

Aug. 2	Paid Black Bros., oil and waste	\$ 2 75
	For labour	47 75
16	"	48 75
30.	"	50 13
Sept 7.	Wm. Roche and others for coal	50 60
13.	For labour	49 63
27.	"	46 00
Oct. 11.	General work	48 50
	Wm. Roche for coal	12 85
25.	General work	45 50
Nov 8.	Wm. Roche for coal	25 63
	General work	41 25
22.	"	41 50
Dec. 6.	Wm. Roche for coal	11 28
	General work	46 75
1898.		
April 11.	General repairs	40 75
25.	General work	42 00
30.	Black Bros. & Co., hardware	5 03
		\$999 99

### CAMP HILL CEMETERY.

*Statement of Expenditure on Camp Hill Cemetery from 1st May,  
1897, to 30th April, 1898.*

1897.		
May 17.	Paid A. McDougall for labour	\$ 13 00
31.	"	29 10
June 14.	"	50 40
28.	"	21 45
July 10	"	22 00
26.	"	23 70
Aug. 9.	Power & Co, repairing valves	4 75
	W. Foster, repairing fences	36 84
	A. McDougall for labour	19 25
23.	"	17 65
Sept. 6.	"	13 20
20.	"	13 20
	Wm. Foster for lumber, &c.	9 97
Oct. 11.	A. McDougall for labour	13 20
18.	"	10 20
Nov. 15.	"	40 90
1888		
Jan 24	"	8 05
27.	"	13 20
	W. Foster, labour and work	13 78
Feb. 24	A. McDougall for labour	11 00
Mar. 7.	"	6 60
April 18.	"	5 50
		\$396 94

## PUBLIC SCHOOLS.

*Statement of amounts paid Commissioners of Public Schools as per  
Estimate for year ending 30th April, 1898.*

1897.			
June 4.	Paid Secretary of Board, R. J. Wilson	.....	\$9200 00
July 3.	“ “	.....	9200 00
Aug. 3.	“ “	.....	9200 00
Sept. 2.	“ “	.....	9200 00
Oct. 4.	“ “	.....	9200 00
Dec. 2.	“ “	.....	9200 00
1898.			
Jan. 4.	“ “	.....	9200 00
Feb. 7.	“ “	.....	9200 00
March 9.	“ “	.....	9200 00
April 12.	“ “	.....	9200 00
			\$92000 00

## COUNTY OF HALIFAX.

*Statement of amounts paid County Treasurer on account of Civic  
Year, 1897 8.*

1897.			
June 28.	Paid W. H. Wiswell	.....	\$ 177 29
July 13.	“	.....	341 61
Aug. 3.	“	.....	4307 30
Sept. 3.	“	.....	255 07
Oct. 5.	“	.....	440 14
Nov. 8.	“	.....	237 02
Dec. 8.	“	.....	215 45
1898.			
Jany. 7.	“	.....	286 36
Feb. 14.	“	.....	468 12
Mar. 17.	“	.....	231 00
April 22.	“	.....	206 59
May 11.	“	.....	208 21
June 30.	“	.....	209 48
July 14.	“	.....	220 21
Aug. 9.	“	.....	144 72
			\$7950 57

Some of the above amounts, as will be seen, were paid after the close of the civic year but they belong to 1897-8 and the balance of the estimate, \$2049.43, will be paid out of the taxes for that year.

### FOOTPATH ON CITADEL HILL.

*Statement of Expenditure for Footpath Account on Citadel Hill,  
from 1st May, 1897, to 30th April, 1898.*

1897.			
May 10.	To grading footpath.....	\$ 51 43	
17.	Jas. Freda for sand.....	25 93	
24.	Grading footpath.....	27 90	
June 7.	Black Bros. & Co., wire rope.....	16 00	
	Grading footpath.....	17 85	
Sept. 7.	Jas Hi lis & Sons, settees.....	96 00	
13.	Mowing grass, etc.....	25 03	
Oct. 11.	Black Bros., Hardware.....	1 73	
			<u>\$261 87</u>

### FUEL ACCOUNT.

*Statement of Expenditure for Fuel Account from 1st May,  
1897, to 30th April, 1898.*

1897.			
Oct. 8.	Paid for putting in coal.....	\$ 6 16	
	Wm. Roche for coal.....	228 39	
20.	Removing ashes.....	3 20	
Dec. 8.	Transfer to credit, horses account.....	18 80	
1898.			
Jan. 3.	Labour, putting in coal.....	6 30	
1.	Truckage of ".....	9 95	
7.	Wm. Roche, ".....	256 60	
Mar 14.	Putting in coal.....	6 25	
16.	Transfer to credit, horses account.....	26 00	
April 25.	Putting in coal.....	12 20	
27.	Transfer to credit, City Property.....	81 60	
30.	Wm. Roche for coal.....	198 29	
			<u>\$853 74</u>

CONSOLIDATED ACCOUNT

## STREET LIGHTING.

*Statement of Expenditure for Lighting Streets from 1st May,  
1897, to 30th April, 1898.*

1897.			
June	1.	Paid Illuminating & Motor Co. for May	\$1246 56
July	12.	“ “ “ June	1280 06
Aug.	9.	“ “ “ July	1263 56
Sept.	7.	“ “ “ August	1267 56
Oct.	19.	“ “ “ September	1272 60
Nov.	8.	“ “ “ October	1244 68
Dec.	6.	“ “ “ November	1268 56
1898.			
Jan.	10.	“ “ “ December	1126 06
Feb.	7.	“ “ “ January	1212 56
March	7.	“ “ “ February	1280 56
April	4.	“ “ “ March	1234 06
	30.	“ “ “ April	1365 56
			\$15062 38

## LIGHTING CITY HALL.

*Statement of Expenditure for Lighting City Hall from 1st May,  
1897, to 30th April, 1898.*

1897.			
May	17.	Paid Halifax Gas Co.	\$ 6 60
July	5.	W. Shepherd, electric work	1 90
Aug.	17.	Heat & Light Co., rent of meter	10 20
Sept.	7.	Peoples' Light Co.	2 45
Oct.	11.	“ “ “	2 75
Nov.	8.	Illuminating & Motor Co., 6 months	313 90
		Peoples' Light Co. for gas	5 90
Dec.	6.	“ “ “	5 30
1898.			
Jan.	10.	“ “ “	4 55
Feb.	7.	“ “ “	4 25
March	7.	“ “ “	2 75
April	30.	Illuminating & Motor Co.	318 65
			\$679 20

### TELEPHONE ACCOUNT.

*Statement of Expenditure for Telephones during year ending  
31st April, 1898.*

1897.			
May 17.	Paid N. S. Telephone Co. for rent of 8 instruments 6 months .	\$119 00	
Nov. 8.	“ “ “ “ “ “ “ “	119 00	
			<u>\$238 00</u>

### COUNTY RIFLE ASSOCIATION.

*Statement of Expenditure for County Rifle Association during  
year ending 30th April, 1898.*

1897.		
Oct. 13.	Paid C. F. Burns, amount of appropriation.....	\$ 50 00

### COURT OF APPEALS.

*Statement of Amounts paid Commissioners of Appeals from  
1st May 1897, to 30th April, 1898.*

1897.		
May 13.	Paid Thos. E. Cook .....	\$ 100 00
	J. H. Symons.....	100 90
	W. F. MacCoy.....	100 00
		<u>\$300 00</u>

**CONSOLIDATED FUND—PREMIUM ACCOUNT.***Statement of Amounts received and paid on Consol. Premium  
Accounts during year ending 30th April, 1898.*

1897.		CR.	
May 1.	By balance of premium account.....		\$3167 71
	Cash from J. C. Mackintosh, premium of loan.....		3636 60
			<u>\$6804 31</u>
		DR.	
June 19	Paid Morning Herald Co., advertising .....	\$ 3 64	
July 2.	Water department .....	666 67	
Aug. 4.	Transfer to Sinking Funds, 1896 .....	5500 00	
23.	T. C. Allen & Co., stationery .....	10 97	
	Maritime Lithograph Co., debentures .....	63 07	
31.	American Express Co., freight.....	33 92	
	Balance .....	525 44	
			<u>\$6804 31</u>

**INSURANCE ACCOUNT.***Statement of Amounts paid for Insurance from 1st May, 1897 to  
30th April, 1898.*

1897.		
May 1.	Paid Queen Insurance Co.....	\$802 50
	Quebec Fire Insurance Co.....	60 00
	Acadia " " .....	30 00
		<u>\$ 892 50</u>
31.	Halifax " " Exhibition building....	30 00
June 7.	Herald and Recorder, advertising.....	2 20
		<u>\$924 70</u>

**DALHOUSIE COLLEGE AND UNIVERSITY.***Statement of Amount paid Dalhousie College for year ending  
30th April, 1898.*

1897.		
Dec. 20.	Paid H. MacInnis, amount of appropriation.....	\$500 00

### HALIFAX DISPENSARY.

*Statement of Amount paid Halifax Dispensary for year ending  
30th April, 1898.*

1897.		
Dec. 31.	Paid W. H. Wiswell, amount of appropriation .....	\$750 00

### INSTITUTION FOR DEAF AND DUMB.

*Statement of Amount paid Institution for the Deaf and Dumb  
during year ending 30th April, 1898.*

1897.		
Sept. 8.	Paid A. MacKinlay this amount .....	\$ 510 00

### R. C. HOME FOR GIRLS.

*Statement of Amount paid R. C. Home for Girls—Monastery  
of the Good Shepherd—during year ending 30th April, 1898.*

1897.		
Oct. 8.	Paid Sister Mary Gabriel this amount .....	\$750 00

### ST. PATRICK'S REFORMATORY FOR BOYS.

*Statement of Amount paid for Maintenance of Boys at St.  
Patrick's Reformatory from 1st May, 1897, to 30th April, 1898.*

1897.			
Aug. 16.	Paid Bro. Lawrence, 9 boys, 3 months .....		\$131 11
Nov. 15.	“ “ 11 “ .....		170 45
1898.			
Feb. 21.	“ “ 9 “ .....		149 10
April 30.	“ “ 10 “ .....		142 90
			<u>\$593 56</u>

## INDUSTRIAL SCHOOL FOR BOYS.

*Statement of Amount paid for Maintenance of Boys at the Industrial School from 1st May, 1897, to 30th April, 1898.*

1897.		
Aug. 23.	Paid R. Norman for 7 boys .....	\$146 66
Nov. 15.	“ “ 5 “ (longer time).....	153 30
Feb. 19.	“ “ 8 “ .....	186 49
April 30.	W. P. Barton for 9 boys . . . . .	180 00
		<b>\$666 45</b>

## TRUANTS UNDER COMPULSORY ACT.

*Statement of Amounts paid for Truants under Compulsory Act from 1st May, 1897, to 30th April, 1898.*

1897.		
Aug. 23.	Industrial School paid R. Norman for 8 boys.....	\$203 30
Nov. 15.	“ “ 7 “ .....	166 64
1898.		
Feb. 19.	“ “ 10 “ .....	169 83
April 30.	“ “ 8 “ .....	160 00
1897.		
Aug. 16	St. Patrick's Reformatory, 28 boys, 3 months.....	506 86
Nov. 15.	“ “ 26 “ “ .....	470 20
1898.		
Feb. 21.	“ “ 22 “ “ .....	305 11
April 30.	“ “ 21 “ “ .....	274 67
		<b>\$2256 61</b>

## SCHOOL FOR THE BLIND.

*Statement of amount paid the School for the Blind for the Civic Year ending 30th April, 1898.*

1897.		
June 16.	Paid C. F. Fraser, amount of appropriation.....	\$ 600 00
	5	



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### INFANTS' HOME, TOWER ROAD.

*Statement of amount paid Infants' Home, Tower Road, for Civic Year ending 30th April, 1898.*

1897.  
June 7. Paid Mrs. J. C. Mackintosh, amount of appropriation ..... \$ 300 00

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### INFANTS' HOME, R. C.

*Statement of amount paid the R. C. Infants' Home for Civic Year ending 30th April, 1898.*

1897.  
June 10. Paid Sister De Paul, amount of appropriation..... \$ 300 00

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### VICTORIA SCHOOL OF ART AND DESIGN.

*Statement of amount paid School of Art and Design for Civic Year ending 30th April, 1898.*

1898.  
March 15. Paid F. W. Oxley, amount of appropriation ..... \$ 500 00

CITY ENGINEER'S REPORT

## SUPERANNUATION OF ROBERT MOTTON

*Statement of amount paid Ex-Stipendiary Motton from 1st May,  
1897, to 30th April, 1898.*

1897.			
May 31.	Paid Superannuation for May .....		\$ 83 33
June 30.	“ “ June, \$43.33. Sheriff, \$40.00 .....		83 33
July 31.	“ “ July .....		83 33
Aug. 31.	“ “ August .....		83 33
Sept. 30.	“ “ September .....		83 33
Oct. 31.	“ “ October .....		83 33
Nov. 30.	“ “ November .....		83 00
Dec 31.	“ “ December .....		83 33
1898.			
Jan. 31.	“ “ January .....		83 33
Feb 28.	“ “ February .....		83 33
Mar. 31.	“ “ March .....		83 33
April 30.	“ “ April .....		83 37
			\$1000 00

## DIAMOND JUBILEE CELEBRATION.

*Statement of Expenditure for Celebration Queen's Diamond Jubilee,  
July, 1897.*

1897.			
June 25.	Paid Mr. Grier, expenses of Regatta .....		\$ 50 00
	“ “ “ .....		155 00
	For entertaining Royal Society .....		300 00
	F. Parsons, cab hire .....		5 00
July 10.	Hand & Co., for fireworks, \$50 00 and \$350.00 .....		400 00
15.	W. F. Pickering & Co., sheet for fountain .....		12 00
	J. J. O'Brien, sundry expenses .....		566 43
	Regatta committee .....		145 00
	H. V. Barwood, for music .....		20 00
	N. S. Nursery for boquet .....		4 00
	J. J. O'Brien, Secretary .....		75 00
			\$1732 43

**HALIFAX ELECTRIC TRAMWAY COMPANY.**

*Statement of amount received from the Halifax Electric Tramway Company during year ending 30th April, 1898.*

1897.			
July 7.	By cash being 4 per cent. on \$49,914 65 .....	\$1996	56
1898.			
Jan. 4.	“ “ \$66,830.85 .....	2673	23
		<u>\$4669</u>	<u>79</u>

The amount placed in the Estimates for 1897-8 is \$5,000.

**DIAMOND JUBILEE CELEBRATION**

*Statement of Expenditure for Celebration Queen's Diamond Jubilee, 1897.*

1897.			
Jan. 10.	Hand & Co. for notices \$20.00 and \$20.00		
Jan. 15.	J. J. O'Brien, sundry expenses		
Jan. 20.	Repairs to motor		
Jan. 25.	H. F. Barrett, for notice		
Jan. 30.	H. F. Barrett, for notice		
Feb. 5.	J. J. O'Brien, sundry expenses		
Feb. 10.	Hand & Co. for notices \$20.00 and \$20.00		
Feb. 15.	F. Barrett, cap and notice		
Feb. 20.	For entertaining Royal Society		
Feb. 25.			
Mar. 1.			
Mar. 5.			
Mar. 10.			
Mar. 15.			
Mar. 20.			
Mar. 25.			
Apr. 1.			
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1898.			
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1899.			
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Dec. 10.			
Dec. 15.			
Dec. 20.			
Dec. 25.			
Dec. 30.			

# CITY ENGINEER'S REPORT.

## CITY WORKS DEPARTMENT.

OFFICERS, 1897-8.

MAYOR.

ALEXANDER STEPHEN.

CITY ENGINEER.

F. W. W. DOANE, M. CAN., SOC. C. E.

### ENGINEERING DIVISION.

*Assistant City Engineer*.....H. W. JOHNSTON, JR.  
*Assistant Engineer*.....W. P. MORRISON.  
*Assistant Engineer*.....ALEX. PICKERING.

### OFFICE DIVISION.

*Clerk of Works*.....W. F. REILLY.  
*Assistant Clerk*.....JAMES J. HOPEWELL.  
*Stenographer, etc*.....MISS MINNIE HUNTER.

### WATER WORKS DIVISION.

*Foreman*.....EWEN MORRISON.  
*Meter and Plumbing Inspector*.....CLAUDE DONOVAN.  
*Water Inspector*.....JOHN E. BURNS.  
*Work Shop Foreman*.....J. B. SCRIVEN.

### STREET AND SEWER DIVISION.

*Foreman*.....JOHN McDONALD.  
*Inspector of Buildings*.....} THOMAS SPELMAN.  
*Caretaker of City Property*.....}

## CITY ENGINEER'S OFFICE, CITY HALL,

*Halifax, N. S., May 2, 1898.**To His Worship the Mayor :*

SIR,—I beg to submit the Annual Report of the Department of City Works for the year ending April 30th, 1898, my seventh annual report and the fourth from this Department.

## WATER WORKS.

The following statement shows the cost of the system to date :—

Amount of funded debt on water account . . . . .	\$1,049,600 00
“ transferred from revenue . . . . .	16,000 00
	<u>\$1,065,600 00</u>
Am <sup>t</sup> expended to April 30, 1897 . . . . .	\$1,039,597 28
May 1, 1897 to April	
30th, 1898 . . . . .	21,805 49
	<u>\$1,061,402 77</u>
Balance on hand May 1, 1898 . . . . .	<u>\$4,197 23</u>
Cost of maintenance, 1897-8 :—	

Interest . . . . .	\$48,091 67
Sinking Fund . . . . .	2,000 00
Maintenance of System . . . . .	19,576 59
	<u>\$69,668 26</u>

The consumption of water is increasing, particularly on the high service,—the natural result of the activity in building operations, especially in the suburbs.

## NEW MAINS.

Twenty-five petitions for the extension of main distribution pipes were received and twenty-eight orders were passed by the Council. Thirteen were to be made, provided the petitioners would pay special rates, and three provided that the street should be graded before the pipes were laid.

Only one nine inch main was laid, the pipe on Windsor Street being extended to Young Street, 370 feet of eight inch pipe being used on the north end.

A six inch main was laid from Windsor Street under the Manufactures Building at the Exhibition grounds, and a hydrant placed at the end of the pipe on the east side of the building.

In Birmingham Street the old three inch pipe between Spring Garden Road and Morris Street had become badly corroded, and it was taken up and four inch pipe laid instead.

The agreement in reference to the street line on Duncan Street was signed by the property owners and the pipe was laid on one side of the sewer trench.

#### RAINFALL.

The total rainfall for the year was not extraordinary, but there are some facts in connection with it which are worthy of note. In 1896 rain or snow fell on 183 days, the total precipitation recorded by Mr. Allison, Dominion Government Meteorological Agent, being 69.862 inches—a quantity greater than that of any previous year since the establishment of the Station in 1869. Last year, (1897) rain or snow fell on 193 days although the total was only 51.522 inches. The total for each month has been exceeded in former years, but the number of wet days in each month makes a new record, as follows:—January 14, February 11, March 18th, April 18, May 25, June 18, July 13, August 16, September 18, October 10, November 19, December 13.

Although the season was wet Long Lake fell on the first day of November six feet three inches below the waste weir,—within four inches of the lowest recorded level. Water ran over the dam in January, March, April, May, June and July.

At Spruce Hill Lake the water ran over the waste weir in January, February, March, April, May, June, July and August, rising on April 10th fifteen inches above the spillway. The lowest level reached was on November 1st—two feet six and a half inches below the spillway.

#### FRAZIL ICE

formed at Chain Lake gatehouse during a cold night in the winter and there was danger that the screen chamber would

freeze up solid. In order to keep up the supply to the city it became necessary to remove the screens entirely until the danger was past, and during that period many eels were drawn into the pipe. Subsequently several service pipes were obstructed from this cause.

#### DAMS.

The wing wall on the south side of the south gatehouse at Chain Lake was thrown down by the frost during the winter and will be rebuilt as soon as the lake falls. The eastern dam at Spruce Hill Lake had been injured by frost during the winter and the necessary repairs were made during the season.

#### CLEANING MAINS.

The 24 inch low service main was cleaned with the Kennedy-Keating scraper on October 22nd. It passed through 13,400 feet in 70 minutes, starting at 3.25 p. m., passing blow-off at Arm at 3.33, Industrial School Gate at 3.50, and reaching St. Andrew's Cross at 4.35.

The high service main was cleaned October 26th. The scraper passed through 6,712 feet of 20 inch pipe in 30 minutes, leaving Spruce Hill Lake at 10.37 a. m., passing blow-off at 10.43, air valve at 10.56, and emerging at reducer at 11.07. The 15 inch scraper made the run of 29,628 feet in 1 hour and 40 minutes, starting from the hatchbox at 1.56 p. m., blow-off Upper Chain Lake, 2.31; Chain Lake pipehouse, 2.50; Arm, 3.04; Industrial School, 3.16; Oxford Street, 3.25; Monastery, 3.29; St. Andrew's Cross, 3.36.

Old three inch street mains were cleaned in three blocks, (see foreman's returns).

#### METERS.

The number of meters in use at the close of the year is 281, an increase of 87. Several meters were injured by frost, property owners neglecting to take proper precautions to protect them. The department has obtained samples of all the best meters in the market for the purpose of making a frost test. All other things being equal, the meter that sustains the least damage from frost will be adopted in future for use in exposed places.

The adoption of meters is strenuously opposed in some

quarters. Among owners and occupants of dwellings this is chiefly through ignorance of the facts. It is claimed that the generous use of water should not be prevented, as it is necessary for sanitary reasons ; that the charge by meter is exorbitant ; that the supply of water is ample for all our requirements, waste included ; and that the waste is exaggerated.

In answer to the first argument, we readily agree that water should be used freely for flushing and other sanitary purposes ; but almost all waste is in small streams that are useless for flushing. One bucket of water will do more good than 1000 gallons wasted daily in a small stream. The cost by meter should not prevent the free use of water. One-half cent's worth of water supplies a liberal bath. The minimum charge by meter is the same as by assessment and allows the consumer sufficient water for every legitimate purpose, and even waste, before the meter registers a quantity equivalent to the minimum charge.

The answer to the third argument may be given by many citizens who know from experience how the pressure decreases in cold weather, and the season of 1894, when we were compelled to discontinue street sprinkling during the Exhibition for want of water, is still fresh in the memory of those who take an interest in such matters.

That the waste is not exaggerated has been proved over and over again. In one instance a meter put on a wharf registered 1,400,000 gallons the first month and has averaged 10,000 to 12,000 since. In another instance a meter was put on a pipe supplying a water closet where the valve in the flushing cistern was worn and did not fit its seat tightly. The waste was but a trickling stream, yet 407,750 gallons of water went through the closet between March 23rd, 1896, and April 7th, 1897, an average of 1,073 gallons per day. The valve was repaired on the latter date, and from that time until April 1st, 1898, the consumption was only 15,750 gallons, an average of 43 gallons per day.

The adoption of meters is the only practicable means of compelling wasteful consumers to keep their plumbing in good order, and watch for waste of water as they do now for waste of gas. Our fire pressure must not be allowed to decrease, to say nothing of domestic supply.



## GENERAL.

8,279 feet of cast iron turned and bored distribution pipe was laid, the total now in use being 64 miles. 7,111 feet of service pipe was put in, 212 buildings were supplied with water, and 21 old services were renewed.

35 stop valves have been placed in position, and 2 removed, making a total of 680 in use.

Ten old hydrants were replaced with improved frost jacket hydrants, and nine new hydrants were put in, making the total 397.

The total length of excavation made in carrying out the work was 16,037 feet or 3.04 miles.

The reports of the Foreman and Plumbing and Meter Inspector are appended.

## LAND LINES

were established at Chain Lakes some time ago; but nothing has been done at Long Lake and Spruce Hill Lake. This matter should receive attention during the coming year, as there is nothing to define the boundary of city property at these lakes.

## SEWERS.

The total length of new sewers constructed was 5,492 feet or 1.04 miles,—about one-third of the work that was done in 1895, and one-half of that performed in 1896. The demand for sewer extension seems to have been satisfied and few petitions were received during the year. About eighteen miles of sewers have been constructed since the passing of the Act.

The average cost for the year was \$3.34 per lineal foot. The most expensive work was on Windsor Street where the excavation was in rock. The cheapest work was performed on Robie Street at a cost of \$1.93 per foot—exactly the same as last year. Kent Street sewer follows closely at \$1.94.

Fifty-three concrete catchpits were constructed during the year, making a total of 611. All concrete basins were provided with granite curbs and cast iron covers.

## HOUSE DRAINS AND PLUMBING.

259 permits were issued for laying drains. The inspection of drains has been made principally by the Engineering staff, as the

Plumbing Inspector was obliged to give his whole time to other work. Operations under the plumbing law have been carried out with less friction, and few violations have been reported. There were 417 plumbing permits granted, and 397 certificates issued for satisfactory completion of work.

## INTERNAL HEALTH.

The contract for the removal of ashes and garbage was awarded to David Elliott at \$44.90 per week. The service was continued from May 17th until November 26th, the contract extending over twenty-eight weeks. The contract price was \$12.10 per week less than in 1896. The work performed is not up to the standard required by the public and this department, and if the contract for this work were made for a period not exceeding five years the work could be done much better and at less cost than under the present system of one year contracts. The garbage disposal problem remains in *statu quo*.

The extra street sprinkler was operated by Wm. Parsons at \$2.84 per day.

The regular street cleaning work was begun March 26th, and continued until November 23rd. During the season 23,811 loads of dirt and 1,137 bags of paper were collected and removed.

Main Squad .....	20,179	loads.
Market " .....	279	"
Water Street .....	1,503	"
Sectionmen .....	1,850	"
" (paper, &c.) .....	1,137	bags.

Instead of the whole squad cleaning perhaps once a month during the year, two men were employed on the principal streets to sweep daily and keep as clean as possible the crossings and gutters, and to collect all paper and rubbish along their route, and the middle of the street was swept by the horse sweeper as often as required. The system has worked so well that it is the intention to detail five men for this work in 1898, four to have separate sections of the principal streets and one for the patrol cart. The district covered will be as large as the appropriation will permit.

In order to make any decided improvement in this branch of the service, we must have the assistance and co-operation of

the police department and the citizens generally. While a great improvement has been made and the streets kept cleaner than they ever were in the past, yet it is a hopeless task to keep the streets of this city clean while the people themselves are determined to keep them dirty.

They sweep or throw out paper, straw, ashes, old boots, overshoes, tins, coal hods, iron hoops, &c. ; cases of crockery-ware and other goods, packed in straw, are unpacked on the street ; piles of ashes are shovelled out on the sidewalk and roadway ; tar and gravel roofing is thrown down and old shingles strewn over the most important thoroughfares when repairs are being made ; carts are filled too full ; barrels piled up with rubbish distribute their contents by means of the small boy or the wind ; roofing pots are removed and the ashes and rubbish left ; and yet the people who commit and permit these abuses are loudest in their complaints that the City Works Department does not keep the streets clean enough. It is within the power of every citizen to assist the department to make the city more presentable and lessen the expense.

Complaints reach the department at times in reference to the street watering service. The department cannot afford to put on more carts until more money is available, consequently each cart has to cover so much territory that the work is not performed as satisfactorily as we could desire. The complaint is heard frequently that too much water is used, but it is impossible for the carts to cover our mileage of macadamized streets often enough to keep down the dust, and when a choice is to be made between mud and dust, of the two evils mud is preferred.

Snow removal was carried on only where it was absolutely necessary for public safety and to prevent obstruction to business. Your officials have no hope of satisfying the public generally, but endeavour to perform as much work as possible with the money provided, and to spend it where it will do the greatest good to the greatest number.

The appropriation should be made large enough to permit of the removal of snow from all business blocks and all streets through which the tramway runs. The department succeeded in keeping the latter streets passable, and did a great deal of work on Water Street. The traffic on Water Street causes

holes and ruts which go down to the pavement. When the street gets in this condition the only remedy is to cart the ice and snow off.

The catchpits are cleaned as often as the appropriation will permit ; but this work should be prosecuted continuously during the working season to prevent entirely the rising of obnoxious odors which are noticeable when the pits are full.

#### PERMANENT PAVEMENT.

The work performed includes 306.61 square yards of concrete sidewalk ; 6,153.16 square yards of tar concrete sidewalk ; 331.28 square yards of tar concrete crossings ; 8,879 feet of straight curb and 434 feet of corner curb set or re-set, and 9,353 feet of straight gutter and 371 feet of corner gutter laid or re-laid.

Tar concrete was laid by John McFatrige, Jr., by contract. The crossings have not been satisfactory, and granite will be laid in future.

#### STREETS.

In making up the estimates it was the custom at one time to pass the item streets until every other appropriation was threshed out, then if there was anything left it was given to streets—result, less than \$200.00 per mile to make and macadamize roadways, pave gutters, lay curbs, construct sidewalks, lay crossings, and keep them all in repair. In late years the requirements of this service are being recognized by the progressive members of council. The appropriation has been increased slightly and methods of expenditure changed. To-day not one dollar of the street appropriation is expended illegally, and although many streets must be neglected every year in consequence of the fund being inadequate to meet the demands, every effort is made to spend the sum apportioned to this service in the best interest of the whole city.

There is much room for further improvement, however. The work begins too late in the season. The appropriation should be available at least one month earlier—not later than the first of April. The system of allowing a street to wear out before repairs are made is all wrong. As soon as the frost is out of the ground ruts and holes should be repaired instead of being allowed to grow worse until the middle of summer. In

fact, ruts should never be allowed to form at all to retain water and ruin the road surface. If repairs could be commenced earlier the streets would present a more creditable appearance at the time of year when strangers visit us, and would be more easily kept clean. One dollar in the spring is better than two in the fall, and work done late in the season is often money thrown away. The street surface does not become hard before the fall rains or the winter freezing and thawing destroys it.

The better protection of our steep streets is a problem that should be grappled with at once. Many of the roadways and sidewalks are washed out by every heavy rain. Sewers, catch-pits and granite gutters are required to carry off the rain before it can do any damage, and the custom of pouring small torrents from every downspout and gateway to cut up the sidewalks should be stopped entirely. If the flow of water from these nuisances were carried direct to the sewers thousands of dollars of needless expenditure would be saved to the city. A change is being made this year which will improve the condition of the streets. In the past the cocks for turning off water were in the roadway and it was necessary to dig up the road winter and summer to get at them. The result was most annoying and discouraging. We are now putting turn-off cocks in the sidewalk immediately inside the curb wherever permanent sidewalks are laid, and the necessity for breaking the surface of the street will be avoided.

Some steps should be taken to prevent the obstruction of streets by fences for building purposes. They are left on important streets long after the necessity for them has ceased to exist. This practice should be stopped and builders charged a daily rate after a reasonable time.

During the year the Council authorized the purchase of a piece of land on the west side of Water Street, opposite Cunard's wharf, to widen the street at that point.

Good progress is being made with the official plan, and a portion of it will be submitted this year, when changes in duplicate names, numbering of wharves, &c., will be dealt with.

#### LOCKMAN STREET.

The cost of this work to date is shewn by the following statement :—

Loan .....	\$125,000 00
Sales of property.....	3,323 00
Rents, &c.....	81 50
	\$128,404,50
Expenditure to April 30th, 1897.....	\$118,315 67
Labor and materials, 1897-8.....	4,315 02
Advertising .....	5 29
Insurance.....	27 50
F. W. Horley, allowance .....	172 00
Heirs Wriggt Estate, allowance.....	1,150 00
Moving No. 151.....	465 00
Waddell Estate, land.....	350 00
Getting awards out of Court .....	729 00
	125,529 48

Balance on hand April 30th, 1898..... \$2,875 02

The property, No. 111, was sold to H. W. Trider for \$1,000.00. F. W. Horley was allowed \$172.00 for land not considered in the award. The Wright Estate were unable to move No. 119 for the amount named in the award, and the city asked for tenders for the work. The lowest tender exceeded the award by \$1,150.00, and that additional amount was paid to the owners.

All remaining buildings between Gerrish Street and North Street were removed, and an old building on the west side was torn down and a strip of land deeded to the city by the Waddell Estate to widen the street to the new line.

A granite curb and gutter was laid on the west side from Artz Lane to North Street, and on the east side from North Street to a point about half way between Artz Lane and Gerrish Street and from Gerrish Street to Cornwallis Street.

#### QUINPOOL ROAD.

No progress has been made in the widening of this street.

#### CITY PROPERTY.

The heating boilers in the City Hall were leaking badly, and Longard Bros. were awarded a contract to put in three No. 9 Oxford furnaces.

The frost has started the retaining wall on the east side of the Parade entrance, and it will have to be re-built.

S. M. Brookfield has begun to point the building—a work which was badly needed as the frost was destroying the stone.

A contract has been awarded to Lowe & Ebsary for the construction of a retaining wall around the Egg Pond on the Common, and the work will be done during the year.

#### STREET RAILWAY.

Double track was laid between Cornwallis Street and North Street, the Pleasant Street branch was extended to the Park boundary, a turnout was put in on Grafton Street, and one on Agricola Street between Charles Street and Willow Street, and single track was laid on Windsor Street from Almon Street to Cunard Street with a turnout at Chebucto Road.

#### THE PEOPLE'S HEAT AND LIGHT COMPANY

completed their pipe laying and bought out the Halifax Gas Light Company. They have been notified that they will not be permitted to lay any more pipe unless they use turned and bored joints, as they are constantly digging up the streets to repair leaky joints.

#### GENERAL.

The cost of work was again reduced. The average cost per foot of sewers constructed under ordinary conditions in 1896 was \$3.82. In 1897 this work was performed at an average cost of \$3.34. Kent Street sewer cost \$373.84, less than the amount assessed on the properties, and Robie Street sewer cost \$1,682.28, while the assessment on one side of the street only is \$1,020.53, the other side being city property, Camp Hill.)

The list of employees has been reduced and a corresponding reduction made in the expenditure. The Caretaker of the Exhibition Building and City Carpenter resigned and no new appointment was made, making a saving of \$364.00 a year. The City Plumber passed away during the year and the vacancy was not filled, the work being performed by the Assistant, a saving of \$780.00. The office of City Scavenger has been abolished and the work is included in the contract for removal of ashes and garbage, a saving of \$156.00.

Reference to the report of the Clerk of Works shows that there was no over-expenditure in any service over which the department had control.

The books of the Clerk of Works also show another improvement. It was at one time customary to do work and supply materials for private citizens for which a bill was entered, but in many cases could not be, or was not, collected, and the city was the loser. All old bills have been placed in the hands of a special collector, and he has been successful in obtaining payment of a considerable amount. No new bills are placed on the books to-day except where the city has a lien or some sure means of collection. All materials sold are paid for before delivery, and when it becomes necessary or advisable for the city to do extra work such as laying water pipe beyond the street line, &c., an estimate of the cost is made and the property owner is required to deposit the amount estimated before the work is begun.

There is a general impression that the change to the present Works Department transferred great power and authority to the City Engineer. Such, however, is not the case. The position and power of that official was not altered in any particular by the Act, except to place him under one chief instead of six, while all rights, power, duties, obligations and authority were transferred to His Worship the Mayor. The Engineer has no power to order work, but in all matters affecting the department is subject to the instructions of the Mayor.

This system is in accordance with the ideas of the most progressive authorities in the world on such matters. It is similar to that of the City of Washington, which is claimed to be the best governed Municipality on the continent. The tendency of the times is to concentrate more power and responsibility in the Mayor of a City, almost invariably a gentleman who has had long experience in city affairs and who is elected by the vote of the whole city. From his office he is in a position to do what no alderman or commissioner could do, viz., to work the different City Departments together.

In conclusion, I beg to express my thanks for the uniform courtesy shewn by His Worship the Mayor, and the support given in the performance of the various duties assigned to me.

I have the honor to be, Sir,

Your obedient servant,

F. W. W. DOANE,

*City Engineer.*



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**WATER WORKS, FOREMAN'S REPORT.**

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F. W. W. DOANE, ESQ.,

May 2, 1898.

*City Engineer.*

SIR,—I have prepared a schedule of stock belonging to the Water Department ; also length of Main and Service pipes laid, and length of pipes cleaned and re-cleaned ; with location of houses supplied with water during the summer of 1897, which is

Respectfully submitted,

E. MORRISON,

*Foreman Water Department.*

## NEW MAINS, 1897-8.

STREETS.			High or Low Service.	CAST IRON MAIN PIPE.					Joints.	HYD'NTS.				COST PER FOOT IN CENTS.						Total Cost.		
In	FROM	To		3 inch Pipe—feet.	4 inch Pipe—feet.	6 inch Pipe—feet.	8 inch Pipe—feet.	9 inch Pipe—feet.		Number of Valves.	Length of Pipe—feet.	Size of Pipe—inches.	Number.	Percentage of Rock.	Pipes and Specials.	Valves and Hydrants.	Labor and Cartage.	Lead, Gasket, etc.	Dynamite and Fuse.		Incidentals.	Total cost per Foot in Cents.
Shirley	Louisbourg	369 feet west	H			369			T & B	1			16	60.0	6.6	50.0	1.3	2.4		120.3	443.87	
Lemarchant	South	295 " north	H			295			"	1			100	60.0	6.9	94.0	0.3	8.8		170.0	501.40	
Young	Bloomfield	108 " "	H	108					"	1				47.7	16.7	28.0	1.6			94.0	101.58	
Windsor	N. of London	30 ft. S. of Young	H			370	225		(9" T & B) (8" H & S) T & B	1	12	6	1	80	88.7	20.8	155.3	2.8	22.2		280.8	1759.23
Exhibit'n gr'ds.	Windsor	E. side Manf. Bldg	H			286			"	1	6	1		20	66.5	30.2	38.1	3.1	1.4		139.3	401.39
Duncan	"	693 feet west	H			603			"	1	18	6	1		63.9	17.9	14.2	1.6	0.4		93.0	608.79
Jubilee Road	Walnut	203 " east	H			203			"	1			100	60.0	9.9	64.5	0.5	2.3		137.2	278.46	
Black	Gottingen	Maynard	H			504			"	1	14	6	1	75	63.1	16.7	115.2	1.4	15.7		212.1	1098.66
Union	Han-over	Richmond	H			492			"	1	20	6	1	75	60.0	19.6	105.3	0.6	19.5		203.1	543.16
Maynard	Black	127 ft. N. 100 ft. S.	H			227			"	2				75	62.1	18.0	95.2	0.8			101.1	461.09
Duffus	Campbell Road	W. side Nth. Starr.	L			747			"	1	11	6	1	100	63.4	14.6	110.3	0.2	16.7		205.2	1547.88
North	W. end of Pipe	9 feet west	H			9			"					60.0		144.4		9.5		213.9	19.26	
Willow	Windsor	E. to W. end of Pipe	H			1071			"	2	11	6	1	75	64.5	8.0	73.1	0.7	5.8		152.1	1657.97
Sullivan	W. end of Pipe	108 feet west	H			168			"					25	62.7		62.0	1.8			126.5	212.73
Birmingham	Sp. Garden Road	Morris	L	944					"	3					34.2	5.7	35.5	0.8			76.2	719.18
Pleasant	S. end of Pipe	Owen	L			216			"					50	62.1		94.5	0.7	3.4		160.7	347.24
Preston	Cedar	Jubilee Road	H			358			"	1	22	6	1	50	63.4	28.0	90.2	0.8	4.4		186.8	759.18
Edward	Jubilee Road	215 feet south.	H			215			"	1				5	62.2	11.7	48.3				122.2	262.87
Jubilee Road	Edward	34 " west	H			34			"					4	73.2		83.1	6.0			162.3	55.15
Charles	Robie	513 " "	H			513			"	1				75	62.1	3.9	50.8	0.4	2.6		119.8	614.64
Maynard	Bloomfield	214 " south.	H			214			"	1				80	62.9	9.3	178.3		16.1		266.6	570.84
Public Gardens	3 inch Main.	Fountain	H	168					H & S	1												17.16

NOTE.—Willow St. main was laid from Robie St. west 125 feet in 1878. \*Pipe laid in sewer trench. †Half of excavation in gas pipe trench. ‡New main laid to replace old pipe. N. B.—370 feet of 8 inch pipe was laid north of the 9 inch on Windsor St.

### Street Mains replaced with larger pipe, 1897.

STREET.	FROM.	To.	Size in inches.		LENGTH IN FEET
			Old pipe	Newpipe	
Birmingham ..	Sp. Garden Rd.	Morris Street ..	3	4	944
Jubilee Road .	Edward Street.	Westwardly	4	6	34

### Pipes cleaned by Mechanical Scrapers, 1897.

DATE.	Time occupied.	LOCATION OF PIPE.	Diameter of Pipe in inches.		Length Cleaned in feet.	Cost.	REMARKS.
Oct. 22.	1 H. 10 M.	Low Service Main .....	24	13400	} 18 00		
" 26.	0 H. 30 M.	High " .....	20	6712			
" 26.	1 H. 40 M.	" " .....	15	29628	} 14 17	Connected with 9" at Buckingham St.	
		Granville St. from Buck- ingham St. to Prince St.	3	.....			
		Grafton St. from George St. to Sackville St.	3				
		George St. from Argyle St. to Grafton St. ....	3				

**Total length in feet of Cast Iron Water Mains in the Water Supply System of  
the City of Halifax.**

	SIZE OF PIPES IN INCHES.										Total.	
	27"	24"	20"	15"	12"	9"	8"	6"	4"	3"		Less than 3"
Length on April 30th, 1897 . . . .	14560	20524	6712	44236	37201	42176	370	99881	15908	48249	898	330345
Laid during 1897-8 . . . . .	.....	.....	.....	.....	.....	225	370	6632	1052	168	.....	8447
Taken up during 1897-8 . . . . .	.....	.....	.....	.....	.....	.....	.....	.....	34	944	.....	978
<b>Total on April 30th, 1898 . . . .</b>	<b>14560</b>	<b>20524</b>	<b>6712</b>	<b>44236</b>	<b>37201</b>	<b>42401</b>	<b>370</b>	<b>106513</b>	<b>16926</b>	<b>47473</b>	<b>898</b>	<b>337814</b>

=  $63\frac{17\frac{1}{2}}{80}$  miles.

## 212 New Service Pipes, 1897.

$\frac{1}{2}$ inch. Feet.	$\frac{3}{4}$ inch. Feet.	1 inch. Feet.	$1\frac{1}{4}$ inch. Feet.	2 inch. Feet.	3 inch. Feet.	Total Feet.
6827	146	32	24	24	58	7111

## 21 House Services Renewed.

$\frac{1}{2}$ inch. Feet.	$\frac{3}{4}$ inch. Feet.	1 inch. Feet.	$1\frac{1}{4}$ inch. Feet.	2 inch. Feet.	3 inch. Feet.	Total Feet.
493	33					526

## NEW HYDRANTS, 1897.

STREET.	LOCATION.	Kind.	Service.	Size of Pipe in inches.	Length of Pipe in feet.	No. of Nozzles.	Distance Valve from Hydrant.		Pressure—lbs.
							FT.	IN.	
Sullivan .....	450ft. W. of Gottingen	City	High.	6	14	3			10
Duncan .....	600 " Windsor.	"	"	6	18	3	6	2	14
Union .....	Opposite Richmond	"	"	6	20	3	9	3	17
Duffus .....	Corner Albert.	"	Low.	6	11	3	9	0	11
Willow .....	" Gladstone	"	High.	6	11	3			11
Black .....	" Creighton	"	"	6	14	3			17
Windsor .....	Opposite Cork	"	"	6	12	3	8	3	1
Jubilee Road	Corner Preston	"	"	6	22	3	8	0	34
Exhibition Gr'ds.		"	"	6	286	3			

LOCATION AND SIZE OF VALVES SET DURING 1897

## OLD HYDRANTS RENEWED, 1897.

STREET.	LOCATION.
Artz Lane .....	Corner Lockman.
Prince .....	“ Barrington.
George .....	“ Argyle.
Gottingen .....	Between Cunard and Gerrish.
Brunswick .....	Opposite Jacob.
Pleasant .....	“ Inglis.
“ .....	500 feet S. of Inglis.
“ .....	919 “
“ .....	Opposite Mrs. Bauld's.
Cunard .....	Corner Gottingen.

### SUMMARY OF HYDRANTS.

Number of Hydrants on Streets 30th April, 1897.....	339
“ “ Wharves, 30th April, 1897 .....	23
“ “ Military and Naval Property.....	18
“ “ Private Property .....	8
Total number in use 30th April, 1897 .....	388
Number set on Streets during 1897 .....	8
“ Private property during 1897.....	1
Total number in use April 30th, 1898 .....	397

## LOCATION AND SIZE OF VALVES SET DURING 1897.

STREET.	LOCATION.	Size.	Service.
		inch	
Sackville .....	309' 0" west from west line of Bell Road, 4' 0" north of north line of Sackville street .....	12	H
South Park .....	For Public Gardens, 33' 6" west from east line of South Park St., 8' 0" N. from S corner house No. 187.	3	"
	(The above were omitted from last year's report).		
Birmingham .....	27' 0" from N. E. corner of Rottenburg St. North line of Rottenburg street .....	4	L
" .....	29' 0" from N. W. corner of Morris street. North line of Morris street .....	4	"
" .....	22' 0" from S. E. corner of Spring Garden Road, 0' 9" south of corner .....	4	"
Black .....	24' 10" from N. W. corner of Gottingen street, 0' 2" west of corner .....	6	H
Charles .....	23' 0" from N. E. corner of Windsor street. East line of Windsor street .....	6	"
Duffus .....	35' 2" from N. W. corner of Campbell Road, 4' 0" west of corner .....	6	L
Duncan .....	31' 0" from S. W. corner of Windsor street, 1' 0" west of corner .....	6	H
Edward .....	32' 1" from S. E. corner of Jubilee Road South line of Jubilee Road .....	6	"
Jubilee Road .....	18' 3" from N. E. corner of Walnut street 0' 6" east of corner .....	6	"
Lemarchant .....	32' 0" from N. E. corner of South street. North line of South street .....	6	"
Maynard .....	25' 2" from S. E. corner of Bloomfield street, 37' 5" from S. W. corner .....	6	"
" .....	27' 9" from N. E. corner of Black street north side of door, 3' 0" north from south line of building .....	6	"
" .....	27' 9" from S. E. corner of Black street. South line of Black street .....	6	"
Pleasant .....	27' 5" from S. W. corner of Atlantic street. South line of Atlantic street .....	6	L
Preston .....	22' 8" from S. E. corner of Cedar street. South line of Cedar street .....	6	H
Public Gardens ..	For fountain 21' 0" south from basin of fountain.	3	"
Shirley .....	32' 3" from S. E. corner of Walnut street. East line of Walnut street .....	6	"
Willow .....	43' 11" from S. W. corner of Kobie street, 0' 3" west of corner .....	6	"
" .....	19' 8" from N. E. corner of Windsor street, 1' 0" east of corner .....	6	"
Windsor .....	For Exhibition building. 80' 6" south from south line Liverpool st., 16' 6" from E line of Windsor st.	6	"
" .....	42' 0" from S. W. corner of Liverpool street. South line of Liverpool street .....	9	"

## LOCATION AND SIZE OF VALVES.—(Continued.)

STREET.	LOCATION.	Size.	Service.
		Inch.	
Young, (No. 3) ..	15' 10" from N. E. corner of Bloomfield street. North line of Bloomfield street .....	4	H
HYDRANT VALVES.			
Brunswick .....	Head of Hurd's Lane, 18' 0" from hydrant .....	6	L
" .....	" Jacob street, 4' 0" .....	6	"
Duffus .....	At Albert street, 9' 0" .....	6	"
Duncan .....	600 ft W. of Windsor St., 6' 2" .....	6	H
Jubilee Road .....	At Preston street, 8' 0" .....	6	"
Pleasant .....	At Inglis street, 2' 6" .....	6	L
" .....	400' 0" S. of Inglis street, 2' 9" .....	6	"
" .....	South of Atlantic street, 4' 9" .....	6	"
" .....	Near Bauld's, 6' 9" .....	6	"
Robie .....	North of Quinpool Road, 4' 2" .....	6	H
" .....	South of Compton Avenue, 3' 8" .....	6	"
Union .....	At Richmond Street, 9' 3" .....	6	"
Windsor .....	At Cork street, 8' 3" .....	6	"

## LOCATION OF VALVES REMOVED DURING 1897.

STREET.	LOCATION.	Size.	Service.
		Inch.	
Birmingham .....	29' 0" from N. W. corner of Morris street. North line of Morris street .....	3	L
" .....	22' 0" from S. E. corner of Spring Garden Road, 0' 9" south of corner .....	3	"



LOCATION AND SIZE OF VALVES SET DURING 1897

### Total Number of Valves, Main and Distribution Service, April 30th, 1898.

	27"	24"	20"	15"	12"	9"	6"	4"	3"	1½"	1¼"	1"	¾"	Hydrant, 6"	Total.
In use 30th April, 1897.	1	7	1	29	55	64	253	46	149	1	9	2	11	19	647
Set during 1897-8.						1	16	4	1					13	35
Removed during 1897-8.									2						2
<b>Tot. in use Apl. 30, 1898</b>	<b>1</b>	<b>7</b>	<b>1</b>	<b>29</b>	<b>55</b>	<b>65</b>	<b>269</b>	<b>50</b>	<b>148</b>	<b>1</b>	<b>9</b>	<b>2</b>	<b>11</b>	<b>32</b>	<b>680</b>

### PIPE STOCK ON HAND, DEC. 31st, 1897.

No. of Pieces.	Diameter in inches	Weight of one, in lbs.	Total weight, in lbs.	Val. per lb incts.	Total Value.	Remarks.
1	27	3,658	3,658	1¾	\$ 64 01	T. & B. 12 feet.
2	24	2,555	5,110	1¾	89 42	" 12 feet.
4	24		9,698	1¾	169 72	" 11 feet.
1	27	2,651	2,651	2¼	59 65	
1	20	1,263	1,263	2¼	28 42	
10	15	1,200	12,000	2¼	270 00	
4	12	680	2,720	2¼	61 20	
13	10	550	7,150	2¼	160 88	
108	9	500	54,000	2¼	1215 00	
42	8	386	16,212	2¼	364 77	
14	6	380	5,320	2¼	119 70	T. & B., 12ft long.
60	6	280	16,800	2¼	378 00	" 9 "
17	5	222	3,774	2¼	84 91	
89	4	156	13,884	2¼	312 39	T. & B.
103	4	156	16,068	2¼	361 53	
60	3	130	7,800	2¼	175 50	
65	1½	26	1,690	2¼	38 02	Stand Pipes.
55		12	660	2¼	14 85	Plates.
42		6	252	2¼	5 67	Caps.
9		2	18	2¼	40	Thimbles.
10		18	180	2¼	4 05	Sleeves for service
10		6	60	2¼	1 35	Caps for sleeves.
<b>720</b>			<b>180,968</b>		<b>\$3979 44</b>	

## PIPE-SPECIALS.

No. of Pieces	Diameter in inches.	DESCRIPTION.	Weight of one in lbs.	Total weight, lbs.	Value per lb. in cents.	Total value.
2	27	Bell Mouth	831	1662	24	\$ 37 39
2	27	Plain thimbles	624	1248	24	28 08
3	27	Saddles, 27"x6"	81	243	24	5 47
13	27	Bevel collars	795	10335	3	310 05
1	27	Plain, special, 2 feet long, Class A	404	404	13	7 07
1	27	" 2 " " B	460	460	"	8 05
1	27	" 3 " " "	700	700	"	12 25
1	27	" 4 " " "	920	920	"	16 10
1	27	" 5 " " "	1248	1248	"	21 84
2	27	" 5 " " "	1144	2288	"	40 04
1	27	" 6 " " "	1360	1360	"	23 80
1	27	" 6 " " "	1472	1472	"	25 76
1	27	" 3 " " C	820	820	"	14 35
1	27	" 3 " " "	930	930	"	16 27
1	27	" 4 " " "	1068	1068	"	18 69
1	27	" 5 " " "	1332	1332	"	23 31
1	24	Bevel collar	688	688	3	20 64
12	24	Thimbles	396	4752	24	106 92
1	24	Cap	290	290	"	6 52
1	24	Y	2372	2372	"	53 37
6	24	Split thimbles	620	3720	24	93 00
1	20	"	453	453	"	11 32
4	20	Thimbles	230	920	24	20 70
3	15	4 way branches	896	2688	"	60 48
3	15	4 " 15"x16"	660	1980	"	44 55
1	15	3 " "	812	812	"	18 27
2	15	Y's	1012	2024	"	45 54
5	15	Thimbles	234	1170	"	26 32
1	15	Reducer to 6"	400	400	"	9 00
1	15	Saddle, 15"x6"	122	122	"	2 74
9	15	Split thimbles	260	2340	24	58 50
1	12	4 way branches	615	615	24	13 84
4	12	4 " 12"x9"	500	2000	"	45 00
5	12	4 " 12"x6"	475	2375	"	53 44
2	12	3 " "	524	1048	"	23 58
3	12	3 " 12"x9"	494	1482	"	33 34
2	12	3 " 12"x6"	469	938	"	21 10
2	12	Reducer to 9"	240	480	"	10 80
6	12	" 6"	200	1200	"	27 00
2	12	" 6" with faucet	200	400	"	9 00
3	12	Thimbles	160	480	"	10 80
2	12	Caps	45	90	"	2 02
1	12	Saddle	86	86	"	1 93
13	12	Split thimbles	222	2886	24	72 15
2	9	4 way branches, 9"x9"x3"	450	900	24	20 25

## PIPE—SPECIALS.—(Continued.)

No. of Pieces.	Diameter in inches.	DESCRIPTION.	Weight of one in lbs.	Total weight, lbs.	Value per lb. in cents.	Total value.
1	9	4 way branches 9"x6" . . . . .	400	400	2 $\frac{1}{2}$	9 00
6	9	Reducers to 6" . . . . .	157	942	"	21 19
3	9	Offsets . . . . .	156	468	"	10 53
8	9	Caps . . . . .	34	272	"	6 12
1	9	Saddle, 9"x4" . . . . .	45	45	"	1 01
1	9	" 9"x3" . . . . .	40	40	"	90
17	9	Split thimbles . . . . .	139	2363	2 $\frac{3}{4}$	59 07
6	6	3 way branches . . . . .	209	1254	2 $\frac{3}{4}$	28 21
1	6	3 " 6"x4" . . . . .	200	200	"	4 50
2	6	Y's . . . . .	250	500	"	11 25
1	6	Y, 6"x4" . . . . .	240	240	"	5 40
5	6	Reducers to 3" with faucet . . . . .	114	570	"	12 82
2	6	" 3" without faucet . . . . .	105	210	"	4 72
3	6	Offsets . . . . .	140	420	"	9 45
11	6	Thimbles . . . . .	75	825	"	18 56
13	6	Bends . . . . .	140	1820	"	40 95
3	6	Caps . . . . .	19	57	"	1 28
10	6	Split thimbles . . . . .	92	920	"	20 70
4	5	Caps for main stopcock . . . . .	15	60	2 $\frac{1}{2}$	1 50
22	4	4 way branches . . . . .	123	2706	2 $\frac{1}{4}$	60 88
1	4	3 " . . . . .	114	114	"	2 56
4	4	Y's . . . . .	96	192	"	4 32
1	4	Reducer to 3" with faucet . . . . .	95	95	"	2 14
1	4	" 3" without faucet . . . . .	84	84	"	1 89
2	4	Offsets . . . . .	66	130	"	2 92
20	4	Thimbles . . . . .	29	580	"	13 05
4	4	Bends with faucets . . . . .	88	352	"	7 92
7	4	Split thimbles . . . . .	64	448	2 $\frac{3}{4}$	11 20
6	3	4 way branches . . . . .	100	600	2 $\frac{1}{4}$	13 50
2	3	3 " . . . . .	60	120	"	2 70
1	3	3 " 3"x2" . . . . .	55	55	"	1 24
14	3	Sleeves for main stopcocks. . . . .	20	280	"	6 30
26	3	Caps for sleeves . . . . .	10	260	"	5 85
3	3	Split thimbles . . . . .	48	144	2 $\frac{3}{4}$	3 60
3	2	Angle branches . . . . .	23	69	2 $\frac{1}{2}$	1 55
6	...	Castings for fire hydrants . . . . .	418	2508	"	56 43
9	...	Jackets " " . . . . .	340	3060	"	68 85
16	...	Split collars " " . . . . .	61	976	2 $\frac{3}{4}$	24 40
3	...	Plain " " . . . . .	81	243	"	6 07
10	...	Extension pieces for fire hydrants . . . . .	124	1240	"	31 00
6	...	Brass nozzles for fire hydrants . . . . .	2 $\frac{1}{2}$	15	.60	9 00
3	...	" " (suction) . . . . .	5 $\frac{1}{2}$	16 $\frac{1}{2}$	.60	9 90
...	...	" castings, all sorts . . . . .	...	290	.35	101 50
...	...	Tin tubing . . . . .	...	350	.33	115 50
...	...	Refined iron, different sizes . . . . .	...	400	...	6 40

## JOINT STAVES.

NUMBER OF PIECES.							VALUE.	
For 6 inch pipe.	For 9 inch pipe.	For 12 inch pipe.	For 15 inch pipe.	For 20 inch pipe	For 24 inch pipe.	Keys.	Each.	Total.
1500	3400	3000	1000	600	2000	..... 3000	\$0.01 $\frac{1}{4}$ 0.00 $\frac{1}{4}$	\$145.00 7.50

## METERS.

Number.	Size Inches.	DESCRIPTION.	Value of each.	Total Value.
9	6	Siemens' Meters (in stock) .....	\$143 42	\$ 1290 78
5	4	“ “ .....	86 75	433 75
5	3	“ “ .....	65 67	328 35
2	2	“ “ .....	44 65	89 30
3	1 $\frac{3}{4}$	“ “ .....	34 42	103 26
10	1 $\frac{1}{4}$	“ “ .....	29 16	291 60
5	1	“ “ .....	21 50	107 50
12	“	“ “ .....	15 50	186 00
119	“	“ “ .....	14 50	1580 50
1	“	Crown Meters “ .....	37 92	37 92
2	“	Frost “ “ .....	31 42	62 84
1	“	Hersey “ “ .....	15 87	15 87
2	6	Siemens' Meters (in use) .....	143 42	286 84
12	4	“ “ .....	86 75	1041 00
19	3	“ “ .....	65 67	1157 73
8	2	“ “ .....	44 65	357 20
3	1 $\frac{3}{4}$	“ “ .....	34 42	103 26
2	1 $\frac{1}{4}$	“ “ .....	29 16	58 52
12	1	“ “ .....	21 50	258 00
35	“	“ “ .....	15 50	242 00
171	“	“ “ .....	14 50	2479 50
1	1	Crown Meters “ .....	49 25	49 25
4	“	“ “ .....	37 92	151 68
2	“	“ “ .....	26 25	52 50
1	“	Starr “ “ .....	.....	.....
1	“	Hersey Disc Meters “ .....	10 77	10 77

## VALVES.

Number.	Size Inches.	DESCRIPTION.	Weight of One—lbs.	Total Weight — lbs.	Value.	Total Value.
1	12	Regulating Valve.....				\$206 66
1	6	“.....				103 33
4	15	Stop Valves.....			\$60 00	240 00
2	12	“.....			40 00	80 00
10	9	“.....			25 77	259 70
26	6	“.....			15 17	394 42
24	4	“.....			9 98	239 52
3	3	“.....			10 00	30 00
3	1	Service Cocks.....			2 50	7 50
6		“.....			2 00	12 00
30		“.....			1 50	45 00
4	15	Gun Metal Screws (Spindles).....	28	112	60	67 20
2	12	“.....	19	38	60	22 80
5	9	“.....	14	70	60	42 00
16	6	“.....	9	144	60	86 40
12	4	“.....	6	72	60	43 20
6	3	“.....	5	30	60	18 00

## MISCELLANEOUS.

Number.	DESCRIPTION.	Value of each.	Total Value.
3	Fire Hydrants with jackets.....	\$66 50	\$199 50
4	“ without jackets.....	50 00	200 00
3	“ old style single nozzle 2½.....	13 00	39 00
5	Pressure gauges.....	10 00	50 00
1	Pipe tapping machine.....		127 60
1	4 H. P. gas engine.....		475 50
1	5 H. P. steam engine and pump.....		625 00
3	Derrick winches.....	7 00	21 00
2	Hand winches.....	8 00	16 00
2	Platform scales.....	25 00	50 00
3	Lathes.....		200 00
	Tape packing for meters.....		90 00
	Blacksmith's tools.....		100 00
			\$2193 60

## RECAPITULATION.

Pipes.....	\$ 3979 44
Specials.....	2368 47
Joint Staves, 14500.....	152 50
Valves, 155.....	1897 73
Meters, 447.....	10776 42
Miscellaneous.....	2193 60

## FREE DOMESTIC SUPPLY HYDRANTS, 1897.

STREET.	LOCATION.
Preston.....	West end Cedar Street.
Bland.....	S. E. corner Inglis Street

## RENTED HYDRANTS, 1897.

STREET.	LOCATION.
Windsor.....	N. E. corner Charles Street.
Cedar.....	“ Louisburg Street.
Wellington.....	S. W. corner Lundy Lane.
Windsor.....	S. E. corner Willow Street.
Duncan.....	North side.
Preston.....	S. W. corner Jubilee Road.
“.....	“ Quinpool Road.
Tower Road.....	At Fay's Lane.
Bilby.....	N. W. corner Agricola Street.

### FREE PUMPS MAINTAINED BY CITY, 1897.

No.	LOCATION.
1	Leahyville.
1	Lady Hammond Road.
1	Kempt Road.
1	Duffus Street.
1	Acadia Street.
3	Campbell Road.
1	Oak Street.

### HYDRAULIC HOISTS IN OPERATION, 1897.

NAME.	Business.	Size of Service.	How Rated.
Kenny & Co .....	Dry Goods....	4 inch .....	Meter.
Murdoch's Nephews .....	" .....	4 " .....	"
Post Office .....	Post Office....	3 " .....	"
Appraiser's Office .....	Warehouse .....	3 " .....	"
G. M. Smith & Co.....	Dry Goods....	4 " .....	"
Smith Bros .....	" .....	3 " .....	"
Wm. Stairs, Son & Morrow .....	Hardware .....	4 " .....	"

#### MOTORS.

St. Luke's Church.....	Organ.....	3 inch .....	Meter.
Brunswick St. Church, (Methodist).....	" .....	2 " .....	Indicator.

## SERVICE PIPES LAID, 1897.

Number.	Name of Owner or Agent.	Location of Premises.	No. of Stopcock.	Size of Pipe.	Purpose for which water is used.
1	Fred Blackman	N. side Willow	6012	1/2	Dwelling
2	E. W. O'Donnell	E. side Brunswick	6013	"	"
3	E. G. Smith	N. side Smith Lane	6014	"	Dwelling
4	A. M. Haverill	S. side Willow	6015	"	"
5	"	"	6016	"	"
6	"	"	6017	"	"
7	"	"	6018	"	"
8	"	"	6019	"	"
9	"	"	6020	"	"
10	Arthur Pelton	"	6021	"	"
11	Thos. Vail	"	6022	"	"
12	James Allen	N. "	6023	"	"
13	Wm. Richards	"	6024	"	"
14	James Haverstock	"	6025	"	"
15	J. R. Parsons	"	6026	"	"
16	John Mulroney	E. side Kempt Road	6027	"	Dwelling & shop
17	James Baker	N. side Shirley	6028	"	Dwelling
18	Thos. Anderson	S. "	6029	"	"
19	Robt. Harris	N. "	6030	"	"
20	John O'Donnell	"	6031	"	"
21	Michael Foley	"	6032	"	"
22	John P. Kelly	"	6033	"	"
23	J. S. Phalen	W. side Campbell Road	6034	"	"
24	James White	E. "	6035	"	"
25	Robert Dow	W. side Gottingen	6036	"	"
26	W. B. McCoy	N. side College	6037	"	"
27	H. H. Smith	"	6038	"	"
28	H. R. Taylor	N. side Inglis	6039	"	"
29	M. Conroy	W. side Robie	6040	"	"
30	Dan McDonald	E. side Gottingen	6041	"	"
31	Elizabeth Sutherland	W. side Pleasant	6042	1	Laundry
32	John Campbell	W. side Gottingen	6043	1/2	Dwelling
33	Aaron Hubley	"	6044	"	"
34	John Blagdon	S. side Sullivan	6045	"	"
35	"	"	6046	"	"
36	"	N. "	6047	"	"
37	"	"	6048	"	"
38	Gauvin & Gentzel	S. side Spring Garden Rd.	6049	"	Photographers
39	Mrs. T. Desmond	N. side Macara	6050	"	Dwelling
40	Geo. H. Smith	W. side Gottingen	6051	"	"
41	F. C. Stevens	W. side Granville	6052	"	"
42	Mrs. James	E. side Almermarle	6053	"	Shop & dwelling
43	John Davidson	N. side Sullivan	6054	"	Dwelling
44	Thos. Burton	"	6055	"	"



## SERVICE PIPES LAID—(Continued).

Number.	Name of Owner or Agent.	Location of Premises.	No. of Stopcock.	Size of Pipe.	Purpose for which water is used.
45	E. E. Wallace	N. side North	6056	$\frac{1}{2}$	Dwelling
46	Sarah Flavin	N. side Sullivan	6057	"	"
47	Chas. Hosterman	E. side Preston	6058	"	"
48	Susan Lewis	S. side Bloomfield	6059	"	"
49	Henry Baker	N. side North	6060	"	"
50	H. L. Wallace	S. "	6061	"	"
51	D. Quinn	N. side Sullivan	6062	"	"
52	John Blagdon	"	6063	"	Shop & dwelling
53	Sam Kirby	"	6064	"	Dwelling
54	Mary Davey	S. "	6065	"	"
55	Thos. J. Power	W. side Robie	6066	"	"
56	— Tracey	S. side Bloomfield	6067	"	"
57	Susan Lewis	W. side Young	6068	"	"
58	"	"	6069	"	"
59	M. Muldowney	N. side Sullivan	6070	"	"
60	M. A. Shanahan	S. "	6071	"	"
61	John Egan, Agent	"	6072	"	"
62	John W. Phalen	N. "	6073	"	"
63	John Glassey	W. side Gottingen	6074	"	Barn & stable
64	Jas. McDonald	E. side King's Place	6075	"	Dwelling
65	H. R. Taylor	N. side Inglis	6076	"	"
66	Thos. Cooke	E. side LeMarchant	6077	"	"
67	Mrs. Delaney	E. side South Park	6078	"	"
68	Wm. Connell	E. side LeMarchant	6079	"	"
69	Alex. Moody	"	6080	"	"
70	John Jenney	N. side Jubilee Road	6081	"	"
71	Nelson Jackson	N. side Willow	6082	"	"
72	John Flinn	W. side Campbell Road	6083	"	"
73	"	"	6084	"	"
74	M. Love	N. side Welsford	6085	"	"
75	J. Cashen	E. side Gottingen	6086	"	"
76	Geo. H. Phillips	S. side Cedar	6087	"	"
77	John T. Keating	N. side Duncan	6088	"	"
78	W. C. Hodgson	"	6089	"	"
79	F. S. Selig	S. side Willow	6090	"	"
80	Henderson & Potts	W. side Kempt Road	6091	2	Paint Factory
81	"	"	6092	$\frac{1}{2}$	"
82	Isaiah Slaughenwhite	E. side Windsor	6093	"	Dwelling
83	Wm. Lowe	S. side Duncan	6094	"	"
84	Bridget Eagan	N. "	6095	"	"
85	John T. Keating	"	6096	"	"
86	John Egan	"	6097	"	"
87	Ben. Lowe	S. "	6098	"	"
88	J. H. Mont	N. "	6099	"	"
89	John T. Keating	"	6100	"	"
90	H. T. O'Brien	"	6101	"	"
91	Susan Maling	S. "	6102	"	Shop & dwelling

## SERVICE PIPES LAID—(Continued).

Number.	Name of Owner or Agent.	Location of Premises.	No. of Stopcock.	Size of Pipe.	Purpose for which water is used.
92	Mrs. Lavers	S. side Duncan	6103	$\frac{1}{2}$ "	Dwelling
93	James Brown	N. side Willow	6104	"	"
94	Wm. Heisler	S. " "	6105	"	"
95	Ambrose Vail	" " "	6106	"	"
96	Caleb Tanner	W. side Preston	6107	"	"
97	Noah Boutilier	S. side Willow	6108	"	"
98	J. A. Butler	N. side Black	6109	"	"
99	Thos. Williamson	" " "	6110	"	Shop & dwelling
100	H. Mann	S. " "	6111	"	Dwelling
101	J. S. Hodges	W. side Maynard	6112	"	"
102	S. H. Withers	" " "	6113	"	"
103	H. S. Grant	" " "	6114	"	"
104	John J. Cox	W. side Campbell Road	6115	"	"
105	Hamilton & Outhit	E. side Barrington	6116	"	Shops
106	J. E. Roy	" " "	6117	"	"
107	John Duff	W. side Robie	6118	"	Dwelling
108	John Daly	S. side Kent	6119	"	"
109	Fader Bros.	E. side Gottingen	6120	"	"
110	"	" " "	6121	"	Shop & dwelling
111	St. Joseph's Hall	W. " "	6122	"	Hall
112	J. E. & N. DeWolf	S. side Willow	6123	"	Dwelling
113	Albert Hubley	N. " "	6124	"	"
114	Geo. E. Franklyn	S. side Duncan	6125	"	"
115	"	" " "	6126	"	"
116	"	" " "	6127	"	"
117	Richard Beazley	N. " "	6128	"	"
118	W. C. Hodgson	" " "	6129	"	"
119	M. Donovan	S. " "	6130	"	"
120	A. Ferguson	E. side Preston	6131	"	"
121	A. Mackinlay	E. side Tower Road	6132	"	"
122	Alfred King	W. side Windsor	6133	"	"
123	Arthur Cox	E. side Maynard	6134	"	Machine shop
124	E. G. Smith	W. side Lockman	6135	"	Dwelling
125	W. N. McArthur	S. side North	6136	"	"
126	Hannah Ibbitson	N. side Macara	6137	"	"
127	John May	S. side Sullivan	6138	3"	Brewery
128	Robert Carr	N. side Willow	6139	$\frac{3}{4}$ "	Dwelling
129	James Corrigan	N. side Bloomfield	6140	"	"
130	Laura Brown	W. side North Starr	6141	"	"
131	M. Cuvelier	S. side Sullivan	6142	"	"
132	Joseph Robertson	W. side Union	6143	"	"
133	James Brady	" " "	6144	"	"
134	"	" " "	6145	"	"
135	B. H. Dean	W. side Campbell Road	6146	"	Shop & dwelling
136	Jas. Quinnan	S. side Duffus	6147	"	Dwelling
137	"	" " "	6148	"	"
138	R. B. Moxon	" " "	6149	"	"

## SERVICE PIPES LAID—(Continued).

Number.	Name of Owner or Agent.	Location of Premises.	No. of Stopcock.	Size of Pipe.	Purpose for which water is used.
139	Thos. Moxon	S. side Duffus	6150	1	Dwelling
140	Thos. O'Brien	"	6151	"	"
141	W. H. Blois	N. "	6152	"	"
142	"	"	6153	"	"
143	"	"	6154	"	"
144	"	"	6155	"	"
145	"	"	6156	"	"
146	Chas Skinner	"	6157	"	"
147	Isaac Creighton	S. "	6158	"	"
148	"	"	6159	"	Barn & stables
149	David Akenhead	E. side Campbell Road	6160	"	Dwelling
150	Mrs. E. McNeil	"	6161	"	"
151	Peter McCarron	W. " "	6162	"	"
152	R. Uniacke	E. " "	6163	"	"
153	Emily Veale	W. side Gottingen	6164	"	"
154	John Penny	W. side Upper Water	6165	"	"
155	Wm. Judge	W. side Gottingen	6166	"	"
156	Mary Hennessey	"	6167	"	"
157	"	"	6168	"	"
158	Slaney & Boleman	S. side W. Young	6169	"	"
159	"	"	6170	"	"
160	W. Y. Gray	W. side Needham	6171	"	"
161	"	"	6172	"	"
162	Frank Eden	E. side Maynard	6173	"	"
163	Geo. E. Franklyn	W. side Franklyn	6174	1 1/2	"
164	J. W. Longenil	N. side Willow	6175	1 1/2	"
165	W. E. Brokenshire	S. side North	6176	"	"
166	Archbishop	E. side Brunswick	6177	"	St Patrick's school
167	R. W. Carmichael	N. side Willow	6178	"	Dwelling
168	Mrs. G. H. Scriven	S. side Compton Ave	6179	"	Shop
169	J. Gray	N. side Willow	6180	"	Dwelling
170	Malachi Yetman	S. " "	6181	"	"
171	John Higgins	"	6182	"	"
172	E. G. Smith	N. side Smith's Lane	6183	"	"
173	"	"	6184	"	"
174	W. J. Manning	N. side Roome	6185	"	"
175	Jas. Kempt	W. side Kempt Road	6186	"	"
176	John Trider	W. side Pleasant	6187	"	"
177	Wm. Ware	W. side Vernon	6188	"	"
178	L. W. Parsons	"	6189	"	"
179	W. McC. Boak	E. side Edward	6190	"	"
180	Geo. H. Jost	S. side South	6191	"	"
181	F. W. Curtis	E. side Windsor	6192	"	"
182	John Vincent	S. side Willow	6193	"	"
183	John M. Hurd	S. side Black	6194	"	"
184	G. A. Fader	W. side Maynard	6195	"	"
185	"	"	6196	"	"

## SERVICE PIPES LAID—(Continued).

Number.	Name of Owner or Agent.	Location of Premises.	No. of Stopcock.		Purpose for which water is used.
			No.	Size of Pipe.	
186	Wm. Foster	W. side Edward	6197	$\frac{1}{2}$	Dwelling
187	Thos Hemsworth	N. side Welsford	6198	"	"
188	J. Monamy	W. side Gottingen	6199	"	"
189	Geo. Wright	E. side Edward	6200	"	"
190	Geo. F. Perry	S. side North	6201	"	"
191	Caleb Tanner	W. side Preston	6202	"	"
192	"	"	6203	"	"
193	Leopold Clement	N. side Rhuland	6204	"	"
194	J. H. Tully	W. side Kempt Road	6205	"	Barn & stables
195	Henry G. Bauld	W. side Pleasant	6206	"	Dwelling
196	Wm. T. Verge	N. side Charles	6207	"	"
197	Samuel Godwin	W. side Veith	6208	"	"
198	"	"	6209	"	"
199	G. A. Fader	N. side Black	6210	"	"
200	"	W. side Maynard	6211	"	"
201	A. G. Fader	"	6212	"	"
202	D. A. Scott	"	6213	"	"
203	Susan Lewis	E.	6214	"	"
204	"	"	6215	"	"
205	"	"	6216	"	"
206	"	"	6217	"	"
207	"	"	6218	"	"
208	Oliver Myatt	W. side Maple	6219	"	"
209	"	"	6220	"	"
210	Thos. Pethon	"	6221	"	Shop & dwelling
211	R. T. Forristall	E.	6222	"	"
212	Clayton & Sons	E. side Campbell Road	6223	"	5 Dwellings

## DETAILED PRECIPITATION FOR 1897.

Day.	LOWER CHAIN LAKE.											
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	.....	.....	.....	0.060	1.300	.....	.....	.....	0.020	.....
2	.....	.....	0.150	.....	.....	0.110	.....	0.240	.....	.....	2.200	0.400
3	.....	.....	1.320	.....	0.290	0.020	.....	0.030	0.130	.....	1.100	.....
4	0.250	.....	.....	.....	0.130	0.350	.....	.....	.....	.....	.....	.....
5	1.880	.....	0.290	0.350	0.030	0.350	.....	.....	.....	.....	.....	0.480
6	.....	.....	.....	1.500	.....	0.140	.....	.....	.....	.....	.....	.....
7	.....	0.480	.....	0.150	.....	.....	.....	0.040	.....	.....	0.250	.....
8	.....	.....	.....	0.070	0.020	.....	.....	.....	.....	0.350	0.030	.....
9	.....	.....	0.230	0.350	.....	.....	.....	.....	0.030	0.020	0.020	.....
10	.....	.....	0.960	1.360	0.020	.....	0.060	0.150	0.050	.....	2.190	.....
11	.....	.....	.....	0.650	0.550	0.700	.....	.....	.....	.....	.....	.....
12	0.620	.....	0.650	0.110	0.200	0.140	0.060	1.750	.....	0.070	0.750	.....
13	0.400	.....	.....	.....	0.420	0.180	0.020	.....	.....	0.160	0.150	0.280
14	.....	.....	0.780	0.180	0.050	0.040	.....	0.020	0.280	.....	0.020	.....
15	.....	.....	.....	0.320	0.570	0.020	0.230	.....	0.020	.....	.....	0.780
16	.....	0.500	.....	0.570	.....	0.100	.....	0.050	.....	0.030	0.090	0.900
17	0.730	.....	.....	0.100	0.320	.....	.....	1.200	.....	0.060	0.190	.....
18	.....	0.340	.....	.....	0.200	0.340	.....	.....	.....	.....	.....	0.060
19	.....	0.030	0.070	.....	0.080	.....	.....	.....	.....	.....	.....	0.050
20	.....	.....	.....	.....	.....	.....	.....	0.070	0.050	.....	.....	.....
21	0.830	0.420	0.360	.....	.....	3.310	.....	.....	0.150	.....	0.040	.....
22	.....	.....	.....	.....	1.200	.....	.....	.....	.....	.....	0.020	.....
23	0.090	0.550	0.310	.....	.....	.....	.....	0.030	.....	.....	0.120	.....
24	.....	0.110	0.150	.....	.....	.....	0.550	.....	.....	.....	.....	0.040
25	.....	0.400	0.290	.....	.....	.....	.....	1.260	0.350	.....	.....	.....
26	.....	.....	0.070	0.040	0.030	0.730	.....	.....	.....	.....	.....	.....
27	.....	.....	.....	0.560	0.470	.....	.....	.....	0.070	.....	0.110	0.480
28	0.860	.....	.....	.....	0.040	0.050	.....	.....	0.010	.....	0.170	0.090
29	0.030	.....	.....	0.170	0.090	0.020	1.550	.....	.....	0.010	.....	.....
30	.....	.....	.....	0.520	0.260	0.040	0.020	.....	.....	0.130	0.510	0.080
31	.....	.....	.....	.....	0.260	.....	.....	0.020	.....	.....	.....	0.030
<b>Total.</b>	<b>5.690</b>	<b>2.830</b>	<b>5.630</b>	<b>7.000</b>	<b>5.230</b>	<b>6.700</b>	<b>3.790</b>	<b>4.860</b>	<b>1.190</b>	<b>0.830</b>	<b>7.980</b>	<b>3.670</b>

Total for year ..... 55.40 inches.

## DETAILED PRECIPITATION FOR YEAR 1897—(Continued).

Day.	SPRUCE HILL LAKE.											
	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	.....	.....	0 050	.....	.....	0 120	.....	0 030	.....	.....	0 400	0 420
2	.....	.....	.....	.....	.....	.....	.....	0 140	0 220	.....	2 630	.....
3	.....	.....	1 400	.....	0 520	0 400	.....	.....	0 050	.....	0 170	.....
4	0 200	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	0 490
5	2 200	.....	0 170	2 100	.....	0 470	.....	.....	0 100	.....	.....	.....
6	0 120	.....	.....	.....	0 050	0 030	.....	0 200	.....	.....	0 140	.....
7	.....	0 450	.....	0 230	.....	.....	.....	.....	.....	.....	0 040	.....
8	.....	.....	.....	0 040	.....	.....	.....	.....	.....	0 270	.....	.....
9	.....	.....	0 220	1 760	.....	.....	0 040	0 120	0 080	.....	2 440	.....
10	0 030	.....	1 070	0 070	0 700	0 400	.....	0 170	.....	.....	0 050	.....
11	0 820	.....	.....	0 700	.....	0 480	0 070	2 050	.....	.....	.....	.....
12	0 350	.....	0 520	.....	0 490	0 050	0 070	.....	.....	0 250	1 010	0 300
13	.....	.....	.....	.....	.....	0 100	.....	.....	0 350	.....	0 040	.....
14	.....	.....	0 750	0 200	0 510	.....	.....	.....	.....	.....	.....	0 760
15	.....	.....	.....	0 810	0 480	.....	0 200	0 040	.....	.....	.....	0 940
16	.....	0 660	.....	0 170	0 260	0 250	.....	0 910	.....	0 120	0 190	.....
17	.....	0 120	.....	.....	0 050	0 040	.....	0 150	.....	.....	0 160	0 080
18	0 650	0 250	.....	.....	0 240	0 300	.....	.....	.....	.....	.....	0 060
19	.....	0 060	0 100	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	.....	.....	.....	2 370	.....	0 300	0 150	.....	0 040	.....
21	0 620	0 550	0 350	.....	0 560	.....	.....	.....	.....	.....	.....	.....
22	.....	.....	0 110	.....	0 580	.....	.....	0 180	.....	.....	0 140	.....
23	0 170	0 850	.....	.....	.....	.....	0 020	.....	0 360	.....	.....	0 040
24	.....	0 120	0 310	.....	.....	.....	0 270	1 340	.....	.....	.....	.....
25	.....	0 500	.....	.....	.....	0 720	.....	.....	.....	.....	.....	0 470
26	0 070	.....	0 150	0 450	0 380	.....	.....	.....	0 070	.....	.....	0 120
27	.....	.....	.....	0 110	0 170	.....	.....	.....	.....	.....	0 480	.....
28	0 860	.....	.....	0 140	0 160	0 020	0 380	.....	.....	.....	.....	.....
29	0 070	.....	.....	0 120	0 270	.....	1 350	.....	.....	0 190	0 600	0 080
30	.....	.....	.....	0 940	.....	1 700	.....	.....	.....	.....	.....	0 060
31	.....	.....	.....	.....	0 390	.....	.....	.....	.....	.....	.....	.....
Total	6 160	3 560	5 200	7 840	5 810	7 450	2 400	5 630	1 380	0 830	7 930	3 820

Total for the year.....58·01 inches.

## DETAILED PRECIPITATION FOR YEAR 1897—(Continued).

CITY OF HALIFAX.												
Day.	Jan.		Feb.		March.		April.		May.		June.	
	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches
1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	.....	.....	.....	.....	8·7	0·214	1·0	0·010	.....	.....	4·0	0·092
3	.....	.....	.....	.....	8·8	0·636	.....	.....	8·3	0·310	2·0	0·039
4	.....	.....	.....	.....	7·2	0·760	.....	.....	5·5	0·157	6·0	0·327
5	13·5	1·770	.....	.....	.....	.....	9·0	0·460	2·0	0·010	7·5	0·193
6	7·6	0·379	.....	.....	6·4	0·386	11·5	1·078	2·0	0·027	6·5	0·065
7	1·5	0·050	.....	.....	.....	.....	2·7	0·202	0·5	0·005	.....	.....
8	.....	.....	5·7	0·490	.....	.....	3·2	0·060	0·8	0·022	.....	.....
9	.....	.....	2·5	0·040	10·5	0·083	9·5	0·612	.....	.....	.....	.....
10	5·2	0·020	.....	.....	16·0	1·160	11·2	1·170	0·5	T	.....	.....
11	1·0	T	.....	.....	2·0	0·039	9·8	0·478	5·5	0·546	11·0	0·600
12	12·7	0·850	.....	.....	.....	.....	.....	.....	3·0	0·340	3·2	0·045
13	.....	.....	.....	.....	5·4	0·632	.....	.....	1·5	0·100	4·0	0·081
14	.....	.....	.....	.....	4·3	0·350	2·5	0·212	5·0	0·068	1·5	0·014
15	.....	.....	.....	.....	4·1	0·270	7·7	0·310	10·0	0·521	1·0	0·010
16	.....	.....	6·8	0·150	.....	.....	4·2	0·402	5·1	0·143	3·0	0·130
17	.....	.....	4·0	0·260	.....	.....	3·0	0·122	7·0	0·104	.....	.....
18	5·7	0·704	10·0	0·120	.....	.....	2·5	0·100	8·0	0·208	4·2	0·577
19	.....	.....	5·0	0·040	5·8	0·120	.....	.....	1·5	0·046	.....	.....
20	.....	.....	.....	.....	4·5	0·028	1·7	0·010	.....	.....	0·2	T
21	7·0	0·900	10·3	0·454	2·7	0·120	.....	.....	1·0	0·006	13·5	2·951
22	5·3	0·530	.....	.....	3·2	0·100	.....	.....	13·0	0·900	.....	.....
23	3·3	0·090	14·2	0·684	9·5	0·164	.....	.....	.....	.....	.....	.....
24	.....	.....	4·2	0·120	3·9	0·140	.....	.....	.....	.....	.....	.....
25	.....	.....	.....	.....	5·5	0·180	.....	.....	2·0	0·010	.....	.....
26	.....	T	6·5	0·500	6·2	0·088	2·2	0·041	3·0	0·024	7·0	0·682
27	.....	.....	1·2	0·040	.....	.....	10·0	0·526	9·0	0·392	.....	.....
28	5·5	0·500	.....	.....	.....	.....	.....	.....	4·9	0·099	1·4	0·042
29	5·5	0·103	.....	.....	.....	.....	5·5	0·146	1·5	0·040	.....	.....
30	1·5	T	.....	.....	.....	.....	7·3	0·272	6·0	0·253	4·5	0·088
31	.....	.....	.....	.....	.....	.....	.....	.....	3·6	0·282	.....	.....
Total	5·8	896	2·8	898	5·4	70	6·2	211	4·6	613	6·0	70

T. Trace.

## DETAILED PRECIPITATION FOR YEAR 1897—(Continued).

Day.	CITY OF HALIFAX.											
	July.		Aug.		Sept.		Oct.		Nov.		Dec.	
	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches	Hours	Inches
1	8 6	0 973	4 0	0 030	.....	.....	.....	.....	0 5	T	.....	.....
2	.....	.....	6 8	0 340	5 0	0 130	.....	.....	23 0	1 618	8 8	0 421
3	.....	.....	4 0	0 100	0 6	0 028	.....	.....	14 5	0 744	.....	.....
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5	.....	.....	.....	.....	0 5	0 010	.....	.....	.....	.....	5 7	0 250
6	.....	.....	2 2	0 143	1 0	0 082	.....	.....	3 7	0 143	.....	.....
7	.....	.....	0 1	T	.....	.....	4 0	0 020	1 9	0 044	.....	.....
8	.....	.....	.....	.....	.....	.....	8 0	0 268	.....	.....	.....	.....
9	.....	.....	1 5	0 124	0 7	0 025	0 5	0 010	6 0	0 298	.....	.....
10	1 0	0 062	0 6	0 033	2 0	0 050	.....	.....	8 0	0 926	.....	.....
11	4 0	0 026	3 2	0 490	0 1	T	.....	.....	.....	.....	.....	.....
12	2 0	0 030	7 0	1 346	.....	.....	0 2	T	8 5	0 816	2 0	0 078
13	1 0	0 020	.....	.....	3 3	0 203	3 5	0 160	3 2	0 102	3 5	0 200
14	.....	.....	0 8	0 020	3 2	0 087	.....	.....	.....	.....	0 2	T
15	1 2	0 302	.....	.....	2 0	0 023	.....	.....	.....	.....	10 3	1 003
16	1 0	0 010	0 7	0 022	0 1	T	0 8	0 020	2 0	0 098	6 6	0 758
17	1 0	0 010	8 1	0 926	0 1	T	0 8	0 090	5 5	0 209	.....	.....
18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	5 8	0 140
19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	.....	.....	4 9	0 322	2 0	0 040	.....	.....	.....	.....	.....	.....
21	.....	.....	.....	.....	2 7	0 086	.....	.....	1 0	0 020	.....	.....
22	.....	.....	.....	.....	.....	.....	0 1	T	0 4	T	.....	.....
23	0 2	T	1 0	0 050	.....	.....	.....	.....	6 8	0 070	.....	.....
24	1 5	0 050	.....	.....	4 1	0 200	.....	.....	.....	.....	1 0	0 040
25	6 9	1 084	8 7	1 212	3 0	0 109	.....	.....	.....	.....	.....	.....
26	.....	.....	.....	.....	.....	.....	.....	.....	0 6	0 020	1 8	0 066
27	.....	.....	.....	.....	1 5	0 060	.....	.....	6 5	0 315	12 5	0 410
28	.....	.....	.....	.....	1 3	0 036	.....	.....	0 2	0 002	3 5	0 080
29	.....	.....	.....	.....	.....	.....	2 2	0 070	1 0	0 060	.....	.....
30	12 5	1 069	.....	.....	.....	.....	4 7	0 108	9 0	0 566	5 7	0 076
31	2 0	0 025	1 0	0 027	.....	.....	.....	.....	.....	.....	.....	.....
Total	.....	3 661	.....	5 185	.....	1 169	.....	0 746	.....	6 051	.....	3 552

Total for the year.....51 522.



### TOTAL PRECIPITATION FOR THE YEAR 1897.

1897.	LOWER CHAIN LAKES.				SPRUCE HILL LAKE.				CITY OF HALIFAX.*		
	Snow.	Melted Snow.	Rain.	Total.	Snow.	Melted Snow.	Rain.	Total.	Melted Snow.	Rain.	Total
January . . . . .	17.75	2.30	3.39	5.69	19.50	2.96	3.20	6.16	2.463	3.433	5.896
February . . . . .	22.00	2.35	0.48	2.83	25.00	3.11	0.45	3.56	2.154	0.744	2.898
March . . . . .	13.00	1.78	3.85	5.63	12.50	1.51	3.69	5.20	1.618	3.852	5.470
April . . . . .	7.25	1.11	5.89	7.00	7.50	1.03	6.81	7.84	0.768	5.443	6.211
May . . . . .	.....	.....	5.23	5.23	.....	.....	5.81	5.81	0.022	4.591	4.613
June . . . . .	.....	.....	6.70	6.70	.....	.....	7.45	7.45	.....	6.070	6.070
July . . . . .	.....	.....	3.79	3.79	.....	.....	2.40	2.40	.....	3.661	3.661
August . . . . .	.....	.....	4.86	4.86	.....	.....	5.63	5.63	.....	5.185	5.185
September . . . . .	.....	.....	1.19	1.19	.....	.....	1.38	1.38	.....	1.169	1.169
October . . . . .	.....	.....	0.83	0.83	.....	.....	0.83	0.83	.....	0.746	0.746
November . . . . .	1.12	0.16	7.82	7.98	1.25	0.16	7.77	7.93	0.090	5.961	6.051
December . . . . .	1.25	0.13	3.54	3.67	1.00	0.12	3.70	3.82	0.186	3.336	3.522
<b>Total . . . . .</b>	<b>62.37</b>	<b>7.83</b>	<b>47.57</b>	<b>55.40</b>	<b>66.75</b>	<b>8.89</b>	<b>49.12</b>	<b>58.01</b>	<b>7.301</b>	<b>44.221</b>	<b>51.522</b>

\* Returns furnished by Dominion Government Meteorological Agent.

### Gallons discharged over Long Lake Waste Weir during 1897.

Day.	January.	February.	March.	April.	May.	June.	July.	August.	Sept'r.	October.	November.	December.
1					2,053,123	725,898	2,935,888					
2					3,771,748		5,807,185					
3					5,807,185		3,771,748					
4					10,665,474		725,898					
5					10,665,474							
6	20,419,735			34,026,476	3,771,748							
7	32,100,236			48,090,747	2,053,123							
8	26,482,975			32,081,007								
9	10,665,474			24,698,988								
10	5,807,185			46,452,871								
11	2,935,888			46,452,871								
12	2,053,123			30,173,996								
13	725,898	10,665,474		19,600,783								
14		30,173,996		13,441,414								
15		22,953,449		14,910,137								
16		10,665,474		28,336,175								
17		8,112,524		34,026,476	5,807,185							
18		2,935,888		26,482,975	8,112,524							
19		725,898		19,600,783	8,112,524							
20				13,441,414	5,807,185							
21				8,112,524	2,935,888	19,600,783						
22				3,771,748	5,807,185	28,336,175						
23				2,053,123	10,665,474	19,600,783						
24				725,898	10,665,474	13,441,414						
25					8,112,524	8,112,524						
26			256,678		5,807,185	5,807,185						
27					3,771,748	1,333,376						
28			725,898		2,053,123							
29			725,898		2,053,123							
30			725,898	725,898	1,333,376							
31			256,678		1,333,376							
Totals	101,190,514		88,923,753	447,206,304	120,165,769	95,958,138	13,240,719					

Total for the year.... 867,685,197 gallons.

### Highest and Lowest Points reached at Long Lake and Spruce Hill Lake, 1897.

LONG LAKE.					SPRUCE HILL LAKE.			
1897.	Lowest point reached during the month.	Highest point reached during the month.	Monthly precipitation in inches at gauge at Chain Lakes.	Monthly precipitation in inches in City of Halifax.	1897.	Lowest point reached during the month.	Highest point reached during the month.	Monthly precipitation in inches at gauge at Sp. Hill Lake.
Jan. 4.	205.36				Jan. 7.		364.30	
" 7.		206.53	5.69	5.896	" 3.	363.88		6.16
Feb. 1.		205.62			Feb. 1.		353.84	
" 28.	204.12		2.83	2.898	" 28.	363.01		3.56
Mar. 3.	203.95				Mar. 3.	362.88		
" 14.		206.49	5.63	5.470	" 15.		364.00	5.20
April 5.	205.91				April 3.	363.80		
" 10.		206.74	7.00	6.211	" 10.		364.59	7.84
May 4.		206.24			May 2.		364.34	
" 11.	205.78		5.23	4.613	" 10.	364.13		5.81
June 19.	205.70				June 18.	364.00		
" 21.		206.53	6.70	6.070	" 22.		364.42	7.45
July 2.		206.15			July 2.		364.30	
" 29.	204.15		3.79	3.661	" 29.	363.26		2.40
Aug. 1.		204.24			Aug. 1.		363.34	
" 11.	203.57		4.86	5.185	" 11.	362.97		5.63
Sept. 1.		203.91			Sept. 1.		362.05	
" 30.	201.91		1.19	1.169	" 30.	361.97		1.38
Oct. 1.		201.83			Oct. 1.		361.92	
" 31.	199.79		0.83	0.746	" 31.	360.80		0.83
Nov. 1.	199.74				Nov. 1.	360.80		
" 18.		201.83	7.98	6.051	" 13.		361.76	7.93
Dec. 1.	201.24				Dec. 12.	361.47		
" 18.		202.45	3.67	3.552	" 18.		361.88	3.82
Totals			55.40	51.522				58.01

Level of waste weir at Spruce Hill Lake... 363.34 above mean low tide.  
 " " " " " Long Lake... 205.99 " " " "

## RECORDS COMPARED, 1879-97.

Year.	Total precipitation at Chain Lakes.	Lowest Level of Long Lake below Waste Weir.		Total precipitation at Spruce Hill Lake.	Lowest Level of Spruce Hill Lake below Waste Weir.		Total precipitation in the City of Halifax.
	Inches.	Feet.	Inches.	Inches.	Feet.	Inches.	Inches.
1879....	40.76	4	6½	.....	.....	.....	47.70
1880....	51.45	3	10½	.....	.....	.....	52.752
1881....	46.65	3	0½	.....	2	3	51.755
1882....	56.089	2	6¼	.....	2	0	62.022
1883....	46.201	4	5½	.....	3	3	58.112
1884....	59.252	3	9¾	.....	2	0½	63.278
1885....	47.995	4	5	.....	3	0½	56.629
1886....	46.60	2	3	.....	2	0	57.29
1887....	59.82	3	10	.....	3	8¼	57.253
1888....	68.525	1	5	67.21	2	2	66.294
1889....	46.81	5	11	49.10	4	4	48.659
1890....	59.38	4	2	60.78	3	11¾	60.103
1891....	57.015	3	6½	58.99	2	9¼	58.669
1892....	58.97	2	11½	60.19	2	5¾	53.69
1893....	57.26	3	11½	57.98	2	9½	58.748
1894....	47.59	6	4	46.40	4	11	45.808
1895....	56.98	6	7	57.94	4	11½	62.152
1896....	70.87	3	1	70.72	3	8	69.862
1897....	55.40	6	3	58.01	2	6½	51.522

City record made by Dominion Government Metereological Agent.

## REPORT OF PLUMBING AND METER INSPECTOR.

HALIFAX, N. S., *May 2, 1898.*

MR. F. W. W. DOANE,  
*City Engineer.*

SIR,—I beg to submit for your information the following report of work done by me during the past year in the Water and Health Departments.

The only difficulty I have with the licensed plumbers is that they do not notify me as soon as they should when work is finished.

Respectfully submitted.

CLAUDE DONOVAN,  
*Plumbing Inspector.*

## Scale of Rates for Annual Rental of Meters.

(Adopted by Board of Works, June, 1892.)

## Water Department.

	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.	Jan.	Feb.	March.	April.	Total.
No. of houses examined and Collector's orders issued for turning on .....	29	18	23	33	16	27	28	13	5	2	12	19	225
No. of Meter readings .....													1100
Total .....													1325

## Meters in use during 1897-8.

KIND.	$\frac{1}{2}$ "	$\frac{3}{4}$ "	1"	1 $\frac{1}{4}$ "	1 $\frac{1}{2}$ "	2"	3"	4"	6"	Total.
Siemens .....	178	36	12	3	2	7	17	14	2	271
Crown .....	2	3	1							6
Beck .....							1			1
Starr .....		1								1
Hersey .....		1								1
Indicators .....		1								1
Total .....	181	41	13	3	2	7	18	14	2	281

No. of new meters set .....	87
No. of meters replaced .....	15
No. of meters removed for non-registering .....	8
No. of meters injured by frost .....	15
No. of houses inspected for Collector and for waste .....	13

Minimum annual charge for water by Meter \$4.00