64.11	39.89	44.65	47.96	49.58	53.52
1869	64.34	66.28	47.98	47.30	47.30	48.96	47.70
1870	55.89	59.73	41.53	39.40	46.30	48.71	49.02
1871	45.39	48.33	40.56	36.82	44.45	44.17	47.91
1872	48.47	58.04	52.73	45.80	44.32	48.67	48.71
1873	45.43	54.94	46.81	42.58	39.86	45.05	52.56
1874	35.93	41.09	38.73	32.32	35.68	41.75	43.39

* By J. Vannevar.

Table showing the Rainfall in Boston for the year 1874, and the days on which it occurred, from observations by Wm. H. Bradley, Esq., Superintendent of Sewers.

Days of Month.	Jan.	Feb.	Mar.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	. . .	. . .	. . .	. . .	. . .	.84	. . .	. . .	. . .	. . .	. . .	. . .
2	.25	. . .	. . .	. . .	. . .	. . .	. . .	.02	. . .	.26	. . .	.02
3	. . .	1.98	. . .	. . .	. . .	. . .	.05	. . .	. . .	. . .	. . .	. . .
4	.03	. . .	.36	.05	. . .	.15	. . .	. . .	. . .	. . .	. . .	. . .
5	. . .	. . .	. . .	. . .	. . .	. . .	.72	. . .	. . .	. . .	. . .	. . .
6	.04	. . .	. . .	.40	. . .	.72	. . .	. . .	. . .	. . .	. . .	. . .
7	.48	.08	. . .	.29	.20	. . .	. . .	.06	. . .	. . .	. . .	.40
8	.79	. . .	.42	. . .	. . .	.32	. . .	1.44	. . .	. . .	. . .	. . .
9	. . .	. . .	. . .	.42	. . .	. . .	. . .	2.33	. . .	.26	. . .	. . .
10	.04	. . .	. . .	1.74	. . .	. . .	. . .	. . .	. . .	.32	.02	. . .
11	. . .	. . .	. . .	.04	. . .	. . .	.29	. . .	. . .	. . .	. . .	.02
12	. . .	. . .	. . .	. . .	. . .	.34	.49	. . .	. . .	. . .	. . .	. . .
13	. . .	.64	. . .	. . .	. . .	.08	. . .	.24	. . .	. . .	. . .	. . .
14	1.65	. . .	. . .	. . .	. . .	. . .	. . .	.85	. . .	. . .	. . .	.29
15	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
16	. . .	.02	. . .	. . .	1.04	. . .	.40	. . .	. . .	. . .	. . .	. . .
17	. . .	. . .	. . .	. . .	. . .	.35	. . .	. . .	. . .	. . .	. . .	. . .
18	. . .	. . .	.29	.38	. . .	. . .	. . .	. . .	.41	.12	.16	. . .
19	. . .	. . .	.01	. . .	.18	.05	. . .	. . .	.16	. . .	. . .	. . .
20	.37	. . .	. . .	1.02	. . .	.02	. . .	. . .	. . .	. . .	.38	. . .
21	.20	.06	. . .	. . .	1.34	. . .	.10	. . .	.08	.02	. . .	.38
22	. . .	.36	. . .	. . .	. . .	. . .	. . .	1.54	. . .	. . .	. . .	. . .
23	.02	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1.46	.14
24	. . .	. . .	. . .	.53	. . .	. . .	. . .	. . .	. . .	. . .	. . .	.19
25	. . .	. . .	. . .	. . .	.96	. . .	. . .	. . .	. . .	. . .	. . .	. . .
26	. . .	.88	. . .	2.24	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
27	. . .	. . .	. . .	. . .	. . .	.04	. . .	. . .	. . .	. . .	. . .	. . .
28	.11	. . .	.56	. . .	. . .	. . .	. . .	. . .	.01	. . .	. . .	.26
29	. . .	. . .	. . .	1.25	. . .	. . .	.65	. . .	. . .	.01	.56	. . .
30	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	1.00	.03	. . .	. . .
31	.32	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .	. . .
Monthly Totals	4.30	4.02	1.64	8.36	3.72	2.91	2.70	6.48	1.66	1.02	2.58	1.70

Total for the year . . . . . 41.09 inches.

REPORT OF SUPERINTENDENT OF WESTERN DIVISION.

WESTERN DIVISION BOSTON WATER WORKS,
May 1st, 1875.

HON. THOMAS GOGIN,

President Cochituate Water Board:—

SIR, — In compliance with the rules of the Board, I submit herewith my report for the past year: —

LAKE COCHITUATE.

May 1st, 1874, found us with a full lake, viz., 13 feet 4 inches above the bottom of the aqueduct. This height was held, with alternate loss and gain, until June 23d, from which time the surface lowered continuously and rapidly.

On the 30th of January, 1875, the water reached its lowest point, 9½ inches below the bottom of the aqueduct, or 14 feet 1½ inches below high-water mark. The middle division of the lake was at this time 1 foot 8 inches above the bottom of the aqueduct, and in the southern division 3 feet 10 inches. These divisions being connected by arched bridges under a highway and railway, the water overflowed from one basin to the next. The effect of the scour on the stability of the structures was a source of some anxiety. They were closely watched, protected by rip-rap, and no accident happened. Jan. 21st water from Sudbury river was turned into the lake, and the surface rose rapidly, sometimes as much as 5 or 6 inches in a day, and now the lake is again nearly full.

July 11th Dug pond was let into the lake, to allow Natick to get in the foundation of their pump-house. This pond is

now controlled by that town under the act of 1873, and negotiations are pending to sell the entire interest of the city in that pond. January 8th, Dudley pond was turned into the lake, it being then 4 feet below high-water mark, and on the 26th the water was drawn down to the level of the bottom of the pipe.

November 1st, 1874, the lake having fallen to the top of the aqueduct, I received orders to get the pumps and engines, used during the drought of 1871–2, in readiness; and on Dec. 3d the stop planks were put in and the pumps started. For three months the supply to the city was kept up by pumping. On March 3d, 1875, the pumps were stopped. I am much indebted to Mr. Geo. Taylor and the enginemen under his charge for the success with which the engines were run day and night without accident. When the temporary character of the machinery is considered, the poor shelter from the extreme cold of the past winter, and the exposure incident to the many changes which we were obliged to make in the suction pipes, it seems to me a fitting place to say this word in their praise.

The pumps were run 90 days. The average consumption of coal in 24 hours was 5.85 tons. Steam was kept at about 75 lbs. A side track was built at the Cochituate crossing, so that we were enabled to land our coal near to the works.

THE AQUEDUCT.

Up to the 18th of August the aqueduct was run under a foot head. On that day a leak was reported on the high bank at Newton Lower Falls. I had the brick-work laid bare at the point, and found two cracks and an open space of about a cubic foot in the embankment above them. A buttress of concrete, one foot thick, was laid up against the conduit, and the brick-work well plastered down with cement. No further leakage has been noticed. At the same time, with the assistance of Mr. George S. Rice, I took a series of cross sections

25 feet apart, the whole length of this bank referred to two stone bounds for line, and to a bench in the pipe-chamber for level, so that any future change in the form of the bank can be detected.

From the middle of August to Oct. 5th, 6 feet of water were run in the aqueduct, and from that time to the present about 8 inches head has been kept up. An examination of the aqueduct was made Dec. 3d, when we started the pumps. Efforts were made to stop a bad spring at Station 7, near the lake, which brought in a large amount of sand. The attempts were ineffectual, and it was thought best to fill the aqueduct as soon as possible, so that little time was left for any repairs. On February 23d a large volume of water broke into a manhole in the deep cut near the lake. The valley of Snake brook being clogged all the way to Cochituate village, with several feet of ice, a sudden freshet was turned into the cut, and lifting the ice with the manhole cover, left an opening for the water into the aqueduct. So good was the old brickwork, that since the breaking up of the ice, we found it undisturbed, with the exception of the cover.

The aqueduct has been cleared of timber from Wellesley to the lake. The bounds from Wellesley to the reservoir have not yet been set. There are a number of property lines which should be run during the coming summer, not only on the aqueduct, but at the lake, and I would ask the Board for the services of a small surveying party for that purpose.

A set of stop-planks have been so arranged at Grantville that the water can be shut off, in case of accident to the aqueduct below that point.

CHESTNUT HILL RESERVOIR

Is in good condition. In December we put in a new revolving screen in the effluent gate-house. This was accomplished

successfully without pumping, to which I feared at one time we should have to resort. Distance pieces a few feet apart have been added to the new screen, also two wire ropes firmly bound to the edges to prevent the wire from tearing. The new screen works well, and I would recommend that the other old one be replaced as soon as possible. The driveway is in good order; that portion of it repaired with finely crushed stone is smooth and free from mud and dust.

A row of maples was planted last fall along Beacon street, on the south side of the reservoir. The Webber claim for damages for flowage from the waste weir near the reservoir has been settled. A permanent right to empty into this brook will have to be secured, or else a connection put in between the conduit and the sewer near Beacon street.

BROOKLINE RESERVOIR

Is in the same condition as usual. It needs cleaning badly. The gate-houses are in thorough order. Annexed is the usual schedule of property and a table of examinations of the conduit, which I have compiled from various sources, hoping it may be of use in any extended examinations in the future.

Respectfully submitted,

DESMOND FITZGERALD,
Superintendent.

SCHEDULE OF PROPERTY AT CHESTNUT-HILL RESERVOIR.

1 two-horse express-wagon, 1 single ditto, 1 water-cart, 2 two-horse water carts, 2 iron road rollers, 1 single horse pung, 1 two-horse ditto, 1 horse truck, 1 horse power, 1 horse cart, 1 hay wagon, 2 hand carts, 1 pair large wheels, 2 clay mills, 1 tank, 6 gravel screens, 20 ox-tie chains, 1 7-inch pump, 2 5-inch ditto, 1 house force-pump, 4 clay knives, 1 stone-crushing machine and castings, 1 blacksmith's forge and tools, 1 derrick and rigging, 1 man head, 2 grub axes, 30 picks, 17 shovels, 13 spades, 4 hoes, 27 iron bars, 16 iron rakes, 9 stone hammers, 2 striking hammers, 24 wooden rakes, 4 border knives, 1 root-puller, 5 snaiths, 15 scythes, 18 scythe stones and rifles, 3 lawn-mowers, 1 garden engine, 2 Johnson's pumps, 5 hay forks, 6 lanterns, 6 oil cans, 3 reflectors, 8 peat knives, 7 tin dippers, 37 drills, 11 tin candlesticks, 18 barrels cement, 18 fire buckets, 7 pails, 9 rattan brooms, 5 wooden rammers, 10 ladders, 7 wheelbarrows, 2 grindstones, 1 jack-screw, 1 window brush, 5 paint brushes, 1 whitewash brush, 1 telegraph battery, 7 rubber coats and caps, 15 pair rubber boots, 1 four-bushel basket, 1 bushel basket, 2 hay ropes, 12 feet 18-inch Scotch pipe, 25 feet 15-inch ditto, 12 feet 30-inch cement pipe, 5 galls. raw linseed oil, 6 galls. varnish, 100 lbs. green paint, 1 sand pump, 25 lbs. candles, 2 doz. padlocks, 1 set scales, 1 safe, 1 clock, 2 horses, 1 Concord wagon, 1 carryall, 3 harnesses, 1 sleigh, 1 20 h. p. engine, 1 12 h. p. ditto, 1 6 h. p. ditto.

PROPERTY AT LAKE COCHITUATE.

1 extension dining-room table, 18 chairs, 1 map, 1 table, 1 mirror, 1 stove, 1 oil-cloth carpet, 1 wash-bowl, 1 range.

1 telegraph instrument, 1 horse, 1 carriage, 1 wagon, 2 harnesses, 1 cart and harness, 1 pung, 1 robe, 1 blanket, 5 shovels, 1 coal shovel, 6 wheelbarrows, 8 picks, 4 crowbars, 2 sledge hammers, 6 drills, 1 hand saw, 1 hammer, 2 screens, 1 sieve, 4 stop plank hooks, 1 scale, 1 rain gauge, 3 ox-chains, 3 pulley blocks, 1 spirit level, 2 25 h. p. engines, 1 boat, 3 large pumps, 3 small pumps, 2 hay forks, 1 dung fork, 1 pair hedge shears, 9 pieces copper pipe, 2 spades, 6 hoes, 4 axes, 2 rakes, 7 pair rubber boots, 10 buckets, 3 baskets of classified articles belonging to engines, 4 belts, 3 whitewash brushes, 1 scythe.

PROPERTY AT BROOKLINE RESERVOIR.

1 desk, 2 settees, 1 large stove, 1 spittoon, 1 lamp, 1 pair rubber boots, 1 scythe, 1 iron rake, 1 wooden rake, 1 sickle, 1 hoe, 1 pick, 2 shovels, 1 scuffle hoe, 1 pair clipping shears, 1 spade, 1 border knife, 1 wheelbarrow, 1 step-ladder, 2 long ladders, 3 scrubbing-brushes, 1 corn broom, 1 rattan broom, 1 water-pot, 1 water-pail, 1 sponge, 1 bushel basket, 1 dust-pan and brush, 1 coal-hod, 1 fire shovel, 1 stove-brush, 1 screen brush, 4 iron rods, 2 mats, 2 towels.

Table of all Recorded Examinations of the Aqueduct.*

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
0	April, '74.	6.24 × 5.04		Stearns.
1	"	6.15 × 5.02		"
1 + 50	Dec., '74.		Springs on right	Cunningham.
2	April, '74.	6.15 × 5.02		Stearns.
2	Dec., '74.		Large spring bringing sand. Probe passed easily through joint, 2 feet deep into space	Cunningham.
3	April, '74.	6.30 × 5.03		Stearns.
5	"	6.23 × 5.07		"
5 + 60	"		Remains of cement dam 1½" high . .	"
6	"	6.25 × 5.05		"
6 to 7	April, '71.		Crack in top	Mains.
6 + 70	" '74.		Remains of cement dam 1" high . . .	Stearns.
7 to 8	" '68.		Fine crack in top arch	Crafts.
7 + 15	" '74.	6.05 × 5.19	Spring bringing in sand, crack in top 25 feet long, ⅛" wide	Stearns.
7 + 20	Dec., '74.		Crack top and bottom	Cunningham.
7 + 25	"	6.03 × 5.17	Hole in bottom, probed 4"	"
7 + 30	"	6.03 × 5.22	Two cracks in top from 7 + 10	"
7 + 50	"		End of crack in top	"
8 + 5	"	6.20 × 5.04		"
10	April, '74.	6.33 × 5.02		Stearns.
12 + 80	"	6.28 × 5.00	Snake brook valley excavation	"
13	Nov., '73.		From 0 to 13, sides covered with moss and spongy substance	Cunningham.
15	April, '74.	6.29 × 4.92		Stearns.
17 + 30	"	6.21 × 5.04	Large spring	"
17½	April, '68.		Fissure with water and sand	Crafts.
17 + 50	Dec., '74.		Large spring in bottom	Cunningham.
17 + 50	Nov., '73.		Bottom below grade 3" for 25 feet . .	"
17 + 70	Dec., '74.	6.30 × 4.94	Bottom below grade	"
17 + 80	April, '74.	6.45 × 4.92	Conduit very much distorted	Stearns.

*The later and more careful examinations have been furnished me in manuscript by Mr. Davis and Mr. Fteley, under whose directions they were made. — D. F.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
19	April, '74.	6.24 × 5.13		Stearns.
20 + 50	Dec., '74.		Loose brick in bottom at manhole . .	Cunningham.
20 and 21	April, '69.		Are several places where cement used in repointing has fallen out	Crafts.
22 + 50 to 24 + 50	" '74.		Sand	Stearns.
25	"	6.12 × 5.05		"
25 + 10	"	5.92 × 5.00		"
26	"	6.22 × 5.07		"
26	Nov., '73.	6.28 × 5.10	Bottom apparently 3" above grade for a short distance	Cunningham.
26 + 50	April, '74.	6.31 × 5.02		Stearns.
27 + 70	"	6.25 × 5.16		"
29	"	6.18 × 5.01		"
31	"	6.25 × 5.07		"
33	"	6.25 × 5.08		"
40	"	6.24 × 5.03		"
40 to 41	"		Sand below manhole	"
50	"	6.22 × 5.14		"
51	"	6.24 × 5.04		"
51 + 20	"	6.20 × 5.05		"
52 + 50 to 53	"		Sand below manhole	"
52 to 53	April, '71.		Manhole, bad leak	Mains.
55 + 20	" '74.	6.28 × 5.05		Stearns.
56 and 57	" '69.		Small place where cement has dropped out and brick settled a little	Crafts.
57 to 58	" '71.		3 small fissures need pointing	Mains.
57	" '74.	6.28 × 5.00		Stearns.
57 + 70	"	6.25 × 5.00		"
60	" '69.		Figure 6 wrong side up	Crafts.
64 + 40	" '74.	6.25 × 5.07		Stearns.
66	"	6.25 × 5.11		"
66 + 10	Dec., '74.		Spring enters on right. Cutting 37 feet deep	Cunningham.
66 + 20	April, '74.		½" stream coming in at side bringing a little sand	Stearns.
66 and 67	" '71.		Needs repointing on right	Mains.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
68 + 20	April, '74.	6.31 × 5.04		Stearns.
70 + 50	"	6.27 × 5.02	Water running in at several places.	"
71 + 40	Dec., '74.	6.22 × 5.12		Cunningham.
71 + 60	"	6.28 × 5.02		"
71 + 72	"		Large springs in several places, 27 feet cutting	"
72	April, '74.	6.22 × 5.06	Large number of springs at sides	Stearns.
Near 73	" '69.		Place about 2 feet square where joints need repointing. A little below on the left quite a stream	Crafts.
73 + 65	Dec., '74.	6.13 × 5.12	Large springs at left, 14 feet cutting.	Cunningham.
74	April, '74.	6.19 × 5.10		Stearns.
74 and 75	" '69.		Stream and considerable sand	Crafts.
75 and 76	1866.		Fissure bringing in sand and water	"
80	April, '74.	6.21 × 5.12		Stearns.
85	"	6.30 × 5.07		"
88	Dec., '74.		Slight opening on right	Cunningham.
90	April, '74.	6.30 × 5.01		Stearns.
95 + 70	"	6.19 × 5.07	Large spring — no sand	"
96	April, '68.		Fissure with water and sand	Crafts.
96 + 80	Dec., '74.		Spring in bottom	Cunningham.
97 + 20	April, '74.	6.35 × 5.10		Stearns.
97 + 50 to 98	"		Sand from 1" to 3" deep	"
97 + 50	April, '68.		Fissure with sand and water	Crafts.
"	" '69.		Stream with sand	"
97 + 80	Dec., '74.		Sand in bottom from spring above	Cunningham.
98	1866.		Fissure bringing in sand and water	Crafts.
100 (about)	April, '69.		Another stream, very sandy	"
100	Dec., '74.	6.32 × 5.08	Brick out of bottom	Cunningham.
101 + 70	April, '74.	6.22 × 5.05		Stearns.
102 + 30	"	6.33 × 5.05		"
112	"	6.37 × 5.10		"
115	April, '69.		Manhole leaks badly	Crafts.
115 and 116	" '71.		Muddy	Mains.
116 + 20	" '74.	6.51 × 5.08		Stearns.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
116 + 50 to 117	April, '74.	6.39 × 5.08	Sand	Stearns.
119 + 10	"	6.32 × 5.08		"
120	"		Remains of cement dam	"
121	Dec., '74.	6.34 × 5.05	Spring in bottom, at left, 21 ft. cut	Cunningham.
122	"		Sand in bottom from spring above	"
122	Nov., '73.		Water springs in with fine sand	"
122 + 20	April, '74.	6.35 × 5.37		Stearns.
122 + 30 to 123	"		Sand 1" to 3" deep	"
134	"	6.38 × 5.02		"
134	Dec., '74.		One inch sand	Cunningham.
140	April, '71.		Large willow root. Crack $\frac{1}{8}$" wide near last manhole	Mains.
141	April, '74.	6.36 × 5.03		Cunningham.
141	"	6.26 × 5.05		Stearns.
141 + 50	"	6.28 × 5.15	Wide crack top and bottom, $\frac{1}{4}$"	Cunningham.
141 + 75	"	6.33 × 5.13	$\frac{3}{8}$ and over	"
141 to 144	Dec., '74.		Old crack, pointed last year, has not started	"
141 to 142½	April, '69.		Are several small cracks in top	Crafts.
141 to 142½	Nov., '73.	6.3 × 5.13	Crack in top $\frac{1}{8}$" to $\frac{1}{4}$", probably new	Cunningham.
141½ to 142½	April, '70.		Fine crack in top arch	Crafts.
142	" '71.		Considerable mud	Mains.
142	April, '74.	6.29 × 5.15		Cunningham.
142	"	6.30 × 5.14		Stearns.
142 + 50	"	6.31 × 5.05	End of crack	Cunningham.
143	"	6.32 × 5.02	Embankment at Stevens's Brook	"
145	"	6.33 × 5.06		"
147	"	6.33 × 5.08		"
to 148	"		Sand in bottom	"
149	"	6.35 × 5.01		"
150 + 80	Dec., '74.		Old crack in top has not started	Cunningham.
151 and 152	April, '69.		Fine crack in top	Crafts.
152	Dec., '74.	6.32 × 5.04	Old crack not started. Embankment.	Cunningham.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
152	April, '74.	6.31 × 5.04		Stearns.
152 and 153	" '71.		Small crack in top extending to waste weir	Mains.
152 and 153	Dec., '73.		Light crack in top	Cunningham.
153	" '74.		Roots at left	"
153	April, '74.	6.34 × 5.06		Stearns.
154	"	6.34 × 5.05	Crack in top from 154 to waste weir .	"
154	Dec., '74.	6.34 × 5.01	Crack at top begins	Cunningham.
154 + 50	"	6.31 × 5.06		"
154 + 50	"	6.30 × 5.10		"
154 + 50	Dec., '74.	6.31 × 5.05	Slight crack	"
154 to 155	April, '68.		Fine crack in top of arch	Crafts.
154 and 155	April, '69.		Crack in top all the way $\frac{1}{4}$"	Crafts.
154 to 155	" '70.		Fine crack in top	"
154 to 155 + 20	Dec., '73.		Cracks in top and bottom	Cunningham.
154 to 155 + 20	" '74.	6.33 × 5.13	Cracks from 154 to 155+20 were pointed Nov., 1873, and have not started. Conduit built on 5 ft. of embankment	"
155	April, '74.	6.37 × 5.11		Stearns.
155	"	6.35 × 5.08		Cunningham.
155 + 20			DEDMAN'S BROOK WASTE WEIR.	
156 to 158 + 50	Dec., '73.	6.3 × 5.04	Old slight crack, no change	Cunningham.
157	" '74.	6.33 × 5.08	Old crack unaltered, from 166 to 158.50	"
157 and 158	April, '68.		Crack which has been repaired and is in good condition	Crafts.
157 + 60	" '74.	6.3 × 4.94	Slight crack in top arch. Between 157 and 158 are several small cracks . .	Thompson.
158	" '70.		Small crack in top	Crafts.
158	" '74.	6.35 × 5.05	Roots growing through top. Crack widens slightly	Thompson.
160	Oct., '72.		Crack in top arch	Wiggin.
160	April, '74.	6.33 × 5.0		
160 + 95	"	6.35 + 4.95	Small crack in invert	Thompson.
161 + 20	"		Slight crack in top arch	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
161 and 162	April, '74.		Slight crack in side	Thompson.
162	"	6.35 × 5.00	Crack top $\frac{1}{8}$''. Number of slight cracks in top and side	"
163	"	6.35 × 5.05	From here to 165, several slight cracks, one short one, $\frac{1}{4}$'' wide. Long one in top $\frac{1}{4}$'', in some places apparently new	"
165	"	6.35 × 5.00		"
167 + 20	"		Crack $\frac{1}{2}$'' wide, 10 ft. long, continues at intervals	"
167 + 50	Dec., '73.	6.4 × 5.17	Crack in top $\frac{1}{4}$'', 10 feet long, old one.	Cunningham
167 + 70	Dec., '74.		Old crack unaltered	"
167 and 168	April, '74.		Old crack started again	Thompson.
168	"	6.35 × 5.15		"
168	1866.		Where repairs were made, pointing slightly started	Crafts.
168	Dec., '74.	6.34 × 5.02		Cunningham.
168 to 169	April, '68.		Is a repaired crack, in good order . .	Crafts.
168½ to 170	" '69.		Is a crack in top, cement falling out; should be repointed. Several places that have been repointed show no sign of weakness	"
169	" '74.		Crack near 169, which has been repointed, has started again	Thompson.
169 + 2[illegible]	"		Crack in top from manhole $\frac{1}{4}$'' wide .	"
169 to 170	" '70.		Small crack in top, part of which has been pointed and stands well	Crafts.
169 to 170	" '71.		Several small cracks in top, which have been repointed and have not started	Wiggin.
169	Oct., '72.		Slight crack	"
169	April, '68.		Short crack; should be pointed . . .	Crafts.
169½ to 170	" '68.		Small crack in top arch	"
169	Dec., '74.	6.30 × 5.07	Old crack started in top. Embankment 11 feet high	Cunningham.
169 to 170.20	"		Crack top and bottom. Bricks at bottom may be sprung with foot . . .	"
171 to 172	April, '74.		Crack in top $\frac{1}{8}$'' wide; appears new .	Thompson.
171 + 30 to 171 + 65	Dec., '74.		Slight crack on left top	Cunningham.
171 + 50 to 175½	April, '70.		Cemented crack all sound	Crafts.
172	" '74.	6.30 × 5.15		Thompson.

Table of all Recorded Examininations of the Aqueduct. —Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
172 to 175½	April, '68.		Repaired crack, in good order, except a small portion near 174, which was not pointed	Crafts.
173+40 to 173+70	Dec., '74.		Crack top started again 5 or 6 feet of embankment	Cunningham.
174	April, '74.		Slight crack in top	Thompson.
+10	"		Crack top ⅛ '	"
174 to 177			Roots	"
178 to 181	Dec., '73.		Old crack ⅛''	Cunningham.
178	Dec., '74.	6.35 × 5.00		"
178 and 181	April, '71.		Several cracks in top, some of them ¼'' wide, others quite fine	Wiggin.
178+65	Dec., '74.		Crack top and bottom ⅛'' wide	Cunningham.
178½ to 180	April, '69.		Crack little below top on right, in some places very fine, but in no place over ⅛''. This crack continues at intervals to about 184	Crafts.
179	Oct., '72.		Slight crack	Wiggin.
179	April, '74.	6.35 × 5.03	Small crack in top	Thompson.
179	Dec., '74.		Crack top and bottom ⅛'' wide	Cunningham.
179 to 181	April, '74.		Crack in top ⅛'' wide in places	Thompson.
180	Dec., '74.	6.35 × 5.02	Crack top and bottom ⅛''wide	Cunningham.
180	April, '70.		Fine crack for 50 feet	Crafts.
180	Oct., '72.		Slight crack	Wiggin.
181	Dec., '74.		Crack ends	Cunningham.
181+75	"		Crack by manhole	"
182	Oct., '72.		At 182 and 183 is a crack (Paddock's Pond Embankment.)	
182 to 183.50	April, '74, and Dec., '74.		Crack in top ⅛'' (Paddock's Pond Embankment.)	Thompson.
			Crack ⅛'' top and bottom (Paddock's Pond Embankment.)	Cunningham.
182 to 184	April, '70.		Fine crack at intervals (Paddock's Pond Embankment.)	Crafts.
182 to 183+	" '71.		Several cracks, one of which has been repointed (Paddock's Pond Embankment.)	Wiggin.
			There seems to be no change from these cracks	Crafts.
189	" '74.		Between 189 and 190 crack in top ¼'' wide	Thompson.
190	"	6.35 × 5.05		"
191 to 193	"		Several small cracks in side, settled slightly on top arch	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
205 to 206	April, '74.		Crack in top	Thompson.
	"	6.35 × 5.02		"
206 + 60 to 208 + 20	Dec., '74.		Slight crack at top	Cunningham.
207	"	6.3 × 5.04		"
207 to 208 + 20	Nov., '73.	6.3 × 5.12	Slight crack in top	"
207 to 208	April, '69.		Fine crack in top, whole distance	Crafts.
207 to 208	" '70.		Fine crack at intervals	"
207 to 208 + 30	" '74.		Small crack top arch	Thompson.
207½ to 208½	" '68.		Fine crack in top arch	Crafts.
209	" '74.		Slight crack top	Thompson.
214 to 215	" "		Slight crack in top	"
219 + 25	" "		Diagonal crack started	"
221 + 85	" "	6.30 × 4.90	Old settling of right side of upper arch. Slight crack top. General condition about here seems poor	"
222 to 223	" "		Slight crack in top	"
222 + 70	Dec., '74.		B. & A. R. R. crossing	Cunningham.
228 to 230	Oct., '72.		Slight crack	Wiggin.
228 + 5	April, '74.	6.20 × 4.97		Thompson.
228 and 229	"		Slight crack	"
240 to	"		Crack in top partially repointed	"
241	"	6.30 × 5.05	Opposite Wellesley Depot	"
240 + 50 to 241 + 70	Dec., '74.		Small crack top, partly pointed, not started	Cunningham.
241	April, '70.		Fine crack	Crafts.
245 to 246	Nov., '73.	6.3 × 5.17	Old crack ⅛"	Cunningham.
245	April, '74.		Slight crack top	Thompson.
245 to 246	Dec., '74.		Old crack not started	Cunningham.
245 to beyond 246	April, '69.		Fine crack alongside of an old repaired crack	Crafts.
245½	" '70.		Cemented	"
245½ to 247½	" '68.		Repaired cracks in good order, but there are several small cracks unpointed	"
246½ to 243½	" '70.		Fine crack	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
247	April, '71.		From near 247 and extending about 50 ft. is a crack on top arch, left side, in some places nearly $\frac{1}{2}''$ wide	Cunningham.
247 and 248	Oct., '72.		Quite large crack in top arch	Wiggin.
247 and 248	April, '69.		Between 247 and 248 is a short crack, worse than any seen yet; appears again at intervals, a little beyond 248	Crafts.
247 + 30	Dec., '74.		Crack top and bottom $\frac{1}{8}''$ wide . . .	Cunningham.
247 + 50	"	6.27 × 5.15	Crack top and bottom $\frac{1}{8}''$	"
247 + 70	"		Crack ends	"
248 to	April, '74.		Bad crack in top	Thompson.
249	"	6.30 × 5.05		"
248 + 50 to 249	Dec., '74.		Crack top and bottom $\frac{1}{8}''$ to $\frac{1}{4}''$ . . .	Cunningham.
252 to 253	April, '74.		Slight crack top; bottom settled . . .	Thompson.
252 + 50	Nov., '73.		Slight crack in top	Cunningham.
252 + 50 to 253	Dec., '74.		Crack $\frac{1}{8}''$ wide on top unaltered .	"
253 to 254	April, '74.		Roots. Slight crack grows larger to 254 — $\frac{1}{4}''$ wide — near manhole 3'' to 6'' of mud	Thompson.
253 to 254	Nov., '73.		Quantity of roots and small crack in top	"
254	Dec., '74.	6.24 × 5.22	Mud in bottom and roots	Cunningham.
254 to 256	April, '70.		Fine crack in top	Crafts.
254	Oct., '72.		Bottom quite muddy	Wiggin.
254	Nov., '73.	6.25 × 5.22		Cunningham.
254 to 256	April, '74.		Crack in top, part of way $\frac{1}{2}''$ wide	Thompson.
254½ to 256	" '68.		Very fine crack in top	Crafts.
255	" '69.		An old crack, pointed, remains sound	"
255 to 256	Nov., 73.		Wide crack top and bottom . . .	Cunningham.
255	Dec., '74.	6.34 × 5.07	Slight crack top and bottom . . .	"
255 + 40	"	6.27	Wide crack in top	"
255 to 257½	Oct., '72.		Crack	Wiggin.
256	Dec., '74.	6.33 × 5.06	Slight crack in top	Cunningham.
256 + 20	"		End of crack	"
259	Oct., '72.		Crack	Wiggin.

Morton's culvert embankment 14 feet extreme height.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
259 to 260	April, '74.		Slight crack in top	Thompson.
259 to 260 + 80	Dec., '74.		Slight crack in top	Cunningham.
260	April, '74.	6.32 × 5.07		Thompson.
260 to 264	"		Several slight cracks; mud between 263 and 264	"
264 to 265	"		Water leaks through	"
272 to 274½	" '68.		A little past 272 is a crack, part of which is cemented, extending to about 274½	Crafts.
272 and 272½	" '69.		Is an old crack in top, which has been bridged at intervals with Portland cement, which remains unbroken .	"
272 to 273	Oct., '72.		Large crack which has been pointed not started	Wiggin.
272	April, '74.		Bad crack repointed, cracked again, extends to 273 + 50	Thompson.
272 to 274.50	Dec., '74.		Old crack not started	Cunningham.
272 and 276	April, '71.		Is large crack, pointed and not started	Wiggin.
272½ to 275	" '70.		Fine crack	Crafts.
272 to 274½	Nov., '73.	6.26 × 5.13	Old crack in top quite wide, not started since last year	Cunningham.
274	Oct., '72.		Quite a crack in several places . . .	Wiggin.
275	1864.		Not very serious crack	Crafts.
282	April, '69.		Figures wrong to sta. There should be a 2 in place of a 9	"
283	" '70.		Fine crack	"
283 to 284	" '74.		Cracks in top most of the way	Thompson.
283½ to 284	Nov., '73.		Slight crack in top (old)	Cunningham.
283 + 50 to 284	Dec., '74.		Old crack unaltered	"
284 + 90	April, '74.		Crack ¼" wide	Thompson.
284½ to 285½	Nov., '73.	6.24 × 5.12	Slight crack in top, left hand	Cunningham.
285 + 50	April, '74.		End of crack	Thompson.
289	" '71.		What should be 289 is numbered 282 .	Wiggin.
292 to 296	Oct., '72.		Small cracks	"
293 + 30	April, '74.		Cement out around one brick	Thompson.
293 + 40	"		" " " " "	"
293 + 75	"		" " " " "	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
297 + 25	April, '74.	6.10 × 5.05		Thompson.
297 to	"		Bottom uneven, leaks badly from outside, old dams	"
298	"		2 small streams on right	"
298 + 10			Bricks loose on right side 2 feet up	"
300	Nov., 73.	6.16 × 5.13	END OF DIVISION 1.	
1 and 2	April, '74.		Bad place in top, 2 dams	"
3 and 4	"		Dams	"
12½ to 13	" '68.		Fine crack in top opposite Grantville depot	Crafts.
12 to 14	" '71.		Several large cracks which have been repointed, but think have started a little in places	Wiggin.
13 to 14	Nov., '73.	6.14 × 5.21	Old crack in top pointed and cracked again	Cunningham.
13 to 14	April, '70.		Fine crack in top	Crafts.
13 and 14	" '74.		Bad crack in top, leaks badly on side; brick sunk in bottom	Thompson.
13 + 10	Dec., 74.		Slight crack top and bottom	Cunningham.
+ 40	"		¼" wide at top, cut 23 feet deep	"
+ 50	"	6.09 × 5.08	Large spring in bottom, brings in sand	"
13 to 14	Oct., '72.		Crack, which looks as if it had spread and water drips through; sand in bottom	Wiggin.
14	Dec., '74.		Crack ends	Cunningham.
15 and 17	April, '69.		Old crack patched but not started	Crafts.
15½ to 17	Nov., '73.	6.12 × 5.17	Old crack in top quite wide, pointed and started again	Cunningham.
15½ to 16½	Oct., '72.		Quite a crack in top	Wiggin.
16	April, '74.	6.12 × 5.0	Large crack in top commences	Thompson.
16 to 16 + 40	Dec., '74.		Crack top and bottom	Cunningham.
16 to 17	April, '68.		Fine crack in top	Crafts.
16 to 17	" '74.		5 streams from inside, largest ¼" diameter; brick gone in bottom	Thompson.
16 to 18½	" '71.		Quite muddy	Wiggin.
17 to 18	Oct., '72.		Large crack, sandy	"
17 to 18	Nov., '73.	6.11 × 5.15	Old crack in top quite large, pointed and started again; springs at bottom	Cunningham.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
17 + 30	Dec., '74.		Crack at top	Cunningham.
17 + 50	"	6.15 × 5.13	Two cracks in top	"
18	"	6.21 × 5.03	Slight crack	"
18 + 40	"	6.14 × 5.21	Crack ¼" at top	"
18 to 19	April, '74.		Bad crack in top 60 feet long, leaks badly	Thompson.
18 + 50	" '70.		Fine crack in top	Crafts.
18 + 70	Dec., '74.		⅜" at top	Cunningham.
19	"		Crack ends	"
20	1866.		Fissure repaired	Crafts.
21 + 50	April, '74.		Appears to be lead pipe in top	Thompson.
27 + 80	"		Slight crack top	"
30 + 25	"	6.35 × 4.95	Mud bottom	"
30½	Nov., '73.		Mud and roots in bottom	Cunningham.
32	1866.		Fissure repaired	Crafts.
34 to 36	April, '74.		Some small cracks, cement gone	Thompson.
40 to 45	"		Numerous small cracks in top	"
49	" '70.		From 49 to east pipe-chamber all good	Crafts.
49 + 50			WASTE WEIR AT GRANTVILLE.	
51 and 52	Oct., '72.		Slight crack	Wiggin.
52 to 54½	Nov., '73.		Slight crack in top	Cunningham.
52 to 53	April, '74.		Small crack in top, somewhat increased from 53 to 54	Thompson.
53	" '71.		To a little beyond 54 are two cracks in top, in some places quite fine, and in others ¼" wide	Wiggin.
53 and 55	Oct., '72.		Slight crack	"
53	Dec., '74.		Crack top and bottom	Cunningham.
54	"	6.28 × 5.12	Crack in top 1-16" to ⅛"	"
54 + 60	"		Crack ends	"
56 + 70	"		Slight crack in top to 59 + 80 } embankment.	"
59 + 80	"		Crack ends }	
63	"		Slight crack	"
63½ to 64½	Nov., '73.	6.3 × 5.05	" "	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
63 + 80 to 64 + 40	April, '74.		Large crack in top	Thompson.
64	Dec., '74.		1-16 ' crack	Cunningham.
64 + 50	"		Ends	"
64 and 65	Oct., '72.		Slight crack	Wiggin.
77	Dec., '74.		Slight crack in top	Cunningham.
77 + 30	"		1-8" wide	"
77 + 60	"		Ends	"
77 to 78	Nov., '73.		Several cracks	"
77 and 78	April, '71.		Are 3 quite large cracks in top, but they look as if they had been in the condition they are now in for some time	Wiggin.
77 and 78	Oct., '72.		Several cracks	"
78	April, '74.	6.34 × 5.00		Thompson.
80 + 90	Dec., '74.		Slight crack, top	Cunningham.
81	"		Ends	"
82	April, '74.		Slight crack, top	Thompson.
100	1864.		Crack between 100 and the west pipe-chamber 400 feet in length; serious crack, repaired	Crafts.
100 to 101	April, '74.		Small crack top	Thompson.
101	"	6.38 × 5.03		"
105 +	"		Dam	"
105 + 30	Dec., '74.	6.27 × 5.05		Cunningham.
106	April, '74.	6.27 × 5.05		"
106 + 75	"	6.27 × 5.14		Thompson.
107	Dec., '74.	6.19 × 5.21		Cunningham.
107	"	6.19 × 5.22	Patching commenced	Thompson.
107	"	6.19 × 5.21	This crack was plastered over in Nov. '73, but has again opened both top and bottom nearly ¼"	Cunningham.
107 + 40	"	6.06 × 5.30		Thompson.
107 + 50	"	6.10 × 5.22		"
107 + 50	"	6.04 × 5.33		Cunningham.
107 + 50	Dec., '74.	6.04 × 5.24	The very bad crack repaired in Nov. '73, has started very slightly; showing a crack in all the new pointing	"

High embankment, Newton Lower Falls.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.		AUTHORITY.
107 + 60	April, '74.	6.02 × 5.40			Thompson.
107 + 85	"		Crack in bottom		"
107 + 85	"	5.98 × 5.44			Cunningham.
107 + 95	"	6.00 × 5.45			Thompson.
108	Nov., '73.	6.00 × 5.48	Worst place wide crack top and bottom, in a very dangerous condition		Cunningham.
108	April, '74.	6.05 × 5.45			"
108	Dec., '74.	6.04 × 5.42	Started slightly at top and bottom		"
107 to 109½	Oct., '72.		Crack that was repointed has started, especially at 109		Wiggin.
107 to 109½	April, '71.		Is a crack in top which has been repointed, but think it is opening some		
107 to 109½	Nov., '73.	6.18 × 5.30	Bad cracks top and bottom, very wide in many places; has been pointed and started again; conduit badly out of shape. A probe was pushed through bottom crack 2 feet into the gravel below . .		Cunningham.
108 + 25	April, '74.	6.05 × 5.40	Larger crack in bottom, cement repointing stops. Crack in top continues. In some places there are 3 cracks, some apparently new	High embankment, Newton Lower Falls.	Thompson.
108 + 40	"		Crack in bottom goes to R. side of centre and increases		"
108 + 50	"	6.09 × 5.35	Crack in top continues and increases		"
108 + 50	Dec., '74.	6.07 × 5.38			Cunningham.
108 + 50	April, '74.	6.07 × 5.37	Several bricks near the top are cracked from settlement. There appears to be motion in the conduit, and as I thought some loose bricks in the bottom		"
109	Dec., '74.	6.15 × 5.21			"
109	April, '74.	6.15 × 5.28			Thompson.
109 + 15	"		Two cracks in bottom each side of centre		"
109 + 25	"		Crack in bottom varies from side to side		"
109 + 50	"	6.20 × 5.15	Crack in bottom stops		"
109 + 50	Dec., '74.	6.22 × 5.15	Crack not started		Cunningham.
110	April, '74.	6.33 × 5.03			Thompson.
110	"	6.33 × 5.01			Cunningham

Table of all Recorded Examinations of the Aqueduct. —Con.

STATION.	DATE.	SIZE.	REMARKS.		AUTHORITY.
110 + 50	April, '74.		Old crack repointed in top not started	High emb., N. L. F.	Thompson.
110 + 70	Dec., '74.		Slight crack to 111		Cunningham.
111	April, '74.	6.35 × 5.05			Thompson.
111 + 50	"	6.35 × 5.05	West pipe-chamber of Charles river siphon		

FROM EAST PIPE-CHAMBER TO THE RESERVOIRS.

123	April, '74.	6.36 × 5.00		Rice.
138 + 50	"	6.33 × 5.06		"
142 to 143	Oct., '72.		Little sandy	Wiggin.
143 + 25	April, '74.	6.36 × 5.03		Rice.
145	"	6.36 × 5.06		"
151	"	6.36 × 5.00		"
155	"	6.35 × 5.03		"
160	"	6.28 × 5.13	Crack in top, beginning 16 ft. west of a manhole; total length, 40 ft.	"
160	Oct., '72.		Each side of manhole is a crack	Wiggin.
160	Nov., '73.		Crack 50 ft. long in top both sides manhole	Cunningham.
163 to 164	Oct., '72.		Sandy	Wiggin.
165	April, '74.	6.34 × 5.05	Roots first observed in sides	Rice.
169¼ to 170	Nov., '73.	6.33 × 5.07	Slight crack in top; roots side	Cunningham.
169 + 30 to 170	April, '74.	6.38 × 5.03	Slight crack at top	Rice.
170	"	6.34 × 5.03		"
174 to 180	Oct., '72.		Moss on each side	Wiggin.
175	April, '74.	6.33 × 5.04		Rice.
175 to + 40	"	6.33 × 5.06	Slight crack in top	"
176 to 179	"		Large roots growing both sides	"
178 + 15 to 178 + 95	"	6.32 × 5.09	Cracks at top	"
179 + 40 to + 60	"	6.37 × 5.04	Slight crack in top	"
180 + 50	"		Slight crack in top, 2 ft. long	"
182 + 83	"		Roots	"
183 + 40	"		Manhole cracked on both sides	"

Table of all Recorded Examinations of the Aqueduct.—Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
185	April, '74.	6.33 × 5.09		Rice.
190	"	6.33 × 5.05		"
193 to 194	" '71.		Crack on right side of upper arch about 3 ft. long, diagonally to corners	Manley.
195	" '74.	6.37 × 5.02		Rice.
195 + 30 to 196 + 80	"	6.33 × 5.07	Slight crack in top	"
195½ to 196½	Nov., '73.	6.35 × 5.03	Slight crack in top	Cunningham.
195½ to 197	April, '71.		Fine crack in top	Manley.
196 and 197	" '70.		Fine crack in top	Crafts.
196 and 197	1867		Is a small crack in top 50 ft. long . .	"
196 and 197	1869		Small crack in top arch	Wightman.
196 to 197	Oct., '72.		Crack	Wiggin.
197 + 50	April, '74.		Manhole cracked	Rice.
198 + 25 to 198 + 55	"	6.31 × 4.97	Slight crack in top	"
198 to 199	April, '71.		Fine crack in top	Manley.
200	" '74.	6.32 × 5.00		Rice.
205	"	6.33 × 5.03		"
205 + 70	"		Sand at bottom	"
206	April, '69.		Small crack in bottom which lets in sand	Crafts.
210	" '74.	6.29 × 5.00		Rice.
215	"	6.33 × 5.01		"
216 + 25 to 218 + 42	"		Crack in top and sides	"
216 to 218½	Oct., '72.		Several cracks in top and on left . . .	Wiggin.
216 + 25 to 218¼	Nov., '73.	6.31 × 5.06	Several bad cracks in different joints, left hand, top and bottom 1-8" to 1-4"	Cunningham.
217 + 50	April, '74.	6.31 × 5.08		Rice.
217½ to 218½	1867		Crack top and bottom	Crafts.
217½ to 218½	April, '69.		Crack top and bottom, and sand . . .	"
217½ to 218½	" '70.		Bad crack in top, nearly 1-4" wide in places	
217½ to 218½	" '71.		Bad cracks in top arch, part of the way two cracks	Manley.
218	Nov., '73.	6.28 × 5.06		Cunningham.

Table of all Recorded Examinations of the Aqueduct. —Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
218	April, '74.	6.28 × 5.07		Rice.
220	"	6.29 × 5.04		"
221 + 25 to 222 + 12	"		Slight crack in top and sides	"
221 to 222	April, '71.		Fine crack in top, part of the way two cracks	Manley.
223 + 50 to 224	Nov., '73.		Slight crack in top	Cunningham.
223 + 55 to 223 + 85	April, '74.	6.30 × 5.01	Slight crack in top	Rice.
223 + 85 to 224	" '74.		Slight crack in left side	"
224 to 225	Nov., '73.	6.26 × 5.13	Several large cracks in top, left hand, and one in bottom, probably new one	Cunningham.
224 to 225	1867		A double crack in top arch	Crafts.
224 to 225	April, '69.		Double crack in top arch and bottom also	Wightman.
224 to 225	" '70.		Two cracks in left top, some places 1-4" wide, and others very fine	Crafts.
224 to 225	" '71.		Two cracks in top arch, same as last year; worst crack in the section	Manley.
224 to 225 + 5	April, '74.		Large crack in top and sides	Rice.
224 + 50	"	6.27 × 5.08	Roots to 225	"
225	"	6.29 × 5.10		"
226 + 47 to 228 + 45	"		Slight crack in top	"
226¾ to 228½	Nov., 73.		Slight crack in top	Cunningham.
227 to 228	April, '71.		Fine crack in top arch	Manley.
227 + 50	April, '74.	6.29 × 5.08		Rice.
228	"	6.31 × 5.06		"
230	"	6.31 × 5.06	Manhole	"
232 + 40 to 234	"		Large crack in top	"
232 + 50 and 234	April, '69.		Small crack in top and bottom arches	Wightman.
232 + 50 to 234	1867.		Slight crack in top	Crafts.
232½ to 234	April, '70.		Several cracks in top, some of the way very fine, some 1-8" to 1-4" wide	"
232½ to 234	Oct., '72.		Several bad cracks in top and on left	Wiggin.

Embankment 12 feet high.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
232½ to 234	April, '71.		Several cracks in top, some of the way fine, but part of it from ⅛″ to ¼″ wide; no change from last year . .	Manley.
232½ to 238½	Nov., '73.	6.28 × 5.14	Bad cracks top and bottom, ¼″ wide, and crack in bottom, south side . .	Cunningham.
233 + 50	April, '74.	6.29 × 5.31		
237	"	6.31 × 5.01		
240	"	6.29 × 5.04		
242¾ to 2442	1867.		Serious crack, 65 feet in length . . .	Crafts.
241 and 244½	Apr., '69.		Bad crack in bottom and top, and considerable sand	Wightman.
242½ to 244	" '70.		Several cracks on both sides of top, some quite bad, nearly ½″ in places	Crafts.
242 to 244	" '71.		Several bad cracks in both sides of top arch	Manley.
242½ to 244	Oct., '72.		Several bad cracks and mossy	Wiggin.
242 + 60 to 244	Nov., '73.	6.21 × 5.21	Near manhole and in embankment, two of the worst cracks we have seen; also two bad ones in bottom, ¼″ to ½″, large roots in top	Cunningham.
242 + 60	April, '74.	6.27 × 5.09	Slight crack in top	Rice.
245	"	6.31 × 5.06		"
247 + 40 to 248 + 20	"	6.38 × 5.06	Slight crack in top	"
247¾ to 248	Nov., '73.		Very slight crack top	Cunningham.
248	April, '71.		Fine crack in top	Manley.
250	" '74.	6.32 × 5.06		Rice.
253 + 30 to 254 + 50	"		Slight crack in top	"
253½ to 254½	" '71.		Several fine cracks, top and right side of arch	Manley.
253½ to 254½	Nov., '73.	6.30 × 5.15	Slight crack in top	Cunningham.
254 and 255	1867.		Small crack	Crafts.
254 and 255	April, '69.		Small crack top	Wightman.
254	" '74.	6.29 × 5.13		Rice.
254 to 262	"		Springs both sides, large root left side	"
255	"	6.37 × 5.06	Springy on right side	"
260	"	6.32 × 5.07		
263 + 35 to 0 + 30	"		Large crack in top	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
263½ to 264	1867.		Slight crack	Crafts.
263½ to 264	April, '69.		Small crack in top	Wightman.
	" '71.		Fine crack in top and right side . . .	Manley.
264	" '74.	6.29 × 5.07		Rice.

THIRD DIVISION.

0 + 93 to 2 + 80	April, '74.		Large crack in top	Rice.
1 and 2	1867.		Slight crack 30 ft. long	Crafts.
1 and 2	April, '69.		Small crack in top	Wightman.
1 and 2½	Nov., '73.	6.29 × 5.06	Slight crack in top	Cunningham.
1 to 2	April, '71.		Fine crack in top	Manley.
2	April, '74.	6.31 × 5.08		Rice.
5	"	6.38 × 5.03		"
6 + 50 to 7 + 15	"	6.30 × 5.07	Slight crack	
6¾ to 7	Nov., '73.		Small crack in top	Cunningham.
8½			NEWTON CENTRE WASTE WEIR.	
11 + 40 to 12 + 30	April, '74.		Slight crack in top	Rice.
11½ to 12½	Nov., '73.		Very slight crack in top	Cunningham.
12	April, '74.	6.39 × 5.07		Rice.
12 + 60	"		Slight crack top 5 ft.	"
13 + 86 to 17 + 20	"		Very slight crack	"
14	"	6.34 × 5.03		"
16	"	6.34 × 5.06		"
18	"		Manhole cracked both sides for a few feet	"
18 + 86 to 19 + 70	"		Very slight crack in top	"
19½ to 20	Nov., '73.		Very slight crack in top	Cunningham.
20	April, '74.	6.30 × 5.04		Rice.
20 + 85 to 21 + 38	"	6.30 × 5.04	Very slight crack in top	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
21 to 21¼	Nov., '73.		Very slight crack in top	Cunningham.
22	"	6.26 × 5.13		"
25	April, '74.	6.30 × 5.06		Rice.
27 + 75	"		Slight crack in top	"
30	"	6.34 × 5.09		"
30 + 50	"		Very small stream right side	"
33½	Nov., '73.		Old cement dam 5'' or 6'' high . . .	Cunningham.
35	April, '74.	6.32 × 4.99		Rice.
+ 9	"		Small stream left side	"
35½	May, '70.		Cement dam should be cut out . . .	Crafts.
35½	Nov., '73.		Another dam and rubbish	Cunningham.
37½	1867.		Large fissure in bottom, through which a large volume of water and some sand was flowing	Crafts.
37 + 50	April, '74.		Spring as large as man's wrist in bottom	Rice.
37½	Nov., '73.		Copious spring in bottom, smells of sulphur	Cunningham.
37½	1866.		Fissure repaired	Crafts.
39	Nov., '73.		Roots and spring	Cunningham.
40	1866.		Fissure repaired	Crafts.
40	April, '74.	6.34 × 5.09		Rice.
41 + 40	"		Manhole leaks from top	"
45	"	6.32 × 5.02		"
46 + 50	"		Small spring on left side	"
50	"	6.29 × 5.11		"
50 + 50 to 52 + 50	"		Large crack in top	"
50 + 75	"	6.26 × 5.20		"
51	"	6.25 × 5.08		"
+ 13	"		Four large springs in bottom	"
52	"	6.24 × 5.20	This crack stops at manhole	"
51	1867.		East of 51 is a slight crack and small fissure in the bottom bringing in water	Crafts.
50½ to 52½	Oct., '72.		Bad cracks. Conduit clean	Wiggin.
50½ to 52½	Nov., '73.		Cracks 1-8'' and 1-4'' top and bottom	Cunningham.

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
51½	Nov., '73.	6.20 × 5.10		Cunningham.
51	"		Hole in bottom, spring	"
52	"		Crack in bottom on right	"
53 + 65	April, '74.		Spring bubbling at bottom	Rice.
53 + 85	"		Slight crack in top	"
54 + 38			Spring size of one's thumb	"
			Copious springs from 10 to 20 feet west of west end of tunnel	"
			NEWTON TUNNEL.	
	Nov., '73.		From 3" to 9" of mud in tunnel . . .	Cunningham.
	April, '74.		Several inches of mud whole length .	Rice.
84	"		Small stream right side	"
85	"	6.24 × 5.04		"
86½	Oct., '72.		Crack on right	Wiggin.
86½ to 87½	Nov., '73.		Quite a crack on right near top; also in bottom	Cunningham.
86 + 65 to 87 + 45	April, '74.		Crack in right side	Rice.
87	"	6.29 × 5.15		"
88 to 90	Oct., '72.		Considerable fungus	Wiggin.
89	April, '74.	6.30 × 5.04		Rice.
89 to 89 + 30	Nov., '73.		Crack in middle, top, and bottom . .	Cunningham.
90	April, '74.	6.35 × 5.03		Rice.
90 to 90½	Nov., '73.	6.4 × 5.12	Crack 1-8" to 1-4" right side	Cunningham.
90 + 10 to 90 + 90	April, '74.		Crack in right side	Rice.
90 + 60	"	6.36 × 5.03		"
91 + 60 to 92 + 97	"		Crack in right side	"
92	"	6.33 × 5.07		"
93	Oct., '72.		Crack on right	Wiggin.
94	Nov., '73.		Slight crack on right side near top . .	Cunningham.
94	April, '74.	6.32 × 5.09	Slight crack in right side and top . .	Rice.
95	"	6.36 × 5.07		"
100	"	6.37 × 5.06		"
103 to 103 + 24	"		Slight crack in side	"

Table of all Recorded Examinations of the Aqueduct. — Con.

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
103 + 15	April, '74.	6.35 × 5.07		Rice.
103 + 50	Oct., '72.		Crack in top	Wiggin.
105	April, '74.	6.35 × 5.07		Rice.
106+55 to 107+40	"		Slight crack in top and right side . .	"
107+40 to 107+87	"		Slight crack in top	"
107 + 50	"	6.30 × 5.09		"
107½ to 108	Nov., '73.		Slight crack in top	Cunningham.
108½ to 110	Oct., '72.		Several cracks, been repointed, not started	Wiggin.
108+58 to 110+50	April, '74.		Crack right side and top	Rice.
109 to 110	Nov., '73.	6.31 × 5.05	Two cracks at right of top 1-8" . . .	Cunningham.
110	April, '74.	6.30 × 5.07		Rice.
115	"	6.40 × 5.01		
115 to 117	Oct., '72.		Crack	Wiggin.
115+20 to 118+40	April, '74.		Slight crack in top	Rice.
115½ to 116¾	Nov., '73.		Slight crack in top	Cunningham.
116	April, '74.	6.33 × 5.17		Rice.
117¾ to 118½	Nov., '73.		Two slight cracks	Cunningham.
118	Oct., '72.		Crack on right side	Wiggin.
118+65 to 126+75	April, '74.		Large crack in top. Bottom rough .	Rice.
118¾ to 119¼	Nov., '73.		Slight crack in top	Cunningham.
119½ to 126	1866.		The cracked portion of the Bennett meadow extends about 650 feet; repaired during the year	Crafts.
119 to 124	1867.		Old cracks do not show much change	"
119¾ to 124	Nov., '73.		Bad cracks top and bottom, ¼" and more	Cunningham.
119 to 124	Oct., '72.		Several bad cracks on each side and top; repointing is all right	Wiggin.
119 + 50	April, '74.	6.37 × 5.04	Bottom rough	Cunningham.
120	"	6.36 × 5.01		"
120	"	6. 37 × 5.07		Rice.
120 + 50			From here to Intermediate Gate-house is by the side of the Lawrence Basin	

STATION.	DATE.	SIZE.	REMARKS.	AUTHORITY.
120 to 121	April, '70.		Crack, and to 125 are several; some of them large; but haven't increased since last examination	Crafts.
120 to 125	" '71.		Should be repaired	Stanwood.
121	" '74.	6.23 × 5.24		Cunningham.
121	Nov., '73.	6.20 × 5.27		"
121 + 50	April, '74.	6.20 × 5.21	This cracked portion measures about the same as last year; crack $\frac{1}{4}$" wide most of the distance	"
122	Nov., '73.	6.24 × 5.22	Rough bottom; remains of dams . .	"
122	April, '74.	6.21 × 5.22	Some places there are two cracks . .	"
122 + 50	" '74.	6.24 × 5.18		"
123	"	6.28 × 5.12		"
+ 50	"	6.33 × 5.10		"
124	"	6.31 × 5.07		"
+ 50	"	6.36 × 5.08	No crack here	"
125	"	6.19 × 5.22	Crack ends a little below this	"
125	Nov., '73.		Old crack been pointed; not started .	"
125	April, '74.	6.21 × 5.21		"
125½ to 126½	Oct., '72.		Slight crack	Wiggin.
125½ to 126		6.3 × 5.15	Small crack, top	Cunningham.
127	Nov., '73.		Small crack in top	"
128 to 129	Oct., '72.		Crack in top	Wiggin.
123 + 30 to 129 + 20	April, '74.		Slight crack in top	Rice.
130	"	6.35 . 5.07		"
133½ to 138½	1866.		400 feet in length repaired	Crafts.
133½ and 138½	1867.		Old cracks do not show much change. Those portions pointed remain perfect	"
134			A few bricks fallen from top	Rice.
	April, '71.		2 feet south of Webber waste-weir is a bad crack 30 feet long	Stanwood.
156 and 157	" '69.		For about 20 feet, slight crack on top, where sewer was carried under conduit	"
157	May, '70.		Small crack not increased	Wightman.
171			Small crack	

WATER REGISTRAR'S REPORT

FOR

1874-75.

WATER REGISTRAR'S REPORT FOR 1874-75.

WATER REGISTRAR'S OFFICE,
BOSTON, May 1, 1875.

THOMAS GOGIN, Esq.,

President of the Cochituate Water Board: —

SIR, — The following report is made in accordance with the requirements providing for the care and management of the Cochituate Water Works.

The total number of water-takers now entered for the year 1875 is 44,676, being an increase, since January 1, 1874, of 2,331.

The total number of cases where the water has been turned off for non-payment of rates during the year ending January 1, 1875, is 1,112. Of this number, 881 have been turned on, leaving a balance of 231 still remaining off.

The total amount of water-rates received from April 30, 1874, to May 1, 1875, is . . .		$1,001,177 10
Of this amount there was received for water used in previous years the sum of	$61,271 75	
Leaving the receipts for water furnished during the year ending April 30, 1875, the sum of	$939,905 35	
Amount carried forward,		$1,001,177 10

Amount brought forward,		$1,001,177 10
Amount paid Mystic Water Board for the year ending April 30, 1875, as per contract	$71,497 51	
In addition to the above there has been received for turning on water in cases where it had been turned off for non-payment of rates, the sum of		1,876 00
		$1,003,053 10
The increased amount of income for the year ending April 30, 1875, over the previous year is		$96,622 62
The total amount of assessments now made for the present year is		$804,338 67
The estimated amount of income from the sales of water during the financial year 1875 and 6 is		$1,081,271 26
The expenditures of my office during the year 1874 have been		$24,183 31

The total number of meters now applied to the premises of water-takers is 1,092. Of this number 729 are $\frac{5}{8}$-inch, 307 1-inch, 44 2-inch, 10 3-inch, 2 4-inch, all of which are the Worthington pattern.

DRINKING FOUNTAINS.

There are 31 drinking-fountains now established within the city limits. They are located as follows: —

* Common (6.)

Tremont street, near Clarendon street.

Beacon street, near Charles street.

Washington street, near Blackstone square.

Charles street, near Boylston street.
" " between Boylston and Beacon streets.
" " opposite jail.
Commercial street, junction Atlantic avenue.
Albany street, opposite City Hospital.
Mt. Washington avenue, near the bridge.
Foundry street, near First street.
Fourth street, near Foundry street.
Washington Village, junction Dorchester avenue and Dorchester street.
Telegraph hill, South Boston.
Eustis street, corner Washington street.
* Eliot square, opposite Norfolk House.
Pynchon street, opposite Roxbury street.
Tremont street, junction of Cabot street.
Beacon street, junction of Brookline avenue.
Commercial street, opposite Beach street, Dorchester.
Upham's corner, Dorchester.
Glover's corner, "
Grove Hall, "
Maverick square, East Boston.
Central square, "
Bennington street, junction Chelsea street, East Boston.

Those marked * are arranged for a continuous flow of water. The balance have automatic fixtures, operating the flow of water when required.

The following table exhibits the class of premises to which meters are attached, together with the amount of revenue received during the year 1874: —

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Revere House	Hotel	. .	3	.	.	.	1	4	10,003,346	$3,000 98
American House	"	2	1	1	.	.	.	4	8,024,144	2,407 22
Parker House	"	1	4	.	.	.	.	5	11,625,817	3,487 74
U. S. Hotel	"	. .	3	.	.	.	.	3	5,051,969	1,515 56
Tremont House	"	2	3	.	.	.	.	5	8,405,346	2,521 58
Young's Hotel	"	1	2	.	.	.	.	3	3,784,042	1,135 19
Adams House	"	2	1	.	.	.	.	3	3,161,244	948 35
Hotel Berkeley	"	1	1	1	.	.	.	3	2,868,036	860 39
Marlboro House	"	. .	1	.	.	.	.	1	3,094,837	928 43
Albion Building	"	. .	1	.	.	.	.	1	745,695	223 69
W. D. Park	"	1	. .	.	.	.	.	1	375,087	112 51
Hotel Pelham	"	1	3	.	.	.	.	4	2,756,542	826 95
Hotel Boylston	"	. .	1	.	.	.	.	1	1,077,333	323 34
La Grange House	"	1	1	.	.	.	.	2	427,514	128 24
St. Cloud	"	2	. .	.	.	.	.	2	608,579	182 55
Hotel Clarendon	"	. .	1	.	.	.	1	2	1,457,392	437 20
Seaver House	"	1	. .	.	.	.	.	1	351,441	105 40
Evans House	"	. .	2	.	.	.	.	2	1,177,680	353 29
Wm. Pfaff	"	1	. .	.	.	.	.	1	292,184	87 64
Hotel Kempton	"	1	1	.	.	.	1	3	1,294,792	388 42
Hotel Hamilton	"	1	1	.	.	.	1	3	1,647,059	494 09
Hotel Vendome	"	. .	2	.	.	.	.	2	1,982,789	594 81
Coolidge House	"	. .	5	.	.	.	.	5	1,358,091	407 40
City Hotel	"	2	. .	.	.	.	.	2	127,027	38 10
Hancock House	"	1	. .	.	.	.	.	1	123,786	37 12
Merrimac House	"	1	. .	.	.	.	.	1	445,477	133 63
Amount carried forward		. .	. .	.	.	.	.	. .	72,267,749	$21,679 82

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward .									72,267,749	$21,679 82
Derby House	Hotel	3						3	468,832	140 64
Merchants Hotel	"	1						1	264,839	79 43
M. J. Flatley	"	1						1	184,499	55 33
New England House	"		1					1	593,407	178 00
Winthrop House	"	1						1	401,377	120 38
Dooley's House	"	1						1	131,406	39 41
Commercial House	"	2						2	497,824	149 36
Job A. Turner	"		1					1	449,886	134 95
Milliken House	"	3						3	459,742	137 90
Sherman House	"		3					3	1,457,391	437 21
Everett House	"		1					1	236,302	70 87
Metropolitan House	"		2					2	776,526	232 95
Commonwealth Hotel	"		2					2	3,034,575	910 35
Thomas L. Robinson	"	1						1	78,270	23 48
St. James Hotel	"		4					4	5,687,826	1,706 33
Massachusetts House	"	1						1	88,326	26 48
Webster House	"	1	1					2	662,700	198 78
Mariner's House	"	1						1	172,530	51 74
Robertson House	"	2						2	310,776	93 21
Boston Hotel	"	3						3	699,532	209 84
Creighton House	"	2						2	864,915	259 45
Van Rensselaer	"		2					2	767,177	230 13
Wilde's Hotel	"	1						1	346,657	103 99
Quincy House	"	2	2					4	2,924,856	877 43
Marston House	"	1						1	857,332	257 18
Stumcke & Goodwin	"	3						3	3,013,316	903 98
Pavilion House	"		1					1	550,117	165 01
Norfolk House	"	1						1	769,740	230 91
National House	"	1						1	261,059	78 30
Hotel Agassiz	"		1				2	3	1,259,519	377 84
Phillips House	"	1						1	87,630	26 27
Amount carried forward									100,626,633	$30,186 95

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									100,626,633	$30,186 95
Hotel Marion	Hotel	2						2	162,210	48 65
Dio Lewis	"	1	1					2	1,547,368	464 20
Old Col. & Newp't R.R. Co.		6	3	2				11	22,509,003	6,752 70
Boston & Albany R. R. Co.		13	7	2				22	36,022,207	10,806 66
Boston & Maine R. R. Co.		1	3					4	4,076,376	1,222 90
Boston & Lowell R. R. Co.			3	1			1	5	6,079,082	1,823 71
Fitchburg R. R. Co.			1	1				2	4,851,321	1,455 38
Eastern R. R. Co.		1	3	1				5	12,515,421	3,754 62
New York & New Eng. R. R. Co.			1	1				2	6,761,406	2,028 41
Boston & Providence R. R. Co.		3	2	3				8	10,721,091	3,216 20
Boston Gas Light Co.		1	4	1		1		7	39,792,749	11,937 81
South Boston Gas Light Co.		1	1					2	1,522,394	456 70
East Boston Gas Light Co.			1					1	1,334,969	400 48
Roxbury Gas Light Co.		2	1					3	1,420,641	426 14
Dorchester Gas Light Co.			1					1	1,808,953	542 67
Standard Sugar Refinery, Granite street				3	1			4	38,749,650	11,624 89
Standard Sugar Refinery, Eastern avenue			1	1				2	13,403,489	4,021 03
Continental Sugar Refinery.				2				2	20,647,425	6,194 21
Bay State Sugar Refinery				1				1	9,676,800	2,903 03
Oxnard Sugar Refinery			3					3	4,118,886	1,235 65
Boston Sugar Refinery					1			1	21,345,600	6,403 66
American Sugar Refinery			1					1	685,327	205 59
Bay State Rolling Mill			4	1	1			6	17,457,402	5,237 20
Norway Iron Works		1	7	1				9	22,601,678	6,780 49
Highland Spring Brewery	Brewery		1	2				3	9,172,004	2,751 58
Edward Habich	"		1					1	3,221,478	966 43
Wheat & Carberry. Vacant.	"			1				1		
H. & J. Pfaff	"			1				1	2,694,551	808 34
A. J. Houghton & Co.	"		1					1	766,132	229 82
Amount carried forward									416,292,246	$124,886 10

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward		. .	. .	.	.	.	.	. .	416,292,246	$124,886 10
Gottlieb Burkhardt	Brewery . . .	. .	1	.	.	.	.	1	1,453,507	436 03
John Roessle	" . . .	. .	1	.	.	.	.	1	3,316,019	994 78
Christian Jutz	" . . .	1	. .	.	.	.	.	1	389,167	116 73
Henry Souther & Co. . . .	" . . .	1	1	.	.	.	.	2	911,182	273 34
Boston Beer Co.	" . . .	. .	2	.	.	.	.	2	5,371,814	1,611 53
Conrad Decker	" . . .	1	. .	.	.	.	.	1	738,554	221 54
Suffolk Brewing Co. . . .	" . . .	. .	. .	1	.	.	.	1	3,642,750	1,092 81
Burton Brewery	" . . .	. .	1	.	.	.	.	1	946,530	283 94
Standard Brewery	" . . .	. .	1	.	.	.	.	1	1,210,986	363 27
Vincent & Hathaway . . .	Beer Factory .	. .	1	.	.	.	.	1	868,544	260 55
Moses Fairbanks & Co. . .	" . . .	. .	1	.	.	.	.	1	742,551	222 75
Coburn, Lang & Co.	" . . .	1	. .	.	.	.	.	1	432,951	129 87
Comstock, Gove & Co. . .	" . . .	1	. .	.	.	.	.	1	288,411	86 50
Leonard & Co.	Building . . .	. .	1	.	.	.	.	1	1,081,882	324 55
Wesleyan Association . . .	" . . .	3	. .	.	.	.	.	3	930,630	279 17
Tremont Temple	" . . .	1	1	.	.	.	.	2	1,049,486	314 83
S. S. Houghton & Co. . . .	" . . .	1	. .	.	.	.	.	1	307,619	92 27
P. McAleer	" . . .	2	. .	.	.	.	.	2	546,096	163 81
Smith & Porter	" . . .	2	. .	.	.	.	.	2	1,223,302	366 98
T. H. Carter	" . . .	2	. .	.	.	.	.	2	846,321	253 88
Boston Journal	" . . .	. .	1	.	.	.	.	1	1,938,277	581 47
John L. Gardner	" . . .	1	. .	.	.	.	.	1	119,536	35 84
Joseph Byers	" . . .	2	. .	.	.	.	.	2	793,364	237 99
Western Union Telegraph Co.	" . . .	1	. .	.	.	.	.	1	391,439	117 42
N. E. Mut. Life Ins. Co., 39 State st.	" . . .	. .	1	.	.	.	.	1	726,854	218 04
N. E. Mut. Life Ins. Co., 70 State st.	" . . .	2	. .	.	.	.	.	2	183,337	54 98
Horticultural Hall	" . . .	. .	1	.	.	.	.	1	318,406	95 48
Suffolk National Bank . .	" . . .	2	1	.	.	.	.	3	417,441	125 22
Benjamin Leeds	" . . .	2	. .	.	.	.	.	2	362,339	108 68
Stone, Bier & Weiss . . .	" . . .	2	. .	.	.	.	.	2	205,919	61 75
Amount carried forward . .	. . . . .	. .	. .	.	.	.	.	. .	448,047,460	$134,412 10

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward		. .	. .	.	.	.	.	. .	448,047,460	$134,412 10
John Rayner, heirs	Building . . .	2	. .	.	.	.	.	2	463,641	139 07
Otis T. Ruggles	" . . .	2	. .	.	.	.	.	2	208,116	62 41
B. B. Appleton, heirs . . .	" . . .	1	. .	.	.	.	.	1	541,139	162 33
J. W. Merriam	" . . .	2	. .	.	.	.	.	2	508,146	152 42
R. H. Spaulding	" . . .	2	. .	.	.	.	.	2	349,536	104 84
Mrs. Ellen Brooks	" . . .	1	. .	.	.	.	.	1	177,569	53 26
Oriental Tea Co.	" . . .	1	. .	.	.	.	.	1	293,256	87 96
S. D. Hicks	" . . .	2	. .	.	.	.	.	2	1,253 009	375 88
John Stetson	" . . .	. .	1	.	.	.	.	1	873,088	261 91
Macullar, Williams & Parker	" . . .	. .	1	.	.	.	.	1	482,421	144 71
E. H. Furber	" . . .	1	. .	.	.	.	.	1	203,309	60 98
Joshua Sears' Estate . . .	" . . .	1	. .	.	.	.	.	1	411,359	123 40
Lilly, Young, Pratt & Brackett	" . . .	. .	1	.	.	.	.	1	822,446	246 72
A. T. Brown	" . . .	. .	1	.	.	.	.	1	83,609	25 07
Hogg, Brown & Taylor . .	" . . .	1	1	.	.	.	1	3	1,099,425	329 82
A. Wentwenth	" . . .	2	1	.	.	.	.	3	1,075,882	322 75
William Ropes' Estate . .	" . . .	4	1	.	.	.	.	5	3,790,259	1,137 05
A. D. Puffer	" . . .	1	. .	.	.	.	.	1	383,654	115 08
Eastern Express Co. . . .	" . . .	. .	1	.	.	.	.	1	771,501	231 43
Grand Lodge of Masons .	" . . .	1	1	.	.	.	.	2	200,984	60 27
James W. Rollins	" . . .	1	. .	.	.	.	.	1	487,821	146 32
Haley, Morse & Co., 411 Washington st.	" . . .	2	. .	.	.	.	.	2	341,451	102 42
Mass. Inst. of Technology .	" . . .	. .	1	.	.	.	.	1	1,134,509	340 34
S. N. Brown, Jr.	" . . .	1	. .	.	.	.	.	1	269,654	80 87
A. H. Vinton	" . . .	1	. .	.	.	.	.	1	221,084	66 31
J. W. Pierce	" . . .	1	. .	.	.	.	.	1	389,414	116 80
B. F. Bradbury	" . . .	1	. .	.	.	.	.	1	378,268	113 47
Shepard, Norwell & Co. . .	" . . .	4	. .	.	.	.	.	4	328,558	98 54
D. J. Hastings	" . . .	. .	1	.	.	.	.	1	234,344	70 28
C. U. Cotting, 456 Wash st.	" . . .	5	. .	.	.	.	.	5	640,410	192 11
Amount carried forward		. .	. .	.	.	.	.	. .	466,465,322	$139,936 92

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									466,465,322	$139,936 92
Parsons & Stoddard	Building	2						2	225,958	67 77
W. H. Mann	"	2						2	465,014	139 48
Hallett & Davis	"	1						1	119,351	35 79
Galvin & Currie	"		1					1	886,794	266 03
P. Donahoe	"		1					1	738,359	221 49
Jonas Fitch	"		1					1	187,941	56 37
Samuel A. Way, estate	"	2						2	191,047	57 30
H. C. Stephens	"	1						1	1,175,331	352 59
Jordan, Marsh & Co., Washington street	"	4						4	870,666	261 18
G. T. Burnham & Co.	"		1					1	616,612	184 97
G. D. Dowes & Co.	"	1						1	128,324	38 48
Stephen H. Bennett, heirs	"	2						2	1,413,734	424 10
J. P. Dimond	"	1						1	451,926	135 56
Taylor Page	"	1						1	227,774	68 32
Franklin Evans	"	2						2	393,996	118 17
J. Zane & Co.	"	2						2	483,749	145 11
Metropolitan R. R. Co.	"	1						1	66,261	19 85
Art Garden	"	1						1	233,827	70 14
Allen & Woodworth	"	1						1	177,510	53 23
Merchants' Exchange	"	1	1					2	4,460,601	1,338 16
C. U. Cotting, 7 Court sq.	"	1	1					2	348,276	104 47
J. J. Stevens	"	2						2	212,189	63 64
J. T. Brown & Co.	"	1						1	322,810	96 83
J. C. Gray	"	3	1					4	837,580	251 25
C. F. Hovey	"	3	1					4	988,477	296 52
John Foster	"	1						1	495,479	148 62
R. B. Brigham	"	1						1	38,084	11 41
M. M. Ballou	"	1						1	560,721	168 20
J. M. Smith & Co.	"	1						1	29,931	8 96
Charles Rollins	"	1						1	743,452	223 02
Adams Express Co.	"	2	1					3	1,797,287	539 17
Amount carried forward									486,354,383	$145,903 10

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									486,354,383	$145,903 10
Jordan, Marsh & Co., Kingston street	Building	1						1	367,911	110 35
H. S. Lawrence	"	1						1	225,516	67 63
J. M. Beebe	"		1					1	560,857	168 23
F. Tudor	"	3						3	515,902	154 76
Studio Building		1	2					3	903,614	271 06
Bost'n Post B'ding, Water st.		1	1					2	496,529	148 94
" " Milk st.			1					1	69,300	20 79
Traveller Building		2	1					3	773,700	232 10
Union Building		5						5	925,650	277 67
Wentworth Building		1						1	312,479	93 72
Rice Building			1					1	849,779	254 91
Carter Building		2						2	293,616	88 07
Edmands Building		1						1	306,847	92 03
Washington Building		3						3	615,081	184 51
Niles Building			2					2	1,119,336	335 78
Palmers Building		1						1	422,144	126 62
Joy's Building		3						3	345,022	103 49
Sears Building		2	1					3	1,359,374	407 80
Advertiser Building			1					1	807,427	242 21
Charity Building		2						2	135,119	40 51
Codman Building		7						7	1,410,420	423 10
Transcript Building		1	1					2	385,462	115 62
Chauncy Hall School		1						1	35,130	10 53
Mass. General Hospital		2	4	1				7	3,751,109	1,125 32
City Hospital		3	4					7	7,947,231	2,384 14
Lunatic Hospital		1	3					4	3,335,421	1,000 61
New England Hospital		1						1	685,829	205 74
Notre Dame Academy		1						1	184.972	55 47
St. Mary's Institute		2						2	102,990	30 88
House of the Angel Guardian		1						1	635,626	190 67
Home for Catholic Children			1					1	1,136,737	341 01
Amount carried forward									517,370,504	$155,207 37

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									517,370,504	$155,207 37
Church Home		1						1	774,689	232 39
Temporary Home		1						1	270,697	81 19
Somerset Club House		2						2	1,311,951	393 56
Union Club House		1						1	640,530	192 14
Temple Club			1					1	292,994	87 88
Boston Music Hall		3						3	730,162	219 03
City Hall		1	2					3	1,194,658	358 38
State of Massachusetts	State House	2	1					3	1,021,514	306 44
United States of America	Post Office			1				1	247,725	74 31
Howard Athenæum		1						1	167,526	50 24
Boston Theatre		1	4					5	650,355	195 10
Boylston Market		5						5	293,691	88 09
Washington Market		1	1					2	1,075,867	322 74
Suffolk Market		4						4	666,642	199 98
Franklin Market			1					1	366,502	109 93
Williams Market		3						3	709,851	212 94
Tremont Market			1					1	92,527	27 75
Union Market		1						1	66,750	20 02
Medical College		1						1	297,539	89 25
Boston College		1	1					2	537,679	161 28
Mary Stearns	Boarding	1						1	251,805	75 52
Mrs. J. R. Hill	"	2						2	382,935	114 86
Mrs. R. W. Prescott	"	1						1	158,204	47 45
J. H. Baker	"	1						1	138,051	41 40
Mrs. W. A. Colson	"	2						2	203,437	61 02
F. E. Ruggles	"	2						2	233,654	70 07
Mrs. A. A. Tower	"	1						1	96,719	29 00
A. Carr	"	1						1	131,587	39 46
W. A. Prescott	"	2						2	243,598	73 05
Geo. Odin, heirs	"	1						1	220,543	66 15
James F. Goodwin	"	2						2	291,405	87 40
Amount carried forward									531,132,291	$159,335 39

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									531,132,291	$159,335 39
Mrs. A. P. Cleverly	Boarding	2						2	266,548	79 95
D. C. Knowlton	"	1						1	301,851	90 54
Mrs. C. Farley	"	1						1	151,019	45 28
Mrs. C. Cummings	"	1						1	305,579	91 65
James Knowlton	"	1	1					2	963,681	289 09
Ruel Philbrick	"	2						2	246,267	73 86
E. F. Whitman	"		1					1	105,381	31 60
S. V. Loring	"	1						1	187,927	56 35
Mrs. N. F. Chapin	"	1						1	277,634	83 27
William Evans	Model	3						3	731,234	219 34
E. Cutler, 147 Kneeland st.	"	2						2	180,809	54 22
E. Cutler, 146 Kneeland st.	"	2						2	434,834	130 43
Michael Doherty	"	5						5	496,304	148 87
Job A. Turner, 17 Webster avenue	"	1						1	24,600	7 38
Job A. Turner, 6 Melrose pl.	"	1						1	266,766	80 01
Peter McFarland	"	1						1	384,531	115 35
J. Collins	"	2						2	536,729	161 01
D. L. Webster	"	1						1	550,664	165 17
Thomas Cantlon	"	1						1	271,750	81 50
W. B. Mendum	"	2						2	204,637	61 38
Brown & Wilcox	Factory	3						3	1,044,501	313 32
Jacob J. Storer, vacant	"	1						1		
Joseph Nickerson & Co.	"		1					1	1,630,649	489 18
J. Morrill, jr., & Co.	"	1						1	180,645	54 17
Pearson Bros. & Co.	"		1					1	1,641,067	492 31
J. Morse	"	1						1	142,911	42 85
L. Whittaker	"	1						1	138,667	41 58
C. Wright & Co.	"	1						1	355,559	106 64
Howard Watch and Clock Co	"		2					2	1,315,146	394 52
Haley, Morse & Co.	"	1						1	559,529	167 84
Amount carried forward									545,029,710	$163,504 05

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward		. .	. .	.	.	.	.	. .	545,029,710	$163,504 05
Roxbury Carpet Co.	Factory . . .	. .	1	.	.	.	.	1	3,380,172	1,014 05
George C. Pearson	" . . .	1	. .	.	.	.	.	1	500,459	150 12
Back Bay Woolen Co. . . .	" . . .	. .	2	.	.	.	.	2	593,444	178 01
S. S. Putnam	" . . .	1	1	.	.	.	.	2	1,380,509	414 13
John Preston	" . . .	1	. .	.	.	.	.	1	196,491	58 92
Union Elastic Goods Co. . .	" . . .	2	. .	.	.	.	.	2	192,781	57 82
Mason & Hamlin	" . . .	3	. .	.	.	.	.	3	1,609,234	482 77
William Carleton	" . . .	3	. .	.	.	.	.	3	488,369	146 49
Boston Star Collar Co. . .	" . . .	1	. .	.	.	.	.	1	239,100	71 72
Murphy, Leavens & Co. . .	" . . .	1	. .	.	.	.	.	1	397,446	119 23
H. M. Richards	" . . .	1	. .	.	.	.	.	1	711,082	213 31
Charles E. Kershaw . . .	" . . .	1	. .	.	.	.	.	1	704,767	211 42
E. Strain & Co.	" . . .		. .	.	.	.	.	1	53,181	15 94
Hasse & Pratt	" . . .	1	. .	.	.	.	.	1	1,221,029	366 29
H. F. Miller	" . . .	1	. .	.	.	.	.	1	165,367	49 59
Stephen Smith & Co. . . .	" . . .	1	. .	.	.	.	.	1	450,404	135 10
Chickering & Sons	" . . .	. .	3	.	.	.	.	3	230,849	69 24
Mace & Keyes	" . . .	1	. .	.	.	.	.	1	210,209	63 04
Bagnall & Loud	" . . .	1	. .	.	.	.	.	1	290,204	87 04
Boston Car Spring Co. . .	" . . .	. .	1	.	.	.	.	1	836,535	250 93
Wassineus & Whittle . . .	" . . .	1	. .	.	.	.	.	1	248,267	74 47
A. Folsom & Sons	" . . .	. .	1	.	.	.	.	1	394,026	118 18
Dwinell & Co.	" . . .	1	. .	.	.	.	.	1	479,609	143 86
Standard Vinegar Works .	" . . .	1	. .	.	.	.	.	1	37,094	11 11
J. M. Cook, estate	" . . .	. .	1	.	.	.	.	1	628,717	188 59
Hallett & Davis	" . . .	. .	1	.	.	.	.	1	321,561	96 45
W. Wolf & Co.	" . . .	1	. .	.	.	.	.	1	862,252	258 66
S. D. & H. W. Smith . . .	" . . .	. .	1	.	.	.	.	1	746,257	223 87
James W. Vose & Co. . . .	" . . .	1	. .	.	.	.	.	1	80,730	24 21
Daniels, Harrison & Co. . .	" . . .	1	. .	.	.	.	.	1	1,320,554	396 16
William Underwood & Co.	" . . .	1	. .	.	.	.	.	1	305,024	91 50
Amount carried forward		. .	. .	.	.	.	.	. .	564,305,433	$169,286 27

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward .	. . . . .	. .	. .	.	.	.	.	. .	564,305,433	$169,286 27
Cummings & Carlisle . . .	Factory . . .	. .	1	.	.	.	.	1	746,279	223 86
Leigh Manufacturing Co. .	" . . .	. .	1	.	.	.	.	1	988,499	296 53
Walworth Manufact'ing Co.	" . . .	1	. .	.	.	.	.	1	280,544	84 15
Newton, Morton & Co. . .	" . . .	1	. .	.	.	.	.	1	136,634	40 96
A. J. Morse & Co.	" . . .	2	. .	.	.	.	.	2	321,157	96 32
Seth W. Fowle & Son . .	" . . .	1	. .	.	.	.	.	1	47,000	14 09
T. W. Townsend	" . . .	1	. .	.	.	.	.	1	21,975	6 59
Oscar Foote & Co.	" . . .	1	. .	.	.	.	.	1	397,294	119 18
A. R. Whittier	" . . .	1	. .	.	.	.	.	1	458,413	137 49
W. P. Emerson Piano Co. .	" . . .	1	. .	.	.	.	.	1	584,616	175 37
Hallett & Cumston	" . . .	1	. .	.	.	.	.	1	378,778	113 61
P. Lally	" . . .	. .	1	.	.	.	.	1	778,972	233 67
J. Hertkorn	" . . .	1	. .	.	.	.	.	1	19,620	5 88
S. D. & H. W. Smith . . .	" . . .	. .	1	.	.	.	.	1	876,711	262 99
S. G. Underhill	" . . .	1	. .	.	.	.	.	1	527,302	158 17
Am. Moulded Collar Co. .	" . . .	1	. .	.	.	.	.	1	529,056	158 70
Kittredge & Co.	" . . .	. .	1	.	.	.	.	1	25,267	7 57
John Clark	" . . .	1	. .	.	.	.	.	1	421,656	126 49
Christopher Blake	" . . .	1	. .	.	.	.	.	1	705,809	211 72
G. H. Dickerman	" . . .	1	. .	.	.	.	.	1	330,989	99 27
J. L. Ross	" . . .	2	1	.	.	.	.	3	270,825	81 23
Vance & Co.	" . . .	1	. .	.	.	.	.	1	140,811	42 23
A. D. Nichols	" . . .	1	. .	.	.	.	.	1	44,692	13 40
F. King & Co.	" . . .	1	. .	.	.	.	.	1	376,590	112 96
Peet Valve Co.	Machinist. . .	1	. .	.	.	.	.	1	950,819	285 23
G. F. Waldron	" . . .	1	. .	.	.	.	.	1	128,572	38 55
A. K. Young	" . . .	2	. .	.	.	.	.	2	578,563	173 55
Harrison Loring	" . . .	2	1	.	.	.	.	3	437,939	131 36
S. A. Woods & Co.	" . . .	1	. .	.	.	.	.	1	692,565	207 75
Holmes & Blanchard . . .	" . . .	. .	1	.	.	.	.	1	89,160	26 74
George F. Blake & Co. . .	" . . .	. .	1	.	.	.	.	1	1,501,345	450 38
Amount carried forward .	. . . . .	. .	. .	.	.	.	.	. .	578,093,885	$173,422 26

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward		. .	. .	.	.	.	.	. .	578,093,885	$173,422 26
E. H. Ashcroft	Machinist . . .	. .	1	.	.	.	.	1	597,636	179 26
L. M. Ham	" . . .	2	. .	.	.	.	.	2	562,852	168 85
Eyelet Tool Co.	" . . .	1	. .	.	.	.	.	1	78,959	23 67
Shorey & Co.	" . . .	2	. .	.	.	.	.	2	673,095	201 92
L. A. Bigelow	" . . .	. .	1	.	.	.	.	1	729,757	218 91
William Evans	" . . .	3	1	.	.	.	.	4	966,389	289 89
Smith & Lovett	" . . .	1	. .	.	.	.	.	1	324,411	97 30
Am. Tool and Machine Co.	" . . .	. .	1	.	.	.	.	1	848,722	254 59
J. Souther & Co.	" . . .	1	. .	.	.	.	.	1	281,782	84 52
Boston Machine Co.	" . . .	1	1	.	.	.	.	2	1,393,904	418 16
Hersey Brothers	" . . .	1	. .	.	.	.	.	. .	399,906	119 95
Hinkley Locomotive Works	" . . .	1	3	.	.	.	.	4	3,218,452	965 51
U. S. Manufacturing Co. . .	" . . .	. .	1	.	.	.	.	1	1,569,382	470 79
H. S. Robinson	" . . .	1	. .	.	.	.	.	1	173,549	52 05
Atlantic Works	" . . .	. .	. .	1	.	.	.	1	1,976,100	592 82
Geo. T. McLaughlin . . .	" . . .	2	. .	.	.	.	.	2	627,059	188 10
South Boston Iron Co. . .	Foundry . . .	3	2	2	.	.	.	7	2,248,589	674 56
Boston Iron Co.	" . . .	1	. .	.	.	.	.	1	687,854	206 35
Holmes & Blanchard . . .	" . . .	1	. .	.	.	.	.	1	438,659	131 57
Dyer & Gurney	" . . .	1	. .	.	.	.	.	1	211,970	63 57
William Blake & Co. . . .	" . . .	. .	1	.	.	.	.	1	1,339,180	401 73
Whiting Foundry Co. . . .	" . . .	1	. .	.	.	.	.	1	358,496	107 53
Tremont Foundry Co. . . .	" . . .	1	. .	.	.	.	.	1	88,584	26 56
Fulton Iron Foundry Co. .	" . . .	. .	1	.	.	.	.	1	228,824	68 63
Chelmsford Iron Foundry Co.	" . . .	. .	1	.	.	.	.	1	130,694	39 20
John Lally	Boiler Maker .	1	. .	.	.	.	.	1	278,414	83 50
Downer's Kerosene Oil Co.	Oil Works . .	2	1	.	.	.	.	3	5,687,039	1,706 09
F. H. Jenny	" . .	. .	2	.	.	.	.	2	1,328,376	398 49
Wilkinson, Carter & Co. . .	" . .	. .	1	.	.	.	.	1	424,934	127 46
Farrar, Pierce & Canterbury	" . .	. .	1	.	.	.	.	1	1,423,836	427 14
Kidder, Vaughan & Co. . .	" . .	. .	1	.	.	.	.	1	144,764	43 40
Amount carried forward		. .	. .	.	.	.	.	. .	607,536,053	$182,254 33

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									607,536,053	$182,254 33
Bowker, Torrey & Co., Bowker st.	Marble Works	1	1					2	3,538,131	1,061 42
Bowker, Torrey & Co., Foundry st.	"	1	1					2	2,296,746	689 00
Torreys & Co.	"	2	1					3	5,413,312	1,623 96
C. E. Hall & Co.	"	2	1					3	3,504,084	1,051 21
W. C. Taylor & Co.	"	1						1	829,972	248 96
A. Wentworth & Co.	"	4						4	3,566,962	1,070 08
Richard Power & Son	"	2						2	1,201,402	360 40
Jeremiah Carew	Stone Yard	2						2	773,759	232 10
E. F. Meaney	"	2	1					3	1,876,804	563 02
Geo. F. Chapin & Co.	Vinegar Works	1						1	149,136	44 72
C. D. Brooks	Pickle Factory		1					1	385,896	115 75
Blake, Gage & Co.	"	1						1	189,389	56 80
W. K. Lewis & Bros.	"	1						1	223,957	67 18
B. M. Clark	"	1						1	205,117	61 51
E. T. Cowdry & Co.	"	2						2	530,655	159 17
Francis Baker	Salt Works	1						1	255,427	76 61
Fobes, Hayward & Co.	Confectionery	1						1	481,791	144 51
Chase & Co.	"	2						2	1,307,834	392 33
Charles Copeland	"	4						4	2,259,576	677 85
Messenger Bros.	Restaurant	1						1	448,859	134 63
Mrs. G. F. Harrington	"	1						1	498,494	149 53
Marston & Cunio	"	1						1	459,562	137 85
Edward B. Pierce	"	3						3	1,000,596	300 16
J. Brown & Co.	"	1						1	304,042	91 19
I. F. Kendall	"	1						1	458,354	137 48
Kendall & Dearborn	"		1					1	470,504	141 12
Geo. Fera	"	2						2	678,434	203 51
D. T. Copeland	"		1					1	1,070,571	321 15
F. E. Weber	"	1						1	400,746	120 21
R. B. Brigham	"		1					1	1,705,686	511 69
Amount carried forward									644,021,851	$193,199 43

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward		. .	. .	.	.	.	.	. .	644,021,851	$193,199 43
W. S. Mathews	Restaurant . .	1	. .	.	.	.	.	1	468,636	140 58
Pearson & Tibbetts	" . .	1	. .	.	.	.	.	1	94,987	28 49
Brock & Coy	" . .	1	. .	.	.	.	.	1	701,002	210 28
W. C. Cahoon & Son . . .	" . .	1	. .	.	.	.	.	1	447,171	134 13
Durgin, Park & Co.	" . .	1	. .	.	.	.	.	1	471,299	141 37
Morrill & Onthank	" . .	1	. .	.	.	.	.	1	641,257	192 36
Smith & Underwood . . .	" . .	1	. .	.	.	.	.	1	935,140	280 53
J. M. Learned	" . .	1	. .	.	.	.	.	1	564,014	169 20
Wm. Englehardt	" . .	1	. .	.	.	.	.	1	456,911	137 05
Tibbetts & Russell	" . .	2	. .	.	.	.	.	2	336,000	100 78
J. D. Gilman	" . .	1	. .	.	.	.	.	1	498,839	149 64
R. R. & J. S. Higgins . . .	Saloon	2	. .	.	.	.	.	2	749,511	224 83
Atwood & Bacon	"	1	. .	.	.	.	.	1	261,816	78 52
B. S. Wright & Co.	"	1	.	.	.	.	.	1	972,862	291 84
Felton & Stone	Distillery . . .	. .	2	.	.	.	.	2	853,972	256 17
Jonas H. French	"	. .	1	.	.	.	.	1	1,687,963	506 38
C. H. Graves	Distillery . . .	1	. .	.	.	.	.	1	294,906	88 45
J. A. Whipple	Photographer .	. .	1	.	.	.	.	1	136,095	40 82
James Edmands & Co. . . .	Fire Brick . .	1	. .	.	.	.	.	1	295,064	88 50
E. L. Perkins	Card Factory .	. .	1	.	.	.	.	1	586,641	175 97
A. Hale & Co.	Rubber Works	1	. .	.	.	.	.	1	619,102	185 71
Suffolk Wood Preserving Co.	. . . . .	1	. .	.	.	.	.	1	255,096	76 52
W. H. Swift & Co.	Fertilizers . .	1	1	.	.	.	.	2	459,944	137 97
W. L. Bradley	"	. .	1	.	.	.	.	1	2,448,607	734 57
B. Randall	"	1	. .	.	.	.	.	1	568,349	170 49
Committee on Bathing . . .	Baths	. .	. .	1	.	.	.	1	960,150	288 04
C. W. Blodgett	"	. .	1	.	.	.	.	1	943,573	283 05
W. A. Holland	"	. .	3	.	.	.	.	3	705,636	211 68
Boston Dye Wood & Chemical Co.	Chemicals . .	. .	2	.	.	.	.	2	10,555,987	3,166 77
Hodges, Coolidge & Co. . .	"	. .	1	.	.	.	.	1	2,037,607	611 26
Amount carried forward .	. . . . .	. .	. .	.	.	.	.	. .	675,029,988	$202,501 38

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									675,029,988	$202,501 38
M. Crocker & Co.	Chemicals	2	1					3	2,434,312	730 28
G. W. & F. Appleton	"	1						1	154,117	46 20
Preston & Merrill	Extracts			1				1	852,750	255 80
George Gill & Co.	Tannery	1						1	317,054	95 09
F. S. Merritt	"	1						1	511,754	153 50
Guild, White & Co.	"	1						1	525,794	157 73
R. W. Ames & Son	"	1						1	223,199	66 93
Boston Forge Co.			1					1	1,728,141	518 42
Boston Lead Co.		1	1					2	2,248,386	674 50
National Bridge Co.		1	1					2	679,901	203 95
American Steam Safe Co.			1					1	417,741	125 31
Suffolk Glass Co.		1						1	890,729	267 20
Washington Pipe Works			1					1	857,323	257 17
East Boston Pottery			1					1	280,309	84 09
Curtis, Knowles & Co.	Bacon Works	1						1	109,186	32 73
Simpson's Dry Dock Co.		1						1	586,026	175 79
Cunard Steamship Co.					1			1	9,148,932	2,744 66
Munson & Co.	Supply Locomotives		1					1	1,686,172	505 84
Union Freight Railway Co.					1			1	481,500	144 44
J. B. Crosby	Carving	1						1	348,817	104 63
Farrar, Follett & Co.	Wire Works		1					1	1,558,506	467 53
Metropolitan Railroad Co.	Stable	6	5					11	6,165,172	1,849 54
So. Boston Railroad Co.	"		2					2	2,526,831	758 04
Highland Railroad Co.	"	3						3	1,492,390	447 71
Draper & Hall	"	3						3	1,765,146	529 52
Martin Hayes	"	2						2	555,546	166 65
Draper Bros.	"	1						1	66,391	19 90
Wilbur & Locke	"	2						2	295,603	88 66
J. Austin Rogers	"	1						1	299,512	89 83
Norfolk House Stable	"	1						1	250,214	75 04
Northend & Foster	"	1						1	479,017	143 69
Amount carried forward									714,966,459	$214,481 75

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									714,966,459	$214,481 75
Jennings & Noyes	Stable	1						1	380,593	114 17
Robert H. Douglass	"	1						1	257,031	77 09
T. H. Seavey	"	1						1	218,782	65 61
C. & J. F. Baker	"	2						2	195,093	58 49
W. P. Pierce	"	1						1	100,710	30 19
J. Pratt	"	1						1	142,124	42 62
L. E. Hartshorne	"	1						1	59,451	17 82
J. P. Barnard, 108 Chestnut street	"	1						1	405,036	121 49
J. P. Barnard, cor. Brimmer and Chestnut streets	"		1					1	912,727	273 80
J. P. Barnard, Joy street	"	3						3	1,013,736	304 10
A. Garcelon	"	1						1	228,472	68 52
C. S. Godfrey	"	1						1	194,369	58 29
G. W. Sherburne	"	1						1	145,304	43 57
J. E. Maynard, 834 Shawmut avenue	"	1						1	113,782	34 12
A. Goss	"	1						1	244,259	73 26
Adams Express Co.	"	1						1	403,183	120 94
John Eaton, jr.	"	1						1	197,511	59 23
F. S. Merritt	"	1						1	61,132	18 32
L. W. Porter & Co.	"	1						1	366,584	109 96
Warner & Richardson	"	2						2	878,527	263 55
Geo. M. King	"	1						1	585,704	175 69
Milo Whitney	"	1						1	202,093	60 61
Daniel Wood	"	1						1	361,476	108 41
T. D. Sullivan	"	1						1	166,086	49 81
Ham & Co.	"	2						2	185,893	55 75
F. E. Russell	"	1						1	234,914	70 46
Blanchard & Snow	"	1						1	123,510	37 04
G. D. Pattee	"	1						1	328,437	98 51
James Jellison	"	1						1	257,399	77 20
John Miller	"	1						1	73,326	21 98
Amount carried forward									724,003,703	$217,192 35

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward . .	. . . . .	. .	. .	.	.	.	.	. .	724,003,703	$217,192 35
J. N. Harwood	Stable	1	. .	.	.	.	.	1	409,296	122 77
H. C. Nims, Mason Ct. . .	"	3	. .	.	.	.	.	3	565,305	169 57
J. A. Riedell & Co.	"	2	. .	.	.	.	.	2	471,884	141 55
E. W. Murray, Berkeley st.	"	1	. .	.	.	.	.	1	151,454	45 42
E. W. Murray, Stanhope st.	"	1	. .	.	.	.	.	1	319,462	95 83
A. B. Atherton & Co. . . .	"	1	. .	.	.	.	.	1	687,817	206 32
George S. Johnson & Co. 680 Washington st.	"	. .	1	.	.	.	.	1	479,488	143 83
George S. Johnson & Co. 774 Washington st.	"	1	. .	.	.	.	.	1	131,564	39 45
T. Thaxter	"	1	. .	.	.	.	.	1	132,637	39 78
James Monroe	"	1	. .	.	.	.	.	1	181,920	54 56
Miller & Robinson	"	2	. .	.	.	.	.	2	652,762	195 81
L. L. Howland	"	2	. .	.	.	.	.	2	184,731	55 40
P. E. Murray	"	1	. .	.	.	.	.	1	185,362	55 59
J. E. Maynard	"	1	. .	.	.	.	.	1	538,653	161 58
John Rice	"	3	. .	.	.	.	.	3	735,629	220 67
Geo. S. Fogg & Co.	"	2	. .	.	.	.	.	2	982,972	294 87
J. M. Dow	"	1	. .	.	.	.	.	1	344,534	103 34
New York Express Co. . . .	"	1	. .	.	.	.	.	1	565,380	169 60
Moses Coleman & Son . . .	"	1	. .	.	.	.	.	1	166,521	49 93
Boston Hotels Coach Co. . .	"	2	. .	.	.	.	.	2	1,223,159	366 93
U. S. and Canada Express .	"	1	. .	.	.	.	.	1	110,797	33 22
Eastern Express Co.	"	. .	1	.	.	.	.	1	370,371	111 09
J. O. Barnard	"	1	. .	.	.	.	.	1	84,142	25 23
Riverside Club Stable . . .	"	1	. .	.	.	.	.	1	126,794	38 02
Club Stable, Chardon st. . .	"	1	. .	.	.	.	.	1	181,642	54 47
Beacon Club Stable	"	1	. .	.	.	.	.	1	192,742	57 82
F. A. Phelps	"	1	. .	.	.	.	.	1	441,831	132 53
C. W. Dean	"	1	. .	.	.	.	.	1	218,654	65 58
V. H. Covill	"	1	. .	.	.	.	.	1	242,511	72 73
Dean & Burgess	"	1	. .	.	.	.	.	1	87,698	26 29
Amount carried forward . .	. . . . .	. .	. .	.	.	.	.	. .	735,171,415	$220,542 13

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward . .	. . . . .	. .	. .	.	.	.	.	. .	735,171,415	$220,542 13
Sumner & Dickinson	Stable	1	. .	.	.	.	.	1	182,076	54 61
J. B. Cassidy & Bro.	"	1	. .	.	.	.	.	1	247,004	74 08
L. C. Chase	"	1	. .	.	.	.	.	1	174,179	52 24
Peck & Hall	"	1	. .	.	.	.	.	1	53,729	16 11
T. H. Ayres	"	1	. .	.	.	.	.	1	77,834	23 34
J. Hale	"	1	. .	.	.	.	.	1	75,337	22 59
J. M. Smith	"	1	. .	.	.	.	.	1	47,684	14 30
E. R. Webster	"	1	. .	.	.	.	.	1	379,425	113 81
Club Stable, 75 Chestnut st.	"	1	. .	.	.	.	.	1	144,666	43 38
B. F. Wrightington	"	1	. .	.	.	.	.	1	234,494	70 34
Clark & Brown	"	2	. .	.	.	.	.	2	301,627	90 47
H. C. Nims, 8 Lime	"	1	. .	.	.	.	.	1	100,432	30 10
John Sawyer	"	1	. .	.	.	.	.	1	137,406	41 21
Cilley & Stimson	"	1	. .	.	.	.	.	1	266,175	79 84
Club Stable, 44 Joy st. . . .	"	1	. .	.	.	.	.	1	180,374	54 10
Gray, Bell & Bailey	"	1	. .	.	.	.	.	1	36,952	11 08
Joel Gray	"	1	. .	.	.	.	.	1	64,478	19 34
Asa Critchett	"	1	. .	.	.	.	.	1	185,467	55 62
Patrick Morrison	"	1	. .	.	.	.	.	1	70,419	21 11
L. A. Noyes	"	1	. .	.	.	.	.	1	173,219	51 94
Met. R. R. Co., Meridian st.	"	1	. .	.	.	.	.	1	94,258	28 26
A. S. Eaton	"	. .	1	.	.	.	.	1	112,589	33 77
Geo. D. Brown	"	1	. .	.	.	.	.	1	152,609	45 77
J. H. Hathorne	"	1	. .	.	.	.	.	1	862,431	258 70
Henry K. Wing	"	1	. .	.	.	.	.	1	330,546	99 15
National Tube Works . . .	. . . . .	1	2	.	.	.	.	3	1,960,364	588 09
Globe Nail Works	. . . . .	. .	1	.	.	.	.	1	1,539,450	461 83
Grover & Baker S. M. Co., Albany st.	. . . . .	. .	1	.	.	.	.	1	249,066	74 70
Grover & Baker S. M. Co., Washington st.	. . . . .	. .	3	.	.	.	.	3	2,400,585	720 16
Farrington & Hunnewell . .	Silversmith . .	1	. .	.	.	.	.	1	272,910	81 85
Amount carried forward . .	. . . . .	. .	. .	.	.	.	.	. .	746,279,200	$223,874 0 2

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									746,279,200	$223,874 02
Boston Wheat and Bread Co.		1						1	216,285	64 88
B. M. Cunningham	Laundry	1						1	757,446	227 22
Byam, Carlton & Co.	Match Factory	1						1	74,677	22 38
Manley Howe	Chemist		1					1	252,651	75 78
L. Prang & Co.	Chromos	1						1	458,864	137 64
Cook, Jordan & Morse	Engine	1						1	345,014	103 48
E. Brooks	"	1						1	288,717	86 59
Walworth Manufact'ing Co.	"	1						1	322,468	96 72
H G. Denney	"	1						1	150,584	45 16
Briggs & Robinson	Mill	1						1	648,156	194 42
Carpenter, Woodward & Morton	"		1					1	1,406,489	421 93
S. B. Stebbins	"		1					1	585,936	175 76
L. W. Pickens	"	1						1	288,427	86 52
C. E. Folsom	"	1						1	408,180	122 44
Boston City Flour Mills	"		1					1	3,151,754	945 51
J. J. McNutt	"		2					2	2,661,238	798 35
Glendon Co.	"		1					1	1,518,276	455 47
Manson & Peterson	"	2						2	881,489	264 43
W. W. Bennett	"	1						1	936,689	280 99
Cross & Gilman	"	1						1	560,144	168 03
McQuesten & Fogg	"	1						1	392,587	117 76
J. F. Paul & Co.	"	1	2					3	1,022,481	306 73
Bugbee & Spooner	"	1						1	781,994	234 58
J. A. Robertson	"	1						1	930,021	278 98
R. Meagher	"		1					1	308,459	92 52
Chauncey, Page & Co.	"		1					1	1,059,367	317 80
S. H. L. Pierce	"	1						1	1,137,089	341 11
A. J. Stearns & Son	"		1					1	90,112	27 02
H. Parker & Co.	"	1						1	638,451	191 51
J. F. Keating	"	1						1	419,759	125 91
Amount carried forward									768,973,004	$230,681 64

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward									768,973,004	$230,681 64
S. C. Caleff	Mill	1						1	304,824	91 45
Watson & Bisbee	"	1						1	295,199	88 53
D. A. Reed	"	1						1	567,621	170 27
Laming & Drisko	"	1						1	904,761	271 40
Cressey & Noyes	"	1	1					2	1,979,304	593 92
Smith & Jacobs	"	1						1	811,828	243 52
B. D. Whitcomb	"	1						1	1,593,990	478 18
F. R. Jenkins	"	2						2	355,777	106 72
H. C. Hopkins	"	1						1	85,192	25 54
R. S. Gilmore	"	1						1	207,119	62 12
Glover & Jones	"	1						1	804,216	241 24
Whitney Dye Wood Mill	"	1						1	1,385,946	415 78
David Snow, Jr. & Co.	Fish Store	2						2	65,257	19 57
White, Frame & Co.	"	1						1	102,577	30 77
Knowles, Freeman & Co.	"	2						2	324,568	97 36
Curtis, Knowles & Co.	Bacon Market		1					1	17,370	5 21
Bond, Blanchard, Worthen & Co.	Bakery	1						1	279,171	83 73
H. A. Hall	Fountain	1						1	216,472	64 93
J. H. Chadwick	House & Fo'nt'n	1						1	618,539	185 55
Horatio Harris	" "	1						1	422,872	126 85
W. P. Hutchings	Fountain	1						1	89,204	26 74
S. A. Way Estate. Not used.	"	1						1		
J. C. Nichols	Wharf purposes	1						1	203,602	61 07
House of Correction						1		1	13,120,237	3,936 05
Suffolk County Court House.			1	1				2	5,347,242	1,604 15
Suffolk County Jail		2	3					5	1,406,115	421 82
Directors of Public Institutions		2	3	1				6	3,464,377	1,039 30
South Ferry				1	1			2	8,628,733	2,588 60
North "					1			1	6,971,175	2,091 35
Police Station No. 1		1						1	306,126	91 84
Amount carried forward									819,852,918	$245,945 20

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward . .	. . . . .	. .	. .	.	.	.	.	. .	819,852,918	$245,945 20
Police Station No. 2	. . . . .	. .	1	.	.	.	.	1	390,885	117 27
" " 3	. . . . .	. .	1	.	.	.	.	1	402,645	120 78
" " 4	. . . . .	1	. .	.	.	.	.	1	434,542	130 36
" " 5	. . . . .	1	. .	.	.	.	.	1	631,965	189 58
" " 6	. . . . .	1	. .	.	.	.	.	1	125,001	37 48
" " 7	. . . . .	1	. .	.	.	.	.	1	522,644	156 77
" " 8	. . . . .	1	. .	.	.	.	.	1	160,057	48 02
" " 9	. . . . .	1	. .	.	.	.	.	1	220,245	66 08
" " 10	. . . . .	1	. .	.	.	.	.	1	397,117	119 15
" " 12	. . . . .	1	. .	.	.	.	.	1	41,932	12 58
Cedar Grove Cemetery . . .	. . . . .	. .	. .	.	1	.	.	1	1,196,625	358 98
First Church	Organ	. .	. .	.	.	.	1	1	151,360	45 40
King's Chapel	"	. .	. .	.	.	.	1	1	141,427	42 41
St. Mary's Church	"	. .	1	.	.	.	.	1	211,964	63 57
Tremont st. M. E. Church .	"	. .	1	.	.	.	.	1	172,882	51 85
South Cong'l Church	"	. .	. .	.	.	.	2	2	121,543	36 45
Church of the Advent . . .	"	. .	1	.	.	.	.	1	257,962	77 38
First Universalist Church .	"	. .	. .	.	.	.	1	1	204,740	61 41
Columbus av. Univ. Church .	"	. .	1	.	.	.	.	1	61,402	18 40
Shawmut Cong'l Society . .	"	. .	. .	1	.	.	.	1	179,250	53 77
Church of the Holy Redeemer	"	. .	1	.	.	.	.	1	104,466	31 32
Church of the Immaculate Conception	"	. .	. .	.	.	.	1	1	103,759	31 12
Clarendon st. Baptist Church	"	. .	. .	.	.	.	1	1	19,864	5 95
Second Church Society . . .	"	. .	. .	.	.	.	1	1	24,014	7 20
St. James Church	"	. .	. .	.	.	.	1	1	381,231	114 36
Brattle st. Church Society .	"	. .	. .	.	.	.	1	1	217,956	65 38
Bancroft & Boyden	Elevator . . .	. .	1	.	.	.	.	1	597,502	179 23
John L. Gardner	" . . .	. .	. .	1	.	.	.	1	62,175	18 64
Job F. Bailey	" . . .	. .	1	.	.	.	.	1	604,881	181 45
George O. Hovey	" . . .	. .	. .	1	.	.	.	1	30,900	9 27
Amount carried forward . .	. . . . .	. .	. .	.	.	.	.	. .	828,025,854	$248,396 81

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward . .	. . . . .	. .	. .	.	.	.	.	. .	828,025,854	$248,396 81
Sidney Squires	Elevator . . .	. .	1	.	.	.	.	1	283,552	85 05
E. Williams	" . . .	. .	. .	.	.	.	1	1	71,250	21 36
Henry G. Denny, 9 mos. . .	" . . .	. .	. .	.	.	.	1	1	46,334	13 88
William Claflin, 6 mos. . . .	" . . .	. .	. .	1	.	.	.	1	67,125	20 13
Mrs. S. S. Dunn	" . . .	. .	1	.	.	.	.	1	44,579	13 35
Goldthwait, Snow & Knight	" . . .	1	. .	.	.	.	.	1	20,857	6 25
Thos. Richardson, prs. vac. .	" . . .	. .	. .	1	.	.	.	1	. . . . .	. . . . .
Chickering & Sons, 3 mos. .	" . . .	. .	. .	.	.	.	2	2	425,250	127 57
Odd Fellows Building, 1 mo.	" . . .	. .	. .	.	.	.	1	1	38,250	11 47
Davis & Co.	" . . .	. .	. .	.	.	.	1	1	346,000	103 80
J. C. Tucker & Co.	" . . .	. .	. .	.	.	.	1	1	608,100	182 43
A. W. Clapp	" . . .	. .	. .	.	.	.	1	1	484,200	145 26
Rufus Gibbs & Co.	" . . .	. .	. .	.	.	.	1	1	175,756	52 72
James Tucker & Co.	" . . .	. .	. .	.	.	.	1	1	589,300	176 79
Boston Rubber Shoe Co. . .	" . . .	. .	. .	.	.	.	1	1	603,300	180 99
Skilton, Dole & Co.	" . . .	. .	. .	.	.	.	1	1	500,812	150 24
Lamkin & Foster	" . . .	. .	. .	.	.	.	1	1	713,000	213 90
E. H. Sampson	" . . .	. .	. .	.	.	.	1	1	583,100	174 92
J. A. Bacon, 3 mos.	" . . .	. .	. .	.	.	.	1	1	72,000	21 60
James P. Pomeroy	" . . .	. .	. .	.	.	.	1	1	454,900	136 47
Lewis Brown & Co.	" . . .	. .	. .	.	.	.	1	1	1,318,500	395 54
Field, Thayer & Co., 9 mos.	" . . .	. .	. .	.	.	.	1	1	713,250	213 97
McConnell & Gardner, 9 mos.	" . . .	. .	. .	.	.	.	1	1	173,835	52 14
F. Shaw & Bro., 9 mos. . . .	" . . .	. .	. .	.	.	.	1	1	551,851	165 55
W. E. Putnam & Co., 9 mos.	" . . .	. .	. .	.	.	.	1	1	579,180	173 75
Henry Bond & Co., 7 mos. .	" . . .	. .	. .	.	.	.	1	1	291,750	87 52
J. S. Stone, 6 mos.	" . . .	. .	. .	.	.	.	1	1	312,000	93 59
Mrs. Goddard, 3 mos. . . .	" . . .	. .	. .	.	.	.	1	1	54,750	16 42
W. H. Mawhinney & Co., 7 mos.	" . . .	. .	. .	.	.	.	1	1	699,054	209 71
R. H. White & Co., 3 mos. .	" . . .	. .	. .	.	.	.	1	1	418,500	125 55
Amount carried forward . .	. . . . .	. .	. .	.	.	.	.	. .	839,266,189	$251,768 73

NAME.	CLASS.	5-8 inch.	1 inch.	2 inch.	3 inch.	4 inch.	Indicator.	Total.	GALLONS.	REVENUE.
Amount brought forward . .	. . . . .	. .	. .	.	.	.	.	. .	839,266,189	$251,768 73
Talbot, Wilmarth & Co., 6 mos.	Elevator . . .	. .	. .	.	.	.	1	1	177,000	53 09
John Shepard, 3 mos. . . .	" . . .	. .	. .	.	.	.	1	1	39,750	11 92
S. R. Spalding, vacant . . .	" . . .	. .	. .	.	.	.	1	1	. . . . .	. . . . .
F. Upton & Co., 6 mos. . . .	" . . .	. .	. .	.	.	.	1	1	258,000	77 40
Perry, Wendall, Fay & Co., 3 mos.	" . . .	. .	. .	.	.	.	1	1	121,500	36 45
Barker Bros. & Gardner, vacant	Factory . . .	1	. .	.	.	.	.	1	. . . . .	. . . . .
Paul Knowles & Others . .	Marine w'rmen	. .	. .	.	3	.	.	3	2,000,996 at 8 cts. per 100 gallons.	1,600 73
Total	. . . . .	. .	. .	.	.	.	.	. .	841,863,435	$253,548 32

The following table exhibits the yearly revenue from the sale of Cochituate water since its introduction into the city October 25th, 1848: —

Received by Water Commissioners, as per Auditor's Report, in 1848,					$972 81
From January 1,	1849,	to January 1,	1850,		71,657 79
" "	1850,	"	1851,		99,025 45
" "	1851,	"	1852,		161,052 85
" "	1852,	"	1853,		179,567 39
" "	1853,	"	1854,		196,352 32
" "	1854,	"	1855,		217,007 51
" "	1855,	"	1856,		266,302 77
" "	1856,	"	1857,		282,651 84
" "	1857,	"	1858,		289,328 83
" "	1858,	"	1859,		302,409 73
" "	1859,	"	1860,		314,808 97
" "	1860,	"	1861,		334,544 86
" "	1861,	"	1862,		365,323 96
" "	1862,	"	1863,		373,922 33
" "	1863,	"	1864,		394,506 25
" "	1864,	"	1865,		430,710 76
" "	1865,	"	1866,		450,341 48
" "	1866,	"	1867,		486,538 25
" "	1867,	"	1868,		522,130 93
" "	1868,	"	1869,		553,744 88
" "	1869,	"	1870,		597,328 55
" "	1870,	"	1871,		708,783 68
" "	1871,	"	1872,		774,445 70
" "	1872,	"	1873,		806,102 51
" "	1873,	"	1874,		859,436 55
" "	1874,	"	1875,		914,748 73
" "	1875,	to May 1,	1875,		693,512 31
					$11,647,259 99

Statement showing the number of houses, stores, steam engines, etc., in the City of Boston, supplied with water to the 1st of January, 1875, with the amount of water-rates paid for 1874: —

29,078	Dwelling-houses	$462,137 94
39	Boarding-houses	1,829 50
890	Model-houses	25,949 48
13	Lodging-houses	449 00
16	Hotels	924 50
5,817	Stores and shops	59,960 80
448	Buildings	21,054 17
630	Offices	5,147 05
41	Printing offices	847 29
32	Banks	432 04
28	Halls	500 75
2	Museums	241 00
35	Private schools	557 33
17	Asylums	1,048 67
4	Hospitals	230 00
47	Greenhouses	1,020 00
108	Churches	1,580 55
6	Markets	1,099 83
108	Cellars	712 00
795	Restaurants and saloons	16,651 34
12	Club-houses	290 83
38	Photographers	1,069 12
10	Packing houses	412 00
1,656	Stables	13,338 17
52	Factories	1,499 62
7	Bleacheries	157 50
1	Brewery	125 00
	Amount carried forward,	$619,265 48

Amount brought forward,		$619,265 48
4	Beer factories	237 50
109	Bakeries	1,198 92
1	Boat-house	49 00
10	Freight-houses	218 17
4	Gasometers	59 00
7	Ship-yards	130 33
1	Cemetery	10 00
3	Dry docks and engines	125 00
53	Shops and engines	2,482 36
59	Stores and engines	4,382 57
17	Factories and engines	1,026 49
1	Foundry and engine	69 38
5	Printing and engines	708 00
3	Bakeries and engines	109 00
1	Ship yard and engine	35 00
5	Buildings and engines	1,150 50
1	Packing-house and engine	78 00
12	Stationery engines	1,090 95
90	Hoisting and pile-driving engines	1,075 00
14	Armories	257 00
725	Hand-hose	4,260 00
13	Fountains	148 75
66	Tumbler-washers	990 00
60	Water-pressures	300 00
6	Laundries	146 42
1	Commercial college	42 00
1	Laboratory	50 00
1	Milk Company	55 00
	Custom-House	150 00
	Post-Office	80 00
	Branch Post-Offices	61 00
5	Aquariums	45 00
Amount carried forward,		$640,085 82

Amount brought forward,		$640,085 82
	Filling tanks	44 34
	Filling cisterns	99 34
1	Ice company (washing ice)	30 00
1	Gymnasium	12 50
1	Depot	34 00
4	Railroad stations	59 50
75	Steamboats	13,076 94
	Office (City Scales)	11 00
	Lockup (Ward 16)	6 00
	Municipal Court (Ward 16)	14 00
	Probate building	75 00
	House of Reception	10 00
40	Fire-engines, hose and hook and ladder houses	890 00
2,918	Fire hydrants	52,524 00
98	Reservoirs	1,764 00
	Insurance Brigade	25 00
	Fire-boat "Wm. Flanders"	200 00
368	Public schools	3,214 00
	City stables	226 25
	Washing-carts	125 00
	Offal station	225 00
	Faneuil Hall	40 00
	Public Library	50 00
2	Branch Libraries	43 50
	Paving Department	271 50
	Common Sewer Department	250 00
	Deer park	10 00
	Public urinals	120 00
	Street sprinkling	500 00
	Public Garden	25 00
	Drinking fountains	920 00
Amount carried forward,		$714,981 69

Amount brought forward,	$714,981 69
Steamer "Henry Morrison"	200 00
Steamer "Samuel Little"	100 00
Small-pox Hospital	25 00
House of Industry (Deer Island)	83 75
Northampton-street District	108 50
Building purposes	6,215 91
Metered water (9 months)	192,981 88
Hippodrome	15 00
Mass. Charitable Mechanics' Association	25 00
Office, Surveyor's Department	12 00
	$914,748 73

Statement showing the number and kind of Water Fixtures contained within the premises of Water-takers in the City of Boston to January 1, 1875, as compared with previous years.

1872.	1873.	1874.	REMARKS.
6,452	6,768	7,266	Taps. These have no connection with any drain or sewer.
64,454	67,089	72,310	Sinks.
30,632	32,690	36,141	Wash-hand basins.
10,289	11,580	12,040	Bathing-tubs.
14,863	16,222	18,877	Pan water-closets.
14,891	17,081	18,765	Hopper water-closets.
		201	" " automatic.
278	248	291	" " pull.
213	223	188	" " self-acting.
503	589	606	" " waste.
602	590	648	" " door.
2,755	2,445	2,851	Urinals.
		459	" automatic.
11,826	12,779	14,300	Wash-tubs. These are permanently attached to the building.
714	734	680	Shower-baths.
445	419	363	Private hydrants.
641	712	754	Stop-hoppers.
96	112	134	Foot-baths.
159,654	170,281	186,874	

Respectfully submitted,

WM. F. DAVIS,

Water Registrar.

REPORT OF THE SUPERINTENDENT

OF THE

EASTERN DIVISION.

REPORT OF SUPERINTENDENT OF EASTERN DIVISION.

BOSTON, May 1, 1875.

THOS. GOGIN, Esq.,

President of the Cochituate Water Board:—

SIR, — I hereby respectfully submit my report for the year ending with April 30th.

MAIN PIPE.

Most of the labor for the year was in relaying streets within the city proper, East and South Boston, with pipes of enlarged sizes, according to the plans of the City Engineer. The lengths, in what streets, and the sizes, may be found in the tables below. The whole length is 124,400 feet, equal to a little more than 23½ miles. The required number of stop-valves and hydrants have been established at their proper distances and localities. Included in this estimate of pipes laid are the following important lines: a 24-inch high-service pipe from Centre street in Roxbury, through Heath and Parker streets and Fisher avenue, to the Parker Hill reservoir; a 20-inch from Heath street, through Pynchon, Tremont and Northampton streets, to Columbus avenue, and through the avenue to Berkeley street; a 16-inch from Berkeley street, through the avenue, to and into the Common, there connecting with the 16-inch laid last year, that supplies the Beacon Hill district; a 12-inch from Columbus avenue, through Berkeley and Dover streets, and on the Dover-street bridge, to the siphon at the draw; a continuation of the same through Fifth, Old Harbor and Thomas streets, for the high-service supply of South Boston.

Preparations are being made to lay the 40-inch siphon pipe at Newton Lower Falls. About one half of the pipes have been received; the remainder are nearly all made and will soon be delivered. By the 5th of the present month I shall commence to lay pipes in the West Roxbury and Brighton districts, and hope to continue without interruption to the close of the season.

SERVICE PIPES.

The whole number of services put in is . .	1,245
Length of feet	33,699

LEAKS AND BREAKS.

The number of leaks this year has been greater than in any year previous; many of them were owing to the extreme cold of the last winter. Three breaks in the large mains have occurred. The first was on September the 8th, in the 40-inch line on Brookline avenue. This was the largest break since the introduction of the Cochituate water; the cause of it was the resting of the pipe on the stone capping of a culvert, and the weight of the earth of the street, that had just then been filled to a depth of five feet, caused the pipe to separate through its entire length, and making a full opening of the 40-inch pipe. The break was repaired and the water let on the day following. It was fortunate this occurred at this locality, as the water flowed into the wide creek that runs parallel with the street, and no damage was done to the buildings or property surrounding, nor harm other than the washing away a portion of the street, and a temporary short supply of water in the city.

On November the 2d the 20-inch pipe on Tremont street near Chickering's factory broke. This is the new high-service line, and was shut off just below, forming a dead end. At the time of the break there was an exhibition of the working

of the two pumps, at the same time, at the pumping works, in presence of your Board.

The extra pressure, with the line being shut off, was probably the cause of the break; possibly by damage to the pipe in its transportation, as it was one of a lot that came by railroad.

The third break occurred on the night of the 23d of January, on the Dover-street bridge, near Albany street, in one of the old 20-inch pipes. Both of the above were repaired at once.

There was also a break in the north 36-inch gate on Tremont street, at Dover street. This gate was one of the first pattern introduced, and, as has been proved by the breaking of a number of the same kind, defective in its design. It was replaced by one of the latest improved pattern.

STOP-VALVES OR GATES.

The order of the Board to discontinue what was known as the "chamber" on Tremont street, opposite Chester square, was attended to early this spring. Two 36-inch and two 30-inch gates of the old pattern were taken out, and one 36-inch of the newest pattern put in. Suitable brick boxes or chambers were made round them, and the old large chamber filled up, and paved over.

A new 48-inch gate was this spring put into the line on the Goddard estate, near the foot of Bradley's hill. A 36-inch and a 30-inch established in Tremont street, with blow-offs connecting, near the dividing line of Roxbury and Brookline, and one in the 40-inch line on Brookline avenue, opposite the gas-works in Brookline, will be completed before this report appears in print.

By the introduction of proper machinery at our works on Federal street, I have been able to make all of our stop-valves from 3 to 12 inch inclusive, and am now making the 16-inch. The machinery is suitable for making as large as 24-inch, and

I can make them, if you think the number wanted will justify the cost of the patterns. The number of stop-valves established this year is 358.

HYDRANTS.

Your Board granted the request of the Fire Commissioners to change the existing system of the kind and locality of hydrants to establishing, when new pipes are laid, the "Lowry" at the intersections of streets, and the "Post" between these intersections. With the assistance of the City Engineer, I prepared a design, which promises to overcome all the objections heretofore urged against them. The design was adopted by your Board, and an order passed to construct 50 of them. The patterns are made, and two hydrants made and set. I have tested them under the greatest pressure of water we have, and under the most unfavorable circumstances, and am pleased with the result. I shall be able to make them all at our works, and at much less expense than they can be furnished by outside parties. The number of hydrants established this year is 433.

RESERVOIRS.

The Parker Hill reservoir was so far completed as to allow the water to be let in November 2d, which was done in presence of your Board. I have kept it full this winter. It is perfectly tight. The slope banks are nearly graded, and sowed with grass seed, and the driveway will soon be completed. The whole was enclosed with a fence. The East Boston, South Boston and Beacon Hill reservoirs are in as good condition as when I last reported.

By request of the inhabitants the Cochituate water was turned on to East Boston in place of the Mystic; but the pipes on the Charlestown side, between the connection of the Mystic pipes and Warren bridge, were found to be frozen. This line, since the introduction of the Mystic water, with

three or four exceptions, has been shut off, and the water drawn out of the pipes under the bridge in the winter season, to prevent its being frozen.

Not only has the water been drawn out, but that in the siphon under the draw has been pumped out to below low-water mark.

It was found, on examination, that where it was frozen, the pipes were deflected so as to retain the water for about 200 feet. Two of the pipes were burst, and, as all were old ones and might be weakened by the ice, I thought it advisable to take them out, and replace them with new ones. The new pipes were laid properly, and a blow-off gate put in at the lowest point, which will prevent a damage of like nature in the future. The water was turned on again April 21st, and has continued without intermission since.

FROST.

The extreme and continuous cold of last winter made serious trouble with the main and service pipes throughout the entire city. In the whole of my service on water-works, commencing in 1840, I have never known anything like this season. Coming, as the cold did in the early part of the winter, with no snow to protect the ground, and continuing till the spring opened, with scarcely an intermission, it penetrated to a depth unknown to any one I know or have conversed with. The coldest winter I have known was that of 1871–72. In my report for that year, it will be seen that the number of services frozen was 338. In my account for this year, you will find 1,090. This does not include all. Permission was given the plumbers to thaw as many as they might; how many they thawed is unknown to me. The original depth which pipes were laid was 4 feet. In 1865 I altered this grade to $4\frac{1}{2}$ feet, and in 1872 to 5 feet. To this depth, I continue to lay them. I estimate the average depth of frost this season to be about 4 feet 3 inches,

though it was found in some places 5 and 6 feet, and even more. I cannot say how correct this estimate is, for I only measured it by the depth of the pipes that were frozen. The frost was oftentimes below the pipes. How much, I cannot say.

The following are the lengths and sizes of main-pipes frozen, all dead ends.

20 inch on Charlestown bridge,	200 feet.
12 "	1,269 "
8 "	400 "
6 "	8,565 "
4 "	2,681 "
Total length,	13,115 "

Of the relaying of mains of enlarged sizes with Lowry Hydrants connected throughout the City proper, South and East Boston, the following table shows the changes in the sizes : —

	Size now.	No. of feet.	Size formerly.
Tremont st. — between Mason and Boylston, 16 and	12 inch.	366	6 inch.
Hanover st. — Court to Union	12 "	923	6 "
Albany st. — from Harvard to Curve	12 "	790	6 "
" " at Chester Park	12 "	66	6 "
" " from Dover to Way	12 "	1,177	6 "
Merrimac street	12 "	900	6 "
Cornhill	12 "	550	6 "
East Chester Park	12 "	678	6 "
Beacon st. — Somerset to Joy	12 "	1,050	6 "
Beach st. — Federal st. to Harrison ave	12 "	1,411	6 "
Commercial st. — Eastern ave. to Prince	12 "	3,075	6 "
Lehigh st	12 "	993	6 "
South st. — Lehigh to Beach	12 "	1,350	6 "
Curve st. — Albany to Hudson	12 "	200	4 "
Temple Place	12 "	524	4 "
Sudbury st. — Court to Portland	8 "	700	6 "
Portland st. — Hanover to Chardon	8 "	975	6 "
Salem st. — Hanover to Charter	8 "	1,900	6 "
Charter st. — Foster and Henchman	8 "	200	6 "
Long Wharf	8 "	737	6 "
North st. — Commercial and Fleet	8 "	728	6 "
Blossom	8 "	915	6 "
Allen	8 "	775	6 "
Richmond	8 "	988	6 "
Pemberton sq	8 "	600	6 "
Somerset st. — Pemberton sq. to Beacon	8 "	182	6 "
Lincoln st. — Kneeland and Harvard	8 "	280	6 "
Cove " " " Furnace	8 "	350	6 "
Henchman	8 "	275	4 "
Furnace	8 "	275	4 "

SOUTH BOSTON.

Dorchester ave. — Woodward to Boston	12 inch.	2,896	8 inch.
Dorchester ave. — Boston to Woodward	12 "	400	6 "
Granite	12 "	1,650	6 "

	Size now.	No. of feet.	Size formerly.
First st. — I and M	12 inch.	1,562	6 inch.
Seventh st. — B and Dorchester	12 "	2,700	6 "
Eighth st. — Dorchester and L	12 "	4,547	6 "

EAST BOSTON.

Maverick st. — Chelsea to Cottage	12 inch.	1,200	6 inch.
Maverick st. — Lamson to Jeffries	12 "	975	6 "
Lamson st. — Maverick and Webster	8 "	800	6 "
Clyde st.	8 "	466	6 "
Marion st. — Bremen and Chelsea	6 "	194	4 "

RAISED.

Newton st., between James and Harrison ave	12 inch.	258 feet.
Harrison ave., between Newton and Dedham	12 "	900 "

LOWERED.

Second st., between O and P	6 inch.	280 feet.
Everett st., between Cottage and Lamson	6 "	800 "

TAKEN UP AND ABANDONED.

8 inch iron pipe	2,896 feet.
6 " " "	36,862 "
4 " " "	2,538 "
2 " lead	34 "
1 " "	102 "
1½ " iron	2,145 "
1¼ " "	192 "
⅝ " lead	79 "
⅝ " pipe extended	225 "

Statement of Location, Size and Number of Feet of Pipe laid in 1874.

BOSTON.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Columbus av. Northampton and Tremont	Berkeley and Hammond Park	20	5,730
	Total 20-inch	...	5,730
Columbus av.	Berkeley, and 16-inch pipe on Boston Common.	16	2,741
	Total 16-inch	...	2,741
Tremont	Mason and Boylston	12	366
Hanover	Union and Court	"	923
Curve	Hudson and Albany	"	200
Albany	Harvard and Curve	"	790
"	North and south line of East Chester Park	"	66
"	Dover and Way	"	1,177
Dover	Albany and Draw of Bridge	"	460
East Chester Park	Albany and Harrison ave	"	678
Merrimac	Chardon and Causeway	"	900
Cornhill	Devonshire and Court	"	550
Columbus av.	Pleasant and Ferdinand	"	928
Atlantic av.	Long Wharf and South Market st.	"	84
" "	Lewis Wharf and Commercial Wharf	"	375
Temple pl.	Washington and Tremont	"	524
Beacon	Somerset and Joy	"	1,050
Beach	Federal and Harrison av.	"	1,411
Commercial	Eastern av. and Prince	"	3,075
Lehigh	Albany and South	"	993
South	Lehigh and Beach	"	1,350
	Total 12-inch	...	15,900

Statement of Location, Size, etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Tremont	Boylston and School	9	36
East Chester Park	Albany and Harrison av.	"	24
Merrimac	Chardon and Causeway	"	12
Worcester sq.	Harrison av. and Washington	"	9
Rutland	Shawmut av. and Tremont	"	18
Albany	Dover and Troy	"	26
Salem	Endicott and Charter	"	36
Henchman	Charter and Commercial	"	9
North	Fleet and Commercial	"	12
Wellington	Columbus av. and Prov. R. R.	"	8
Claremont Park	" " " " "	"	8
Concord sq.	" " " " "	"	8
Blossom	Cambridge and Allen	"	10
Allen	Blossom and Charles	"	12
Richmond	Commercial and Hanover	"	12
Lenox	Shawmut av. and Washington	"	4
South	Lehigh and Beach	"	24
	Total 9-inch	...	268
Sudbury	Court and Portland	8	700
Washington	Cornhill and Hanover	"	550
Portland	Hanover and Merrimac	"	975
Salem	Endicott and Charter	"	1,900
Charter	Foster and Henchman	"	200
Henchman	Charter and Commercial	"	275
Long Wharf	Atlantic ave. and end of wharf	"	737
North	Commercial and Fleet	"	728
Commercial Wharf	Atlantic ave. and North cor. of wharf	"	658
Blossom	Cambridge and Allen	"	915
Allen	Blossom and Charles	"	775
	Amount carried forward	...	8,413

Statement of Location, Size, etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
	Brought forward	. . .	8,413
Richmond	Commercial and Hanover	8	825
"	Commercial and Mercantile	"	163
Pemberton sq.	Tremont and Somerset	"	600
Somerset	Pemberton sq. and Beacon	"	182
Mercantile	Clinton and Richmond	"	416
Lincoln	Kneeland and Harvard	"	280
Boylston	Park sq. and Tremont	"	518
"	Public Library and Head place	"	268
Cove	Kneeland and Furnace	"	350
Furnace	Federal and Cove	"	275
	Total, 8-inch	. . .	12,290
Waltham	Harrison ave. and Union Park st.	6	155
Westfield	Tremont and Providence R. R.	"	170
Pearl	Milk and Water	"	314
Newland	Dedham and Upton	"	246
Coburn place	From Reed st.	"	142
Reed	Northampton st. and Coburn place	"	187
Appleton	Berkeley and Tremont	"	250
Boylston	Public Library and Head place	"	91
Marlboro	Gloucester and Hereford	"	76
Hereford	Beacon and Marlboro	"	47
Yarmouth	Columbus ave. and Providence R. R.	"	72
	Total 6-inch	. . .	1,750
Liverpool wharf	Atlantic ave. and end of wharf	4	404
Newbury place	From Carver st.	"	84
Boylston	Public Library and Head place	"	98
	Total 4-inch	. . .	586

Statement of Location, Size, etc. — Continued.

SOUTH BOSTON.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Dorchester avenue	Boston and Dorr	12	1,360
" "	Dorr and B	"	1,836
" "	Sixth and Seventh	"	270
Granite	Mt. Washington avenue and Second	"	1,650
H	Second and Emerson	"	268
L	Eighth and First	"	2,160
N	Seventh and Eighth	"	320
First	I and M	"	1,562
Fourth	Foundry and draw of Bridge	"	147
Seventh	B and Dorchester	"	2,700
Eighth	Dorchester and L	"	4,547
Eighth	N and M	"	100
	Total 12-inch	...	16,920
Second	O and P	9	12
Fifth	K and L	"	10
Seventh	H and I	"	11
Seventh	G and H	"	12
Eighth	Dorchester and L	"	12
Dorchester avenue	Dorr and B	"	20
	Total 9-inch	...	77
Dorr	Dorchester avenue and Earl	8	335
First	C and D	"	807
	Total 8-inch	...	1,142
House of Correction and	Insane Hospital yards	6	1,457
Tudor	D and E	"	412
Springer court	Seventh and Eighth	"	296
	Amount carried forward	...	2,165

Statement of Location, Size, etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
	Amount brought forward	. . .	2,165
Howe avenue	G and H	6	253
Emerson	Dorchester and Third	"	238
Emerson	H and I	"	472
Morni court	Ninth and O. C. and N. R. R.	"	270
Baxter	C and D	"	60
New street from N street .	Seventh and Eighth	"	181
Bolton	A and B	"	175
Athens street Bridge . . .	Over N. Y. and N. E. R. R.	"	33
Second	K and L	"	90
Second	L and O	"	1,390
Third	H and I	"	321
Fifth	M and O	"	662
Seventh	N and O	"	394
Sixth	D and C	"	87
	Total 6-inch	. . .	6,791
James avenue	From G	4	119
Vinton	Dorchester avenue and O. C. and N. R. R. . .	"	48
	Total 4-inch	. . .	167

Statement of Location, Size, etc. — Continued.

EAST BOSTON.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Maverick	Lamson and Chelsea	12	2,090
"	Lamson and Jeffries	"	985
	Total, 12-inch		3,075
Paris	Brooks and Putnam	9	10
Byron	Saratoga and Bennington	"	12
Wadsworth	Saratoga and Bennington	"	12
Bremen	Brooks and Marion	"	12
Maverick	Lamson and Chelsea	"	44
	Total, 9-inch		90
Lamson	Maverick and Webster	8	800
Clyde	Marginal and Cunard wharf	"	466
Grand Junction wharf	Clyde and Marginal		1,624
	Total, 8-inch		2,890
Bremen	Bennington and Prescott	6	360
"	Brooks and Marion	"	413
Marion	Bremen and Chelsea	"	194
Paris	Brooks and Putnam	"	457
Grand Junction wharf	Clyde and Marginal	"	966
	Total, 6-inch		2,390

Statement of Location, Size, Etc. — Continued.

BOSTON HIGHLANDS.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Parker Hill Reservoir . . .	Fisher ave. and Reservoir	36	185
	Total, 36-inch	. . .	185
Parker Hill Reservoir . . .	In Reservoir	30	109
	Total, 30-inch	. . .	109
Centre	Cedar and New Heath	24	632
New Heath	Centre and Parker	"	919
Parker	New Heath and Fisher ave.	"	274
Fisher ave.	Parker and New Heath	"	1,759
Parker Hill Reservoir . . .	Fisher ave. and Reservoir	"	225
	Total, 24-inch	. . .	3,809
Pynchon	New Heath and Tremont	20	1,987
Tremont	Pynchon and Hammond park	"	3,814
	Total, 20-inch	. . .	5,801
Centre	Linwood and Cedar	16	27
	Total, 16-inch	. . .	27
Parker Hill Reservoir . . .	Fisher ave. and Reservoir	12	308
Tremont	Burke and Benton	"	88
Brookline ave.	Burlington ave. and Beacon	"	780
Magazine	Howard and Dudley	"	977
Norfolk ave.	Magazine, N. Y. and N. E. R. R.	"	613
Centre	Parker and Sheridan ave.	"	1,480
Tremont	Wigglesworth and Hillside ave.	"	536
Washington	Pynchon and Gardner	"	42
	Amount carried forward	. . .	4,824

Statement of Location, Size, Etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
	Amount brought forward	12	4,824
Day	Heath and Creighton	"	729
Heath	Tremont and Fisher ave.	"	1,373
Lamartine	Centre and West Roxbury line	"	1,100
	Total, 12-inch	. . .	8,026
Westminster ave.	Shawmut ave. and Walnut ave.	9	10
Dearborn pl.	From Dearborn	"	7
Halleck	Ruggles and Ward	"	20
Centre	Houghton pl. and Bowe	"	14
	Total, 9-inch	. . .	51
Halleck	Ruggles and Prentiss	8	1,042
	Total, 8-inch	. . .	1,042
Westminster ave.	Shawmut ave. and Walnut ave.	6	380
Terrace	From New Heath	"	193
Beech Glen ave.	Fort ave. and Highland	"	647
New Heath	Pynchon and Terrace	"	23
Parker Hill Reservoir . . .	In Reservoir	"	6
Dearborn pl.	From Dearborn	"	189
Fisher ave.	Parker and New Heath	"	1,848
Perry court	From Hampden	"	206
Short	Brookline ave. and Maple ave.	"	317
Central ave.	From Blue Hill ave.	"	450
Tremont	Culvert and Pynchon	"	40
Woodville sq.	Dennis and Blue Hill ave.	"	412
Eustis	Hampden and Magazine	"	164
Wyman	From Centre	"	28
Sheridan ave.	Centre and Curtis	"	965
	Amount carried forward	. . .	5,868

Statement of Location, Size, Etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
	Amount brought forward	6	5,868
New st.	Longwood ave. and Francis	"	133
Thornton	Vale and Ellis	"	109
Hartopp pl.	Dearborn and Chadwick	"	29
Chadwick	Yeoman and Hartopp pl.	"	82
Gaston	Warren and Blue Hill ave.	"	117
Clay	Hampshire and Elmwood	"	67
Milford pl.	From Tremont	"	342
Wilmont	Bainbridge and Elmore	"	308
Duncan	From Ruggles	"	210
Billings pl.	From Parker	"	337
	Total, 6-inch	. . .	7,602
Tolman pl.	From Warren	4	51
Blanchard pl.	Bartlett and Norfolk	"	55
Lewis park	Highland and Highland ave.	"	127
Quincy	Blue Hill ave. and Warren	"	38
	Total, 4-inch	. . .	271

Statement of Location, Size, Etc. — Continued.

DORCHESTER.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
Pleasant	Stoughton and Commercial	24	1,886
Stoughton	Boston and Pleasant	"	1,545
Commercial	Pleasant and Dorchester ave.	"	866
Dorchester ave.	Commercial and East	"	188
	Total, 24-inch	...	4,485
Dorchester ave.	Codman and Washington	12	2,669
Hamilton ave.	Bowdoin and Mt. Everett	"	1,541
Milton ave.	Evans and Fuller	"	803
	Total, 12-inch	...	5,013
Norfolk	Washington and Nelson	9	56
Euclid	Washington and Withington	"	9
Withington	Euclid and Norfolk	"	9
Wentworth	Torrey and Norfolk	"	10
Chipman	Torrey and Norfolk	"	11
Learned	Torrey and Norfolk	"	11
Thetford	Evans and Norfolk	"	39
Dorchester ave.	Washington and Codman	"	39
Fuller	Milton ave. and Capen	"	10
	Total, 9-inch	...	194
Washington pl.	From Minot	6	357
Water	Fuller and High	"	19
Fulton	Franklin and Water	"	127
Franklin	Fulton and Walnut	"	560
Swan court	From Richmond	"	174
Harbor View	Sidney and Spring Garden	"	121
	Amount carried forward	...	1,358

Statement of Location, Size, Etc. — Continued.

IN WHAT STREET.	BETWEEN WHAT STREETS.	Diam. of Iron Pipes in In.	Feet of Pipe.
	Amount brought forward	6	1,358
Sidney	Harbor View and Crescent ave.	"	252
Shelberne	From Buttonwood	"	267
New	From Taylor	"	158
Taylor ave.	From Dudley	"	81
Plain	Oak and Pierce avenues	"	6
Norfolk	Washington and Nelson	"	4,249
Euclid.	Washington and Withington	"	458
Withington	Norfolk and Torrey	"	364
Wentworth	Norfolk and Torrey	"	309
Chipman	Norfolk and Torrey	"	492
Learned	Norfolk and Torrey	"	473
Alexander ave.	Dudley and Lebanon	"	175
Howard ave.	Sargent and Howard	"	636
Boston Building Co.	From Harvard	"	812
Buttonwood	Garden and Locust	"	143
Garden	Dorchester ave. and Buttonwood	"	262
Thetford ave.	Norfolk and Evans	"	1,389
Newport	From Savin Hill ave.	"	398
Midland	From Savin Hill ave.	"	398
Frederica	From Adams	"	237
Evans	Thetford ave. and Milton ave.	"	277
Mt. Everett	Quincy and Hamilton ave.	"	503
Winter	Hancock and Church	"	129
Fuller	Milton ave. and Capen	"	270
Selden	Milton ave. and Capen	"	346
Church	Winter and High	"	341
New Seaver	Merrill and Erie ave.	"	50
Pleasant	Commercial and Savin Hill ave.	"	78
	Total, 6-inch	. . .	14,891
Humphrey pl.	From Humphrey	4	87
	Total, 4-inch	. . .	87

RECAPITULATION.

SECTION.	1874-75.	DIAMETER IN INCHES.											
		48	36	30	24	20	16	12	9	8	6	4	Totals.
Boston	Total number of feet laid . . .	. . .	. . .	. . .	. . . .	5,730	2,741	15,900	268	12,290	1,750	586	
"	Stopcocks in same	. . .	. . .	. . .	. . . .	2	6	34	. . .	33	67	24	
South Boston . . .	Total number of feet laid . . .	. . .	. . .	. . .	. . . .	. . . .	. . . .	16,920	77	1,142	6,791	167	
" " . . .	Stopcocks in same	. . .	. . .	. . .	. . . .	. . . .	. . . .	31	. . .	2	37	10	
East Boston	Total number of feet laid . . .	. . .	. . .	. . .	. . . .	. . . .	. . . .	3,075	90	2,890	2,390	. . . .	
" "	Stopcocks in same	. . .	. . .	. . .	. . . .	. . . .	. . . .	3	. . .	5	16	3	
Boston Highlands .	Total number of feet laid . . .	. . .	185	109	3,809	5,801	27	8,026	51	1,042	7,602	271	
" " .	Stopcocks in same	. . .	1	1	1	1	1	11	. . .	2	24	3	
Dorchester	Total number of feet laid . . .	. . .	. . .	. . .	4,485	. . . .	. . . .	5,013	194	. . . .	14,891	87	
"	Stopcocks in same	. . .	. . .	. . .	2	. . . .	. . . .	6	. . .	. . . .	31	. . . .	
Brookline	Stopcocks in same	1	. . .	. . .	. . . .	. . . .	. . . .	. . . .	. . .	. . . .	. . . .	. . . .	
	Sums of Pipes	. . .	185	109	8,294	11,531	2,768	48,934	680	17,364	33,424	1,111	124,400
	Sums of Stopcocks	1	1	1	3	3	7	85	. . .	42	175	40	358

Statement of the Length of different sizes of Pipes laid, and the Number of Stopcocks put in, to May 1, 1875.

	Diameter of Pipes in Inches.														
	48	40	36	30	24	20	16	12	10	9	8	6	4	3	
Feet of Pipe laid in Brookline, Boston Highlands and Boston Proper	7,283	23,166	20,070	26,770	5,773	5,823	19,446	104,434	. .	486	31,095	307,794	93,665	. .	
Number of Stopcocks in same	6	5	8	11	11	5	42	225	. .	. .	97	790	392	. .	
Feet of Pipe laid in Boston Highlands	. .	. . .	185	109	11,427	5,801	7,168	76,789	. .	772	1,152	138,908	26,232	238	
Number of Stopcocks in same	. .	. . .	1	2	9	1	17	109	. .	. .	3	297	112	2	
Feet of Pipe laid in South Boston	. .	. . .	. . .	. . .	. . .	13,206	. . .	46,863	. .	105	4,013	124,410	36,774	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	5	. . .	74	. .	. .	4	226	108	. .	
Feet of Pipe laid in East Boston	. .	. . .	. . .	. . .	1,463	15,972	2,152	32,088	9,923	146	21,474	82,662	5,912	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	8	5	41	3	. .	13	141	45	. .	
Feet of Pipe laid in Dorchester	. .	. . .	. . .	. . .	7,784	3,698	456	86,471	. .	1,055	3,428	85,792	3,450	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	5	1	1	104	. .	. .	6	164	22	. .	
Feet of Pipe laid in Newton and Needham	. .	. . .	1,074	2,140	. . .	. . .	. . .	1,359	. .	. .	. . .	360	. . .	. .	
Number of Stopcocks in same	. .	. . .	. . .	. . .	. . .	. . .	. . .	2	. .	. .	. . .	2	. . .	. .	
Totals, Length of Pipe laid	7,283	23,166	21,329	29,019	26,447	44,500	29,222	348,004	9,923	2,564	61,162	739,926	166,033	238	1,508,816 feet, equal to 285 miles, 4,016 feet.
Number of Stopcocks put in	6	5	9	13	25	20	65	555	3	. .	123	1,620	679	2	3,125.

Statement of Service Pipes Laid in 1874.

DIAMETER IN INCHES.	BOSTON.		SO. BOSTON.		EAST BOSTON.		BOSTON HIGHLANDS.		DORCHESTER.		TOTALS.	
	Number of pipe.	Length in feet.	Number of pipe.	Length in feet.	Number of pipe.	Length in feet.	Number of pipe.	Length in feet.	Number of pipe.	Length in feet.	Number of pipe.	Length in feet.
1¼	...	....	1	36	...	....	1	28	1	12	3	76
1	22	543	3	86	...	....	7	143	4	162	36	934
¾	23	679	...	....	...	....	4	102	2	105	29	886
⅝	218	6,222	175	4,277	131	3,513	385	10,322	236	7,204	1,175	31,538
½	2	265	...	....	...	....	...	....	...	....	2	265
Aggregate											1,245	33,699
Making total number up to May 1st, 1875											40,088	

Repairs of Pipes during the Year 1874.

WHERE.	DIAMETER OF PIPES IN INCHES.																		
	40	36	30	24	20	16	12	10	8	6	4	3	2	1½	1¼	1	¾	⅝	½	Totals.
Boston	.	4	15	2	19	7	31	.	2	67	85	11	8	116	12	20	5	863	40	1,307
South Boston	.	.	.	.	2	.	9	.	.	17	14	.	.	.	.	6	4	371	19	442
East Boston	.	.	.	.	11	.	1	1	1	18	17	.	3	.	.	.	2	326	12	392
Boston Highlands	1	.	.	1	2	1	3	.	.	12	20	.	.	.	.	2	1	231	2	276
Dorchester	.	.	.	.	.	.	14	.	.	43	8	.	.	.	.	3	1	65	3	137
Totals	1	4	15	3	34	8	58	1	3	157	144	11	11	116	12	31	13	1856	76	2,554

Of the leaks that have occurred on pipes of 4-inch and upwards, joints, 183; settling of earth, 25; defective pipe, 18; defective packing, 1; defective gate, 1; struck by pick, 4; cap blown off, 7; burst by frost, 90; blasting, 2.

Total, ... 331

Stoppages, by frost, 102; fish, 1. 103

Of 3-inch and on service pipes, joints, 17; settling of earth, 170; setting of wall, 2; settling of boxing, 3; defective pipes, 59; defective packing, 16; defective faucet, 11; defective coupling, 14; stiff connections, 115; faucet punched out, 5; faucet loose at main, 3; faucet blown out, 1; gnawed by rats, 18; blasting, 1; struck by pick, 53; parties digging drains, 7; pipes not in use, 13; frost, 43; burnt off by parties trying to thaw, 3.

Total, ... 554

Stoppages, by fish, 183; rust, 84; gasket, 7; dirt, 4.

Frost from inside of house, 198; frost outside, 1,090.

Total, ... 1,566

Total, 2,554

Statement of Number of Leaks, 1850–1874.

YEAR.	DIAMETER OF.		TOTALS.
	Four Inches and upwards.	Less than Four Inches.	
1850	32	72	104
1851	64	173	237
1852	82	241	323
1853	85	260	345
1854	74	280	354
1855	75	219	294
1856	75	232	307
1857	85	278	363
1858	77	324	401
1859	82	449	531
1860	134	458	592
1861	109	399	508
1862	117	373	490
1863	97	397	494
1864	95	394	489
1865	111	496	607
1866	139	536	675
1867	122	487	609
1868	82	449	531
1869	82	407	489
1870	157	769	926
1871	185	1,380	1,565
1872	188	1,459	1,647
1873	153	1,076	1,229
1874	434	2,120	2,554

HYDRANTS.

During the year 433 hydrants have been established, and 194 abandoned, as follows: —

	Established. Lowry.	Boston.	Post.		Abandoned. Lowry.	Boston.		
In Boston proper	163+	6=		169	2+	114=	116	53
South Boston	100+	7=		107	1+	57=	58	49
East Boston	38+	2=		40	—	13=	13	27
Boston Highlands	47+	3	+1=	51	2+	4=	6	45
Dorchester	59+	7=		66	—	1=	1	65
Totals	407+	25	+1=	433	5+	189=	194	239

Total Number of Hydrants up to May 1, 1875.

Boston Proper	1,256
South Boston	465
East Boston	272
Boston Highlands	693
Dorchester	518
Brookline	9
Charlestown	11
Chelsea	8
Deer Island	14
	3,246

63 hydrants have been taken out and replaced by new or repaired ones, and 181 boxes have been taken out and replaced by new ones. The hydrants have had the usual attention paid them.

STOPCOCKS.

358 new stopcocks have been established this year. 72 boxes have been taken out and replaced by new ones. All the stopcocks have had the attention of former years paid them.

Statement of Pipes and other stock on hand, exclusive of Tools, May 1st, 1875.

	DIAMETER IN INCHES.															
	48	40	36	30	24	20	18	16	12	10	9	8	6	4	3	2
Pipes	11	56	13	75	32	10	.	874	399	48	51	4,980	628	149	4	.
Blow-off Branches	.	.	3	.	2	1	.	4	15	.	.	20	.	. .	. .	.
Y Pipes	.	.	.	1	1	.	.	1	. .	.	.	. . .	3	. .	. .	.
4 Way Branches	.	2	1	2	10	1	.	19	66	.	.	30	15	1	. .	.
3 Way Branches	1	8	2	6	9	7	.	4	89	6	67	114	17	21	. .	3
Flange Pipe	.	1	1	2	3	.	.	2	2	.	.	. . .	.	1	. .	.
Sleeves	7	9	11	1	30	5	.	11	78	16	.	57	24	46	28	48
Clamp Sleeves	3	2	4	14	2	.	.	5	2	.	.	. . .	16	8	8	.
Caps	.	2	3	2	1	.	1	5	23	.	.	21	42	39	. .	.
Reducers	.	3	3	.	5	7	.	1	99	.	14	20	34	17	. .	.
Bevel Hubs	.	.	.	.	.	.	.	. .	. .	.	.	. . .	9	1	. .	.
Curve Pipes	5	.	3	29	5	7	.	16	72	.	.	78	44	. .	. .	.
Quarter Turns	.	1	2	10	2	14	.	10	75	9	.	68	27	27	2	.
Double Hubs	.	.	.	.	.	3	.	7	. .	.	.	. . .	13	. .	. .	200
Offset Pipes	.	.	.	.	.	.	.	. .	53	.	.	50	42	16	. .	.
Yoke Pipes	.	.	.	.	.	.	.	. .	28	.	.	20	39	4	. .	.
Manhole Pipes	.	1	.	1	.	.	.	. .	. .	.	.	. . .	.	. .	. .	.
One-eighth Turns	.	1	.	.	8	9	.	10	87	10	.	89	14	30	. .	.
Pieces of Pipes	2	2	2	10	3	18	.	3	12	.	9	16	16	9	8	.
Blow-offs and Manholes	1	1	.	1	.	.	.	. .	. .	.	.	. . .	.	. .	. .	.
Plugs	.	.	.	.	.	.	.	. .	. .	.	.	. . .	.	12	. .	.
Thawing Clamps	.	.	.	.	.	.	.	. .	30	.	.	14	30	19	. .	.
Stopcocks	.	1	.	2	1	2	.	3	54	.	.	52	5	21	6	.
Manhole Branches	.	.	2	2	.	.	.	. .	. .	.	.	. . .	.	. .	. .	.

Hydrants. — 102 Lowry, 21 Lowry extension, 7 Lowry chucks, 15 Lowry frames and covers, 39 Lowry barrels, 15 Lowry caps, 12 round covers, 24 Wilmarth, 4 Lowell old.

For Hydrants. — 8 bends, 40 lengtheners, 38 covers, 121 wastes, 2 wharf hydrant cocks, 16 nuts, 11 valve seats, 45 rubber valves, 124 screws, 18 heavy frames, 12 heavy covers, 38 frames, 22 old covers, 315 pounds composition, 40 pairs straps.

For Stopcocks. — 2 36-inch screws, 1 30-inch do., 2 24-inch do., 1 16-inch do., 3 12-inch do., 4 8-inch do., 36 6-inch do., 36 4-inch do., 1 4-inch do., for waste weir, 1 ditto for Brookline reservoir, 34 3-inch do., 1 16-inch check valve, 12 12-inch valves, 1 8-inch do., 34 6-inch do., 27 4-inch do., 31 3-inch do., 12 8-inch rings, 67 6-inch do., 85 4-inch do., 20 3-inch do., 2 stuffing boxes for 8-inch stopcocks, 22 do., for 6-inch, 40 do. for 4-inch, 6,200 pounds iron casting for 16-inch, 12 inch, 6-inch and 4-inch stopcocks, 5 16-inch unfinished, 66 rings for stuffing-boxes, 610 pounds malleable nuts, 75 pounds $\frac{3}{4}$-inch bolts, 200 pounds $\frac{5}{8}$-inch washers, 860 pounds $\frac{5}{8}$-inch bolts, 80 pound lead washers.

Meters in Shop. — 3 3-inch, 3 2-inch, 6 1-inch, 35 $\frac{5}{8}$-inch.

Stock for Meters. — 9 2-inch nipples, 12 1-inch do., 20 $\frac{5}{8}$-inch do., 5 2-inch connection pieces, 4 1-inch do., 12 $\frac{5}{8}$-inch do., 24 1-inch cocks, 45 $\frac{5}{8}$-inch do., 1 4-inch clock, 1 3-inch do., 8 1-inch do., 30 $\frac{5}{8}$-inch do., 30 brass spindles, 325 rubber nipples, 7 fish boxes, 21 covers, 11 frames, 13 glasses.

For Service Pipe. — 157 1-inch union cocks, 113 $\frac{3}{4}$-inch do., 155 $\frac{5}{8}$-inch do.,511 unfinished do., 16 1-inch air cocks, 38 $\frac{1}{4}$-inch T cocks, 9 1-inch do., 38 $\frac{3}{4}$-inch do., 8 $\frac{5}{8}$-inch do., 12 $\frac{5}{8}$-inch Y do., 38 $\frac{5}{8}$-inch thawing do., 12 $1\frac{1}{4}$-inch tubes, 70 1-inch do., 185 $\frac{5}{8}$-inch do., 12 2-inch couplings, 35 1-inch do., 1,700 $\frac{8}{5}$-inch do., 200 $\frac{1}{2}$-inch do., 120 $\frac{5}{8}$-inch thawing tubes, 1,000 boxes, 50 T do., 34 Y do., 149 extension tubes, 316 tubes, 1,000 caps, 470 pounds unfinished composition castings, 7 4×2 iron reducers, 18 composition hose reducers, 2 $\frac{1}{2} \times$ 2-inch.

Lead Pipe. — 3,201 pounds 2-inch lead pipe, 2,475 lbs. $1\frac{1}{2}$-inch do., 1,240 lbs. $1\frac{1}{4}$-inch do., 397 lbs. 1-inch do., 2,275 lbs. $\frac{1}{2}$-inch do., 425 lbs. 1-inch tin-lined do., 504 lbs. $\frac{5}{8}$-inch do., 50 lbs. $\frac{5}{8}$ block tin do., 255 pounds block tin do.

Blacksmith Shop. — 1,050 pounds round iron, 975 lbs. flat iron, 450 lbs. square do., 150 lbs. working pieces, 1,980

cast steel, 4 dozen pick blanks, 311 lbs. spring steel, 5,200 lbs. Cumberland coal.

Carpenter's Shop. — 117 Lowry hydrant boxes, 232 stopcock boxes, 71 do. unfinished, 54 hydrant boxes, 23 do. unfinished, 6 meter boxes, 1,200 lbs. spikes and nails, 9,000 feet 2-inch spruce plank, 19,500 $1\frac{1}{2}$-inch spruce batting, 37 1-foot pieces for raising hydrant boxes, 50 1-foot do. for stopcock boxes, 13 do. for Lowry hydrant boxes.

Tools. — 1 steam engine, 1 large hoisting crane, 3 boom derricks, 7 hand-geared derricks, 5 sets shears and rigging for same, 7 tool-houses, 3 tool-boxes, 2 platform scales, 1 portable blacksmith shop, 1 portable cover for Brewer fountain, 1 hand roller, 1 horse do., tools for laying main and service pipes, 2 engine lathes, 1 foot do., 1 hand do., 1 Pratt and Whitney taper do., 1 planer, 1 boring mill, 1 chain-hoisting gear, 1 upright drilling machine, 4 grindstones, 1 trip hammer, the necessary tools for carrying on the machine, blacksmith, carpenter and plumbing shop, 1 circular saw, 1 fan-blower, 1 40-inch proving press, 1 36-inch do., 1 small do., 7 wheelbarrows, 1,650 feet hose, also a lot of patterns where we obtain castings.

Stable. — 14 horses, 12 wagons, 2 buggies, 6 pungs, 1 sled, 2 carts, 20 sets harness, 13 blankets, 2 buffalo robes, 2 sleighs, 40 bales hay, 180 bushels grain, 3 tons straw, 1 jigger.

Beacon Hill Reservoir. — 1 large composition cylinder 16-inch jet, 1 6-inch composition jet, 3 composition plates, 9 cast-iron plates, 2 4-inch composition jets, 5 swivel pipe patterns, 1 2-inch copper straight jet, 6 composition jets for small fountains.

Miscellaneous. — 8 tons pig lead, 81 gallons linseed oil, 2 barrels kerosene oil, 45 tons furnace coal, 180 tons gravel, 500 brick, lot of paving stones, 11 reservoir covers, 9 cords wood, 6 plates, 1 iron fountain-basin, 4 stone troughs for drinking-fountains, 3 drinking-fountains, 1 hose carriage, 16 bales gasket.

E. R. JONES,
Superintendent of Eastern Division.

CIVIL ORGANIZATION OF THE WATER WORKS FROM THEIR COMMENCEMENT, TO MAY 1, 1875.

Water Commissioners.

NATHAN HALE, JAMES F. BALDWIN, THOMAS B. CURTIS. From May 4, 1846, to January 4, 1850.

Engineers for Construction.

JOHN B. JERVIS, of New York, Consulting Engineer. From May, 1846, to November, 1848.

E. S. CHESBROUGH, Chief Engineer of the Western Division. From May, 1846, to January 4, 1850.

WILLIAM S. WHITWELL, Chief Engineer of the Eastern Division. From May, 1846, to January 4, 1850.

City Engineers having charge of the Works.

E. S. CHESBROUGH, Engineer. From November 18, 1850, to October 1, 1855.

GEORGE H. BAILEY, Assistant Engineer. From January 27, 1851, to July 19, 1852.

H. S. MCKEAN, Assistant Engineer. From July 19, 1852, to October 1, 1855.

JAMES SLADE, Engineer. From October 1, 1855, to April 1, 1863.

N. HENRY CRAFTS, Assistant Engineer. From October 1, 1855, to April 1, 1863.

N. HENRY CRAFTS, City Engineer. From April 1, 1863, to November 25, 1872.

THOMAS W. DAVIS, Assistant Engineer. From April 1, 1863, to December 8, 1866.

HENRY M. WIGHTMAN, Resident Engineer at C. H. Reservoir. From February 14, 1866, to November, 1870.

JOSEPH P. DAVIS, City Engineer. From November 25, 1872, to present time.

After January 4, 1850, Messrs. E. S. CHESBROUGH, W. S. WHITWELL, and J. AVERY RICHARDS were elected a Water Board, subject to the direction of a Joint Standing Committee of the City Council, by an ordinance passed December 31, 1849, which was limited to keep in force one year; and in 1851 the Cochituate Water Board was established.

COCHITUATE WATER BOARD.

Presidents of the Board.

THOMAS WETMORE, elected in 1851, and resigned April 7, 1856 * * . . . . . Five years.
JOHN H. WILKINS, elected in 1856, and resigned June 5, 1860 * * . . . . . Four years.
EBENEZER JOHNSON, elected in 1860, term expired April 3, 1865 . . . . . Five years.
OTIS NORCROSS, elected in 1865, and resigned January 15, 1867 . . . . . One year and nine months.
JOHN H. THORNDIKE elected in 1867, term expired April 6, 1868 . . . . . One year and three months.
NATHANIEL J. BRADLEE, elected April 6, 1868, and resigned January 4, 1871 . . . Two years and nine months.
CHARLES H. ALLEN, elected from January 4, 1871, to May 4, 1873 . . . . . Two years and four months.
JOHN A. HAVEN, elected May 4, 1873, to Dec. 17, 1874 . . . . . One year and seven months.
THOMAS GOGIN, elected Dec. 17, 1874, to present time.

Members of the Board.

THOMAS WETMORE, 1851, 52, 53, 54 and 55 * * . . Five years.
JOHN H. WILKINS, 1851, 52, 53, * 56, 57, 58 and 59 * * . Eight years.
HENRY B. ROGERS, 1851, 52, 53, * 54 and 55 . . . Five years.
JONATHAN PRESTON, 1851, 52, 53 and 56 . . . Four years.
JAMES W. SEAVER, 1851 * * . . . . . One year.
SAMUEL A. ELIOT, 1851 * * . . . . . .
JOHN T. HEARD, 1851 . . . . . One year.
ADAM W. THAXTER, Jr., 1852, 53, 54 and * *55 . . Four years.

SAMPSON REED, 1852 and 1853	Two years.
EZRA LINCOLN, 1852 * *	One year.
THOMAS SPRAGUE, 1853, 54 and 55 * *	Three years.
SAMUEL HATCH, 1854, 55, 56, 57, 58 and 61	Six years.
CHARLES STODDARD, 1854, 55, 56 and 57 * *	Four years.
WILLIAM WASHBURN, 1854 and 55.	Two years.
TISDALE DRAKE, 1856, 57, 58 and 59 * *	Four years.
THOMAS P. RICH, 1856, 57 and 58	Three years.
JOHN T. DINGLEY, 1856 and 59	Two years.
JOSEPH SMITH, 1856	Two months.
EBENEZER JOHNSON, 1857, 58, 59, 60, 61, 62, 63 and 64	Eight years.
SAMUEL HALL, 1857, 58, 59, 60 and 61 * *	Five years.
GEORGE P. FRENCH, 1859, 60, 61, 62 and 63	Five years.
EBENEZER ATKINS, 1859 * *	One year
GEORGE DENNIE, 1860, 61, 62, 63, 64 and 65	Six years.
CLEMENT WILLIS, 1860 * *	One year.
G. E. PIERCE, 1860 * *	One year.
JABEZ FREDERICK, 1861, 62 and 63 * *	Three years.
GEORGE HINMAN, 1862 and 63	Two years.
JOHN F. PRAY, 1862	One year.
J. C. J. BROWN, 1862	One year.
JONAS FITCH, 1864, 65 and 66	Three years.
OTIS NORCROSS, * 1865 and 66	Two years.
JOHN H. THORNDIKE, 1864, 65, 66 and 67	Four years.
BENJAMIN F. STEVENS, 1866, 67 and 68	Three years.
WILLIAM S. HILLS, 1867	One year.
CHARLES R. TRAIN, 1868	One year.
JOSEPH M. WIGHTMAN, 1868 and 69	Two years.
BENJAMIN JAMES, * 1858, 68 and 69	Three years.
FRANCIS A. OSBORN, 1869	One year.
WALTER E. HAWES, 1870	One year.
JOHN O. POOR, 1870	One year.
HOLLIS R. GRAY, 1870	One year.
NATHANIEL J. BRADLEE, 1863, 64, 65, 66, 67, 68, 69, 70 and 71	Nine years.
GEORGE LEWIS, 1868, 69, 70 and 71	Four years.
SIDNEY SQUIRES, 1871	One year.
CHARLES H. HERSEY, 1872	One year.
CHARLES H. ALLEN, 1869, 70, 71 and 72	Four years.
ALEXANDER WADSWORTH,* 1864, 65, 66, 67, 68, 69 and 72	Seven years.
CHARLES R. MCLEAN, 1867, 73 and 74	Three years.
EDWARD P. WILBUR, 1873 and 74	Two years.
JNO. A. HAVEN, 1870, 71, 72, 73 and 74	Five years.

EDWARD A. WHITE, 1872, 73, 74 and 75 . . }
THOMAS GOGIN, 1873, 74 and 75 . . . . }
LEONARD R. CUTTER, 1871, 72, 73, 74 and 75 . . }
WM. G. THACHER, 1873, 74 and 75 . . . } *Present Board.*
AMOS L. NOYES, 1871, 72 and 75 . . . . }
L. MILES STANDISH, 1860, 61, 63, 64, 65, 66, 67, 74 and 75 . . . . . }
CHARLES J. PRESCOTT, 1875 . . . . . }

* Mr. John H. Wilkins resigned Nov. 15, 1855, and Charles Stoddard was elected to fill the vacancy. Mr. Henry B. Rogers resigned Oct. 22, 1865. Mr. Wilkins was re-elected Feb., 1856, and chosen President of the Board, which office he held until his resignation, June 5, 1860, when Mr. Ebenezer Johnson was elected President, and July 2, Mr. L. Miles Standish was elected to fill the vacancy occasioned by the resignation of Mr. Wilkins. Otis Norcross resigned Jan. 15, 1867, having been elected Mayor of the city. Benjamin James served one year, in 1858, and was re-elected in 1868. Alexander Wadsworth served six years, 1864–69, and was re-elected in 1872.

* * Deceased.

COCHITUATE WATER BOARD, 1875.

THOMAS GOGIN, President.

CHARLES J. PRESCOTT, of the Board of Aldermen.

WM. G. THACHER, }
AMOS L. NOYES, } Of the Common Council.

AT LARGE.

For Two Years.	For One Year.
LEONARD R. CUTTER,	L. MILES STANDISH,
THOMAS GOGIN,	EDWARD A. WHITE.

Clerk.

WALTER E. SWAN.

Superintendent of the Eastern Division.

EZEKIEL R. JONES.

Superintendent of the Western Division.
DESMOND FITZGERALD.

Water Registrar.
WILLIAM F. DAVIS.

City Engineer.
JOSEPH P. DAVIS.

STANDING COMMITTEES OF THE BOARD.

Eastern Division.
EDWARD A. WHITE, Chairman.
WM. G. THACHER, L. MILES STANDISH.

Western Division.
LEONARD R. CUTTER, Chairman.
CHARLES J. PRESCOTT, AMOS L. NOYES.

Water Registrar's Department.
L. MILES STANDISH, Chairman.
WM. G. THACHER, AMOS L. NOYES.

On New Supply.
THOMAS GOGIN, Chairman.
LEONARD R. CUTTER, L. MILES STANDISH.

SHELF No.....

[Sept., 1882, 20,000.]

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