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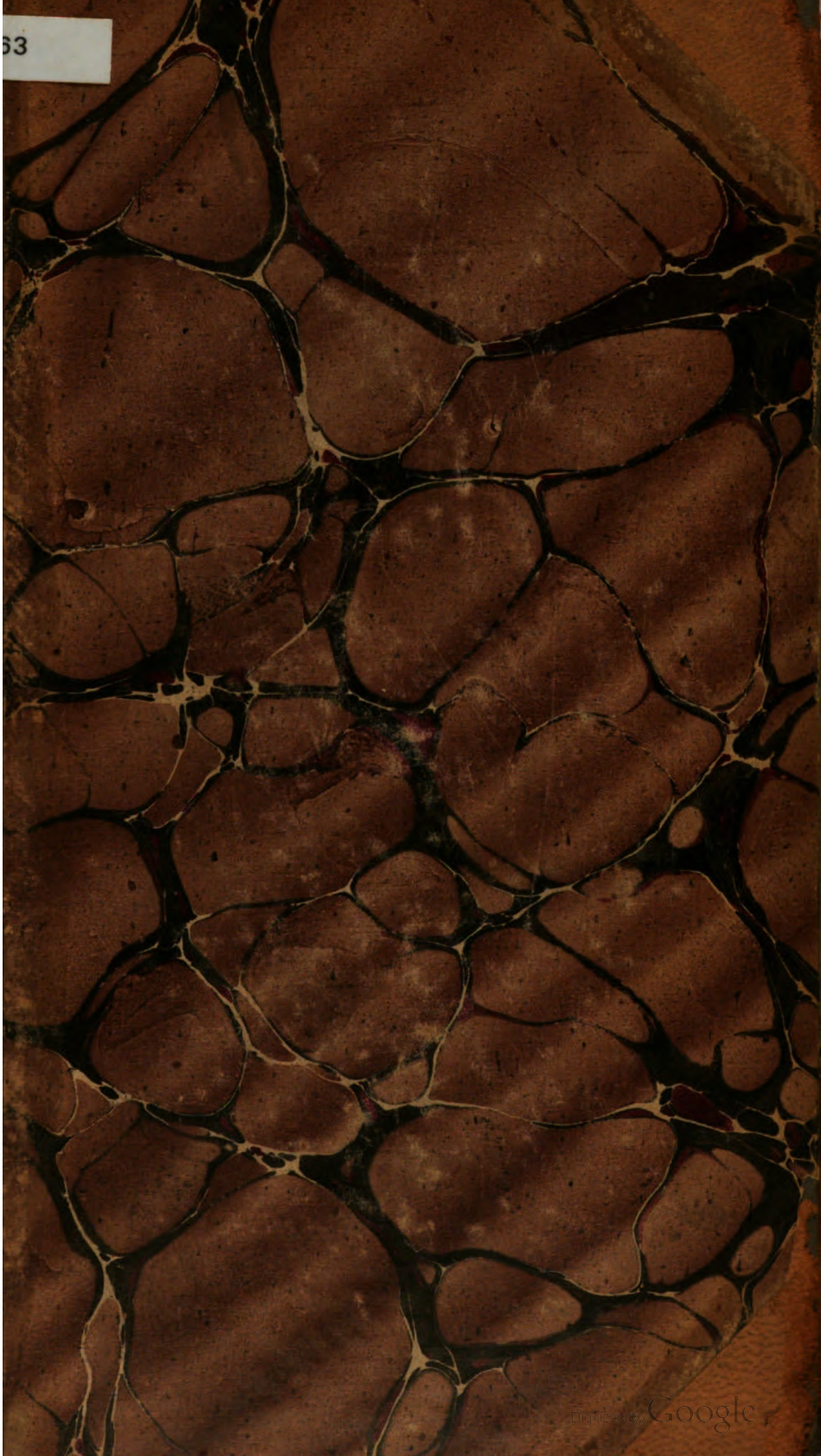
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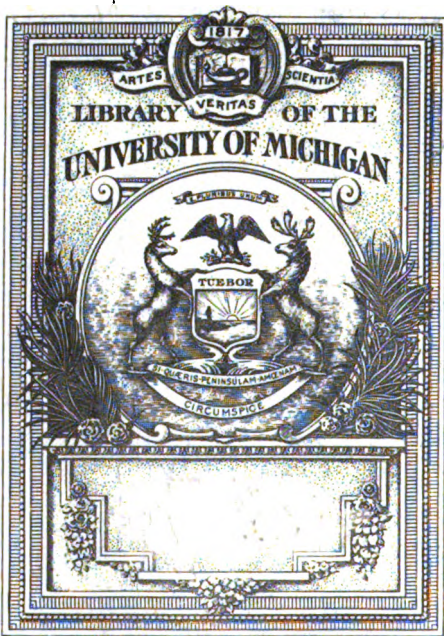
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1919

REPORTS

PRESENTED BY THE

GENERAL ASSEMBLY

OF THE

State of Rhode Island and Providence Plantations.

STATE OF RHODE ISLAND, Etc.,

OFFICE OF THE SECRETARY OF STATE, 1919.

Dup. 1920
D. of D.

PAWTUCKET

PAWTUCKET LINOTYPING COMPANY

1919

CONFIDENTIAL

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SEP 14 1920

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REPORTS MADE TO THE GENERAL
ASSEMBLY DURING THE LEGISLATIVE
YEAR A. D. 1919.

JANUARY SESSION.

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PUBLIC DOCUMENT.] APPENDIX.

[No. 5.

State of Rhode Island and Providence Plantations

ANNUAL REPORT

OF THE

GENERAL TREASURER

FROM

JANUARY 1 TO DECEMBER 31

1918

**PROVIDENCE
THE OXFORD PRESS
1919**

GENERAL TREASURERS.

BEFORE THE PARLIAMENTARY PATENT.

PORTSMOUTH AND NEWPORT.

Treasurers.

Robert Jeffreys, } March 12, 1640, to March 16, 1641.
William Balston, }
Robert Jeffreys..... March 16, 1641, to March 16, 1642.

NEWPORT.

Robert Jeffreys..... March 16, 1641, to March 13, 1644.
Jeremy Clarke..... March 13, 1644, to May 19, 1647.

PORTSMOUTH.

Thomas Spicer..... March 16, 1642, to _____

UNDER THE PARLIAMENTARY PATENT.

General Treasurers.

Jeremy Clarke, Newport..... May 19, 1647, to May 22, 1649.
John Clarke, Newport..... May 22, 1649, to the separation.

PROVIDENCE AND WARWICK.

Randall Holden, Warwick..... May, 1652, to May, 1654.

PORTSMOUTH AND NEWPORT.

John Coggeshall, Newport..... May 17, 1653, to May 16, 1654.

UNION RE-ESTABLISHED.

John Coggeshall, Newport..... May, 1654, to Sept. 12, 1654.
Richard Burden, Portsmouth..... Sept. 12, 1654, to May 22, 1655.
John Sanford, Portsmouth..... May 22, 1655, to May 21, 1661.
Caleb Carr, Newport..... May 21, 1661, to May 22, 1662.
John Sanford, Portsmouth..... May 22, 1662, to Nov. 25, 1663.

UNDER THE ROYAL CHARTER OF CHARLES II.

John Sanford, Portsmouth..... Nov. 26, 1663, to May 4, 1664.
John Coggeshall, Newport..... 1664 to 1672.
Peter Easton, Newport..... 1672 to 1677.
Thomas Ward, Newport..... 1677 to 1678.
Pelege Sanford, Newport..... 1678 to 1681.
Weston Clarke, Newport..... 1681 to 1685.
*John Woodman, Newport..... 1685 to 1686.

John Holmes, Newport.....	February, 1690, to May, 1703.
William Hiscock, Newport.....	1703 to 1705.
Nathaniel Sheffield, Newport.....	1705 to 1708.
John Holmes, Newport.....	1708 to 1709.
Edward Thurston, Newport.....	1709 to 1714.
Joseph Borden, Portsmouth.....	1714 to 1730.
Abraham Borden, Newport.....	1730 to 1733.
Gideon Wanton, Newport.....	1733 to 1743.
John Gardner, Newport.....	1743 to 1748.
Thomas Richardson, Newport.....	1748 to 1761.
Joseph Clarke, Newport.....	1761 to 1792. Died.
Henry Sherburne, Newport.....	October, 1792, to May, 1806.
Constant Taber, Newport.....	1806 to 1811.
William Ennis, Newport.....	1811 to 1817.
Thomas G. Pitman, Newport.....	1817 to 1832.
John Stearne, Newport.....	1832 to 1838.
William S. Nichols, Newport.....	1838 to 1839.
John Stearne, Newport.....	1839 to 1840.
Stephen Cahoon, Newport.....	1840 to 1843.

UNDER THE CONSTITUTION.

Stephen Cahoon, Newport.....	1843 to 1851.
Edwin Wilbur, Newport.....	1851 to 1854.
Samuel B. Vernon, Newport.....	1854 to 1855.
Samuel A. Parker, Newport.....	1855 to 1866.
George W. Tew, Newport.....	May, 1866, to March, 1868.
Samuel A. Parker, Newport.....	March, 1868, to Feb. 4, 1872. Died.
Samuel Clark, Lincoln.....	Feb. 15, 1872, to 1887.
John G. Perry, South Kingstown.....	1887 to 1888.
Samuel Clark, Lincoln.....	1888 to 1890.
John G. Perry, South Kingstown.....	1890 to 1891.
Samuel Clark, Lincoln.....	1891 to Dec. 27, 1897. Died.
Clinton D. Sewell, Providence.....	Dec. 28, 1897, to May 31, 1898.
Walter A. Read, Gloucester.....	1898 to Dec. 14, 1918. Died.
Richard W. Jennings of Cranston.....	Dec. 14, 1918, to

*At this date the charter was suspended by Sir Edmund Andross.

WALTER A. READ

OF

GLOCESTER.*Born July 6, 1842.*

Enlisted as a private in Co. D, 4th Rhode Island Infantry, August 17, 1861, Commissioned 2nd Lieutenant October 2, 1861, 1st Lieutenant November 20, 1861, Captain August 2, 1862; served under General Burnside, General McClellan, General Pope, General Peck, General Butler and General Grant; after the battle before Petersburg was senior Captain and commander of the Regiment until it was disbanded in Providence, October 15, 1864.

Member of Commission for Relief of needy Soldiers and Sailors.

Department Commander, G. A. R., 1900.

Postmaster at Chepachet from 1866 to 1865.

Senator from Gloucester from May, 1888, to May, 1892, and from May, 1893, to May, 1898.

Member of the Board of State Charities and Corrections from June 22, 1892, to January 31, 1917, and chairman of the Board from December, 1910, to date of his retirement.

GENERAL TREASURER

From June 1, 1898, until the date of his death,

December 14, 1918.

OFFICE STAFF OF GENERAL TREASURER.

BookkeeperLeverett C. Stevens
Bond Clerk.....Hattie M. Church
Check Clerk.....James V. Greenhalgh
Clerk.....Carrie E. Oatley

REPORT.

OFFICE OF THE GENERAL TREASURER,

February 4, 1919.

To the Honorable General Assembly:

I have the honor to present a report of the receipts and disbursements of the General Treasurer during the fiscal year ending December 31, 1918, and of the condition of the State Treasury as of that date, in compliance with the provisions of Chapter 43 of the General Laws.

The receipts are presented in detail and the disbursements, which will be covered in detail in the report of the State Auditor, are given in condensed form. This condensed statement has been arranged to conform, as nearly as practicable, with the classification required by the law relating to the report of this office, but that classification is somewhat out of date and is scarcely serviceable when applied to the volume of business of the present day.

GENERAL FUND.

The condition of the general fund of the treasury may be summarized as follows:

Balance December 31, 1917.....	\$493,547	21
Receipts during 1918	4,573,949	20
	<hr/>	
Resources available during 1918.....	\$5,067,496	41
Payments from general fund during 1918.....	4,571,256	00
	<hr/>	
Balance December 31, 1918.....	\$496,240	41

This balance remaining in the general fund after all orders of the State Auditor for the fiscal year had been paid was represented by deposits in certain banks, and cheques and cash on hand. The deposits in the banks drawing interest at two per cent on daily balances were: Industrial Trust Company \$157,722.38; Rhode Island Hospital Trust Company \$165,945.26, and the Union Trust Company \$82,524.36.

About the middle of the year, the General Treasurer had reason to borrow \$200,000 on short time notes, which were paid on maturity.

LOAN ACCOUNTS.

In addition to the general fund of the State Treasury there are a number of accounts covering funds remaining of the several bond issues for harbor improvement, park purposes, and construction and repairs at various institutions. The accounts of this nature active at the close of the fiscal year were: Harbor Improvement Loan, Second Metropolitan Park Loan, Charitable Institutions Loan of 1914, of 1915, of 1916 and of 1918. The following is a summary of those accounts for the fiscal year:

Total funds on deposit December 31, 1917.....	\$369,875	13
Receipts during 1918 from bond issues and other sources	150,186	58
	<hr/>	
	\$520,061	71
Payments during 1918	254,374	70
	<hr/>	
Funds on deposit December 31, 1918.....	\$265,687	01

The General Assembly, at its January Session, 1918, authorized an issue of \$850,000 bonds of the Charitable Institutions Loan of 1918, but a sale of \$25,000 of these bonds was found sufficient to meet the current requirements under war

conditions. A sale of \$125,000 bonds of the Bridge Construction Loan of 1917 was also made during the year.

The funds of these loan accounts are subject to the orders of the State Auditor, from time to time, and are kept on deposit in certain banks in the city of Providence at two per cent interest on daily balances. The bank deposits at the close of the fiscal year covering these funds were in the following banks: Industrial Trust Company \$77,334.41; Rhode Island Hospital Trust Company \$63,646.84; National Exchange Bank \$124,705.76.

BONDED INDEBTEDNESS.

The bonded indebtedness of the State at the close of the fiscal year was \$7,702,000, an increase of \$68,000 during the year.

There was an addition of \$150,000 by the sale of bonds of the Bridge Construction Loan and of the Charitable Institutions Loan of 1918 and a reduction of the indebtedness by the retirement of \$72,000 State House Construction Loan bonds, due 1924, which the late General Treasurer Read was able to purchase at a price that resulted in a profit of \$2,238.00 to the sinking fund. The sinking fund account for the fiscal year may be summarized as follows:

Bonded indebtedness December 31, 1917.....	\$7,624,000 00
Proceeds from sale of bonds during 1918.....	150,000 00
	<hr/>
	\$7,774,000 00
Retirement of State House Construction bonds, 1924..	72,000 00
	<hr/>
	\$7,702,000 00
Securities and cash in Sinking Funds.....	1,263,843 63
	<hr/>
Net bonded indebtedness December 31, 1918.....	\$6,438,156 37

A certificate of the Sinking Fund Commissioners showing an examination of the securities and deposits in the sinking fund, as of the fiscal year ending December 31, 1918, is included in this report.

There was, at the close of the fiscal year, a total of \$2,407,884.05 represented by cash and securities in the custody and control of the General Treasurer as follows:

Balance in general fund.....	\$196,240 41
Balance in loan accounts.....	265,687 01
Securities and cash in sinking funds.....	1,263,843 63
Permanent school fund.....	249,941 19
Touro Jewish Synagogue fund.....	72,011 81
Land Grant fund of 1862.....	50,000 00
Co-operative Vocational Education fund (U. S.)....	3,219 49
Venereal Disease Control fund (U. S.).....	5,920 51
Soldiers' Home Burial Lot fund.....	1,020 00

During the fiscal year covered by this report, with the exception of the last two weeks, this office was administered by the late Walter A. Read, of Gloucester, whose sudden death on December 14, 1918, brought to a close a term of continuous service as General Treasurer covering a period of more than twenty years. 'In recognition of his faithful and valuable services, not only in this office, but also in many other positions of usefulness and responsibility, I have prefaced this report with a brief record of his public activities.

RICHARD W. JENNINGS,

General Treasurer.

SUMMARY OF RECEIPTS.

*State Tax for general purposes	\$672,671	74
*State Tax for highway purposes	221,404	48
*Tax on savings deposits	703,262	84
*Corporate excess tax, business corporations.....	984,020	82
*Franchise tax, business corporations	17,744	33
*Gross earnings tax, public service corporations...	294,684	35
*Franchise tax, street railways	2,595	94
*Tax on inheritances and deposits therefor.....	301,738	40
*Tax on bank shares	8,820	27
*Tax on insurance business and fees, etc.....	265,290	30
*Fines, costs, fees, etc., from Courts and officers...	102,879	63
Fees for automobile registrations and licenses....	385,608	00
*State share of liquor licenses	150,945	04
*State share of shows, pool, etc., licenses	17,870	50
Rent of oyster beds	76,062	82
*Hunters' licenses	10,825	94
Fishermen's licenses	946	15
Lobster fishermen's licenses	1,215	00
*Peddlers' licenses	555	00
Milk dealers' licenses	250	00
*Duty on auctioneers	1,138	44
Fees for examination practice of medicine.....	340	00
Fees for examination practice of midwifery.....	285	00
Fees for examination trained nurses	595	00
*Fees for analysis commercial fertilizers	2,240	00
*Fees for charters	37,280	00
Fees for civil commissions	1,552	00
*Fees, miscellaneous	239	28
<i>Income from interest and dividends:</i>		
On general deposits	15,585	77
On Metropolitan Park Loan	2,514	74
On Harbor Improvement Loan	1,385	75
*On Charitable Institutions Loans	2,885	02
On Bridge Construction Loan of 1917	2,361	50

*On Permanent School Fund	\$11,948 00
*On Corporate excess and Franchise taxes overdue	1,423 41
*On Inheritance taxes	383 49
*On Agricultural Loans	69 59
*Interest, miscellaneous	220 83
<i>Receipts from Boards, Institutions, etc., for support, care, tuition, rents, sales, labor, etc.:</i>	
State Institutions in Cranston	154,575 18
Penal and Charitable Commission	2,594 66
State Home and School	3,396 41
State Sanatorium	9,382 70
Exeter School	3,246 32
*Tuition, State Normal School	9,292 98
State Board of Agriculture	999 57
Harbor Commission, rents, wharfage, etc.....	15,632 74
Metropolitan Park Commission	3,396 97
Automobile department, sale of number plates....	629 32
Sale of laws, schedules and Court reports.....	824 68
Rent of armories	2,001 00
*Sales, miscellaneous	1,195 76
Refund of agricultural loans	36,584 38
Soldiers' Relief, National Home for Disabled Soldiers	8,925 00
*Highway improvement, payments by cities, towns, etc.	6,244 01
Stone bridge maintenance from Bay State Street Railway Company	750 00
The Rhode Island Company, share of cost of investigation	9,868 15
Unclaimed dividends Warwick Institution for Savings	561 83
Board of Firemen's Relief, unexpended balance...	1,780 21
*Repayments and refunds, miscellaneous.....	227 96

\$4,573,949 20

*See detailed statement.

DETAILED STATEMENTS OF RECEIPTS.

STATE TAXES.

State Tax, Due December 15, 1917.

Central Falls	\$483 83
West Greenwich	161 85
	<hr/>
	\$645 68

State Tax, Due June 15, 1918.

Barrington	\$2,406 54
Bristol	3,773 30
Burrillville	2,010 00
Central Falls	6,362 87
Charlestown	548 24
Coventry	2,329 08
Cranston	11,034 60
Cumberland	4,550 07
East Greenwich	1,361 42
East Providence	7,410 49
Exeter	247 51
Foster	289 59
Glocester	533 22
Hopkinton	881 27
Jamestown	1,535 83
Johnston	1,919 05
Lincoln	2,758 32
Little Compton	1,113 97
Middletown	1,630 41
Narragansett	1,843 50
New Shoreham	480 22
Newport	30,568 28
North Kingstown	2,295 20
North Providence	2,396 49

North Smithfield	\$1,389 00
Pawtucket	30,164 26
Portsmouth	1,440 05
Providence	174,929 53
Richmond	727 44
Scituate	1,768 28
Smithfield	1,508 97
South Kingstown	3,293 45
Tiverton	2,065 52
Warren	3,297 85
Warwick	8,420 61
West Warwick	5,075 49
West Greenwich	161 85
Westerly	5,253 66
Woonsocket	16,026 18
	<hr/>
	\$345,802 51

State Tax, Due December 15, 1918.

Barrington	\$2,558 67
Bristol	3,896 42
Burrillville	2,148 06
Central Falls	6,691 16
Charlestown	555 75
Coventry	2,344 55
Cranston	11,600 51
Cumberland	4,599 40
East Greenwich	1,407 63
East Providence	7,974 18
Exeter	247 01
Foster	292 83
Glocester	629 45
Hopkinton	842 00
Jamestown	1,582 15

REPORT OF GENERAL TREASURER.

15

Johnston	\$2,077 04
Lincoln	2,840 25
Little Compton	1,113 99
Middletown	1,733 90
New Shoreham	462 34
North Kingstown	2,375 65
North Providence	2,451 48
North Smithfield	1,436 69
Pawtucket	32,582 48
Portsmouth	1,455 61
Providence	181,284 90
Richmond	788 55
Scituate	1,549 91
Smithfield	1,744 52
South Kingstown	3,332 82
Tiverton	2,131 38
Warren	3,513 57
Warwick	8,420 61
West Warwick	5,075 49
West Greenwich	168 40
Westerly	5,439 33
Woonsocket	16,874 87
	<hr/>
	\$326,223 55

RECAPITULATION.

State Tax due December 15, 1917	\$645 68
State Tax due June 15, 1918	345,802 51
State Tax due December 15, 1918	326,223 55
	<hr/>
	\$672,671 74

HIGHWAY TAXES.

State Highway Tax, Due December 15, 1917.

West Greenwich	\$53 95
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State Highway Tax, Due June 15, 1918.

Barrington	\$802 18
Bristol	1,257 76
Burrillville	670 30
Central Falls	2,120 96
Charlestown	182 74
Coventry	776 36
Cranston	3,678 20
Cumberland	1,516 69
East Greenwich	453 81
East Providence	2,470 16
Exeter	82 50
Foster	96 53
Glocester	177 74
Hopkinton	293 76
Jamestown	511 94
Johnston	639 68
Lincoln	919 44
Little Compton	371 32
Middletown	543 47
Narragansett	614 50
New Shoreham	160 07
Newport	10,189 42
North Kingstown	765 07
North Providence	798 83
North Smithfield	463 00
Pawtucket	10,054 75
Portsmouth	480 01
Providence	58,309 85

REPORT OF GENERAL TREASURER.

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Richmond	\$242 48
Scituate	589 42
Smithfield	502 99
South Kingstown	1,097 82
Tiverton	688 50
Warren	1,099 28
Warwick	2,806 87
West Warwick	1,691 83
West Greenwich	53 95
Westerly	1,751 22
Woonsocket	5,342 06

\$115,267 46

State Highway Tax, Due December 15, 1918.

Barrington	\$852 89
Bristol	1,298 80
Burrillville	716 02
Central Falls	2,230 38
Charlestown	185 25
Coventry	781 51
Cranston	3,866 83
Cumberland	1,533 13
East Greenwich	469 21
Exeter	82 34
Foster	97 61
Glocester	209 82
Hopkinton	280 66
Jamestown	527 38
Johnston	692 35
Lincoln	946 75
Little Compton	371 33
Middletown	577 96
New Shoreham	154 11

North Kingstown	\$791 88
North Providence	817 16
North Smithfield	478 89
Pawtucket	10,860 83
Portsmouth	485 20
Providence	60,428 30
Richmond	262 85
Scituate	516 64
Smithfield	581 51
South Kingstown	1,110 94
Tiverton	710 46
Warren	1,171 19
Warwick	2,806 87
West Warwick	1,691 83
West Greenwich	56 13
Westerly	1,813 11
Woonsocket	5,624 95
	<hr/>
	\$106,083 07

RECAPITULATION.

State Highway Tax due December 15, 1917.....	\$53 95
State Highway Tax due June 15, 1918.....	115,267 46
State Highway Tax due December 15, 1918.....	106,083 07
	<hr/>
	\$221,404 48

TAX ON SAVINGS DEPOSITS.

Savings Banks.

Centreville Savings Bank	\$5,165 23
Citizens Savings Bank	53,422 23
Columbus Exchange Bank	2,803 95
Gorham Savings Bank	334 51
Island Savings Bank	6,448 23

Mechanics Savings Bank (Woonsocket).....	\$8,250	66
Pawtucket Institution for Savings.....	29,525	73
Peoples Savings Bank.....	53,488	44
Producers Savings Bank.....	14,281	17
Providence County Savings Bank.....	5,661	08
Providence Institution for Savings.....	130,643	09
Savings Bank of Newport.....	46,865	92
Smithfield Savings Bank.....	2,218	57
Wakefield Institution for Savings.....	5,014	79
Wickford Savings Bank.....	1,627	07
Woonsocket Institution for Savings.....	38,521	47
La Credit Union de Notre Dame de Central Falls..	804	87

\$405,077 01

Trust Companies.

Industrial Trust Company.....	\$127,696	95
Italo-American Mutual Trust Company.....	389	20
Phenix Trust Company.....	1,410	48
Rhode Island Hospital Trust Company.....	78,463	24
Slater Trust Company.....	27,807	23
Union Trust Company.....	13,727	94
Wakefield Trust Company.....	736	45
Washington Trust Company.....	19,291	88
Woonsocket Trust Company.....	2,323	12

\$271,846 49

National Banks.

Mechanics National Bank.....	\$6,746	21
Merchants National Bank.....	8,340	41
National Exchange Bank of Providence.....	10,421	84
Citizens National Bank of Woonsocket.....	830	88

\$26,339 34

RECAPITULATION.

Savings Deposits.

Savings Banks	\$405,077 01
Trust Companies	271,846 49
National Banks	26,339 34
	<hr/>
	\$703,262 84

CORPORATE EXCESS TAX.

MANUFACTURING, MERCANTILE AND MISCELLANEOUS CORPORATIONS.

Due July 1, 1912.

Hennessey Laundry Company.....	\$149 40
New England Land Company.....	15 90
Walnut Hill Cemetery Company.....	8 54

Due July 1, 1913.

Beattie, Roy H., Incorporated.....	\$137 78
Girard Brothers Company.....	64 91
Hennessey Laundry Company.....	149 69
New England Land Company.....	15 90
Walnut Hill Cemetery Company.....	13 58

Due July 1, 1914.

Beattie, Roy H., Incorporated.....	\$137 78
Hennessey Laundry Company.....	168 26
New England Land Company.....	15 90
Walnut Hill Cemetery Company.....	9 67

Due July 1, 1915.

Beattie, Roy H., Incorporated.....	\$137 78
Enterprise Real Estate Corporation.....	86 99
Hennessey Laundry Company.....	164 53
New England Land Company.....	15 90
Walnut Hill Cemetery Company.....	12 23

Due July 1, 1916.

Beattie, Roy H., Incorporated.....	\$137 78
American Loan Company.....	139 65
Castritius, A. L. Company.....	34 16
Crown Confection Shop.....	7 00
Globe Optical Company.....	22 14
Hennessey Laundry Company.....	165 58
Miller, Henry F. & Sons Piano Company.....	112 21
New England Land Company.....	15 90
Powers-Dundas Company.....	356 76
R. I. Security Company.....	48 95
Walnut Hill Cemetery Company.....	4 94

Due July 1, 1917.

American Loan Company.....	\$139 65
Amstaco, Incorporated.....	53 60
Anshen, L. J. Company.....	280 96
Atlantic Refining Company.....	21 37
Bay State Cranberry Company, on account.....	10 00
Beattie, Roy H., Incorporated.....	137 78
Bens, William Company.....	21 16
Benjamin Brothers Company.....	2 00
Beyer Brothers Commission Company.....	206 39
Brown, Gilbreth Company, Incorporated.....	37 31
Bonnet Point Land Company.....	25 21
Canadian & Southern Lumber Company.....	36 00
Cranston Bottling Company.....	21 04
Crown Confection Shop.....	21 98
Crown Realty Company.....	12 50
Dimond Company.....	585 50
Domestic Sewing Machine Company, Incorporated.....	7 07
Dyer Credit Company.....	28 00
Feeley, W. J. Company.....	858 43
Flint Farms, Incorporated.....	82 66

Gallasi, T. V. Company.....	\$89 88
General Plastering Company.....	51 17
German Sausage Company.....	33 05
Gertsacov, Max Company.....	14 48
Globe Optical Company.....	22 14
Hand Brewing Company.....	942 31
Hasselbaum Company	27 86
Hennessey Laundry Company.....	190 96
Interstate Ice Company.....	20 80
Invincible Tire Company.....	7 08
La Lo Chemical Company.....	175 56
Learned, C. J. Company.....	2 59
May's, Incorporated	28 62
Merchant Tailors' Trimming House, Incorporated.	56 77
Merrill, S. K. Company.....	289 98
Narragansett Bay Realty Company.....	184 78
New England Amusement Co.	120 00
New England Land Company.....	15 90
Oakland Cemetery Company	3 74
Olneyville Provision Company.....	25 12
Openshaw, James Company.....	70 00
Paige Motor Company of Rhode Island.....	139 53
Providence Novelty Company.....	32 00
Providence Printing Company.....	73 20
Rex Mfg. Company.....	245 41
R. I. Electric Equipment Company.....	85 81
Rhode Island Security Company.....	88 22
Riter-Conley Company	126 00
Rocheford Harness Company.....	12 95
Raphael-Gouse Textile & Supply Company.....	13 28
Saywell-Lundgren Company	7 50
Safety Locker Company	88 00
Silverworkers Mutual Loan Company.....	173 47
Smith, Benjamin F. Company.....	474 21

REPORT OF GENERAL TREASURER.

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Sweeney Brothers Company	\$21 60
Unique Findings & Supply Company.....	16 40
Vito, A. Construction Company.....	35 91
Walnut Hill Cemetery Company.....	7 88
Western Mercantile Corporation.....	8 11
Wilkinson, James Company.....	8 14
Williams, Charles H. Company.....	30 80
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	\$8,999 63

CORPORATE EXCESS TAX, 1918.

MANUFACTURING, MERCANTILE AND MISCELLANEOUS CORPORATIONS.

A. A. A. Spooling & Winding Company.....	\$58 47
A. L. N. S. Company.....	30 80
Abda Amusement Company.....	240 00
Alberthaw Construction Company.....	60 84
Abrasive Machine Tool Company.....	8 80
Acker, Merrill & Condit Company.....	70 01
Adams, C. F. Company.....	259 24
Adams Brothers Company.....	34 65
Acme Finishing Company.....	1,868 01
Adder Machine Company.....	71 72
Adie-Brown Land Company.....	61 67
Adjustment Bureau of the Providence Association of Creditmen	1 72
Adrian, William F. Company.....	58 71
Aetna Bottle & Stopper Company.....	420 10
Agawam Chemical Works	117 31
Akerman Company	70 32
Aldrich-Eldredge Company	560 94
Allen Feature Film Corporation.....	72 10
Allen Fire Department Supply Company.....	173 35
Allen Hippodrome Corporation	224 28

Allen Opera House Company	\$58 54
Allen Wrench & Tool Company.....	27 14
Allen & Reed, Incorporated.....	1,341 08
Alling, W. S. Rubber Company.....	105 58
Almy, Arthur C. Company	44 52
Almy Water-Tube Boiler Company.....	306 31
Amber Star Films Corporation.....	100 20
Alsace Worsted Company.....	5,138 86
America Land Company	157 27
American Ball Company	69 88
American Brass Company	517 19
American Bridge Company	508 10
American Bottling Corporation	209 78
American Coated Paper Company.....	142 54
American Coin Lock Company.....	118 60
American Cotton Oil Company.....	3,784 19
American Electrical Works	10,699 23
American Emery Wheel Works.....	1,279 65
American Enamel Company	522 39
American File Renewing Company.....	26 09
American Fish Culture Company.....	165 00
American Flyer Company	240 00
American Hair Cloth Company.....	700 00
American Loan Company, Incorporated.....	139 65
American Locomotive Company	479 26
American Multiple Fabric Company.....	557 57
American News Company	224 31
American Oil Company	184 17
American Oyster Company	92 72
American Paper Tube Company.....	699 54
American Plumbing Company	34 11
American Radiator Company	530 84
American Roll Gold Leaf Company.....	373 64
American Screw Company	5,145 85

American Ship Windlass Company	\$73 36
American Silk Spinning Company.....	4,757 18
American Sugar Refining Company.....	51 19
American Supply Company	718 83
American Textile Company	305 60
American Vending Machine Company.....	10 92
American Woolen Company	2,209 44
American Wringer Company	4,321 31
American & British Mfg. Company.....	1,920 20
Anchor Webbing Company.....	498 13
Anderson Candy Company.....	170 68
Andrews Express & Storage Warehouse, Inc.....	59 85
Andrews Land Company.....	22 28
Andrews & Spelman Company.....	300 73
Anshen, L. J. Company.....	339 09
Anthony, J. L. & Company.....	85 49
Anthony, Alfred Estate Company.....	86 33
Anthony-Cascambas-Gandy, Incorporated.....	60 91
Anthony Coal & Cement Company.....	107 47
Anthony Furniture Company.....	443 29
Apartment House Corporation.....	53 13
Apco Mfg. Company	141 50
Apponaug Company	2,259 95
Aquidneck Realty Company	41 09
Arcadia Amusement Company	95 00
Arcadia Print Works	304 68
Armour Fertilizer Works.....	101 20
Armour & Company.....	3 091 73
Arnold Company	5 00
Arnold, Hoffman & Company, Incorporated.....	1,107 92
Arnold Realty Company	15 52
Ashaway Line & Twine Mfg. Company.....	166 33
Artesian Well & Supply Company.....	333 14
Ashaway Woolen Company.....	376 90

Associated Merchants Stamp Company	\$4 00
Astor Lunch Company	101 29
Atlantic Coast Fisheries Company.....	1,957 67
Atlantic Mills of Rhode Island.....	5,016 56
Atlantic Refining Company	21 37
Atlantic Tubing Company	972 54
Atlas Machine Company.....	116 80
Atlas Sheet Metal Works.....	22 84
Atwood, Crawford Company.....	186 12
Austin Company	110 07
Autocar Sales & Service Company.....	134 27
Autosales Corporation	71 00
Bachrach, Louis Fabian, Incorporated.....	18 91
Baird-North Company	1,433 17
Baker, Richard J. Company.....	104 93
Balch, Joseph Realty Company.....	12 56
Ball Realty Company	25 16
Ballou, B. A. & Company, Incorporated.....	481 15
Ballou, F. E. Company	237 97
Ballou, F. M. Company	24 40
Ballou, Johnson & Nichols Company.....	355 52
Bamford & Smith Corporation.....	26 75
Bank Building Company	15 86
Barker Artesian Well Company	43 20
Barker Building & Realty Company	17 58
Barker, Ralph R. Incorporated	64 91
Barker & Company, Incorporated	20 37
Barnai Worsted Company	781 23
Barrett Company	46 02
Barrett, W. E. Company	362 50
Barrington Steam Brick Company	125 17
Barstow Realty Company	9 11
Barstow Stove Company	253 11
Bartelt-Comstock Company	38 00

Bartlett, Milot Company	\$21 00
Bassett Jewelry Company	669 74
Bates, Dr. Sanatorium Company	24 76
Bayer Company, Incorporated	1,638 95
Beach & Sweet, Incorporated	214 54
Beacon Oyster Company	61 20
Beaman & Smith Company	496 55
Beard, J. J. Furniture Company	209 89
Beattie, Roy H. Incorporated	137 78
Beckwith Land Company	14 46
Bedell, Incorporated	219 88
Begin Bros. Incorporated	37 39
Belcher & Loomis Hardware Company	2,277 22
Belmont Lunch Company	169 01
Belmont Realty Company	42 59
Benn, Joseph & Sons, Incorporated	7,600 18
Bennett, T. E. Company	69 60
Bentlee Mfg. Company, Incorporated	5 38
Bentley, Clarke Auto Company	13 20
Berard & Proulx Company, Incorporated	21 70
Berkeley Company	5,162 39
Besse-Boeker Company	161 02
Beverly Land Company	126 42
Bigelow Land Company	5 97
Bigney, C. I. Construction Company	106 00
Birchall Mfg. Company	76
Bishop Bros. & Baker Company	27 45
Bishop, J. W. Company	630 59
Blackstone Glazed Paper Company	337 34
Blackstone Hall Company	32 70
Blackstone Machine Company	32 03
Blackstone Mfg. Company	1,646 24
Blackstone Specialty Company	11 25
Blackstone Stocking Company	58 00

Blackstone Tire & Rubber Company.....	\$129 97
Blake, F. N. Company	65 96
Blanding & Blanding, Incorporated	371 16
Bliss & Company	237 04
Bliven Opera House Company	20 57
Block Island, Newport & Providence Transporta- tion Company	175 40
Blodgett & Orswell Company	1,617 64
Bloom, S. Company, Incorporated	42 00
Bodwell Land Company	130 70
Bonner & Barnewall, Incorporated	144 31
Borden's Premium Company, Incorporated	1 35
Border City Garnetting Company	34 40
Boss & Seiffert Company.....	48 76
Boston, Providence & Fall River Express Company	10 60
Boston Store Land Company	19 28
Boston Wire Stitcher Company	686 40
Boucher-Tetu Company	57 88
Bourne Mills	357 37
Bourn Rubber Company	673 23
Bowen, C. W. & R. M. Company	41
Bowen, Philip J. Hardware Company	55 14
Bower Piano Company	30 00
Bowery Street Land Company	119 82
Bradburn Motors Company	117 48
Bradstreet Company	27 64
Branaghan Bottling Company	86 85
Bradford Dyeing Association (U. S. A.).....	583 03
Branaghan, J. H. Company	76 91
Brayton, D. W. Company	22 43
Brayton, L. Foundry Company	106 98
Breidenbach, R. A. Incorporated.....	334 70
Bridge Company	50 76
Bridge Mill Power Company.....	462 16

Bridge's Amos D. Sons, Incorporated.....	\$95 27
Brier Mfg. Company	190 66
Briggs, J. & Sons Company.....	230 16
Briggs, S. J. Company, Incorporated.....	54 16
Briggs & Company, Incorporated.....	32 88
Briggs & Nichols Barrel Company, Incorporated...	62 65
Brightridge Land Company	32 50
Bristol Ferry Company	49 83
Broad Street Power Company.....	73 60
Broadway Hardware Company	224 00
Broadway Storage Company.....	53 60
Broadway Tire Exchange Company, Incorporated..	111 24
Brooks, C. E. Company.....	60 86
Brown Bros. Company	112 67
Brown, Edward A. Company.....	125 73
Brown Howland Corporation	23 90
Brown Land Company	244 55
Brown, William R. Company.....	15 43
Brown & Dean Company	88 00
Brown & Mills	15 90
Brown & Sharpe Mfg. Company	41,814 86
Brownell Machinery Company	1,273 66
Brownell & Field Company.....	916 25
Brown, King & Company.....	592 95
Brunnckow, C. G. Company.....	158 76
Bryant & Stratton-Rhode Island Commercial School	102 07
Buckingham Company, Incorporated.....	29 77
Budlong Rose Company	295 44
Buell Realty Company	2 29
Builders Concrete Stone Company.....	75 88
Builders Iron Foundry	1,273 23
Builders & Merchants Exchange.....	34 20
Burdick Clarke Company	119 44
Burgess Mills	1,447 44

Burke Engineering Company	\$19 13
Burnham Store Company	153 03
Burns, John Granite Company	28 33
Burns International Detective Agency, Incorporated	10 93
Burroughs Adding Machine Company	340 00
Burrows & Kenyon, Incorporated	867 96
Bush, Charles S. Company	644 41
Business Statistics, Incorporated	5 50
Butman & Tucker Company	115 50
Butterick Stores Company	3 60
Buttonwood Beach Association	21 36
Cadillac Auto Company of Rhode Island	769 60
Cady Moving & Storage Company	24 85
Cadoza Sales Company	286 26
Cahoone, George H. Company	557 19
Calder Dentine Company	6 40
Callender, McAuslan & Troup Company	1,174 40
Cannon & Brown, Incorporated	12 00
Cape Ann Fish Company	20 00
Capitol Real Estate Company	15 67
Capron Company	170 41
Caproni Brothers Company	287 91
Capwell, Searles Lumber Company	42 91
Carlton Hotel Company	8 00
Carolina Company	385 63
Carpenter, Frank F. Lumber Company	214 45
Carpenter Furniture Company	46 89
Carpenter, J. M. Tap & Die Company	1,322 27
Carpenter & Wood Company, Incorporated	22 30
Carr, L. M. Company	84 32
Carrique Land Company	19 95
Carroll Realty Company	16 24
Carter Realty Company	61 80
Cartier, M. N. & Sons Co., Incorporated	300 24

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Cartier, M. N. & Sons Realty Company.....	\$17 20
Casino Amusement Company	9 12
Cassella Color Company	32 69
Castner, Curran & Bullitt, Incorporated.....	919 66
Castritius, A. L. Company.....	26 96
Cataract Tire & Garage Company.....	43 36
Cellini Company	80 00
Centreville Mills	62 00
Central Automobile Tire Company.....	132 22
Central Coal Company, Incorporated.....	65 05
Central Falls Furniture Company.....	93 32
Central Falls Stone Company.....	54 35
Central Real Estate Company.....	51 56
Central Realty Company	7 38
Central Tool Company	148 41
Central Warp Company, Incorporated.....	100 55
Centerdale Worsted Mills	7,647 33
Century Colors Corporation	158 91
Chaffee, Thomas K. Company, Incorporated.....	154 29
Champion Horse Shoe Company.....	364 27
Champlin, Arthur D. Company.....	50 33
Champlin Lumber Company	181 41
Champlin, S. B. Company	276 94
Chandler Motors of R. I., Incorporated.....	104 80
Chapin-Northup Company	20 48
Chapin & Hollister Company.....	99 15
Cheapside Land Company	20 12
Cherry Neck Realty Company.....	112 18
Chester, F. E. Mfg. Company.....	492 87
Chevrolet Motor Company of New York, Incorporated	277 37
Child & Miller Company	10 12
Childs Company of Providence.....	270 41
Church, E. C. Company.....	249 46

Churchill House Corporation	\$7 68
City Bellevue Laundry Company.....	70 51
City Fuel & Feed Company.....	67 43
Clafin, George L. Company.....	378 35
Clapp, B. P. Ammonia Company.....	810 31
Clapp, Otis & Son, Incorporated.....	46 40
Clark Mfg. Company	268 23
Clark & Coombs Company	543 26
Clason Architectural Metal Works Company.....	171 19
Cleveland Vapor Light Company.....	96 99
Cleveland Worsted Mills Company.....	246 02
Clinton Mfg. Company	930 04
Clinton Realty Company	18 80
Coates, Hurdis Company	30 34
Coats Co-Operative Association.....	1 76
Coats, J. P. Incorporated (R. I.).....	12,206 35
Coe, W. H. Mfg. Company.....	179 91
Cohn & Rosenberger, Incorporated of R. I.....	138 65
Cole Teaming Company	52 23
Collins Brothers Machine Company.....	149 20
Collyer Insulated Wire Company.....	826 42
Collyer Machine Company	12 00
Colored Worsted Mill	2,925 90
Colquhoun, D. & Son, Incorporated.....	106 27
Columbia Graphophone Company.....	12 89
Columbus Club Building Association.....	8 45
Colvin Foundry Company	434 40
Colwell Worsted Mills	760 26
Commercial Camera Company	768 96
Commercial Corporation	5 60
Common Sense Gum Company.....	959 54
Compartment Garage Company.....	2 72
Comstock, J. F. & Sons Company.....	200 80
Comstock Land Company	200 98

Comstock, R. W. Land Company.....	\$1,713 75
Conant, H. Real Estate Company.....	87 64
Conaty, Bernard Company, Incorporated.....	33 40
Conductors & Engineers International Investment Company.....	66 52
Congdon & Carpenter Company.....	2,214 24
Consolidated Car Fender Company.....	188 93
Consolidated Land Company.....	247 80
Consolidated Rendering Company.....	942 35
Consumers Brewing Company.....	238 70
Continental Finishing Company.....	375 66
Continental Metals Company.....	64 76
Contrexeville Mfg. Company.....	468 81
Cook, A. S. Company.....	180 18
Cook, Dunbar, Smith Company.....	740 57
Cook, Edward N. Plate Company.....	319 39
Cooke, Byron S. Company.....	133 83
Cooke, C. H. Company.....	80 26
Cooke, Henry W. Company.....	26 58
Co-operative Loan, Mortgage & Real Estate Com- pany.....	119 16
Copeland Mill Supply Company.....	14 21
Cory & Reynolds Company.....	24 40
Cottrell, John T. Company.....	892 41
Coupe, Murphy Company.....	18 00
Coventry Company.....	2,057 43
Cowen Braid Mfg. Company.....	270 12
Coy, Frank W. Real Estate Company.....	45 00
Craft & Newton, Incorporated.....	67 04
Cranston Worsted Mills.....	2,621 56
Credit Foncier Canadien.....	73 15
Creditors National Clearing House.....	6 34
Crefeld Waste & Batting Company.....	1,740 10
Crescent Braid Company, Incorporated.....	128 21

Crimmings, J. J. Company.....	\$64 77
Crocker-Johnson Company, Incorporated.....	19 20
Crompton Company	1,106 36
Crompton & Knowles Loom Works.....	3,044 27
Crooker Company	174 05
Crosby, J. D. Company	650 88
Cross, A. T. Pencil Company.....	47 47
Crown Food Products Corporation.....	24 16
Crown Garage Company	46 62
Crown Worsted Mills, Incorporated.....	622 26
Crucible Steel Company of America.....	660 25
Cruise & Smiley Construction Company, Incorporated	199 00
Crumb Quarry Company	241 20
Cudahy Packing Company	383 01
Cuddy-Gardner Company	115 43
Cumberland Land Company	208 05
Cumberland Worsted Mills	395 09
Curran & Burton, Incorporated.....	1,542 18
Cushing Realty Company	18 72
Cutter & Wood Supply Company.....	208 42
D. W. F. Engineering Company	57 56
D. & N. Mfg. Company, Incorporated.....	40 46
D. & W. Fuse Company	1,812 55
Daggett & Miller Company, Incorporated.....	163 53
Darling, C. H. Company	55 62
Darling, C. P. Company	336 12
Darling, George E. Company.....	110 89
Darling-Slade Construction Company.....	420 31
Darlington Textile Company	105 94
Darrow-Mann Company	24 40
Dart, E. M. Mfg. Company.....	594 34
Davol Rubber Company	1,122 60
Dean, John M. Company.....	566 78

Dean Realty Company	\$14 38
Decker, F. A. Company.....	27 46
DeLuxe Silk Hosiery Company.....	727 44
Delany, Lyons Company	258 00
Del Rossi, G. D. Company.....	69 31
Dempsey Bleachery & Dye Works.....	117 35
DeNevers Bros. Furniture Company.....	97 46
Dennis Real Estate Company.....	1 05
Desurmont, Jules Worsted Company.....	4,182 90
Devereux, O. C. Company.....	40 87
Dexter, Edgar M. & Company, Incorporated.....	82 14
Dexter Land Company	14 56
Dexter Realty Company	8 00
Dexter Yarn Company	3,622 40
Diebold Safe & Lock Company.....	10 69
Dillman Bakery, Incorporated	186 69
Dillon & Douglass, Incorporated	194 37
Direct Importing Company	116 84
Direct Rubber Company	140 80
Dodge Sales & Engineering Company.....	77 14
Dodge & Camfield Company.....	357 01
Doe & Company, Incorporated	61 04
Doe & Little Coal Company	94 76
Dolbey Ice Cream Company.....	122 27
Domestic Sewing Machine Company, Incorporated.	28 27
Donle, Charles B. & Sons.....	53 32
Doran, James C. & Sons.....	60 66
Doran, M. J. Company.....	122 12
Douglas, W. L. Shoe Company.....	188 55
Douglas, William Company.....	28 27
Dover, George W. Incorporated.....	158 76
Doyle, L. T. Company, Incorporated.....	11 12
Draper, J. O. Company.....	1,376 52
Dudley Hardware Company	106 54

Duffy Hardware Company	\$40 42
Dunford Mfg. Company	8 00
Dunn Worsted Mills	3,407 45
Dupuis, Frank Company	266 14
Dyer Real Estate Company.....	6 54
Dyerville Mfg. Company	9 48
Eagle Brewing Company	914 43
Eagle Dye Works	340 20
Eagle Land Company	10 20
Eagle Mills	308 47
Eagle Realty Company	8 54
Eagleville Company	90 50
East Greenwich Farmers Corporation.....	64
Early, Thomas H. Company.....	36 90
Eastern Advertising Company	49 63
Eastern Advertising Company (R. I.).....	122 86
Eastern Bolt & Nut Company.....	767 17
Eastern Coal Company	1,412 29
Eastern Construction Company	91 27
Eastern Finishing Works	508 05
Eastern Home Building Association.....	3 36
Eastern Nail Company, Incorporated.....	318 57
Eastern Sanitary Towel Company.....	25 72
Eastern Waist Company	41 89
Eastern Wreath Mfg. Company.....	2 85
Easton & Burnham Machine Company.....	329 44
Eddy Realty Company	167 19
Eddy & Fisher Company.....	627 48
Edson, N. H. Company.....	45 56
Elaborated Ready Roofing Company.....	31 22
Elizabeth Mill	4,022 36
Elliott-Fisher Company	19 20
Elm Cottage	60 00
Elmgrove Farm	7 05

Elmwood Realty Company of Providence.....	\$44 00
Elsbree-Valleau Company	118 73
Emery Theatre	200 40
Empire Bottling Company	49 28
Enterprise Real Estate Company	32 00
Enterprise Realty Company	21 16
Equitable Realty Corporation	55 08
Era Narrow Fabric Company.....	36 78
Esmond Mills	3,673 25
Ettlinger Mfg. Company	3 32
Eureka Dyeing & Bleaching Company.....	145 59
Eureka Land Company	39 12
Evans, Henry R. & Son Company.....	19 18
Evans Roller Company	57 34
Evening Call Publishing Company.....	213 40
Everett & Barron Company.....	90 72
Everlastik, Incorporated	1,551 54
Excelsior Carpet Cleaners, Incorporated.....	23
Excelsior Loom Reed Works.....	21 47
Exchange Real Estate Company.....	481 45
Faerber, Peter & Sons Company.....	63 20
Fairbanks Company	262 74
Fairbanks, Morse & Company.....	18 95
Fairhaven, Incorporated	1 93
Fairmount Foundry & Engineering Works.....	156 67
Fairmount Land Company	4 74
Fales Textile Company	10 42
Fales & Jenks Machine Company.....	2,463 69
Fall River Ice Company.....	12 92
Falls Yarn Mills	919 84
Famiglietti Brothers Company	298 70
Farber Cornice Works	10 55
Farbwerke-Hoechst Company	24 72
Farnum, J. B. Company	429 17

Fay, C. E. Company	\$33 19
Federal Screw Corporation	58 59
Feeley, W. J. Company.....	547 85
Ferrier Land Company	20 78
Ferry Hill Improvement Company.....	8 00
Fess Rotary Oil Burner, Incorporated.....	690 40
Fidelity Mercantile Agency	15 55
Files Engineering Company	279 01
Financial Service Company	25 92
Fisk Drug Company	143 00
Fisk Rubber Company of New York.....	150 40
Fitzgerald & Company, Incorporated.....	4 60
Fleischmann Company of Massachusetts.....	144 73
Fletcher-Burrows Company	68 99
Fletcher Land Company	17. 68
Flint, Blood & Company, Incorporated.....	76 91
Flint, Dutee W. Gasolene Company.....	663 08
Flint Farms, Incorporated	57 89
Flint Motor Car Company.....	10 00
Flint & Company, Incorporated.....	141 35
Florence Dye Works	126 53
Foley, E. W. Contracting Corporation.....	18 90
Ford, Perry Company	184 60
Forestdale Mfg. Company	1,294 52
Foss-Hughes Company	281 76
Foster, J. A. Company.....	931 87
Foster-Smith Company	309 31
Foster, Theodore W. & Brother Company.....	344 66
Fourem Company, Incorporated.....	2 00
Fox, C. J. Company.....	247 49
Foxon Company, Incorporated	23 15
Franco American Realty Company.....	18 54
Francis Chemical Company	1 62
Franklin Auto Supply Company	40 10

Franklin Machine Company	\$642 02
Franklin Process Company	961 60
Franklin Real Estate Company	2 44
Franklin Specialty Mfg. Company.....	72 66
Franklin Street Garage Company	10 00
Freeman, E. L. Company	354 86
Freeman, James F. Company	14 90
Freemasons' Building Asso. of East Greenwich....	3 00
Freemasons' Hall Company	3 92
French Mfg. Company	429 55
French, O. P. & Sons Company.....	53 58
French Worsted Company	6,752 30
Fulford Mfg. Company	137 30
Fuller, George A. Company	303 75
Fuller, George H. & Sons Company.....	1,342 34
Fuller Iron Works	293 31
Fuller Winfield Company	11 03
Gage, L. H. Lumber Company.....	838 40
Gallaudet Aircraft Corporation	992 53
Gammino, M. A. Construction Company, Inc.....	19 67
Gardiner, Charles C. Lumber Company.....	309 60
Gas Consumers Association of the United States....	139 94
Gately, E. & Company	33 72
General Baking Company	183 10
General Chemical Company	824 43
General Electric Company	2,382 87
General Fire Extinguisher Company.....	5,037 70
General Mfg. & Exporting Company.....	31 77
General Machinery Company	14 47
General Motorcycle Sales Company	14 28
Gertsacov, Max Company	19 00
Gibson, J. Fred Company	400 18
Gilbane Building Company	165 10
Gilbreth, Frank B. Incorporated.....	1 37

Giusti Brothers Company	\$101 39
Gladding Dry Goods Company	1,311 94
Gladstone Springs Water Company.....	17 60
Glencairn Mfg. Company	304 68
Glendale Elastic Fabrics Company.....	998 20
Glengarry Mills, Incorporated	465 65
Globe Automatic Sprinkler Company.....	1 10
Globe Braiding Company	62 66
Globe Optical Company	22 14
Goff, D. & Sons	6,295 63
Goff, William D. Company	100 00
Goff, James C. Company	207 39
Gold Mark Knitting Company (Mass.).....	540 07
Goldstein, Jules P. Company.....	46 00
Good-Will Soap Premium Store.....	1 76
Goodby-Rankin Company	332 28
Goodrich, B. F. Rubber Company.....	604 64
Goodyear Tire & Rubber Company of Mass.....	334 50
Gorham Mfg. Company	11,658 62
Gorman Company, Incorporated	114 32
Gove Lumber Company	9 40
Gowdey, J. A. Reed & Harness Mfg. Company....	23 09
Graham Mfg. Company	75 05
Graham, W. H. Corporation.....	212 93
Grand Union Tea Company.....	70 34
Granite Building Corporation	6 64
Grant, Alexander & Company, Incorporated.....	42 48
Grant Brothers, Incorporated	48 14
Grant, Daniel & Son Company.....	32 50
Grant Vacuum Cleaning & Sales Agency.....	23 57
Graphite Mines Corporation	67 43
Great Atlantic & Pacific Tea Company.....	1,024 52
Greene, R. L. Paper Company.....	941 55
Greene, S. H. & Sons Corporation.....	2,182 65

Greene, William C. Company.....	\$268 25
Greene & Daniels Company, Incorporated.....	4,797 33
Greenville Finishing Company, Incorporated.....	402 06
Greenwich Bleachery	990 00
Greenwood Investment Company	20 80
Gregory's Bookstore, Incorporated	32 40
Grey Rock Glove Company	22 00
Greystone & District Co-operative Association.....	22 70
Griess Fur Company, Incorporated	4 80
Griffin & Browning Ice Company.....	60 00
Griffith, R. L. & Son Company	393 94
Grimes, Thomas & Brother, Incorporated.....	456 57
Grimes, W. H. Company	131 63
Grimwood, H. A. Company	87 82
Grocers Baking Company	333 92
Guarantee Clothing Company	34 19
Guerin Spinning Company	1,479 75
Gulf Refining Company	978 94
H. M. H. Company	227 56
Hall, F. A. Company, Incorporated	66 98
Hall, Fred E., Incorporated	53 22
Hall, J. C. Company	174 16
Halliwell Company	141 05
Hambly, J. H. Company	26 78
Hamilton, George Company	28 80
Hamilton Web Company	384 93
Hamlet Textile Company	5,286 75
Hamlyn, William H. & Son	200 00
Hammel Oil Burning Equipment Company, Inc....	143 71
Hammett, A. & H. G. Company	365 68
Hammett, Clarence A. Company	18 00
Hancock, Charles E. Company	334 92
Hand Brewing Company	784 80
Hanley-Hoye Company	453 14

Hanley, James Brewing Company	\$4,082 89
Hanashoe Mfg. Company	1,090 05
Harley, David Company	709 29
Harmon, William E. & Company, Incorporated...	109 09
Harris, A. W. Oil Company	484 23
Harris-Corliss Engine & Machine Company.....	333 37
Harris Farm & Mine Company	78 17
Harris & Mowry Company	546 52
Harrison, A. & Company, Incorporated.....	84 00
Harrison Brothers Company	117 73
Harrisville Co-operative Store, Incorporated.....	28 55
Haskell, William H. Mfg. Company	2,006 52
Hathaway, O. H. Company, Incorporated.....	14 49
Hawkins Lumber Company	105 39
Hawkins & Withington, Incorporated	375 00
Hayward Rubber Company, Incorporated	57 15
Hazard Cotton Company	474 00
Hazard-Peckham Certified Milk Company.....	35 63
Hazard, R. Estate, Incorporated	258 02
Heaton Mfg. Company	6 80
Hebron Mfg. Company	1,756 62
Heller, L. & Son, Incorporated	17 54
Hemenway, H. L. Company	33 00
Hemphill Mfg. Company	5,646 70
Henderson, F. C. Company	77 12
Henius & Company	413 81
Hennessey Laundry Company	220 03
Herald Publishing Company	97 76
Herb-O-Phosa Company	54 87
Herreshoff Mfg. Company, Incorporated.....	1,416 32
Herrick, William H. Company	10 78
Hesse Mfg. Company	222 10
Higgins, J. H. Company	145 78
Higgins, R. R. Company (R. I.).....	16 18

Hill, James Mfg. Company	\$135 43
Hill Top Company	307 03
Hill & LaCross Company	684 86
Hillside Hotel Company	3 37
Hodges Building & Land Company	20 88
Hoefler-Fisher Company	75 29
Hoey Mfg. Company	14 72
Holbrook Raw Hide Company	288 32
Holmes, George H. Company	59 03
Holmes, H. H. Company	12 16
Holt, A. & Company	103 53
Home Bleach & Dye Works	80 00
Home Builders Company	14 00
Homestead Realty Corporation	1 20
Hope Building Company	29 42
Hope Company	3,427 31
Hope Drug Company	96 16
Hope Foundry Company, Incorporated	106 11
Hope, John & Sons Engraving & Mfg. Company...	84 56
Hope Land Company	71 67
Hope Mill Supply Company	152 23
Hope Paper Company	95 18
Hope Private Hospital	10 00
Hope Rubber Company	141 89
Hope Webbing Company (Mass.)	5,537 91
Horsemen of Rhode Island	12 80
Horton, H. F. & Sons Company	84 54
Horton, H. R. Company	44 52
Hough Realty Company	1 72
Hough, W. S. Jr. Company	704 37
Household Furniture Company	896 06
Howard Braiding Company	397 91
Howard's Motor Livery, Incorporated	22 00
Hoxsie Nurseries, Incorporated	40 16

Hughes, William Company	\$313 14
Humes Construction Company	43 10
Huntoon & Gorham Company	144 77
Hutchison & Huestis, Incorporated	304 76
Huyler's	19 81
Ideal Co-operative Association	18 47
Ideal Ventilator Company	45 21
Imperial Printing & Finishing Company	504 51
Imperial Theatre Company	96 60
Importers Branch, Limited	52 21
Improved Seamless Wire Company	617 20
Improved Tenement Corporation	8 21
Independent Real Estate Association of R. I.	33 80
Indiana Motor Sales Company	16 02
Industrial Land Company	77 60
Industrial Real Estate & Investment Company....	26 00
Ingersoll, J. H. & Company, Incorporated.....	74 61
Inlaid Company	318 65
Interlaken Mills	3,550 61
International Braid Company	3,980 10
International Moistening Company	1 20
Interstate Construction Company	46 80
Interstate Ice Company	21 80
Inter-State Realty Corporation	2 87
Irons & Russell Company	623 31
J. & H. Electric Company	178 56
Jackson Realty Company	18 33
Jackson, Samuel Company	86 75
Jacob Brothers Company	123 78
Jacoby, Julius J., Incorporated.....	29 70
Jager, Charles J. Company	174 08
James & Holstrom	42 98
Jenckes Knitting Machine Company	251 60
Jenckes Spinning Company	18,171 53

Jencks Paper Box Company	\$409 22
Jenks, H. F. Company	63 45
Jennings & Company, Incorporated	33 56
Jewel Tea Company, Incorporated	43 71
Jewelers Supply Company	124 34
Jewell Export Filter Company	25 88
John the Shoeman, Incorporated	212 66
Johnson, O. R. Company	45 22
Johnson, Oliver & Company, Incorporated.....	114 06
Johnston, John F. Company	30 06
Jones, Edward S. Sons Company	67 29
Jones Lunch Company	114 69
Joslin-Lena Company	50 19
Joslin Mfg. Company	4,585 49
Joyce Brothers & Company	263 49
K. Mfg. Company, Incorporated	11 28
K. & W. Amusement Company	4 00
Kalkman Pharmacy, Incorporated	87 90
Kalle Color & Chemical Company, Incorporated...	254 53
Kapland Remnant Company	12 59
Kaps & Reinacher Company	34 70
Kazanjian Company	2 83
Keach Land Company	14 22
Keach & Brown Mfg. Company	246 05
Kearns & Rocheleau Company	73 87
Keasbey & Mattison Company	59 65
Keljikian Company, Incorporated	21 77
Kendall Mfg. Company	683 79
Kennedy's of Providence	359 08
Kenneth Ridge Company	3 84
Kent Mfg. Company	1,105 83
Kenworthy Company	44 13
Kenyon, James S. Realty Corporation	44 16
Kenyon, John J. Mfg. Company	315 83

Kern Music Company	\$23 21
Kile & Morgan Company	474 17
Kimball, Richard D. Company	1 12
Kimball & Colwell Company	572 29
King, McLeod Company	555 58
Kinney Company	281 35
Klipstein, A. & Company	80 23
Knight & Knight, Incorporated	6 00
Knowles' Horace B. Sons, Incorporated	107 75
Korper & Company, Incorporated	34 60
Kresge, S. S. Company	746 17
Kuttroff, Pickhardt & Company, Incorporated.....	408 35
La Tribune Publishing Company	61 34
Ladew, Edward R. Company, Incorporated.....	37 87
Lafayette Worsted Company	11,185 74
Lane, Frank T. Company	172 28
Langelier Mfg. Company	638 44
Lawton Spinning Company	5,603 30
Leach, M. J. & Sons Corporation	38 80
Leader Weaving Company	594 64
Leand Realty Company	32 00
Lebanon Mill Company	2,587 43
Lederer, Henry & Brother, Incorporated.....	118 79
Lederer Realty Corporation	227 78
Lederer, S. & B. Company	296 42
Leeder & Bernkopf Company	192 56
Leonard-Rooke Company	34 96
Lescault Realty Company	175 93
Leslie-Judge Company	27 21
Leu-Payne Company	9 60
Lewandos French Dyeing & Cleansing Company...	34 24
Lewis & Paige, Incorporated	4 17
Leys, William Dry Goods Company	196 11
Liberty Stores Company, Incorporated	103 10

Library Bureau	\$4 63
Liggett, Louis K. Company	2,594 91
Lincoln Machine Company	151 08
Lind-Sampson Needle Company	41 25
Lind, T. W. Company	242 39
Linton, P. & A. Company	140 48
Lippitt Woolen Company	1,349 20
Littlefield Mfg. Company	48 00
Livermore & Knight Company	371 13
Livingston Worsted Company	3,026 10
Logee, E. L. Company	33 24
Longley Motor Sales Company	67 20
Lonsdale Bakery Company	365 67
Lonsdale Company	18,799 97
Loose Leaf Mfg. Company	19 62
Loose-Wiles Biscuit Company	867 86
Lorimer, L. B. Company	44 88
Lorraine Mfg. Company	23,491 85
Lorsch, Albert & Company, Incorporated.....	138 80
Loutitt Home Hand Laundry Company.....	166 56
Low, Taussig & Karpeles Company	812 03
Low, William H. Estate Company	125 48
Lowe, Edwin & Company, Incorporated	68 00
Lowland Worsted Company	336 12
Lumb Knitting Company	1,200 57
Lupton's, David Sons Company	61 07
Lymansville Company	4,698 72
Lynch, James E. Company	14 77
Lynd & Murphy Company	190 28
Lyons Mfg. Company	527 52
M. & T. Button Company	91 81
Mackenzie, Walton Company	47 56
Mackenzie & Winslow, Incorporated	232 54
MacMillan & Kennison, Incorporated	40 00

MacNeil Jewelry Company	\$28 08
MacWatty Belting Company	127 68
Maguire, Charles B. Company	642 50
Maguire, J. T. Company	70 64
Main Street Theatre Corporation	36 00
Maine Creamery Company	130 57
Manchester, A. C. Company	29 28
Manchester Silver Company	143 34
Manchester & Hudson Company	185 84
Manhasset Mfg. Company	2,110 80
Manufacturers' Building Company	57 90
Manufacturers Fuel Company of R. I.	35 71
Manufacturers Power Company	368 00
Manufacturers' Refining Company	154 97
Manville Company	7,846 72
Maplehurst Greenhouses, Incorporated	45 52
Marden & Kettlety Company	57 47
Marginal Dock Company, Incorporated.....	25 45
Mariani Company Branch, Incorporated	148 34
Marr, Daniel & Son Company	7 27
Marston Hotel Company	21 21
Martell, A. E. Company	26 49
Mason, John N. Real Estate Company.....	157 95
Mason Mfg. Company	485 04
Mason, Robert D. Company	479 67
Masonic Temple Company	115 80
Mauran, John T. Mfg. Company.....	521 09
Mayflower Stores	465 84
Maynard Land Company	199 46
McCabe, Bernard Carriage Company	27 00
McCabe, Edward J., Incorporated	3 04
McCarthy Dry Goods Company	418 93
McClintic Marshall Company	17 64
McKenzie-McKay Company	1,018 47

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McKinnon Construction Company	\$46 40
McLauthlin, George T. Company	1 39
McMahon, J. E. Company	28 70
McWilliams Mfg. Company	32 42
Mechanical Accountant Company	98 13
Mechanical Fabric Company	2,328 13
Meiklejohn Company	641 58
Mercantile Advance Company	45 60
Mercantile Trading Company	11 42
Merchants Cold Storage & Warehouse Company..	667 34
Mercury Publishing Company	13 20
Merrimac Land Company	9 92
Merrimac Realty Associates, Incorporated.....	22 47
Merrimac Rome Company	54 06
Merriman Solidified Oil Company	5 52
Metals Corporation	36 00
Metropolitan Furniture Company of Boston.....	41 46
Metz, H. A. & Company, Incorporated	5 94
Mexican Petroleum Corporation	7,807 12
Meyer, L. H. Company	58 15
Middlebrook Wool Combing Company	159 87
Midwood Land Company	55 92
Midwood's, H. Sons Company	507 97
Milano Silk Weaving Company, Incorporated.....	72 00
Miller Mfg. Company	187 40
Miller Rubber Company of N. Y.	7 44
Mills Tea & Butter Corporation	47 56
Milne Realty Company	26 30
Miner, D. W. Company	103 91
Misch, Caesar, Incorporated	1,244 20
Miskiania Camp	1 20
Mitchell Fertilizer Company	143 16
Model Dyeing & Printing Company	633 54
Modern Shoe Stores Corporation	355 58

Mohican Company	\$96 57
Mohr Realty Corporation	4 73
Monahan Vehicle Company	108 49
Monast Realty Company	149 91
Monette, J. B. Company, Incorporated	82 87
Montrose Worsted Company	1,771 48
Moore, George C. Company	807 52
Moore, J. W. Company	185 43
Morin, John B. Company, Incorporated.....	36 97
Morse-Brooks \$10 & \$15 Shops	118 84
Morse, Fred W. Company	157 38
Morse, R. F. Company	31 76
Mossberg Wrench Company	357 31
Motor Protection Company	3 30
Motor Sales & Service Corporation	32 40
Motorcycle Supply Company	41 60
Moulton & Son Company	24
Mount Hope Distilling Company	328 42
Mount Hope Farms	80 31
Mount Hope Spinning Company	999 57
Mourin, J. P. Company	44 00
Mowry, A. Company	214 40
Mumford's Restaurant, Incorporated	68 00
Mundell Realty Company	1 35
Musical Instrument Sales Company	96 85
Mutual Investment Association	19 81
Mutual Realty Company	88 96
Mystic Woolen Company	374 87
Namquit Worsted Company	1,818 83
Narotex Company	194 88
Narragansett Association	363 31
Narragansett Bay Oyster Company	264 51
Narragansett Belting Company	114 97
Narragansett Brewing Company	4,083 64

Narragansett Cotton Mills	\$3 72
Narragansett Dairy Company, Limited	41 01
Narragansett Equipment Company	26 05
Narragansett Finishing Company	783 32
Narragansett Fish Company	7 64
Narragansett Ice Mfg. Company	98 60
Narragansett Improvement Company	45 73
Narragansett Machine Company	2,069 85
Narragansett Milling Company	328 09
Narragansett Realty Company	57 52
Narragansett Rubber Company	485 10
Narragansett Supply Company	37 39
Nasonville Bottling Company	165 95
Nassau Mfg. Company	32 67
National Amusement Realty Company	8 00
National Aniline & Chemical Company	2,116 95
National Biscuit Company	1,662 26
National Cash Register Company	41 92
National Coated Paper Corporation	239 17
National Electric & Gas Heater Co. of America ..	21 20
National Funeral Association	2 00
National Furnace Lining Company	10 00
National Gas Furnace Company	12 40
National India Rubber Company	6,140 80
National Machinery Company	29 11
National Realty Company	217 82
National Ring Traveler Company	434 46
National Starch Company	73 02
National Tennis Racket Company	13 77
National Wholesale Grocery Company, Incorporated	548 29
National & Providence Worsted Mills	7,059 11
Nayatt Point Oyster Company	64
New Cliffs Hotel Company	68
New England Bakery	102 73

New England Butt Company	\$1,001 02
New England Consolidated Company	1 20
New England Dyeing & Finishing Company.....	104 79
New England Furniture Company	90
New England Granite Works	273 60
New England Hosiery Company	57 36
New England Land Company	15 90
New England Machine & Electric Company.....	249 86
New England Sales Company, Incorporated.....	11 95
New England Supply Company	189 67
New England Ventilating & Heating Company....	15 71
New England Window & House Cleaning Company	39 31
New Method Laundry	59 61
Newell Coal & Lumber Company	1,786 51
Newport Beach Association	360 56
Newport Casino	270 80
Newport City Laundry Company	36 48
Newport Coal Company	270 98
Newport Country Club	231 44
Newport Engineering Works	5 56
Newport Fisheries Ice & Cold Storage Company...	109 34
Newport Horse Show	60
Newport Ice Company	129 55
Newport Industrial Company	393 20
Newport One Price Clothing Company	138 26
Newport Paper & Grocery Company	554 89
Newport Realty Company	27 60
Newport Transfer Express Company	35 20
Nicholson File Company	17,409 92
Nicholson Thackray Company	411 00
Nichols Mfg. Company	154 74
Nickerson Art Metal Company	282 52
Nicol Building & Realty Company	22 63
Nitro-Tungsten Lamp Company	27 33

Nitrogen Corporation	\$17 55
Nitrogen Products Company	176 15
Nonnabo Chemical Company	459 97
Norcross Brothers Company	44 56
Norris Bedding Company	54 04
North Scituate Cotton Mills	1,260 00
Novelty Knitting Company	272 56
Nut Grove Butter Company	655 67
Nyanza Mills	2,484 23
O. K. Nut Lock Company	164 79
Oak Hill Land Company	143 64
Oakdale Mfg. Company	219 12
Oakland Cemetery Company	5 60
Oakland Worsted Company	1,815 83
O'Bannon Corporation	4,818 79
Ocean Products Company	12 40
Ochee Spring Water Company	38 33
Odd Fellows Building Association	3 89
Oden Brothers	47 15
Office Appliance Company	47 91
O'Gorman 25c Store Company	136 13
O'Leary, Arthur, Incorporated	6 40
Olney, Joseph & Son, Incorporated.....	117 16
Olney & Payne Brothers, Incorporated.....	739 74
O'Neill & Block, Incorporated	32 39
Opie, P, H. Company	321 38
Original Bradford Soap Works, Incorporated.....	130 56
Orrell Mfg. Company, Incorporated	40 00
Orrell Mills, Incorporated	1,212 62
Oscar's Clothes Shop, Incorporated	97 62
Ostby & Barton Company	3,537 74
Oswegatchie Textile Company	704 91
Otis Brothers Company	110 86
Otis Elevator Company	593 95

Oxford Land Company	\$151 76
Packard, J. S. Dredging Company	113 50
Packard Motor Car Company of Boston.....	1,755 69
Palmer Company	48 39
Paragon Worsted Company	1,712 91
Park Spring Dyeing & Bleaching Company.....	133 70
Parker Mills	414 61
Parker Realty & Mortgage Loan Comany.....	41 37
Parks Brothers & Rogers, Incorporated.....	1,205 60
Pascoag Realty Company	1,201 27
Pascoag United Co-operative Association	27 15
Paull-Oatman Company	10 38
Paull, Seth Company	322 98
Pawcatuck Woolen Mills	939 90
Pawtucket Amusement Company	60 92
Pawtucket Bijou Corporation	4 00
Pawtucket Corporation	4 00
Pawtucket Dyeing & Bleaching Company.....	1,162 16
Pawtucket Furniture Company	233 28
Pawtucket Gas Company of New Jersey.....	208 00
Pawtucket Glazed Paper Company	391 35
Pawtucket Hair Cloth Company	108 39
Pawtucket Hosiery Company	552 61
Pawtucket Ice Company	75 39
Pawtucket Mfg. Company	1,900 29
Pawtucket Mordant Company	13 02
Pawtucket Sash & Blind Company	363 45
Pawtucket Screw Company	81 48
Pawtucket Smelting & Refining Works.....	277 25
Pawtucket Spinning Ring Company	145 06
Pawtucket Valley Textile Company	256 71
Paxson, J. W. Company	82 43
Payne, George W. Company	152 30
Payton & Kelley Company	621 84

Peace Dale Mfg. Company	\$4,152 62
Pearce, F. T. Company	52 00
Pease, L. F. Company	76 16
Peck, Asa & Company, Incorporated	1,397 73
Peck, John W. & Sons Company	52 70
Peckham Brothers Company	86 00
Peckham Company	136 00
Peckham, L. W. Company	32 12
Peerless Box Company	24 16
Peerless Electric Company	84 16
Pennsylvania Petroleum Products Company.....	306 15
Peoples Loan Company	112 88
Pequot Shirt Company	401 32
Perforated Pad Company	125 86
Perkins Brothers Company	59 58
Perkins Land Company	557 52
Perry, Buxton, Doan Company	725 45
Perseverance Worsted Company	2,115 96
Peterson, George P. Company	12 79
Phenix Braid Mill	6 00
Phenix Lace Mills	471 84
Phillips Lead & Supply Company	603 93
Phillips Wire Company	9,329 12
Phinotas Chemical Company	7 72
Pierce, Roy W. Company	146 49
Pilgrim Novelty Company	48 04
Pillsbury Flour Mills Company	121 16
Pinckney Farm Land Company	12 32
Pinniger & Manchester Company	286 58
Pitman Land Company	4 67
Pitman, T. T. Corporation	342 19
Place, Oscar E. & Sons Company	643 61
Plainfield Realty Company	15 40
Plews, R. Mfg. Company	145 76

Pocasset Ice Company	\$40 07
Podrat-Freeman Company	7 90
Ponemah Mills	2,667 43
Post & Lester Company of R. I., Incorporated.....	288 88
Potter, D. N. Incorporated	16 86
Potter, E. A. Company	130 05
Potter & Buffington Company	364 93
Potter & Johnston Machine Company	17,301 53
Power Construction Company	39 63
Powers & Mayer Mfg. Corporation.....	116 00
Prata Undertaking Company	3 42
Premier Worsted Mills	730 31
Preston & Rounds Company	113 96
Priscilla Worsted Mills	1,063 50
Proffitt-Larchar Advertising Corporation	12 52
Profile Cotton Mills	119 51
Progressive Ring Company	55 40
Providence Aerie 99 F. O. E. Building Company..	136 69
Providence Amusement Company	356 00
Providence Art Metal Company	107 38
Providence Auto Equipment Company	235 55
Providence Banking Company	1,489 65
Providence Blank Book Company	48 00
Providence Blower Company	9 68
Providence Box & Lumber Company	99 03
Providence Braid Company	1,028 69
Providence Brewing Company	1,532 47
Providence Building Company	144 83
Providence Churning Company	1,471 59
Providence Dairy Company	260 10
Providence Dental Company	18 80
Providence Dry Dock & Marine Railway Company	213 80
Providence Dyeing, Bleaching & Calendering Co..	842 42
Providence Electric Mfg. Company	94 89

Providence Engineering Works	\$20 00
Providence Fittings Company	52 25
Providence Ice Company	859 75
Providence Journal Company	8,735 41
Providence Land & Wharf Company.....	34 58
Providence Lithograph Company	587 75
Providence Lumber Company	147 10
Providence Merrill System Building Company....	47 60
Providence Mill Supply Company	176 70
Providence Opera House Association	97 01
Providence Paper Company	403 25
Providence Real Estate Improvement Company...	147 42
Providence Scale & Supply Company	28 40
Providence Silk Hosiery Company	397 39
Providence Specialty Company	4 19
Providence Steamboat Company	95 19
Providence Steel & Iron Company	747 31
Providence Stock Company	208 39
Providence Surgical Hospital	19 66
Providence Taxi Service Company	8 40
Providence Theatre Company	308 00
Providence Tribune Company	577 44
Providence Wall Paper House, Incorporated.....	120 00
Providence Warehouse Company	365 76
Providence Wholesale Drug Company	86 21
Providence Wholesale Grocery Company	14 00
Prudence Land Company	17 20
Prudential Land Company	26 73
Prudential Realty Company	50 36
Puritan Bottling Company	21 37
Purity Bakery, Incorporated	25 92
Putnam Foundry & Machine Company	20 40
Queen Dyeing Company	6,143 20
Quidnick Greenhouses, Incorporated	62 16

Quidnick-Windham Mfg. Company	\$743 03
Quinebaug Company	82 13
Quinham, J. W. Company	61 27
Quinn & Company, Incorporated	75 99
Ralph's, Incorporated	76 19
Rand Company	14 95
Raphael-Gouse Textile & Supply Company.....	42 97
Rathbun Knitting Company	891 24
Rathskeller Company	85 12
Rau Fastener Company	257 71
Ray Cotton Company	1,545 65
Real Estate Improvement Company	1 12
Reardon & Company	19 01
Reed House Furnishing Company	58 04
Reed, William B. Company	42 94
Reetz, Robert C. Company	60 27
Regal Shoe Company	201 29
Regina Lace Company (Mass.)	1,123 25
Regina Spinning Company	73 09
Register & Guide Company	6 00
Reiling & Schoen, Incorporated	952 48
Reiner Company	164 03
Reliance Yarn Company	110 48
Remington, Horace & Son Company	271 70
Remington Printing Company	140 97
Remington Typewriter Company	95 52
Retail Grocers Syndicate, Incorporated	59 09
Revere Rubber Company	2,670 32
Rex Mfg. Company	186 43
Rhode Island Baking Company	103 44
Rhode Island Braiding Machine Company	151 38
Rhode Island Card Board Company	701 14
Rhode Island Concrete Company	9 95
Rhode Island Co-operative Coal Company.....	45 27

Rhode Island Covering Company	\$105 25
Rhode Island Cranberry Company	153 04
Rhode Island Crown & Cork Company	18 58
Rhode Island Electric Protective Company.....	280 00
Rhode Island Estates Corporation	33 21
Rhode Island Fish Company	259 36
Rhode Island Fittings Company	385 16
Rhode Island Iron & Steel Company	2 33
Rhode Island Label Works, Incorporated	154 96
Rhode Island Lace Works	169 27
Rhode Island Malleable Iron Works	658 36
Rhode Island Mansion Company	133 91
Rhode Island Oyster Farms Company	129 04
Rhode Island Paving & Granolithic Company....	4 64
Rhode Island Perkins Horse Shoe Company.....	181 02
Rhode Island Processing Company	399 17
Rhode Island Pure Water Company	24 30
Rhode Island Roofing Company	18 30
Rhode Island Rug Works, Incorporated	37 15
Rhode Island Safe Deposit Company	32 19
Rhode Island Shell Fish Company	189 20
Rhode Island Silk Company	86 00
Rhode Island Supply Company	157 97
Rhode Island Supply & Sprinkler Company.....	706 40
Rhode Island Telephone & Electric Company....	21 17
Rhode Island Textile Company	242 98
Rhode Island Tool Company	1,903 20
Rhode Island Vending Machine Company, Inc...	24 82
Rhode Island Window Cleaning Company.....	50 20
Rhode Island Yarn Company	204 00
Rhodes Brothers Company	82 60
Richards, Isaac P. Company	16 63
Richards Land Company	2 87
Richey, Browne & Donald, Incorporated.....	64 22

Richmond Lace Works	\$951 21
Richmond Land Company	115 92
Richmond Mfg. Company	86 24
Richmond Park Plat Company	47 51
Richmond Street Garage	18 09
River Spinning Company	6,420 35
Roberts, William J. Company, Incorporated.....	6 10
Robinson, C. H., Incorporated	312 62
Rocky Point Oyster Company, Incorporated.....	391 92
Rocheford Harness Company	5 18
Rodman Mfg. Company	1,722 39
Rooke Automatic Register Company	81 43
Roscoe Worsted Mills	846 31
Rose, R. L. Company	769 84
Roseknit Hosiery Company	40 76
Rosemont Dyeing Company	733 81
Rosendale Company	138 55
Rosenhirsch, H. Company	66 88
Rounds, T. W. Company, Limited	49 36
Rowley, Frank G. Company	392 07
Roy, L. J. & Company	2 30
Royal Chemical Company	202 12
Royal Home Security Company	81 74
Royal Homestead Land Company	37 20
Royal Jewelry Company	25 20
Royal Stamp Company	33 01
Royal Typewriter Company	23 04
Royal Weaving Company	9,230 70
Rueckert Mfg. Company	137 08
Rumford Chemical Works	3,387 80
Rumford Textile Company	1,197 65
Rust, H. B. Company	133 52
Ryan Pharmacy, Incorporated	27 03
S. & B. Amusement Company	52 64

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S. & S. Novelty Company, Incorporated.....	\$86 22
Safety Engineering Company	8 23
St. Clair's, Incorporated	117 14
Salembier & Clay, Incorporated	327 83
Samoset Laundry, Incorporated	45 00
Samoset Worsted Mills	4,201 06
Sample Shoe Company	23 00
Sampson & Murdock Company	136 96
Samuels, H. C., Incorporated	8 29
Samuels, J. & Brother, Incorporated	8,241 08
Samuels Land Company	108 40
San Souci, J. O. Company	257 85
Sanderson Mfg. Company	52 44
Sands, Taylor & Wood Company	326 53
Sanitary Bottling Company, Incorporated	130 23
Sargent, LeRoy & Company, Incorporated	12 52
Saugy, Augustus, Incorporated	403 13
Saunderstown Hotel Association, Incorporated....	20 01
Saxony Color & Chemical Company	67 20
Sayer Planing Mill Company	17 08
Sayles, Fred L. Company	1,406 31
Saylesville Co-operative Association, Incorporated.	25 34
Scattergood, A. T. Company	380 68
Schott-Suter Company	80 61
Schrieber, A. H. Company	196 64
Scientific Textile Finishing Corporation	31 95
Scotia Worsted Mills	3,106 64
Screw Machine Products Corporation	486 34
Seabury, T. Mumford Company	161 03
Seaconnet Coal Company	982 54
Security Company	85
Seekonk Lace Company	790 32
Sellew Machine Tool Company	174 64
Shannock Narrow Fabric Company	307 82

Shartenberg & Robinson Company	\$591 12
Shaw, Victor Ring Traveler Company	110 82
Shawmut Iron Company	5 40
Shea, P. F. Company	40 00
Sheldon Building Company	47 92
Sheldon Housefurnishing & Storage Company.....	56 53
Shepard Company	3,516 22
Sherman's, R. A. Sons Company	446 23
Sherry Casino Company	103 44
Sherwood Ice Company	92 90
Shove, Isaac Company	49 61
Silbert, David F. & Company, Incorporated.....	17 49
Silverworkers Mutual Loan Company	30 40
Simons, M. & Company, Incorporated.....	30 97
Simplex Tool Company	55 58
Sinclair Refining Company	324 42
Singer Sewing Machine Company	213 57
Sisson, C. S. Company	105 04
Skinner Milling Company	67 06
Slater Yarn Company	2,226 44
Slatersville Finishing Company	1,473 98
Slocomb, J. T. Company	598 53
Smalley Pink & Red Westerly Company	40 01
Smith, A. J. Realty Company	32 52
Smith, C. Sydney Company	81 22
Smith, Edward Company	421 36
Smith, Edwin A. Real Estate Company.....	211 70
Smith, E. E. Company	90 18
Smith, George S. Engraving Company	39 88
Smith-Gibbs Company	77 37
Smith Granite Company	161 41
Smith-Holden Dental Supply Company	295 36
Smith, John P. Realty Company	11 17
Smith, L. C. & Bros. Typewriter Company.....	23 30

Smith, Robert E. Company	\$136 48
Smith, R. P. & Son	52 16
Smith & Holden Company	122 87
Smithfield Land Company	32 00
Snow & Farnum Company	74 36
Snow & Westcott Company	187 27
Snowdon Worsted Mills, Incorporated	430 19
Solway Dyeing & Textile Company	2,955 28
South County Bird Company	6 92
South County Real Estate Company	10 60
Spalding Plaster Company	3 54
Spencer, E. L. Company	636 72
Sperry & Hutchinson Company	80 25
Spouting Rock Beach Association	179 36
Sprague-Cooke Company	50 00
Spring House Company	30 00
Squire, John P. & Company, Incorporated	363 92
Standard Engineering Works	221 84
Standard Machinery Company	484 73
Standard Mfg. Company	14 56
Standard Mill Supply Company	586 32
Standard Nut & Bolt Company	595 94
Standard Oil Company of N. Y.	7,902 11
Standard Paper Box Corporation	141 70
Standard Printing Company	144 00
Standard Wholesale Company	704 07
Standish Barnes Company	54 80
Staples Coal Company of R. I.	600 92
Star Dye House, Incorporated	40 26
Star Electric Company	88 78
Starkweather, J. U. Company	203 56
Starkweather & Shepley, Incorporated	575 46
Starkweather & Williams Company	903 45
States Motor Company, Incorporated	80 51

Stebenne, T. & Sons	\$68 33
Steinert, M. & Sons Company	205 59
Stephans Nut & Bolt Company	145 71
Sterling Handkerchief Company	2 80
Sterling Realty Company	31 21
Sterling Silver Mfg. Company	240 60
Sterling Tire Corporation	296 19
Stern, Louis Company	833 05
Stevens & Company, Incorporated	643 84
Stillwater Grain Mills	23 97
Stillwater Worsted Company	2,252 12
Stone, C. Moulton Company	444 89
Stranahan & Company	400 00
Strathmore Company	27 85
Suffolk Engraving & Electrotyping Company.....	19 83
Sullivan Company	135 49
Sullivan, D. J. Company	255 85
Sullivan, The Five Brothers	49 32
Sullivan Investment Company	340 68
Sullivan, J. P. & Sons, Incorporated	62 95
Sullivan Motor Express, Incorporated	41 45
Summerfield Company, Incorporated	432 32
Sutcliffe, Adam Company	378 96
Swan & Finch Company	38 44
Sweeney Brothers Company	22 82
Sweet, Williams & Son, Incorporated.....	134 18
Swift-McNutt Company	61 14
Swiss Cleansing Company	156 12
Swiss Textile Company	196 05
Sydney Worsted Company	1,589 25
Sylvestre & Brodeur Company	28 00
Taft-Pierce Mfg. Company	2,794 34
Talbot Brothers Company	150 13
Tallman & Mack Fish & Trap Company.....	38 28

Tamarack Company	\$5,161	44
Tanner, Charles S. Company	511	12
Tarkiln Mfg. Company	375	31
Terminal Warehouse Company of R. I., Inc.....	282	98
Texas Company	7,488	13
Textile-Finishing Machinery Company	957	93
Textile Products Company	80	84
Thayer, P. E. Company	83	40
Thompson Finishing Company	34	16
Thompson Hardware Company	39	81
Thompson, John R. Company	82	96
Thompson & Thompson, Incorporated	105	55
Thornton Amusement Company	28	00
Thornton Brothers Company	261	70
Thornton, R. E. Company	21	60
Thurston Mfg Company	36	32
Tierney-Colgan Company	96	69
Tierney, The P. & J. Company	45	38
Tilden-Thurber Corporation	336	41
Tillinghast, F. A. Company	2	14
Tillinghast, L. H. Supply Company	307	07
Tillinghast Stiles Company	3,036	70
Times Publishing Company	2,204	43
Times Square Auto Supply Company	120	00
Tinkham, William Company	77	20
Tisdall, C. Company	367	22
Title Guarantee Company of R. I.	1,124	32
Titus, A. C. Company	296	46
To Kalon Building Association, Incorporated.....	14	40
Toole, William K. Company	488	07
Tower, James H. Iron Works	906	43
Toy Theatre Company	20	00
Traveler Shoe Company	51	62
Travers Land Company of Newport	69	39

Travers Motor Supply Company, Incorporated	\$26 62
Trosseau Chemical Company	5 85
Tubular Woven Fabric Company	285 97
Tucker, J. C. Company	592 10
Tullis Court Land Company	324 08
Turko Club	1 50
Turner Centre Dairying Association	255 00
Turner Construction Company	4 84
Turner Heating Company	19 04
Uncas Mfg. Company	158 90
Underwood Typewriter Company	350 97
Underwriters Salvage Company of New York	20 68
Union Amusement Company	56 31
Union Carbide Sales Company	30 63
Union Charcoal Company	198 61
Union Co-operative Association (No. 1)	3 20
Union Co-operative Association (No. 2)	1 04
Union Electric Supply Company	251 67
Union Hand Laundry Company	16 72
Union Metal Goods Company	23 80
Union News-Company	159 49
Union Paint & Varnish Company	90 44
Union Realty Company	3 21
Union Trading Company	12 48
Union Wadding Company	6,828 87
Union Webbing Company	96 82
Unique Findings and Supply Company	21 60
United Cigar Stores Company of America	427 44
United Coal Company	279 84
United Lace & Braid Mfg. Company	1,509 15
United Land Company	16 80
United Railway Signal Company	173 71
U. S. Alizarine Company	6 32
U. S. Amusement Company	34 60

REPORT OF GENERAL TREASURER.

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U. S. Bobbin & Shuttle Company	\$803 90
United States Cotton Company	920 41
United States Finishing Company	5,501 06
United States Gutta Percha Paint Company.....	1,338 09
United States Glazed Yarn Company	68 51
United States Knitting Company	887 45
U. S. Oil & Supply Company	346 39
U. S. Ring Traveler Company	273 49
United States Rubber Company	7,496 05
United States Spindle Company	42 00
United States Tire Company	201 21
U. S. Tungsten Mining & Products Company.....	6 00
United Wire & Supply Company	2,025 42
Unity Masonic Company	8 24
Universal Optical Corporation	181 03
Universal Patents Company	3,600 00
Universal Plate & Wire Company.....	95 95
Universal Textile Company	12 90
Universal Winding Company	3,357 18
Urdike Real Estate Company	6 51
Urquhart-Swift Land Company	96
Utility Company	221 03
Utter Company, The	129 16
Valley Falls Company	1,147 98
Valley Stores Company	88 87
Van Dyk Company, James	32 37
Vaughn, L. Company	271 06
Vennerbeck & Clase Company	520 30
Verge, George A. Lumber Company	62 20
Vesta Underwear Company	563 51
Vester, Alfred Sons, Incorporated	109 08
Vim Truck Sales Company	118 93
Visitor Printing Company	21 99
Vito, A. Construction Corporation	47 87

Vocalion Company of Boston	\$109 61
Vose, George L. Mfg. Company	144 71
W. M. Mfg. Company	15 46
W. & K. Company	1,567 27
W. & W. Wall Paper Company, Incorporated.....	28 51
Wage Earners Emergency Hospital	49 70
Waite Auto Supply Company	390 06
Waite, Evans Company	119 56
Waite, Thresher Company	1,032 56
Wakefield Land & Investment Company	4 00
Wakefield Mfg. Company	32 69
Wakefield Mills Company	715 99
Waldorf Lunch of Rhode Island	330 58
Wales & Smith Baking Company	109 81
Walk-Over Shoe Company	38 75
Walker, Robert L. Company	157 84
Walker Webbing Company	90 38
Wall, A. T. Company	472 16
Walnut Hill Cemetery	15 24
Walton-Day Company, Incorporated	28 47
Wanskuck Company	24,359 01
Ward Baking Company	1,092 65
Wardwell Braiding Machine Company	431 22
Wardwell Lumber Company	134 17
Warren Brothers Company	62 82
Warren Dye Company	45 67
Warren Mfg. Company	4,069 55
Warren, Moore & Company	22 72
Warwick Coal Company	156 58
Warwick Lace Works	396 26
Warwick Lumber Company, Incorporated	56 40
Warwick Mills	4,011 06
Warwick Neck Land Company	2 52
Washburn-Crosby Company	180 30

Washburn Purizone Company	\$21 58
Washburn Wire Company	9,722 23
Washington Company	19 57
Washington Real Estate Company	71 56
Washington Row Company	191 77
Watch Dog Novelty Company.....	1 58
Waterman Land Company	127 39
Waterman, T. W. Company.....	48 30
Watjen, H. E. Company, Incorporated.....	1 04
Watkins, D. M. Company.....	663 25
Watrous, Ralph C. Company.....	20 00
Wauregan Company	522 67
Waypoysset Mfg. Company	4,051 15
Weatherhead-Thompson Company	151 96
Weaver & Company, Incorporated.....	252 52
Webb, E. C. Oil Company.....	160 37
Weeden Land Company	115 34
Weeden & Company	17 96
Weekapaug Land & Beach Improvement Company.	8 00
Weeks Furniture Company	53 15
Wellman Lumber Company	150 00
Wells, W. A. H. Company, Incorporated.....	59 95
Welsbach Company	209 07
Welsbach Street Lighting Company of America...	25 39
West Pharmacal Company, Incorporated.....	3 07
West Shore Land Company, Incorporated.....	38 94
Westcott, Slade & Balcom Company.....	168 06
Westerly Dye Works	20 92
Westerly Industrial & Improvement Company.....	50 48
Westerly Lumber Company, Incorporated.....	234 00
Westerly Textile Company	732 92
Westerly Towing Company	26 00
Westerly & Watch Hill Ice Company.....	9 20
Western Electric Company, Incorporated.....	353 73

Western Mercantile Corporation	\$8 11
Westinghouse, Church, Kerr & Company, Incor.	19 00
Westminster Greenhouses, Incorporated	12 60
Westminster Real Estate Company.....	9 93
Westminster-Union Corporation	20 00
Weybosset Land Company	59 75
Weybosset Pure Food Market.....	193 19
What Cheer Beef Company	222 19
What Cheer Laundry	467 77
What Cheer Stables Company	8 45
Whipple & Campbell Company.....	6 40
White Fireproof Construction Company.....	29 98
White, J. J. Mfg. Company.....	326 84
White, John R. & Son, Incorporated.....	646 95
White Sewing Machine Company.....	129 31
Whitehead Brothers Company	71 02
Whitestone Mills	10 00
Whitney Law Corporation	31 16
Wholey Boiler Works	159 20
Wickford Milling & Supply Company.....	47 53
Wightman & Hough Company.....	246 01
Wilbur, J. W. Company, Incorporated.....	21 09
Wilbur, Jacob W. Incorporated.....	29 68
Wilkinson, E. DeF. Company.....	219 88
Wilkinson, James Company	8 14
Willard, C. W. Hardware Company.....	70 03
Williams, M. F. Company.....	148 20
Williams & Anderson Company.....	472 63
Williams & Crowell Color Company.....	557 42
Willmarth-Mackillop, Incorporated	416 64
Winograd, M. Son Company, Incorporated.....	44 66
Wilson & English Construction Company.....	118 50
Windsor Webbing Company	87 07
Winnapaug Company	29 82

Winsor & Jerauld Mfg. Company.....	\$224 20
Wirth, Jacob & Company, Incorporated.....	373 45
Wisconsin Bridge & Iron Company.....	33 32
Wolcott Mfg. Company	217 98
Wolff Worsted Mills	236 63
Wolstenholms Mfg. Company	63 82
Wood, Frank Mfg. Company.....	418 24
Wood River Iron Works, Incorporated.....	307 18
Woodland Realty Company	42 64
Woodlawn Finishing Company	229 60
Woodlawn Machine Screw Company.....	41 40
Woolworth, F. W. Company.....	1,533 45
Woonsocket Athletic Union	14 67
Woonsocket Bijou Company	60 00
Woonsocket Co-operative Association	18 42
Woonsocket Country Club	6 60
Woonsocket Dyeing & Bleaching Company.....	1,043 93
Woonsocket Falls Mill	512 34
Woonsocket Fruit & Produce Company.....	72 67
Woonsocket Machine & Press Company.....	6,463 70
Woonsocket Masonic Building Association.....	13 18
Woonsocket Napping Machinery Company.....	425 60
Woonsocket Realty Company	19 07
Woonsocket Rubber Company	2,134 48
Woonsocket Spinning Company	363 75
Woonsocket Supply Company	307 59
Woonsocket Wagon Mfg. Company.....	210 67
Woonsocket Worsted Mills	3,363 43
Workingmen's Loan Association	341 00
Wright, Henry E. & Sons, Incorporated.....	44 73
Wright & Ditson	79 76
Yale Jewelry Mfg. Company.....	47 48
Yardley Pearl Works	9 92
Yawgo Line & Twine Company.....	78 80

Young, Leonard & Harrall Company.....	\$78 77
Young Orchard Company	894 80
Zarr, Incorporated	10 63

\$975,041 19

Rebate on Tax	20 00
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\$975,021 19

Corporate Excess Tax.

Recapitulation.

Receipts for 1918 tax.....	\$975,021 19
Receipts for tax of previous years.....	8,999 63

\$984,020 82

FRANCHISE TAX.

MANUFACTURING, MERCANTILE AND MISCELLANEOUS CORPORATIONS.

Due July 1, 1916.

Abbott Run Company	\$25 00
Dececo Company, The	25 00
Fargo, E. A. Company.....	5 00
Niantic Dyeing Company	7 50
Providence Merchandise Company	2 50
Rhode Island Automatic Fountain Company.....	12 50

Due July 1, 1917.

Aetna Realty Company	2 50
Armour Fertilizer Works	50 00
Abbott Run Company	25 00
Dececo Company, The	25 00
Francis Chemical Company, Incorporated.....	25 00
Hahn, Isaac Land Company.....	2 50
Interstate Ice Company	4 20

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Invincible Tire Company	\$0 42
McLean, J. R. Company	7 50
Niantic Dyeing Company	7 50
Oakland Cemetery Company	21 26
Providence Merchandise Company	2 50
Rhode Island Automatic Fountain Company.....	12 50
Taxi Service Company of Rhode Island.....	27 50
U. S. Electric Generator Company.....	50 00
	<hr/>
	\$340 88

Due July 1, 1918.

Abbott Run Ice & Grain Company.....	\$25 00
Abedare Weaving Company	25 00
Aberdeen Land Company	7 50
Abbott Run Company	25 00
Abrasive Machine Tool Company.....	28 70
Adams, E. A. Machine Company.....	7 50
Adjustment Bureau of the Prov. Assoc. Creditmen	78
Aetna Realty Company	2 50
Albion Company	45 00
Allen Amusement Corporation	25 00
Allen Theatre & Realty Company.....	25 00
Allens Avenue Land Company.....	25 00
Alliance Well Company	25 00
Amergold Company, Incorporated	12 50
American Annular Rolling Company of R. I.....	7 50
American Block Company	25 00
American Building Company	7 50
American Jewelers Findings Corporation.....	20 00
American Oyster Comporation	2 50
American Webbing Company	25 00
Anchor Oil Company	75 00
Andrews Land Company	27 72

Anthony, Alfred Estate Company.....	\$38 67
Aquidneck Dairymen's Association	25 00
Arnold Company	20 00
Arnold, Hough Company, Incorporated.....	2 50
Arnold Real Estate Company.....	25 00
Arnold Realty Company	9 48
Ashaway Clay Company	25 00
Associated Merchants Stamp Company.....	21 00
Atlantis Mining Company	82 50
Attleboro Mfg. Company	25 00
Attleboro Sanitarium & Hospital Company.....	57 50
Austin & Stone, Incorporated.....	37 50
Barigan, Joseph Rubber Company.....	312 50
Barden Reservoir Company	25 00
Barker Building & Realty Company.....	2 42
Barstow N. Company	20 00
Barstow Realty Company	15 89
Bay State Jewelry & Silversmiths Company.....	7 50
Bear Hill Gold Mining Company.....	25 00
Beckwith Land Company	3 04
Belknap Mills Corporation	75 00
Berry Spring Mineral Water Company, Ltd.....	25 00
Beverly Land Company	123 58
Bigelow Land Company	1 53
Bigney, S. O. Company.....	75 00
Birchall Mfg. Company	24 24
Blackstone Land Company	12 50
Block Island & Improvement Company.....	25 00
Boston Store Land Company	105 72
Bowen, C. W. & R. M. Company.....	2 09
Brevitt Land Company	25 00
Bridgeton Worsted Company	12 50
Bristol Ferry Inn, Incorporated.....	5 00
Brooks, Robert R. & Company, Incorporated.....	7 50

Brown, George L. Company.....	\$15 00
Brown Land Company	255 45
Bucklin, Charles R. Belting Company.....	25 00
Buell Realty Company	10 21
Burdick, Charles J. Real Estate Company.....	25 00
Burges Land Company	25 00
Burke Engineering Company	5 87
Burrill Building Company	17 50
Business Statistics, Incorporated	2 00
Butler Exchange Company	125 00
Buttonwood Beach Association	3 64
Calder, Albert L. Company.....	12 50
Caldwell-Talbot Box & Lumber Company.....	2 50
Carrique Land Company	80 05
Cartier, M. N. & Sons Realty Company.....	7 80
Casino Land Company	2 50
Cassidy Realty Company	12 50
Century Realty Company	25 00
Chernack Mfg. Company	12 50
Chestnut Grove Casino Company.....	2 50
Child & Miller Company.....	2 38
Church Land Company	12 50
Churchill House Corporation	7 32
Cia Mexicana De Alambre "Phillips" Mexico City..	2 50
Citizens Ice Company	10 00
Citizens Trust Company	50 00
Clark, John J. & Company.....	7 50
Club Pothier Realty Company.....	5 00
Coastwise Fish & Transportation Company.....	25 00
Coats Building-Loan Association	25 00
Coats Co-Operative Association	23 24
Coe Ribbon Gold Leaf Mfg. Company.....	25 00
Collyer Machine Company	13 00
Columbus Club Building Association.....	16 55

Columbus Exchange Bank	\$25 00
Compartment Garage Company	2 28
Congdon Street Land Company.....	2 50
Connecticut Valley Onion Company.....	25 00
Coupe, William Company, Ltd.....	37 50
Covell, William H. Land Company.....	15 00
Cranston Print Works Company.....	75 00
Creditors National Clearing House.....	56 16
Crittenden Lumber Company	35 00
Crown Mfg. Company	250 00
Cushing Realty Company	6 28
Cushion Fabric Company	12 50
Davol Land Company	7 50
Day Building & Land Company.....	45 00
Dean Realty Company	5 62
Dennis Real Estate Company.....	6 45
Derwil Realty Company	5 00
Diamond Ice Company	25 00
Diamond Machine Company	32 50
Dime Messenger Service Company.....	2 50
Doleman Optical Company	2 50
Donahue, T. F. Company.....	7 50
Dragon Silk Mills	5 00
Draper, O. M. Company.....	22 50
Draper, William H. Real Estate Company.....	12 50
Dyer Street Land Company.....	30 00
Eagle Realty Company	16 46
East Greenwich Farmers Corporation	1 86
East Greenwich Savings Fund & Loan Association.....	25 00
East Shore Land Company	5 00
East Side Realty Company	7 50
Eastern Beef Company	2 50
Eastern Film Corporation	25 00
Eastern Home Building Association.....	9 14

Eastern Wreath Mfg. Company	\$4 65
Eaton Realty Company	25 00
Eden, C. H. Company.....	25 00
Electric Systems Corporation	25 00
Elmgrove Farm	45
Elmwood Novelty Company	2 50
Emerson Apparatus Company	2 50
Emery Amusement Company	62 50
Empire Realty Company	25 00
Everett, C. J. Incorporated	2 50
Excelsior Carpet Cleaners, Incorporated.....	2 27
Fairhaven, Incorporated	5 57
Fairmount Land Company	2 76
Fall River Provision Company.....	2 50
Fargo, E. A. Company.....	5 00
Farkas Company	2 50
Fessenden & Company, Incorporated.....	7 50
Fidelity Loan Guarantee Company.....	25 00
Fidelity Mercantile Agency	9 45
Fidelity Realty Company	7 50
Field Engine Turning Company	2 50
Field Land Company	25 00
Fisher, J. M. Company.....	27 50
Fisk-Bennett Company	2 50
Fitchville Mfg. Company	50 00
Fitzgerald & Company, Incorporated.....	40
Fletcher Hotel Company	7 50
Fletcher Land Company	107 32
Flint Land Company	25 00
Fogerty, William J. Company, Incorporated.....	5 00
Fourem Company, Incorporated.....	3 00
Francis Chemical Company	23 38
Francis Woolen Mills	7 50
Franco American Realty Company.....	6 46

Franklin Real Estate Company.....	\$22 56
Freemasons' Building Asso. of East Greenwich....	4 50
Freemasons' Hall Company	21 08
French Knitting Company	12 50
French River Textile Company.....	250 00
Fulton Fuel & Road Oil Company... ,.....	150 00
Fulton Land Company	25 00
Gardner-Lofdal Company	2 50
General Plate Company	25 00
General Supply Company	2 50
Gibbs Land Company	75 00
Gilbreth, Frank B. Incorporated.....	1 13
Gilman Land Company	17 50
Glenlyon Dye Works	2 50
Glenwood Mfg. Company	7 50
Globe Land Company	25 00
Gold Mark Knitting Company (R. I.).....	12 50
Good-Will Soap Premium Store.....	74
Goodwin-Sherman Motor Car Company, Inc.....	7 50
Gorham Garage Company	2 50
Granite Building Corporation	86
Greene Farm Land Company.....	62 50
Guaranty Used Motor Car Company.....	2 50
H. W. K. Company.....	7 50
Hahn, Isaac Land Company.....	2 50
Harding, Patrick E. Construction Company.....	7 50
Hardman Railroad Tie Company.....	7 50
Hardware Agency Company	7 50
Harris Farm Dairy Company.....	2 50
Harris Lithograph & Publishing Company.....	25 00
Harris, S. A. Realty Company.....	12 50
Hazard, Anna Land Company.....	20 00
Heaton Mfg. Company	43 20
Hebert Construction Company	2 50

Heirs of Thomas Burgess, Incorporated.....	\$55 00
Hellman, L. J. Company.....	5 00
Herreshoff Mfg. Company, Incorporated.....	25 00
Herrick, William H. Company.....	14 22
Herx & Eddy, Incorporated.....	25 00
High Street Bank.....	100 00
Hodges Building & Land Company.....	29 12
Hoey Mfg. Company.....	7 78
Home Products Company, Incorporated.....	5 00
Homestead Realty Corporation.....	3 80
Hope Fruit Company.....	2 50
Hope Land Company.....	40 83
Hope Private Hospital.....	15 00
Hope Publishing Company.....	32 50
Hope Spring Company.....	25 00
Hopkins Machine Works, Incorporated.....	10 00
Hopkins Transfer Company.....	12 50
Hough Realty Company.....	10 78
Howard, Albert J. Company, Incorporated.....	12 50
Howard Land Company.....	42 50
Howard Realty Company.....	175 00
Howe Waste & Packing Company.....	7 50
Hygienic Fibre Company.....	12 50
Improved Tenement Corporation.....	4 29
Indian Oaks Farm.....	5 00
Indiana Motor Sales Company.....	8 98
Industrial Patent Corporation.....	25 00
Industrial Trust Company.....	1,250 00
International Moistening Company.....	3 80
Interstate Ice Company.....	3 20
Interstate Stone Company.....	7 50
Italo American Mutual Trust Company.....	62 50
Jackson Realty Company.....	6 67
Jamestown Land Company.....	2 50

Jewelers Manufacturing Company	\$5 00
Jewelers' Protective Association	2 50
Joslin Himalaya Company	25 00
Kazanjian Company	2 17
Kenneth Ridge Company	8 66
Kilburn, J. R. Glass Company, Incorporated.....	12 50
Kingston Trust Company	27 50
Kinsley Avenue Land Company.....	12 50
Kirkland Realty Company	2 50
Knock Down Motors, Incorporated.....	10 00
Kohinoor Novelty Company	2 50
La Tuhia Lace Company	50 00
Lafayette Land Company	2 50
Landholders, The	5 00
Leach & Garner Company	5 00
Lee, A. S. Company	2 50
Lee, Charles H. Company.....	2 50
Leonard-Rooke Company	27 54
Lewis & Paige, Incorporated.....	83
Lind Mfg. Company	25 00
Lind-Sampson Needle Company	8 75
Little Pond Company	2 50
Lundin Turkish Bath Company.....	5 00
Lynde Land Company	25 00
Lynford Company, Ltd.....	25 00
M-B Tool Company	7 50
Magnan, N. J. Company.....	20 00
Main Street Power Company.....	25 00
Makepeace, D. E. Company.....	25 00
Manchaug Company	200 00
Marginal Dock Company, Incorporated.....	49 55
Marvel Rubber Company	25 00
Mashapaug Land Company	7 50
Mason, Volney W. & Company, Incorporated.....	12 50

McCabe, Edward J. Incorporated.....	\$21 96
McCrillis, A. B. & Son, Incorporated.....	50 00
McLaughlin, George T. Company.....	23 61
Mechanics Building Company.....	2 50
Medway Mfg. Company.....	25 00
Menopad Mfg. Company.....	25 00
Mercantile Trading Company.....	13 58
Merriam Company.....	5 00
Merriman Solidified Oil Company.....	29 48
Metacomet Realty Company (No. 2).....	25 00
Metallic Shell & Tube Company.....	37 50
Miller, Joseph W. Land Company.....	20 00
Milot Brothers Company.....	10 00
Miskiania Camp.....	23 80
Modern Equipment Company.....	2 50
Mohr Realty Corporation.....	20 27
Morris Plan Company of Rhode Island.....	62 50
Morrison Granite Company.....	12 50
Mossberg, Frank Company.....	50 00
Motor Protection Company.....	9 20
Moulton & Son Company.....	7 26
Mowry, D. E. Company.....	2 50
Mu-Col Company, Incorporated.....	12 50
Mundell Realty Company.....	23 65
Namquit Worsted Mills.....	25 00
Narragansett Cotton Mills.....	46 28
Narragansett Land Company.....	75 00
Narragansett Pier Company.....	20 00
Natick Mills.....	250 00
National Button Company.....	25 00
National Funeral Association.....	23 00
Nayatt Point Oyster Company.....	24 36
New Cliffs Hotel Company.....	24 32
New England Company.....	25 00

New England Consolidated Company	\$11 30
New England Furniture Company	9 10
New England Mfg. Jewelers' & Silversmiths' Asso.	5 00
New England Provision Company	7 50
New Idea Realty Company	25 00
New Orpheum Amusement Company.....	2 50
New Star Amusement Company	2 50
Newport Cooperative Association for Saving and Btilding	250 00
Newport Horse Show	1 90
Newport Taxicab Company	5 00
Newport Trust Company	125 00
Niantic Dyeing Company	7 50
Nitrogen Corporation	7 45
Nornay Worsted Company	62 50
North Swansea Mfg. Company.....	7 50
Norton Taxi Motor Company.....	25 00
Oak Valley Mills	5 00
Oakland Cemetery Company	19 40
Ocean Highland Company	17 50
O'Gorman, Roger Jr. Company.....	10 00
Old Colony Advertising Company.....	2 50
Old Colony Co-operative Bank	625 00
Orpheus Corporation	2 50
Pairie, George L. Company.....	25 00
Pawtucket Hair Cloth Company.....	24 11
Pawtucket Safe Deposit & Trust Company.....	250 00
Pawtucket Warehouse, Incorporated	2 50
Pearce-Mauran Land Company	50 00
Pearce Realty Company	2 50
Peck Realty Company	7 50
Peckham Brothers Company	7 50
Peckham Realty Company	15 00
People's Grocery Company	2 50

Perry, William H. Company	\$25 00
Phenix Trust Company	25 00
Pilgrim Machine Company	7 50
Pilling Chain Company	2 50
Pinckney Farm Land Company.....	22 68
Pitman Land Company	5 33
Pocasset Cemetery Corporation	25 00
Pocasset Worsted Company, Incorporated.....	125 00
Pocket Ice Apron Company.....	2 50
Pontiac Mfg. Company	75 00
Poons, Edward M. Company.....	25 00
Posnegansett Ice Company	25 00
Potter, Johnston & Gridley, Ltd.....	87 50
Potter & Johnston Company.....	50 00
Producers Trust Company	2 50
Providence Arcade Corporation	25 00
Providence Blower Company	40 32
Providence Building Company	255 17
Providence Engineering Corporation	125 00
Providence Musical Association	2 50
Providence Realty Company	25 00
Prudence Land Company	7 80
Puritan Lunch Company	7 50
Purity Cross, Incorporated	37 50
Quidnick Reservoir Company	25 00
Racing Coaster Company	12 50
Reading Custom Laundry Company.....	5 00
Real Estate Improvement Company.....	13 88
Red Cross Chemical Company.....	25 00
Regina Lace Company (R. I.).....	50 00
Remington Realty Company	25 00
Renaud, I. Company	12 50
Rhode Island College of Nursing	25 00
Rhode Island Conservation & Development Co.....	25 00

Rhode Island Country Club	\$37 50
Rhode Island Exhibition Company	25 00
Rhode Island Foundry & Machine Company.....	25 00
Rhode Island Hospital Trust Company.....	1,250 00
Rhode Island Humidifier & Ventilating Company..	12 50
Rhode Island Investment Company	125 00
Rhode Island Iron & Steel Company.....	15 17
Rhode Island Printing Company	7 50
Rhode Island Pullclean Towel Company.....	12 50
Rhode Island Supply & Engineering Company.....	25 00
Rhode Island Telephone & Electric Company.....	3 83
Rhode Island Warehouse Company	7 50
Rice & Sargent Engine Company.....	10 00
Richardson Foster Company	15 00
Richmond Mfg. Company	38 76
Richmond Realty Company	25 00
Riverside Park Company of Westerly, R. I.....	2 50
Robbins Company	10 00
Robinson, E. A. Company.....	7 50
Robinson Jewelry Company, Incorporated.....	7 50
Roger Williams Finishing Company.....	25 00
Roger Williams Narcotic Cure Company.....	2 50
Roger Williams Savings Fund & Loan Association.	875 00
Rosenberg Realty Company	10 00
Roy, L. J. & Company, Incorporated.....	20
Rumford Company	2 50
Russell Medicine Company	7 50
Saart Brothers Company	25 00
Safety Engineering Company	16 77
Sakonnet Golf Club	25 00
Samoset Company	57 50
Samsy Mfg. Company	5 00
Sanborn, A. J. Sons, Incorporated.....	15 00
Saunders' Marine Safety Device Company.....	2 50

REPORT OF GENERAL TREASURER.

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Sayles, Albert H. Realty Company	\$25 00
Sayles, Albert L. 2nd Land Company.....	5 00
Security Company	1 65
Sheldon Building Company	52 08
Shepard, John Jr. Real Estate Company.....	25 00
Shepard Land Company	87 50
Slater Realty Company	25 00
Slater Trust Company	250 00
Smart & Austin Company	5 00
Smith, John P. Realty Company.....	21 33
Smith Webbing Company	75 00
Solvents Recovery Company	25 00
Somerset Realty Company	40 00
South County Bird Company	5 58
South County Co-operative Association.....	2 50
Squantum Association	2 50
Standard Investment Company	2 50
Standard Mfg. Company	60 44
Standard Ring Traveler Company.....	5 00
Star Carbonizing Company	2 50
Sterling Handkerchief Company	4 70
Studley Land Company	37 50
Sturtevant Wharf & Storage Company.....	25 00
Sun Publishing Company	25 00
Sweet Sash & Blind, Lock & Hinge Company.....	12 50
Symonds Land Company	2 50
Talbot Mfg. Company	7 50
Tamco Mailing Company	2 50
Taprick Company	7 50
Telegraphone Sales Company	12 50
Thornton, F. L. Company	2 50
Tillinghast, F. A. Company.....	2 68
Times Publishing Company	12 50
Tips Aero Motor Company	25 00

Tiverton Brewing Company	\$10 00
To Kalon Building Association, Incorporated.....	10 60
Tockwotton Company	7 50
Turko Club	1 00
Union Belt & Leather Company.....	5 00
Union Co-operative Association (No. 2).....	6 46
Union Hand Laundry Company	8 28
Union Realty Company	21 79
Union Trust Company	625 00
United States Alizarine Company	6 18
United States Electric Generator Company.....	50 00
Universal Fire Escape Company of New England..	2 50
Urdike Real Estate Company.....	5 99
Urban Realty Company	25 00
Urquhart-Swift Land Company.....	24 04
Vega Valley Orchards, Incorporated.....	12 50
Vesta Knitting Mills	87 50
Wakefield Land & Investment Company.....	21 00
Wakefield Trust Company	50 00
Walker Land Company	25 00
Walker Realty Corporation	25 00
Wannamoissett Company	12 50
Warwick Club Association	5 00
Warwick Land Company	125 00
Warwick Neck Land Company.....	4 98
Washington Row Company	308 23
Washington Trust Company of Westerly.....	75 00
Waterman, Frank E. Company.....	2 50
Watjen, H. E. Company, Incorporated.....	1 46
Watrous, Ralph C. Company.....	5 00
Weatherhead-Thompson Company	25 00
Webb Mfg. Company	7 50
Webster Company	45 00
Walling, Charles H. Company.....	2 50

REPORT OF GENERAL TREASURER.

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West Pharmacal Company, Incorporated.....	\$4 43
West Providence Land Company.....	50 00
Westerly Dye Works.....	4 08
Westerly Furniture Company.....	10 00
Westerly Quarries Company.....	15 00
Westerly Savings Fund & Loan Association.....	100 00
Westminster Bank.....	75 00
Westminster Land Company.....	7 50
Weybosset Investment Company.....	12 50
What Cheer Stables Company.....	16 55
Wheeler, Mary C. School, Incorporated.....	25 00
Wheeler & Chadbourne, Incorporated.....	2 50
Whipple & Campbell Company.....	1 10
Whitcomb Farm Company.....	2 50
White Lace Company.....	25 00
White Rock Mill.....	62 50
Wickford Oyster Company.....	5 00
Wilcox, L. M., Calder Company.....	2 50
Winnebago Mfg. Company.....	12 50
Winslow Realty Company.....	50 00
Woonsocket Building & Loan Association.....	100 00
Woonsocket Company.....	2 50
Woonsocket Co-operative Association.....	6 58
Woonsocket Land Company.....	2 50
Woonsocket Realty Company.....	5 93
Woonsocket Trust Company.....	12 50
Woonsocket Wholesale Grocery Company.....	25 00

\$17,403 45

FRANCHISE TAX.

Recapitulation.

Receipts for 1918 tax.....	\$17,403 45
Receipts for tax of previous years.....	340 88
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	\$17,744 33

GROSS EARNINGS TAX.

Public Service Corporations.

Adams Express Company	\$2,420 72
Colonial Navigation Company	800 00
Dyer Transportation Line	331 59
Jamestown & Newport Ferry Company.....	1,030 00
New England Steamship Company.....	139 93
Providence, Fall River & Newport Steamboat Co..	1,258 50
Moshassuck Valley Railroad Company.....	857 67
New York, New Haven & Hartford Railroad Co...	80,546 43
Wood River Branch Railroad Company.....	174 68
Bay State Street Railway Company (Ry. Dept.)...	2,192 59
Newport & Providence Railway Company.....	1,325 30
Rhode Island Company	59,683 91
Shore Line Electric Railway Company.....	1,089 92
Pullman Company	1,479 23
American Telephone & Telegraph Company.....	4,395 03
New England Telephone & Telegraph Company....	1,945 87
Providence Telephone Company	45,440 73
Southern New England Telephone Company.....	2 59
Westerly Automatic Telephone Company.....	945 00
Western Union Telegraph Company.....	2,413 65
Barrington Water Company	63 50
Bay State Street Railway Company (Illum. Dept.).	2,510 62
Blackstone Valley Gas & Electric Company.....	15,627 55
Bristol & Warren Water Works.....	827 22
Drownville Water Company	47 74

East Greenwich Water Supply Company.....	\$200 05
East Providence Water Company.....	548 92
Jamestown Light & Water Company.....	196 54
Narragansett Electric Lighting Company.....	27,603 25
Narragansett Pier Electric Light & Power Company	490 04
Newport Gas Light Company.....	1,601 74
Newport Water Works	2,491 97
Pascoag Water Company	125 76
Pawtucket Gas Company	5,583 94
Pawtuxet Valley Water Company.....	256 19
Providence Gas Company	21,051 04
Putnam Light & Power Company.....	15 00
Rhode Island Power Transmission Company.....	4,130 45
Scituate Light & Power Company.....	143 36
Seaconnet Park Water Company.....	7 10
Shawomet Water Company	43 44
Stoneleigh Water Company	9 32
Tiverton Electric Light Company.....	179 55
Tiverton Gas Company	65 20
Wakefield Water Company	278 35
Warwick & Coventry Water Company.....	333 92
Westerly Light & Power Company.....	1,455 90
Wickford Light & Water Company.....	115 35
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	\$294,684 35

Tax on Street Railway Companies.

Newport and Fall River Street Railway Company..	\$2,595 94
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INHERITANCE TAX.

Estate.	Deposit.	Net Amount.
Thomas E. Rounds		\$65 74
Mary R. C. Deonstye.....		20 91
Philip Case		760 64

Estate.	Deposit.	Net Amount.
George H. Richardson		\$9 59
Mary Hamilton Buck		5,092 66
Catherine Abell		6 20
Mary Hurley		17 91
Maria Heald		5 62
Anna R. Cranston		28 76
William H. Patt		376 85
Albert Horton, Jr., alias.....		1,498 29
George G. Palmer		7 80
Thomas H. Frauley		27 45
Augusta G. Hazard		8,011 02
Frank N. Lamb		16 37
Elijah R. Tefft		24 56
Roger McCormick		14 24
Nathan B. Hail		1,470 09
Rebecca S. Phillips.....		21 54
Henrietta B. Jenckes.....		33 52
Ellen Baker		254 30
Thomas Shaw Safe		162 27
Mary E. Knowles		609 91
Mary P. Babcock		47 07
Nicola Capelle		563 00
Charles H. Dodge		34 48
Mary Knobloch		223 27
Clarence O. Valentine.....		35 67
Mary O'Reilley		2 22
Sarah L. Harrington.....		10 33
Emma C. Smith		4,107 59
John Reid		11 91
William B. Wait.....		62 29
Mary E. Parker.....		125 60
Gorham N. Thurber.....		15 96
William W. Batchelder.....		455 88

Estate.	Deposit.	Net Amount.
Elizabeth L. Sweet	\$3 69
Edward F. Aldrich.....	1,150 14
Harriet N. Webster.....	12 99
Job E. Carpenter	12
Susan Almy Smith.....	876 51
Susan M. Eddy.....	14 02
Isaac C. Greene.....	144 62
Edward S. Aldrich.....	374 17
Daniel Beckwith	2,139 05
David O. Black	175 82
John Conley, alias	11 64
John H. Arnold	194 52
Sarah Marchington	60 03
Sarah C. Wood.....	7 09
Charles E. Blake.....	52 90
Martha Ann Fisher.....	99 63
Rebecca B. Rose	12 05
Philip Case	6,115 37
John E. Gobeille	67 47
Susan Manchester	1 39
James H. Fredericks.....	175 87
Joseph H. Cushing	335 65
Susan M. Carpenter	14 12
Nicholas J. Gardiner	1,334 84
Joseph G. Johnson	236 76
James McArdle	47 24
Ermina A. Newell	54 58
Carrie Maude Hough	45 11
Elvira B. Bates	324 49
Matthias Wicklund	3 47
John H. Spink	21 74
Mary E. Douglass	10 52
David Beckwith	1,786 16

Estate.	Deposit.	Net Amount.
Edward S. Aldrich	\$663 19
Hayley S. Pike	995 00
Frank E. Richmond	289 76
Alice D. Mumford	212 35
Peter A. Underwood	51 17
Isaac R. Perkins	11 96
John Suttrell	30 31
Davis C. Anderson.....	91 78
Alice Conant	43 67
Gilbert B. Roffee	1 16
Susan E. Peckham	69 51
Bethena A. Pendleton.....	402 99
Arabella G. Thompson.....	146 04
Herman Rosenberg	149 76
Sophie T. A. Tillinghast.....	194 18
William H. Covell, Jr.	258 19
Sarah E. Ralph	67 59
Sarah F. Bourne	1,064 84
William W. H. Cannon.....	426 37
Rebecca M. Hoag	27 38
Seraphina W. Smith	7 40
Carl Siegel	73 83
Joseph M. Bates	62 29
Bridget Fennessy	266 08
Mary E. Smith	5 21
Jerry L. Wightman	49 60
Annie Anderton	111 92
John B. Hawkins	34 97
Elmer S. Knowles	34 24
Charles A. Henry	70 13
Richard G. Davis	116 22
Edward T. Kenyon.....	119 66
Maria L. Hazard.....	21 81

Estate.	Deposit.	Net Amount.
Adelaide Horton		\$13 11
Bethena A. Pendleton		408 25
Henry F. Jenckes		63 00
Charles H. Cowell		139 63
Israel P. Rounds		6 23
Crawford Carter Allen		120 85
Susan C. Chace		5 77
Sidnie C. Newman		18 34
Caroline M. Remington		5 45
Julia E. Gates		121 84
Maria E. Burlingame		2 59
Catherine C. Miller		70 07
Sally F. Bates		71 79
William Stanley		291 92
Byron S. Cooke		715 61
Annie M. Whitaker		19 89
Emeline W. Kilton		6 78
Walter I. Goff		7 98
Mary Rothwell		29 77
Mary Ann Dodge		33 25
John Walter Perry		17 26
Charles H. Dodge		80 86
Amelia A. Greene		153 88
Charles Morris Smith		1,971 33
Henry S. Cole		303 55
Ellen L. O. Sheldon		101 13
Rosalie R. Ford		2,134 62
Frances E. Robinson		234 92
Thomas Boardman, Jr.		40 90
Charlotte A. Markham		123 38
John B. Spink	\$231 74	
Lois A. Judkins		105 29
Tillie A. Spitz		61 46

Estate.	Deposit.	Net Amount.
Phebe Maxson Durfee.....	\$11 40
Philip D. Hall	115 28
James Wilson	121 26
Sarah M. D. Gardner.....	892 45
Jane M. Burnham	494 48
Augusta G. Hazard	16,070 40
Charles E. Gorman	177 64
Charles Brooks	3 25
Catherine M. Lynch	13 02
Waity A. Champlin.....	2,573 90
Sarah E. Norman	112 34
Susan E. Arnold	40
Herbert M. Howe	575 00
Esther B. Lawton	1 10
Virginia Caselli	17 00
John Howard Manchester.....	759 58
Chester T. Calder	1 08
Frederick H. Watkins.....	814 43
Ida F. Draper.....	8 08
Marcus M. Inman	45 86
Mary E. Potter	4 24
John H. Hayden	19 38
James M. Ripley	3,403 02
Charles B. Gardner	196 80
Rufus G. Angell	7 19
Agnes M. Harris	13 98
Elbert Anderson	747 00
Proctor C. Lull	105 86
Sarah Burdick	72 88
Anne L. Willson	102 14
David P. Burke.....	90 73
Catherine Lorillard Kernochan.....	2,086 87
Henry Lawton	21 41

Estate.	Deposit.	Net Amount.
Jeanette S. French	\$28 39
John Smith	90 11
N. Duncan Chapin.....	226 15
Benjamin Hall	449 48
Mary K. Cole	66 21
Charles H. Young	178 98
Sylvanus Warren	88 90
Daniel J. Boyd	249 49
William A. Bosworth.....	79 55
Francis A. Talbot.....	21 23
Annie E. Braley	127 74
Abby Langworthy	73 81
Edwin C. Phillips	14 65
James Carroll	10 54
Lydia O. Wood	9 02
Laura E. Butler	7 52
Mary Matteson	29 50
John W. Butts	57 65
George M. Welles	477 64
Anne E. Brown	11 52
Elizabeth A. Cook.....	\$192 57 .....	.....
John J. Butler	263 75
Johns H. Congdon.....	2,500 65
Mary Preston Hill.....	1,798 24
Walter W. Griffith.....	486 04
Thomas Thorp	19 35
Anjanette Eddy	38 32
Lena M. Swinbourne.....	45 36
James C. Cottrell	9 01
John P. Hazard.....	34 24
Henry J. Spooner.....	551 67
Phebe A. S. Fisher.....	22 51
Clinton N. Williams.....	61 35

Estate.	Deposit.	Net Amount.
Abby F. Martin	\$46 97
Laura G. Bosworth.....	111 97
William A. Carter.....	48 56
Abigail M. Reynolds.....	265 97
Maria A. Page	141 41
Ida F. Draper	5 00
George A. Griffin	24 24
John H. Hayden	65 82
Joseph R. Bullock	489 32
Susan A. Ashton.....	91 43
Eugene W. Mason	338 43
Wealthy Hart	117 96
George McKenzie	163 76
Oliver Kendall	432 85
William Auger	63 86
Luola M. Sprunt	15 00
Wendell R. Bates	6 86
Guan M. Hutton	658 25
✓ William Halkyard	1,005 28
John Hazard Reynolds.....	23 13
Oliver Kendall	228 16
Mary Clark Buffington.....	5 00
Joseph N. Nelson	31 89
Walter S. Hackney	5,422 34
Jane Murphy	35 51
Henry F. Horton	41 28
Euphemia Gendron	19 31
Elizabeth Howland	58 59
Elizabeth B. Phillips.....	19 05
Stephen B. Brown	70 10
Wilhelmina H. Van Wyke.....	33 33
Martha W. Fish	6 19
George M. Long	46 50

Estate.	Deposit.	Net Amount.
Otis A. Miller	\$14 06
Charles H. Stebbens.....	153 34
Maria M. Foster.....	6 83
Emma R. Whitaker.....	248 60
Charles H. West.....	93 84
Susan A. Howe	29 75
Andrew Luther	39 50
Janet C. James	7 34
Chauncy J. Jaques	8 99
Alfred B. Evans	8 37
Robert Wilson	22 83
Alice V. Burrows.....	29 14
Sarah C. Carpenter.....	68 94
Joseph A. Taylor	273 19
William Halkyard	1,464 26
Adeline L. F. Daniels.....	3 00
Mary M. Flint	83 73
Frank H. Martin.....	235 06
Francis A. Paige.....	45 66
Mary Hennessey	1 22
Bradford Gay	64 33
Hannah E. Bachellor	16 80
Ramon Guiteras	25 75
Waity A. Champlin.....	5,023 79
William H. Perry.....	2,700 83
William E. Brayton.....	4,038 35
Michael Joseph Keeffe.....	20 35
Walter T. Maxfield.....	477 55
William Adam Purrucker.....	29 49
Mary M. Purcell Crosson.....	76 97
Mary E. Williams.....	8 78
John P. Freeborn.....	50 56
Frederick R. Hazard.....	359 83

Estate.	Deposit.	Net Amount.
William Williams	\$789 53
George Leigh	4 99
Malvina A. Milliken.....	141 98
Stephen Attmore Tucker.....	30 32
Mary E. L. Mitchell.....	120 00
Patrick Murphy	64 02
Mary H. Ellis.....	1,216 36
Dutee Wilcox	2,802 61
Benjamin Seabury	2,186 54
Hayley S. Pike	1,282 14
Frank E. Richmond.....	796 62
Eliza W. Howland.....	2,275 84
Abby Jane Bradbury	\$6 77 .....	.....
Caroline Amelia Brown Weeden...	208 10
Ruth M. Harrington.....	18 25
Malvina A. Milliken.....	354 13
Edward deVanx Morrell.....	537 50
Rowland Gibson Hazard.....	94,895 60
Sarah F. Bourne	919 19
Caroline A. Cromwell.....	30 45
John C. Mertz	19 45
James Henry Singleton.....	8,857 99
Thankful E. Wilkinson.....	8 06
Amory Chapin	192 85
Richard Hayward	235 03
Hugh Denerby	54 65
Ethan T. Sheldon	184 47
John J. Mason	2,481 94
Joseph W. Knight	6 88
Robert B. Richmond	24 25
Margaret Murray	27 97
Harriet E. Cole	552 00
Nancy A. Lawton	10 90

Estate.	Deposit.	Net Amount.
Mary J. Marshall	\$191 01
George Henri DeFoy	121 93
George M. Long	46 50
John M. Smith	451 77
Jonathan Chace	30,686 42
Capitola I. Spalding	62 51
Mary McDonald	2 60
Daniel Burrows	313 62
Patrick H. O'Connell	42 36
Mary A. Watson	120 40
Helen H. Jones	96 36
Joseph T. Sheldon	3 31
Robert H. Blanding	8 75
Alfred K. Hawes	13 64
Harriet A. Harrison	114 49
Jane M. Palmer	20 70
John Mulcahey	1 11
Charles G. Tost	47 44
Alice Thurber	2,211 51
Florence M. Joslin	37 59
Charles E. Wilbur	91 19
William Clark, Jr.	1,602 86
Margaret A. Ryan	117 96
Ellen Taylor	15 00
Harriet E. Cole	2,099 85
Ellen L. O. Sheldon	254 43
Sarah M. D. Gardner	1,540 66
Charles E. Wilbur	467 32
Edwin Reynolds	543 85
Samuel A. Colvin	12 52
Marguerite Trinque	4 17
Susan A. Barrett	35 21
L. Irena Mathewson	13 02

Estate.	Deposit.	Net Amount.
Abby F. Mathewson	\$52 22
Ida A. Colwell	2,375 64
Alice Keteltas	152 37
Frederick Stephan	32 49
Sanford Mowry	3 31
Thomas Brennan	196 28
Patrick H. Carroll	12 72
Helen M. Burton	26 78
George F. Glasse	98
Harry E. Winsor	79 18
Robert H. Blanding	8 75
Morris Keiser	31 22
Anna Johnson	11 40
Alice Keteltas	146 28
Phebe A. Thomas	10 49
William H. Cooke	15 66
Rowland Crandall	265 31
Grace V. Palmer	4 46
Silas Carr	28 73
Honorine G. Brigham	5 00
Hayley S. Pike	1 63
Amanda M. Sayles	18 10
George A. Pope	163 68
George Chilson Phillips	7,449 53
Edgar A. Mowry	33 87
Helen M. Burton	128 55
John James Carr	139 83
Sarah M. Dodge	45 88
George A. Pope	150 93
Herbert E. Dodge	152 49
Catherine E. McSoley	19 94
Alfred Chabot	2 15
Ephraim Bedford	8 99

REPORT OF GENERAL TREASURER.

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Estate.	Deposit.	Net Amount.
Maria A. Steere	\$9 30
Charles C. Gardiner	7,955 74
Eleanor S. Bennett	94 48
Elizabeth C. Markland .....	.....	81 98
Ellen M. Jencks .....	.....	344 65
Thomas McCurry .....	.....	4 50
Abby S. Crandall .....	.....	96 37
Mary E. King .....	.....	506 60
Imogene B. Kern .....	.....	35 42
Harriett E. Wilbour .....	.....	510 33
Frederick Hough .....	.....	4 62
Frederick Hough .....	.....	4 62
Florine L. Mathewson .....	.....	6 87
Martha A. Brown .....	.....	5 08
Horace Slocum .....	.....	3 41
Emma A. Berrian .....	.....	80 99
William Griffin .....	.....	40 09
Henry M. Rhodes .....	.....	15 06
	<hr/>	
	\$431 08	\$301,758 53
Rebate of Taxes .....	.....	451 21
		<hr/>
		\$301,307 32
Deposits .....	.....	431 08
		<hr/>
		\$301,738 40

TAX ON BANK SHARES.

Banks and Trust Companies.

Ashaway National Bank	\$236 64
Blackstone Canal National Bank	843 70
Centreville National Bank of Warwick.....	339 53
Columbus Exchange Bank of Providence.....	400 00
High Street Bank	478 80
Industrial Trust Company	276 79
Italo-American Mutual Trust Company.....	144 40
Kingston Trust Company	188 30
Merchants National Bank of Providence.....	1,497 80
Mechanics National Bank of Providence.....	189 58
Morris Plan Company of Rhode Island.....	946 20
National Exchange Bank of Greenville.....	309 37
National Exchange Bank of Newport.....	98 84
Newport Trust Company	210 00
Newport National Bank	117 52
Pawtucket Safe Deposit & Trust Company.....	11 40
Phenix National Bank of Providence.....	822 30
Phenix Trust Company	380 00
Providence National Bank	307 72
Producers Trust Company	13 60
Wakefield Trust Company	504 02
Washington Trust Company	540 00
Westminster Bank	118 40
Woonsocket Trust Company	20 00
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	\$8,994 91
Refund to Cities and Towns for bank shares of non- resident shareholders	174 64
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	\$8,820 27

TAX ON INSURANCE BUSINESS.

State Insurance Companies.

Automobile Mutual Insurance Company of America	\$3,240 22
American Mutual Fire Insurance Company.....	2,768 94
American Motors Mutual Insurance Company.....	8 91
Blackstone Mutual Fire Insurance Company.....	4,423 26
Equitable Fire & Marine Insurance Company.....	374 06
Enterprise Mutual Fire Insurance Company.....	2,766 74
Firemen's Mutual Insurance Company.....	6,108 34
Franklin Mutual Fire Insurance Company.....	123 40
Hope Mutual Fire Insurance Company.....	2,524 33
Manufacturers' Mutual Fire Insurance Company..	4,619 11
Mechanics Mutual Fire Insurance Company.....	3,233 66
Merchants Mutual Fire Insurance Company.....	2,432 00
Mercantile Mutual Fire Insurance Company.....	1,127 01
Narragansett Mutual Fire Insurance Company....	758 71
Patrons' Fire Relief Association.....	19 40
Pawtucket Mutual Fire Insurance Company.....	783 60
Puritan Life Insurance Company... ..	2,028' 60
Providence-Washington Insurance Company.....	3,265 46
Providence Mutual Fire Insurance Company.....	483 06
Rhode Island Mutual Fire Insurance Company....	5,668 86
Rhode Island Insurance Company	892 60
State Mutual Fire Insurance Company	7,743 93
Tiverton & Little Compton Mutual Fire Insurance Company	20 94
Union Mutual Fire Insurance Company.....	358 27
What Cheer Mutual Fire Insurance Company.....	2,574 07
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	\$58,347 48

FOREIGN INSURANCE AGENTS.

Fire and Marine.

P. Skinner, Jr.	\$287 97
Theophilus Topham	85 91
Abraham Ingham	57
Vernum L. Miner	62 86
Edward P. Butler	89 22
William H. Severance	29 97
William R. Randall	93 91
George A. Schuyler	3 43
Edward L. Spencer	13 20
Silas R. Richmond	4 45
M. Louis B. Sweatt	119 08
Edwin H. Farnum	69 67
Clark H. Straight	50
Di Jeser & Ortoleva	55 12
George N. Saillant	15 52
Howard E. Thorpe	16 30
Edwin F. Cary	25 27
H. A. Mackinney	44 15
C. B. Frechette	50
Edith C. Logee	221 07
Walter E. Shannon	6 26
Duncan A. Hazard	21 64
Matthew J. Lynch	23 03
N. E. Kendall	26 24
George W. Callahan	32 63
John E. Babcock	49 95
L. J. Morrisette	6 29
Albert H. Knight	1 83
Fred E. Hathaway	11 54
Gamwell & Ingraham	1,317 26
Henry C. Sherman, Jr.	53 88
John W. Ramsbottom	15 59

Joseph Perkins, Jr.	\$111 57
B. Thomas Potter	1 95
Charles W. Greene	43 10
Herbert L. Dyer	21 53
Charles A. Morgan	705 51
Andrews & Weaver	96 13
The Joseph L. Fleurant Insurance Agency.....	198 86
Alexander M. Blake	5 62
T. A. Gardner & Company	64 09
Benjamin J. Dyer	14 46
P. Skinner, Jr.	1 18
A. P. White	96 23
Frederick P. Church	27 26
Thomas D. Higgins	8 51
Charles H. Philbrick	643 14
Frank W. Coy	270 65
Felix F. Thurm	24 40
Joseph L. Sanders	29 70
A. Lincoln Hambly	119 00
Beach & Sweet	2,812 43
Coates, Hurdis Company	92 67
Oscar J. Rousseau	10 64
Herbert C. Calef	12 51
Packer Braman	1,744 18
James T. Kaull	43 31
Wheeler W. Arnold	48 77
Charles G. Easton	25
Clifford D. Paige	387 73
Scott & Farrell	76 98
B. M. Briggs & Sons	93 19
Briggs & Golden	3 02
C. H. Wrightington	106 47
Frederick H. Paine	154 76
John L. Borden	8 93

Moses E. Shippee	\$224 44
Great American Insurance Company	4 08
Stanley N. Chase	208 55
James P. Healey	6 69
Scott & Farrell	5 63
Stanley N. Chase	1 38
Leon S. Sanders	10 99
H. G. Wilkes	67 17
Harold P. Warren	2 49
W. Herbert Caswell	81 46
Henry T. Bugbee	14 29
H. M. Clark	62 60
James F. Freeman Company	304 85
Frank E. Brown	611 30
George N. Girard	248 85
Girard & Ninteau	2 29
Norberg & Company	11 15
John C. Budlong	11 30
C. E. Boon & Company	101 48
Adam J. Dotzert	22 13
Bertram W. Wall	55 15
Thomas R. Rathbun	251 69
John A. Gammons	945 11
William E. Doyle	9 61
John C. Cosseboom	182 10
James Keough	43 81
Thomas O'Brien	11 08
W. Russell Sweet	4 20
William H. Draper	26 64
Ida J. Morin	76 46
E. L. Watson & Company	1,879 10
Howard I. Lee	1,013 33
Donald S. Tonge	197 23
Henry C. Anthony	9 99

Royal G. Luther	\$59 51
John A. O'Connell	1,749 43
Clarence A. Hammett Company.....	206 66
Beach & Sweet, Incorporated	7 53
Dwight C. Lord & Son	40 49
Lewis L. Simmons	7 16
F. X. Roberts & Son	63 38
W. A. Lester	1,679 56
William C. Mowry	222 88
Lyman W. Budlong	93
R. P. Smith & Son	1,567 16
John F. Kirby	24 01
Herbert P. Sutton	65 65
Misael Gaulin & Son	43 17
Edward M. Burke	1 98
Irvine O. Chester	177 90
Joseph S. Blume & Company	53 28
James W. Burke	6 18
Howard B. Perry	39 45
Holden & Greene	173 34
Edgar E. Matteson	13 45
Daniel McIver	19 27
James W. Cook	309 86
J. B. Parsonage	449 01
Andrew F. Denegan	1 45
John H. Rock	13 71
Richard S. Smith	9 80
William H. Herrick Company	84 73
William E. Brightman	404 60
Chester F. Newcomb	831 93
Frank Bishop & Company	61 04
Eugene A. Tingley	51 32
Leon E. Danforth	23 04
John B. Carpenter	208 79

John E. McOsker	\$13 67
J. Urban Edgren	47 10
DeBlois & Eldredge	794 01
Melvin C. Johnson	175 83
American Druggists Fire Insurance Company.....	141 94
William C. Chambers	84 67
Antonio Marcaccio	163 76
Elmer C. Mason	96 56
Leo R. Donahue	33 45
Elmer W. Shippee	6 24
O. J. Paquin	45 28
H. F. Horton & Sons Company.....	27 92
William G. Sweeney	29 49
C. A. Bursley	3 60
N. S. Brown Company	33 72
Leo A. Blais	160 79
J. C. Palin	54 36
F. N. Branch	164 01
William F. McCoy	4 32
Abraham Manchester	2 28
C. E. Boon & Company.....	04
Fagan & Moore	42 91
The Arnold Company	251 04
Spencer & Boss	1,618 38
John Eddy & Son	172 42
Gallivan & O'Donnell	2,213 00
Frank L. Dean	40 20
J. A. & C. O. Latham	131 02
John F. Galligan	135 81
Walter H. Robinson	205 60
Edward McCabe & Son	94 21
The Isaac Shove Company	967 70
Herbert B. Davis	13 53
George I. Parker	95 55

Arthur O'Leary, Incorporated.....	\$951 93
Richard A. Hurley	110 54
Elmer W. Mason	14 38
W. L. Kelley	82 91
Matthew J. Gallagher	430 24
Maryland Motor Car Insurance Company.....	84 91
Starkweather & Shepley, Incorporated.....	10,250 74
William H. Barclay	105 43
Thomas F. Cavanaugh	76 07
Charles H. Lawton	56 02
John E. Kelley	9 96
Thomas W. Peirce	9 69
James Keough	8 53
Daniel McIver	8 05
M. J. Gallagher	4 81
Richard Smith	3 76
Myles M. Mulligan	3 32
P. F. Kinion	2 60
E. H. Richardson	1 22
T. C. Brown, Jr.	84
Bernard Cunningham	35
Frank B. Knowles	40
William D. Goff Company	338 86
Harold Holt	9 01
Sanderson Brothers	483 72
Charles F. Grinnell	2 00
Joseph T. Murphy	26 42
G. L. & H. J. Gross.....	2,246 64
Howard W. Farnum	7 76
Winfield Fuller Company, Incorporated	258 61
Phoenix Insurance Company of Hartford.....	525 99
Orient Insurance Company	221 99
Royal Insurance Company, Limited.....	110 07
Automobile Insurance Company of Hartford.....	15 41

Colonial Fire Underwriters	\$44 84
Glen Falls Insurance Company.....	124 15
The American Insurance Company	14 20
The Farmers' Fire Insurance Company.....	44 49
Massachusetts Fire & Marine Insurance Company	17 69
Pennsylvania Fire Insurance Company	8 89
The Mercantile Insurance Company of America...	80 34
Nord-Deutsche Insurance Company	68 47
Fidelity-Phoenix Fire Insurance Company.....	397 45
The Home Insurance Company	554 91
Svea Fire & Life Insurance Company.....	54 50
The North River Insurance Company.....	64 20
The Eagle & British Dominions Insurance Com- pany, Ltd.	83 25
United States Fire Insurance Company.....	98 26
North British & Mercantile Insurance Company...	36 16
Michigan Commercial Insurance Company.....	39 88
Phoenix Assurance Company, Ltd., of England...	127 17
Connecticut Fire Insurance Company.....	115 13
Michigan Fire & Marine Insurance Company.....	126 54
Fire Association of Philadelphia	267 48
Milwaukee Mechanics Insurance Company	7 79
The Reliance Insurance Company	20 36
The Marine Insurance Company, Ltd., of London	20 71
Columbia Insurance Company	28 12
Western Assurance Company	59 99
The Yorkshire Insurance Company, Limited.....	56 74
The Franklin Fire Insurance Company	12 11
Globe & Rutgers Fire Insurance Company.....	63 08
Hartford Fire Insurance Company	234 51
Queen Insurance Company of America.....	68 52
The Netherlands Fire & Life Insurance Company..	132 28
Prussian National Insurance Company of Stettin, Germany	171 18

The Royal Exchange Assurance Company.....	\$36 72
Caledonian Insurance Company of Scotland.....	20 22
Agricultural Insurance Company	103 85
The Continental Insurance Company	267 23
Hamburg-Bremen Fire Insurance Company.....	5 61
National Fire Insurance Company	29 43
Automobile Insurance Company	5 54
Camden Fire Insurance Association	174 51
New Hampshire Fire Insurance Company.....	34 16
Atlas Assurance Company	29 61
London & Lancashire Insurance Company, Limited	31 04
Union Assurance Society, Limited	67 78
Commercial Union Assurance Company, Limited..	179 60
British America Assurance Company	10 10
German American Insurance Company	11 85
Sun Insurance Office	85 98
National Union Fire Insurance Company.....	11 55
The Hanover Fire Insurance Company	9 64
Insurance Company of North America	83 74
County Fire Insurance Company	27 17
Firemen's Fund Insurance Company	116 87
Westchester Fire Insurance Company	87 26
United States Lloyds	241 32
Security Insurance Company	100 13
Scottish Union & National Insurance Company....	82 32
The London Assurance Corporation	6 90
Firemen's Insurance Company	207 16
Liberty Mutual Insurance Company	68 54
City of New York Insurance Company.....	53 34
Law, Union & Rock Insurance Company.....	84 61
Germania Fire Insurance Company	162 48
The Concordia Fire Insurance Company.....	15 20
Packer Braman	2 16
Norwich Union Fire Insurance Society, Ltd.....	128 56

Niagara Fire Insurance Company.....		\$2,384 33
St. Paul Fire & Marine Insurance Company.....		154 02
The Commonwealth Insurance Company of New York		13 66
Detroit Fire & Marine Insurance Company.....		106 88
Mechanics & Traders Insurance Company.....		257 69
Detroit National Fire Insurance Company.....		11 27
The Columbian National Fire Insurance Company..		61 42
Boston Insurance Company		725 51
Theophilus Topham		49 11
P. Skinner, Jr.		334 30
		<hr/>
		\$60,715 16
Rebate of Taxes	\$299 71	
Paid Firemen's Relief Fund.....	2,500 00	
	<hr/>	2,799 71
		<hr/>
		\$57,915 45

Life.

Connecticut General Life Insurance Company.....		\$1,515 06
United States Life Insurance Company		12 65
The Prudential Insurance Company of America...		14,323 96
The Union Central Life Insurance Company.....		1,166 17
Berkshire Life Insurance Company		211 19
Aetna Life Insurance Company		1,164 17
Equitable Life Assurance Society		6,678 34
Travellers Insurance Company		682 30
Columbian National Life Insurance Company.....		1,101 59
National Life Insurance Company		844 24
The Union Central Life Insurance Company.....		291 55
		<hr/>
		\$27,991 22

Mutual Life.

New England Mutual Life Insurance Company....	\$1,261 32
State Mutual Life Assurance Company.....	1,518 50
Connecticut Mutual Life Insurance Company.....	886 05
Phoenix Mutual Life Insurance Company.....	611 62
The Northwestern Mutual Life Insurance Company	3,100 53
The Mutual Benefit Life Insurance Company.....	1,270 21
Union Mutual Life Insurance Company.....	363 25
Home Life Insurance Company	261 20
Fidelity-Mutual Life Insurance Company	231 58
Penn Mutual Life Insurance Company	2,377 38
Pacific Mutual Life Insurance Company	270 78
Mutual Life Insurance Company of New York....	3,049 52
John Hancock Mutual Life Insurance Company....	14,328 83
Provident Life & Trust Company	1,225 00
New York Life Insurance Company	2,773 38
Metropolitan Life Insurance Company.....	22,908 18
Massachusetts Mutual Life Insurance Company...	7,761 39
State Mutual Life Assurance Company.....	477 50
	<hr/>
	\$64,676 22

Accident and Casualty.

Van R. Wheeler	\$31 80
Gamwell & Ingraham	1,119 38
Hartford Steam Boiler Inspection and Insurance Company	478 13
Henry F. Bischoff	110 02
H. M. Kimball	91 76
Charles H. Philbrick	28 44
Beach & Sweet	70 91
Gamwell & Ingraham	4 06
Packer Braman	3 30
Domenico Conca	3 78

Andrew L. Intlehouse	\$49 01
Royal H. Gladding	9 61
B. M. Briggs & Sons	11 82
Moses E. Shippee	2 94
Wm. T. Stillman	969 84
Stanley N. Chase	2 77
Continental Casualty Company	350 67
Isaac A. Shippee	7 41
Masonic Protective Association	42 70
J. C. Cook	2 89
James E. Smith	905 06
Frank E. Brown	25
D. G. Hall	231 84
George F. Burt	437 87
William M. P. Bowen	38 71
John A. Gammons	2,236 08
William E. Doyle	5 13
James J. Rooney	4 44
John C. Cosseboom	72 15
Frank E. Hagar	2 06
Ida J. Morin	1 11
E. L. Watson & Company	900 62
Beach & Sweet, Incorporated.....	90 43
W. A. Lester	738 63
T. J. Sullivan	28 82
John F. Barnes	87 71
R. P. Smith & Son	10 34
Irvine O. Chester	14 07
Joseph S. Blume & Company	15 54
Holden & Greene	52
Lawrence F. Vories	3,894 40
J. B. Parsonage	62 14
William E. Brightman	3 57
Chester F. Newcomb	222 56

G. L. & H. J. Gross	\$277 45
Starkweather & Shepley	5,736 01
John D. MacMillen	72 13
Clifford D. Paige	1,928 09
Elmer C. Mason	305 20
Arthur O'Leary, Incorporated	54 78
John F. Barnes	88 69
Contractors Mutual Liability Insurance Company..	46 26
Benjamin T. Montgomery	164 38
Fidelity & Casualty Company of New York.....	1,291 49
N. S. Brown Company	58
Leo A. Blais	79 64
American Credit Indemnity Company	43 22
Henry W. Sutcliffe	3 36
Dwight C. Lord & Son	5,550 65
John Eddy & Son	72
Gallivan & O'Donnell	1,606 22
Walter H. Robinson	262 78
Aetna Life Insurance Company (Accident).....	2,416 05
Aetna Casualty & Surety Company	797 79
Automobile Insurance Company	451 64
F. G. Blanchard	89 27
William H. Kean	340 06
George I. Parker	129 93
Isaac Shove Company	52 07
Arthur O'Leary, Incorporated	27 01
Ira Lloyd Letts	1 69
Metropolitan Life Insurance Company	35 26
Massachusetts Bonding & Insurance Company.....	886 70
F. R. Rathbun	143 22
Matthew J. Gallagher	122 44
United States Casualty Company	206 13
Starkweather & Shepley, Incorporated	503 63
A. A. Mulligan	244 42

Sanderson Brothers	\$1,030 52
Commercial Casualty Insurance Company.....	112 81
Fidelity & Deposit Company of Maryland.....	134 15
Peerless Casualty Company	79 00
Boston Casualty Company	9 78
Manufacturers Liability Insurance Co. of N. J....	636 84
Great Eastern Casualty Company	243 68
Eastern Casualty Company	54 78
Brotherhood Accident Insurance Company.....	20 62
Standard Accident Insurance Company	351 87
General Accident Fire & Life Assurance Company	133 60
American Mutual Liability Insurance Company....	1,058 04
Zurich General Accident & Liability Insurance Co.	596 17
The Ridgeley Protective Association	8 34
The Preferred Accident Insurance Company.....	56 15
Western Livestock Company	19 32
Mutual Plate Glass Insurance Company of Conn.	20 42
Stephen J. Casey	92 36

\$42,012 70

INSURANCE FEES.

Philip H. Wilbour, Insurance Commissioner.....	\$14,343 60
Third Dividend American Union Fire Insurance Company, in liquidation	3 63

\$14,347 23

RECAPITULATION.

State Insurance Companies	\$58,347 48
Fire	57,915 45
Accident & Casualty	42,012 70
Life	27,991 22
Mutual Life	64,676 22
Insurance Fees	14,347 23

\$265,290 30

FINES, COSTS, FEES, ETC., FROM COURTS AND OFFICERS.

SUPREME AND SUPERIOR COURTS.

Costs	\$11,214 29
Jurors	2,662 01
Officers	497 70
Witnesses	555 62
Fines	4,241 97
Incidentals	267 82
	<hr/>
	\$19,439 41

DISTRICT COURTS.

First Judicial District.

Entries and Executions	\$303 55
Writs	16 75
Fines	3,310 00
Costs	1,758 80
Court Fees in Town Cases	516 55
	<hr/>
	\$5,905 65

Second Judicial District.

Entries and Executions	\$19 60
Writs	3 25
Fines	154 00
Costs	195 05
Court Fees in Town Cases	32 60
	<hr/>
	\$404 50

Third Judicial District.

Entries and Executions	\$73 10
Writs	11 75
Fines	142 00
Costs	160 30
Court Fees in Town Cases.....	71 20
	<hr/>
	\$458 35

Fourth Judicial District.

Entries and Executions	\$96 25
Writs	7 70
Fines	394 00
Costs	362 65
Court Fees in Town Cases.....	106 75
	<hr/>
	\$967 35

Fifth Judicial District.

Entries and Executions	\$77 85
Writs	4 40
Fines	941 00
Costs	812 85
Court Fees in Town Cases	438 40
	<hr/>
	\$2,274 50

Sixth Judicial District.

Entries and Executions	\$3,547 40
Writs	568 45
Fines	22,830 00
Costs	7,194 67
Court Fees in Town Cases	69 90
	<hr/>
	\$34,210 42

Seventh Judicial District.

Entries and Executions	\$98 30
Writs	50
Fines	866 00
Costs	439 85
Court Fees in Town Cases	253 95
Incidentals	1 02
	<hr/>
	\$1,659 62

Eighth Judicial District.

Entries and Executions	\$121 40
Writs	9 65
Fines	873 00
Costs	579 20
Court Fees in Town Cases	22 60
Incidentals	6 04
	<hr/>
	\$1,611 89

Ninth Judicial District.

Entries and Executions	\$20 60
Fines	147 00
Costs	111 75
Court Fees in Town Cases	18 90
	<hr/>
	\$298 25

Tenth Judicial District.

Entries and Executions	\$394 20
Writs	52 15
Fines	4,045 00
Costs	1,455 40
Court Fees in Town Cases	1,409 20
Incidentals	53 28
	<hr/>
	\$7,409 23

Eleventh Judicial District.

Entries and Executions	\$163 15
Writs	7 30
Fines	873 20
Costs	885 08
Court Fees in Town Cases	526 55
Incidentals	1 64
	<hr/>
	\$2,456 92

Twelfth Judicial District.

Entries and Executions	\$171 70
Writs	9 90
Fines	1,873 00
Costs	771 00
Court Fees in Town Cases	41 50
Incidentals	50
	<hr/>
	\$2,867 60

Jailers.

John V. Chapman, Providence County	\$12,816 29
Frank P. King, Newport County	71 10
Henry Serbst, Bristol County	27 90
George S. Phillips, Washington County	45 40
Ira E. Higgins, Superintendent of State Workhouse	362 30
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	\$13,322 99

Automobile Fines.

Fines imposed by District Courts for violation of Automobile Laws, quarter ending July 31, 1917	\$3,748 00
Fines imposed by District Courts for violation of Automobile Laws, quarter ending October 31, 1917	5,742 00
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	\$9,490 00

COURT FEES, ETC.

Miscellaneous.

Eighth District Court	\$15 90
Chief of Police of Lincoln.....	1 00
Walter R. Wightman, agent, Fourth District Court	21 80
Ninth District Court	1 25
Walter R. Wightman, agent, Second District Court	23 00
Walter R. Wightman, agent, Sixth District Court..	16 20
Walter R. Wightman, agent, Third District Court..	23 80
	<hr/>
	\$102 95

FINES, COSTS, FEES, ETC., COURTS AND OFFICERS.

RECAPITULATION.

Supreme and Superior Courts.....	\$19,439 41
District Courts	60,524 28
Jailers	13,322 99
Fines in Automobile cases.....	9,490 00
Miscellaneous	102 95
	<hr/>
	\$102,879 63

RECEIPTS FROM TOWN AND CITY LICENSES.

Liquor Licenses.

Bristol	\$1,152 50
Burrillville	2,100 00
Central Falls	6,662 50
Charlestown	106 25
Coventry	900 00
Cranston	3,118 75
Cumberland	2,556 81
East Greenwich	962 50
East Providence	1,500 00

Foster	\$150 00
Glocester	200 00
Lincoln	1,790 00
Newport	7,940 82
North Kingstown	300 00
North Providence	1,450 00
North Smithfield	650 00
Pawtucket	14,550 00
Providence	84,300 00
Scituate	150 00
Smithfield	250 00
Warren	2,162 50
Warwick	2,550 00
West Greenwich	25 00
West Warwick	4,850 00
Westerly	2,264 50
Woonsocket	11,512 50
Bristol	60 00
Charlestown	6 25
Cranston	6 25
Cumberland	725 00
East Greenwich	18 75
East Providence	87 50
Foster	87 50
Lincoln	25 00
Pawtucket	137 50
Providence	200 00
Scituate	150 00
Woonsocket	612 50
	<hr/>
	\$156,270 88
Refund to City of Newport	5,325 84
	<hr/>
	\$150,945 04

Shows, Pool, Billiards, etc., Returns.

Bristol	\$85 12
Central Falls	507 25
Charlestown	44 50
Coventry	18 50
Cranston	169 25
Cumberland	78 75
East Greenwich	28 50
East Providence	168 00
Foster	2 50
Hopkinton	31 50
Jamestown	20 00
Lincoln	25 50
Middletown	25 00
Newport	1,595 50
North Kingstown	44 50
North Providence	83 50
North Smithfield	4 00
Pawtucket	1,264 00
Portsmouth	21 00
Providence	2,976 13
Scituate	8 00
South Kingstown	40 00
Tiverton	37 50
Warren	213 00
Warwick	183 00
Warwick	133 50
West Warwick	255 50
Westerly	33 00
Woonsocket	821 50
Barrington	15 00
Bristol	49 00
Central Falls	242 50
Charlestown	23 50

Cranston	\$189 00
Cumberland	10 50
East Greenwich	25 00
East Providence	159 25
Johnston	53 50
Lincoln	10 00
North Providence	46 00
North Smithfield	22 00
Pawtucket	394 50
Portsmouth	5 00
Providence	5,973 25
Scituate	18 00
South Kingstown	40 50
Tiverton	30 00
Warwick	140 50
West Warwick	412 00
Westerly	80 00
Woonsocket	1,013 50
	<hr/>
	\$17,870 50

RECAPITULATION.

Liquor	\$150,945 04
Shows, Pool, Billiards, etc.....	17,870 50
	<hr/>
	\$168,815 54

Peddlers' Licenses.

George Ettelman, State	\$15 00
Harris Gorman, Providence County	30 00
Edward White, State	15 00
Vincent Frank, State	15 00
H. Falcofsky, State	15 00
Simon Farley, Providence County	10 00
Lena Hanna, Washington County	15 00

John Arnta, Providence County	\$10 00
Frank Albanese, Providence County	10 00
Arif Hasen, State	15 00
Mihmad Mahmood, State	15 00
Philip Cohen, State	15 00
Hyman Cohen, State	15 00
Joseph Wenger, State	15 00
Sam Dick, State	15 00
George Williamson, State	15 00
Morris Pessis, State	15 00
Mohammed Amra, State	15 00
Joseph Abid, State	15 00
May Y. Monroe, Providence County	10 00
Simon Farley, Providence County	10 00
Jacob Karp, State	15 00
Max Bretchneider, Providence County	10 00
Elias Jacobs, State	15 00
George W. Lewis, Washington County	15 00
Louis Trencher, State	15 00
Joseph Kallele, State	15 00
Habash Kalid, State	15 00
Mary Holly, Bristol County	15 00
Alice Howayeck, Newport County	15 00
Hyman Cohen, State	15 00
Morris Miller, State	15 00
Simon Farley, Providence County	10 00
Louis Kulman, State	15 00
Edward White, State	15 00
Joseph Spear, Providence County	10 00
Max Cohen, State	15 00
Philip Storch, State	15 00
Simon Farley, Providence County	10 00

 \$555 00

Auctioneers' Duties.

Fred W. Perkins, Providence	\$36 45
Robert L. Walker Company, Providence.....	71
John F. Kiernan, Providence	22 27
M. Crochiere, Woonsocket	66
Herbert C. Calef, Providence	36 08
James H. Hurley, Providence	112 16
Theodore Brown, Providence	6 86
Samuel E. Daubney, Providence	40 32
E. Tudor Gross, Providence	46
George A. Schuyler, Pawtucket	1 13
John W. Saball, Lincoln	6 47
Joseph J. Owens, Providence	24
Clarence O. Carpenter, Warwick	3 43
George V. Sevin, Cranston	4 00
Joseph M. Provencher, Woonsocket	7 13
S. K. M. Robertson, Warwick	2 10
Henry B. Potter, Providence	36 12
Herman G. Tucker, Foster	13
Walter F. Crowell, Providence	12 86
Thomas T. Larkin, Hopkinton	26
James D. Caswell, Narragansett	3 79
Harry L. Bates, Providence	1 55
Warren Dawley, Richmond	2 52
William C. Tibbitts, West Warwick	2 94
Charles O. Latham, Cranston	16 28
Joseph A. Latham, Cranston	17
Wheeler W. Arnold, Pawtucket	88
Thomas W. Peirce, North Kingstown	1 14
Thomas O'Brien, Pawtucket	7 55
Domenico Conca, North Providence	4 85
Norbert Lavallie, Woonsocket	37
John C. Cosseboom, Woonsocket	29 29
Charles E. Conley, Pawtucket	3 08

Allen Money, Exeter.....	\$4 94
William G. Sweeney, Newport	7 07
John Cassidy, West Warwick	4 24
William H. Manuel, Newport	2 35
Matthew J. Gallagher, Pawtucket	16 89
William H. Quigley, Central Falls	8 67
George T. Howard, Little Compton	18
Ernest L. Manchester, Little Compton	1 35
Albert S. Greene, Burrillville	3 54
Edward E. Peckham, Middletown	14 38
Patrick F. Canning, Providence	97
Aaron Milkman, Providence	10 92
Harry Nathanson, Providence	6 13
Richard A. Hurley, Providence	15 16
Benjamin W. Grossman, Providence	3 55
Herbert L. Dyer, Newport	23 61
Arthur J. Billings, Warwick	2 95
Napoleon B. Rose, New Shoreham	17
Herman G. Tucker, Foster	48
Sylvester T. M. Robertson, Warwick.....	1 31
Clarence O. Carpenter, Warwick	3 06
James R. Jenkins, Providence	8 80
Charles A. White, Narragansett	10
Fred W. Perkins, Providence	39 44
Robert L. Walker Company, Providence.....	3 07
Patrick J. Callahan, Cumberland	9 12
James H. Hurley, Providence	53 01
E. Tudor Gross, Providence	15
George R. Hanaford, East Greenwich	4 57
Herbert C. Calef, Providence	16 51
Theodore Brown, Providence	7 87
Samuel E. Daubney, Providence	6 88
Thomas T. Larkin, Hopkinton	1 22
Patrick F. Canning, Providence	5 34

John W. Saball, Lincoln	\$4 02
Harry L. Bates, Providence	21 45
Thomas W. Peirce, North Kingstown	7 49
William C. Tibbitts, West Warwick	1 33
Herbert L. Dyer, Newport	2 89
Walter F. Crowell, Providence	31 08
Joseph M. Provencher, Woonsocket	2 34
Wheeler W. Arnold, Pawtucket	3 56
Henry B. Potter, Providence	85 88
John Votolato, Johnston	2 47
Charles O. Latham, Cranston.....	1 48
Joseph A. Latham, Cranston.....	1 87
Charles E. Conley, Pawtucket.....	4 62
Domenico Conca, North Providence.....	11 44
Jonathan Andrews, Woonsocket.....	1 94
Charles H. Lawton, Pawtucket.....	41 31
Richard A. Hurley, Providence.....	14 02
Albert S. Greene, Burrillville.....	1 87
Levi Staples, Barrington	2 36
Harry R. Paquin, Portsmouth.....	6 59
William H. Quigley, Central Falls.....	5 51
David M. Knight, Coventry.....	3 21
Arthur J. Billings, Warwick.....	12 39
Levi Staples, Barrington	2 28
Frank A. Greene, Charlestown.....	4 17
Napoleon B. Rose, New Shoreham.....	. 47
John B. Carpenter, East Providence.....	24 77
Charles A. White, Narragansett.....	31
Willard F. Browning, South Kingstown.....	2 14
W. Herbert Caswell, Narragansett.....	63 57
James R. Jenkins, Providence.....	98
Albert L. Cole, Foster.....	2 82
George R. Hannaford, East Greenwich.....	1 40
Patrick F. Canning, Providence.....	3 53

Fred W. Perkins, Providence.....	\$32 03
Robert L. Walker Company, Providence.....	2 69
Herbert C. Calef, Providence.....	7 27
William A. Baggott, Providence.....	26 64
	<hr/>
	\$1,138 44

Fees for Analysis of Commercial Fertilizers.

Bowker Fertilizer Company.....	\$136 00
Parmenter & Polsy Fertilizer Company.....	48 00
Lowell Fertilizer Company.....	96 00
New England Fertilizer Company.....	64 00
American Agricultural Chemical Company.....	48 00
Bowker Fertilizer Company.....	48 00
Sanderson Fertilizer & Chemical Company.....	88 00
The Pulverized Manure Company.....	72 00
John Joynt.....	24 00
New England Lime Company.....	32 00
John Breck's Sons Corporation.....	24 00
Coe-Mortimer Company.....	120 00
Rockland & Rockport Lime Company.....	16 00
National Fertilizer Company.....	176 00
L. B. Darling Fertilizer Company.....	128 00
Wilcox Fertilizer Company.....	136 00
The Fertile Chemical Company.....	24 00
J. B. King & Company.....	8 00
Nitrate Agencies Company.....	48 00
Charles F. A. Smith.....	16 00
The Rogers & Hubbard Company.....	152 00
M. L. Shoemaker & Company.....	32 00
Armour's Fertilizer Works.....	128 00
Herbert Harris.....	16 00
What Cheer Chemical Company.....	16 00
Alpha Portland Cement Company.....	8 00
Nicholas F. Gaeber.....	32 00

Berkshire Fertilizer Company	\$80 00
The American Agricultural Chemical Company....	416 00
William B. Scott & Company.....	8 00
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	\$2,240 00

Fees for Charters.

Culver Dye Company, Incorporated.....	\$100 00
Portuguese Holy Ghost Society.....	5 00
Acme Finishing Company (Increase).....	225 00
The Nut Creamery, Incorporated.....	100 00
Atlantic Beach Corporation	100 00
Gem Yarn & Dye Works.....	100 00
Patton-MacGuyer Company	100 00
Burke-Tarr Company	100 00
R. Bolle Mfg. Company.....	100 00
Rhode Island Electrical Instrument Company.....	100 00
W. M. Harris Realty Company.....	100 00
The Jackson Social Club	5 00
Barnai Worsted Company (Increase).....	100 00
Superior Margarine Mfg. Company	100 00
Family Laundry, Incorporated	100 00
The Williams & Anderson Company (Increase)...	50 00
Taxi Company, Incorporated	100 00
The Trustees of the Norwegian & Danish Methodist Episcopal Church	5 00
Standard Garnetting Company.....	100 00
Our Lady of Perpetual Aid, Polish Old Roman Catholic Church	5 00
Horton-Gardner Corporation	100 00
British Relief Society of Rhode Island.....	5 00
Fray Jewelry Company	500 00
Manville Fire Department	5 00
B. & H. Mattress Company.....	100 00

Woodlawn Finishing Company (Increase).....	\$150 00
Providence Braid Company (Increase).....	100 00
Oswegatchie Textile Company (Increase).....	100 00
Paul Stierle Company, Incorporated.....	100 00
The Steel Specialty Corporation.....	100 00
The Charles Worsted Company.....	100 00
Independent Grocers & Market Men's Association..	5 00
Columbus Cycle Club	5 00
Riverpoint Club Association	5 00
Caproni Brothers Company (Increase).....	100 00
Rhode Island Knitting Company.....	100 00
Providence Kiltie Band	5 00
The Pawtuxet Valley Board of Trade.....	5 00
A. & Z. Chain Company.....	100 00
Rhode Island Registry & Identification Company...	100 00
Thornton Cotton Duck Mills.....	100 00
Oswegatchie Textile Company (Increase).....	100 00
Saint Christ Michalance Club.....	5 00
The French Literary & Social Club of Warren, R. I.	5 00
Optical Patent & Trade Mark Company.....	100 00
Lewis L. Fales Corporation.....	100 00
Narragansett Veteran Firemen's Association.....	5 00
Ukranian Library Association	5 00
Italian Retail Grocers Association.....	5 00
Wickaboxet Farms	100 00
Ventrone & Company, Incorporated.....	100 00
Rhode Island Bag & Burlap Company.....	100 00
Providence Fittings Company	100 00
The W. & K. Company (Increase).....	250 00
Anglo-American Mfg. & Export Company.....	100 00
The Retail Furniture Association of Rhode Island..	5 00
Manhasset Mfg. Company (Increase).....	300 00
Cranston Italo-American Club	5 00
Whitfield, Gilbane Company	100 00

L. H. Tillinghast Supply Company (Increase).....	\$20 00
Temple Mfg. Company	100 00
Jenkinson Machine & Tool Company.....	100 00
Cranston Welfare League	5 00
Davisville Free Library Association.....	5 00
William H. Schwartz Company.....	100 00
The Caesar Battista Club of Knightsville.....	5 00
Collyer Insulated Wire Company (Increase).....	300 00
Providence Farmers Exchange	5 00
Oakland Beach Civic League.....	5 00
The Verga Wolf Mfg. Company.....	100 00
The Franklin Machine Company (Increase).....	200 00
Federal Independent Athletic Club.....	5 00
Nathanson Amusement Company	100 00
The Fairmount Club	5 00
United Americas Exporting Company.....	100 00
Dupuis-Blais Company	100 00
The Carolina Company (Increase).....	100 00
Manton Base Ball & Social Club.....	5 00
Societa Operaia Teanese di Mutuo Soccorso Cesare Battisti	5 00
Central Construction Company	100 00
Cercle Franco Americain	5 00
Aleppo Young Men's Educational Club of Paw- tucket and Central Falls.....	5 00
F. David & Company, Incorporated.....	100 00
Sakonnet Fishing Company	100 00
Budlong Manufacturing Company	100 00
Italo-American Retail Grocers Corporation of Rhode Island	100 00
Bristol Lega Di Miglioramento Fra Glio Perrio Society	5 00
Stoller-Hilgers Silk Mill, Incorporated.....	100 00
Rocky Brook Mills Company.....	250 00

Saint Mathew's Catholic Club.....	\$5 00
Rhode Island Exchange Company.....	100 00
American Piercing Saw Company.....	100 00
Premier Worsted Mills (Increase).....	50 00
D'I Weaving Company	100 00
Harrisville Utilities, Incorporated.....	100 00
H. A. Mackinney Company.....	100 00
J. E. Kenworthy Company.....	100 00
Service Dyeing & Winding Company.....	100 00
Hope Publishing Company (Increase).....	25 00
National Wholesale Grocery Company of Rhode Island	200 00
Northern Water Company	200 00
Marion Woolen Mills	100 00
What Cheer Braid Company.....	100 00
Oakland Beach Yacht Club.....	5 00
Darlington Trucking Company	100 00
The Carpenter-Jenks Funeral Home, Incorporated.	100 00
Liberty Tool & Gauge Works.....	100 00
California Wine Company	100 00
Warwick Novelties, Incorporated.....	100 00
What Cheer Haven No. 1, Daughters of Neptune...	5 00
Modern Machinery Company	100 00
What Cheer Laundry (Increase).....	100 00
Narragansett Motors Company	100 00
Vermont Creamery	100 00
Union Furniture Company	100 00
George E. Withington Grocery Company.....	100 00
New England Publishing Company, Incorporated, of Providence, R. I.	100 00
United Syrian-American Association	5 00
Williams & Merchant, Incorporated.....	100 00
Trustees for the Eastern Nazarene College.....	5 00
The Young Orchard Company (Increase).....	50 00

J. P. Taylor Company	\$100 00
Ashaway Grange No. 50, P. of H.	5 00
Federation of the Societies of the North End of the City of Providence and State of Rhode Island.	5 00
Majestic Clothing Company	100 00
Hayes Loom, Reed & Harness Company.....	100 00
National Coated Paper Corporation.....	250 00
The J. C. Hall Company (Increase).....	100 00
J. A. Lind Company	100 00
Armeno-American Publishing Company, Incor- porated	100 00
Banner Needle Company	200 00
Eagle Weaving Company	100 00
W. W. Wightman, Incorporated.....	100 00
The Enterprise Dye Works, Incorporated.....	300 00
Standard Emblem Company	100 00
Fontaine Realty Company	100 00
The National Grocery Company, Incorporated.....	150 00
West Gloucester Light & Power Company.....	100 00
Parkin Yarn Company	100 00
The Longmeadow Sporting & Fishing Club.....	5 00
Laline Building Moving Company.....	100 00
H. D. McLean Trucking Company.....	100 00
Trinity Square Jewelers, Incorporated.....	100 00
The Anderson Sheet Metal Company.....	100 00
Starkweather & Shepley, Incorporated (Increase)..	500 00
Battery A of Rhode Island, Welfare League.....	5 00
Cold Spring House	100 00
Draft Regulator Company	100 00
Metropolitan Transportation Company.....	100 00
Saint Michael Club	5 00
British Empire Club	5 00
E. M. Dart Mfg. Company (Increase).....	100 00
Excelsior Lodge No. 90, Vasa Order of America...	5 00

REPORT OF GENERAL TREASURER.

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Acme Braid Company	\$100 00
Aldrich Brothers Company	3,000 00
Pettaconsett Mfg. Company.....	100 00
W. H. Graham Company of Rhode Island.....	100 00
East Greenwich Columbus Independent Band.....	5 00
The Master Barbers Association of the City of Providence	5 00
The Hazeloch Medicine Company	100 00
St. Paula Independent Irish Catholic Benevolent Union	5 00
Johnson Brass Foundry Company.....	100 00
Teanese Social Club	5 00
Providence Needle Company	200 00
Hamel Oil Burning Equipment Co., Incorporated..	100 00
Lyon Silk Works, Incorporated.....	100 00
Rhode Island Oil Gas Company.....	100 00
Red Cross Lodge No. 25, Knights of Pythias.....	5 00
R. Livingston Beeckman Association of East Provi- dence	5 00
Assyrian Jacobite Apostolic Church of St. Ephraim	5 00
Towarzystwo Najswieszegi Imienia Jezus Przy Parafi Sivientez Jadwigi	5 00
C. H. Pease & Company.....	100 00
Panara Brothers, Incorporated	100 00
Joseph Benn & Sons, Incorporated (Increase).....	1,100 00
Roy Rawlings, Incorporated.....	100 00
Pierce-Arrow Trucking Company of Rhode Island.	100 00
National Macaroni Company	100 00
Park Clothing Company	100 00
B. B. & R. Knight, Incorporated.....	12,000 00
Union for Rehabilitation of the Village of Haght..	5 00
Putnam Warehouse Company	100 00
Kescot Mfg. Company, Incorporated.....	100 00
Reliable Shoe Shop, Incorporated.....	100 00

Priscilla Worsted Mills (Increase)	\$50.00
Circolo Educcativo Alessandro Manzoni	5 00
Liberty Mfg. Company, Incorporated	100 00
The Wood Metal Company	100 00
Springer Social Club	5 00
Fulford Mfg. Company (Increase)	300 00
Acme Laundry Company	100 00
La Vechia Societa Di Mutuo Soccorso Christofo Colombo No. 1	5 00
Woonsocket Machine Press Company, Incorporated	750 00
Adams Novelty Company	100 00
The Elms Social & Literary Club	5 00
The Oaks Social & Literary Club	5 00
The American Society of Martians	5 00
Marine Engineering & Dry Dock Company of Rhode Island	500 00
Moses Robinson Company	100 00
Armenian American Club	5 00
John F. Sheern, Incorporated	100 00
Providence Driving Club	5 00
The Ninigret Mills Company	550 00
Trudon & Company, Incorporated	100 00
The Nutile Roofing Company	100 00
The Liberty Club of Central Falls, R. I.	5 00
The Old Homestead Literary Club of East Green- wich, R. I.	5 00
The French Worsted Company (Increase)	600 00
Eastern Lace & Braid Company	100 00
The Jolly Five Club	5 00
Blackstone Valley Transportation Company	250 00
St. Antonio Club	5 00
Harrisville Realty Company	100 00
Crescent Braid Company of Rhode Island	100 00

REPORT OF GENERAL TREASURER.

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Pawtuxet Valley Agricultural Society.....	\$5 00
East Side Social & Literary Association.....	5 00
United Fraternal Club,.....	5 00
Vaad Taharath Hameshpacho	5 00
Palin Realty Company	100 00
Newman Realty Company	210 00
Workingman's Club of East Greenwich	5 00
Red Bridge Warehouse Company	100 00
Tubular Woven Fabric Company (Increase).....	50 00
John D. Peck, Incorporated	100 00
John D. Peck Grain Company	100 00
The Boko Social & Literary Club of Rhode Island	5 00
The Island Lumber Company	100 00
Colwell Worsted Mills (Increase)	100 00
Pascoag Realty Company (Increase)	500 00
Club La Jenness Franco Americaine	5 00
W. S. Hough, Jr., Company (Increase).....	100 00
Ricco Company, Incorporated	100 00
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	\$37,280 00

FEES.

Miscellaneous.

Water analysis, etc., Board of Health.....	\$65 00
Board of Examiners in Chiropody, unexpended bal- ance	39 65
Board of Registration in Embalming	2 23
Fraternal Societies, regulation fees and charges....	132 40
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	\$239 28

INTEREST.

Interest from Charitable Institution Loans.

Loan of 1914	\$2,105 64
Loan of 1915	260 29
Loan of 1916	282 52
Loan of 1918	336 57
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	\$2,885 02

Dividend on School Funds.

Interest, Town of Bristol Bonds	\$980 00
Interest, City of Cranston Bonds	40 00
Interest, Town of Lincoln Bonds	4,600 00
Interest, Town of East Providence Bonds	3,040 00
Interest, Town of North Kingstown Bonds	240 00
Interest, City of Pawtucket Bonds	760 00
Interest, Town of Warren Bonds	720 00
Interest, City of Woonsocket Bonds	120 00
Interest, Harbor Improvement Loan of 1913 Bonds	200 00
Interest, Highway Construction Loan Bonds.....	30 00
Dividend, National Bank of Commerce.....	1,218 00
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	\$11,948 00

Interest, Corporate Excess and Franchise Taxes.

The W. J. Feeley Company.....	\$34 34
L. J. Anshen Company.....	11 49
Unique Findings and Supply Company.....	60
Richter Mfg. Company	40
Bonnet Point Land Company	1 06
Western Mercantile Corporation	33
Providence Dental Company	31
Rhode Island Automatic Fountain Company.....	2 08

Saywell-Lundgren Company	\$0 30
Gilbreth Brown Company, Incorporated.....	1 65
New England Amusement Company	5 40
Crown Confection Shop	09
Olneyville Provision Company	2 66
T. N. Gallassi Company	5 59
A. Hasselbaum Company	2 39
Max Gertsacov Company	2 00
William Bens Company	2 16
Invincible Tire Company	1 78
Benjamin Brothers Company	1 20
Rex Mfg. Company	14 76
S. K. Merrill Company	17 60
A. C. J. Learned Company	1 23
The General Plastering Company	3 83
Crown Confection Shop	1 60
Charles H. Williams Company	2 41
Narragansett Bay Realty Company	10 77
Canadian & Southern Lumber Company.....	4 20
Dimond Company	35 51
Rocheford Harness Company	4 36
Aetna Realty Company	13
Isaac Hahn Land Company	12
Oakland Cemetery Company	3 07
Interstate Ice Company	3 70
E. A. Fargo Company	65
Cranston Bottling Company	2 46
Merchant Tailors Trimming House, Incorporated..	2 45
Whitney Law Corporation	1 36
Flint Farms, Incorporated	11 07
James Openshaw Company	6 65
Sweeney Brothers Company	3 74
Dyer Credit Company	4 31
Paige Motor Company of Rhode Island.....	14 35

Rhode Island Electrical Equipment Company	\$8 63
Providence Printing Company	7 97
Providence Novelty Company	5 47
Benjamin F. Smith Company	36 09
La Lo Chemical Company	14 50
Amstaco, Incorporated	6 65
J. R. McLean Company	47
Crown Realty Company	1 05
German Sausage Company	3 25
Providence Merchandise Company	54
Francis Chemical Company	1 79
R. I. Security Company	9 55
American Loan Company	31 67
Domestic Sewing Machine Company, Incorporated	51
James Wilkinson Company	59
New England Land Company	26 03
Armour Fertilizer Works	3 67
Globe Optical Company	5 01
Atlantic Refining Company	1 56
Walnut Hill Cemetery Company	16 58
Hand Brewing Company	79 83
Raphael Gouse Textile & Supply Company	97
Niantic Dyeing Company	1 80
Hennessey Laundry Company	260 13
Enterprise Real Estate Company	11 85
Rhode Island Security Company	4 08
Henry F. Miller & Sons Piano Company	17 95
Rhode Island Co-operative Coal Company	21
St. Clair, Incorporated	60
Scientific Textile Finishing Corporation	16
McKenzie & Winslow, Incorporated	1 14
Monast Realty Company	77
Talbot Brothers Company	77
Medway Mfg. Company	14

REPORT OF GENERAL TREASURER.

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A. B. McCrillis & Son, Incorporated.....	\$0 29
Telegraphone Sales Company	07
Arcadia Print Works	I 62
Nickerson Art Metal Company	I 88
Belmont Realty Company	24
Credit Foncier Canadian	41
Musical Instrument Sales Company	52
Sullivan Motor Express, Incorporated	26
Brevitt Land Company	17
Waldorf Lunch of Rhode Island, Incorporated....	2 13
A. S. Cook Company	I 16
A. H. Schrieber & Company, Incorporated.....	I 44
Berry Spring Mineral Water Company	13
Beyer Brothers Commission Company	17 95
Marden & Kettlety Company	33
Pascoag Water Company	I 15
J. W. Moore Company	I 61
A. L. Castritius Company	6 24
E. L. Logee Company	33
Providence Land Company	27
Hayward Rubber Company, Incorporated.....	64
Universal Textile Company	15
W. E. Barrett Company	3 95
Fred W. Morse Company	I 82
James Hohnetrom, Incorporated	48
Jacob Brothers, Incorporated	I 38
National Furnace Lining Company	11
American Oyster Company	93
Hope Rubber Company	I 61
The Spring House Company	26
Powers, Dundas Company	12 21
Westerly Quarries Company	13
Windsor Webbing Company	97
A. J. Sanborn's Sons, Incorporated	26

Safety Engineering Company	\$0 45
Greenville Finishing Company, Incorporated.....	7 33
The Kenworthy Company	76
Barker Artesian Well Company	82
M. A. Gammino Construction Company.....	38
Narragansett Improvement Company	47
Burrill Building Company	28
Newport Transfer & Express Company.....	69
Bryant & Stratton-Rhode Island Commercial School	1 81
Abbott Run Company	7 65
Leand Realty Company	51
Brown-Dean Company	2 13
Clark Mfg. Company	6 56
Edward R. Ladew Company, Incorporated.....	83
David Lupton's Sons Company	1 49
Era Narrow Fabric Company	72
Norris Bedding Company	1 34
The William Douglas Company	70
Dunford Mfg. Company	20
A. T. Cross Pencil Company	1 16
J S. Packard Dredging Company.....	1 66
Jenckes Knitting Machine Company.....	6 43
Central Warp Company	2 55
Broadway Storage Company	1 36
Franco-American Realty Company	63
The Washington Company	52
Continental Finishing Company	8 59
Hoey Mfg. Company	56
City Bellevue Laundry Company	1 79
Hoxsie Nurseries Incorporated	1 00
Rhode Island Roofing Company	46
Anthony-Cascambas-Gandy, Incorporated	1 54
Providence Scale & Supply Company	71
New England Bakery Company	2 56

Rhode Island Lace Works	\$4 25
Universal Optical Company	4 55
Empire Bottling Company	1 24
Keasbey & Mattison Company	1 46
Prudential Land Company	72
Fisk Drug Company	3 49
Frank W. Coy Real Estate Company.....	1 20
Redfern Mfg. Company	60
William H. Herrick Company	67
John Burns Granite Company	72
Max Gertsacov Company	55
Bourn Rubber Company	20 05
U. S. Alizarine Company	37
Famiglietti Brothers Company	9 03
Cadoza Sales Company, Incorporated	8 66
S. & S. Novelty Company	2 62
Faxon Company, Incorporated	69
L. J. Anshen Company	10 25
Builders Concrete Stone Company	2 30
Rex Mfg. Company	5 63
National Wholesale Grocery Company, Incorporated	17 52
Mariani Company Branch, Incorporated	4 51
U. S. Tungsten Mining & Products Company.....	18
Enterprise Real Estate Corporation	97
Rhode Island Baking Company	3 10
H. B. Rust Company	4 15
Pawtucket Screw Company	2 50
Weeks Furniture Company	1 63
William D. Goff Company	3 11
Standard Wholesale Company	21 90
The Kazanjian Company	16
Union Paint & Varnish Company	2 85
U. S. Electric Generator Company	7 20
New Cliffs Hotel Company	76

Great Atlantic & Pacific Tea Company.....	\$25 95
Coupe, Murphy Company	60
Alexander Grant & Company, Incorporated.....	1 24
Safety Locker Company	11 00
Boss & Seiffert Company	1 68
Adams Brothers Incorporated	1 05
Star Electric Company	3 02
Peerless Electric Company	2 86
Milano Silk Weaving Company, Incorporated.....	2 51
Stranahan & Company	13 87
Roy H. Beattie, Incorporated	4 74
United States Amusement Company	1 20
Mount Hope Distilling Company	11 34
Clason Architectural Metal Works	5 89
Sterling Handkerchief Company	25
H. C. Samuels, Incorporated	29
Carrigue Land Company	56
American Bottling Corporation	7 42
H. F. Jenks Company	2 11
Oakland Cemetery Company	77
D. N. Potter, Incorporated	94
D. Colquhoun & Sons, Incorporated	3 75
Unique Findings & Supply Company	66
Roy H. Beattie, Incorporated	160 61
The Progressive Ring Company	1 99
Rhode Island Crown & Cork Company	65
Providence Dental Company	69
General Machinery Company	50
Francis Chemical Company	1 00
K. Mfg. Company	40
Nayatt Point Oyster Company	91
Nichols Mfg. Company	5 13
Broadway Tire Exchange Company, Incorporated..	3 96
United States Glazed Yarn Company.....	2 57

REPORT OF GENERAL TREASURER.

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A. Vito Construction Company	\$3 99
Edward S. Jones Sons Company.....	1 67
Rocheford Harness Company	16
Roy H. Beattie, Incorporated	30 20
Western Mercantile Corporation	31
William J. Roberts Company, Incorporated.....	23
Sweeney Brothers Company	89
M. Winograd Son & Company	1 69
Hand Brewing Company	31 39
Taxi Service Company of Rhode Island	3 30
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	\$1,423 41

Interest, Inheritance Taxes.

Estate of :

John A. Cowell	\$12 73
Susan Manchester	27
Mary R. C. Deonstyn	28
Nicola Capelli	8 36
Oswald H. Wunsch	90
Susan E. Peckham	75
Adelaide Horton	59
Bethena A. Pendleton	36 75
Sally F. Bates	95
Charles H. Dodge	5 80
Thomas Boardman, Jr.	50
Charlotte A. Markham	3 65
Tillie A. Spitz	55
Charles E. Gorman	1 80
Rosalie E. Ford	103 06
Sarah E. Norman	3 65
Herbert M. Howe	26 93
Frederick H. Watkins	3 99
Benjamin Hall	7 00

Estate of :

Mary Matteson	\$1 15
Charles H. Young	2 53
John J. Butler	5 67
Maria A. Page	1 52
Wealthy Hart	10 62
George M. Long	4 74
Frank H. Martin	5 36
Mary M. Flint	5 42
Hannah E. Bachellor	40
Walter T. Maxfield	1 70
Caroline Amelia Brown Weeden	21 48
Ethan T. Sheldon	2 65
Margaret Murray	67
John M. Smith	29 18
Byron S. Cooke	34 70
Amanda M. Sayles	56
Herbert E. Dodge	1 80
Ellen M. Jencks	29 58
Frederick Hough	65
William Griffin	35
Thomas Brennan	4 25
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	\$383 49

Interest, Agricultural Loans.

Robert E. Moore	\$0 10
Edwin Early	1 88
William B. Colwell	11 60
R. K. Fort	1 26
C. L. Richardson	1 20
F. L. Main	21 00
Walter R. Peirce	2 98
Byron Angell	5 50

REPORT OF GENERAL TREASURER.

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Clifton B. Ward	\$5 65
Gardner H. Kelly	6 43
Louis O. Winsor	11 99

\$69 59

Interest, Miscellaneous.

On hunters' licenses account	\$46 75
On deposits of State Board of Charities and Cor- rections	37 67
On deposit of Penal and Charitable Commission...	50 80
On State taxes—Pawtucket, \$33.51; Central Falls, \$4.27; West Greenwich, \$2.20; Johnston, \$45.63	85 61

\$220 83

TUITION, RHODE ISLAND NORMAL SCHOOL.

City of Providence, quarter ending November 9,

1917	\$2,081 08
City of Providence, quarter ending January 25, 1918	2,099 74
City of Providence, quarter ending April 5, 1918...	2,057 41
City of Providence, quarter ending June 21, 1918...	1,995 75
Walter E. Ranger, Secretary	1,059 00

\$9,292 98

RECEIPTS FROM SALES, ETC.

Miscellaneous.

Rhode Island Institute for the Deaf	\$168 83
Board of Education, discarded books	70 42
State House Commission, telephone booth commis- sion	14 70
State House Commission, sale of paper and boxes..	300 80
Sheriff of Providence County, sale of junk.....	55 00

Commission of Inland Fisheries, sale of trout, Girard Spring Hatchery	\$1 50
Board of Public Roads, sale of old number plates..	5 97
James R. Cannon, truant officer, sale of newsboys' badges	50 50
Board of Public Roads, crushed stone	136 79
Board of Public Roads, pipe	30 40
Board of Public Roads, empty oil barrels	360 85
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	\$1,195 76

PAYMENTS RECEIVED FOR CONSTRUCTION AND
IMPROVEMENT OF HIGHWAYS.

The Rhode Island Company, repairing pavement in Barrington	\$19 08
Nathan Marks, sewer connection in Warren.....	7 03
James H. Smith, sewer connection in Warren.....	6 70
Narragansett Electric Lighting Company, repairing cuts in Warren and Bristol.....	110 79
State Board of Public Roads, repairing highway over Stone Bridge	56 85
Bristol and Warren Water Company, repairing cuts in highways, Warren	17 83
The Rhode Island Company, making sewer connec- tions at Warren	11 05
State Board of Public Roads, repairing sewer cuts, water service and sale of stone.....	477 40
State Board of Public Roads, repairing sewer cuts at Warren	71 33
State Board of Public Roads, repairing sewer cuts at Warren	81 46
State Board of Public Roads, repairing highway at Warren	20 43

State Board of Public Roads, repairs to highway at Warren	\$55 19
Narragansett Electric Lighting Company, proportional part of cost of repairs to highway at Warren	109 75
The Rhode Island Company, paving on Main Street, in Wakefield	1,462 64
Bristol & Warren Water Works, repairing cuts in highways in Barrington and Warren	52 64
State Board of Public Roads, repairing cuts in highway in East Greenwich	73 14
Providence Gas Company, repairing cuts in road, Pawtucket Avenue	23 08
State Board of Public Roads, repairing highway at Warren, Pawtucket, Jamestown, Barrington, East Greenwich, Pawtucket, Bristol and Forstdale	525 38
State Board of Public Roads, repairing cross-walks, Bradford and Hope Streets in Bristol	47 06
East Greenwich Bleachery, repairs to highway	44 50
Wakefield Water Company, repairs to highway	6 38
Town of Warren, repairs to sewer trench, State highway, Warren	2,420 40
State Board of Public Roads, repairs to Bristol highway	74 47
The Rhode Island Company, repairing State highway, East Providence	18 90
State Board of Public Roads, repairing highway, town of Bristol	82 81
State Board of Public Roads, repairing sewer at Warren	6 50
Newport and Providence Railway Company, repairing between and outside rails at Middletown	254 20

State Board of Public Roads, repairs to sewer cuts in Warren	\$6 50
State Board of Public Roads, repairs to highway in Warren	8 11
Providence Gas Company, repairs to highway in East Providence	8 11
East Providence Water Company, repairs to high- way in East Providence	8 11
City of Providence, repairs to highway, Smith street	4 00
State Board of Public Roads, repairing cuts in high- way, Bristol, East Providence and Cumberland	72 10
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	\$6,244 01

REPAYMENTS AND REFUNDS.

Miscellaneous.

Inman Lumber Company	\$0 37
Providence Journal Company	31 38
Board of Public Roads	25 10
Narragansett Electric Lighting Company	5 69
Sanford E. Kinnecom, deputy sheriff	7 00
Neemes Brothers	25
Board of Public Roads, cash 1917	18 52
City of Providence, water maintenance	9 34
Walter R. Wightman, from Butler Hospital	13 29
Board of Public Roads, traffic censor money	76 00
Board of Public Roads, rebate on freight	40 00
Board of Public Roads, refund duplicate payment	1 02
	<hr/>
	\$227 96

LOAN ACCOUNTS.

Harbor Improvement Loan Account.

1918.	
January 1. Cash in Bank	\$77,756 73
Payments from January 1, 1918, to December 31, 1918	\$55,742 66
Cash in Bank	22,014 07
	<hr/>
	\$77,756 73

Second Metropolitan Park Loan Account.

1918.	
January 1. Cash in Bank	\$96,298 32
Payments from January 1, 1918, to December 31, 1918	\$41,817 06
Cash in Bank	54,481 26
	<hr/>
	\$96,298 32

Charitable Institutions Loan of 1914 Account.

1918.	
January 1. Cash in Bank	\$75,029 44
Payments from January 1, 1918, to December 31, 1918	\$11,382 60
Cash in Bank	63,646 84
	<hr/>
	\$75,029 44

Charitable Institutions Loan of 1915 Account.

1918.	
January 1. Cash in Bank	\$10,936 52
Payments from January 1, 1918, to December 31, 1918	\$10,097 44
Cash in Bank	839 08
	<hr/>
	\$10,936 52

Charitable Institutions Loan of 1916 Account.

1918.

January 1. Cash in Bank		\$12,163 44
Payments from January 1, 1918, to December 31, 1918	\$7,168 63	
Cash in Bank	4,994 81	
	<hr/>	\$12,163 44

Bridge Construction Loan of 1917 Account.

1918.

January 1. Cash in Bank		\$97,690 68
Sale of bonds	\$125,000 00	
Sale of cement and use of mixer..	186 58	
	<hr/>	125,186 58
		<hr/>
		\$222,877 26
Payments from January 1, 1918, to December 31, 1918	\$117,908 95	
Cash in Bank	104,968 31	
	<hr/>	\$222,877 26

Charitable Institutions Loan of 1918 Account.

1918.

Received from sale of Charitable Institutions Loan of 1918		\$25,000 00
Payments from September 26, 1918, to December 31, 1918	\$10,257 36	
Cash in Bank	14,742 64	
	<hr/>	\$25,000 00

COMMISSIONERS OF SINKING FUNDS.

Established by Chapter 42, General Laws.

State House Construction.

Amount reported December 31, 1917.....	\$622,549 20
Annual appropriation	41,000 00
Interest from State bonds	2,840 00
Interest from other investments	21,004 90
Profit on State House Construction bonds purchased and cancelled	2,238 00
	\$689,632 10

The Fund is invested as follows:

Note, Town of New Shoreham, due 1903	\$4,000 00
12 District of Narragansett 4 per cent. bonds, due 1919.	12,000 00
30 City of Pawtucket 4 per cent. coupon bonds, due 1944.	30,000 00
23 City of Woonsocket Water Works 4 per cent. registered bonds, due 1919	23,000 00
20 City of Woonsocket Sewer 4 per cent. registered bonds, due 1925	20,000 00
50 Town of Cranston 4 per cent. registered bonds, due 1937.	50,000 00
30 Town of Jamestown 3½ per cent. coupon bonds, due 1930..	30,000 00
15 Town of Cranston 4 per cent. registered bonds, due 1947.	15,000 00
55 Town of Westerly 4 per cent. coupon bonds; due 1939.	55,000 00
40 Town of West Warwick 4½ per cent. coupon bonds, due 1944..	20,000 00

32 Town of Bristol 3½ per cent. registered bonds, due 1930....	\$32,000 00
11 Town of North Kingstown 4 per cent. coupon bonds, due 1940..	11,000 00
10 Town of Burrillville 4 per cent. coupon bonds, due 1922.....	10,000 00
142 State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	71,000 00
5 U. S. Treasury 4¼ per cent. coupon bonds, due 1942.....	50,000 00
16 City of Central Falls 4 per cent. coupon bonds, due 1922 and 1923	16,000 00
56 Town of Warwick 4½ per cent. serial coupon bonds	56,000 00
10 Town of Bristol 3½ per cent. coupon bonds, due 1930.....	10,000 00
20 Town of Jamestown 4½ per cent. serial coupon bonds.....	20,000 00
Cash, Rhode Island Hospital Trust Company	82,371 13
	<hr/>
	\$617,371 13
Paid interest on State of Rhode Island bonds cancelled	254 92
Paid for collecting Johnston bonds	83
Paid for converting U. S. Liberty Loan bonds	5 22
Bought and cancelled \$72,000 State House Construction bonds due 1924	72,000 00
	<hr/>
	\$689,632 10

State Highway Construction.

Amount reported December 31, 1917.....	\$336,831 85
Annual appropriation	33,515 00
Interest from State bonds	4,560 00
Interest from other investments	9,828 66

\$384,735 51

The Fund is invested as follows:

5 City of Woonsocket 4 per cent. water bonds, due 1929.....	\$5,000 00
5 Town of North Kingstown 4 per cent. coupon bonds, due 1940..	5,000 00
2 City of Pawtucket 4 per cent. registered bonds, due 1923....	2,000 00
1 City of Pawtucket 4 per cent. coupon bond, due 1923.....	1,000 00
5 Town of Cranston 4 per cent. registered bonds, due 1947....	5,000 00
30 Town of Westerly 4 per cent. funding bonds, due 1939.....	30,000 00
1 City of Providence 4 per cent. school loan registered bonds, due 1927	5,000 00
3 City of Providence 4 per cent. school loan registered bonds, due 1927	3,000 00
10 State of Rhode Island Armory Construction Loan 3 per cent. bonds, due 1946	10,000 00
6 Town of West Warwick 4½ per cent. coupon bonds, due 1944..	3,000 00
25 Town of West Warwick 4½ per cent. coupon bonds, due 1944..	25,000 00

9 Town of North Kingstown 4 per cent. coupon bonds, due 1940..	\$9,000 00
9 City of Central Falls 4 per cent. coupon bonds, due 1922 and 1923	9,000 00
5 U. S. Treasury 4¼ per cent. coupon bonds, due 1942.....	25,000 00
228 State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	114,000 00
15 Town of Warwick 4½ per cent. coupon bonds, due 1944.....	15,000 00
50 State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. coupon bonds, due 1967	50,000 00
Certificate of Deposit, Union Trust Company	20,000 00
Certificate of Deposit, Industrial Trust Company	35,187 33
Cash, Industrial Trust Company...	13,545 58
	<hr/>
	\$384,732 91
Paid for converting U. S. Liberty Loan bonds	2 60
	<hr/>
	\$384,735 51

Providence Armory Construction.

Amount reported December 31, 1917.....:	\$61,361 22
Annual appropriation	4,500 00
Interest from State bonds	420 00
Interest from other investments	1,793 24
	<hr/>
	\$68,074 46

The Fund is invested as follows :

5	City of Woonsocket 4 per cent. coupon water bonds, due 1929.	\$5,000 00	
9	Town of Westerly 4 per cent. school loan bond, due 1927....	9,000 00	
1	City of Providence 4 per cent. school loan bond, due 1927....	5,000 00	
10	Town of Tiverton refunding 4 per cent. serial bonds, 1930 to 1934, inclusive	10,000 00	
21	State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	10,500 00	
5	Town of Warwick 4½ per cent. coupon bonds, due 1944.....	5,000 00	
20	State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. coupon bonds, due 1967	20,000 00	
	Certificate of Deposit, Industrial Trust Company	2,261 94	
	Cash, Industrial Trust Company...	1,312 52	
			<hr/>
			\$68,074 46

Metropolitan Park Loan.

Amount reported December 31, 1917.....	\$46,151 43
Annual appropriation	3,733 00
Interest from State bonds	320 00
Interest from other investments	1,208 47
	<hr/>
	\$51,412 90

The Fund is invested as follows:

5	City of Woonsocket City Hall 4 per cent. coupon bonds, due 1923	\$5,000 00
1	City of Pawtucket 4 per cent. registered bond, due 1923	1,000 00
1	Town of Westerly 4 per cent. coupon refunding bond, due 1929	1,000 00
5	City of Woonsocket 4½ per cent. coupon funding bonds, due 1927	5,000 00
2	Town of Westerly 4 per cent. coupon funding bonds, due 1939	2,000 00
1	City of Providence 4 per cent. school loan registered bond, due 1927	5,000 00
3	City of Providence 4 per cent. school loan registered bond, due 1927	3,000 00
16	State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	8,000 00
14	State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. coupon bonds, due 1967	14,000 00
	Cash, Industrial Trust Company	7,412 90
		<hr/>
		\$51,412 90

Penal and Reformatory Institutions Loan.

Amount reported December 31, 1917	\$25,898 64
Annual appropriation	2,212 00

Interest from State bonds	\$300 00
Interest from other investments	703 54
	<hr/>
	\$29,114 18

The Fund is invested as follows:

4 Town of Westerly 4 per cent. coupon funding bonds, due 1939	\$4,000 00
1 City of Providence 4 per cent. school loan registered bond, due 1927	5,000 00
15 State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	7,500 00
Cash, Industrial Trust Company..	12,614 18
	<hr/>
	\$29,114 18

Harbor Improvement Loan.

Amount reported December 31, 1917.....	\$34,936 41
Annual appropriation	6,300 00
Interest from investments	1,137 32
	<hr/>
	\$42,373 73

The Fund is invested as follows:

Certificate of Deposit, National Ex- change Bank	\$20,000 00
20 State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. coupon bonds, due 1967	20,000 00
Cash, Rhode Island Hospital Trust Company	2,373 73
	<hr/>
	\$42,373 73

Charitable Institutions Loan of 1914.

Amount reported December 31, 1917.....	\$26,719 44
Annual appropriation	3,886 00
Interest from State bonds	400 00
Interest from other investments	611 80
	<hr/>
	\$31,617 24

The Fund is invested as follows:

20 State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	\$10,000 00
10 Warwick Funding Loan 4½ per cent. coupon bonds, due 1944..	10,000 00
10 State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. bonds, due 1967....	10,000 00
Cash, Rhode Island Hospital Trust Company	1,617 24
	<hr/>
	\$31,617 24

Charitable Institutions Loan of 1915.

Amount reported December 31, 1917.....	\$19,300 16
Annual appropriation	2,885 00
Interest from investments	682 17
	<hr/>
	\$22,867 33

The Fund is invested as follows:

2 Town of Johnston refunding 4½ per cent. coupon bonds, due 1935	\$2,000 00
--	------------

8 Town of Johnston refunding 4½ per cent. coupon bonds, due 1940	\$8,000 00	
Cash, Industrial Trust Company...	12,867 33	
	<hr/>	\$22,867 33

Charitable Institutions Loan of 1916.

Amount reported December 31, 1917.....	\$7,919 43	
Annual appropriation	941 00	
Interest on cash in Bank.....	252 03	
	<hr/>	\$9,112 46

The Fund is invested as follows:

Cash, National Exchange Bank.....	\$9,112 46
-----------------------------------	------------

Bridge Construction Loan of 1917.

Amount reported December 31, 1917.....	\$5,105 84	
Annual appropriation	1,103 00	
Interest on cash in Bank.....	167 28	
	<hr/>	\$6,376 12

The Fund is invested as follows:

Cash, National Exchange Bank	\$6,376 12
--	------------

Charitable Institutions Loan of 1918.

Premium on sale of bonds.....	\$787 50	
Interest on cash in Bank	3 67	
	<hr/>	\$791 17

The Fund is invested as follows:

Cash, National Exchange Bank	\$791 17
--	----------

OFFICE OF THE SINKING FUNDS COMMISSION.

PROVIDENCE, R. I., February 4, 1919.

The undersigned hereby certify that they have personally examined the securities and investments constituting the State House Construction, Providence Armory Construction, State Highway Construction, Metropolitan Park Loan, Penal and Reformatory Institutions Loan, Harbor Improvement Loan, Charitable Institutions Loans of 1914, 1915, 1916 and 1918 and Bridge Construction Loan of 1917 Sinking Funds in the custody of Richard W. Jennings, General Treasurer, and find them to agree with the statement incorporated in his annual report to the General Assembly for the fiscal year ending December 31, 1918.

(Signed) R. LIVINGSTON BEECKMAN,
HOWARD W. FARNUM,
FREDERICK S. PECK,
EBEN N. LITTLEFIELD,
PHILIP H. WILBOUR,
Commissioners.

PERMANENT SCHOOL FUND.

The following is a list of the investments of the Fund:

115	Town of Lincoln 4 per cent registered bonds, due 1928	\$115,000 00
4	Town of Warren 4 per cent. coupon bonds, due 1919	
4	Town of Warren 4 per cent. coupon bonds, due 1920	
4	Town of Warren 4 per cent. coupon bonds, due 1921	
4	Town of Warren 4 per cent. coupon bonds, due 1922	16,000 00
20	Town of East Providence 4 per cent. coupon bonds, due 1923	
4	Town of East Providence 4 per cent. coupon bonds, due 1923	24,000 00
28	Town of Bristol 3½ per cent. registered bonds, due 1930	28,000 00
1	Town of Cranston 4 per cent. registered bond, due 1937	1,000 00
3	City of Woonsocket 4 per cent. registered water bonds, due 1919	3,000 00
1	City of Pawtucket 4 per cent. sewer coupon bond, due 1923	
9	City of Pawtucket 4 per cent. registered bonds, due 1924	10,000 00
6	Town of North Kingstown 4 per cent. coupon bonds, due 1940	6,000 00
1	State of Rhode Island Highway Construction Loan 3 per cent. coupon bond, due 1936....	1,000 00

14 Town of East Providence 4 per cent. coupon bonds, due 1951	14,000 00
6 State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. bonds, due 1967...	6,000 00
10 State of Rhode Island Harbor Improvement Loan of 1913, 4 per cent. coupon bonds, due 1963	5,000 00
406 Shares National Bank of Commerce.....	20,300 00
Cash available for investment	641 19
	<hr/>
	\$249,941 19

TOURO JEWISH SYNAGOGUE FUND.

Established June, 1823.

Cash in hand December 31, 1917.....	\$57,211 75
Bonds, December 31, 1917	7,000 00
Stocks, December 31, 1917	7,860 00
Dividend, Savings Bank of Newport	1,436 06
Dividend, Newport National Bank	100 80
Dividend, Merchants National Bank	128 00
Dividend, Blackstone Canal National Bank.....	400 00
Interest, Participation Account, Industrial Trust Company	439 16
Interest, Participation Account, Rhode Island Hos- pital Trust Company	99 10
Interest, Call Account, Industrial Trust Company..	56 24
Interest, Call Account, Rhode Island Hospital Trust Company	110 70
Interest, Burrillville 3½ per cent. bonds	70 00
Interest, Cumberland 4 per cent. bonds.....	100 00
	<hr/>
	\$75,011 81

The Fund is invested as follows:

Deposit, Savings Bank of Newport	\$35,546 93	
Participation Account, Industrial Trust Company	11,310 02	
Participation Account, Rhode Island Trust Company.....	2,552 24	
Call Account, Industrial Trust Company	6,414 28	
Call Account, Rhode Island Hospital Trust Company	1,828 34	
2 Town of Burrillville 3½ per cent. bonds, due 1939	2,000 00	
5 State of Rhode Island Bridge Construction Loan of 1917, 4 per cent. coupon bonds, due 1967..	5,000 00	
21 Shares Newport National Bank, par value \$60	1,260 00	
200 Shares Blackstone Canal National Bank, par value \$25.....	5,000 00	
32 Shares Merchant National Bank, par value \$50	1,600 00	
	<hr/>	\$72,511 81
Paid City of Newport.....	2,400 00	
Paid salary of Agent to June 30, 1918	100 00	
	<hr/>	2,500 00
		<hr/>
		\$75,011 81

FIREMEN'S RELIEF FUND.

Chapter 363, General Laws, and Chapter 855, Public Laws.

Annual Appropriation	\$2,500 00
Unexpended balance of 1917 appropriation.....	1,780 21
	<hr/>
	\$4,280 21

Paid Daniel F. McLoughlin, Treasurer	\$2,500 00	
Transferred to General Account...	1,780 21	
	<hr/>	\$4,280 21

MORRILL FUND.

United States Treasury	\$50,000 00
Paid Rhode Island State College	\$50,000 00

LAND GRANT FUND.

Act of Congress, July 2, 1862.

Amount received from Brown University	\$50,000 00	
Interest, Participation Account, Industrial Trust Company	\$2,020 00	
Interest, Call Account, Industrial Trust Company	13 49	
General Treasurer's check to complete income of five per cent..	466 51	
	<hr/>	2,500 00
		<hr/>
		\$52,500 00
Paid Treasurer, Rhode Island State College	\$2,500 00	
Deposit, Industrial Trust Company.	50,000 00	
	<hr/>	\$52,500 00

COOPERATIVE VOCATIONAL EDUCATION FUND.

United States Treasury	\$9,280 67
Interest on bank account	54 83
	<hr/>
	\$9,335 50

Payments to December 31, 1918...	\$6,099 19	
Payments to United States, interest	16 82	
		6,116 01
<hr/>		
Balance in bank		\$3,219 49

VENEREAL DISEASE CONTROL FUND.

United States Treasury	\$5,899 72	
Interest on bank account	20 79	
		\$5,920 51
<hr/>		
Cash in bank December 31, 1918.....		\$5,920 51

SOLDIERS' HOME BURIAL LOT FUND.

State Board of Soldiers' Relief.....	\$1,000 00	
Interest, participation account, Industrial Trust Co.	20 00	
		\$1,020 00
<hr/>		
Cash in Industrial Trust Co., participation account.		\$1,020 00

STATE INDEBTEDNESS.

Bonded Debt.

3½ per cent. State House Construction Bonds, due January 1, 1924.....	\$318,000 00
Interest January and July.	
3½ per cent. State House Construction Bonds, due January 1, 1934.....	395,000 00
Interest January and July.	
3 per cent. State House Construction Bonds, due July 15, 1938	800,000 00
Interest April and October.	

3 per cent. State House Construction Bonds, due May 1, 1941	700,000 00
Interest May and November.	
3 per cent. Highway Construction Bonds, due April 1, 1936	600,000 00
Interest April and October.	
3 per cent. Armory Construction Bonds, due April 1, 1946	350,000 00
Interest April and October.	
3½ per cent. Second Highway Construction Bonds, due March 1, 1939	600,000 00
Interest March and September.	
3½ per cent. Penal and Reformatory Institutions Bonds, due March 1, 1959	300,000 00
Interest March and September.	
4 per cent. Harbor Improvement Bonds, due August 1, 1960	500,000 00
Interest February and August.	
4 per cent. Third Highway Construction Bonds, due June 1, 1942	563,000 00
Interest June and December.	
3½ per cent. Metropolitan Park Loan Bonds, due June 1, 1958	250,000 00
Interest June and December.	
4 per cent. Harbor Improvement Bonds of 1913, due December 1, 1963	476,000 00
Interest June and December.	
4 per cent. Second Metropolitan Park Bonds, due February 1, 1964	300,000 00
Interest February and August.	
4 per cent. Charitable Institutions Loan of 1914 Bonds, due July 1, 1964	617,000 00
Interest January and July.	

4 per cent. Charitable Institutions Loan of 1915	
Bonds, due September 1, 1965.....	\$458,500 00
Interest March and September.	
4 per cent. Charitable Institutions Loan of 1916	
Bonds, due September 1, 1966.....	149,500 00
Interest March and September.	
4 per cent. Bridge Construction Loan of 1917	
Bonds, due May 1, 1967.....	300,000 00
Interest May and November.	
4½ per cent. Charitable Institutions Loan of 1918	
Bonds, due August 1, 1968.....	25,000 00
Interest February and August.	
	<hr/>
	\$7,702,000 00
Less Sinking Funds	1,263,843 63
	<hr/>
	\$6,438,156 37

Amount of interest paid on State House, Armory, Highway, Penal and Reformatory, Harbor Improvement, Metropolitan Park, Charitable Institutions Loan of 1914, 1915 and 1916 and Bridge Construction Loan of 1917 \$269,525 00

At the close of the year 1918, ending December 31, 1918, there were no coupons due and unpaid.

Bills Remaining Unpaid December 31, 1918, in Sundry Offices and Boards as Reported by the State Auditor.

Fuel and Gas	\$2,329 74
Providence County Court House	1,939 17
Sixth District Court House ..	355 76
Miscellaneous Expense Account	1,121 38
Expenses, Jury Commissioner	461 12
Compensation, Members State Board of Health...	184 00

State Board of Health	\$47 90
Chemical Laboratory, State Board of Health.....	3 50
Free Employment Office	17 20
Expenses, Public Utilities	877 15
Medical Examiners and Coroners	478 40
Care and Maintenance, New State House.....	174 77
Law Library	185 40
Supreme Court House	6 00
Public Buildings, Kent County	135 40
Public Buildings, Washington County	78 00
Medical Inspection, Public Schools	121 80
State Home and School, Maintenance.....	2,309 50
Expenses, Automobile Department	1,187 75
	<hr/>
	\$12,013 94

TRUST COMPANIES.

Chapter 232, General Laws.

The Trust Companies named below, in compliance with "An Act to Provide for the Incorporation and Regulation of Banks, Savings Banks and Trust Companies," have deposited with the General Treasurer, State, municipal and town bonds and securities in the sums enumerated below:

Industrial Trust Company	\$607,000 00
Rhode Island Hospital Trust Company	600,000 00
Union Trust Company	200,000 00
Slater Trust Company	100,000 00
Newport Trust Company	60,000 00
Washington Trust Company	60,000 00
Phenix Trust Company	20,000 00
Wakefield Trust Company	18,000 00
Title Guarantee Company of Rhode Island.....	20,000 00
Italo-American Mutual Trust Company	16,000 00

Woonsocket Trust Company	\$11,000 00
Producers Trust Company	1,000 00
	<hr/>
	\$1,713,000 00

INSURANCE COMPANY.

The following Insurance Company, in accordance with the provision of Sections 17 to 22, inclusive, Chapter 219, General Laws, has deposited with the General Treasurer, bonds and securities, total par value of which is set forth below :

Puritan Life Insurance Company	\$100,000 00
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CASH AND SECURITIES IN THE TREASURY
FOR SPECIFIC PURPOSES.

State House Sinking Fund	\$617,371 13
State Highway Sinking Fund	384,732 91
Providence Armory Sinking Fund	68,074 46
Metropolitan Park Sinking Fund	51,412 90
Penal and Reformatory Institutions Sinking Fund	29,114 18
Harbor Improvement Sinking Fund	42,373 73
Charitable Institutions Loan of 1914 Sinking Fund	31,617 24
Charitable Institutions Loan of 1915 Sinking Fund	22,867 33
Charitable Institutions Loan of 1916 Sinking Fund	9,112 46
Bridge Construction Loan of 1917 Sinking Fund..	6,376 12
Charitable Institutions Loan of 1918 Sinking Fund	791 17
Permanent School Fund	249,941 19
Touro Jewish Synagogue Fund	72,011 81
Land Grant Fund 1862	50,000 00
Coöperative Vocational Education Fund	3,219 49
Venereal Disease Control	5,920 51
Soldiers' Home Burial Lot Fund	1,020 00
	<hr/>
	\$1,645,956 63

EXPENDITURES.

Scheduled in accordance with provisions of Chapter 43
of the General Laws.

A. SALARIES:

Salaries as scheduled in the general appropriation law	\$307,316 28
Pay of officers, secretaries, clerks and clerical assistance not otherwise included	81,474 07

B. PAY AND EXPENSES OF THE GENERAL ASSEMBLY:

Pay and mileage of the General Assembly..	64,143 20
Clerks of the Senate and House	3,000 00
Clerks of Committees	8,300 00
Doorkeepers, pages and officers	5,820 00
Stationery and stamps	1,480 52
Legislative reference bureau	3,946 25

Special Appropriations.

Clerks of the Senate and House	600 00
Senate and House Journals	600 00
Expenses of committee on investigation The Rhode Island Company	664 05
Expenses of commission on revision corporation law	355 19
Expenses joint special committee on public health	900 00

C. COURTS:

Supreme and Superior Courts.

Jurors	65,167 86
Officers	44,330 79
Witnesses	16,607 12

\$126,105 77

District Courts.

First Judicial District :

Officers	\$2,331 03
Witnesses	535 60
	<hr/>
	\$2,866 63

Second Judicial District :

Officers	\$926 85
Witnesses	171 00
	<hr/>
	\$1,097 85

Third Judicial District :

Officers	\$1,090 00
Witnesses	241 30
	<hr/>
	\$1,331 30

Fourth Judicial District :

Officers	\$1,498 95
Witnesses	747 60
	<hr/>
	\$2,246 55

Fifth Judicial District :

Officers	\$737 16
Witnesses	281 60
	<hr/>
	\$1,018 76

Sixth Judicial District :

Officers	\$14,937 12
Witnesses	3,389 70
	<hr/>
	\$18,326 82

Seventh Judicial District :

Officers	\$929 30
Witnesses	234 20
	<hr/>
	\$1,163 50

Eighth Judicial District :

Officers	\$2,053 65
Witnesses	584 00
	<hr/>
	\$2,637 65

Ninth Judicial District :

Officers	\$519 20
Witnesses	99 40
	<hr/>
	\$618 60

Tenth Judicial District :

Officers	\$2,515 50
Witnesses	441 30
	<hr/>
	\$2,956 80

Eleventh Judicial District :

Officers	\$1,928 08
Witnesses	289 10
	<hr/>
	\$2,217 18

Twelfth Judicial District :

Officers	\$1,369 00
Witnesses	502 40
	<hr/>
	\$1,871 40

Incidental expenses, Supreme and Superior Courts	\$8,550 12
Traveling expenses and subsistence, justices of Supreme and Superior Courts.....	895 78
Incidental expenses, District Courts.....	1,799 51
Court stenographers	12,250 00
Traveling expenses and subsistence, Court stenographers	710 18
Juvenile Courts	5,917 80
Expenses, Jury Commissioner	5,618 09
Compensation of town clerks, Jury Commissioner	582 63
Law Library	5,314 54
D. ORDERS OF THE GOVERNOR:	
Civil account	2,992 37
Criminal account	1,934 56
State representation at expositions and celebrations	3,130 09
E. PUBLIC PRINTING:	
Printing	40,306 79
Binding	7,472 29
Publishing proclamations	859 48
F. SUPPORT OF STATE INSTITUTIONS AT CRANSTON:	
<i>Penal and Charitable Commission and Institutions at Cranston, State Home and School and Exeter School:</i>	
Penal and Charitable Commission:	
Salaries and compensation of officers.....	\$14,949 96
Traveling expenses	710 80
Payments to March 31:	
Pay of officers, clerks and other employees, institutions at Cranston	35,603 39

Maintenance and repairs, institutions at Cranston	\$135,875 16
State Home and School, maintenance.....	18,204 03
State Home and School, placing-out department	2,148 42
Exeter School, maintenance	13,302 37

Payments since March 31:

Penal and Charitable Commission, clerical assistance	3,440 00
Office expenses, etc., of commission.....	498 46
Maintenance, institutions at Cranston, State Home and School, Exeter School.....	656,619 27
Pay of officers and employees, institutions at Cranston	178,760 17
State Home and School	20,477 14
State Home and School, placing-out department	1,120 00
Exeter School	19,417 42

Repairs and furnishings:

Institutions at Cranston	17,024 77
State Home and School	2,013 14
Exeter School	2,184 82

Special appropriations:

Unpaid bills of 1917	37,340 67
Construction and repairs:	
Under resolution 46, April 19, 1918.....	31,288 99
Under resolution 48, April 19, 1918.....	38,596 27
Building account	92 60
Plans and specifications for permanent improvement	4,087 43
State Home and School driveway.....	903 86

Payments from loan accounts:

State Institutions, 1914	\$11,279 00
Hospital for Insane, 1914	58 60
State Institutions, 1915	157 39
Hospital for Insane, 1915	4 60
State Home and School, 1915	6 33
State Institutions, 1916	6 67
State Institutions, 1918	10,257 36

Other institutions under supervision of the Purchasing Agent:

Rhode Island Institute for the Deaf:

Pay-roll, maintenance and repairs to March 31	10,701 73
--	-----------

Payments since March 31:

Pay-roll	13,366 16
Maintenance	19,870 90
Repairs and furnishings	1,259 36
Special appropriation, new building.....	40,005 79

State Sanatorium:

Pay-roll, maintenance and repairs to March 31	24,693 71
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Payments since March 31:

Pay-roll	39,194 91
Maintenance	82,315 67
Repairs and furnishings	4,913 72

Special Appropriations.

Unpaid bills of 1917	5,198 86
Repairs and furnishings	3,432 93
From charitable institutions loan, 1914.....	45 00
Hospital for advanced cases of tuberculosis:	
From charitable institutions loan of 1915..	9,929 12
From charitable insitutions loan of 1916..	7,161 96

G. PUBLIC SCHOOLS:

Public schools	\$120,000 00
Public schools, special aid	3,755 86
Graded and high schools	32,520 00
Supervision of public schools	21,955 00
Rhode Island School of Design	23,000 00
Post graduate courses at Brown University..	5,000 00
Rhode Island Normal School (mileage).....	3,995 00
Rhode Island Normal School	80,377 13
Evening Schools	8,185 59
Industrial education	7,079 66
School apparatus	3,804 54
Teachers' pensions	48,972 32
Increase of teachers' salaries	5,971 26
Physical examination of children for employ- ment	7,838 00
Medical inspection of pupils of public schools	4,500 00
Education of blind and imbecile.....	7,104 56
Instruction of adult blind	2,827 25
Public libraries	9,855 93
Traveling libraries	2,500 00
Teachers' examinations	2,916 70
Lectures and addresses	681 16
Teachers' institutes	245 27
Special appropriations for unpaid bills of 1917:	
Teachers' pensions	552 15
Medical inspection of pupils	250 00
Physical examination of children	389 00
Special appropriation, summer session, Normal School	3,987 29

H. SPECIAL APPROPRIATIONS:

Expenditures under special appropriations
not otherwise scheduled:

Public Defence Fund	\$156,843 70
Public Defence Fund, 1917	7,698 31
Agricultural loans	39,045 12
Pay of State employees in Service.....	4,076 39
Rural post roads	73,632 80
Number plates, automobile department....	11,093 14
Cancelling note of Town of New Shore- ham	25,000 00
Rhode Island Hospital	40,000 00
Saint Joseph's Hospital	10,000 00
U. S. Life Saving Corps	4,000 00
Suppression of gypsy and brown-tail moth	13,893 92
Suppression of white pine rust	1,005 44
Bounty for wild foxes	942 00
Encouragement of bee keeping.....	668 21
Publishing Volumes 39 and 40, Rhode Island reports	1,078 00
Investigation of The Rhode Island Com- pany	4,013 46
Special appropriations for construction, re- pairs and furnishings:	
Rhode Island Stone Bridge	2,391 77
Providence Armory	3,348 57
Newport County Court House	1,986 51
Ward room on Harrison street, Providence	4,593 50
Rhode Island State College (building ac- count)	640 95
Armory for Mounted Commands	200 00
Furniture for Pawtucket and Woonsocket Armories	203 35
State Armory, Bristol	112 45

REPORT OF GENERAL TREASURER.

Look-out stations	\$487 30
Barrington and Warren bridges	122 00
Armory, Kentish Artillery	95 56
Lockers, armories, Westerly, Woonsocket and Pawtucket	6 41
Woonsocket Court House (heating appa- ratus)	36 52
Special appropriation for unpaid bills of 1917:	
Expenses of Supreme and Superior Courts	1,963 64
Expenses of District Courts.....	399 25
Juvenile Courts	362 50
Supreme Court House	493 50
Providence County Court House	93 65
Clerical assistance, Superior Court, Provi- dence County	55 98
Factory Inspector	112 10
Bank Commissioner	323 60
Commissioner of Forestry	9 90
State Board of Agriculture	1,145 75
Services and clerical assistance, auto de- partment	44 30
Pathological laboratory	174 50
Public buildings, Newport County	262 26
Public buildings, Kent County	239 64
Militia and Military affairs	66 50
Miscellaneous expenses	1,705 43
Fuel and gas	413 15
Rents	125 00
Stationery and stamps for General Assembly	344 25
Improvement of Seekonk River	150 00
Markers for Soldiers' and Sailors' graves...	247 30
Marking historic sites	122 00
Decorating graves on Memorial Day.....	462 83

Compensation for death of Nils W. Pearson	\$480 00
Compensation for injuries to Georgiana M. Johnson	300 00
Payments from loan accounts:	
Harbor Improvement loan	55,742 66
Metropolitan Park loan	41,817 06
Bridge Construction loan of 1917	117,908 95

EXPENDITURES FROM GENERAL APPROPRIATIONS NOT OTHERWISE SCHEDULED.

Construction and improvement of State roads.....	\$579,007 20
Care of New State House	45,261 12
Rhode Island State College	40,000 00
State Board of Agriculture	23,608 90
Farm Bureaus	3,000 00
Commercial Feeding Stuffs	1,299 81
Commercial Fertilizers	2,240 00
State Library	3,030 00
State Board of Health	13,019 56
Expenses and services, members of State Board of Health	1,377 40
Expenses of chemical laboratory, State Board of Health	8,998 02
Expenses of pathological laboratory, State Board of Health	12,973 54
Inland Fisheries	14,500 00
Girard Spring Hatcheries	2,827 54
Soldiers' Home Fund	38,925 00
Soldiers' Relief Fund	9,000 00
Relief of dependent soldiers and sailors, war with Spain	2,000 00
Indigent Insane	9,971 78
Care of females, etc., by probation officer.....	2,742 38
Support of destitute families by probation officer...	6,081 20

Maintenance of New Stone Bridge.....	\$6,438 60
State Guard	49,993 30
Care of Providence Armory	11,574 10
Care of Armory for mounted commands.....	5,738 04
Armories, independent companies	1,700 00
Maintenance of other armories	9,283 46
Maintaining State Arsenal	999 98
Repairing buildings, etc., at State camp grounds....	406 79
Watchman at State camp grounds.....	600 00
Armory rents, Rhode Island Militia	570 00
Metropolitan Park maintenance fund	3,010 00
Care and maintenances of court houses, other public buildings and monuments	36,714 10
Expenses of officers, boards and commissions not otherwise scheduled	89,204 05
Payments to associations, societies, asylums and hospitals	46,140 05
Medical examiners and coroners	7,153 70
Fines in certain cases	9,957 50
Officers' fees in criminal cases	9,632 57
Jails and Jailers	2,621 72
Expenses of delivering children to the Rhode Society for the Prevention of Cruelty to Children	34 96
Free employment offices	4,002 37
Maintenance of Look-out stations	229 71
Accounts allowed by the General Assembly.....	3,791 07
Regulation and control of fraternal societies.....	6,195 65
Purchase and binding of newspapers published within the State	396 38
Rents	2,346 56
Fuel and gas	10,501 47
Indexing births, marriages, etc., in Rhode Island...	500 00
Badges for newsboys, street vendors, etc.....	100 00
Miscellaneous expenses	14,261 15
Payments to Sinking Funds	100,075 00

INTEREST PAYMENTS:

State House Construction loan.....	\$71,215 00
Armory Construction loan	10,500 00
Highway Construction loan	61,520 00
Metropolitan Park loan	20,750 00
Penal and Reformatory loan	10,500 00
Harbor Improvement loan	39,040 00
Charitable Institutions loan of 1914.....	24,680 00
Charitable Institutions loan of 1915.....	18,340 00
Charitable Institutions loan of 1916.....	5,980 00
Bridge Construction loan	7,000 00
On moneys borrowed	625 00
On Land Grant fund	466 51
	<hr/>
Payments from general fund.....	\$4,571,256 00
Payments from loan accounts.....	254,374 70
	<hr/>
Total payments	\$4,825,630 70

APPORTIONMENT OF SCHOOL FUND TO CITIES AND
TOWNS.

Barrington	\$1,940 09
Bristol	2,880 48
Burrillville	2,430 73
Central Falls	4,645 40
Charlestown	702 22
Coventry	2,252 42
Cranston	4,472 77
Cumberland	2,686 84
East Greenwich	1,813 46
East Providence	3,803 82
Exeter	1,254 51
Foster	1,490 86
Glocester	1,550 48
Hopkinton	1,723 17
Jamestown	1,070 93
Johnston	2,476 16
Lincoln	2,659 01
Little Compton	1,080 01
Middletown	1,154 97
Narragansett	798 24
Newport	4,577 26
New Shoreham	689 15
North Kingstown	1,873 65
North Providence	2,510 23
North Smithfield	1,852 64
Pawtucket	8,381 94
Portsmouth	1,515 73
Providence	27,713 74
Richmond	1,359 57
Scituate	1,747 59
Smithfield	1,842 99

REPORT OF GENERAL TREASURER.

185

South Kingstown	\$2,053 67
Tiverton	2,107 05
Warren	2,459 69
Warwick	3,104 78
Westerly	2,616 42
West Greenwich	544 29
West Warwick	3,749 88
Woonsocket	6,413 16
Total payments 1918.....	\$120,000 00

RECEIPTS FROM HUNTERS' LICENSES.

Chapter 381, Public Laws.

	Resident	Non-resident	Alien	
Barrington	\$108 00	\$20 00	\$15 00	\$143 00
Burrillville	410 00	.....	15 00	425 00
Central Falls	63 00	.....	.....	63 00
Coventry	191 00	.....	.....	191 00
Cranston	372 00	.....	.....	372 00
East Greenwich.....	53 00	.....	15 00	68 00
East Providence.....	145 00	10 00	.....	155 00
Exeter	68 00	.....	.....	68 00
Foster	100 00	.....	.....	100 00
Glocester	123 00	.....	.....	123 00
Hopkinton	155 00	.....	.....	155 00
Jamestown	47 00	.....	.....	47 00
Johnston	164 00	.....	15 00	179 00
Lincoln	243 00	.....	45 00	288 00
Little Compton.....	99 00	50 00	.....	149 00
Middletown	24 00	.....	.....	24 00
Narragansett	64 00	10 00	.....	74 00
New Shoreham	108 00	.....	.....	108 00
Newport	298 00	.....	.....	298 00

	Resident	Non-resident	Alien	
North Kingstown...	\$126 00	.....	.....	\$126 00
North Providence...	59 00	.....	15 00	64 00
North Smithfield....	101 00	.....	.....	101 00
Pawtucket	383 00	30 00	60 00	473 00
Portsmouth	60 00	.....	.....	60 00
Providence	1,548 00	30 00	315 00	1,893 00
Richmond	87 00	.....	.....	87 00
Scituate	232 00	.....	.....	232 00
Smithfield	229 00	.....	15 00	244 00
South Kingstown...	197 00	10 00	.....	207 00
Tiverton	143 00	100 00	30 00	273 00
Warwick	596 00	.....	30 00	626 00
West Greenwich....	33 00	.....	.....	33 00
Westerly	355 00	70 00	60 00	485 00
Woonsocket	343 00	40 00	90 00	473 00
				\$8,417 00

LIST OF BONDS AND COUPONS REDEEMED AND
DESTROYED MARCH 7, 1918,

*In Accordance with the Provisions of Section 3, Chapter 42, of the
General Laws, with the Numbers, Date of Issue and
the Denomination of Each Bond.*

STATE HOUSE CONSTRUCTION BONDS.

Issued January 1, 1894; denomination \$1,000 each.

Registered Bonds, Due 1914.

Numbers 301, 302, 303, 304, 305, 306, 307, 308, 309,	
310, 311, 312, 313, 314, 315, 316, 317, 318, 319,	
320, 321, 322, 323, 324, 325, 326, 327, 328, 329,	
330.....	\$30,000 00

Numbers 401, 402, 403, 404, 405, 406, 407, 408, 409,
 410, 411, 412, 413, 414, 415, 416, 417, 418, 419,
 420, 421, 422, 423, 424, 425, 426, 427, 428, 429,
 430, 431, 432, 433, 434, 435, 436, 437, 438, 439,
 440, 441, 442, 443, 444, 445, 446, 447, 448, 449,
 450 \$50,000 00

Numbers 511, 512, 513, 514, 515, 516, 517, 518, 519,
 520, 521, 522, 523, 524, 525, 526, 527, 528, 529,
 530, 531, 532, 533, 534, 535, 536, 537, 538, 539,
 540, 541, 542, 543, 544, 545, 546, 547, 548, 549,
 550 \$40,000 00

Due 1924.

Numbers 731, 732, 733, 734, 735, 736, 737, 738, 739,
 740 \$10,000 00

Numbers 1041, 1042, 1043, 1044, 1045, 1046, 1047,
 1048, 1049, 1050, 1051, 1052, 1053, 1054, 1055,
 1056, 1057, 1058, 1059, 1060, 1061, 1062, 1063,
 1064, 1065, 1066, 1067, 1068, 1069, 1070, 1071,
 1072, 1073, 1074, 1075, 1076, 1077, 1078, 1079,
 1080, 1081, 1082, 1083, 1084, 1085, 1086, 1087,
 1088, 1089, 1090 \$50,000 00

Due 1934.

Numbers 1101, 1102, 1103, 1104, 1105 \$5,000 00

HARBOR IMPROVEMENT LOAN OF 1913.

Issued December 1, 1913; denomination \$500 each.

Coupon Bonds, Due 1963.

Numbers 555, 556, 557, 558, 559, 560, 561, 562, 563,
 564, 565, 566, 567, 568, 569, 570, 571, 572, 573 . . . \$9,500 00

Numbers 400, 401, 402, 403, 404, 405, 406, 407, 408,
 409, 410, 411, 412, 413, 414, 415, 416 \$8,500 00

Numbers 747, 748, 749, 750, 751, 752, 753, 754, 755,
 756, 757, 758 \$6,000 00

THIRD HIGHWAY CONSTRUCTION LOAN.

Issued June 1, 1912; denomination \$1,000 each.

Coupon Bonds, Due 1942.

Numbers 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161	\$11,000 00
Numbers 376, 377, 384, 385, 424, 425, 480, 481, 482, 483, 484, 485, 486, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 501, 528.....	\$26,000 00

We hereby certify that the bonds of the numbers, date of issue and denomination hereinbefore set forth, which have become the property of the State, have this day, in our presence been destroyed by burning by the General Treasurer.

J. FRED PARKER,
Secretary of State.

HERBERT A. RICE,
Attorney General.

PHILIP H. WILBOUR,
State Auditor.

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PUBLIC DOCUMENT.] APPENDIX.

[No. 6.]

State of Rhode Island and Providence Plantations

SEVENTEENTH ANNUAL REPORT

OF THE

STATE BOARD OF PUBLIC
ROADS

OF THE

STATE OF RHODE ISLAND

JANUARY, 1919

PROVIDENCE

E. L. FREEMAN COMPANY, PRINTERS

1919

State of Rhode Island.

MEMBERS OF THE STATE BOARD OF PUBLIC ROADS.

	Term expires.
ABRAM L. ATWOOD, Providence, <i>Chairman</i>	1920
BENJAMIN F. ROBINSON, South Kingstown, <i>Secretary</i>	1922
FRANK COLE, Warwick	1921
MICHAEL VAN BEUREN, Middletown	1919
*J. HENRY WOODARD, Barrington	1923
IRVING W. PATTERSON, North Kingstown, <i>Chief Engineer</i> .	
PETER J. LANNON, Providence, <i>Clerk</i> .	
GEORGE R. WELLINGTON, Cranston, <i>Clerk of the Automobile</i> <i>Department</i> .	

Regular meetings of the Board are held on Wednesdays of each week, at 10 o'clock A. M.

* Appointed December 23, 1918, vice John F. Richmond, deceased.

State of Rhode Island and Providence Plantations.

*To the Honorable the General Assembly of the State of Rhode Island
at its January Session, A. D. 1919:*

We, the undersigned, the State Board of Public Roads, under the provisions of Section 3, Chapter 84, General Laws, entitled "An Act to provide for the construction, improvement, and maintenance of State roads," herewith submit our seventeenth annual report.

ABRAM L. ATWOOD,
BENJAMIN F. ROBINSON,
FRANK COLE,
MICHAEL VAN BEUREN,
J. HENRY WOODARD.

State Board of Public Roads.

REPORT

With the labor situation very serious, with railroad embargoes frequent and with Federal restriction and control becoming more and more in evidence as the construction season advanced, highway work during what appears at this writing to be the last year of the Great War was surrounded by many difficulties. Not only were the obstacles to the carrying out of highway work far greater than usual, but the traffic over our roads occasioned by the unusual military and industrial activity and by freight congestion was more severe than normal. Increase in the use of heavy trucks during the past two years has been especially noticeable. Reports received from many sections of the country during the past year were to the effect that the damage to roads resulting from the greatly increased traffic was very serious and had resulted in many instances in the complete demolition of pavements which were designed to carry normal traffic successfully for many years. Although many of our older roads of waterbound macadam construction were for a time early in the spring in such condition as seriously to impede traffic, we were gratified to note no serious damage to our roads built recently according to our present standards. Our bituminous macadam and bituminous concrete roads have been affected very little if any by the unusual conditions surrounding traffic and affecting maintenance. Observation of roads of this type after the spring thaws indicated the want of no more extensive repair upon the whole than was to be expected under normal conditions. Even upon those trunk lines over which the traffic was many times more severe than normal, as for instance the road between Fall River and Newport, very little repair was necessary to the bituminous macadam roads, although the waterbound macadam sections were at times in deplorable condition.

The policy of the Board during the entire period of unusual difficulties in the carrying out of road work has been to continue as rapidly as possible the work of reconstructing those sections upon our main trunk lines which constitute a serious hindrance to traffic, even though prices have been abnormally high. A number of State

highway departments have curtailed greatly construction and reconstruction and have allowed their funds to accumulate until conditions allow of doing work under conditions more favorable to low costs. Since the building of our main trunk lines had been completed previously, we could see no good reason for taking up the building of new roads during the past year, even if funds for that purpose had been made available, which was not the case. The matter of reconstructing the sections upon our main trunk lines which at certain times of the year were almost prohibitive to travel seemed to us, however, of the greatest importance in view of the extreme value of having these lines serviceable during the entire year. If our work of reconstruction were to be delayed until the return of low prices, the public would not save the entire difference existing between the abnormally high costs at present prevailing and normal costs. When low costs of road work will return is uncertain and until low costs do return the public must pay the high cost of hauling over these very bad sections, unless they are rebuilt. Delays to traffic because of wornout roads which are so soft as to be next to impassable are expensive and the excessive wear and tear to vehicles on account of such roads is also expensive. During a period of several years the cost to the public of these bad sections as represented by the delays and excessive wear and tear incident to millions of trips is tremendous. The public therefore loses nothing we feel by the carrying out of reconstruction of wornout roads as rapidly as possible, even if prices are high.

Unsettled conditions surrounding all construction work made necessary radical changes in our methods of planning work. The desire to have our main trunk lines passable at all points during the entire year caused us to spread out our work more than has been our practice for some years past and in a number of instances to adopt temporary surfaces over foundations placed to take care of soft places. Our policy in carrying out our work did not include the enhancing at the earliest possible moment of the comfort of high speed traffic. The repair of sections of road which were simply inclined to be rough at high speeds gave way under our plan of work to the repair of sections which at times were so soft that travel over them was virtually impossible. It was out of the question to make plans for work extending over long periods. Conditions were changing rapidly throughout the construction season. New Federal restrictions of road work were imposed from time to time, the supply

of labor available for road work fluctuated and railroad embargoes were frequent. In laying out our work, therefore, it was necessary to adopt a policy which in normal times might well be termed a "hand to mouth" policy. A very careful study of conditions was necessary before work of any magnitude was started.

A strenuous and successful endeavor was made to take care of the necessary maintenance of our good roads; that is, the roads which will be serviceable with light repairs for many years. To neglect the maintenance of these roads would have been a serious economic error. The light and inexpensive repairs to our bituminous macadam roads, for instance, were very necessary to avoid serious deterioration of these roads.

The reconstruction of approximately 15 miles of wornout macadam was undertaken during the past year. Work upon three of the sections reconstructed was begun in the fall of 1917 and two of the contracts begun during the past year were not wholly completed. In addition to this complete reconstruction approximately six miles of wornout macadam was taken care of by constructing the foundations necessary on account of unstable or poorly drained sub-soils and laying temporary surfaces of plain macadam over the foundations until such time as conditions surrounding construction are more propitious. Temporary wearing surfaces were necessary because of the impossibility of securing labor and materials to lay more permanent surfaces.

The maintenance of our plain macadam roads has been very difficult for a number of years and this work of course was affected seriously by the abnormal conditions which prevailed during the past year. It was possible, however, to keep these roads upon the whole in as good condition as they had been for several years past. It was not, however, possible to carry out the work as rapidly as we desired, chiefly because of labor shortage. We have in our past reports stated that it is impossible to keep our waterbound macadam in perfect condition because they were not designed for the travel to which they are now subjected. It appears necessary to rebuild the plain macadam upon our main trunk lines as rapidly as possible and to maintain them in the meantime so that they will be reasonably serviceable to carry the traffic to which they are subjected.

Considerable drainage work upon our older roads was done during the past year. Inadequate and damaged culverts were replaced, new culverts were laid in locations which required them, side ditches

were dug where necessary and a number of catch basins were built. All of this work will be of value when reconstruction comes and will in the meantime take care of distressing conditions.

Federal restriction, supervision and control of practically all road work was an innovation during the past year. The first restriction imposed was upon the use of bituminous materials for road work. This was a very necessary fuel conservation measure, since the bitumens employed for road work are very largely either derived from materials which may be used as fuel or are of such a nature that they may be employed as fuel. Later in the construction season restrictions were placed upon the use of practically all road materials and labor, and rail shipments in connection with road and street work were also controlled by Federal authorities. The United States Highways Council was created to coördinate and to control all road building activities. All projects of road and street construction, reconstruction and maintenance involving the issuance of bonds, the use of rail or water transportation, the use of coal or oil as fuel or the use of cement, brick, asphalt, oil, tar, crushed stone or steel were required to be submitted for approval to the United States Highway Council. Applications for approval of projects were sent through the various State highway departments and action by the State highway departments was necessary before the applications were forwarded to the Highways Council. This Department, therefore, in common with all other State highway departments served in effect as local agents of the Highways Council.

We have endeavored to coöperate fully with Federal authorities, in the carrying out of our work during the past year. It was not the intention of the Federal authorities to hamper the maintenance of roads which had been constructed, but it was their desire to curtail the use of bitumens as much as possible as a fuel conservation measure and it was also their desire to limit road construction and reconstruction to those roads which were of military value or which were of National economic value. Our use of bitumens, in accordance with the wishes of Federal authorities, was greatly reduced. We ordinarily use approximately 700,000 gallons of bituminous materials for maintenance, but during the past year only 200,000 gallons of bituminous materials was employed for this purpose. This saving in the use of bitumens was effected by the omission of the surface treatment of those plain macadam roads which are not upon heavily travelled trunk lines and also by the omission of surface treatment

upon many miles of macadam upon main trunk lines which had upon the surface a considerable accumulation of bitumen from applications made in previous years. It was thought necessary to treat the macadams which showed little or no effect of former applications, provided the travel over them was heavy, and it was also deemed advisable to treat macadams in thickly built up sections in order to eliminate dust which otherwise might have been a menace to health. We have to date perceived no serious results from the omission of the usual annual surface treatment of these sections of plain macadam which were not treated. It appears probable, however, that surface treatment next year will be necessary where it was omitted this year in order to avoid serious deterioration. In all probability many of the roads surface treated during the past year will not have to be treated next year, and of course the sections reconstructed during the past year will not require surface treatment next year.

None of our projects for reconstruction submitted for the approval of the United States Highway Council was disapproved. In selecting the sections for reconstruction we were very careful to consider only those sections of our main trunk lines which were in very bad condition. That the selection of sections to be reconstructed was made in accordance with the rules laid down by Federal authorities is apparent by the fact that all applications were approved.

No convict labor was employed upon our work during the past year. This fact is not to be construed to imply that convict labor is not to be employed in connection with State road work in Rhode Island in the future. We received this year from the Penal and Charitable Commission no offer of convict labor to be used in connection with our work. In our last annual report we suggested certain modifications of our Convict Labor Law. None of these modifications were, however, brought about. We still feel that convict labor upon State roads is desirable, but we feel also that our present law governing the use of convicts may be improved along the lines recommended in our last annual report. The two sections of road built by convicts in 1917 have proved so far to be very serviceable. One section has stood up excellently and bids fair to compare favorably with the best work of that type built by free labor. The other section built by convicts is considerably below the average of this type of construction in quality of workmanship, but is nevertheless in very good condition. The results secured by our use of convict labor seem to indicate, therefore, that it is possible to get the

best of results but that the chances of poor workmanship are greater than is the case with free labor.

The progress of our work under the provisions of the Federal Aid Road Act of 1916 has been satisfactory. Our first Federal Aid project, which involved the reconstruction of approximately $3\frac{3}{4}$ miles of the Post Road between Wakefield and Matunuck was practically completed during the past year. Work upon this section began late in 1917. The progress of the work was retarded appreciably by the difficult conditions which affected all construction work. Federal authorities approved two more projects during the past year, but at this writing project agreements covering the work involved have not been executed. The three projects submitted to date involve the expenditure of practically all of the funds due Rhode Island under the terms of the Act during the first three of the total period of five years covered by the Act.

During the past year innovations in the types of construction which we have adopted previously are to be noted. Previous to 1918 our roads had been limited in types to plain macadam, bituminous macadam and a form of bituminous concrete involving a coarse ungraded aggregate. The new types selected during the past year are cement concrete and bituminous concrete in which the aggregate is fine and graded. A statement now as to the success obtained from the employment of these types of construction heretofore untried is of course premature. We shall follow with great interest the behavior of these pavements under travel. The use of the particular type of bituminous concrete selected is interesting in that a material saving over bituminous macadam was effected in the particular sections where it was laid, chiefly because local mineral aggregate could be used for this type of construction and imported mineral aggregate would have been necessary if bituminous macadam had been selected. We have in Rhode Island many sections far removed from railroads where the native rock is not suited for bituminous macadam construction but where local sands and gravels may be combined to form a very satisfactory mineral aggregate for bituminous concrete construction. The fact that sand and gravel are as a rule in Rhode Island very much cheaper than are crushed stone, together with the fact that long hauls frequently are done away with by the use of these local materials, makes apparent the saving brought about by the selection of a type of construction which does not involve the use of expensive imported crushed stone.

The use of cement concrete is interesting in affording an opportunity for comparing maintenance costs upon this pavement and maintenance costs upon the types of pavements which we have constructed heretofore. The cost of the concrete pavement was considerably higher than the cost of bituminous macadam, and we shall be interested to note whether or not the extreme low cost of maintenance claimed for concrete will bring about a lower ultimate cost of this pavement. The concrete pavement at any rate will serve as a permanent foundation for a wearing surface which will be laid over it when the concrete wears to such an extent that it is no longer serviceable as a concrete pavement. We believe that pavements laid upon a concrete base as are the pavements upon city streets, are now demanded upon those of our main trunk lines which are called upon to carry heavy commercial traffic. The travel over some of our trunk lines at present is comparable to the travel upon many city streets which are laid with permanent pavements upon a concrete base. There should, therefore, be little difference in the design of pavements for these lines and the design of pavements for city streets. The public, however, must become educated to the fact that expenditures for State roads are to become comparable to the expenditures for city streets.

As a war measure more use was made during the past year of local materials. Federal authorities urged the coöperation of all road and street officials in reducing transportation of road materials. A great reduction in shipments of materials for our work was made possible. Crushed local stone was employed more than is usual upon our work and in a number of instances where the quality of local stone was so poor as to render its presence in the wearing surface undesirable a type of construction was selected which made possible the use of local sands and gravels combined to form a mineral aggregate suitable for the wearing surface, the inferior local rock being employed for the base only, where it is not subjected to as severe wear. Shipments of crushed stone were involved upon only two reconstruction projects and upon only one of these projects was imported stone used exclusively. Rail shipments of certain materials ordinarily used in our work in small quantities were also reduced materially by ordering in carload lots and distributing by trucks to the localities where they were to be used.

The progress of bridge work was very satisfactory during the past year, considering the difficulties to be overcome. As much bridge work was undertaken as our organization could well handle. It was

deemed very necessary to replace several of our bridges during the past year, in spite of unusually high prices, because of the probability that complete failure of the old structures might occur, with the result that traffic would be very seriously inconvenienced. The character of traffic over our main highways during the past year was such that no chances could be taken with questionable bridges. Very serious results industrially and commercially were possible if bridges upon our main trunk lines were to fail in locations where there are no suitable parallel roads which could have been employed as detours until repairs were effected. The conditions heretofore described as obstacles to economical, rapid and effective work upon our highways of course had their effect upon bridge work. The fact that smaller gangs were as a rule employed upon bridge work and the apparent ability of our bridge contractors to retain at least portions of their customary organizations appeared to make the conditions surrounding bridge work during the past year not as serious as were the conditions surrounding road work.

Our office and field forces were considerably affected during the past year by reason of the induction of a number of men from both forces into army and navy service. These losses constituted a rather serious handicap, since the greater number of the men whose services were lost had been in our employ for a number of years and were in consequence very familiar with their work. We found it very difficult to secure the services of engineers to replace the engineers entering the service. So many engineers were employed in connection with the tremendous amount of Government work requiring engineering skill that comparatively few were left available for other lines of work. It was merely a case of making the best of the situation and endeavoring by various expedients to carry out our work in the best manner which conditions permitted. A few years ago we would have thought it impossible to carry on our work with such a reduced force, but we have in common with all organizations discovered that many things which appear out of the question are perfectly possible when necessity leaves no alternative. Some branches of our work, especially the preparation of records of our work, have progressed very slowly, but this work can all be brought up to date when our forces are increased to normal strength.

NEW ROAD LEGISLATION.

In our last annual report we suggested numerous modifications of the laws governing the activities of this department. None of these suggestions was acted upon, so that a résumé of the changes suggested in our last report is advisable here.

Our first suggestion was in regard to the restriction of the widths of State highways. Our existing law places the maximum width of all State roads at 18 feet. We explained the unsatisfactory manner in which this restriction works out in certain localities where the conditions are peculiar and we showed also that greater widths than 18 feet are called for upon some of our roads which carry a very heavy travel. It was suggested that all restrictions governing widths of State roads be eliminated so that this department might exercise its discretion in the matter. The most convincing argument in favor of not limiting the widths appears to us to be the fact that desirable widths of roads may now be arrived at with almost mathematical precision by a study of traffic conditions made possible by a careful census of traffic. It does not seem logical to limit by law something which is as much a feature of design as are foundations and drainage.

Another matter discussed in our last annual report is the acquiring of land for highway purposes. Under the provisions of Chapter 1380 all changes in line or in width which involve the taking private property for highway purposes must be taken up with the Town Councils of the towns in which the contemplated changes are located, and approval by the Town Councils is a condition precedent to the carrying out of the changes. The formal layouts are made by Town authorities if the approval of Town Councils is granted. The criticism of this method of acquiring land is that it is rather too cumbersome to be practicable. It was stated in our last report that one of the chief faults in this method of acquiring land is the fact that the process is so round-about because so many parties are interested that much time is usually required, with the result that the actual construction-work where changes are necessary may be greatly delayed. We question the logic or advisability of securing the approval by Town Councils of changes in line or in widths of State roads which involve acquiring of private property. During the past year, however, we have received the heartiest of coöperation by Town Councils in this matter. We feel that the cause of some of the extended delays occasioned previously in the securing

of the rights necessary were occasioned chiefly because of the inexperience of Town Councils in the carrying out of the provisions of the Act. One advantage from our standpoint of the method as now employed is that our office is relieved of considerable work because of the fact that the towns make all agreements with property owners and also make the formal layouts. The matter does not appear to us to be as serious as it did one year ago because of the greater success obtained under the Act during the past year by reason of greater exertion upon the part of town officials in making the layouts. We feel, however, that this department should be vested with greater power in the matter of acquiring land for highway purposes.

The suggestion in our last annual report that legislative action be taken to make possible the purchase by this department of land for the purpose of securing road building materials was not acted upon. It appears desirable for this department to insure future supplies of road building materials by purchase of land upon which are ledges of good road building stone, good gravel banks and good sand banks. The inability to secure these materials from individuals at fair prices constitutes in certain localities a rather serious obstacle to economical work.

The problem of regulating by law the weights, widths, speeds, designs of tires, axle loadings and tire pressures of vehicles operating upon our public highways is still unsolved. The damage to roads and pavements occasioned by vehicles carrying excessive loads upon narrow, improperly designed or damaged tires and operating at high speeds is unquestioned. The danger incident to loads which overhang so greatly as to involve the occupation of a very large portion of narrow suburban road is also very apparent. Several Acts which were drawn to regulate these matters have been presented to the General Assembly, but none has been passed. The chief obstacle to the passage of any Act imposing restrictions upon weights, speeds and tires of vehicles is the protest upon the part of the owners of motor trucks. The extreme value of motor trucks in the commerce of today must be recognized. During frequent congestion in the movement of railroad freights during the past two years motor trucks have helped out the situation very greatly. The employment of trucks in connection with military activities has also been very extensive. The motor truck is here to stay and is so essential to our industrial and commercial welfare that no hardships justly can be

imposed upon the owners of motor trucks. Certain restrictions in the design and use of motor trucks, however, would not constitute hardships. The matter of speeds of motor trucks, for instance, could we believe be regulated without bringing about a calamity to the indispensable business of motor trucking. Manufacturers of motor trucks are emphatic in cautioning purchasers of trucks not to exceed certain speeds for which their trucks are designed. Owners of motor trucks who have studied carefully the costs of operation of their vehicles frequently refer to the high cost of repairs occasioned by driving the trucks at high speeds. High speeds of heavy vehicles are especially harmful to rigid pavements because of the effect of the pronounced vibrations incident to high speeds. We doubt if the cost of haul by motor trucks would be increased by legislation regulating speeds in reason. The desirable allowable maximum speeds for trucks of course depends upon weights involved and upon the types of tires with which the trucks are equipped. A tabulation of maximum speeds based on total weights and types of tires appears to us to be the most logical method of speed limitation.

The matter of limiting the extreme widths of vehicles and loads is not to our minds an injustice to the owners of vehicles. It seems right that the public should be protected against widths so great as to involve a monopolization of practically all of the available width of many suburban roads. A generous width should be allowed, but the person who loads carelessly with the result that portions of the load project dangerously should be made to change his ways in that regard.

The limiting of tire pressures to a reasonable amount per lineal inch of width of tire is very desirable from the standpoint of the protection of roads and pavements, as is also the preventing of the use of the defective or improperly designed tires which may exert a very serious effect upon the surfaces of roads. The limitation of tire pressures to a maximum of a specified weight per lineal inch of tire should not work a hardship upon truck owners. There is, we believe, little just criticism of tires of motor trucks as they are designed by the great majority of manufacturers. The tires of various types of vehicles employed as trailers, however, frequently are far from what is desirable from the standpoint of their effect upon the surfaces of roads and pavements.

Any legislation governing the designs and use of vehicles must apply to all sorts of vehicles. There should be no discrimination

against vehicles which are self propelled. Horse-drawn vehicles should be made to conform to all of the requirements for motor vehicles. Horse-drawn vehicles employed for the carrying of heavy loads frequently are equipped with tires too narrow. Any legislation aimed to limit tire pressures should of course apply to all vehicles regardless of types or methods of propulsion.

The matter of defining by law what roads are State roads and are therefore to be maintained by State funds is still an urgent necessity. We stated in our last annual report that there was an uncertainty as to what constituted a State road under our law and we recommended that legislative action be taken to make this point clear. The public suffers by reason of the vagueness that now exists in regard to the placing of responsibility for many sections of public highways. The point to make clear is whether this department is to maintain only those sections of road built previously by the State, as has been the view taken by this department since its creation, or whether this department is to maintain also sections of road placed upon the State highway system by legislative action but not built by State funds. In our report to the General Assembly at its last session the matter was discussed very fully. It was shown that the sudden addition of several hundred miles of highway to the mileage at present maintained by this department involves a great expense which should be met by appropriations much larger than have been the rule in past years. It was stated further that our big problem at present is the reconstruction of those sections of our main trunk lines which are impassable or next to impassable for traffic at certain seasons of the year, and we expressed the opinion that this work should not be retarded by devoting to roads of lesser importance the funds which necessarily would have to be devoted to roads other than those which we are now maintaining, if many miles of unimproved road be added to the system of State highways.

Other features which we think should be covered more explicitly by our State highway law are the control of public utility structures in State highways and the transferring to this department of all rights held by towns over roads which have become State roads. We have explained in our past reports some of our difficulties in regard to public utility structures located upon State highways. Railroad tracks, for instance, frequently involve inconvenience or even danger because of the fact that the crossovers, switches or some other portion of the tracks are not properly paved. We are now

apparently powerless to exercise compulsion over railroad companies in matters of this sort, it being necessary to seek the coöperation of town authorities. Certain rights held by towns upon roads which have become State highways are not specifically transferred to this department. There are many instances of agreements having been entered into by towns with individuals or with corporations in regard to structures upon roads occasioned by artificial water courses such as mill trenches. Under the terms of these agreements very frequently the individuals or corporations were responsible for all structures in the highways occasioned by artificial waterways. Now that the towns have no more responsibility over roads that are now State roads town officials claim that they cannot compel the owners of waterways under these roads to make good their part of the agreements, and our law does not empower us to exercise compulsion in the matter. Bridges and guard rails are the structures most commonly affected by this condition.

SNOW PROBLEM UPON STATE HIGHWAYS.

Under the provisions of Section 6 of Chapter 84 the separate towns and cities are responsible for the relieving of conditions brought about by accumulations of snow and ice upon the State roads within their respective boundaries. The law is very definite in fixing the responsibility for the meeting of snow conditions upon State highways but the provisions of the law in this regard have not been carried out effectively in past years. There has been in fact practically no attempt made by towns and cities to keep State roads open for traffic during the winter months. In view of the very great importance of highways transport in solving problems of direct importance to the war and to the post-war period, too much importance cannot be placed upon the keeping of highways open during the entire year. It may be sufficient upon certain roads remotely located to open the roads after heavy snows only sufficiently to enable light vehicles to get through, but upon our main trunk lines it is very necessary to meet the snow problem in such a manner that the normal travel to which the roads are subjected will not be interfered with seriously. This problem is now so serious that it must be met squarely. We can no longer maintain a careless attitude toward the subject of meeting snow conditions; we must no longer look upon snow as a necessary impediment to traffic; and we must not sit by

complacently and allow traffic to fight its way through drifts or of necessity to cease until nature takes care of the situation.

If there appears no certainty that the present provisions of our law in regard to snow removal upon State highways cannot be made effective, modifications of our law in this regard are in order. We feel that good results under our existing law will not be forthcoming. Towns and cities, it seems to us, will not take the proper interest or spend the necessary funds to meet the snow problem satisfactorily upon State roads. It appears probable that roads under the full control of towns and cities will receive preference in the programs of snow removal carried out by towns and cities, notwithstanding the fact that in the great majority of cases the State roads are the most important roads to keep open.

It appears very logical to assume that the responsibility for taking care of snow conditions upon State roads should be borne by the State. Dual responsibility over State highways does not appear desirable but there is a dual responsibility now, the State taking care of maintenance and towns and cities taking care of snow conditions. If the State were to assume responsibility for the meeting of snow conditions, it is not to be presumed that all State roads would receive the same attention in the matter of snow removal or involve the same expense. Conditions would govern steps taken to meet the snow problem. Special attention naturally would be paid to the roads carrying the heaviest travel. More extensive work would be necessary upon those lines subjected to a heavy motor truck traffic than upon those lines carrying in the winter months only a very light traffic composed largely of light horse-drawn vehicles. The locations of roads would also affect very greatly the expense involved in snow removal. The northern section of our State has normally a much greater snow fall than does the southern section of the State and would therefore demand a greater expenditure for meeting snow conditions.

The removal of snow after it falls is only one aspect of the problem of meeting snow conditions. The prevention of drifting by the erection of snow fences, by changes in fences and by cutting of brush which affect the currents of air and result in the causing of drifts to form, are of the greatest importance. The drivers of vehicles could aid materially in helping out the situation when drifting does not occur and where the depth of snow does not involve a serious hindrance to traffic by avoiding travelling in one track. The driving

in one track of course develops ruts which may freeze and therefore cause the greatest difficulty in turning out. The damage to road surfaces by this tracking is very apparent, especially when thawing occurs and the ruts become filled with water.

We wish once more to urge careful consideration of this subject of meeting the snow problem. We feel that it is important that our main highways be kept open throughout the entire winter.

FUNDS FOR ROAD WORK IN 1919.

Never before perhaps have conditions made so desirable generous appropriations for road work. The importance of good roads is now more generally recognized and the value of roads serviceable twelve months in each year for use by all types of vehicles is greater than has ever been the case before in view of the tremendous increase in commercial highway traffic. Federal authorities are urging the prosecution of extensive highway work during 1919 as an aid in solving our post-war problems. The opportunity which road work affords for the employment of a great deal of labor is perhaps not the least valuable feature of an extensive highway program during the period of readjustment to normal conditions.

The big problem still confronting us is the reconstruction of the wornout and unfit sections of our main trunk lines. The arguments in favor of reconstruction which we have employed in past years hold good now with added force. We feel that the State cannot afford to stop or to retard the present program of rebuilding the deplorable sections of our main trunk lines. It is preferable rather to accelerate this work. We believe that the results obtained during the past three years in reconstruction work are apparent to all. Consider for instance the conditions existing now upon the road between Stone Bridge and Newport, upon the shore route from Providence to Westerly, upon the Mendon Road to Woonsocket, upon Taunton Avenue in East Providence, and upon the Putnam Pike, and compare these conditions with the conditions existing four years ago. Almost the entire distance from Stone Bridge to Newport was four years ago in such condition during winter and spring thaws that heavy motor vehicles simply could not pass over the road at these times. The character of the soil is such that no semblance of stability in the road then existing was maintained when frost action was at its maximum. Approximately six miles of road upon this line

have been rebuilt with heavy foundations so that seasons have no effect upon the ease or comfort of travel over the road. The remaining sections of old macadam comprise the best of the original macadam upon this line, but the unusually heavy travel now passing over the road makes imperative the rebuilding of these sections as soon as possible.

When the two sections of wornout macadam between Saunderstown and Narragansett Pier have been built under the provisions of the Federal Aid Road Act, as has now been definitely approved by Federal authorities, there will be no old macadam remaining between Providence and Matunuck. There is also a new section of bituminous macadam upon the Westerly end of this road. Four years ago wornout macadam upon this route was so prevalent as to cause much complaint upon the part of the travelling public.

A section of old macadam less than one mile in length remains upon the Mendon Road to Woonsocket. The tremendous motor truck traffic over this route now need not be suspended or be seriously impeded during thaws, as was the case four years ago.

A new concrete road upon Taunton Avenue in East Providence remedies a condition which was for a long time deplorable.

An excellent road has now been built upon the Putnam Pike from the Providence City Line to West Greenville. Only four and one-half miles of old macadam remains upon this line for its entire length in Rhode Island. Some of the older bituminous macadam is too narrow for comfort or perhaps for safety, but this readily may be widened.

In addition to the great improvement of the trunk lines mentioned above, there has been considerable reconstruction work accomplished upon all of the other main trunk lines. There is, however, much more work to be done to make our main trunk lines suitable for the travel to which they are subjected. We trust that the funds necessary for the continuation of the present program of reconstruction may be forthcoming.

It is impossible to predict at this time how costs of road work in 1919 will compare with the costs before the war, although it appears very probable, however, that they will be higher. Labor conditions will, it seems very likely, be relieved, although the prices paid labor probably will remain high. It is the opinion of the Board that conditions warrant extensive road work in 1919. We believe that it would be a mistake to make the extent of the funds available for road work in

1919 less than the funds that were available for our work during the past year. It would, it seems, be preferable to increase the available funds, since the conditions surrounding the building of roads in 1919 will very probably be far more favorable than the conditions prevailing during the past year.

We recommend, therefore, that at least \$400,000 in addition to the funds received under the provisions of our Motor Vehicle Act be made available for reconstruction and for maintenance in 1919. It is very desirable to have our funds made available early in the session of the General Assembly. We have been considerably handicapped in the past because of the fact that our appropriations have been made so late that it has been impossible to advertise our work and to award contracts until late in the construction season.

FEDERAL AID.

The Federal Aid Road Act of 1916 is now in full operation throughout the United States. The provisions of this Act were described in our report to the General Assembly at its January Session in 1917. A total of \$85,000,000 of Federal funds was made available for road work under this Act. Of this amount ten million dollars is to be expended upon roads and trails within or partly within the national forests and the remaining seventy-five million dollars is to be spent upon rural post roads. The apportionment of the \$75,000,000 fund for rural post roads was made among all of the States according to a definite rule which takes into consideration the area of each State as compared to the total area of all of the States, the population of each State compared to the total population of the United States and the mileage of post roads in each State as compared with the total mileage of post roads in all of the States.

The apportionment among the various States of the funds provided by the Federal Aid Road Act covers a period of five years. Five million dollars was apportioned during the fiscal year ending June 30, 1917, and apportionments for the remaining four years are of ten, fifteen, twenty and twenty-five million dollars respectively. The amount due Rhode Island for the fiscal year ending June 30, 1917, was \$11,665.71, and double this amount was due for the fiscal year ending June 30, 1918. The amounts due in subsequent years are multiples of \$11,665.71, as may readily be determined by examining the method of apportionment as described.

In conformity with a provision of the Act our General Assembly at its January Session in 1917 assented to the terms of the Act and appropriated funds equal in amount to the Federal funds due Rhode Island.

The first project of road improvement by Federal Aid undertaken in this State was the rebuilding of approximately 3.8 miles of wornout macadam upon the Post Road, so-called, between Wakefield and Matunuck. The work involved in this project was described very completely in our last annual report. Actual construction began late in 1917 and progressed through the greater part of the winter. The rough grading was completed by late spring and the laying of the pavement was started immediately afterward. The wearing surface was completed early in November and the road was at once thrown open to travel. At this writing the final shoulder work, the erection of guard rails and the laying of cobble gutters are not completed.

The work was frequently inspected by Federal engineers.

This first project involves the expenditure of the allotments of Federal funds due Rhode Island for the fiscal years ending June 30, 1917 and June 30, 1918.

The cost of the work completed to January 1st, 1919, follows:

**DETAILED COSTS OF FEDERAL AID PROJECT NO. 1 TO
JANUARY FIRST, 1919.**

LENGTH, 19,459 FEET. SQUARE YARDS, 39,296.

Grading:

Clearing and grubbing 1.1 acres @ \$400.00.....	\$440 00
Earth excavation, 10,654 cu. yds. @ \$1.25.....	13,317 50
Ledge excavation, 254 cu. yds. @ \$3.00.....	762 00
Cleaning, scarifying, reshaping 25,006 sq. yds. @ \$0.07..	1,750 42
	\$16,269 92

Drainage and foundations:

Earth excavation, 346 cu. yds. @ \$1.25.....	\$432 50
Stone foundation in place, 95.7 cu. yds. @ \$2.00.....	191 40
Gravel foundation in place, 250 cu. yds. @ \$2.00.....	500 00
Gravel borrow, 2,396 cu. yds. @ \$2.25.....	5,391 00
Culvert pipe laid, 796 feet @ \$1.00.....	796 00
Catch basins in place, 3 @ \$50.00.....	150 00
Concrete masonry 35 cu. yds. @ \$18.00.....	630 00
Culvert pipe purchased.....	1,117 80
Culvert reinforcement purchased.....	19 79
Frame and grates purchased.....	30 81
Miscellaneous.....	55 66
	9,314 96

New metalled surface:

Crushed stone base, 7,824.75 tons @ \$2.75	\$21,518 06	
Bituminous concrete surface, 39,296 sq. yds. @ \$0.45	17,683 20	
Asphalt purchased, 369 tons @ \$36.00	13,284 00	
		52,485 26
Stone masonry, 22.9 cu. yds. @ \$8.00		\$183 20
Land damage involved in relocation and widening of highway		5,994 10
Inspection		2,529 45
Watchmen		1,470 00
		\$88,246 89

The cost of completing the work is estimated to be approximately \$3,000.

FEDERAL AID PROJECTS NO. 2 AND NO. 3.

This department submitted upon April 26, 1918 to the proper Federal authorities Project Statements involving the expenditure of funds under the Federal Aid Road Act upon two sections of State highway. The reconstruction of these sections will call for the expenditure of practically the entire allotment of Federal funds due Rhode Island for the fiscal year ending June 30, 1919.

Project No. 2 involves the rebuilding of a section of the road between Providence and Narragansett Pier extending from a point 3,500 feet north of the Ferry Road at Saunderstown southerly to Four Chimney Corner, a distance of 2.04 miles. This section of road has been in bad condition for several years and its improvement is, therefore, greatly to be desired. Not only is the road surface in deplorable condition, but the alignment is far from satisfactory. A very radical relocation of this road from Saunderstown to its southern extremity is planned in reconstruction. This relocation will avoid two grade crossings, will do away with three very dangerous curves and will also bring about a saving in distance of one-third of one mile.

The construction work will be heavy. Foundations will be required upon the section of the existing road which is to be rebuilt and heavy grading will be necessary upon the section relocated from the existing road. Securing of a new right of way was of course necessitated. The towns of North Kingstown and Narragansett acquired the new right of way under the provisions of Chapter 1380.

Project No. 2 was approved by the Secretary of Agriculture of the United States upon July 19, 1918. Plans, specifications and engineer's

estimate were filed with Federal authorities very shortly after the approval of the project. We were desirous of beginning work upon this road during the past season, but the time necessarily involved in the preliminary dealings with Federal authorities has made this impossible. We cannot well award the contract until the Project Agreement required by the Act has been executed. It appears very probable at this writing that construction work upon this project may be started very early in the spring of 1919.

Project No. 3 involves the reconstruction of a section of wornout waterbound macadam in the vicinity of Bonnet Point in the town of Narragansett. This section is 1.15 miles in length and is with the exception of the road involved in Federal Aid Project No. 2 the only remaining section of waterbound macadam between Providence and Narragansett Pier. Foundation difficulties and the worn condition of the existing macadam had caused this road to be in very poor condition for a number of years. The taking care of foundation difficulties and the modification of a very sharp reverse curve as planned in reconstruction will be a very great aid to travel.

Project No. 3 was approved by the Secretary of Agriculture of the United States upon June 26, 1918. Federal authorities have at this writing not forwarded to us for execution the Project Agreement. No work can be done upon the project until this document is properly executed. We are confident that all matters pending will be cleared up so that construction work upon this section may begin early in 1919.

There is a great deal of preliminary work necessary in connection with Federal Aid road work. Although we have received the heartiest of coöperation upon the part of Federal officers in connection with this work we have discovered that a great deal of time must elapse between the submission of Project Statements and the awards of contracts for the work involved in Project Statements. All papers incident to the work pass through so many hands and the examination of the various documents and plans involves so much labor that it is apparent that immediate action is impossible. We feel, therefore, that it is desirable to select roads for improvement under the Federal Aid Road Act that may remain unimproved for a considerable time without bringing about serious hardship to travel over those roads. It seems to us a good plan to submit Project Statements for Federal Aid approximately one year before it is planned to begin construction work, and we shall in the future endeavor to do this.

RECONSTRUCTION IN 1918.

Considerable reconstruction of wornout macadam was accomplished during 1918. The sections of highway selected for reconstruction were all macadamed many years ago and were in wretched condition for present day travel because the macadam was badly worn and because of serious sub-soil difficulties. All of the sections rebuilt were upon main trunk lines.

The design of foundations and drainage structures and the selection of types of wearing surfaces received very careful consideration. Although costs of all construction work were high during the past year, no attempt was made to save expense by slighting foundations or drainage. The extent of motor truck traffic upon all of our main trunk lines makes necessary very heavy foundations over certain soils. It is poor economy to lay expensive wearing surfaces over foundations insufficient to prevent their demolition under traffic. Heavy motor vehicles are here to stay and there is to our minds no other course open to road authorities than to design roads for them. The reconstruction work accomplished under our present program and according to our present standards is free from foundation troubles. The work done in 1915 and in 1916 has been laid long enough so that foundation defects would be perceptible if they existed, but we have yet to discover the slightest weakness in the foundations constructed in connection with this work. Very light maintenance to the wearing surfaces has been demanded upon some sections, but this work has been inexpensive.

The urgent necessity existing during the past year for conservation in the transportation of road materials caused us to give careful consideration to the selection of types of construction and to materials to be used. Upon the greater part of our work the binder was the only material which it was necessary to ship in. It was necessary to secure the approval of the delivery of all bituminous materials employed in connection with our reconstruction work from Federal authorities. More or less delay in the completion of our work was occasioned by the necessity for securing this approval. None of our applications for approval, however, was acted upon unfavorably.

The conditions met with during the past year interfered rather seriously with the rate of progress of our reconstruction work. None of the forces of laborers employed upon this work was sufficient to allow of more than one or two stages of the work to progress simul-

taneously. Labor conditions furthermore had their effect upon results secured. Upon most of the work changes in the personnel of the labor forces were so frequent that inexperienced labor was the rule rather than the exception. Constant changes of laborers is not conducive to the best work. We do not intend to imply that the work accomplished was not satisfactory, but we wish merely to explain the influence of labor condition upon results. Upon the whole the finished work is very satisfactory, although some of the work is rather deficient in the little niceties that are not readily perceptible to one not engaged in road building.

More or less inconvenience to the travelling public was occasioned by the general retarding of the progress of the work because of the untoward conditions. As a rule, however, the public appeared to appreciate the unusual difficulties encountered. Shortage in available labor, delays in shipments and the delays involved in securing Federal sanction of various phases of the work made impossible a rate of progress as rapid as was to be expected under normal conditions. In general the work was carried out as rapidly as conditions made possible. All but two of our reconstruction projects were completed. One of the sections uncompleted was so heavy in character that completion in 1918 was not contemplated and the contract for the other section uncompleted was awarded so late in the season that completion did not appear at all certain. Traffic will be accommodated over both of the uncompleted sections during the winter months.

NARRAGANSETT PEIR ROAD—BARBERS HEIGHT.

The rebuilding of this road constitutes one of the greatest improvements to our highway system that has yet been accomplished. The old macadam road upon the site of this improvement was very badly worn and was subject in spots to complete demolition at certain seasons of each year under the combined action of frost and traffic. The alignment also was not suited for the traffic which passes over the road today. Two very sharp curves upon the old road had been responsible for numerous accidents and required modification. It was deemed advisable also to reduce the very steep grade upon Browning's Hill.

A very radical relocation and revision in existing grades made possible the remedying of all of the undesirable features of line and grade. A new right of way through private property was secured

for a distance of one-half mile at the north end of the road. The alignment upon this new location is very satisfactory.

The character of the soil and the presence of a great many ledges involved difficulties in design and in construction. Upon the new line a layer of gravel existed below the top soil and it was anticipated from the character of gravel pits in the immediate vicinity that no heavy foundations would be required. It developed, however, that the gravel occurred in a layer so thin that all of the cuts extended below it into very unstable micaceous clay. Because of this condition, it was decided to excavate below the sub-grade planned and to back-fill to sub-grade with gravel secured off from the line of work.

Ledges were the chief obstacles encountered upon the line of the old road. The formation of the ledges and their rather peculiar internal structure made their excavation very difficult. In many of the cuts ledges whose surfaces were generally parallel to the finished surface and which were at elevations requiring shallow excavation only were uncovered. Ledges of this character were found to be extremely difficult to deal with.

It was our plan to grade this road and to lay the foundations during the fall and early winter and then to allow travel to use the road until weather conditions permitted of continuing work in the spring. It was anticipated that the finished foundations would not be objectionable to travel over during the winter and this fact together with the fact that the only available detour was not suitable for travel during the winter and early spring made this plan practicable. The many difficulties met with in construction, however, made it impossible to open the road temporarily as planned. The very severe weather of last winter also delayed the work considerably. It was unfortunate that the rather inadequate detour was necessary all winter and also during the early spring, but it was unavoidable under the circumstances.

The type of construction selected for the wearing surface was bituminous macadam. Local stone was employed in order to avoid the extensive shipments necessary if imported stone were used. The foundations were of field and wall stone and of gravel. Heavy stone foundations were employed in all of the cuts upon the new line because of the necessity for drainage occasioned by the springy nature of the land in the locality. Insulating cushions of gravel were employed in fills over the heavy retentive soil and employed

universally over the clay sub-soil upon the section relocated from the line of the old road.

The wearing surface was completed July 19, 1918, and the road opened to travel the following day.

The contract for this work was awarded to John Bristow of Narragansett Pier.

The following table contains the detailed costs of this work:

COST.

LENGTH, 7,921 FEET. SQUARE YARDS, 16,053.

Drainage and foundations:

Earth excavation, 12,957 cu. yds. @ \$0.90.....	\$11,661 30
Ledge excavation, 891.6 cu. yds. @ \$2.00.....	1,783 20
Stone foundation, 1,966.33 cu. yds. @ \$1.50.....	2,949 50
Gravel foundation, 3,119 cu. yds. @ \$1.40.....	4,366 60
Culvert pipe laid, 390 feet.....	215 80
Culvert pipe, purchased.....	724 20
Concrete masonry, 12.5 cu. yds. @ \$10.00.....	125 00
Catch basin in place.....	59 75
Cobble gutter in place (Force acct.).....	685 62
Miscellaneous.....	99 30
	\$22,670 27

New metalled surface:

Crushed stone, 5,299.4 tons @ \$2.25.....	\$11,923 65
Asphalt heated and applied, 35,741 gals. @ \$0.06.....	2,144 46
Asphalt purchased, 36,241 gals. @ \$0.15.....	5,436 15
Freight on asphalt.....	756 10
	\$20,260 36

Clearing and grubbing on new line.....	800 00
Guard rails, 1,366 feet @ \$.60.....	819 60

Land damage:

Town of North Kingstown, cost of new layout.....	2,582 00
Resetting walls and fences.....	1,248 87
	3,830 87
Inspection, including weigher.....	1,564 69
Miscellaneous, grading driveways, watchman.....	61 78
	\$50,007 57

EAST MAIN ROAD—PORTSMOUTH.

During the past year the reconstruction of approximately 2.8 miles of old macadam upon the East Main Road between Stone Bridge and Newport was completed. This section extended south-

erly from the Bristol Ferry Road. In selecting the section to be rebuilt upon this line our usual custom of reconstructing sections adjacent to work completed previously was not adopted. The old macadam upon the site of the newly rebuilt road was in far worse condition than was the old macadam adjacent to either of the bituminous macadam sections previously built. During winter and spring thaws this section of road formerly was next to impassable for all types of vehicles excepting light horse-drawn vehicles. The heavy, retentive character of the soil was responsible for the difficulties experienced with the old waterbound macadam pavement.

Very heavy foundations were required for the entire length of the section rebuilt. The design of foundations to take care of the difficulties was very simple because the conditions were uniformly bad. The depth of foundations were varied somewhat because of slightly varying soil conditions, but the character of foundations was the same for the entire distance. Wall and field stone composed the foundations. Sandy gravel from nearby beaches was used over the stone foundations to bind and to solidify them and also to avoid considerable waste in crushed stone otherwise resulting because of the relatively large surface voids in the stone foundations.

Connecticut Trap Rock was employed exclusively for the laying of the bituminous macadam wearing surface. The local rock is not of a type allowing of the best results in this type of construction. Some of the ledges in the locality are fairly hard and tough, but are rather too variable in character to warrant crushing for the wearing surface. A rather peculiar feature of one type of ledge rock found in this section and which is otherwise excellent for bituminous macadam construction is the adherence after crushing of very fine rock powder to the surfaces of the individual stones. This fine rock powder tends to prevent proper adhesion of bitumen to the surfaces of the stones, and results in the securing of an imperfect bond.

The contract for the rebuilding of two miles of this road was awarded to Joseph McCormick, of East Providence, R. I., in September, 1917. The grading and the laying of foundations upon the site of the original contract were practically completed during the fall and winter immediately following the award of the contract. The laying of the wearing surface was not started until the spring of 1918. Traffic was allowed to pass over the completed foundations during the winter and early spring because the only roads available as detours were not passable during thaws at these seasons. The

gravel cover over the foundations made a very serviceable road, but during the latter part of the period that traffic was allowed over the foundations the gravel wore through to the stones below and caused the surface to become very rough in places. It was, however, possible to get over the foundations at all times even with heavy loads and it was not possible to pass over the old road at all times during the winter and spring, so we feel that no harm resulted in leaving the road uncompleted over the winter.

The original contract for the reconstruction of two miles of old road was extended early in 1918 to include the reconstruction of approximately 0.8 miles adjoining the north end of the original contract. This was deemed necessary in order to take care of very distressing conditions which impeded and endangered travel during the winter and early spring. The original contract was completed and opened to travel August 9th. The work upon the extension progressed slowly. Very extensive Government work at Newport during the period in which the extension was built tended to affect labor conditions adversely as far as other work in the vicinity was concerned. Difficulty also was experienced in securing prompt shipments of trap rock. The extension was completed early in December.

The problem of taking care of horse-drawn traffic upon a long steep grade at the north end of this section was carefully considered. The type of surface construction planned for the entire road was considered to be too slippery for the safety of horse-drawn vehicles upon this steep grade. The problem was solved by building very wide earth shoulders in this location so that horse-drawn vehicles at times when the conditions cause the pavement to be especially slippery might travel at the sides in safety.

A considerable expense was incurred upon this section by the necessity for building a great many longitudinal culverts under approaches to intersecting roads and to private drives. The character of the soil in this locality is such that relatively deep side ditches were deemed advisable in order that the heavy stone foundations might be drained at frequent intervals. Very many longitudinal culverts existed previous to the work of reconstruction. The greater number of these culverts apparently were built many years ago and were far from satisfactory in type of construction, in state of repair and in grade. The new longitudinal culverts were

laid to a definite grade and were placed at a uniform distance from the edge of the new pavement.

The detailed costs of this work follow:

COST.

LENGTH, 14,590 FEET. SQUARE YARDS, 29,180.

Drainage and foundations:

Earth excavation, 10,533 cu. yds. @ \$1.10.....	\$11,586 30
Earth excavation, 2,654 cu. yds. @ \$1.50.....	3,981 00
Ledge excavation, 5 cu. yds. @ \$3.00.....	15 00
Stone foundation, 7,064 cu. yds. @ \$2.90.....	20,485 60
Stone foundation, 2,517 cu. yds. @ \$3.10.....	7,802 70
Gravel filler, 2,230 cu. yds. @ \$2.40.....	5,352 00
Gravel filler, 642 cu. yds. @ \$2.50.....	1,605 00
Culvert pipe laid, 119 feet @ \$1.75.....	208 25
Culvert pipe laid, 1,102 feet @ \$1.00.....	1,102 00
Culvert pipe laid, 388 feet @ \$1.50.....	582 00
Culvert pipe purchased.....	1,917 57
Concrete masonry, 3 cu. yds. @ \$18.00.....	54 00
Miscellaneous drainage.....	29 90
	\$54,721 32

New metalled surface:

Crushed trap rock, 5,880.75 tons @ \$4.00.....	\$23,523 00
Crushed trap rock, 2,503.95 tons @ \$4.65.....	11,643 37
Asphalt applied, 58,035 gals. @ \$0.08.....	4,642 80
Asphalt applied, 22,547 gals. @ \$0.11.....	2,480 17
Asphalt purchased.....	13,651 76
	55,941 10
Watchmen.....	1,502 50
Inspection.....	1,646 35
Miscellaneous.....	53 28
	\$113,864 53

MENDON ROAD—CUMBERLAND.

The section of old waterbound macadam approximately 3,500 feet in length upon the Mendon Road between Ashton and Cumberland Hill was rebuilt during the past year. This section is located between the section reconstructed in 1916 and the section rebuilt in 1917 by convict labor. It was intended to complete this work in 1917 with the convict labor force which was employed upon this line, but weather conditions made necessary the stopping of work before the entire section of old macadam was rebuilt.

The greater part of the work of rebuilding this section during the past year was done by force account. The progress of the work was slow, but since traffic was accommodated upon the car tracks beside the road without the necessity for detouring, no great hardship on the part of the travelling public was occasioned by the slow rate of progress. The difficulty of maintaining upon the work sufficient labor was the chief reason for the slow progress experienced. When about three-quarters of the work was completed, the labor situation became so acute that a change in the plan of carrying out the work was deemed necessary in order to complete the rebuilding before cold weather. An arrangement was made accordingly with a contracting concern which appeared to have a fairly large force of laborers to complete the small amount of work remaining.

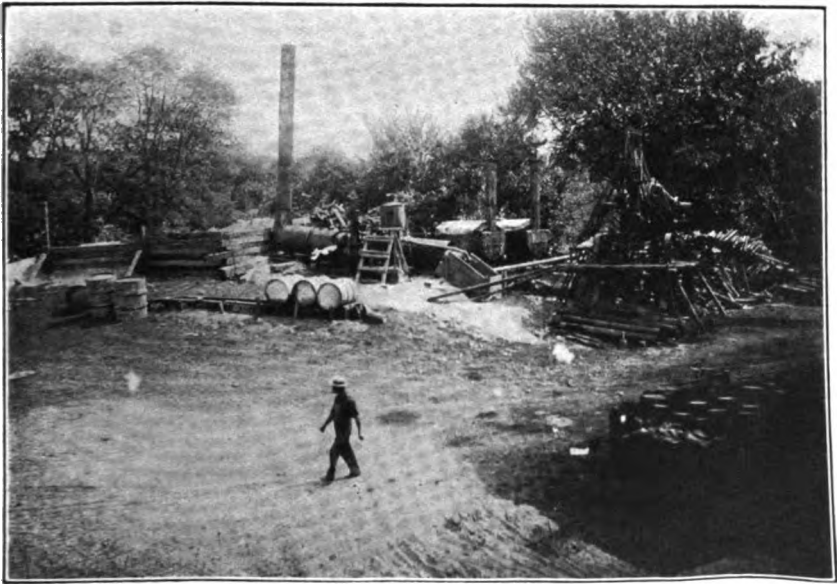
The character of the sub-soil made unnecessary a large expenditure for foundations. The old macadam in large part was merely graded to form a sub-grade for the new bituminous macadam surface. The facilities for taking care of surface water were found to be very inadequate. A great deal of difficulty with surface water has in the past been experienced on a long grade upon the site of this reconstruction. A large watershed draining to the west gutter of the road and the absence of proper culverts across the road to relieve the flow were the conditions which caused the trouble. New culverts laid during the past year intercept the flow in the gutter at frequent intervals and will without doubt take care of the difficulty.

The reconstruction work during the past year upon the Mendon Road does away with all of the wornout waterbound macadam upon this line excepting a section less than a mile in length at its southern extremity. Some of the older bituminous macadam, however, is showing signs of wear under the extremely heavy traffic to which this road is subjected. Some of this pavement will be ten years old in 1919 so that more or less deterioration is to be expected. It is probable that proper maintenance will preserve even the work of this character which is in the worst condition for several years, and if this proves to be the case, these pavements will have given excellent service. When reconstruction of the bituminous macadam upon this line becomes necessary it will be advisable from the standpoint of traffic to which the road is subjected to lay only pavements upon a concrete base.

The total cost of the reconstruction work completed during the past year was \$21,460.26.



COMPLETED BITUMINOUS CONCRETE SURFACE — PUTNAM PIKE.



**PLANT FOR HEATING AND MIXING BITUMINOUS CONCRETE SURFACE —
PUTNAM PIKE.**

PUTUAM PIKE—SMITHFIELD.

Approximately two miles of wornout macadam was reconstructed upon this important line during the past year. The section selected for rebuilding was adjacent to the reconstruction work done by convict labor in 1917.

The work completed upon this road during the past year is interesting in the opportunity it affords for observing the adaptability under trunk line traffic of a type of wearing surface heretofore untried by this department. A form of bituminous concrete which involves the use of local sands and gravels combined to conform to a definite grading of sizes of particles was employed for the wearing surface. The very unsatisfactory quality of the local rock for use in the wearing surface of bituminous macadam or a concrete pavement, the long haul from the nearest railroad station involved if imported stone were used and our desire to curtail rail shipments in accordance with the request of Federal authorities were points considered in the selection of the type of construction. The local rock was deemed satisfactory for the base course of crushed stone, but its properties made very undesirable its presence in the surface where it would be required to withstand direct abrasion by traffic. The average haul from the nearest railroad station was approximately four miles, and the cost of imported crushed stone would in consequence have been very high. It was found by tests that local sands and gravels could be combined to form a satisfactory grading for bituminous concrete, and the economy of this type of surface in both expenditure and in rail shipments influenced us to select it.

Foundation difficulties upon this section were not greatly in evidence. The sub-soil encountered was in large part a coarse, sandy gravel which affords very perfect sub-drainage. Occasional pockets of loam or clay and the presence upon several long grades of bars of relatively impermeable material caused in the past more or less difficulty locally during thaws in the winter or early spring months. The excavation of these unsatisfactory materials and back filling with good gravel constituted the foundation work.

An exceptional condition was encountered upon this work at Cedar Swamp, so-called. This swamp is a peat bog and affords therefore a very unstable footing for the heavy embankment upon which the road is built. The original fill across this swamp was made many years ago by the town of Smithfield, and it is reported that the fill

settled greatly during its construction and that it disappeared completely one night when it was almost to grade. Borings taken during the past summer disclosed the fact that soft peat existed to a depth of more than 24 feet, how much more being uncertain because the boring instrument was not long enough to extend to the bottom of the layer of peat. The fill before the railroad beside the road was laid apparently had reached bottom and was as far as observation and occasional levels disclosed free from settlement. The filling on one side of the original embankment incident to grading for the new track about five years ago appeared to disturb the equilibrium of the entire embankment. Instead of a plane of shear developing on the slope of the original embankment, because of settlement of the new fill, which was the result anticipated, a pronounced shearing effect was produced about one-third of the distance across the original embankment. Cracks from time to time developed in the old macadam surface where this shear developed and the entire fill on the railroad side of the crack settled rapidly. Frequent raising of the rail was necessitated by this settlement and repairs to the road surface were also demanded. Levels disclosed the fact that there was no settlement of the embankment from the position of the established shear plane to the edge opposite the rail. This peculiar condition presented a serious problem in the laying of a pavement upon the fill. There appeared to be no feasible manner of taking care of the difficulty permanently so that no further settlement could occur, but it appeared certain that settlement of the unstable portion of the fill would cease eventually. The omission of the wearing surface over the fill for the present was seriously considered, but since it appeared probable that only a longitudinal section of the pavement approximately one-third of the total width would be affected by the peculiar condition, it was decided to lay the surface and to repair it if necessary. Our prediction as to the probable result has already been proved to be true. About one month after the pavement over the fill was completed, a crack in its surface appeared where cracks in the old macadam developed from time to time. The transverse slope from this crack to the edge of the pavement next to the rail was increased by slight settlement, but nothing dangerous to traffic has yet developed. There has been no perceptible settlement of the pavement upon the side opposite the rail. The cost of repairing the pavement where this peculiar condition exists will have to be borne annually until the fill becomes stable, but this expense will

not be large. Repairs at intervals more frequent than once each year probably will not be called for, and these repairs very likely will be no more expensive than would the almost constant repairs to the old macadam if the new pavement had not been laid until the embankment had ceased to settle.

Because of the fact that the new track upon this section was at our request laid to a grade somewhat above the grade of the old macadam road, it was possible to take advantage of the old road metal in reconstruction. Where foundations were not demanded it was frequently possible to scarify the old macadam surface, to smooth it up and to add new crushed stone to bring the grade up to the grade of the bottom of the new bituminous concrete surface. Where this was possible, excavation was confined to the shoulders.

The drainage of surface water in places was found to be unsatisfactory. Many new culverts were required, several catch basins were built, and cobble gutters were laid where necessary. A long flat grade had in the past caused much trouble because there was not sufficient pitch to allow of free flow of water. It was not deemed desirable to change this grade because of many obstacles to such a course, but it was found possible to lower a culvert at one end of this grade and to excavate a side ditch to the culvert which allowed of ready flow of surface water.

Considerable bank wall was built to retain high slopes in both cut and fill. Stone masonry was employed for the building of all of these bank walls.

The contract for this work was awarded late in May to the R. H. Newell Company of Uxbridge, Mass. The wearing surface was completed and the road opened to traffic for its entire length early in October. The grading of shoulders, the erection of guard rails and general cleaning up were completed about the first of November.

The detailed costs of this follow:

COST.

LENGTH, 10,360 FEET. SQUARE YARDS, 21,140.

Cleaning, scarifying, reshaping, 14,596 sq. yds @ \$0.06	\$875 76
Drainage and foundations:	
Earth excavation, 3,163 cu. yds. @ \$1.50	\$4,744 50
Ledge excavation, 34 cu. yds. @ \$3.50	119 00
Gravel for foundation, 2484 cu. yds. @ \$1.50	3,726 00
Culvert pipe laid, 12" C I, 72 ft. @ \$1.50	108 00
Culvert pipe laid, 12" corrugated metal, 176 ft. @ \$1.25.	220 00
Culvert pipe laid, 18" corrugated metal, 256 ft. @ \$1.50.	384 00

Culvert pipe laid, 24" corrugated metal, 46 ft. @ \$1.70.	\$78 20	
Culvert pipe purchased.	748 70	
Catch basins complete (two).	142 26	
Cobble gutters, 409.5 sq. yds. @ \$1.50.	614 25	
Concrete masonry, 11.8 cu. yds. @ \$16.00.	188 80	
Miscellaneous gutter and culvert work.	94 61	
		11,168 32
New metalled surface:		
Crushed stone base, 4,764.3 tons @ \$2.40.	11,434 32	
Bituminous concrete laid, 21,140 sq. yds. @ \$0.60.	12,684 00	
Asphalt purchased, 179.4 tons.	6,755 35	
		\$30,873 67
Guard rails, 1,598.5 ft.	799 25	
Stone masonry, 203.7 cu. yds. @ \$9.00.	1,833 30	
Rebuilding walls (Force acct.).	291 15	
Grading approaches to private driveways.	175 98	
Inspection.	1,272 97	
Watchmen.	1,204 04	
Miscellaneous work, including grade stakes.	89 78	
		\$48,584 22

HARTFORD PIKE—JOHNSTON.

The contract for the rebuilding of two miles of wornout macadam upon the Hartford Pike was awarded during the past season to Luigi C. Carchia of Boston, Mass., the low bidder for the work. The section selected for reconstruction adjoined the section rebuilt in 1916 from the Providence City Line to Pocasset.

The work involved upon this section was necessarily very heavy in character. The locality abounds with ledges and large boulders, and the necessity for revision in grades and the opening of side ditches involved a great deal of rock work. Except for a short section at the extreme west end of this section, the sub-soil encountered necessitated heavy foundations and extensive drainage. The old macadam for the greater part of its distance was built many years ago by the town of Johnston without preliminary engineering work. The alignment was not satisfactory for present day traffic because of sudden turns in order to avoid ledges or large boulders. The grades to which the old macadam was laid did not allow of perfect drainage of surface water and were furthermore so steep in places as to be objectionable. Bars of ledge which extended very nearly to the surface of the old macadam constituted upon several of the steep grades a hindrance to the seepage of water absorbed by the sub-soil and caused soft spots which were a menace to traffic during thaws. The foundations laid in connection with reconstruction are of stone and of gravel, but stone foundations predominate.

The work of reconstructing this road was not completed during the past year. The grading and the laying of foundations and the construction of culverts are features which are practically completed, but none of the wearing surface was laid. The type of construction selected for the wearing surface is bituminous macadam. Crushed local ledge rock is to be employed for the wearing surface, and the bituminous binder was purchased and delivered, so that there are apparently no obstacles to the completion of the work involved in the contract early in the construction season of 1919.

It was of course necessary to detour traffic during the progress of grading and the laying of foundations. The only parallel roads available as detours were in such condition that it was deemed imperative to allow travel to employ the section of road under construction during the winter and early spring. The rock foundations were accordingly covered with gravel so that travel could safely pass over them and the road was opened to the public in November. The road of course is not in ideal condition for traffic but it is considered preferable to employ it during the winter than to employ the roads used as detours through the greater part of the summer and fall.

A total of \$31,541.03 was spent upon this work during 1918. The estimates of quantities and the unit prices contained in the proposal accepted are contained in the following table:

ESTIMATED QUANTITIES AND ACCEPTED BID PRICES.

Items.	Estimated Quantities.	Unit Prices.	Totals.
Earth excavation.....	8,000 cu. yds.	\$1.31	\$10,480 00
Ledge excavation.....	1,000 cu. yds.	1.32	1,320 00
Stone fill foundations.....	4,000 cu. yds.	1.50	6,000 00
Hauling and laying 12-in. corrugated metal culvert.....	142 lin. ft.	0.75	106 50
Hauling and laying 18-in. corrugated metal culvert.....	256 lin. ft.	0.80	204.80
Hauling and laying 24-in. corrugated metal culvert.....	46 lin. ft.	1.00	46 00
Concrete masonry.....	15 cu. yds.	20.00	300 00
Stone masonry.....	30 cu. yds.	6.00	180 00
Wooden guard railing.....	3,000 lin. ft.	0.80	2,400 00
Crushed local ledge rock.....	6,500 tons,	2.50	16,250 00
Hauling, heating and applying asphalt.....	60,000 gals.	0.07	4,200 00
Gravel borrow.....	2,500 cu. yds.	1.50	3,750 00
Sand filler.....	150 cu. yds.	1.50	225 00
Total bid.....			\$45,462 30

It is anticipated that all of the work involved in the contract for the reconstruction of this road will be completed about August first, 1919.

TAUNTON PIKE—EAST PROVIDENCE

Approximately one mile of concrete pavement was laid upon the Taunton Pike during the past year. This pavement replaces a waterbound macadam surface which has been in deplorable condition for several years. Certain portions of this road have at times in the past been so seriously disturbed by frost action as to make travel over the road dangerous for light vehicles and next to impossible for heavy vehicles. A heavy clayey soil and imperfect facilities for both surface drainage and sub-soil drainage were the conditions responsible for the serious conditions existing in the past. The heaving of spots in this road by frost action was very pronounced. At times of sudden thaws this heaving produced mounds or miniature hillocks which were perceptible for considerable distances, the general effect produced being similar to the effect brought about by dumping upon the road several loads of dirt and not spreading the loads out. The mounds produced by frost action sooner or later cracked open and broke through under traffic, developing pockets of soft mud often hub deep or more.

It is apparent from the preceding description of conditions prevailing upon the old road that a great deal of work below the sub-grade of the concrete pavement was necessary in order to protect the pavement from sub-soil disturbances which might produce very serious results. Although concrete pavements probably are not so seriously affected as are bituminous macadam pavements by retentive or impermeable sub-soils, provided the soils are stable at all times and free from heaving, it is our opinion that sub-soils of the type encountered upon the Taunton Pike demand as careful treatment for concrete as for any other type of pavement. Our plan for taking care of the sub-soil difficulties involved excavation to various depths below sub-grade and back filling with sandy gravel to sub-grade. After the contract was awarded, however, cinders and crusher-run stone screenings were substituted for gravel by agreement with the contractor. Cinders were laid almost to sub-grade and a light coating of stone screenings added over the surface of the cinders in order to avoid the possibility of considerable loss of grout by flow into the very porous cinder base. We are of the opinion that

the use of cinders in the manner indicated produced a better foundation for the pavement than could have been secured by the use of the gravel available in the locality. Very perfect seepage is afforded by the cinder base.

Sub-drains were deemed necessary upon a hill near the east end of the section rebuilt. A very springy condition existed upon this hill and it was considered inadvisable to allow the very decided flow of water from the several springs merely to percolate through the cinder base. Tile drains were therefore laid at both sides of the pavement and the filling of the trenches in which the drains were laid with clean gravel and the providing for free seepage from the cinder base into these gravel filled trenches will doubtless take care of conditions satisfactorily. Although the sub-drains were laid during a dry period in the summer, a considerable flow of water from springs was found when the trenches were dug.

The facilities for the drainage of surface water were greatly improved. New culverts replaced old stone box culverts which were in a very bad state of repair and two new catch basins were built. The conditions met with in excavating for one of the new catch basins indicate the very aggravating conditions prevailing upon certain portions of this road. A spring was encountered in digging for this basin which required two three-inch hand suction pumps working constantly to keep the water level low enough to allow working in the hole with high rubber boots. This catch basin was built late in the summer when the ground water is at its lowest, so the effect of such conditions upon the road during the early spring readily may be perceived.

The concrete pavement completed extends from the Massachusetts State Line to a point about seven hundred feet east of Six Corners. Although all of the work involved in our contract for the building of the concrete pavement was completed, it was our plan to reconstruct the short section remaining between the west end of the pavement and Six Corners. Concrete, however, was not considered for this section remaining. The car tracks upon the portion not rebuilt are in the middle of the street and the street is curbed. We do not consider it good practice to lay a concrete pavement in locations such as this where the ultimate use of the pavement as a base for a two or three inch wearing surface is prohibited by the existence of features which make impossible or impracticable the raise in surface grade involved. Sheet asphalt upon a concrete base was planned

for this short section to Six Corners. The laying of this pavement during the past year was impossible because of numerous obstacles which developed. A change in grade upon this section was deemed necessary in order to facilitate the flow of surface water. The revision in grade of course affected the railroad tracks. It was also thought necessary to change the grades of the curbs somewhat and to replace unsatisfactory sections of curb. It was our plan also to carry the sheet asphalt across the portion of the street occupied by the double tracks of the street railway. The preliminary arrangements with the railroad company for changing the grade of the rails and for laying the new pavement and the necessity for taking up the matter of curbs with the town council of East Providence involved delays which made the completion of the work to Six Corners impossible before winter. It is anticipated that this short section will be rebuilt in 1919.

The concrete pavement was laid on a flat sub-grade and is eight inches thick in the center and six inches thick on the sides. No reinforcement was employed. Expansion joints with tar paper filler were provided. The coarse aggregate consisted of crushed ledge rock from a ledge in the vicinity of the work. Sand was secured from a bank about one mile from the side of the pavement. A half-yard cube mixer with a boom delivery was employed for all mixing of concrete. The concrete was protected for a short time from the effect of sun, wind and rain by covering with canvas and was then covered with dirt and kept wet for two weeks.

The contract for this work was awarded to Joseph McCormick of East Providence, the low bidder, upon May 15, 1918. The road was completely opened to traffic upon November 30th.

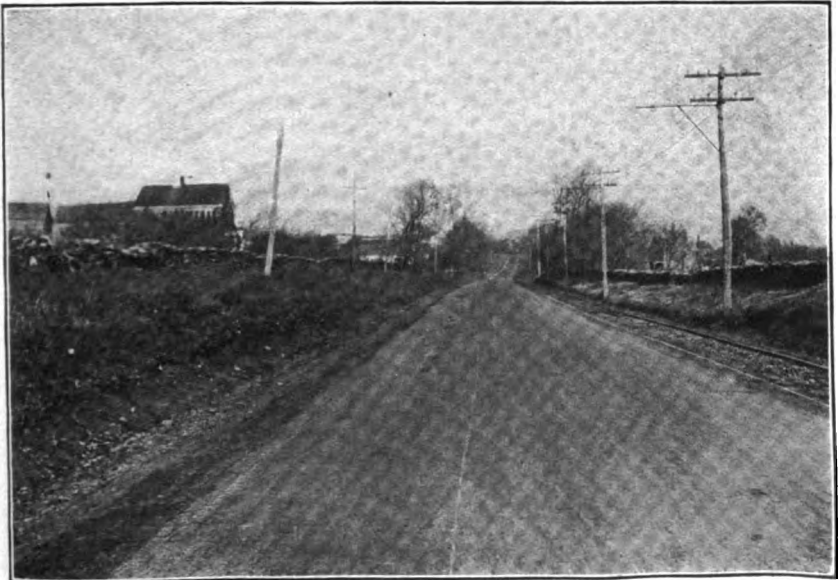
The cost of this work follows:

COST.

LENGTH, 4,902 FEET. SQUARE YARDS, 9,736.	
Foundations:	
Earth excavation, 4,784 cu. yds. @ \$1.45	\$6,936 80
Ledge excavation, 14 cu. yds. @ \$4.00	56 00
Cinders and stone dust, 4,919 cu. yds. @ \$2.00	9,838 00
	<hr/>
	\$16,830 80
Drainage—Culverts, catch basins, side drains, sub-drains	4,618 72
New metallad surface:	
Concrete pavement, 2,027 cu. yds. @ \$12.50	\$25,337 50
Miscellaneous	32 84
	<hr/>
	\$25,370 34



CEMENT CONCRETE ROAD — TAUNTON PIKE.



**EAST MAIN ROAD — PORTSMOUTH.
1918 Reconstruction**

Watchmen	\$2,018 25
Inspection	759 57
Miscellaneous	9 31
<hr/>	
Total	\$49,606 99

MAIN ROAD—WARREN AND BRISTOL.

The contract for the rebuilding of the section of wornout macadam 7,250 feet in length between Warren and Bristol was awarded upon July 3 to Bonfiglio Perini of Ashland, Mass., the low bidder. The work involved in the contract was not completed before cold weather prevented further work, but traffic is allowed to pass over the uncompleted road until work starts in the spring because of the very bad condition of the only roads available as detours.

Bituminous concrete involving the use of sand and gravel combined to form the mineral aggregate was selected for the wearing surface. Except where heavy stone foundations were laid, the old road metal was screened out and employed with new crushed stone in the laying of the crushed stone base for the new surface. Screening of the old road metal was considered advisable because of the economy resulting from this plan and because a great deal of ditching upon the road in connection with the laying of a new sewer system by the town of Warren made the addition of only a thin layer of crushed stone over the old road dangerous. The bottom of the crushed stone base was also considerably below the bottom of the original macadam because the new pavement was made thicker than the old macadam and the grade not changed. Crushed local ledge, field or wall stone was permitted in the specifications for the crushed stone base, but the difficulties of securing and crushing of local rock influenced the contractor to import in large part Connecticut trap rock. The trap rock was furnished by agreement at the price bid for crushed local stone.

A heavy stone foundation was laid for a distance of about one-half mile at the south end of this section. A great deal of trouble has been occasioned in the past where this foundation was laid by the unstable character of the sub-soil. At times in the winter and spring travel over the road was seriously interfered with by the conditions brought about by frost action upon this soil. The foundations laid are expected to take care for all time of the heretofore unsatisfactory conditions upon this portion of the road.

About 2,000 feet of wearing surface only was laid during the past year, but the foundations and the crushed stone base were practically completed. The completion of all of the work involved in the contract is anticipated early in the summer of 1919. The work progressed slowly during the past year. Great difficulty was experienced in maintaining a sufficient force of laborers upon the work to insure rapid progress. This was a very prevalent condition, however, during the past construction season.

A total of \$38,486.21 was spent upon this work in 1918. The cost of the asphalt necessary to complete the work is included in this amount. The final detailed costs cannot be given at this time, but the following table gives a comprehensive idea of the character and amount of work involved. As is our usual custom, the asphalt was furnished by the State and is not included in this table of unit prices.

ESTIMATED QUANTITIES AND UNIT PRICES ACCEPTED.

Items.	Estimated Quantities.	Unit Prices.	Totals.
Earth excavation	5,000 cu. yds.	\$1.75	\$8,750 00
Ledge excavation	100 cu. yds.	3.00	300 00
Stone fill foundations	1,750 cu. yds.	3.50	6,125 00
Laying 12-in. corrugated metal pipe culvert	350 lin. ft.	1.50	525 00
Laying 18-in. corrugated metal pipe culvert	28 lin. ft.	1.50	42 00
Laying 24-in. corrugated metal pipe culvert	42 lin. ft.	1.50	63 00
Laying 24-in. vitrified clay pipe culvert	100 lin. ft.	1.50	150 00
Catch basin	One,	75.00	75 00
Concrete masonry	50 cu. yds.	25.00	1,250 00
Wooden guard rail	200 lin. ft.	0.75	150 00
Crushed stone	3,000 tons,	3.50	10,500 00
Bituminous concrete surface	14,500 sq. yds.	0.87	12,615 00
Total			\$40,545 00

ELIMINATION OF DANGER AT GREENWOOD CURVE.

The large number of accidents which have occurred at the curve immediately east of the overhead railroad bridge at Greenwood demand that some relief from existing conditions there be effected. For a long distance north of this curve the road is smooth, straight

and almost level; the curve is very sharp; the grade rises abruptly, and the width is reduced. This combination of circumstances leads to the popular designation of this curve as "Death Curve." There is, we believe, reason to doubt the occurrence of a serious accident at this curve to a car travelling at a rate of speed not in excess of the maximum speed allowed under the provisions of our Motor Vehicle Act. There have, however, been a large number of fatal accidents upon this curve and this fact justifies the expenditure necessary to relieve conditions.

The present bridge is lined up very well for traffic through Pontiac Avenue which is the town road running east and west over the bridge to Warwick Neck and to Pontiac respectively. Pontiac Avenue must be kept in mind in considering a change in alignment of the State road over the bridge. At present the traffic over the sections of Pontiac Avenue immediately adjacent to the State road is very light as compared with traffic over the State road, but it would be a mistake to assume that this travel always will remain as light as it is now. A realignment involving crossing the railroad tracks at a comparatively flat angle upon a skew bridge built upon the site of the present bridge would be a very satisfactory solution of the problem from the standpoint of improving conditions for travel upon the State road, but unless a very wide bridge is built so that the direction of travel over Pontiac Avenue might remain approximately as it is now, or unless separate bridges are provided for the traffic over Pontiac Avenue and traffic over the State road an element of danger to travel over Pontiac Avenue would be created.

The present overhead bridge is altogether too narrow to accommodate the heavy travel to which the road is subjected. The embankments at each side of the bridge are also too narrow to allow of a suitable width of macadam. Any plan entertained for improving conditions must involve widening of the bridge. The sudden reduction in the width of macadam at the curve east of the bridge is a condition which greatly adds to the danger at present.

At the date of this writing the plan of remedying conditions has not been decided upon. A careful study of the situation is necessary. It may be found that increasing of the radii of the curves both east and west of the bridge and the high banking of the curves, together with widening of the bridge in its present location, will remove all elements of danger. It may, on the other hand, be found necessary to build a skew bridge necessitated by modification of the angle of intersection of the railroad and the State road.

The number of parties interested in any change brought about complicates the matter somewhat. The New York, New Haven and Hartford Railroad Company is involved by reason of changes in the overhead railroad bridge which was built and is maintained by this Company. The Rhode Island Company controls the street railway tracks beside the State road over the bridge, and changes in the tracks are necessary under any feasible method of remedying conditions. The town of Warwick also is interested because of the intersection of Pontiac Avenue with the State road at this point. A special Act by the General Assembly may be found to be necessary in order to define the division of the necessary expenditure and the method of carrying out the work.

REPAIRS TO WATERBOUND MACADAM ROADS.

We have in several of our past annual reports called attention to the great difficulties attending the maintenance of the large mileage of waterbound macadam upon our system of State highways. The fact that these roads were in large part built in a period when traffic conditions were wholly different from the conditions prevailing today caused these roads to be designed according to standards which have been greatly changed since that time. This type of construction, furthermore, is not suited for the traffic to which our main trunk lines are subjected, no matter how well they are built and notwithstanding the greatest attention to foundations and drainage. Waterbound macadam in Rhode Island, as in other States where the building of State roads began at an early date, was the pioneer State road. The macadam roads built served their purpose well for a number of years, but after the marvelous change and increase in vehicular traffic brought about by the development of motor vehicles, roads of this type were found to be inadequate for the lines of heaviest travel. Reconstruction of the plain macadam upon our main trunk lines is unquestionably our most serious problem, but the laying of pavements which will stand up under the travel upon these lines is an expensive proposition and will therefore take time. In the meantime the macadams must be maintained.

In the early spring smoothing out of the sections which have rutted badly is necessary. This is an expensive feature of the maintenance of our plain macadam roads and is the feature which the general public sees the least of because it is done at a time when

pleasure touring is not popular. Later in the season some sort of surface treatment is usually necessary in order to prevent ravelling, and after the surface treatment has been applied almost constant light repair work is necessary to fill holes which develop under traffic. The maintaining of a macadam road which never breaks up under frost action is far different than maintaining a road which "turns bottom side up" when the frost is coming out of the ground. It is possible to establish over a good macadam surface a surface coating of bitumen the effects of which carry over from one season to another so that occasional light surface applications and very light repairs make it possible to keep the road in very good condition at all times. In the case of the macadam road which breaks up each spring, however, no surface treatment gives very good service because the integrity of the macadam surface is lost in the process of the churning by traffic of the stone into the mud for a time each year. That traffic also influences maintenance of macadam roads is so apparent that it is unnecessary to enlarge upon the subject.

A great many of our macadam roads break up each year under the combined effect of sub-soil troubles and heavy traffic. It is next to impossible to keep these roads in perfect condition for traffic at all times. If, however, no repairs were made, it would be but a short time before the condition of the surface would make travel over the roads by motor vehicles practically impossible.

During the past year the untoward conditions generally surrounding all construction or building operations of course had their effect upon our work of maintaining our waterbound macadams. Difficulties in securing labor prevented the prosecution of work during the periods that we desired to have the work done. It was impossible at times to secure the labor necessary for urgently needed repairs. Upon the whole, however, we believe that our plain macadam roads were in as good condition during the past year as they have been for several years past. The fact that frost action was not as severe in its effect upon the roads during the spring of 1918 as it is sometimes helped out the situation considerably. The fact that our previously completed reconstruction work has done away with the necessity for maintaining of many miles of old macadam also is to be considered.

Surface treatment of our macadam roads with bituminous products was curtailed greatly during the past year. It is our custom to treat practically all of our plain macadams annually, but the urgent necessity for reduction in the use of bitumens as a fuel conservation

measure caused us to cut down this work to approximately one-quarter of the amount usually done. A careful examination of our waterbound macadam roads was made with a view of selecting the sections upon which surface treatment could be omitted without serious results. Many of the roads were found to have upon their surfaces considerable accumulations of bitumen left from former applications, and if the surface was sufficiently well covered to lead us to believe that disintegration would not take place to appreciable extent, no treatment was planned. Where the surface showed little effect of previous treatments and disintegration under the heavy summer traffic was certain, steps were taken to apply a coating of bitumen. Through villages which were closely built up and where the surfaces of the roads were dusty, treatment was planned in order to alleviate the dust nuisance which might otherwise have been a menace to health.

We advertised for bids for the furnishing and distribution of both asphaltic oil and light refined tar. The only bid received was for a tar product, the tremendous demand for fuel oil apparently preventing oil companies from bidding on work which involved the use of fuel oil for roads. Federal restrictions on the use of all bituminous materials for road work made it necessary to secure approval by Federal authorities of the delivery of all such materials planned to be used for surface treatment. This restriction, together with uncertainty regarding rail shipments, made impracticable our usual form of contract for the furnishing and applying of bitumens used for surface treatment. An agreement was, therefore, made with the company submitting the only bid for the work, and all of the surface treatment was done under the terms of this agreement. All of our applications to Federal authorities for material to be used for surface treatment were approved. Shipments also were secured without serious difficulty.

The cost of surface treatment during the past year was very high. Our usual form of contract for this work calls for the payment of a flat rate per gallon for the material applied to all of the roads specified. The agreement under which the material was applied during the past year involved the payment of prices which varied according to the freight rates to destination and the hauls necessary. In 1915 the price paid for furnishing and applying material for surface treatment was 4.2 cents per gallon, in 1916 the price paid was 7.7 cents per gallon and in 1917 the price paid per gallon was 9.0 cents. In

1918 the average cost of the material applied was approximately 16.5 cents per gallon. The total cost of surface treatment for the years 1915, 1916, 1917 and 1918 was \$25,500, \$38,800, \$51,400 and \$26,200 respectively. The low total cost in 1918 of course was occasioned by the decrease in quantities employed.

Approximately 40 miles of macadam out of a total of 208 miles was surface treated in 1918. A total of 127,300 gallons of light refined tar was employed for this work. Sand or screened gravel was spread over the tar after its application. It is always a difficult task to cover the bitumen after its application as rapidly as would be desirable from the standpoint of those who travel over the roads while surface treatment is in progress. During the past year labor conditions made this task more difficult than usual.

A feature of our waterbound macadam maintenance which is worthy of note is the permanent remedying of conditions which make certain spots so soft in the early spring as to seriously interfere with traffic. Where the soil is uniformly unfavorable for road surfaces which are not laid upon heavy foundations, as is the case upon the greater part of the Island of Rhode Island, complete reconstruction is called for to remedy conditions. Upon some of our routes, however, the macadam is serviceable at all seasons except for short stretches where loam or clay pockets exist. If the grades warrant it and if the required material is available locally, elevation of these sections by the addition of sandy gravel and the laying of a new macadam surface upon the gravel takes care of the conditions economically and surely. Drainage alone may be efficacious if the soil is not too retentive. Considerable work of this character was accomplished during the past year where complete reconstruction is not contemplated in the near future. This work of course is of value when more permanent surfaces are laid, since the necessity for doing it at that time will be avoided.

It was also deemed essential during the past year to resurface several miles of old macadam road which had deteriorated so badly that patching was no longer feasible. Reconstruction of the sections so treated was not considered advisable because of the greater demand existing for reconstruction involving high costs upon other lines which carry a heavier travel. This resurfacing appeared under the conditions to be the only solution of the problem which the roads so treated presented. The work of resurfacing was greatly facilitated by the equipping of all of our three-wheel rollers with a scarifying

device operated by steam. The loosening of the old macadam surfaces by the employment of this device is a rapid and inexpensive operation.

MAINTENANCE OF BITUMINOUS MACADAM ROADS.

The maintaining of our roads of bituminous macadam construction was carried out in the same manner that it has been accomplished for a number of years. As usual a considerable portion of the entire expense involved was occasioned by cuts into the road surfaces by public utility companies or by individuals for the purpose of installing ducts or pipes or for the purpose of repairing under ground structures of various sorts. This department is of course reimbursed for the cost of repairing these cuts by those responsible for making them.

Two complete new outfits for maintaining of bituminous macadam roads were purchased during the year. The equipment usually employed by each section gang upon this work consists of a light tandem roller, a heating kettle on wheels, pouring pots and the various small tools that are necessary. The delivery of some of this equipment purchased was delayed so long that we were unable to take advantage of it as early in the season as we desired. By far the greater number of the defects in bituminous macadam surfaces which require repair develop under traffic during the winter and early spring, so it is essential to carry out the maintenance work as early in the spring as weather conditions permit. The new equipment was acquired in order to hasten these repairs so that they may be largely completed before the heavy summer traffic occurs.

We were fortunate in having almost enough bituminous material left over from 1917 to complete the repairs to our bituminous macadam roads. The necessity early in the season for securing Federal sanction of all purchases and shipments of bitumens involved delays which might have been serious if the material had not been on hand.

Very necessary improvements to many of our older bituminous macadam roads are the widening of the metalled surface and the banking of curves. Our State Highway Law limited the width of metalled surface to 14 feet until the passage of an amendment in 1912 which permits of widths up to 18 feet, except upon curves, where this department may use its discretion in the matter of width. A width of 14 feet is insufficient for our main trunk lines. Widening of the roads which are too narrow is not a difficult operation, as results secured by widening prove. Very little work of widening

was undertaken during the past year because it was considered more essential to carry out other improvements which were more urgently needed.

It has been our practice for a number of years to construct the surfaces of pavements upon curves to a one-way slope. This is ordinarily referred to as "banking" curves. The curves upon older roads, however, are not banked. In connection with the work of widening our narrow bituminous macadam roads it is desirable also to bank all curves. Crowned sections upon curves are a source of danger, especially upon lines where many curves are banked. We always make a practice also of widening curves in excess of the widths on tangents.

The cost of maintenance is as a rule materially reduced by the widening of roads which are too narrow and by the banking and widening of curves. Upon narrow roads the earth shoulders are rapidly destroyed under heavy motor vehicle travel by the necessity existing for running off from the metalled surface in passing other vehicles. The expense of repairing earth shoulders in order to avoid the danger resulting from a sudden drop from the metalled surface to worn earth shoulders is very considerable and it is very much greater upon narrow roads than it is upon roads sufficiently wide so that the earth shoulders are not broken down by the turning out of rapidly moving vehicles upon them. The lessening in expense of shoulder repair brought about by widening and the lessening of the cost of surface repair occasioned by a greater distribution of travel over the surface causes widening to be a good investment. The banking of curves tends to avoid or to reduce the shearing effect of tires of rapidly moving vehicles upon the road surface.

Our bituminous macadam roads appear to be holding their own well. We believe that the roads of this type are generally in far better condition now than they were five years ago. The seal-coating of roads which required such treatment and careful maintenance of all of these roads seems to have more than offset the deteriorating effects of age and traffic.

The following table details the cost of repairs to bituminous macadam roads during the past year. The cost of repairing cuts in the metalled surfaces by public utility companies and by individuals, which amounts to \$4,109.23 for the year, is not included in this table. The expenditures for widening of narrow bituminous macadam roads also is not included in this table, since this work is not maintenance proper.

COST OF PATCHING BITUMINOUS ROADS IN 1918.

Road.	Total Length.	Total Square Yards.	Total Cost.	Cost per Square Yard.
BRISTOL DIVISION.				
East Providence:				
Pawtucket Line to Warren Ave.	19,690	30,460	\$689.83	.022
Ingrahams Corner to Pomham Ave. . .	15,020	32,321	534.39	.016
Pomham Ave. to Turner Ave.	4,335	6,743	401.37	.059
Willett Ave. 1916 Reconstruction . . .	4,879	9,817	6.50	.001
Willett Ave. 1912 Reconstruction . . .	5,369	8,352	417.56	.050
Barrington:				
Peck's Corner to West Barrington R. R. Crossing	5,150	8,011	37.83	.005
R. R. Crossing to Nayatt Bridge (1909)	4,712	7,330	113.70	.015
Nayatt Bridge to Broad St. to County Road (1910-1912)	13,539	22,138	196.85	.009
1913 Resurfacing at Town Hall	1,055	2,151		
1916 Reconstruction R. R. Crossing to Barrington Bridge	2,225	4,637	216.62	.047
1916 Reconstruction over and between bridges ("Amiesite")	2,658	6,419		
Warren:				
Main St.	5,290	12,247	485.62	.040
Child St.	9,692	16,167	479.30	.030
Bristol:				
1909-10 Construction, Hope St.	6,855	15,233	119.38	.008
1912 Construction, Hope St (North). .	1,110	2,500	65.74	.026
1913 Construction, Hope St.	2,342	5,108	17.20	.003
1912 Construction, Hope St (South). .	4,633	13,317	717.53	.054
1912 Construction, Metacom Ave. . . .	2,630	4,091		
Total for Division	111,184	207,042	\$4,499.42	.022
KENT DIVISION.				
Cranston:				
City Line to Pawtuxet Bridge	5,368	12,014	488.51	.040
Warwick:				
Pawtuxet Bridge to Greenwood (1912)	20,808	41,026	317.07	.008
Greenwood to Williams Corner (1915)	4,765	9,940		
Williams Corner to Apponaug Bridge (1913)	2,000	5,273	125.26	.024
Apponaug Bridge to East Greenwich (1916)	13,016	25,725	579.91	.023
Warwick—Warwick Ave.	18,683	33,347	426.93	.013
Wild's Corner	9,080	16,142	121.87	.007
Centerville Road	10,280	18,275	192.68	.011
Coventry—1912 Construction	13,232	20,784		
Cranston—Reservoir Ave. (1912)	2,500	4,927	42.14	.009
New London Turnpike (1916)	10,080	20,150		
Plainfield Pike (1912)	16,200	26,351	768.83	.029
Total for Division	108,012	233,954	\$3,063.20	.013

COST OF PATCHING BITUMINOUS ROADS IN 1918.—Continued.

ROAD.	Total Length.	Total Square Yards.	Total Cost.	Cost per Square Yard.
NEWPORT DIVISION.				
Tiverton—Fall River Line to Nannaquacket Bridge (1912-1913)	22,352	39,761	\$284.66	.007
Little Compton—Sakonnet Point Road (1912)	9,634	14,909	547.05	.004
Adamsville Bituminous	2,360	4,460	93.60	.021
Portsmouth—Stone Bridge to Anthony Hill (1916)	6,145	12,458	82.86	.007
Middletown:				
East Main Road (1916)	9,167	18,288		
East Main Road, Newport Line (1912)	3,236	5,753	460.93	.080
Portsmouth, West Main Road (1909)	6,318	9,828	491.05	.050
Jamestown—Ferry Road	5,350	14,189	262.36	.018
New Shoreham:				
New Harbor to Hygeia	2,256	4,011		
1913 Resurfacing	1,968	3,499		
1910 Construction	2,437	4,332		
Total for Division	71,223	131,488	\$2,222.51	.017
PROVIDENCE DIVISION.				
Cumberland:				
Lincoln-Mendon Road (1909-12)	17,612	39,405	\$1,670.17	.042
Mendon Road (1916)	10,560	20,998		
Mendon Road (1917)	7,619	15,317	540.69	.035
Foster—Danielson Pike (1912)	12,899	20,065	200.00	.010
Johnston—Hartford Pike (1916)	10,106	20,209	55.03	.003
Glocester:				
Putnam Pike—Chepachet, easterly (1912)	12,893	20,658	45.75	.002
Putnam Pike—Chepachet, easterly (1913)	7,866	12,236	45.74	.004
Putnam Pike, Connecticut Line (1912-13)	21,947	34,140	159.59	.005
North Providence—Johnston—Smithfield				
Putnam Pike (1916)	9,415	18,531	49.80	.003
Smithfield—Putnam Pike (1917)	5,295	10,590	604.41	.057
North Providence—Smith St. (1910)	8,303	17,220	424.00	.025
Burrillville—Mapleville to Nasonville (1912)	19,157	32,390	448.62	.014
North Smithfield—Slatersville to Woonsocket Line (1912)	12,852	25,011	198.20	.008
Greenville Road (1910-12)	12,570	19,553	567.41	.029
Total for Division	169,094	306,323	\$5,009.41	.016

COST OF PATCHING BITUMINOUS ROADS IN 1918.—Concluded.

ROAD.	Total Length.	Total Square Yards.	Total Cost.	Cost per Square Yard.
WASHINGTON DIVISION (NORTH).				
East Greenwich Post Road to Green St. (1910).....	2,662	7,776	\$43.40	.006
Green St. to Hunt's River (1915)....	11,277	22,862	151.68	.007
North Kingstown, Hunt's River to Devil's Foot Ledge (1916).....	11,415	23,028	32.92	.001
Devil's Foot Ledge to Talbot's Corner (1909-1913).....	11,454	19,063	363.40	.019
Talbot's Corner to Wickford (1910).....	2,800	5,600	111.72	.020
Wickford to Hamilton (1917).....	8,130	16,109	.....	.....
Hamilton (1909).....	4,300	6,900	252.97	.037
Barber's Heights (1912).....	2,123	3,775	48.71	.013
Saunderstown Ferry Road (1909)....	1,866	2,903	217.53	.075
Narragansett (1907) South Ferry Road southerly (1908).....	4,272	6,645	288.76	.043
Bonnett Point to Narragansett Pier (1908-1910).....	16,985	33,057	831.18	.025
South Kingstown, Tower Hill Road (1912).....	24,615	38,290	2,641.95	.069
Total for Division.....	101,899	186,008	\$4,984.22	.027
WASHINGTON DIVISION (SOUTH).				
Narragansett—Narragansett Avenue (1909).....	2,205	4,900	\$32.06	.007
South Kingstown, Kingston Road (1916-1917).....	8,323	17,358	41.49	.002
South Kingstown—Wakefield to Sugar Loaf Hill (1916-1917).....	6,795	19,535	201.48	.010
Charlestown:				
Post Road (1907).....	5,366	8,347	.....	.....
Post Road (1906).....	314	488	.....	.....
Westerly:				
Post Road (1916).....	5,330	10,660	.....	.....
Shore Road (1912).....	6,755	10,508	.....	.....
Total for Division.....	35,088	71,796	\$275.03	.004

SUMMARY.

Total Length of Bituminous Macadam.....	112.97 miles.
Total area of Bituminous Macadam.....	1,136,611 sq. yds.
Total Cost of Patching.....	\$20,053.79
Average Cost Per Square Yard.....	0.018

DIVISION OF ROAD EXPENDITURES IN 1918

Reconstruction	\$397,132 38
Repairs to waterbound macadam roads	108,931 69
Repairs to bituminous macadam roads	24,163 02
Oiling waterbound macadam roads	26,249 04
Drainage, widening, cutting brush, guard rails, miscellaneous	40,667 42
Engineering and office expense	39,875 01
Machinery, tools, equipment	14,650 91
Advertisements	970 62
	<hr/>
Total	\$652,640 09

This total expenditure for reconstruction includes an expenditure of \$69,994.26 under the provisions of the Federal Aid Road Act. Of this amount one-half is to be paid by Federal Government and one-half from General State Funds under Act of General Assembly assenting to provisions of Federal Aid Road Act.

STATE HIGHWAY SYSTEM, JANUARY 1, 1919.

	MILES BY TOWNS.				Total Miles by Counties.
	Water- bound Mac- adam.	Cement Con- crete.	Bitumi- nous Mac- adam.	Bitumi- nous Con- crete.	
PROVIDENCE COUNTY.					
Burrillville.....	10.77		3.63		
Cumberland.....			6.90		
East Providence.....		0.93	8.57		
Foster.....	1.92		2.44		
Glocester.....	3.98		8.09		
Lincoln.....	7.01		0.48		
Johnston and Cranston.....	2.78		9.64		
North Providence.....	8.08		1.83		
North Smithfield.....	3.22		4.82		
Scituate.....	4.60				
Smithfield.....	10.97		1.41	1.96	
Smithfield.....	3.64				
Total Miles in County.....	56.97	0.93	47.81	1.96	107.67
WASHINGTON COUNTY.					
Charlestown.....	11.07		1.08		
Exeter.....	9.78				
Hopkinton.....	11.16				
Narragansett.....	2.20		5.50		
North Kingstown.....	8.76		9.74		
Richmond.....	12.25				
South Kingstown.....	3.68		6.46	3.69	
Westerly.....	11.25		2.28		
Total Miles in County.....	70.13		25.06	3.69	98.88
KENT COUNTY.					
Coventry.....	18.45		2.51		
East Greenwich.....			2.41		
Warwick.....	7.81		14.90		
West Greenwich.....	5.37				
Total Miles in County.....	31.63		19.82		51.45
NEWPORT COUNTY.					
Jamestown.....	4.73		0.97		
Little Compton.....	6.59		2.27		
Middletown.....	1.87		3.55		
New Shoreham.....	4.67		1.26		
Portsmouth.....	6.08		4.22		
Tiverton.....	8.15		4.23		
Total Miles in County.....	32.09		16.50		48.59
BRISTOL COUNTY.					
Barrington.....	1.69		6.21		
Bristol.....	2.63		3.33		
Warren.....	1.07		2.93		
Total Miles in County.....	5.39		12.47		17.86
Total Miles in State.....	196.21	0.93	121.66	5.65	324.45

BRIDGES.

Our bridge work during the past year, in common with practically all other construction work, was much affected by war conditions. In accordance with the national policy of restricted construction, our activities were confined to work postponed from last year, to work made necessary by complete or partial bridge failures, and to such parts of a pre-conceived construction program that well could not be deferred.

Construction costs were more than double those of normal times, available materials were limited and labor was scarce and inclined to be inefficient. Contract prices for work reflected the experience of the previous year, and as prices did not continue to increase in the same degree, profits from contract work were liberal. For the first time in our experience a bridge was constructed at cost plus a fixed sum profit. Our bridge engineering organization was crippled by the loss of several men entering military service and by the recent epidemic, and for a short time the supervising engineer was without any assistance for bridge inspection.

Our supervision of bridges has been characterized each year by some predominating feature of particular interest. The first years marked the development of our organization and the adoption of a system of office records; in 1916 a new type of structure was adopted; in 1917 our work was marked by many new construction features and by the introduction of force account work, and the past season is notable for radical realignments and regrading at the bridge sites. Our work during 1918 has required in general less labor, material and expense, as new material for the building of temporary bridges and the labor involved in their removal was eliminated. The economic value of cutoffs cannot be questioned, aside from increased safety for traffic. Temporary bridges were practically dispensed with. The old steel structure on the site of the new Elmwood bridge was moved so that it could carry traffic during construction, the only temporary structure built being a narrow foot bridge. Old planks were used for temporary travel over small brooks in two other locations.

The collapse of a small stone slab bridge is the second instance in Rhode Island of failure of a State highway bridge in service. Nasonville Bridge in Burrillville collapsed in 1917 and Heath's Brook Bridge failed during 1918. Since, however, Nasonville Bridge was under the control of a mill company whose mill trench the bridge

spanned, the failure of Heath's Brook Bridge is the first instance of failure of a bridge under the complete supervision of this department. The risk involved by using natural stone in tension is due to the non-homogeneous character of the material, which fractures along the natural cleavage of the stone, and also to hidden flaws which cannot be detected by superficial examination. The action of shock or frost is liable to cause a failure of this kind at any time. There are thirteen flat slab stone bridges on the highway system, and repetitions of this trouble may occur at any time, but no serious consequences are anticipated, as none of these spans are of more than six feet, with a correspondingly low clearance over the streams. Many of these bridges will endure for a long time, and their replacement is not in order until other less permanent wood and steel bridges are constructed.

Statistics of bridge work during the past season show the usual normal increase in permanent construction, the war conditions affecting the character rather than the extent of the work done. One bridge was eliminated and four others were abandoned for new structures on adjacent realignments. Seven new concrete bridges were built during the past season, and five others commenced the previous year were finally completed. There are 155 bridges upon our State highway system, including ninety masonry structures, twenty-nine steel structures and thirty-six wood structures. Fourteen of these are maintained by railroads and six by mill companies because of their spanning artificial water courses laid out by these companies. Minor repairs were made to four masonry, nine steel and five wood bridges.

Very few innovations in design were attempted during the past construction season, our efforts along this line having been confined to developing and improving of designs previously used. We have experimented with contraction joints of sheet lead and of plaster consisting of a mixture of asbestos fibre, sand and cement. We have considerable confidence in the asbestos mixture, though the results will not be known for some time.

The Narrow River Bridge, a covered Howe truss in the town of Narragansett, is the longest single span wood bridge on the State highway system. Complete surveys and plans for a new structure to replace this old bridge have been made for more than a year, and reconstruction was planned for the past season. As this bridge crossed tide water, our plans were subject to the approval of the War

Department, and complete location and construction plans were furnished to the Government engineers office in Newport. This information was forwarded to Washington, and after some time additional information was requested to be filed upon sheets of a smaller size than those first supplied us. Later information was required by the War Department showing depths of water and tidal currents, which information was not readily available but which was given us finally by the Newport Office. Final permission for this construction was not obtained until June 10th, and as it was not deemed policy to start work at that time, the project will be considered for the coming season.

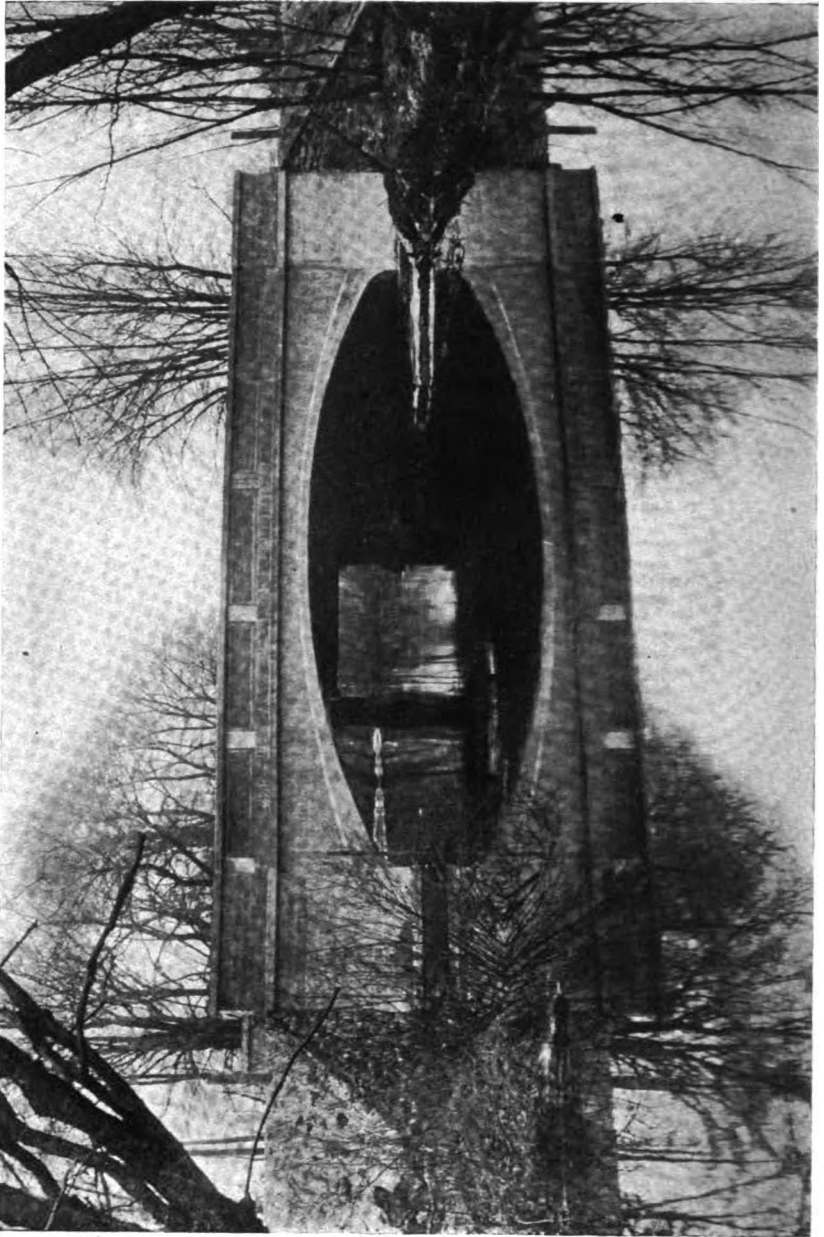
The bridge maintenance expenses for the past season have increased slightly over the previous year, partly because of the general increase in prices and partly because much of this work during the previous season was deferred on account of the war, but could not be postponed longer. Maintenance of masonry bridges was confined to lighting and to pipe railings, except in the case of Little Bridge in Portsmouth, where the exposed location required additional foundation concrete. These foundations were previously heavier than for any other bridge of like size with which we are familiar. The maintenance of steel and wood bridges was confined mainly to replanking.

ELMWOOD AVENUE BRIDGE.

The Elmwood Avenue Bridge over the Pawtuxet River between Cranston and Warwick was the largest bridge built by this department during the past season. This bridge is subject to the heaviest traffic of any bridge upon the State highway system and replacement of the old structure was considered very necessary. The old bridge was a light steel truss of one hundred and thirty-eight foot single span, of a clear width of 20 feet and resting on stone abutments, and was erected jointly by the towns of Cranston and Warwick in 1888. The superstructure was in good condition, but was too light for modern loadings and not wide enough for vehicles to pass abreast of a street car, which occupied more than one-half of the available width, the track being on one side of the bridge. The stone abutment on the north side was cracked and disintegrated. An exposed gas pipe crossed on the west side beyond the car track, and the bridge was without sidewalks. The wood block floor surface was in good condition, but the stringers underneath were decayed, out of place and

improperly fastened. The property lines of the highway on either side of the bridge did not meet when extended across the river, and the center lines were not parallel, the steel bridge being in the center of the highway on the Warwick side and ten feet off on the Cranston side. Arrangements were made under the provisions of Chapter 1380 of the General Laws with the officials of the city of Cranston to obtain additional width on the west side of the highway by purchasing from the Universal Winding Company a strip of land twelve feet wide at the river and extending to a point about four hundred and ninety feet north. Lines and grades for the new structure were established and the most economical type of structure determined. The grade of the roadway at the river was lowered two feet, the new roadway crossing the bridge at a straight grade. This change in grade made possible the saving of two feet in height of the bridge, which more than compensated for regrading and replacing of the bituminous roadway on the approaches. The type and number of spans of the bridge were carefully determined by comparative studies of one, two and three-span structures. A three-span arch bridge of a type developed from the type first designed by this department for the Whipple Bridge in Lonsdale two years ago was selected as the most economical and most feasible structure. The principal improvement in the Elmwood Avenue Bridge over the Whipple Bridge consists in sloping the spandrels downward toward the middle of the bridge until they meet the arch rings, which reduces the load of the earth fill on the outer edges of the arch ring, and also decreases the bending moment induced in the arches by the cantilevered sidewalks. A saving in foundation costs was brought about and other advantages resulted from this design as was the case in previous construction of this type. The superstructure of this bridge was somewhat complicated by the skew of the bridge required at this site which unavoidably increased the cost of form work.

Construction operations commenced in June with the building of a temporary foot bridge for pedestrians and for carrying the temporary gas main. Immediately afterward the steel bridge was moved about eighty feet upstream upon runways to temporary supports, and approaches to meet the old bridge in its new location were graded for temporary traffic of vehicles and street cars during the construction of the new bridge. The relocation of the old steel bridge was an interesting operation and required about ten days of preparation for the actual moving, which was accomplished in less than a



Big River Budge.

single day. No other unusual features, serious accidents or delays occurred during the construction and the new bridge was opened for traffic on Saturday, January 18, 1919. The work remaining to be done at this writing is the construction of the ballustrade, of reinforced light and span wire poles, and of other minor details.

The new structure is 150 feet long, 53 feet wide and contains 1,250 cubic yards of concrete. The cost to date is \$64,693.91, and it is estimated that the total cost will be about \$85,000.

The contract for the building of this bridge was awarded to The McKinnon Construction Company of East Providence.

BIG RIVER BRIDGE.

Big River Bridge is a new concrete arch structure on the Noose-neck Hill Road, four and one-half miles south of the village of Washington, and spanning Big River, which drains north into the Flat River Reservoir and the south branch of the Pawtuxet. This bridge replaces two old structures formerly known as the Twin Bridges, and was considered the most dangerous point on the so-called short route to Westerly on account of the restricted width for travel. This was one of three one-way structures on the State highway system. Conditions at this site were intolerable, and large danger signs posted some distance either side of the structure have not prevented numerous minor accidents nor lessened apparently the liability of more serious accidents. Improvements were required on account of the very weak condition of the structures, as well as by the restricted width. The flood risk was also to be considered, as the water has been known to overflow the roadway, the smaller bridge, number 35, having been erected years ago after trouble of this kind had been experienced. The requirements at this site were apparent. The highway was realigned for a distance of 650 feet, eliminating a bend in the road at the larger bridge. The center-line was moved about twenty-five feet north, reducing the distance for travel about ten feet and involving the acquiring of one-half acre of private property, which was obtained for highway purposes by the town council of the town of West Greenwich under the provisions of Chapter 1380 of the General Laws. The grade of the highway was raised three feet at the new bridge and the span increased to forty feet, providing thereby waterway equivalent to both old bridges and eliminating one structure. A single large new bridge was more economical to construct

than two small bridges. Excavation on one side of the river at the new bridge has straightened the channel and provided additional fill for the new approaches. The elimination of a temporary bridge by the realignment saved about \$1,000 on the cost of this structure.

The new bridge is a concrete arch forty feet in span, fifty-six feet long and thirty feet wide, containing two hundred and fifteen cubic yards of concrete. The new approaches contain more than three thousand cubic yards of earth fill and involve one thousand feet of wooden guard rail. Two hundred and twelve cubic yards of crushed stone was furnished to the contractor at cost from the State storage pile in order to save transportation during the period of the war. An excellent quality of concrete sand was uncovered near the site of the bridge by the excavation for the earth fill. Construction commenced in September and the work was eighty-eight per cent. complete by the end of the year, the work remaining being confined to the fill and to a stone wing wall. This work upon the wing wall must be suspended until traffic is turned over the new line because excavation upon the old road is involved. The completion of this work is deferred until the fill has settled and the roadway completed, so that traffic may be transferred from the old bridges. George F. Austin of North Kingstown constructed this bridge and approaches for the contract price of \$12,970.00. Extra concrete on account of foundation troubles will amount to less than \$70.00. The quality of this work and the efficiency in prosecution of the construction of this bridge have not been excelled upon any structure erected under supervision of this Department.

HAMILTON MILL BRIDGE.

Negotiations for private property adjacent to Hamilton Mill Pond, which were mentioned as pending in our last annual report, were finally completed in 1918 after a delay of about one year. Two new bridges opposite the old structure were constructed during the past season on a new line running directly across Hamilton Pond, with an extensive earth fill intervening. The old road followed the irregular line of the top of an old dam, with short curves at each end of the dam. The old alignment was bad, the roadway was narrow and the larger bridge was unsafe. The old dam or causeway is composed of earth fill between rubble walls, with a spillway under the larger bridge and a mill canal under the smaller structure. Repairs

to the existing structure would have been very expensive and the result unsatisfactory. The alignment could not have been modified or the width increased without an expense exceeding that of the new line, and the work involved under this plan would have obstructed traffic and have required a detour. Permanent repairs also would have undermined the structure to a dangerous extent and have made the State liable for the safety of the dam and for possible damage to surrounding property. The deceptive turns at either end of the old line were responsible for numerous minor accidents. A number of automobiles also have run off from the old embankment into the water or down into a field on the opposite side. More serious than the weakness of the bridge structures was the failure of the old retaining walls. The smaller bridge was a concrete slab structure of poor construction, and although sufficiently strong it was so narrow as to restrict the width of the highway dangerously at a sharp curve.

As a preliminary to reconstruction, the existing structures were carefully examined and complete surveys made of the site. Preliminary studies were made of several plans involving slight modifications of the old line and increasing of the widths, but it was found to be more expensive to remodel the existing structures and to construct the necessary extensive retaining walls than to adopt a radical realignment. Additional surveys were made in January, 1917, as the pond was then covered with ice which could be used as a base plane for grades of the bottom of the pond. Cross sections taken on ten-foot squares supplied information sufficiently accurate for the defining of one foot contours of the bottom. Where mud was appreciable the depth was determined and the quantities computed. This data enabled this department to furnish accurate quantities for the contractor's information, and also made it possible for us to make very accurate estimates of the work to be done. The new line selected was a continuation of the long tangent in the highway north of the pond until it intersected the line of the highway south of the pond. The new line is shorter than the old line by 22 feet. The old bridges are abandoned and superseded by new structures upon the realignment, all expense for temporary bridges and interference with traffic having been avoided. The dominating feature of this contract is the placing of an extensive earth fill of 3,400 cubic yards. Certain phases of the work of filling are worthy of mention. To provide material for the fill the contractor purchased land in the neighborhood, since no borrow pit was to be found in the vicinity.

The material was excavated with a steam shovel and hauled to the site with teams and trucks. Contrary to the usual procedure most of the fill was placed before the bridges were constructed, affording access to the work and dry working space, but with the disadvantage of separating the operation of placing the fill into two periods several weeks apart. The base of the temporary slopes of some of the fill interfered somewhat with the foundation work. At the larger bridge this fill was utilized to good advantage as a cofferdam by building an earth filled dam on the upstream side and unwatering by opening the draw-off gate of the pond, which eliminated all pumping.

The bridges are designed as simple flat slab structures, having a minimum of clearance above the water in order to reduce the amount of fill required as much as possible. These bridges are without parapets, with straight concrete wing walls integral with the slab and headwalls and restrained by diagonal reinforced concrete tension members. These wing walls have shallow footings slanting with the slope of the fill, which has rip-rap on a conical section for a ninety degree arc. Tension members to restrain the pressure of fill on these wing walls are a development from the cantilever type of the same construction used on smaller work the previous season and are more suitable for structures of this size. The larger bridge contains one hundred and eleven yards of concrete and was constructed in a position to supply both spillway and drain gate, being connected with both by retaining walls. The location of this bridge for exact centerline station required considerable computation by trial and error methods. The smaller bridge is not connected with any part of the old causeway and is a symmetrical structure of the same type placed in line of the stream flow to the old canal bridge, and contains thirty-four yards of concrete.

John Bristow of Narragansett Pier is the contractor for this work and the total cost will be about \$18,000. At the date of this writing traffic is passing over the new line but the road surface has not been laid because of the probability of considerable settlement of the new fill.

LONGHOUSE BRIDGE.

Longhouse Bridge is located on the State highway near the village of West Greenville in the town of Smithfield, about one-half mile east of the Gloucester town line. This bridge site is the most dangerous

point on the Putnam Pike between Providence and the State line, and radical improvements were demanded at this time because of contemplated extension upon this line of road reconstruction, which was brought to a point a short distance south of this location during the past season. Although a new alignment would be justified upon an economic basis, consideration of public safety left no choice in our procedure. The south approach to this site is a sharp incline of about seven per cent. grade with an abrupt turn to the left at the top about a high ledge, which obstructs the view. The road then follows a long semicircular curve about a deep ravine on the right, coming back to the original line at the Longhouse, so-called, five hundred feet away where the road again makes a slight curve on a rising grade, with a ledge on both sides. Half way around the long curve the old road crosses a rubble stone arch bridge, which spans the canal leading to the mill of the Greenville Finishing Company. A gate is located fifty feet beyond this arch for draining the small pond on the west side of the road. This gate is not in service and leaks badly. A few washouts from surface water have occurred here. The spillway at present runs over natural ledge just east of the stone arch and overflows into the ravine. A road to North Scituate branches off to the left just south of the stone arch. A single track street railway trestle runs directly across the ravine and meets the highway again at the Longhouse, the highway being somewhat restricted at this point. The Rhode Island Company operates on a right of way thirty feet wide and about five hundred feet long under easement, the title being held by the Greenville Finishing Company.

The situation at this site was complex, requiring more study than is usually made for a structure of this size. Interests of abutters and of the company having the water power right and of the street railway company were important considerations. Steep contours interfered with our surveys, which had to be carefully made so that quantities of fill might be determined accurately. The greatest depth of the ravine was over twenty feet, and any bridge in this position would be heavy and expensive, which would be inconsistent with the small flow from a watershed of about eight square miles. The gate for draining the pond was of no service to the Greenville Finishing Company; in fact this company had attempted to stop the waste of water at this gate in order to prevent washouts. This phase of the problem is to be solved by closing the ravine by a solid earth fill nine thousand cubic yards in volume, and by providing a

small culvert to drain the pocket to be left between the new embankment and the old dam. A new concrete bridge was constructed for combined highway and street railway use where the trestle crosses the canal. The present spillway is to be moved to a point southeast of the new bridge, avoiding thereby the necessity for a wide, heavy bridge under the new fill. The highway relocation is an improvement over the line of the street railway trestle, both in line and in grade. The grade of the south approach is to be reduced to less than six per cent. and at the north end about twenty feet of the Longhouse will be cut off to allow of widening the highway at this point and to conform to the new alignment. Beside the increased safety for traffic, the distance is shortened about 70 feet on the new line.

The land for this cutoff was obtained from the Greenville Finishing Company under the provisions of Chapter 1380 of the Public Laws, arrangements having been made through the town council of Smithfield. The agreement for this property included the title to the land and the removal of part of a building and the relocation of the spillway by the Greenville Finishing Company. The cost to the State of the property required for the new line and also for the work mentioned in the agreement was \$1,600. The construction of the new bridge was accomplished late in the season, from October 14th to December 8th. This work involved some interesting engineering problems, which included the maintenance of street railway traffic, the removal of the old pier foundations of the trestle and the furnishing of a temporary water supply to the mill. Cofferdams were built across the canal at two places about one hundred feet apart on opposite sides of the new bridge. The canal dike was cut through between the cofferdams to drain the water into the ravine, thus avoiding pumping difficulties. A water supply for mill purposes was conveyed around the work in a small wood sluiceway constructed for the purpose.

The contractor for this work was the R. H. Newell Company of Uxbridge, Mass., which concern built this structure under supervision of this department at cost plus a fixed sum profit of \$1,000. This Company had completed a new roadway a short distance from the site, and was fully equipped for the construction of the bridge. The results secured were very satisfactory. The total cost, including engineering, construction and contractor's profit was \$7,047.82 and land damages will increase this amount to \$8,647.82.

EXETER HOLLOW BRIDGE.

Exeter Hollow Bridge spans a small brook at the foot of a long hill on the Ten-Rod Road in the town of Exeter. The bridge required complete reconstruction. One rubble stone head wall had partly fallen into the stream, the planks were worn and the stringers decayed. Minor repairs were out of the question and renewal as a wood structure was not advisable as the construction cost plus the capitalized cost of the maintenance would much exceed the cost of a permanent concrete bridge. Steep contours of the area above this bridge and the small watershed gave a very high runoff coefficient, in itself a serious menace to the safety of a wood plank bridge. A sudden release of water from the dam about one-quarter of a mile above this site would flood the highway and float away any sort of a wood structure. The isolated location, especially during the period of the war, was not conducive to sharp competition in bidding and the available supply of labor and materials was limited, so the construction of the new bridge was awarded to a competent contractor on a percentage basis, with very satisfactory results.

The new bridge is a flat slab structure of 8 foot span, and of a clear width of twenty-eight feet with pipe rail on each side. The foundations extend to extra depth to prevent undermining by the stream during floods. The old floor planks were used for a small temporary bridge during the construction, which was performed by Enoch D. Jerue of Hope Valley. The total cost was \$1,393.99.

HEATH'S BROOK BRIDGE.

Heath's Brook Bridge was a stone slab structure on the Nooseneck Hill Road just north of the village of Barberville in Richmond, near the Exeter town line. On April 5, 1918, without warning some of the flat granite slabs fractured under load and dropped into the bed of the stream, leaving a very dangerous depression in the highway. Fortunately the failure of this bridge involved no serious accident or interruptions to traffic, which was directed through the adjacent ford on the upstream side during temporary repairs which were made promptly by placing timber struts on mud sills under the slab and filling the depression in the road with gravel.

This emergency did not permit the usual formal procedure in reconstruction of the bridge. An examination was made, a survey taken, and plans prepared for a new bridge to be erected with the

least possible delay. The old bridge, although of a type common in this State, was inherently wrong in principle and defective in design. The stone slabs were subject to transverse loading, which is a very questionable practice under any conditions. An excessive opening for the stream flow increased the cost of the structure and reduced the loading capacity. The condition was aggravated by very shallow fill over the slab.

No unusual features of design were required for the new structure, which is a reinforced concrete slab bridge constructed according to our established practice. Grades and alignment remain approximately the same. The bridge is thirty feet wide, an increase of eight feet over the width of the old bridge. The span was decreased three feet and the cushion of fill over the slab was approximately doubled. New stone retaining walls were built from stone obtained from one of the old head walls, the other wall serving as a back form for the concrete of the new bridge. A fairly deep cushion over the slab in a small bridge of this type reduces concentration of loading, improving the stability of the bridge and saves material in the concrete headwalls without increasing the maximum stresses in the slab.

This bridge was constructed by Enoch D. Jerue of Hope Valley at cost plus 10 per cent., the total cost, including engineering, being \$1,477.24.

ASSESSMENT TO TOWNS.

Portions of the total costs of three bridges were assessed to towns during the past year in accordance with the provisions of Section 3 of Chapter 846 of the General Laws. The bridges involved in these assessments were Bridge No. 10, located in the village of Wickford, in the town of North Kingstown, Bridge No. 18, located near the village of Allenton in the town of North Kingstown, and Bridge No. 105, located in the village of Oakland, in the town of Burrillville.

WICKFORD BRIDGE, No. 10.

The assessment of the cost of Wickford Bridge follows:

State pays	60 per cent.	\$4,251 16
North Kingstown pays	25 per cent.	1,771 31
Narragansett pays	10 per cent.	708 53
South Kingstown pays	2 per cent.	141 70
Charlestown pays	1 per cent.	70 85
Westerly pays	2 per cent.	141 70
100 per cent. Total cost.		\$7,085 25

In the above assessment all of the towns in Washington County through which the road upon which the bridge is located passes are assessed.

NARRAGANSETT RIVER BRIDGE, No. 18.

The assessment of the cost of Bridge No. 18, located near Allenton, was as follows:

State pays	60 per cent	\$635 56
North Kingstown pays	25 per cent	264 81
South Kingstown pays	10 per cent	105 93
Narragansett pays	2 per cent	21 18
Charlestown pays	1 per cent	10 59
Westerly pays	2 per cent	21 18
—		
100 per cent. Total cost		\$1,059 25

It will be perceived that the plan of assessment adopted for this bridge is identical with the plan of assessment of the cost of Wickford Bridge.

OAKLAND BRIDGE, No. 105.

The assessment of the cost of Oakland Bridge follows:

State pays	60 per cent	\$7,081 34
Burrillville pays	25 per cent	2,950 56
North Smithfield pays	8.691875 per cent	1,025 83
Glocester pays	3.808125 per cent	449 45
Smithfield pays	1.0 per cent	118 02
North Providence pays	1.0 per cent	118 02
Johnston pays	0.5 per cent	59 02
—		
100 per cent.		\$11,802 24

The decimals in the per cents of the cost assessed to the towns of North Smithfield and Glocester are accounted for by the fact that these towns, both being adjacent to the town of Burrillville in which the bridge is located, were each assessed the proportional part of 12.5 per cent. that the valuation of ratable property in each town bears to the total valuations of ratable property in both towns.

TABULATION OF BRIDGE EXPENDITURES, 1918.

NEW CONSTRUCTION.

No.	Name.	Location.	Cost.
1.	Elmwood Ave. Bridge.....	Cranston-Warwick...	\$64,695 91
10.	Wickford Bridge.....	North Kingstown....	1,534 09
12.	Hamilton Mill Bridge....	North Kingstown....	17,088 01
14.	Hazard Farm Cattle Pass..	North Kingstown....	33 55
17.	Narrow River Bridge.....	Narragansett.....	690 00
34.	Big River Bridge.....	West Greenwich....	10,943 34
40.	Heath's Brook Bridge....	Richmond.....	1,477 24
67.	Exeter Hollow Bridge....	Exeter.....	1,393 99
105.	Oakland Bridge.....	Burrillville.....	2,281 30
110.	Nasonville Bridge.....	Burrillville.....	671 71
140.	New Shoreham Bridge....	New Shoreham.....	1,839 76
155.	Longhouse Bridge.....	Smithfield.....	7,047 82
			<u>\$109,696 72</u>

MASONRY BRIDGE MAINTENANCE.

117.	Whipple Bridge, Lincoln-Cumberland, lighting expense.....		\$195 86
121.	Willett Ave. Bridge, East Providence, end walls.....		7 40
123.	Barrington Bridge, Barrington, lighting.....		129 00
124.	Warren Bridge, Warren, lighting.....		119 55
131.	Little Bridge, Portsmouth, foundations.....		407 63
133.	Kickemuit Bridge, Warren, new pipe railing.....		305 41
			<u>\$1,164 85</u>

STEEL BRIDGE MAINTENANCE.

11.	Hamilton Ave. Bridge, North Kingstown, sidewalks.....		\$2 67
26.	Natick Bridge, Warwick-West Warwick, replanking.....		441 11
27.	Royal Mills Bridge, West Warwick, replanking..		167 98
28.	Centerville Bridge, West Warwick, replanking..		99 26
45.	Wyoming Bridge, Richmond-Hopkinton, replanking.....		858 44
49.	Wellstown Bridge, Hopkinton, replanking.....		500 76
98.	Douglas Ave. Bridge, North Providence, replanking.....		123 15
108.	Branch River Bridge, Burrillville, replanking..		88 27
150.	Warwick Ave. Bridge, Cranston-Warwick, railing repairs.....		5 75
			<u>\$2,287 39</u>

WOODEN BRIDGE MAINTENANCE.

33.	Spring Lake Bridge, Coventry, replanking	\$71 75	
43.	Wyoming North Bridge, Hopkinton, plank re- pairs	9 70	
60.	Shannock Mill Bridge, Richmond, plank repairs . .	17 50	
86.	Ponagansett Bridge, Scituate, replanking	21 50	
106.	Oak Valley Bridge, Burrillville, plank repairs . . .	2 84	
			\$123 29
	General Engineering Expense		4,758 70
	Total Expense		\$118,030 95

RECEIPTS AND EXPENDITURES OF THE STATE BOARD OF PUBLIC ROADS.

Appropriation for clerk hire, travelling and other expenses of the Board.....		\$5,000 00
Clerk hire and office expenses.....	\$2,117 10	
Travelling and other expenses of the Board.....	1,319 71	
Engineering assistance.....	1,563 17	
		4,999 98
Balance.....		\$ 02

CONSTRUCTION, IMPROVEMENT AND MAINTENANCE ACCOUNT.

Balance on hand January 1, 1918.....	\$131,876 80	
Received from fines under the Automobile Law.....	9,490 00	
Received from Automobile Registrations and Licenses.....	346,797 53	
Received from Special State Tax for Highways.....	221,404 48	
Received from other sources.....	6,889 07	
		\$716,457 88
Expenditures for year.....		*652,640 09
Balance.....		\$63,817 79
Bills and obligations not paid.....	\$1,100 00	
Necessary to complete contracts awarded.....	51,770 00	
		52,870 00
		\$10,947 79

COMPLETION OF WARREN AND BARRINGTON BRIDGES ACCOUNT.

Balance on hand January 1, 1918.....	\$1,016 65	
Expenditures for year.....	122 00	
		\$894 65

*This total expenditure includes an expenditure of \$69,994.26 under the provisions of the Federal Aid Road Act. Of this amount one-half is to be paid by Federal Government and one-half from General State Funds under Act of General Assembly assenting to provisions of Federal Aid Road Act.

BRIDGE CONSTRUCTION LOAN OF 1917.

Receipts.

Balance January 1, 1918.....	\$97,690 68	
Bonds sold by State Treasurer in 1918.....	125,000 00	
Miscellaneous receipts.....	186 58	
	<hr/>	\$222,877 26
Expenditures.....		117,908 95
		<hr/>
Balance.....		\$104,968 31
Bills and obligations not paid.....		25,300 00
		<hr/>
Balance if obligations were paid.....		\$79,668 31

AUTOMOBILE DEPARTMENT.

A mere superficial examination of the tables hereinafter printed is sufficient to appreciate at once that the ever expanding business of the Automobile Department has in no wise suffered any cessation of activity during 1918, and in comparison with the preceding ten years of its history, it may be justly argued that the ratio of increases exceeds any given period of the department's existence. When considered in conjunction with almost a complete year of this country's participation in the great world war, and the altogether exaggeratedly unseasonable weather of the first three months of the year, the only period during which a full year's fee may be collected, and the resultant storing away of motor vehicles pending more favorable weather conditions, an increased revenue of more than thirty-nine thousand dollars may in all modesty be acclaimed a remarkable showing.

Another important point to be considered in connection with this increase is the fact that the year 1918 is the first complete year, under the calendar year form of registration, and in comparison with its immediate predecessor, 1917, the number of duplications of registrations was reduced to a negligible factor. Many thousands of new owners and operators were added to the list of registrants and licensees. The closing month of the year brought forth an avalanche of registrations to be renewed for the coming year of 1919, and the fees received in December were nearly one hundred per cent. greater than any other given month on record. The work incidental to so large a business has not been performed without some difficulty. The staff of workers, inadequate from the standpoint of numerical strength to begin with, was further depleted during the year by the enlistment in the military and naval forces of our country of several of our most experienced and valued clerks, who courageously answered the call to duty. While deeply regretting their temporary withdrawal from our service, we record with pleasure our profound regard for that self-sacrificing spirit and sense of responsibility displayed in their unhesitating response to duty's call. It became necessary to fill up the ranks with the best available material which for the most part were clerks having little or no experience. We are glad to say,

however, that notwithstanding the difficulties referred to, we have assiduously endeavored to keep the work of this department to the highest degree of efficiency possible under the circumstances. The past year has definitely demonstrated the need of an adequate standard force, and our budget for the coming year will be prepared with a lively appreciation of the necessity of additional clerks to meet this requirement.

The second complete year of the operation of the present law in so far as it relates to the issuance of all registrations for the calendar year fully justifies the most sanguine expectations of its proponents and has clearly demonstrated its entire practicability.

During the past year a large amount of investigations of accidents and complaints have been accomplished and through much of the year two investigators have been kept busy in this department of our work. The constantly increasing number of cars and operators upon our roads together with the number of accidents occurring and the complaints of reckless driving ensuing therefrom, demands more than ever that there shall be no discontinuance of activity along this line. If further testimony for the permanency of this work be required, a glance at the court record and accident tables, we believe, will be quite convincing.

A matter of great importance, and occasioning much concern alike to automobile administrative authorities and motorists throughout the country, is the much mooted question of adequate and safe lighting of motor vehicles when upon the highways at night. This question interests and affects all users of our highways during the hours of darkness, and the angles from which it is viewed are both numerous and divergent. It is a subject at present involving the most careful study and experimentation of our ablest electrical engineers, manufacturers of cars and light devices, legislative and administrative authorities, and many individual motorists. More than a year ago, your Board cognizant of the responsibility laid upon it by the General Assembly of 1916, through legislative enactment (Section 19, Chapter 1354), appointed a sub-committee to study the whole question of lighting of motor vehicles and proper regulation thereof. This committee has spent much time in consideration of the subject, has attended many conferences with technical experts and officials having in charge the creation and enforcement of lighting laws in other States, attended and participated in practical road demonstrations at night, and by general observation has en-

deavored to find a solution of the problem of the dangerous glaring headlight, or at least some palliative. Only as recent as a few days since, a conference was called in the offices of the Illuminating Engineering Society in New York City of experts on illumination, representatives of manufacturers of cars and lamps, officials of the National Automobile Club, Insurance Experts, and officials in charge of the enforcements of Automobile Laws of the different States, to consider the elements of a model headlight law, at which this committee was in attendance. The discussion lasted through a day and at the conclusion thereof, the matter was referred for further consideration to an executive committee of the Engineering Society. We are not yet in possession of the conclusion of this committee.

Many States have placed upon their statute books, regulations seeking to properly control the glaring headlight menace, but from all testimony we have been able to gather, it is not apparent that any of them have appreciably contributed to the safety of night driving. The whole subject at present is so abstract and the solution of the problem so far from realization that your Board has not yet deemed it wise to promulgate regulations and place upon our motorists restrictions which would serve no good purpose. We believe further investigation is warranted before Rhode Island shall be placed in the list of States having an impracticable headlight law insusceptible of proper enforcement.

In closing, the Board desires to point out to the General Assembly that in discharging the obligations imposed in the administration of the law, it has been forced to exceed its appropriation for general expenses of the automobile department. Appropriations made for the year's work, both for clerical assistance and expenses, were seriously inadequate to the demands made thereon. In the early days of the forthcoming session a deficit bill will be offered to cover a number of unpaid accounts amounting to approximately \$1,500. It is earnestly hoped that the General Assembly will give careful consideration to the financial need of this department for 1919.

COURT CASES.

The various courts of Rhode Island have certified to us during the past year a total of 1,522 convictions under the Automobile Law. A table of such convictions follows:

Court.	Form of Violation.	No. of Cases.	Fines Paid.	Cases Appealed.	Otherwise Disposed of.
Superior	Larceny of automobile.	13			Deferred.
"	Larceny of automobile.	4	\$475		
"	Larceny of automobile.	1			3 years.
"	Larceny of automobile.	2			2 years.
"	Larceny of automobile.	2			6 months.
"	Larceny of automobile.	1			18 months.
"	Larceny of automobile.	1			16 months.
"	Larceny of automobile.	1			Probation.
"	Larceny of automobile.	1			Continued.
"	Larceny of automobile.	1			Not prosed.
"	Larceny of automobile.	1			Committed.
"	Speeding.	7	135		
"	Intoxication.	8	515		
"	Intoxication.	1			\$300 and 30 days.
"	Intoxication.	3			Deferred.
"	Manlaughter.	1			Nolo.
"	Reckless driving.	1			Deferred.
"	Reckless driving.	2	75		
"	Tampering with automobile.	1			Deferred.
"	Driving off automobile.	4	300		
"	Driving off automobile.	5			1 year.
"	Driving off automobile.	1			6 months.
"	Driving off automobile.	2			3 months.
"	Driving off automobile.	2			3 months.
"	Driving off automobile.	19			Deferred.
"	Driving off automobile.	4			Probation.
"	Driving off automobile.	2			Committed.
"	Receiving stolen automobiles.	8			Deferred.
"	Receiving stolen automobiles.	1			3 years.
"	Receiving stolen automobiles.	1			6 months.
"	Receiving stolen automobiles.	1			Not prosed.
"	Conspiracy to steal automobiles.	11			Deferred.
"	Conspiracy to steal automobiles.	2	650		
"	Forging and uttering receipt for automobile.	1			Deferred.
"	Failure to return to scene of accident.	1			Discontinued.
"	Driving without license.	1			Deferred.
"	Inadequate lights.	1			Discontinued.
1st District.	Speeding.	101	1,390		
1st "	Inadequate lights.	21	149		
1st "	Intoxication.	6	285		
1st "	Passing trolley.	19	127		
1st "	Operating without license.	22	130		
1st "	Reckless driving.	1	25		
1st "	Operating without registration.	10	65		
1st "	Excessive smoke.	4	16		
1st "	Not having control of machine.	2	15		
1st "	Not sounding signal.	9	38		
1st "	Tampering with automobile.	1	20		
1st "	Failure to return to scene of accident.	1	15		
3rd "	Reckless driving.	1			Probation.
4th "	Speeding.	8	120		
5th "	Intoxication.	3	200		
5th "	Reckless driving.	1	10		
5th "	Operating without license.	1	15		
5th "	Operating without registration.	1	15		
6th "	Speeding.	532	8,100		
6th "	Speeding.	1		40	
6th "	Speeding.	2		15	
6th "	Speeding.	1		35	
6th "	Speeding.	1			\$15; Committed.
6th "	Speeding.	2			Discontinued.
6th "	Speeding.	1			Probation.
6th "	Inadequate lights.	214	810		
6th "	Inadequate lights.	3			Discontinued.
6th "	Inadequate lights.	1		2	
6th "	Operating without license.	36	555		
6th "	Operating without license.	1		5	
6th "	Failure to show license.	1	10		
6th "	Failure to show license.	1			Discontinued.

Court.	Form of Violation.	No. of Cases.	Fines Paid.	Cases Appealed.	Otherwise Disposed of.
6th District.	Intoxication	24	2,350		
6th "	Intoxication	6		100	
6th "	Intoxication	2			Discontinued.
6th "	Reckless driving	5	220		
6th "	Reckless driving	8			Discontinued.
6th "	Larceny of automobile	1	200		
6th "	Larceny of automobile	1			Committed.
6th "	Larceny of automobile	7			Grand Jury.
6th "	Larceny of automobile	4			Discontinued.
6th "	Larceny of automobile	1		100	
6th "	Larceny of automobile	1			11 mo.; appealed.
6th "	Larceny of automobile	1			10 mo.; appealed.
6th "	Larceny of automobile	1			11 mo.; \$300, app.
6th "	Larceny of automobile	2			6 mo.; appealed.
6th "	Larceny of automobile	2			4 mo.; appealed.
6th "	Larceny of automobile	1			\$200; committed.
6th "	Driving off automobile	30			Grand jury.
6th "	Driving off automobile	2			Committed.
6th "	Driving off automobile	1			10 mo.; appealed.
6th "	Passing trolley	83	466		
6th "	Passing trolley	2			Discontinued.
6th "	Failure to slow down and sound signal	2	30		
6th "	Cutting out muffler	43	217		
6th "	Cutting out muffler	1			Discontinued.
6th "	Operating without registration	7	55		
6th "	Tampering with automobile	3			Probation.
6th "	Tampering with automobile	3			Discontinued.
6th "	Failure to return to scene of accident	2	50		
6th "	Excessive smoke	1	2		
6th "	Improper markers	2	15		
6th "	Improper markers	1			Discontinued.
6th "	Failure to display numbers conspicuously	3	15		
6th "	Operating without owner's consent	2			Grand jury.
6th "	Operating without owner's consent	1			Discontinued.
6th "	Receiving stolen automobiles	1			Grand jury.
7th "	Speeding	1	1		
7th "	Cutting out muffler	1	5		
7th "	Passing trolley	4	17		
7th "	Operating without license	6	52		
7th "	Operating without license	3			Probation.
7th "	Operating without license	1			Discontinued.
7th "	Inadequate lights	24	112		
7th "	Inadequate lights	3			Discontinued.
8th "	Intoxication	5	270		
8th "	Intoxication	1			Discontinued.
8th "	Passing trolley	1	10		
8th "	Failure to return to scene of accident	2	100		
10th "	Inadequate lights	2	30		
10th "	Operating without license	9	165		
10th "	Operating without registration	3	25		
10th "	Reckless driving	1	50		
10th "	Reckless driving	1			Discontinued.
10th "	Larceny of automobile	2			Grand jury.
10th "	Intoxication	6	500		
10th "	Intoxication	1			Discontinued.
10th "	Speeding	43	615		
10th "	Speeding	1		15	
10th "	Operating without consent of owner	2			Grand jury.
11th "	Reckless driving	4	70		
11th "	Operating without license	1			Discontinued.
11th "	Intoxication	1	50		
12th "	Inadequate lights	1	5		
12th "	Intoxication	5	450		
12th "	Failure to return to scene of accident	1	75		
	Total	1,522	\$20,482	312	

ACCIDENTS.

The compilation of accidents from investigations, accident reports and press clippings records a total of 1,085 accidents for the year.

Seventy-one of the accidents caused the deaths of 75 persons, while 647 accidents caused injuries to 771 persons, and 367 accidents caused property damage only.

DEATHS

No. of persons killed.	Probable cause of accident.
46....	Negligence of killed.
13....	Negligence of operator.
1....	Reckless driving.
1....	Auto capsized.
6....	Unknown.
1....	Blinding headlights.
2....	Auto and trolley collision.
1....	Unavoidable accident.
2....	Skidding.
1....	Motor collision.
1....	Defective tires.

75

INJURED.

No. of persons injured.	Probable cause of accident.
386....	Unknown.
181....	Negligence of injured.
124....	Auto collision.
28....	Motor and trolley collision.
11....	Skidding.
13....	Reckless driving.
14....	Motor and wagon collision.
3....	Motor and bicycle collision.
5....	Auto capsized.
3....	Motor and train collision.
1....	Glaring headlights.
1....	Intoxication.
1....	No lights.

771

LICENSES.

There was issued during 1918 a total of 39,596 licenses. The Board formally refused 118 applications for cause; 1,685 applica-

tions were disqualified because of failure to pass examination. Of the licenses granted 10,592 were to new applicants, 27,875 were issued as renewals, and 1,129 as duplicates.

HEARINGS.

As a result of hearings or the receipt of certified court returns several licenses were revoked or suspended for cause, as the following table shows:

REVOCATIONS.

No.	Cause.
44....	Operating a motor vehicle while intoxicated.
10....	Reckless or improper use and operation of a motor vehicle.
10....	Operating without consent of owner.
6....	Reckless driving and operating a motor vehicle while intoxicated.
5....	Failure to return to scene of accident.
5....	Larceny of automobile.
5....	Fatal accident.
1....	Intoxication and failure to return to scene of accident.
1....	Obtaining license by fraud and deceit.
1....	Improper use of operator's license.

88

SUSPENSIONS.

No.	Cause.
16....	Involved in fatal accident.
2....	15 days... Reckless operation of motor vehicle.
1....	10 days... Reckless operation of motor vehicle.
1....	Indefinite... Reckless operation of motor vehicle.
1....	10 days... Failure to show license.
1....	10 days... Intoxication.
1....	Reckless operation of motor vehicle and failure to return to scene of accident.
1....	30 days... Improper use of operator's license.

24

RECEIPTS.

Source.	No.	Amount.
Operator's licenses.....	38,467	\$38,467 00
Duplicate licenses.....	1,129	1,129 00
Automobile registrations.....	29,178	277,748 00
Truck registrations.....	7,040	55,543 50
Transfer registrations.....	3,179	5,240 00
Motor cycle registrations.....	1,464	2,928 00
Dealer's registrations.....	140	4,215 00

Trailer Permits	29	\$337 50
Automobile registrations (exempt fees)	155	.....
Truck registrations (exempt fees)	100	.....
Fire apparatus registrations (exempt fees)	123	.....
Transfer Registrations (exempt fees)	8	.....
Motor cycle registrations (exempt fees)	6	.....

Total..... \$385,608 00

Average fee per automobile (exclusive of trucks, motorcycles, transfers and dealers)	\$9.519
Average fee per motor truck	7.889

EXPENSES.

Services and Clerical Assistance Account.

Appropriated	\$17,000 00
Expended	16,993 76
Balance	\$6 24

Salaries of Members of Board.

Appropriated	\$2,500 00
Expended	2,446 78
Balance	\$53 22

Appropriated	\$9,000 00
Expended	8,999 31
Balance	\$ 69

Number Plates.

Appropriated	\$12,500 00
Expended	10,370 62
Balance	\$2,129 38

Number Plates.

Received	\$739 65
Expended	739 65

State of Rhode Island and Providence Plantations

ANNUAL REPORT

OF THE

Commissioners of Shell Fisheries

FOR THE

YEAR ENDING DECEMBER 31, 1918

AS MADE TO THE

GENERAL ASSEMBLY

AT ITS

JANUARY SESSION, 1919

PROVIDENCE, R. I.
THE OXFORD PRESS, PRINTERS
1919

Commissioners of Shell Fisheries

AND THEIR DEPUTIES

1919.

COMMISSIONERS OF SHELL FISHERIES

EDWARD ATCHISON.....P. O. Address, Slatersville, R. I.
MILTON DUCKWORTH.....“ “ Carolina, R. I.
HENRY K. LITTLEFIELD.....“ “ New Shoreham, R. I.
CLINTON D. LEWIS.....“ “ West Barrington, R. I.
SYLVESTER K. M. ROBERTSON. “ “ Lakewood, R. I.

CLERK

BRAYTON A. ROUND.....P. O. Address, Providence, R. I.

ENGINEER

WALTER W. MASSIE.....P. O. Address, Providence, R. I.

DEPUTY COMMISSIONERS OF SHELL FISHERIES

OLIVER G. HICKS.....P. O. Address, Bristol Ferry, R. I.
LEMAN WARDSWORTH.....“ “ Wickford, R. I.
WILLIAM B. WELDEN.....“ “ Providence, R. I.
JOHN T. SMITH.....“ “ Warren, R. I.
ISRAEL A. SMITH.....“ “ Pawtuxet, R. I.

BIOLOGIST AND BACTERIOLOGIST

STEPHEN DEM. GAGE.....P. O. Address, Providence, R. I.

INSPECTOR OF OYSTER HOUSES

SETH WALTON.....P. O. Address, Providence, R. I.

REPORT

*To the Honorable General Assembly of the State of Rhode Island
and Providence Plantations:*

GENTLEMEN:—In accordance with the provisions of Section 4, of Chapter 203 of the General Laws, the undersigned, Commissioners of Shell Fisheries, beg leave to report to you the condition of this department of the public service, including a detailed statement of all moneys received and expended, on account thereof, also including the names of all the lessees of land, together with the number of acres leased each person, and the rentals received therefor, as of record, for the year ending December 31, 1918.

We are very sorry, to have to report to your Honorable Body, that the Board has sustained the loss of two of its members, by death, during the past year. During the month of October, 1918, the Commission lost two of its members: Col. Randall A. Harrington, October 13th and Hon. William T. Lewis, October 30th. Col. Harrington was Commissioner of Shell Fisheries from Kent County, and Mr. Lewis was Commissioner from Bristol County. While Col. Harrington had not been a member of the Commission but a short time, having been elected to fill the unexpired term of the late John H. Northup, his ability as a business man, together with his earnest effort to render every assistance possible, was of much benefit to the Commission, and his death was a distinct loss to the Commission and to the State.

Hon. William T. Lewis had served as Commissioner of Shell Fisheries from Bristol County from 1900 to 1905, and then again was re-elected January, 1915, this being his second term as Commissioner. Mr. Lewis's experience during his first term enabled him to render valuable services during this term of office. His unflinching courtesy and kindness and his excellent judgment together with his absolute fairness on all matters that come before the Board were of great benefit to the Board and to the State.

In the death of the members just mentioned, the Board has lost two conscientious, careful and considerate members and the State, efficient and valuable servants.

The vacancies caused by the death of the aforementioned members were filled by an appointment of the Governor, as follows: Clinton D. Lewis, December 3, 1918, to fill the vacancy in Bristol County, and Sylvester K. M. Robertson to fill the unexpired term of Col. Harrington from Kent County.

In the consideration of the different matters pertaining to our work, we will consider them by subject and make our recommendations at the close of the discussion of the subject under consideration.

LAWS.

(CHAPTER 203) "Of Private and Several Oyster Fisheries."

Chapter 203 provides for the leasing of ground for the cultivation and propagation of oysters. This chapter was the outgrowth of a series of, what might be termed, experiments that had been conducted for some years under special acts of Legislation, whereby two or three of the citizens of the State had been granted the privilege of planting and growing oysters upon the public ground. After this work had been carried on for several years, it was deemed advisable that there should be a uniform law granting permission to any suitable person, an inhabitant of the State, to take out a lease of ground by paying a fee in the form of rentals, and after the adoption of the constitution of the State in 1842, the chapter pertaining to the leasing of oyster fisheries was enacted.

The conditions that confronted the oyster business in the early fifties were not conducive to the establishment of a very large industry, as there was much opposition to the granting of leases and many of the fishermen believed that the Legislature had granted authority to the Commission that deprived them of obtaining a livelihood from the public domain. They protested vigorously against any leasing of grounds, even going to the extent of taking oysters from leased grounds, in such quantities as to materially retard the progress of the industry. In 1856 this condition became

so serious as to call forth special provisions of the Legislature, in an attempt to remedy the same, and the Commissioners of Shell Fisheries were authorized to take the money obtained from the leasing of oyster ground, and purchase a watch boat to protect the leased areas. The Commissioners of Shell Fisheries did as directed and purchased a boat and attempted to protect the oyster planters, but with very indifferent success, as may be seen from the fact that the industry continued to decrease until in 1864 it was exactly the same as in 1844.

This chapter has been amended from time to time, as circumstances and necessities of the oyster business required. At the January Session of the Legislature in 1917, there was an amendment to this act made by the additions of sections 36 and 37, which provided for the leasing of mud bottom, so-called, for one dollar per year, per acre, to be used for the cultivation of shellfish. This amendment has not proved as advantageous as was expected, and no doubt it could be repealed without materially injuring the oyster business.

It would seem to us, that this chapter could be amended so as to be of much benefit to the State, and particularly if it were amended so the public ground might be rented for other purposes than for oyster cultivation alone. It would seem to us, that it is rather narrow, to lease ground for the cultivation of oysters only, when there are other shellfish that can be raised, upon what is now unused ground, as readily and successfully as oysters. We believe that this act ought to be amended and the Commissioners of Shell Fisheries allowed to lease ground for quahaug and clam culture, as well as for oyster culture, and we would recommend that this chapter be amended so as to give the Commissioners of Shell Fisheries authority to lease ground for shellfish culture.

(CHAPTER 1243) "Of the Protection of Quahaugs."

This is a chapter that was enacted into a law in 1907 and was amended on April 23, 1915.

This chapter prohibits the taking or having in one's possession, quahaugs less than 1½ inches in diameter. Previous to the amendment of this law, there were large quantities of little necks shipped

out of the State, and this practice was so extensive, as to almost destroy the quahaug grounds. Since the enactment of this law, this practice has been stopped, and the little neck industry has increased to a considerable extent. A number of arrests and convictions have been obtained, which has had a salutary effect.

We are of the opinion that this chapter of the law should remain as it is, as it has been an improvement of material benefit to the State.

(CHAPTER 577) "Of the Protection of the Shell Fisheries in the Public Waters of the State."

This is a provision of the law that pertains to the protection of the public health, by providing that no person shall deposit in or allow to escape into the public waters of this State, any substance which shall, in any manner injuriously affect the growth, the sale or flavor of shellfish or shall cause any injury to the public or private fisheries of this State. Under the provisions of this act, the Commissioners are obliged to examine the oyster beds and ascertain if they are free from pollution and if such be the case, to issue certificates granting the use of such beds. This law also provides for the inspection of the opening or shucking houses, and requires that proper sanitary methods should be used in the opening or shucking of oysters and that certificates shall be granted by the Commission, if found to be in proper sanitary condition.

There is one thing relative to this chapter, that may be thoroughly understood, and that is, that just as long as the unsanitary conditions that exist in Rhode Island, are allowed to continue, just so long will the provisions of this chapter have to be carried out in order that the oystermen may be enabled to sell their products in interstate commerce.

We believe that there should be remedial legislation enacted at this term of the Legislature, whereby the pollution of the river and bay will be materially decreased, if not entirely eliminated.

(CHAPTER 852) "An Act Regulating the Taking of Shell Fish from Free and Common Fisheries"

This is a provision that was enacted at the January Session of the General Assembly in 1912 and provides for the granting of li-

censes for the purpose of taking oysters, clams and quahaugs from the public grounds. This act became necessary through the depredations committed by citizens outside of the State, who would come into Rhode Island and take the shellfish and carry them away. There was no way that we were able to prevent the same, until this act was passed.

This act prohibits the use of a dredge upon public ground, excepting in the taking of scollops, as provided by the scallop act; and mussels, which may be allowed by the Commissioners of Shell Fisheries by the issuing of a permit.

(CHAPTER 1602) "An Act for the Planting, Cultivation, Propagating and Developing of any and All Kinds of Shell Fish."

This is an act that was passed by the General Assembly in 1917 and gave the Commissioners of Shell Fisheries authority to conduct any experiment that they might deem best, upon the public ground. Under the provisions of this act, we have closed to the use of the public, certain areas in the bay, in order that the small sets found thereon, could be developed, and it has proved very successful.

In May, 1918, the Commissioners of Shell Fisheries, under authority of this act, closed a piece of ground at New Buttonwoods in East Greenwich Bay and planted 242 bushels of small quahaugs that had been taken from Sand Wharf. This was done in order to ascertain if quahaugs could be transplanted and grown successfully on ground that was barren. This experiment has proven exceedingly successful as it is conservatively estimated to have produced more than one thousand (1,000) bushels from the 242 bushels which were planted thereon. We are contemplating continuing the experiment more extensively, during the coming season, as we believe that we can plant, at least four different pieces of ground with quahaugs, and at the same time and in the same vicinity, plant clams, as we have found that both kinds of shellfish on certain kinds of ground, will flourish and grow rapidly. We hope to be able to do considerable work along these lines during our next season.

A SUMMARY OF THE SHELLFISH LAWS AND RECOMMENDATIONS
PERTAINING THERETO.

First:—We believe that the provisions of the law that allows us to lease ground for the propagation and cultivation of oysters only, is erroneous. We see no good reason why ground should not be leased for oyster, clam and quahaug cultivation and possibly mussel cultivation, as well. We have large areas of public land that is practically worthless, so far as producing revenue to the State and food for the people is concerned, that could be very readily utilized to good advantage, if the law was amended so that we could lease these areas to private enterprise, basing the rental upon a fair and equitable value.

There is no question but what quahaug and clam culture can be conducted as successfully as oyster culture, this has been demonstrated both in Massachusetts and Maine, where ground has been, and is being successfully leased for clam culture.

We believe that if it is the desire of the citizens of the State to have the fisheries fully developed, that the Legislature should give the Commission, authority to lease ground for shellfish culture.

Second:—From our experience in the enforcement of shellfish laws, we are of the opinion that the penalties that are attached to many of our laws are not sufficiently severe to prevent more or less extensive depredations from being committed. It is a great deal more expensive and difficult to apprehend a person that is committing depredations upon the water of Narragansett Bay than it would be to apprehend persons who were committing similar depredations upon the land, and the difficulty in securing convictions is correspondingly increased. As we have previously stated, we believe that the penalties are not as severe as they ought to be. In fact, we feel that where a person has been apprehended in stealing and carrying away oysters, he ought to be punished by a term in jail, rather than by fining him a small sum, which he is able to pay and almost immediately go out and recuperate himself, by stealing oysters.

We believe that a careful revision of the penalties in the shellfish laws, should be undertaken and that fines and imprisonments be

provided that would be sufficient to materially aid in breaking up the depredations committed in the public waters.

Third:—We believe that there ought to be a co-ordination of the shellfish laws, along the lines of search without warrant. Some of our laws give the Commissioners of Shell Fisheries and their duly authorized agents the right to go upon any boat or vessel where certain kinds of shellfish are unlawfully caught or taken, and search without a warrant, whereas, other provisions of the shellfish law make no mention of any authority for such search, and we believe that the Commissioners of Shell Fisheries should have authority to search for quahaugs or any other shellfish, as well as for scollops. The provision for searching in the unlawful catching of scollops is quite adequate, and we believe that a similar provision should be made for all kinds of shellfish. We would suggest that there be an amendment granting authority to the Commissioners of Shell Fisheries to search, without warrant, any place, other than a dwelling, where in their opinion, shellfish are being caught, taken or held contrary to law.

GROUND EXEMPT BY LAW

Section 13 of Chapter 203, as amended by Chapter 672, provides that no land shall be let north of a line extending across Providence River bearing S 40° 30' W, true meridian, from the copper bolt set in the rock near the end of Kettle Point, to Field's Point, or let any lands west of a line drawn from Warwick Neck Light bearing S 55° 16' 02" W, true meridian, to Pojack Point at Potowomut Neck; or let any land in Sakonnet River south of the railroad bridge, or let any lands in shore of the four-foot line, as delineated on the plats in the office of the Commissioners of Shell Fisheries, or any land lying between a line running due east and west through the middle point of the Rhode Island Yacht Club building, northerly of Pomham beacon, and west of the channel; or let the channel between Long Neck and Marsh Island flats from the channel in the Providence River to the bridge in Pawtuxet; or let any of the ponds in Little Compton, South Kingstown, New Shoreham, Tiverton, Portsmouth, or Westerly, except Brightman's pond or Babcock's Pond, so-called, in said Westerly.

As to the practicability of these exemption lines, there may be a considerable question, as some of the areas that are exempt are particularly well fitted for the cultivation of shellfish and the waters of the same, are comparatively clean and especially good for shellfish culture. There is no question but what the exemption line on the Providence River should be retained and possibly it might be advisable to extend the line down the river, as this river is becoming unsuitable for shellfish culture or for the production of shellfish of any description, for food purposes.

PUBLIC GROUND

There is no doubt but what the public ground that is available for shellfish culture is being reduced quite rapidly by pollution, but notwithstanding this fact, there are quite large areas in the lower bay which are suitable for some form of shellfish culture, although not suitable for oyster culture. There are some excellent mussel beds in Rhode Island as was reported by Dr. Irving W. Field to the U. S. Bureau of Fisheries and was incorporated in our report to the January Session of the Assembly in 1918. It would seem to us that there might be some use made of these mussel beds that would be of more value than what is being done at this time, if they are not being utilized only for the purpose of supplying fish bait, and the mussel is as nutritious a shellfish as any that we have and no doubt, if a campaign of education were inaugurated showing the value of mussels, as an article of food, these beds might become valuable food producing areas.

As the oyster industry in Rhode Island is rapidly decreasing, it would seem to us that it would be a wise procedure for other forms of shellfish culture to be undertaken. We feel that encouragement should be given to people who desire to engage in other forms of shellfish culture.

We would recommend that the shellfish laws be amended so as to allow ground to be leased for clam, mussel and quahaug culture as well as for oyster culture.

OYSTER INDUSTRY

We regret very much that we are compelled to call your attention to the fact that the oyster industry of Rhode Island is rapidly decreasing. We have reported this fact, a number of times to your Honorable Body and we feel that unless something is undertaken to relieve the conditions here in Rhode Island, the oyster industry will continue to decrease until we will have very little, or no oyster fisheries remaining.

The leasing of oyster ground in Rhode Island for the propagation and cultivation of oysters has been established for about 120 years. At the beginning, oyster ground was leased by special acts of the General Assembly.

In 1844, the General Assembly created a Commission for that purpose and provided for the leasing of oyster ground for cultivation and propagation. This procedure has been practically continuous ever since. It had grown to a remarkable extent up to the year 1912, at which time conditions became so unsanitary and the areas of leased ground began to be so unproductive that the oystermen were compelled to cancel their holdings. This relinquishment of oyster ground has continued until today, we have less than 50% of the areas under cultivation that we had in 1912. We believe that a further reduction of the areas under cultivation will be made, unless something is done to eliminate the unsanitary conditions of Providence River and the upper bay.

There is no question whatever but what the pollution of Providence River and upper Narragansett Bay is not only destroying the oysters but also the public fisheries as well.

In 1910, when our attention was called to this condition, a conference was held with the U. S. Bureau of Fisheries and Dr. Harvey W. Wiley predicted that unless the State eliminated the source of contamination, in ten years the bay would be so contaminated as to destroy the oyster business. We are obliged to say that Dr. Wiley's prediction is rapidly becoming true. We believe that it is very unwise for the State to allow this condition to exist.

It is not only the fisheries of the State that are being destroyed by this pollution, but the beaches also are becoming worthless for

bathing purposes and the shores adjoining the river and bay a sites for summer residents are becoming greatly depreciated in value, so that this contamination is much broader than the contamination of the fisheries, and if something is not done to eliminate the conditions, we will not only see the loss of the private and public fisheries, but we will also see a great reduction in values of property on the adjoining shores.

If the elimination of this pollution was one of those problems which was unsolvable or that would greatly injure other industries we might hesitate about attempting to remedy these conditions, but the fact is, that it is comparatively easy to remedy these conditions without any injury to any other business enterprises. Much of the pollution that goes into our bay might readily be taken care of by proper sanitary facilities and the manufacturing wastes that are discharged into our public waters could be taken care of by proper appliances and much of it could be converted into products that would pay a portion, at least, of the expenses of establishing sanitary appliances.

There is no doubt but what, if remedial measures were attempted there would be extended objections, but we believe that the opposition might be overcome if the proper procedures were adopted, and it was explained that it would not injure other industries to have sewage disposal systems established.

There are a good many acres of oyster ground that have been cancelled during the last five years, as being worthless for the cultivation of oysters, that, ten years ago, were considered very valuable. People from other States were only too anxious to come here and establish business enterprise and secure these areas and plant them with thousands of bushels of oysters. Not only are these private areas destroyed, but a good many acres of public areas where clams and quahaugs may be produced are also very greatly injured and practically destroyed.

We again want to call your attention to these conditions and reiterate that unless some remedial measures be adopted by your Honorable Body at the earliest possible moment.

SANITATION

It became necessary that the sanitary handling and growing of shellfish should be undertaken by your commission, when a number of years ago our attention was called to the condition that existed in Narragansett Bay. In 1910, an act was adopted by the General Assembly of that year, directing the Commissioners of Shell Fisheries to supervise the growing and handling of shellfish.

We have continued this work and have made arrangements with the U. S. Bureau of Chemistry, which enables our oystermen to ship their oysters in interstate commerce. This was brought about by the performing of an extensive examination of our bay and river and by the establishing of sanitary zones. Some of these zones, it has been found, may be utilized for the growing and shipping of shellfish at any and all seasons, while other zones have to be restricted in their use. Some zones are not suitable for the growing of shellfish and very few shellfish are grown in these zones, excepting for the purpose of transplanting.

Under the provisions of sanitation, we have an inspector of oyster houses. It is the duty of the inspector to visit every place where oysters are being opened and to see that the places are kept clean, that proper sanitary methods are used in the opening and packing of oysters, and that there is not an undue length of time used in the washing and cooling of the oysters.

The inspector reports the conditions to the Office of the Commission, upon cards prepared for that purpose, and certificates are granted to the owner of the opening houses in accordance with his report. Also in connection with the work of the inspector, we are furnished with information relative to the quantity of oysters opened and shipped per day and the number of employees engaged in the industry. In accordance with the report of the inspector, the average number of openers during the month of December, 1918, was 214 and the average number of gallons of oysters opened and shipped per day was 3,240, and the number of houses doing business in Rhode Island at that time was 19.

While the work that is being undertaken under the provisions of our laws enables the oystermen to furnish a wholesome and sani-

tary article of food, and to ship the same in interstate commerce, it does not assist the oystermen in endeavoring to discover and eliminate some of the conditions that are very injurious to the growth of oysters.

The sanitary work during the past year has been performed for us by the State Board of Health, and we are in hopes to continue the arrangement with the Board of Health. We can assure you that as long as conditions exist in Rhode Island, as they are now, it will be necessary for sanitary supervision to be observed.

REPORT OF CHEMIST AND SANITARY ENGINEER OF THE STATE BOARD OF HEALTH

Commissioners of Shell Fisheries:

GENTLEMEN:—I present herewith a report of the various sanitary investigations performed for you during the past year by the staff of the State Board of Health.

The work during the year, in addition to the usual examinations of samples of oysters and investigations necessary for the sanitary control of leased oyster beds, has included a study of the sanitary condition of clams and quahaugs on certain of the unleased ground, and a study of the pollution of the waters of upper Narragansett Bay. In addition, some investigations were made of the unusual mortality among soft clams on certain areas and a number of samples of the wastes discharged from certain industrial establishments located on the Providence and Seekonk Rivers were collected and examined.

SANITARY CERTIFICATES

Following the procedure adopted in 1916, the leased oyster grounds in the State have been divided into two general classes: In one class are included all grounds which examinations during previous years had shown to be in safe sanitary condition throughout the oyster season and for which sanitary certificates could safely be granted without the necessity of making analytical tests for freedom from pollution. This class comprises the leased beds on the west side of the bay south of Rocky Point, the beds around Prudence and Conanicut Islands, and the beds in the southerly part of the Sakonnet River.

In the other class are included those areas which previous investigations have shown are usually in safe sanitary condition during cold weather, but which we must depend on bacterial tests to de-

termine how early in the season oysters taken from them, may safely be permitted to be marketed. For convenience in sampling and control work these doubtful grounds have been grouped into six sub-zones or areas with natural geographical boundaries, and in making examinations of such areas the sampling points have been so located that a representative idea of the sanitary condition of the entire area may be obtained. Under this procedure all the oyster beds in one geographical group are treated as a unit, and sanitary certificates are issued to all leasees as soon as the oysters on that area are found to be of proper quality. Owners of oyster grounds in a given territory are thus placed on a uniform basis and are permitted to open up their grounds at the same time if they wish.

The six sub-zones covering the doubtful areas are as follows: LONGMEADOW—including all beds on the west side of the bay between Rocky Point and Conimicut Point; NAYATT—including the various beds on the southerly side of Nayatt Point; WARREN—including the beds in the Warren River and those on the east side of the bay lying between the northerly part of Poppasquash Neck and Rumstick Point; BRISTOL—including all beds in Bristol Harbor and those around Hog Island; KICKEMUIT—including the beds in the Kickemuit River and those located immediately south in Sections 44, 61 and 66 on the map of leased oyster grounds; PORTSMOUTH—including the various beds in the northerly part of the Sakonnet River and those beds located north of the Island of Rhode Island in sections 95, 96, 114 on the map.

Examinations were made of the Nayatt area on August 28th, Sept. 28, and October 15. This area was found to be clear on the latter date and certificates were issued on Oct. 19. The Longmeadow area was examined on Aug. 28, Sept. 3 and Sept. 28, and certificates were granted on Oct. 1. The Portsmouth area was examined on Sept. 5, Oct. 8, and Nov. 8, and the Kickemuit area on Oct. 8 and Nov. 8, and certificates for both these areas were granted on Nov. 13. The Warren River area was examined on Sept. 10, Oct. 19 and Nov. 16. On the latter date Bed No. 28- and those beds lying south of it were found to be clear, but as beds lying farther up the river still showed contamination from the sewage discharged from the town of Warren, it was deemed advisable

to subdivide the area and certificates were granted for the southerly part on Nov. 19. The Bristol area was examined on Oct. 2 and Nov. 2. Sanitary certificates were granted for all but one of the beds in this area on Nov. 7, but as this bed was located in close proximity to two of the large town sewers, it was not considered safe to permit the oysters from it to be used for food although the bacterial scores were within the prescribed limit.

SANITARY CONDITION OF CLAMS AND QUAHAUGS

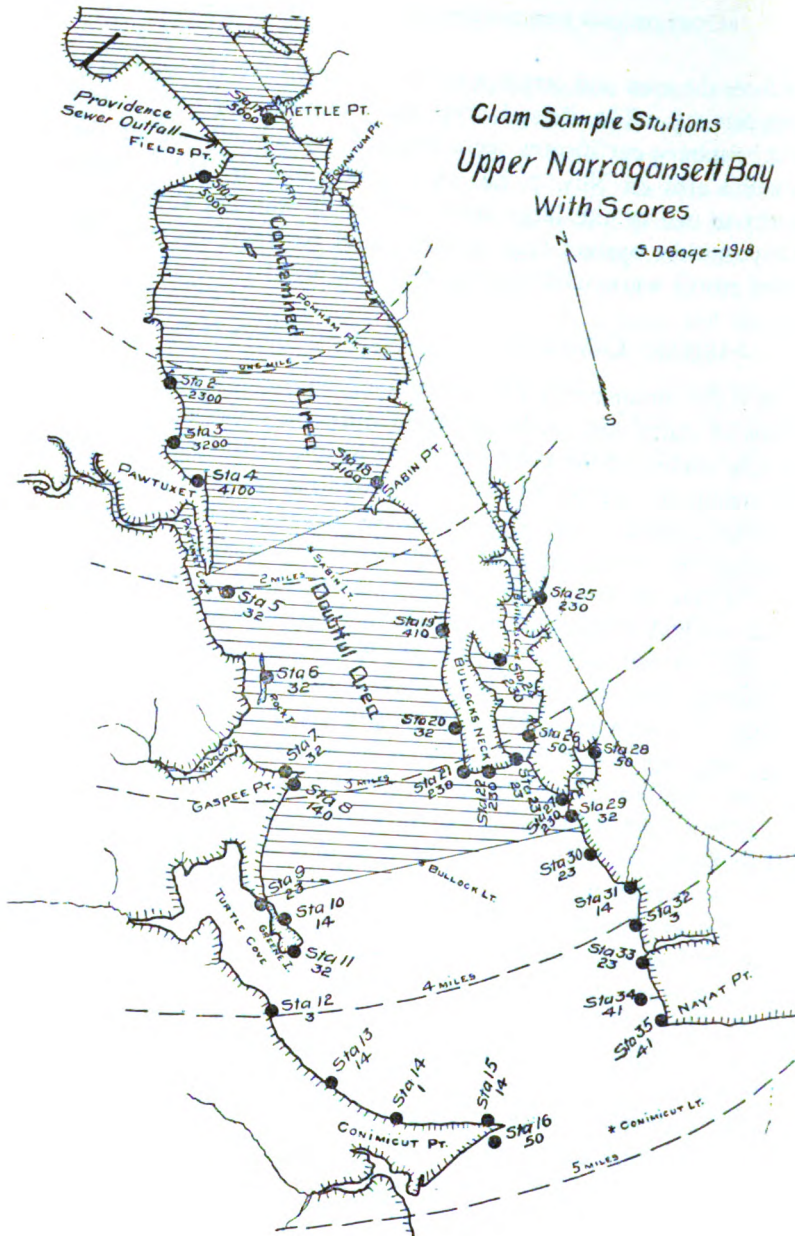
Early in the summer you authorized me to investigate the sanitary condition of clams and quahaugs from different areas and also to make some studies of the pollution of the waters of the bay. Owing to war conditions, considerable difficulty was experienced in obtaining suitable assistance to carry out these investigations and active work along these lines could not be started until the second week in July. The clam investigation was also slowed up materially by the fact that we had to use the motor boat "Pearl" which was of too great draft for such work, and much time was lost in rowing to and from shore at each sampling point. Clam samples necessarily have to be taken at low water and more ground could have been covered at each sampling trip if we had had a light draft power skiff with which we could have run directly from one sampling point to another without waste of time. In order to make the most of the time available, therefore, this part of the investigation was largely confined to clam areas in the upper bay, with a few samples only from points in Greenwich Bay and the Warren River. In the main, also the investigation was confined to soft clams, although a few samples of quahaugs were examined.

The results of this investigation show that clams from points in the upper bay, north of a line drawn from the Pawtuxet Yacht Club to Sabine's Point are very badly polluted.

On the west shore south of Pawtuxet Cove, scores were generally within the limit upon which sanitary certificates are granted for oysters, although high scores were found at one point on the south side of Gaspee Point.

Clam Sample Stations Upper Narragansett Bay With Scores

S.D. Bage - 1918



On the east side of the bay, clams or quahaugs showing scores considerably above the prescribed limit were found at Crescent Park, on the southerly side of Bullock's Neck, in Bullock's Cove and in the small inlet south of Bullock's Cove.

As a result of this investigation it is possible to divide the shellfish ground of the upper bay into three zones of varying pollution. It is evident that the clam and quahaug grounds north of a line drawn from Pawtuxet Cove to Sabine's Point, the dark shaded area on the map, are so seriously polluted that shellfish taken from them are absolutely unfit for food. The taking or sale of shellfish for food from this area should be prohibited. Between the southerly limit of this zone and a line drawn east and west through Bullock's Light, the light shaded area on the map, is an area which is less seriously polluted. Clams and quahaugs from this area are undoubtedly dirty, but if thoroughly cooked, might not be dangerous. South of the Bullock's Light Line all scores were within the limit prescribed for oysters, although it is probable that under different conditions of wind and tide, higher scores might have been obtained. Shellfish from this area are certainly not of the highest standard of cleanliness, although when cooked, they might safely be used as food.

The results of examination of clams and quahaugs are shown in the following table, and the location of sampling stations in the upper bay together with the sanitary score at each station are shown on the accompanying chart.

SANITARY SCORES OF CLAMS AND QUAHAUGS

Station No.	LOCATION.	Date.	Score.
WEST SHORE—UPPER BAY.			
1	Below Field's Point	Aug. 8	5000
2	100 yard south of Edgewood Yacht Club.....	Aug. 8	2300
3	North end of Stillhouse Cove.....	Aug. 8	3200
4	Stillhouse Cove, near R. Yacht Club.....	Aug. 8	4100
5	Marsh Island, mouth of Pawtuxet Cove.....	July 16	32
6	East shore Rock Island (Quahaugs).....	Aug. 28	32
7	North side Gaspee Point		
8	South side Gaspee Point	July 19	140

SANITARY SCORES OF CLAMS AND QUAHAUGS—Concluded.

Station No.	LOCATION.	Date.	Score
9	North east side of Greene's Island.....	July 19	3
10	North west end of Greene's Island.....	July 19	3
11	South end of Greene's Island.....	July 19	3
12	Near Mark Rock (¼ mile below Greene's Island)...	July 19	3
13	Conimicut Beach	Aug. 6	3
14	Shawomet Beach	Aug. 6	3
15	North side Conimicut Point (Quahaugs).....	Aug. 28	3
16	South side Conimicut Point	Aug. 6	3
16a	South of Conimicut Point (Quahaugs).....	Aug. 28	3
EAST SHORE—UPPER BAY.			
17	South side Kettle Point	Aug. 8	500
18	North side Sabine's Point (Quahaugs).....	Aug. 28	410
19	Crescent Park	July 16	4
20	North side Juno Point	July 16	3
20a	South side Juno Point (Quahaugs).....	Aug. 28	3
21	South west shore Bullock's Neck.....	July 22	23
22	South shore Bullock's Neck.....	July 22	23
23	South east shore Bullock's Neck.....	July 22	2
24	West shore Bullock's Cove.....	Aug. 1	23
25	North east shore Bullock's Cove.....	Aug. 1	23
26	South east shore Bullock's Cove.....	July 22	3
27	Just north of inlet below Bullock's Cove.....	July 22	23
28	North end of inlet below Bullock's Cove.....	July 22	3
29	Just south of inlet below Bullock's Cove.....	July 22	3
30	About one-half mile south of Bullock's Cove.....	July 22	2
31	Near Brickyard Creek	Aug. 6	1
32	One-quarter mile south of Brickyard Creek.....	Aug. 6	6
33	One-half mile north of Nayatt Point.....	Aug. 6	2
34	One-quarter mile north of Nayatt Point (Quahaugs)Aug.	28	2
35	North side of Nayatt Point.....	Aug. 6	4
WARREN RIVER.			
36	South east shore, near mouth of river.....	Aug. 19	3
37	North west shore, near mouth of river.....	Aug. 19	3
38	North west shore, ½ mile above mouth of river.....	Aug. 19	3
39	West shore below highway bridge.....	Aug. 19	3
GREENWICH BAY.			
40	South side of Warwick Neck.....	Aug. 21	14
41	North side, near Buttonwoods.....	Aug. 21	3
42	West shore, near Apponaug Cove.....	Aug. 21	3
43	West shore, near boat shop.....	Aug. 21	3
44	South shore, near "The Rock".....	Aug. 21	3

POLLUTION OF WATER IN UPPER BAY

As a check on the analyses of the clam samples from the upper bay and to determine the degree of pollution of the water, samples of water were collected from 10 stations between Field's Point and Conimicut. The location of these stations was carefully pre-determined to obtain a representative idea of the drift of pollution down the bay, taking into consideration as far as possible the effect of any cross currents which might be formed by the action of the winds and tides, etc.

Dissolved oxygen determinations were made in the field at each station on samples collected two feet above the bottom and one foot below the surface of the water, and top and bottom samples from each sampling point were brought to the laboratories for chemical and bacteriological examination. In planning the investigation, it was intended to repeat these examinations and tests at least once a week during the summer, but weather conditions and other circumstances over which we had no control rendered this impossible and only three series of samples were obtained. The results obtained in this investigation, therefore, cannot be considered in any way representative or complete, although they may be used to illustrate how serious the pollution of this part of the bay has become, especially when we take into consideration the worst result obtained at each station in any of the three series.

As is well known, all of the sewage from the City of Providence together with the sewage from part of the City of Pawtucket is discharged at Field's Point on the outgoing tide. The volume of this sewage amounts to between twenty and twenty-five million gallons per day, the larger proportion being discharged on the day tide. This sewage is passed through settling tanks to remove heavy suspended matters and the clarified sewage is treated with chlorine to reduce the bacteria. The sludge which is settled out of the sewage is pressed into cakes and carried on scows to a dumping ground in the lower part of the bay.

It is well recognized that the problem of the disposal of sewage into any large body of water without causing a nuisance is largely a question of preserving a proper balance between the total capacity

of the sewage to absorb oxygen and the capacity of the water to supply that oxygen. If the oxygen capacity of the water is high, a much larger volume of sewage may be disposed of in this way than if the water is of low oxygen content.

It is estimated that the volume of water, passing Field's Point due to the ebb and flow of the tides is about 5460 million gallons every twenty-four hours, or something over 200 times the daily volume of sewage discharged. Studies in the laboratories of the State Board of Health during the past few years show that approximately 1100 volumes of water of sea water of the average quality of that at Field's Point would be necessary to supply the oxygen required by each volume of sewage discharged. It is evident therefore, that even if the sewage were evenly distributed through the water, so as to utilize the full effect of the dilution, the margin of safety is none too large to prevent the waters of the upper bay from becoming a nuisance.

Another effect of the admixture of sewage with salt water is to cause a precipitation of the suspended and colloidal matters of the sewage, and unless the current of water flowing is sufficient to carry them away, these depositive matters are likely to collect on the bottom and form sludge beds of highly putrescible character which require large amounts of oxygen for their eventual decomposition. Deposits of this nature were particularly in evidence at our sampling stations numbered 1, 2, 3, and 4.

The present pollution of the upper part of Narragansett Bay, however, must not be attributed entirely to the discharge of the Providence sewage at Field's Point. Pawtucket, Central Falls and East Providence, all contribute to this pollution through the discharge of sewage and manufacturing wastes into the Blackstone, Seekonk and Moshassuck Rivers. The shape of the upper end of the bay also has considerable influence upon the degree of pollution. Topographically the Providence River and upper bay down to Conimicut and Nayatt Points are not unlike the neck of a tunnel in which the lower bay forms the bell. If all of the water entering between Conimicut and Nayatt Points with the incoming tides could be discharged into the upper part of the Providence River, the dilution would probably be ample to care for all of the sewage now

being discharged into that river. The incoming and outgoing tides, however, tend to produce a shuttle effect with the result that all of the sewage entering at Field's Point, and all the polluted waters coming down the Providence River do not pass out into the lower bay with the ebb tide but are in part driven back by the incoming tide thereby increasing the pollution of the water and diminishing its capacity to absorb more sewage.

Practical studies of pollution in New York Harbor and elsewhere have shown that it is unsafe to permit the dissolved oxygen content of the water in the summer time to be reduced below about fifty per cent. of that required for saturation. On August 11, when the poorest conditions were found, the water collected from both top and bottom at seven of our sampling stations contained less than this amount of oxygen. On July 29, oxygen values below the safe limit were found in bottom samples collected from Stations 2, 4, 5, and 6, and on August 26, the oxygen was below the safe limit at both top and bottom at stations 1, 2, 3, and 4, and at the bottom at stations 5 and 6.

It is evident from these results that during the past summer the pollution in the greater portion of that part of the bay lying between Field's Point and Conimicut exceeded the safe limit at times. In fact, on August 12, water from the bottom at station 2 was entirely devoid of oxygen and that from the bottom at station 4 contained only about 10% of the amount of oxygen required for saturation. While we may not know definitely how much or how little oxygen is necessary to support shellfish life, it is certain that shellfish could not live at station 2 under these conditions and it is probable that they could not live at station 4.

The oxygen content of the water at top and bottom at each of these stations on different dates is shown in the following table and the lowest oxygen found at each station is plotted on an accompanying chart.

DISSOLVED OXYGEN CONTENT OF WATER IN UPPER BAY.

Station.	Depth of Water—Feet.			Dissolved Oxygen—Per Cent. Saturation.					
	July 29.	Aug. 12.	Aug. 26.	July 29.		Aug. 12.		Aug. 26.	
				Top.	Bottom.	Top.	Bottom.	Top.	Bottom.
1.....	10	6	12	65	61	18	21	33	31
2.....	18	21	15	53	51	19	0	34	32
3.....	10	7	9	66	54	3	27	50	48
4.....	15	10	12	86	42	40	10	37	43
5.....	11	10	8	68	49	38	30	75	50
6.....	9	12	9	62	40	40	34	72	49
7.....	6	9	5	87	72	39	40	100	100
8.....	10	9	9	82	76	59	59	58	51
9.....	12	9	6	100	99	69	59	98	91
10.....	9	14	12	81	73	67	65	100	96

Average Temperature of Water July 29—Top, 76°F. Bottom, 76°F.

Aug. 12—Top, 73°F. Bottom, 71°F.

Aug. 29—Top, 77°F. Bottom, 76°F.

Determinations of free and albuminoid ammonia in samples from nearly all of these various stations also show excessive pollution at times. The numbers of bacteria and *B. coli* were much lower than we would normally expect to find in waters showing such a high degree of pollution by chemical analysis. This is explained, however, when we take into consideration that the larger part of this pollution is due to Providence sewage and that this sewage is disinfected before being discharged.

The results of the various chemical and bacterial analyses of samples from these stations are shown in following tables, and the location of the different stations together with the worst conditions found at each one are plotted on the accompanying chart.

CHEMICAL ANALYSES OF WATER FROM UPPER BAY.

Station.	Time	(Parts per million.)							
		Chlorine.		Free Ammonia.		Albuminoid Ammonia.		Nitrites.	
		Top.	Bottom.	Top.	Bottom.	Top.	Bottom.	Top.	Bottom.
July 29, 1918—Stiff S. E. wind; high tide at 1:20 p. m.									
1	12:30	12500	13200	.61	.62	.24	.19	.000	.000
2	12:40	12600	13600	.13	.66	..	.27	.016	.000
3	1:15	13200	13300	.42	.38	.24	.18	.012	.006
4	1:10	13500	14600	.49	.72	.29	.34	.013	.012
5	11:45	14400	13500	.48	..	.18	..	.000	...
6	9:00	12600	13400	.60	.60	.24	.23	.018	.016
7	11:20	14800	14500	.19	..	.21	.22	.016	.007
8	9:30	14000	14100	.50	.32	.22	.18	.018	.016
9	10:40	14500	14600	.09	..	.11	.18	.000	.000
10	10:05	14000	15200	.43	.23	.18	.23	.010	.008
August 12, 1918—No wind; high tide at 10:45 a. m.									
1	9:50	13500	13800	.72	.68	.18	.16	.028	.025
2	10:00	13500	15500	.75	.67	.20	.41	.030	.020
3	9:40	13700	16200	.94	.63	.24	..	.020	.015
4	10:30	14100	15100	.74	.67	.21	.21	.020	.015
5	11:55	13700	15700	.67	.61	.09	.07	.020	.020
6	10:45	12500	15400	.72	.46	.16	.10	.020	.015
7	11:40	14400	15300	.19	.62	.13	.12	.020	.020
8	11:00	14400	15800	.73	.94	.13	.12	.025	.020
9	11:25	14800	15900	.69	.48	.18	.11	.020	.015
August 29, 1918—Stiff S. W. wind; high tide at noon.									
10	11:15	14900	16600	.55	.42	.22	.09	.020	.015
1	1:30	13200	13300	.70	.48	.20	.22	.000	.000
2	1:45	12500	13800	1.34	.61	.47	.19	.000	.003
3	2:15	13900	13000	.68	.49	.26	.21	.004	.004
4	2:00	13800	14600	.60	.41	.21	.15	.005	.003
5	2:45	13800	15000	.43	.32	.20	.13	.004	.001
6	2:30	15000	13500	.32	.31	.19	.15	.003	.002
7	3:30	15000	14700	.02	.06	.21	.21	.001	.001
8	3:15	147000	14200	.27	.24	.14	.14	.002	.002
9	4:00	15600	15000	.09	.02	.20	.16	.000	.001
10	3:45	15500	15500	.14	.09	.19	.15	.001	.001

RESULTS OF BACTERIAL ANALYSIS OF WATER FROM UPPER BAY.

Station.	Total Bacteria 37° C.		B. Coli Found in	
	Top.	Bottom.	Top.	Bottom.
	July 29, 1918.			
1	2200	300	.01 c.c.	.01 c.c.
2	3100	5100	.001	.01
3	1400	1000	.1	1.0
4	1300	1600	1.0	0.1
5	2400	300	.1	1.0
6	1200	4500	.1	.1
7	300	600	1.0	1.0
8	600	700	1.0	1.0
9	1500	2200	.0	.0
10	2800	800	.1	.1
	August 12, 1918.			
1	2900	9100	.01	.01
2	2600	1600	.01	.01
3	5100	2500	.1	.01
4	2700	2500	.1	.1
5	2900	1900	.1	.1
6	2500	2400	.1	.1
7	800	4900	1.0	.01
8	5200	3400	0.1	0.1
9	2900	5900	1.0	.1
10	1100	2500	.1	.1
	August 26, 1918.			
1	3600	2800	.001	.001
2		5300	....	.001
3	750	575	.1	.01
4	1250	600	.01	.1
5	2300	425	.1	.1
6	1750	200	.1	1.0
7	5600	150	1.0	.0
8	250	125	.0	1.0
9	950	350	.0	.0
10	1000	450	.0	.0

EFFECT OF SEWAGE AND MANUFACTURING WASTES ON SHELLFISH

As the decline of the oyster and other shellfish industries in the State during the past few years has been attributed to the growing

pollution of the waters in which these shellfish are grown, it may not be out of place to discuss the possible effect of pollution on fish life. In considering cause and effect we must divide this pollution into three general classes: that caused by city or household sewage; that caused by those waste liquors from manufacturing or industrial processes which mix intimately with water; and that caused by such industrial wastes as tar, oil, etc., which do not mix with the water.

City sewage may injuriously affect the shellfish industry in two ways. Through contamination with city sewage, shellfish may become unfit for food either by reason of their filthy condition or because they may carry disease producing bacteria. Typhoid fever has been known to be caused by infected oysters and for this reason no oysters are permitted to be taken from leased areas in Rhode Island until they have been proved by bacteriological examination to be free from dangerous pollution. Infection of this kind can be controlled by thorough purification of the sewage or by treatment of that sewage with some chemical which will destroy all disease germs. The sewage from the city of Providence discharged at Field's Point is treated with disinfectant for this reason. Another, and perhaps not less serious effect of excessive pollution by city sewage may be caused by the fact that a large amount of oxygen is needed to oxidize the sewage after it has been diluted with sea water. If the volume of sewage discharged into any body of water is excessive, the amount of oxygen in the water may be reduced to a point where the shellfish cannot obtain from the water the oxygen necessary to enable them to live and propagate.

Manufacturing wastes from certain industries also require large amounts of oxygen for their decomposition, and excessive pollution with such wastes may also reduce the oxygen content of the water below the point necessary to sustain fish life. Other kinds of manufacturing wastes may contain acids, dyes, or other chemicals which in any considerable concentration may either directly kill the shellfish or prevent their propagation, or what is equally serious, may destroy the diatoms and other small living organisms upon which these shellfish must depend for food.

The oils and tars being usually lighter than the water, float upon the surface and are thus less likely to affect the adult oysters and

quahaugs which live in deep water. The floating oil or tar may, however, become so loaded with dust, that it sinks to the bottom and under such conditions the flavor of these deep water shellfish will be impaired even although their life may not be interfered with. The soft clam, growing as it does in the sand and mud above low water line, is very likely to be injured by the oil or tar thrown upon the flats by wind and wave action. In a number of places in Narragansett Bay the clams are so highly flavored with oil or tar that they are unfit for food. It is believed that oil and tar may also destroy the set of oysters. The oyster eggs hatch into small free swimming organisms or spat, which for a short time live at the surface of the water. If the water is covered with a film of oil or tar at this time the spat may be killed, and the set of young oysters either prevented or greatly reduced.

We have yet much to learn about the effect of sewage, manufacturing wastes and oils upon shellfish. Many of the previous statements are based on studies of the life history of other kinds of fish, and while probably true, have not yet been proved in the case of shellfish. We do not know definitely how much or how little oxygen in the water is required to support life in the growing oyster or clam. We do not know just what effect the various chemicals which are found in different manufacturing wastes may have on adult shellfish or upon the eggs and spat of shellfish. We also do not know nearly as much as we should about the effect of these various polluting materials on the small organisms which form the food supply of oysters, clams, etc., although we do know that when the pollution is not too great, the supply of microscopic shellfish food is usually greater in water contaminated with sewage than it is in very pure waters. A large amount of constructive experimental work is necessary in order that we may know definitely what limits of pollution should be established for our various shellfish bearing waters.

Another effect of pollution which may affect shellfish life is that due to the stimulation of excessive growths of *Ulva*, sea-lettuce, or sea-cabbage, as it is variously called. This variety of sea-weed, which is seldom found in clean waters, grows prolifically in waters in which the oxygen content has been reduced by sewage pollution

and so dense is this growth at times that clams and other growing shellfish are effectually destroyed. When it dies, or when broken off by the action of winds or tides ulva decays rapidly, not only producing an offensive nuisance, but robbing the water still further of its oxygen content. In August, 1918, for a number of days, parts of the bay were filled with floating masses of sea-cabbages in process of decomposition. Within the past five years, extensive growths of ulva have developed in the upper bay and a number of formerly productive clam growing grounds have been entirely destroyed.

THE FREE SHELL FISHERIES

The productiveness of the oyster industry in Rhode Island being quite largely confined to leased ground under direct State control is a known quantity, and as this industry returns a considerable income in rentals and taxes, its importance as an asset to the State has been well recognized and measures have been taken from time to time for its further development. Comparatively little attention has been paid, however, to the uncontrolled grounds which are free to the public and little is known about their value or productiveness. A conservative estimate shows that there are between 15,000 and 20,000 acres of uncontrolled ground in Narragansett Bay which are producing food in the form of clams, quahaugs, oysters and mussels and scallops or about twice the area of the leased oyster beds in 1918.

With the assistance of your various deputies, estimates have been made of the catch of these varieties of shellfish in different parts of the State during 1918. From these estimates it is evident that the total yield of these unleased areas was something like 78,000 bushels of clams, quahaugs and oysters, and 3500 gallons of scallops, and that the market value of this crop was almost \$200,000. The estimated yield and value of the different varieties of shellfish from open territory is as follows:

	Quantity	Market Value
Clams	40,000 bushels.....	\$70,000
Quahaugs	25,000 "	100,000
Mussels	8,000 "	4,000
Oysters	5,000 "	5,500
Scollops	3,500 gallons.....	14,000
Total		<u>\$193,000</u>

In any discussion of the value of the shellfisheries to the State as a whole, we should consider the amount of food produced rather than the market value of the product or direct income to the State in the form of rents and taxes. The food value of a gallon of oyster meats and the same amount of clams, quahaugs or mussels is practically the same, although the market value of the oysters and quahaugs is considerably greater than that of the clams or mussels. On the basis of food value, the productiveness of the free fisheries in clams and mussels alone was nearly two and one half times as great as the productiveness of the leased oyster beds during 1918, and the total food value of the shellfish catch from the uncontrolled and uncared for areas was nearly five times that from the controlled oyster bearing areas.

There is no question that with proper care and supervision the productiveness of the land under the waters of Narragansett Bay could be increased enormously. If it is a wise policy for the State to assist in every possible way in developing and increasing the productiveness of our farms on land, why should not this same policy be extended to our under-water farms?

In considering the food value of shellfish products special mention should be made of mussels. There are large beds of mussels in the State which are not worked or are not productive because there is little sale for this kind of shellfish. On the market today mussels are valued at only fifty cents per bushel, thus being the cheapest of all shellfish food. When properly prepared mussels are fully as good food as clams, quahaugs, or oysters, and at a time like the present when prices of other foods are unreasonably high, it would seem that every effort should be made to educate the people to utilize to its fullest extent this valuable source of low-priced food.

In my report for 1917, I recommended that the sanitary control

which for a number of years has been exercised over leased oyster grounds be extended to all free grounds and be made to cover clams and quahaugs as well as oysters. The greatest consumption of clams and quahaugs is during the off season for oysters, when according to all available evidence, sanitary conditions are at their worst. Soft clams, although used in large quantities during the summer, are usually cooked before being eaten and the danger of transmission of disease through their means is thereby largely reduced. A few people eat soft clams from the shell without cooking, however, and little necks or the smaller quahaugs are eaten raw in large quantities. From a health viewpoint, therefore, sanitary control is as essential for clams and quahaugs as it is for oysters, and we certainly should not permit polluted oysters to be marketed from free ground any more than we do from leased ground. Furthermore, it would seem that common decency and cleanliness require that the innocent consumer be safeguarded against the sale of clams and other shellfish which are filthy with sewage, even though we may have every reason to believe that these shellfish would not be dangerous if they were properly cooked.

Respectfully submitted,

STEPHEN DeM. GAGE,
Chemist and Sanitary Engineer.

METROPOLITAN SEWAGE COMMISSION.

In our report of 1918, we very strongly recommended that there be established a Metropolitan Sewage Commission and there was an act introduced creating such a commission, but it was never reported. We are still of the opinion that ultimately it will be found that such a board should be established and that the State, together with the cities and towns, should assume the cost of establishing and maintaining such a commission, but that the supervision of the sewage system should be wholly in the hands of the State. A measure of this kind has been before your Honorable Assembly for a number of years, but it does not seem to meet with very much encouragement. We feel that the longer this matter is continued, the greater will be the cost of establishing such a system and it would seem to us that the sooner such a commission was established and work begun, the easier and better it would be for all parties interested. We recommend that this matter be given thorough consideration.

MEETING OF THE NATIONAL ASSOCIATION OF FISHERIES COMMISSIONERS.

The Tenth Annual Convention was held at Richmond, Virginia, on May 14th and 15th, 1918, at the Hotel Murphy. Rhode Island was represented by Commissioner of Shell Fisheries, Milton Duckworth, and Clerk of the Board, Brayton A. Round.

The convention was called to order by W. McDonald Lee, former President of the Association, who welcomed the convention to Virginia and presented Hon. George Ainslie, Mayor of Richmond. He delivered a very cordial and warm welcome. A response was delivered by Dr. William R. Thompson.

In the afternoon session, the President, Brayton A. Round, delivered the annual address, which was followed by a paper by Dr. E. P. Churchill, Bureau of Fisheries, Washington, D. C. At the close of the presentation of the paper, by Dr. Churchill, John W. Titcomb, Fish Culturist to the Conservation Commission, New York, delivered an address which was followed by general discussion of the preceding paper. After the general discussion, Hon.

H. L. Gibbs of North Carolina presented a paper on "Conservation and Co-operation."

On May 15th, the morning session was opened with a paper by Dr. Irving A. Field, Clark College, Worcester, Mass., on "The Food of the Oyster," which was followed by a discussion, after which a paper was presented on the "Bacteriology of the Oyster" by Lester A. Round, Ph. D., Bureau of Chemistry, in which a view was given of the transmission of disease, cleansing of oysters during hibernation, conditions necessary for proper handling and shipping. This was followed by an address on "Contamination of our Fisheries and Methods to Prevent the Same" by W. Thomas Kenney, Chairman of the Conservation Commission of Maryland. This was followed by a general discussion of the subject, in which the general pollution of State Waters were given much consideration.

The afternoon session of May 15th was opened with a paper by George A. Mott on "How New Jersey Oyster Beds were depleted under the old System of Depending on Nature to furnish a supply and how the same has been developed by Applying Business Principles." At the close of Mr. Mott's paper, a general discussion was made, after which the members of the Association were taken down York River, in the City Launch, Thomas Cunningham. The boat was tendered the Association by the Administrative Board of the Chamber of Commerce.

OYSTERS.

Oysters are the only shellfish cultivated by private enterprises in Rhode Island, although there is no reason why other shellfish should not be cultivated as successfully as oysters. In fact, we feel that quahaugs and clams could be cultivated probably more successfully than oysters, as the enemies to the oysters are much more abundant than to the other shellfish. No doubt if there were some way in which the general proposition of shellfish cultivation could be undertaken, there would be as many engaged in the cultivation of clams, quahaugs and mussels as there are in the cultivation of oysters. While oyster cultivation has been practiced for hundreds and, in fact, thousands of years, other shellfish cultivation

has only recently been taken up and then in other states than Rhode Island. Massachusetts and Maine have enacted laws that allow the cultivation of quahaugs and clams by private enterprises.

The estimated number of oysters taken from public ground during 1918, is about 5,000 bushels, and the average price per bushel is about \$1.10, making a total of \$5,500.

There has been a lack of oyster sets in Rhode Island for the last four or five years. This condition has been very injurious to the growth of the oyster industry, as the oystermen have used up all of their surplus stock, in fact, we have been informed that many of the oystermen are almost without oysters for the ensuing year. This lack of set has occurred not only in Rhode Island, but also in Connecticut. In years past, when the oystermen of Rhode Island were unable to obtain young oysters here, they could readily go to Connecticut and purchase the same, and transplant them profitably, whereas, at this time, there are no young oysters available either in Rhode Island or Connecticut.

This condition has become so acute, that we have taken the matter up with the U. S. Bureau of Fisheries, trying to ascertain why oyster sets are not as prevalent here, as formerly. The U. S. Bureau of Fisheries directed Dr. Mitchell to conduct a series of experiments during the last season, which has been done, and the reports of Dr. Mitchell, and of Dr. Albert C. Hunter of the U. S. Bureau of Chemistry follow:

A REPORT CONCERNING THE FAILURE OF OYSTERS TO PROPAGATE IN NARRAGANSETT BAY.

PHILIP H. MITCHELL.

The work here reported was undertaken with two projects in view: (1) to observe the general conditions of oyster propagation in Narragansett Bay, the spawn of oysters on the beds, the time of emitting the spawn, the presence and distribution of "set" at the end of the season; (2) to attempt artificial propagation of oysters by a modification of the method used in lobster hatching at the Wickford Plant of the Rhode Island Inland Fish Commission.

The results may be briefly summarized as follows: natural propagation of oysters did not occur in the greater part of Narragansett Bay. This is in accord with reports for the past ten years. Spawn found in oysters during the early part of the summer on five beds in localities representative of the main part of Narragansett Bay was sufficiently abundant to indicate nothing unusual in nutritive condition and apparent reproductive power of the oysters. Water samples taken from stations widely dispersed in the main part of the Bay did not show oyster fry until after the first of August, and those few in number. Only small numbers, mostly in early embryonic stages were found during the month following their first appearance. Corresponding to observations on water samples the findings of oyster "sets" observed in September were in the main part of the Bay few in number, restricted in location, and so small as to indicate that they formed late in the season, probably about September 1.

In a few restricted localities which might be regarded as inlets a more noticeable "set" occurred. At the head of Narragansett Bay, in the Providence River, there was a very fair set which in September had attained a size indicating that it had formed early in the summer. In Wickford Harbor on the floats of the lobster hatchery oysters "set" about August 1, and although this was not sufficiently large to be of any practical value the young oysters were thick in some spots. A "set" reported to be of value formed

in an inlet into which the Narrow River empties near the southern end of Narragansett Bay. The first of these three "sets" found in the region of the Providence River is reported by an agent of the R. I. State Commission of Shell Fisheries to have partly died before November 1. Whether or not this was caused by pollution cannot be said, but seems possible. It may, therefore, be concluded that there was practically no successful reproduction of oysters in the bay during the season of 1918. Observations indicate that this was typical of recent years. Shells only a few millimeters in length indicating a light and late "set" formed in 1917, but not surviving the winter, were found in many localities, while in the Providence River and in Wickford Harbor plentiful specimens of year-old oysters were found, but many empty shells of the same size occurred in the Providence River. The second project undertaken gave a negative result. A modification of the method used in hatching lobsters was entirely unsuccessful applied to oysters.

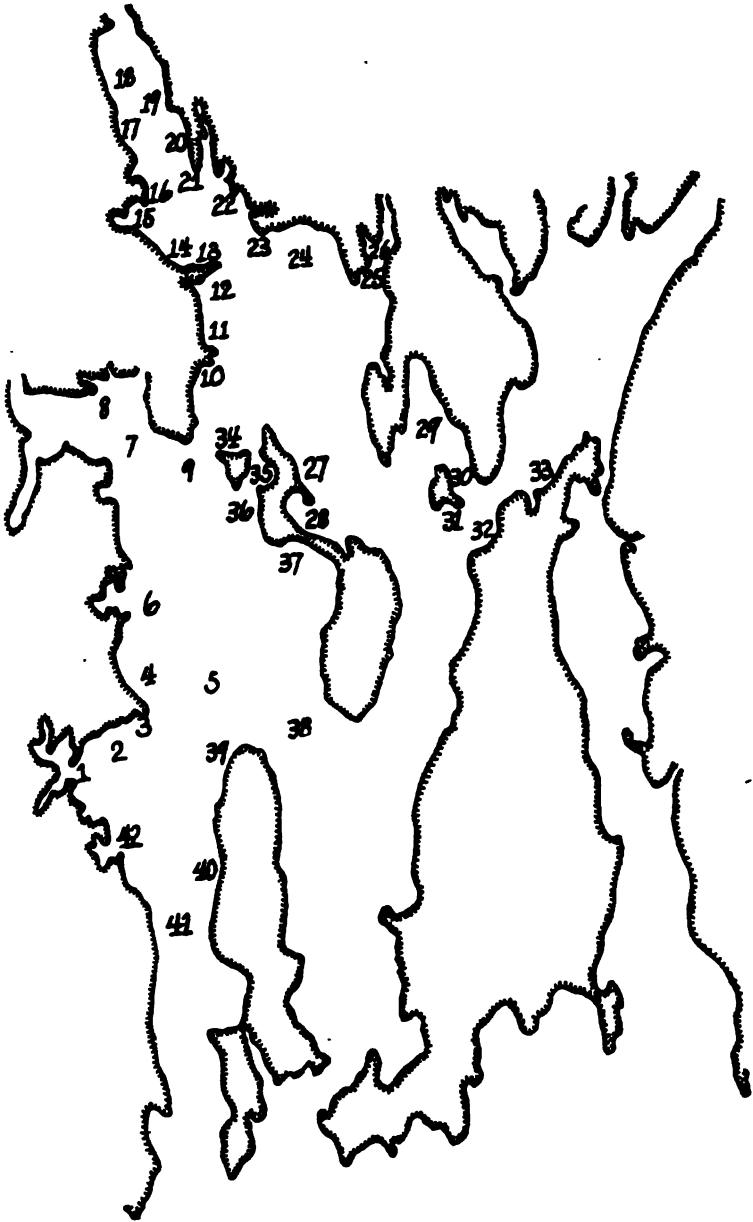
Details of methods and observations follow. To observe the conditions of spawn, samples of oysters were taken by a small dredge from beds at various locations. The eggs and sperm were microscopically examined for form of the egg and motility of the sperm as soon as the samples had been taken in a tub of water to the laboratory. The condition of the eggs in samples taken up to July 26 was, with the exception of one sample from Rocky Point on July 12, comparatively good, with few poorly formed ones. Samples taken later showed an increasing proportion of eggs with disrupted membranes or broken nuclei. Active motility of sperm was observed in every sample. The beds from which oysters were taken for these examinations are located on the accompanying map by the following numbers, 2, 6, 11, 34, and 41. They were regarded as representative of the oyster growing bottoms of the middle and southern portions of the bay. In the table below the relative amount of spawn is represented on a scale of 4. Ten or more individuals were examined in each sample. Those appearing to be full of spawn were graded 4, those nearly full 3, etc. The average for the sample thus stands as a rough estimate of the comparative amount of spawn. A decided decrease occurred about July 27. It might have been expected because of the hot weather which had prevailed

during the week beginning July 21. Samples taken from the same locality, but from different beds, did not show loss of spawn at the same time. The observations point to the general conclusion that oysters in Narragansett Bay produced an abundance of spawn, and while many emitted it during the last week in July there was considerable variation in this respect. No certain relationship between locality and the time of the disappearance of spawn could be traced in these samples.

TABLE OF THE RESULTS OF THE EXAMINATION OF OYSTERS FOR SPAWN.

Date, 1918.	Location.	Number on Map.	Comparative Average of Amount of Spawn Very full=4.
July 8	Patience Island	34	3.2
July 8	Rocky Point	11	2.9
July 8	Allen's Harbor	6	3.6
July 9	Plum Beach	41	3.0
July 9	Wickford Beacon	2	3.2
July 11	Allen's Harbor	6	2.9
July 11	Wickford Beacon	2	3.0
July 12	Patience Island	34	3.1
July 12	Rocky Point	11	2.0
July 15	Plum Beach	41	2.5
July 15	Wickford Beacon	2	3.2
July 20	Wickford Beacon	2	2.4
July 23	Wickford Beacon	2	3.5
July 26	Patience Island	34	2.5
July 27	Plum Beach	41	1.4
July 27	Wickford Beacon	2	2.6
Aug. 1	Patience Island	34	0.6
Aug. 1	Allen's Harbor	6	0.8
Aug. 1	Wickford Beacon	2	1.1
Aug. 9	Wickford Beacon	2	0.4

An effort was made to test the vitality of the eggs and spawn observed in the various oyster samples. The method was to artificially fertilize *in vitro* using technique found to be most favorable by Nelson. The time elapsing between fertilization and good motility was noted, also the proportion of eggs attaining motility and the number of days which elapsed before all or practically all of the embryos died. To make observations sufficiently accurate to be



OUTLINE MAP OF NARRAGANSETT BAY.

Showing Locations at Which Samples of Oysters, Water and Shells were taken. The Numbers Indicating the Locations are Referred to in the Tables and Text.

value, however, consumed too much time to permit of other work, so that the attempt was abandoned. Of sixteen experiments, mostly on eggs of one female for each experiment, but fertilized by mixed sperm, all attained the beginning of motility in $3\frac{1}{2}$ or 4 hours. Abundant motility was observed in from 4 to 5 hours. In no experiment did any embryos survive after the fourth day and nearly all died before the end of the third day. Two experiments were tried to see if paraffine lining of glass would prolong the life of the oyster embryos *in vitro*. No difference between them and the controls in non-paraffined glass could be observed. The observations of Nelson, Brooks and others on the poor resistance of oyster embryos to conditions of artificial fertilization are confirmed.

The occurrence and distribution of oyster fry in various parts of the bay were observed in water samples taken between July 20 and August 24. Surface samples were taken with a bucket and filtered through the finest mesh silk bolting cloth, which retained the embryos of very small size. Deeper samples were obtained with a hose and hand pump and were similarly filtered. From 15 to 20 gallons were filtered for each sample. As the numbers of fry when present did not greatly vary in the different samples and were always few, actual counts were not made. In the following table which records the observations the locations of sampling stations are given by numbers which refer to the accompanying map. No fry were found prior to August 3. This observation is in agreement with the small size of the "sets" observed during September in the main portions of the bay. In the extreme upper part of the bay, where a "set" occurred earlier, as described below, water samples were not taken.

TABLE OF WATER SAMPLES TAKEN FOR FINDING OYSTER FRY.

Date, 1918.	Location Number on Map.	Method of Sampling.	Condition of Tide.	Oyster Fry.
July 20.....	2	Surface.	Rising.	None.
" 24.....	2	Deeper.	Falling.	"
" 24.....	4	"	"	"
" 26.....	2	"	Low.	"
" 26.....	36	Surface.	Rising.	"
" 26.....	34	"	"	"
" 26.....	34	Deeper.	"	"
" 27.....	41	Surface.	Low.	"
" 27.....	41	Deeper.	"	"
" 27.....	2	Surface.	Rising.	"
Aug. 1.....	34	"	"	"
" 1.....	34	Deeper.	"	"
" 1.....	6	"	"	"
" 1.....	6	Surface.	"	"
" 3.....	41	"	High.	"
" 3.....	41	Deeper.	"	Present.
" 6.....	38	Surface.	Falling.	"
" 6.....	38	Deeper.	"	"
" 6.....	37	Surface.	"	"
" 6.....	37	Deeper.	"	"
" 6.....	4	Surface.	Low.	"
" 6.....	4	Deeper.	"	"
" 8.....	11	"	Falling.	None.
" 8.....	10	"	"	"
" 8.....	9	"	"	"
" 9.....	41	"	"	Present.
" 9.....	40	"	"	"
" 9.....	39	"	"	"
" 9.....	2	"	"	"
" 12.....	6	"	Rising.	"
" 12.....	37	"	High.	"
" 12.....	2	"	Falling.	"
" 13.....	41	"	Rising.	None.
" 13.....	40	"	"	"

TABLE OF WATER SAMPLES TAKEN FOR FINDING OYSTER FRY—Concluded.

Date, 1918.	Location Num- ber on Map.	Method of Sampling.	Condition of Tide.	Oyster Fry.
Aug. 13.....	39	"	"	"
" 14.....	8	"	"	"
" 14.....	7	"	"	Present.
" 14.....	6	"	High.	None.
" 15.....	3	"	Rising.	Present.
" 15.....	3	Surface.	"	"
" 15.....	2	Deeper.	"	"
" 15.....	1	"	"	None.
" 17.....	3	"	"	Present.
" 17.....	1	"	"	"
" 17.....	1	Surface.	"	None.
" 19.....	39	Deeper.	Low.	"
" 19.....	39	Deeper.	"	None.
" 19.....	39	Surface.	"	Present.
" 19.....	38	Deeper.	Rising.	"
" 19.....	5	Surface.	"	"
" 19.....	4	"	"	"
" 20.....	41	"	Falling.	None.
" 20.....	40	"	"	Present.
" 20.....	3	"	Low.	"
" 20.....	2	"	Rising.	"
" 24.....	42	"	Falling.	"
" 24.....	1	"	"	None.

The findings of oyster "sets" on shells dredged from various locations during September are shown in the following table. Comparison with the map will show that "sets," valuable in number and age, were found only north of Conimicut Point at number 12 on the map. Most of the beds in this region suitable for "spat" catching had at least some "set." All observations in the main portions of the bay show the conspicuous failure of oyster propagation. Observations in Wickford Harbor are not tabulated. They are described in connection with propagation experiments. A "set" reported at the Narrow River was not investigated.

TABLE SHOWING THE "SET" OF OYSTERS AT VARIOUS LOCATIONS.

Date, 1918.	Location Number on Map.	Total Number Shells Examined.	Number Shells Having Spat.	Total Number Spat Found.	Remarks.
Sept. 5	37	75	39	132	All less than 5 mm. diam.
" 5	36	20	1	1	
" 5	35	42	1	1	
" 5	34	62	5	5	
" 5	9	37	7	8	
" 5	8	47	0	0	
" 5	6	64	2	2	
" 5	4	60	1	1	
" 10	32	42	0	0	
" 10	33	37	12	31	
" 10	31	53	7	12	Practically no "set." All less than 5 mm. diam.
" 10	30	64	16	28	
" 10	29	46	23	48	
" 10	27	83	31	87	
" 10	28	49	8	15	
" 14	41	84	7	9	
" 14	40	82	6	10	

TABLE SHOWING THE "SET" OF OYSTERS AT VARIOUS LOCATIONS—Concluded

Date, 1918.	Location Number on Map.	Total Number Shells Examined.	Number Shells Having Spat.	Total Number Spat Found.
Sept. 14.....	2	45	7	13
" 23.....	17	56	8	11 (a)
" ".....	18	45	45	* (b)
" ".....	19	59	31	66 (c)
" ".....	20	67	48	134 (d)
" ".....	21	46	43	* (d)
" ".....	22	62	2	2
" ".....	23	42	2	3
" ".....	24	62	1.	1 (e)
" ".....	25	63	0	0
" ".....	26	43	0	0
" ".....	12	62	3	4
" ".....	13	53	50	* (f)
" ".....	14	37	24	76 (g)
" ".....	15	55	37	66 (g)
" ".....	16	33	14	34 (g)

* Too many to count.

(a) Muddy ground, poor for spat collection.

(b) Good "set." Many of large size.

(c) Light "set," but many of large size.

(d) Good "set." Many of large size.

(e) Practically no "set." All very small.

(f) Good "set." Average 20 mm. diam.

(g) Light "set." No large ones. Mostly less than 20mm. diam.

In the hope that aeration and movement of the water together with its frequent renewal would facilitate an artificial propagation of oysters, a modification of the method used by the Rhode Island Commission of Inland Fisheries for propagation of lobsters at Wickford was tried. Large hatching boxes, made of match boards, 10 feet square and 4½ feet deep, were provided with two sand filters, 2 feet square, in the floors. There were no openings in the sides. The interior was entirely painted with melted paraffin. Two such boxes were prepared. They were submerged to a depth of four feet while water slowly filtered in and were held in position by fastening them to the framework of the main raft of the floating hatchery. Water was continuously poured in from above.

by a chain of paraffin coated metal buckets belted to a pulley moved by the main shafting of the lobster hatching plant. About two gallons of water per minute were delivered to each car. The water entering one car was passed through a sand filter. At the point where the tanks were fastened the water had a mean low tide depth of about 10 feet, with an average tidal rise of 4.1 feet. The temperature and specific gravity of the water in each tank and just outside the tanks were noted frequently. The difference between the temperatures inside and outside the tank never varied by more than 2° F. Specific gravity was the same inside and outside, except as slightly varied by temperature differences. The greatest range of temperatures in the tanks was from 70.7° F. to 79° F. On July 23, oysters dredged from beds near Wickford, about two miles from the hatchery, were brought in as quickly as possible by motor boat. To avoid any unnecessary exposure to adverse condition they were transported in large tubs of sea water protected from the sun. Within a half hour from the time they were dredged sixty oysters selected for large size and good shape were placed in each hatching tank. Ten oysters from the same dredging were opened as a sample and showed plenty of spawn of good appearance. Graded by the scheme explained above they were valued at 3.5 on a scale of 4. On July 27, twenty additional oysters, obtained and selected in the same manner, were put in each tank. These oysters were not as full of spawn as the ones taken on July 23. They were graded at 2.6. On July 28, oysters which had been in the tanks five days were removed. Seven were taken from each tank and opened to estimate the amount of spawn and to examine the eggs and sperm. For fullness of spawn they were graded at 1.9. Nothing of note was observed in microscopic examination. A similar sample on July 30 graded 1.0 and one taken August 7 graded 0.5. These observations indicate a gradual but practically complete disappearance of spawn from the oysters within two weeks after planting in the tanks. Artificial fertilization was carried out with spawn removed from oysters taken out of the tanks on July 28 and July 30. Five hours after fertilization the free swimming embryos were separated from infertile and dead eggs by decantation and 400 c. c. of a suspension containing approximately 5,000,000, embryos, estimated

from Rafter cell counts, were poured into the hatching tanks each of the dates mentioned. The water in the tanks was examined for oyster fry by straining 15 gallons through bolting cloth and making microscopic examination of the sediment. The examinations were made on July 29, August 4, 5, and 11. On July 29 and August 11, small embryos with measurements correct for oysters but too small, according to Stafford, to be distinguished with certainty from clam embryos were found. On the other two occasions no embryos could be seen. As spat catchers, there were introduced into the hatching cars: (1) unglazed flower pots suspended one foot below the surface of the water and three feet down and resting on the bottom, (2) sun dried, clean oyster shells on the bottom, (3) bunches of dried twigs anchored to the bottom by stones by which they were tied. One of each type of collector was put into each tank at intervals of one week, beginning 20 days after the first planting of oysters. The tank receiving water thru a sand filter was found ten days after starting the experiment to contain noticeably fewer algae than the one receiving unfiltered water. Copepods, however, were about equally abundant in both tanks. Their escape, either escaped the filter or were splashed into the tank. An experiment was made to see if copepods devoured oyster embryos. One cubic centimeter of a suspension of oyster embryos five hours after artificial fertilization was put into each of two watch glasses. One cubic centimeter of sediment rich in various sized copepods freshly strained from seawater was then added to one glass. Observations with binoculars were made several times during the ensuing 24 hours. At no time were copepods seen to molest the embryos. When the experiment was discarded because both embryos and copepods were beginning to stop swimming there were apparently many embryos in the glass containing the copepods as in the one without. This experiment was repeated with the same result. Under such artificial conditions copepods may not behave as they do in the open but the observation indicates no great avidity on their part for destroying oyster embryos.

On September 14 the hatching experiment was terminated and the tanks prepared for landing. No "set" of oysters was found on any of the spat collectors or on the insides of the tanks. On

outside, however, a number of well formed oysters, many of them over 20 m. m. in diameter were found. Indeed nearly all the hatching tanks which had been used for lobster propagation between July 15 and September 1, bore more or less oyster set. A board taken from a representative tank had 102 oysters varying in size from 9 to 27 m. m. diameter on an area of 240 square inches. Shells taken from the bottom of Wickford harbor near the hatchery showed no set but some were found near the mouth of a creek entering the harbor. The muddy character of the harbor bottom probably explains the failure of a set there. It is obvious that conditions in the water at Wickford are favorable to oyster propagation and it is very difficult to see how the failure in the hatching tanks was due to anything which happened to the oysters in the embryonic stage. The question at once arises: were the eggs and sperm which the oysters presumably gave off in the tanks and which were used for artificial fertilization deficient in vitality and therefore foredoomed even before development began to die in the embryonic period? The spawn of natural i. e. uncultivated oysters at the mouths of creeks entering Wickford Harbor evidently produced spawn able to come to maturity, yet oysters seemingly in equally good condition, transplanted from beds just outside Wickford Harbor to the hatching tanks produced no spawn of good vitality. Nelson has emphasized the tendency of oysters when transplanted or kept under unnatural conditions to yield a spawn of poor vitality. The extent to which cultivation of oysters in recent years may have disturbed the reproductive functioning seems worthy of investigation. It is notable that the best propagation occurred at the head of Narragansett Bay in a region condemned by the Bureau of Chemistry as ground for cultivation of marketing oysters. Transplantations and operations for removal of star fish are not as extensively practiced there as in the main parts of Narragansett Bay. The condition of eggs found in many specimens of ripe oysters showed deterioration. Broken membranes, disrupted nuclei, and abnormal texture of cytoplasm were frequently observed. Remembering the constant and rather high oxygen utilization of eggs in general one cannot help but wonder what effect a diminished oxygen supply might exert on developing oyster eggs. Oxygen sup-

ply is cut off from a closed oyster. Closures of adults occur after an artificial disturbance and last for more prolonged periods than they would under natural conditions. Might this not be a *modus operandi* by which disturbances of oysters, transplanting, mopping etc., could produce lowered vitality of oyster eggs? How near to spawning time such a disturbance would have to be in order to produce deteriorating effect it is difficult to conjecture. It is certainly true that eggs are in developmental stages within the gonad during months rather than merely weeks. It is perfectly conceivable that disturbances during the fall and winter might alter the trend of developmental changes. It seems likely, however, that disturbances nearer to spawning time would be more deleterious. There is evidence of its effect on ejection of spawn. Experience of oyster growers shows that a bed mopped for star fish in early summer yields oysters soon afterwards empty of spawn while the oysters on adjacent beds are still well filled with spawn.

Although in general there was less cultivation of oysters in the condemned areas at the mouth of the Providence River than in the main part of the bay, it is nevertheless true that injuries from leases of oyster beds and from agents of the Rhode Island Shell Fish Commission show that certain beds in the former region were cultivated while certain areas bearing oysters in the main part of the bay had not been disturbed during the past year. The proposition here suggested, then, cannot be looked upon as proven. It is only offered as a suggestion for further investigation rather than as a conclusion. At any rate it appears to the writer that future research concerning the failure of oysters to propagate satisfactorily should include not only studies of what happens during the free swimming embryonic stages but also a study of conditions affecting development of spawn in the adult and especially development of the eggs. That the quantity and quality of food supply might so effect nutritive conditions as to alter the vitality of oyster eggs is conceivable. It might well be investigated. Possible relations of pollution to this matter are discussed below.

It is obvious to all interested in oyster culture that many factors may be concerned in the limitation of oyster propagation. Temperature changes in the water have been considered both by i

investigators and practical oystermen. Warming of the water undoubtedly hastens the process. In shallower areas the water warms up earlier in the season. This is doubtless the explanation of the earlier "set" at the Providence River as noted above. The presence of an admixture of fresh water lowering specific gravity is regarded by many as an important factor. It is to be noted that the three localities yielding a "set" as described above were all at or near the mouths of fresh water streams. A third factor is the topography of land and water areas in so far as it affects the movements of tidal and other currents. This may or may not affect the spawning and embryonic life but must affect the "setting." Its influence appears clearly in examination of the map showing location of "sets." The best ones were at numbers 13, 14, 15, 16, 18, 19, 20, and 21. At 17 the bottom is too muddy for successful spat catching. At 22 and 23 the waters are more open to the bay than are the other stations west and north of them because Conimicut Point and sand bars beyond it cut off the areas marked 13 and 14 and produce a considerable tide eddy. The "set", therefore, occurred in a comparatively land locked area furnishing opportunity for warming of the water and confinement of fry. The three factors, temperature, specific gravity, and topography are doubtless of importance. That they are the only and limiting factors is questionable because if so, why should the "set" of oysters in all portions of Narragansett Bay have been formerly very successful as many can testify. It seems as though some factor not so constantly operative as these three and particularly some factor which has appeared more conspicuously in recent years must be of importance.

That pollution is the hitherto unrecognized factor is not clearly shown by these observations. It is in the purest waters that propagation fails while more polluted regions bear the "set." The Providence River receives both domestic and trade wastes emptied into it and its tributaries in large amounts and varied character. The harbor water at Wickford is far from pure, receiving as it does domestic wastes and effluents from muddy and marshy inlets. Spawning in polluted waters and lack of "set" in pure waters has been observed during several seasons by local oystermen. So that

whatever the effect of pollution may be it did not, so far as the observations show, prevent the development of spawn produced north of Conimicut Point early in the summer. In one respect however, these observations might be taken to indicate an important bearing of pollution upon reproduction. It may cause depletion of adult, spawn-producing oysters in those waters most favorable to the emission of spawn early in the summer. It is reported by persons familiar with the region in former years that natural oysters were once fairly abundant in the Seekonk River and the upper part of the Providence River. That none are to be found there now seems to be the general testimony. That pollution caused their disappearance is, of course, not proven but the possibility should not be overlooked in attacking the problem of oyster propagation. One can readily imagine that if the Seekonk River and the upper part of the Providence River were well populated with good spawn-producing oysters the June spawn production might be enough to yield a satisfactory set over the larger part of the entire Bay.

Another factor which has received much attention and is considered very important in modern oyster culture is condition of the spat catching material especially its freedom from sediment and slime. That this is important to obtain the optimum amount of "set" is doubtless true but that the failure of successful oyster propagation as so frequently and widely reported in recent years is due to that is obviously an untenable view. Abundant planting of clean oyster shells at various periods in the spatting season has repeatedly proved to be of no avail. This is unquestionably true in the Narragansett Bay region. In the observations on "sets" herein reported it was repeatedly seen that old, crumbling, shells bore spat and in the "sets" observed at the Wickford hatchery boards and piles by no means clean had collected "set." In connection it was interesting to note that portions of the hatchery plant covered with copper paint served in many cases for the attainment of healthy, good sized spat.

SUMMARY.

1. Oysters failed to propagate during 1918 in the main part of Narragansett Bay.

2. Some more or less satisfactory reproduction took place in certain inlets of the bay.
3. In the main part of the bay oyster fry were not found in the water in significant numbers.
4. Attempts at artificial propagation of oysters failed.
5. That the condition of spawn, especially of the eggs before emission from the adult may be adversely influenced by cultivation or by any circumstance which might interfere with proper oxidation or other metabolic changes is suggested. Some evidence that such influence constitutes a limiting factor is given.
6. Temperature, specific gravity and topography as factors affecting propagation are discussed. That they are always limiting factors is questioned.
7. The relation of pollution to oyster propagation is considered. That pollution interfered with satisfactory propagation by destroying free swimming fry is not indicated by these observations. That it may interfere with satisfactory spawn production is suggested.
8. The condition of spat catching material has not, in all probability, been the factor limiting propagation in Narragansett Bay.

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REPORT OF THE CLEANSING OF POLLUTED OYSTERS IN WICKFORD HARBOR.

ALBERT C. HUNTER

In undertaking this investigation in Wickford during the summer of 1918 the object was to determine the feasibility of cleansing excessively polluted oysters of the Providence River by submerging them for known lengths of time in the clean waters of Wickford Harbor. The large volume of sewage and trade waste which is allowed to flow into the Providence River and upper Narragansett Bay has so polluted these waters that the harvesting of oysters is entirely prohibited from some beds while from others oysters may only be harvested during the hibernating season of the oyster. Similar conditions exist in many harbors and bays along the Atlantic Coast, especially in New Haven Harbor and in Jamaica Bay. This condition of affairs has resulted in a great financial loss both to the individual and to the State, as well as in depriving the public at large of valuable growing ground for one of the best of our shell foods. In order to find some way of cleansing oysters grown on these polluted grounds so as to make them fit for food at any time of the year, these experiments were carried on at Wickford.

Wickford, R. I., was selected as a location for a field laboratory for several reasons. A large supply of excessively polluted oysters was available in the upper bay while the water in and around Wickford Harbor was known to be clean and reasonably free from pollution. The Commissioners of Inland Fisheries and of Shell Fisheries of Rhode Island allowed the use of the lobster hatchery as a laboratory and offered the services of Capt. Leman Wards during the summer.

A preliminary survey of the waters of Wickford Harbor from a fresh water brook at the Post Road to the beacon at the mouth of the harbor showed the locations which were free from pollution. Three such locations selected for the experiment were along the south side of the channel near the Frank T. Lane oyster house, the cove between Cornelius Island and Sanga Point and between Sanga Point and the lighthouse.

Through the assistance of Capt. William B. Welden, two lots of oysters were obtained from the Providence River from grounds known to be excessively polluted. These oysters were analyzed and found to score 5,000. They were divided into three lots and each lot placed in a large wooden crate and submerged at the stations named above. At intervals samples were taken from these crates and analyzed. Results of this experiment are given in Table I.

TABLE I.

Sam- ple.	Station.	Tide.	Tempera- ture.	Length of Time.	Score.	Total Count.
C	Conimicut.	.....	.....	.....	5,000	10,000
D	Nayatt.	.....	.....	.....	5,000	25,000
CI	9	Low.	73° F.	6 hrs.	5	*
CA	16	Low.	75° F.	6 hrs.	23	*
DI	6	Low.	75° F.	6 hrs.	410	*
C2	9	Half flood.	75° F.	24 hrs.	220	3,500
Cb	16	Half flood.	75° F.	24 hrs.	410	3,200
D2	6	Half flood.	75° F.	24 hrs.	230	3,000
C3	9	Half ebb.	70° F.	30 hrs.	230	940
Cc	16	Half ebb.	70° F.	30 hrs.	320	1,100
D3	6	Half ebb.	70° F.	30 hrs.	500	1,620
C4	9	4 hrs. ebb.	76° F.	78 hrs.	140	2,000
Cd	16	4 hrs. ebb.	76° F.	78 hrs.	230	870
D4	6	4 hrs. ebb.	76° F.	78 hrs.	50	320
C5	9	4 hrs. flood.	75° F.	98 hrs.	140	1,600
Ce	16	4 hrs. flood.	75° F.	98 hrs.	140	1,000
D5	6	4 hrs. flood.	75° F.	98 hrs.	50	300
C6	9	Half flood.	75° F.	120 hrs.	14	1,000
Cf	16	Half flood.	75° F.	120 hrs.	41	320
D6	6	Half flood.	75° F.	120 hrs.	32	350

*Spreaders on plates.

While this experiment was going on oysters were obtained from the Beacon Oyster Co. and kept suspended beneath the wharf of that company for five days. The water under this wharf is not clean and at the end of five days the oysters were sufficiently polluted for the experiment. Samples of these oysters were found to score

2,300 and 5,000. Only two crates were submerged in this experiment, the location on the south side of the channel near the oyster house being abandoned. Results are given in Table II.

TABLE II.

Sam- ple.	Station.	Tide.	Tempera- ture.	Length of Time.	Score.	Total Count.
E	Beneath wharf.	Half flood.	75° F.	5 days.	2,300	2,000
F	Beneath wharf.	Half flood.	75° F.	7 days.	5,000	5,700
E1	16	Low.	74° F.	24 hrs.	140	1,170
E2	16	Low.	75° F.	48 hrs.	140	*
E3	16	High.	75° F.	54 hrs.	320	*
E4	16	Low.	70° F.	72 hrs.	320	*
E5	16	Low.	70° F.	120 hrs.	320	*
F1	9	Low.	70° F.	120 hrs.	140	*
E6	16	Half ebb.	72° F.	114 hrs.	3	*
F2	9	Half ebb.	72° F.	144 hrs.	5	*

*Spreaders on plates.

In the third experiment oysters from beneath the wharf and from the Providence River were used and scored 4,100 and 2,300. Results of this experiment are given in Table III.

TABLE III.

Sam- ple.	Station.	Tide.	Tempera- ture.	Length of Time.	Score.	Total Count.
G	Lobster cars.	.....	.....	.....	4,100	8,200
H	Beneath wharf.	.....	.....	.....	2,300	5,000
G1	9	2 hrs. ebb.	76° F.	24 hrs.	410	8,000
H1	16	2 hrs. ebb.	76° F.	24 hrs.	140	4,500
G2	9	1 hr. ebb.	71° F.	48 hrs.	140	6,000
H2	16	1 hr. ebb.	71° F.	48 hrs.	140	4,000
G3	9	High.	72° F.	72 hrs.	50	1,500
H3	16	High.	72° F.	72 hrs.	50	1,000
G4	9	5 hrs. flood.	70° F.	96 hrs.	14	350
H4	16	5 hrs. flood.	70° F.	96 hrs.	23	420

From these experiments it is concluded that it is necessary to leave oysters, as excessively polluted as those from the Providence River, in clean water from 96 to 144 hours before they will score below 50. Oysters, which are not so excessively polluted originally, will, no doubt, cleanse themselves in less time. No hard and fast rule can be laid down at this time, but further experiments along this line may show the length of time necessary to cleanse oysters of varying degrees of pollution by transplanting them into clean seawater or at least to clean water of the same density as that in which they are grown. If the cost of such procedure is not prohibitive, this may offer a solution of the problem of cleansing polluted oysters.

Considerable work is being done along the line of purifying oysters by means of calcium hypochlorite and ultra violet light but such experiments have not been, on the whole, successful. If the excessively polluted oyster will cleanse itself in a reasonable length of time on being transferred to pure water, as the experiments described here indicate, then the polluted oyster ground of upper Narragansett Bay may well be utilized during the whole oyster season with profit both to the individual and to the State.

QUAHAUGS

Again we call your attention to the fact that we believe that quahaugs may be as profitably cultivated as oysters, in fact, quahaug cultivation has some advantages over oyster cultivation, as there are much fewer enemies of the quahaugs than of the oyster. The only objections of which we have heard in regard to quahaug cultivation, are that quahaugs are apt to settle in soft ground, and it is pretty difficult to obtain them. But, notwithstanding this fact, we believe that it can be successfully conducted.

To illustrate, what may be accomplished in quahaug culture, will say, that on May 1, 1918, we had 242 bushels of small quahaugs taken from a piece of ground, that we had under observation, at Sand Wharf, in Cowesett Bay and transplanted them on a piece of ground at Buttonwoods, which was closed, to the use of the public, in order that they might not be disturbed and be given an opportunity to grow. We are quite sure that this experiment has been

successful. Our deputies have brought samples of the quahaugs to the office, which have shown a most remarkable growth. It is conservatively estimated that the quahaugs planted would now make at least 1,000 bushels, or about four-fold. While this might seem to be unreasonable, it is a fact. In Massachusetts a series of experiments were conducted by the Fisheries Commission, which demonstrated that quahaugs certainly would add four-fold, and under favorable conditions a much greater number might be obtained.

We are contemplating conducting a more extended series of experiments on quahaug culture during the season of 1919.

The estimated number of quahaugs which were taken from the public ground of Rhode Island during 1918, was 25,000 bushels, valued at about \$4.00 per bushel, making a total value of \$100,000.

CLAMS

Soft-shelled clams, so-called, are one of the specie of shellfish which have no protection under the laws of Rhode Island, excepting in those places where we have closed to the use of the public, in order to demonstrate the fact that clams may be grown with little effort.

We see no reasons why clams should not be as successfully cultivated in Rhode Island as they have been in Massachusetts and Maine. We are informed that clam cultivation in Maine has been successfully conducted, although the areas under cultivation are considerably restricted, as the law of Maine allows only one-quarter of the available ground to be utilized for private cultivation. There was considerable opposition to the leasing of clam flats in Maine by the fishermen, but it was thought that if one-quarter of the available acreage was leased, the clams grown on this one-quarter would propagate and there would be as many or more grown on the other three-quarters.

At the time of the passage of the act, all of the clam-men were opposed to this proposition, but the clam-men of Maine have found that the clams produced on the remaining three-quarters of ground equals what was formerly produced on all the public ground.

That being the fact, we see no reasons why Rhode Island might not profit by leasing one-quarter of the available clam flats without any material injury to the fishermen, and to the material benefit of the citizens of the State. There is no doubt whatever but what clams grown upon private ground can be produced and sold at reasonable prices.

The estimated number of clams taken from public ground during 1918, was 40,000 bushels, valued at about \$1.75 per bushel or a total of \$70,000.

SCOLLOPS

The scallop season during the past year has not materially changed from the previous season. The area for scallop culture is considerably restricted although it was more extensive last year, than previously, although the scallops were not as thick in some sections as formerly, but we are looking forward to an increased catch in the near future.

The estimated catch of scallops for 1918 was about 3500 gallons, at an average price of \$4.00 per gallon, making a total of \$14,000. We would say that in regard to the price of \$4.00 per gallon, that is probably in excess of what the fishermen obtain for their scallops, but that is the wholesale price of scallops.

MUSSELS

Last year, we made an extended report to your Honorable Body relative to mussel beds in Rhode Island, which was accompanied by a report from Dr. Irving W. Field of the U. S. Bureau of Fisheries, who had studied the problems during the season of 1917.

We again call your attention to the fact that there are extensive mussel beds in Rhode Island that might be utilized for the growing of mussels, and we particularly desire to call your attention to the fact that the U. S. Bureau of Fisheries is conducting a campaign of education, endeavoring to secure a market for mussels. The only use which has ever been made of mussels in Rhode Island has been for fish bait, and there is no law preventing people digging mussels and using them for fish bait, although it would seem to us

that a much better use of mussels might be made. The estimated number of mussels taken from public ground in 1918 was 8,000 bushels valued at about \$4,000.

Quoting from the report of Dr. Field, we wish to particularly call your attention to the fact that "Narragansett Bay presents one of the richest areas for cultivation on the North Atlantic Coast. Protected from the entrance of heavy seas, shallow enough to permit cultivation in nearly all of its parts and to allow the water to be warmed quickly by the sun's rays, rich in its content of plankton organism and detritus and with most of the bottom hard, sticky or muddy, it is an ideal region for the cultivation of oysters, clams and mussels. Practically every part of the bay is adapted for the growth of one or more kinds of these shellfish, cultivation of which will yield far greater food returns with less expense of worry, time and energy than can be obtained from any of the agricultural products." **AS A SOURCE OF FOOD PRODUCTION AND WEALTH, THEREFORE, THE BAY IS WORTH FAR MORE TO THE STATE OF RHODE ISLAND THAN AN EQUAL AREA OF AGRICULTURAL TERRITORY.**

SUMMARY AND RECOMMENDATIONS

1. Narragansett Bay is an exceptionally rich territory for the production of shellfish.
2. The area of natural mussel beds alone was found to aggregate 1,100 acres with an estimated yield of 1,452,000 bushels.
3. More than 2,000 acres of mussel beds have been destroyed to make room for oysters, but hardly more than one-half of these grounds have actually been utilized.
4. In view of the fact that the food value of sea mussels is equal to that of any other shellfish, it is recommended that steps be taken to prevent, hereafter, the unnecessary and wasteful destruction of the mussel beds in Narragansett Bay, and that wide publicity be given to the qualities of the mussel as a food product by means of special articles in newspapers and magazines, lectures and demonstrations in churches, schools and Y. M. C. A. buildings and by co-operating with proprietors of markets, hotels and restaurants, in

bringing them prominently before the public. It is believed that such a campaign of education if properly conducted will result in building up a new and profitable industry in the State of Rhode Island and add considerably to the food resources of the nation."

We particularly desire to call your attention to this quotation as being made by one of the foremost shellfish experts in the country.

STARFISH

We have repeatedly called your attention to the destructiveness of the starfish and we again feel compelled to call your attention to the fact that starfish are a menace to the oyster fisheries of Rhode Island, particularly to the lower bay. With the upper bay being destroyed by pollution and the lower bay being over-run by starfish, the oystermen are up against a pretty severe problem and they have repeatedly called your attention to this condition and we have repeatedly brought this condition to your attention in our report, and have gone before you with recommendations for funds to help exterminate the starfish.

The oystermen take care of their own grounds without any assistance from the State, in fact, do not ask for or expect to receive any assistance from the State in caring for their own areas, but they do feel that the State is not using them fairly when it will not attempt to remove the stars from the public areas.

Starfish not only destroy oysters, but they destroy enormous quantities of young clams. This can be and has been demonstrated a number of times, because of the fact that the young stars are formed and go into the seaweed for protection from their enemies, from two or three weeks before the young clam, so that when the clam arrives and attempts to protect itself by the same means, it finds the young star there ready to destroy them in large quantities. It has been demonstrated that one star, in six days, devours over fifty clams. Therefore it is almost impossible to figure or even estimate the number of clams that are being destroyed by the young stars every season. We believe that stars ought to be removed from the waters of the State, and they ought to be used as fertilizer. We have taken this matter under consideration and have secured con-

siderable data relative to the same, and we feel that there could be a fertilizing plant established under the supervision of the Board of Agriculture, and these stars could be utilized to exceedingly good advantage, not only to the aquaculturist, but to the agriculturist.

POLLUTION

There have been several complaints made to the Board relative to the pollution of Narragansett Bay. One of them was made by the Edgewood Yacht Club on October 3, 1918, and another was made by the Rhode Island Yacht Club on October 15th, 1918, also a complaint was made on October 26, 1918, by Henry B. Barstow of East Providence and John P. Donahue of Providence relative to the discharge of acids from the Nonnabo Chemical Co. These complaints have been investigated and there is no doubt whatever but what the complaints have just cause. But we have been unable to give relief as it is almost impossible for us to secure sufficient evidence to bring suits under any existing laws, although the Attorney General has indictments against four companies under the Common Law, now pending in the Superior Court. We certainly trust that these indictments will be successful.

NEW GROUND

During 1918, we leased 86.6 acres at \$10 per acre, 1.6 acres at \$5 per acre and 12.5 acres at \$1 per acre, making a total of 100.7 acres leased.

GROUND CANCELLED

We regret very much that we are compelled to again call your attention to the fact that many acres of oyster ground were cancelled during the past season. We are compelled to report that during the year 1918, there were cancelled 454.1 acres at \$10, and 1105.6 acres at \$5, making a total of 1559.7 acres cancelled.

Perhaps the best way to call your attention to the decrease of the oyster industry in Rhode Island is to make a comparison of the conditions on December 31, 1912, and on December 31, 1918, a period of six years. On December 31, 1912, the number of acres of

ground leased as shown by the records in the Office of the Commissioners of Shell Fisheries was 5884 acres at \$10 per acre and 15,352.5 acres at \$5 per acre, making a total of 21,236.5 acres. The rentals of this ground amounted to \$135,602.50.

On December 31, 1918, the number of acres leased as shown by the records in the Office of the Commissioners of Shell Fisheries were 3997.4 acres at \$10 per acre, 5000.9 acres at \$5 per acre and 252.5 acres at \$1 per acre, making a total of 9250.8 acres. The rentals of this ground amounted to \$65,226.95.

This shows a net decrease in acreage on the \$10 ground of 1886.6 acres or 32%. On the \$5 ground it shows a decrease in acreage of 10,351.6 acres or 67.42%. It also shows a decrease on the total acreage in Rhode Island of 11,985.7 acres or 56.43%. The decrease in rentals as shown by the above figures is \$70,375.55 or 56.32%.

LEASED GROUND

The number of acres of ground that are under lease, as recorded in the books of the Commissioners of Shell Fisheries, on December 31, 1918, is as follows: 3,997.4 acres at \$10 per acre, 5000.9 acres at \$5 per acre and 252.5 acres at \$1 per acre, making a total of 9,250.8 acres. Total rental amounts to \$65,226.95.

Financial Statement of the Oyster Industry from January 1, 1918, to December 31, 1918.

RECEIPTS.

Received from rent of oyster ground.....	\$74,999 20
Received from interest	1,070 77
Received from fees (Transfer and Cancellation).....	23 00
Received from fishermen's licenses	576 00
Received from scollop licenses	340 00
	<hr/>
	\$77,008 97

DISBURSEMENTS ALLOWED BY COMMISSIONERS OF SHELL FISHERIES.

Salaries Provided by Law.

Salaries of Commissioners	\$2,500 00
Salary of Clerk	1,800 00
For Clerical Assistance	600 00
	<hr/>
	\$4,900 00
Appropriation allowed for expenses of department.....	\$12,000 00
Salaries of deputies	\$5,249 02
Engineering and surveying	1,516 00
Stenographer	720 00
Sanitary work	983 96
Laboratory Supplies	107 54
Inspection of Oyster houses	500 00
Licensed fishermen's boat numbers	102 30
Advertising cancellations	72 75
Printing	83 45
Traveling expenses of committee	442 58
Postage stamps and office supplies	259 45
1918 Maps	71 66
Toll calls	5 52
Operating and supplies for boat	796 07
Use of wharf shop	27 50
Planting shell fish	358 75
Skiffs	85 19
Witness fees	17 15
Quahaug rakes	15 00
Engraving resolutions	20 00
Filing cabinet	124 20
	<hr/>
	\$11,558 09
Unexpended balance	441 91
	<hr/>
	\$12,000 00

Receipts for the year 1918.....	\$77,008 97
Salaries provided by law	\$4,900 00
Expenses of department	11,558 09
	<hr/>
	16,305 23
	<hr/>
Net revenue	\$60,703 74

ALPHABETICAL LIST

*Of names of lessees of oyster ground with the number of acres held by each,
and the amount of rental received by the State for same.*

NAME.	Town.	Acres, \$10.00	Acres, \$5.00	Total Acres.	Amount.
American Oyster Corp.....	Providence	199.3	146.6	345.9	\$2,726 00
Baker, Nicholas	North Kingstown...	12.1	94.3	105.4	592.50
Baker, Joseph W.	North Kingstown...	12.3	6.1	18.4	153.50
Barnes, Edwin G.	Westerly	1.0	.....	1.0	10.00
Barnes, Jeremiah I.	Westerly	1.5	.....	1.5	15.00
Beacon Oyster Co.....	Wickford	132.4	78.6	211.0	1,717.00
Blount, Eddie B.	Warren	29.8	16.4	46.2	380.00
Bowden, John F.....	Barrington	1.1	.....	1.1	11.00
Bourne, John E.....	Providence	76.1	55.1	131.2	1,036.50
Buckingham, Erastus M.....	Warren	67.1	3.9	71.0	690.50
Cape Ann Fish Co.....	Providence	27.8	4.4	32.2	300.00
Coggeshall, Josiah	Warren . . . . .	.1	7.9	8.0	40.50
Connolly, Thomas H.....	Warren	367.5	149.7	517.2	4,423.50
Cornell, Sidney	Warwick	5.8	.....	5.8	58.00
Cottrell, George F.....	Tiverton	85.8	126.9	212.7	1,492.50
Chase, Melvin C.....	Bristol	22.0	33.9	55.9	389.50
Clark & Arnold.....	Bristol	2.7	.....	2.7	27.00
Coffin, Henry.....	East Providence.....	2.7	.....	2.7	27.00
Daniels, William W.....	Barrington	138.9	6.1	145.0	1,419.50
Dodge, David R.	Warwick	31.0	.....	31.0	310.00
Dodge, John W.	Barrington	19.2	.....	19.2	192.00
Dodge, Sarah M.	Warwick	5.7	.....	5.7	57.00
East Providence Oyster Co.....	East Providence	32.0	11.4	43.4	377.00
Fearney, John T.	Providence	54.0	128.2	182.2	1,181.00
Field, Waterman E.....	Warwick	8.5	.....	8.5	85.00
Fortin, James	East Greenwich	1.8	10.2	12.0	69.00
Gladding, Theodore O.....	Bristol	57.8	90.8	148.6	1,032.00
Goodspeed, Joseph W.....	Warren	54.2	13.3	67.5	608.50
Greene, Charles W.	Warren	16.2	24.3	40.5	283.50
Greene, George T.	Warren	19.9	22.3	42.2	310.50
Griffin, Edward W.....	South Kingstown...	2.0	.....	2.0	20.00
Havens, L. & W. D.....	Warwick	39.3	37.2	76.5	579.00
Higgins, R. R. Co. (R. I.).....	Barrington	182.0	61.6	243.6	2,128.00
Johnson, Henry C. 2nd.....	North Kingstown...	8.6	1.4	10.0	93.00
MacMillan, Murdock	Providence	424.5	1287.8	1712.3	10,684.00
Milliken, John W.....	Warwick	8.4	.....	8.4	84.00
Miner, Albert D.....	East Greenwich	3.7	.....	3.7	37.00
Nayatt Point Oyster Co.....	Providence	119.3	112.0	231.3	1,753.00

ALPHABETICAL LIST—Concluded.

NAME.	Town.	Acres, \$10.00	Acres, \$5.00	Total Acres.	Amount.
Narragansett Bay Oyster Co.....	Providence	632.9	1201.6	1834.5	12,337.00
Parmelee, Charles W.	Providence	132.2	118.7	250.9	1,915.50
Pettis, Frank C.	Providence	125.6	105.3	230.9	1,782.50
Rocky Point Oyster Co.....	Providence	202.6	27.4	230.0	2,163.00
R. I. Oyster Farms Co.....	East Providence.....	418.1	650.8	1068.9	7,435.00
Rooks, Benjamin J.....	Warwick	12.5	51.7	64.2	383.50
Shepard, Wilhelmina	Bristol	124.1	16.3	140.4	1,322.50
Smith, Fred G.....	North Kingstown...	39.8	.4	40.2	400.00
Thompson, George L.....	Bristol	1.7	2.8	4.5	31.00
Weiden, William B.....	Providence .....	.....	96.8	96.8	484.00
Wheeler, Walter E.....	Westerly	25.2	196.5	221.7	1,234.50
White, Mary J.....	Warwick	2.6	.....	2.6	26.00

NAME.	Town.	Acres, \$1.00	Amount.
Cottrell, George F.	Tiverton.....	12.5	\$12.50
Waite, Warren A.	Tiverton.....	90.0	90.00
Dooley, James E.	Providence.....	150.0	150.00

All of which is respectfully submitted.

EDWARD ATCHISON,
MILTON DUCKWORTH,
HENRY K. LITTLEFIELD,
CLINTON D. LEWIS,
SYLVESTER K. M. ROBERTSON,

Commissioners of Shell Fisheries.

State of Rhode Island and Providence Plantations

FOURTEENTH ANNUAL REPORT

OF

THE TRUSTEES

OF THE

STATE SANATORIUM

AT WALLUM LAKE

FOR THE

YEAR ENDING DECEMBER 31, 1918



PROVIDENCE
THE OXFORD PRESS

1919

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GENERAL INFORMATION.

The State Sanatorium was opened for patients November 1st, 1905. It is located at Wallum Lake, in the northwestern corner of the State, on the Providence to Southbridge branch of the New York, New Haven and Hartford Railroad, 28 miles from Providence.

The trains for the Sanatorium leave Providence at 7:12 A. M. and 4:00 P. M.; Sundays, 8:55 A. M. and 7:13 P. M. The station is Wallum Lake. The Sanatorium carriage meets these trains. The visiting days are Thursdays and Sundays.

The Sanatorium tract comprises 250 acres of land partly bordering on the lake, from which the water supply is obtained. The buildings are about 600 feet above sea level, and about one-fourth of a mile from the railroad station.

The institution is built on the ward plan, and has a capacity of 176 beds for adults and 40 beds for children. The charge is \$5.00 weekly, payable in advance, but the Trustees admit deserving cases free. No special accommodations are available for private patients, and only residents of Rhode Island are admitted.

The Hospital for advanced cases of tuberculosis at Wallum Lake, having a capacity of 153 beds, is now ready for patients. It is a fireproof building located 200 feet north of the Sanatorium, so arranged and equipped as to allow of the best nursing and comfort for advanced cases. The wards can be so opened as to be equivalent to covered porches allowing open air treatment in suitable weather. While advanced patients are kept apart from the curable patients, those cases which later show sufficient improvement can readily be transferred to the Sanatorium.

Registered physicians of the State may make application for admission of patients having tuberculosis who have been residents of Rhode Island for the full year immediately preceding the application. The rules for free and pay patients are the same as for the State Sanatorium.

TRUSTEES OF THE STATE SANATORIUM.

ALBERT H. SAYLES, <i>Chairman</i>	Pascoag.
THOMAS J. SMITH, M. D.....	Pawtucket.
WILLIAM P. BUFFUM	Newport.
FREDERIC P. GORHAM, <i>Secretary</i>	Providence.
FRANK N. PHILLIPS.....	Providence.

RESIDENT OFFICERS.

HARRY LEE BARNES, M. D.....	Superintendent.
JOHN I. PINCKNEY, M. D.....	Assistant Superintendent.
MARY L. HAMBLET, M. D.....	Assistant Physician.
OLNEY T. INMAN.....	Treasurer.
DOROTHEA OLNEY	Dietitian.
JOHN I. STEPHENS.....	Engineer.

REPORT.

*To the Honorable the General Assembly of the State of Rhode Island
and Providence Plantations:*

As required by Section 5, Chapter 1247 of the Public Laws of Rhode Island, the Board of Trustees of the State Sanatorium now submits its fourteenth annual report.

CHANGE IN STAFF.

Miss Anna L. Feicht, Dietitian since 1914, resigned July 18th, 1918, and was succeeded by Miss Dorothea Olney, a graduate of Chicago University.

NUMBER OF PATIENTS AND COST OF OPERATION.

In the accompanying report of the Superintendent will be found the details of the number of patients admitted to the Sanatorium and the results of their treatment; in the Treasurer's report will be found a detailed statement of the receipts and expenses for 1918.

The following tabular statement will in a brief way show how our appropriation has been expended in the past two years.

APPROPRIATIONS.

	1917.	1918.
Appropriation	\$107,000 00	\$142,300 00
Receipts	8,698 91	9,382 70
	<hr/>	<hr/>
	\$115,698 91	\$151,682 70

STATE SANATORIUM.

EXPENDITURES.

	1917.	1918.
Salaries	\$33,432 58	\$48,500 00
Office expense	2,388 35	3,007 74
Subsistence	38,757 28	45,210 78
Medical	3,754 19	5,963 91
Clothing and dry goods	1,045 68	1,046 53
House supplies		5,913 55
School supplies	156 91	7 38
Heat, light and power	9,725 70	17,301 65
Tools		3,023 24
Live stock	1,348 50	792 68
Farm and barn	6,249 16	7,383 44
Furnishings	3,419 02	537 05
Laundry		1,922 90
Miscellaneous	4,409 27	5,210 95
Special items	844 08	361 00
Automobile expense		7 29
General repairs	3,366 94	4,927 92
New hospital	4,459 02	.....
Total expenses.....	\$113,356 68	\$151,118 01
Unexpended balance	2,342 23	564 69
Average daily number of patients	201	222
Weekly per capita cost.....	9 77	12 42
Per cent. of free patients	90%	85%

BOARD OF PATIENTS.

The total amount received per annum for board of patients has considerably increased during the last six years, as appears in the following table:

1913.....	\$1,797 10
1914.....	1,899 06
1915.....	2,263 04
1916.....	2,937 82
1917.....	2,819 06
1918.....	4,682 21

This increase, which is greater than the increase in the number of patients, indicates increased ability to pay because of the higher wages and more continuous employment during the war, and probably will not be maintained during the coming year. We have

continued to investigate carefully the financial condition of all applicants and fixed the rate of board in each case according to the need. While we try to collect board bills promptly, it is hardly humane to discharge patients immediately if they are behind in their payments, and in this way there are frequently unpaid bills. As the Board lacks power to make these collections, they are referred to the Attorney General's office.

WAR TIME MEASURES.

Asking no exemption from war time food regulations which hospitals might to some extent have claimed, our patients cooperated loyally in the rationing of sugar and flour; in wheatless days, wheatless meals, beefless days, porkless days, and two meatless (fish) days per week, etc.

Our effort to reduce table waste often brought our average daily amount below 75 pounds, and if tea or coffee and refuse like bone, shells, fruit peelings, prune stones, etc., be excluded, to less than 60 pounds for 350 persons.

To do our bit in extra food production we again availed ourselves of Mr. Singleton's offer of three acres of land for gardening in addition to our own, and in spite of the seeming impossibility of securing farm labor, produced more vegetables than ever. Liberty Bonds and War Savings Stamps were bought liberally and 98 of our 100 employees contributed to the Red Cross.

RECOMMENDATIONS.

The need for the repairing of the road between Wallum Lake and Bridgeton, so that it will not be practically impassable during the greater part of the winter months, is now more necessary than ever since the establishment of the Hospital for advanced cases of tuberculosis. The time table of the steam railroad to Wallum Lake is so arranged that it is necessary for any one going there from Providence to take the whole day to make a visit to the Sanatorium and return, and in fact it is impossible for us to make a round trip by railroad from Newport to Wallum Lake in one day. Because of the poor railroad accommodations, the highway would be used much more frequently if the necessary repairs could be made, as repeatedly asked for in our previous Trustees' Reports. As the

visits of friends and relatives are an important factor in the cure, it detracts from the possible benefits that might accrue by practically isolating the institution for a number of months.

ACKNOWLEDGMENTS.

In addition to the weekly services for which we are indebted to all the Clergymen of Burrillville, the large number of deaths in the hospital has thrown a great amount of labor on those who minister to the last rites. Polish, Portuguese, Armenian, Syrian and Greek priests from many localities of the State have cheerfully visited their parishioners.

Respectfully submitted,

ALBERT H. SAYLES; *Chairman,*
FREDERIC P. GORHAM, *Secretary,*
FRANK N. PHILLIPS,
WILLIAM P. BUFFUM,
DR. T. J. SMITH,

Trustees.

SUPERINTENDENT'S REPORT.

To the Board of Trustees of the State Sanatorium:

GENTLEMEN:—Herewith is presented the fourteenth annual report of the Superintendent for the year ending December 31, 1918. The statistical and financial tables are appended.

On January 1, 1918, there were one hundred and ninety-four patients present.* During the year there have been five hundred and sixty-six patients admitted and five hundred and seventy-nine patients discharged. The number of patients present December 31, 1918, was one hundred and seventy-nine.† The whole number of patients treated during the year was seven hundred and sixty-five. The greatest number of patients in the Sanatorium at any one time was two hundred and sixty-two on April 11th, and the least number was one hundred and seventy-nine on December 31st. The average daily number of patients was two hundred and twenty-two. The period which elapsed between the date of application and the date patients were asked to appear at the Sanatorium averaged thirteen and four-tenths days.

RESULTS.

Of the five hundred and seventy-eight tuberculous patients discharged, nineteen had their disease arrested, twenty-seven apparently arrested, seventy-nine were quiescent, one hundred and forty were improved, one hundred and sixty-three were unimproved, and one hundred and forty-eight died. Of the one hundred and sixty-three cases discharged as unimproved, thirty-one per cent. remained less than one month.

OUR APPROPRIATION.

In accordance with Article II, Section 10, of the Penal and Charitable Institutions Act, the estimate of our requirements for 1918 was prepared in October, 1917. As the new hospital for advanced cases, accommodating 153 patients, was completed, we assumed that the State would wish to admit all applicants to this

*In addition three men and two women were at home.

†In addition four men and three women were at home.

hospital and asked for an appropriation sufficient to care for an increase of 124 patients over 1917. In November, 1917, we had opened and filled two of the three hospital wards, and by May, 1918, there were 254 patients in the Institution and 63 patients waiting for admission, or enough to fill the third ward of the new hospital, and give us a total of 317 patients as compared to the 324 patients estimated in the budget. As the General Assembly had appropriated only \$142,300 of the \$198,689 asked for, it was apparent that we not only could not relieve the waiting list by opening the third ward of the hospital, but that we must close one of the two hospital wards already opened if we would avoid a deficit. On May 16th your Board voted to close one hospital ward in order to conform to Article I, Section 24, of the Penal and Charitable Institutions Act, forbidding the incurrence of obligations in excess of appropriations. By declining to admit applicants and sending away thirty patients, over twenty of whom were offered places in other institutions, the ward was closed on May 31st. It was reopened on June 11th at the request of Governor Beekman, who offered to share responsibility for a deficit which might occur. Sixteen of the thirty patients discharged did not return, and twenty others on the waiting list declined to come as a result of the long delay in sending for them. The general effect of closing the ward was to discourage Doctors and patients in filing applications and thus reduce the number cared for. The amount of unpaid bills was \$5750.79.

EFFICIENCY.

In view of certain criticisms from political sources, implying high cost, excessive number of employees and inefficiency in management of the Institution, it is proper to show that such statements have no foundation in fact. Comparisons of the cost of operating sanatoria for tuberculosis with the cost of operating alms houses or institutions where persons are restrained are obviously without value. Our patients who leave homes to come to us and remain voluntarily require a high standard of nursing, food and general care. The most readily applied test for measuring efficiency is the comparison of the amount of money spent in providing sanatorium care at Wallum Lake with the amount of money spent in other institutions doing similar work. Slight differences of method in figuring per

capita cost and slight differences in local conditions and fiscal years in State Sanatoria, tend to counterbalance each other. All are doing the same work. In the years 1916 and 1917, the weekly per capita costs and the ratio of employees to patients in all State Sanatoria in New England were as follows:

1916.		
INSTITUTION.	Weekly Cost Per Capita.	Ratio of Employees to Patients.
Western Maine	\$13 20	1 to 1.5
Central Maine	10 24	1 to 2.7
New Hampshire	10 71	1 to 2.6
North Reading	8 78	1 to 2.5
Lakeville	8 83	1 to 2.8
Westfield	9 27	1 to 2.7
Rutland	10 64	1 to 1.7
Meriden	11 98	1 to 2.5
Hartford	10 06	1 to 2.8
Shelton	12 08	1 to 1.9
Norwich	13 51	1 to 2.2
Rhode Island	8 04	1 to 3.19

1917.		
INSTITUTION.	Weekly Cost Per Capita.	Ratio of Employees to Patients.
Lakeville	\$10 36	1 to 2.7
Westfield	10 93	1 to 2.6
Rutland	13 66	1 to 1.8
North Reading	10 68	1 to 2.4
Western Maine	11 09	1 to 2
Central Maine	12 65	1 to 3
Norwich	13 86	1 to 1.8
Shelton	13 55	1 to 1.8
Meriden	12 86	1 to 2.8
Hartford	10 14	1 to 2.5
New Hampshire	12 19	1 to 2.5
Rhode Island	9 77	1 to 2.7

It should be noted that in 1917 our ratio of employees to patients was lower than in the majority of the above named sanatoria, in 1916 the lowest of all, and in both years our operating cost was lowest of all. Complete data for 1918 are not yet available. Even this year, handicapped as we were by high overhead expense resulting from forty per cent. of our beds being empty, we operated at a lower cost and with a lower number of employees per patient than many of our neighbors not so handicapped.

In 1916, Connecticut in maintaining her four sanatoria spent \$303,490.39 at an average cost of \$11.57 per week per capita, and in 1917 Massachusetts spent \$651,956.53 at an average cost of \$11.59 per week per capita. If we had spent as much money per capita at Wallum Lake as Massachusetts spent in her sanatoria in 1917, we would have required over \$19,000.00 more than we actually used to do our work for that year. If we had spent as much money per capita at Wallum Lake as Connecticut spent in her sanatoria in 1916, we would have required over \$33,000.00 more than we actually used to do our work for that year.

The per capita cost of sanatorium treatment at Wallum Lake in the year 1916 was not only the lowest of any State Sanatorium in New England for that year, but it was the lowest per capita cost ever attained by any State Sanatorium in New England since the first sanatorium was established twenty years ago.

FUTURE APPROPRIATIONS.

While the institution can be operated for a smaller total expenditure if partly empty because of the less labor, food and other materials required by a smaller number, yet the unoccupied parts of the hospital must be heated and parts of the building in common use, like offices, halls, stairways, basement, etc., must be not only heated, but lighted, repaired and cleaned so that the overhead cost remaining practically the same, the more empty beds, the higher the per capita cost. The comparatively low cost of maintaining the institution in past years and the low ratio of employees to patients cannot be continued in the future unless the beds are filled. In other words, the State cannot obtain the best return on its investment in the institution unless it appropriates money enough to use it to capacity and the public does so use it.

THE MEDICAL WORK.

The pandemic of influenza which had affected a few employees and patients in September was apparently controlled from September 29th to October 10th by a quarantine which stopped employees and patients leaving and visitors from coming to Wallum Lake. On October 11th, a newly admitted patient developed the disease, her nurse became infected and the disease soon became epidemic

and continued until 36 employees and 46 patients were affected. Four employees and nine patients died, a mortality of 15.8 per cent. Of 63 patients and employees who survived influenza and whose disease was previously arrested or undergoing arrest, five or eight per cent. developed active tuberculosis immediately succeeding the attack, a surprisingly low percentage. Leary's vaccine (influenza bacilli) was given as a prophylactic to 152 persons.* It had been our experience in previous years that about five per cent. of all our patients had Pfeiffer's influenza bacilli in the sputum, although free from symptoms of influenza.† The influenza by absorbing the time of tuberculosis nurses and physicians of the State resulted in reducing our patients by about fifty during the last three months of the year and incidently reduced our expenditures over \$3000.00. Last spring an epidemic of chickenpox affected thirteen of our children without untoward results. Complement fixation for tuberculosis was done on 279 patients during the past year and the results reported at the meeting of the Rhode Island Medical Society held at the sanatorium September 5th.‡ The amount and character of the medical work and nursing involved in the care of our hospital cases may to some extent be judged by the following tabulation of the 148 deaths which occurred:

CAUSES OF DEATH.

All cases also had Pulmonary Tuberculosis.

No. of Cases.

- 79 Asthenia.
- 3 Influenza.
- 1 Pneumonia.
- 7 Pneumonia developing after influenza.
- 1 Influenza, pulmonary edema, laryngitis, nephritis.
- 5 Hemoptysis.
- 7 Pneumothorax.
- 8 Laryngitis, tuberculous.
- 11 Enteritis, tuberculous.
- 6 Laryngitis and enteritis, tuberculous.
- 2 Peritonitis, tuberculous.
- 2 Peritonitis and enteritis, tuberculous.
- 1 Meningitis, tuberculous.

*Journal of the American Medical Association, Dec. 7, 1918.

†Archives of Internal Medicine, Sept., 1916.

‡Boston Medical and Surgical Journal, Jan. 7, 1919.

No. of Cases.

- 4 Nephritis.
- 1 Meningitis, enteritis and laryngitis, tuberculous. .
- 1 Premature birth.
- 1 Tuberculosis of hip.
- 1 Cervical adenitis.
- 1 Edema of larynx, due to T. B. laryngitis.
- 1 Chronic interstitial nephritis, mitral regurgitation, pulmonary stenosis.
- 1 Acute miliary tuberculosis.
- 1 General paresis.
- 1 Tuberculosis of left tonsil and uvula.
- 1 Tuberculosis of right tonsil and vault of pharynx; spontaneous pneumothorax.
- 1 Nephritis, tuberculous orchitis, epididymitis, and adenitis cervical of elbows, inguinal.

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FREE TREATMENT.

The financial status on admission of the five hundred and sixty-six patients admitted during the past year was as follows:

Entirely free	441
Paying less than \$1.00 per week.....	1
Paying \$1.00 to \$2.00 per week.....	11
Paying \$2.00 to \$3.00 per week.....	24
Paying \$3.00 to \$4.00 per week.....	12
Paying \$4.00 to \$5.00 per week.....	2
Paying \$5.00 per week	74
Paying \$11.00 per week	1
Total.....	<u>566</u>

Many patients were transferred to the free list after admission, so that of the 81,062 days' treatment, 69,443 or eighty-five per cent. have been free.

GARDEN TRUCK.

The following is a list of vegetables raised during the year:

	Amount.	Value.
Beets	906 bunches	\$41 40
Beets	138½ bu.	139 95
Mangle Beets	224 bu.	112 00
Cabbage	26,909 lbs.	234 51
Carrots	771 bunches	22 84
Carrots	56 bu.	46 15
Cantaloupes	5 boxes	7 50
Cauliflower	12 bu.	27 00
Celery	1 bu.	6 00
Corn	2,334 doz.	475 50
Cucumbers	19	89 59
Cucumbers	4,580 bu.	89 59
Kale	69 bu.	69 00
Lettuce	100½ boxes	60 93
Peas	98 bu.	238 51
Pumpkins	1,450 lbs.	17 70
Potatoes	728 bu.	1,371 54
Radishes	3,676 bunches	50 55
Rareripes	1,910 bunches	66 11
Rhubarb	130 lbs.	1 30
Spinach	11¼ bu.	7 17
Squash	108 doz.	50 75
Squash	6,020 lbs.	75 00
String Beans	52½ bu.	66 00
Swiss Chard	127 bu.	106 17
Tomatoes	30¼ bu.	30 15
Turnips	133½ bu.	171 00
Total		\$3,614 37

EXPENSES.

Fertilizer	\$422 32
Manure	138 88
Seeds and plants	250 68
Tools, etc.	70 46
Hen manure	596 08
Labor	1,730 65
Total	\$3,209 07
	\$405 30
Less 5 per cent. interest on 10 acres of land at \$50.00, and \$200.00 implements	35 00
profit	\$370 30

POULTRY REPORT FOR YEAR ENDING DECEMBER 31, 1918.

INVENTORY.

Land, buildings, yards and utensils.....	\$1,925 00	
Poultry, 1,108 fowl	1,693 00	
Grain	467 27	
		<hr/>
Total inventory January 1, 1919.....		\$4,085 27

RECEIPTS.-

Eggs—9675 2/12 doz. @ 56 cts. (wholesale market rate)	\$5,430 93	
Fowl—5249 lbs. @ 32 cts. per lb.....	1,708 93	
Fertilizer—39,739 lbs. @ 1½ cts. per lb.....	596 08	
Credits	16 87	
		<hr/>
Total receipts		\$7,752 81

DISBURSEMENTS.

Labor and board of laborers.....	\$1,458 92	
Food for poukry	3,401 88	
Miscellaneous	564 37	
		<hr/>
Total disbursements		5,425 17
		<hr/>
Excess of receipts over disbursements		\$2,327 64
Deduct lessened value of live stock and grain on hand January, 1919, as compared to January, 1918.....		7 48
		<hr/>
		\$2,320 16
Deduct 3% interest on investment and 5% depreciation charge		408 52
		<hr/>
Profit		\$1,911 64

The average number of hens was 1032 and the yearly profit \$1.85 per hen, or 46 per cent. on the invested capital. The average number of eggs per hen per annum for the whole flock was 112, counting as hens Leghorns over five months and Wyandottes and Plymouth Rocks over seven months old. The low average production resulted from sickness in the flock and repeated freezing of the combs. The average yearly cost of feeding the hens was estimated at \$2.47 per capita. If all the profit is applied to reducing the cost of eggs, which is the main purpose of operating the plant, the eggs from our hennery cost us 32 cents per dozen.

PIGGERY REPORT, JANUARY 1, 1918, TO JANUARY 1, 1919.

Inventory January 1, 1919.

1 Pig House	\$1,073 71
50 Pigs	827 00
	<hr/>
Total inventory	\$1,900 71

DISBURSEMENTS.

Labor, man and horse 2/3 of full time.....	\$900 00
Pigs bought	75 00
Grain	46 20
Miscellaneous	8 80
	<hr/>
Total for maintenance	\$1,030 00
Add 5% interest and 5% depreciation charge on investment	190 07
Add lessened value of pigs on hand January 1, 1919, as compared to January 1, 1918.....	621 00
Value of old piggery which burned.....	600 00
	<hr/>
Total	\$2,441 07
Receipts, including pork used at the sanatorium.....	1,626 23
	<hr/>
Loss	\$814 84

PER CAPITA COST.

The weekly per capita cost of sanatorium treatment for 1918 was \$12.425.* The daily cost of raw food per person, including products of hennery, piggery and farm, and allowing for stock on hand at beginning and end of year, was forty-seven and seven-tenths cents.

IMPROVEMENTS.

Our special appropriation of \$6500.00 allowed the purchase of considerable equipment. The bake shop received a larger oven, a

*Our total disbursements for maintenance for the year ending December 31, 1918, as shown by the Treasurer's report, were.....	\$149,736.33
Add stock on hand January 1, 1918.....	16,000.30
Add loss of burned pig house.....	600.00
	<hr/>
From this deduct stock on hand January 1, 1919, less unpaid bills of \$5,750.79....	\$166,336.83
	17,855.26
	<hr/>
Deduct receipts and credits, items 4 to 16, inclusive.....	\$148,481.57
	4,593.88
	<hr/>
	\$143,887.69

Which sum divided by the number of treatment days, namely, 81,062, gives a daily per capita cost of \$1.775, or a weekly per capita cost of \$12.425.

dough mixer, cake mixer, mechanical flour sieve, and water tank. The kitchen received a vegetable steamer, two soup kettles, broiler and vegetable parer. A Ford ambulance was purchased within the appropriation allowed. This appropriation also allowed the conversion of the old chapel into nurses' rooms and to rebuild our piggery which burned to the ground on January 29th. The new piggery was built by our carpenter at a cost of \$1073.71, of which \$616.47 was spent on materials. A system of officers' call bells was installed from one of the spare wires of our inter-communication telephone system. The hospital roof garden was furnished with an awning, chairs and tables. A merry-go-round ordered for the children's ward has not reached us because of freight delays. A log playhouse for the children is being erected by Dr. Pinckney with patients' labor. As a part of our shop equipment made possible by donations from the Newport Anti-Tuberculosis Association, Mr. Willis E. Chandler and Mrs. Rowland G. Hazard, wood cutting and splitting machines have been installed, and by cutting dead wood about the grounds our patients have earned \$248.00 in addition to paying \$105.25 for part of the equipment.

RECOMMENDATIONS.

For the proper study of doubtful cases an X Ray is indispensable. The wooden floors of our kitchen, serving room, employees' dining room and sanatorium ward bathrooms should be replaced with tile. The kitchen needs more equipment, and the serving room and kitchen need additions to properly place equipment and give room for work. We should have an automobile, garage and wagon shed. The henery needs running water, another brooder and grain house. The chestnut groves between the sanatorium and Wallum Lake are affected with the blight and should be sawed into lumber, thus preventing loss of the trees and obtaining needed building material. This grove should be replanted to pine in order to ensure protection from the west wind.

Respectfully submitted,

HARRY LEE BARNES, M. D.,

Superintendent.

SUPERINTENDENT'S REPORT IN DETAIL.

MOVEMENT OF POPULATION.

PATIENTS.	Males.	Females.	Totals.
Number remaining January 1, 1918*.....	122	72	194
Number admitted within the year†.....	340	226	566
Number treated during the year	465	300	765
Number discharged during the year	354	225	579
Number remaining December 31, 1918.....	107	72	179

*In addition three men and two women were at home.

†In addition four men and three women were at home.

PHYSICAL CONDITION ON ADMISSION.

	Males.	Females.	Totals.
I A	16	22	38
I B	21	13	34
I C	2	2	4
II A	24	18	42
II B	145	66	211
II C	22	10	32
III A	2	3	5
III B	40	21	61
III C	53	57	110
No diagnosis	4	1	5
Non-tuberculous	1	3	4
No active tuberculosis	0	2	2
Bronchiectasis	1	0	1
Tuberculosis of lymph nodes	4	5	9
Abscess of lung	0	1	1
Tuberculosis of spine	2	0	2
Tuberculosis of foot	1	0	1
Healed lesion	2	2	4
Total.....	340	226	566

PHYSICAL CONDITION ON DISCHARGE.

	Males.	Females.	Totals.
Disease arrested	8	11	19
Apparently arrested	13	14	27
Quiescent	52	27	79
Improved	97	43	140
Unimproved	92	71	163
No diagnosis	2	0	2
Dead	90	58	148
Non-tuberculous	0	1	1
Total	354	225	579

ACKNOWLEDGMENTS, 1918.

BOOKS AND MAGAZINES.

Mrs. Arthur Adams	Centredale, R. I.
Frank Farmer	Providence, R. I.
Norwood Union Baptist Sunday School.....	Norwood, R. I.
Mrs. George E. Phillips.....	West Barrington, R. I.
James Armstrong	Wallum Lake, R. I.
Mrs. Charles K. Barker.....	Auburn, R. I.

CLOTHING.

Mr. J. W. Vernon	Providence, R. I.
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MISCELLANEOUS.

Madeline E. Lally	Providence, R. I.
Mr. Byron S. Pierce (fur rug).....	Providence, R. I.
Woonsocket Call (paper free)	Woonsocket, R. I.
Miss Agnes K. Wheeler (Newport Herald)	Newport, R. I.
Dr. King (phonograph and records).....	
Strand Theatre (moving pictures)	Providence, R. I.
Sister M. Cyprian (ice cream)	Pawtucket, R. I.
American Screw Company (Xmas bags for children)	Providence, R. I.
Worth While Circle (toques and gloves).....	Providence, R. I.
I. C. Club (oranges)	Providence, R. I.

RELIGIOUS SERVICES.

Rev. Henry W. Bjork	Harrisville, R. I.
Rev. George W. Dale	Pascoag, R. I.
Rev. Fr. William O. Demers	Pascoag, R. I.
Rev. Fr. John S. Dunn	Pascoag, R. I.
Rev. L. J. Hervey	Bridgeton, R. I.
Rev. A. Hesford	Pascoag, R. I.
Rev. Charles B. Osborne	Pascoag, R. I.
Rev. W. J. Smith	Bridgeton, R. I.
Rev. Matthew Francis	Worcester, Mass.

NEW HOSPITAL FOR ADVANCED CASES OF TUBERCULOSIS.

EXPENDITURES.

Ernest Whitehead, general contract	\$85,227 50
E. J. Sullivan, plumbing, drains and fire service.....	12,679 51
J. F. Johnston Co., heating	11,720 72
Walter Fontaine, architects' services	5,861 37
James Wilkinson Co., electric wiring	4,903 27
Automatic Refrigerating Co., refrigerators and wiring.....	3,670 00
R. D. Kimball Co., engineers' services	1,130 38
E. J. Sullivan, water piping system	872 00
Ernest Whitehead, waterproofing tunnel	750 00

J. Duncan Co., iron meat racks	395 74
Bryan-Marsh Co., bronze tablet	139 37
Ernest Whitehead, painting	80 00
Providence Telephone Co., telephones	77 55
Ernest Whitehead, claim on E. J. Sullivan	73 16
Hardinge Brothers, patrol clock	59 00
Dudley Hardware Co., madza lamps	51 00
Burt W. Flint, estimating plans	25 00
Kny-Scheerer Co., hospital furnishings	11 36
Grading work	1,166 58
Traveling expenses	200 22
Steam supplies	98 91
Advertising	93 11
Hardware	89 30
Lumber	64 75
Drain work—subcellar	30 00
Staking ward	20 44
Plumbers' material	13 26
Freight	9 68
Miscellaneous	360 85

\$129,874 03

**EQUIPMENT AND FURNISHINGS FOR THE NEW HOSPITAL
FOR ADVANCED CASES OF TUBERCULOSIS.**

EXPENDITURES.

Ernest Whitehead, lockers, towel racks and screens.....	\$2,643 00
George T. McLaughlin Co., elevator	2,635 00
Wrought iron range, furnishings	1,609 00
James Wilkinson Co., electric fixtures	1,196 00
Smith-Holden Dental Supply Co., dental outfit	435 00
James Wilkinson Co., extras	256 00
Walter F. Fontaine, architects' services	204 78
R. D. Kimball Co., engineers' services	155 67
A. E. Mylod & Son, window shades	83 31
Bausch & Lomb Optical Co., hospital supplies	79 00
Buttner Electric Co., stoves	63 00
Kny-Scheerer Co., hospital supplies	38 89
Frank S. Betz Co., hospital supplies	16 00
Beds and bedding	6,061 70
Furniture and furnishings	2,457 60
Hospital supplies	1,799 89
Hospital furnishings	291 76
Freight	85 00
Advertising	11 37
Labor	4 00

\$20,125 97

NEW PIGGERY.

EXPENDITURES.

Wm. M. Harris, Jr., lumber	\$454 65
Lehr Agricultural Co., 18 troughs	67 50
E. C. Church Co., hog wire and staples	25 77
Inman Lumber Co., 25 bags cement	23 75
Dudley Hardware Co., nails	20 16
Wm. M. Harris, Jr., 18 window sash	18 00
Bekcher & Loomis Hardware Co., sash cord, etc.	6 64
Labor	230 49
	<hr/>
	\$846 96
Less old piggery	600 00
	<hr/>
	\$246 96

28.—COST OF THE SANATORIUM, 1906 TO 1918, INCLUSIVE.

Land	\$5,000 00
Buildings, including administration building, two ward buildings, service building, barn, pumping-house, power plant and ice- house with improvements up to January 1, 1919.....	162,323 52
Laundry machinery	2,558 53
Furnishings for kitchen, bakery, serving-room, and dining-room	3,877 57
Stable	2,014 61
Furniture and equipment	18,722 19
Improvements to grounds, including grading, coal bin, hose, ice tools, and farming tools, hen houses.....	6,863 72
Water-tank and gasoline engine.....	4,773 99
Sewage plant	9,053 10
Superintendent's house	4,972 05
Superintendent's house furnishings	1,539 00
Laundry	9,942 84
Fire-escapes	670 00
Patients' lockers	1,024 00
New boiler house	25,748 12
Bath-room improvements	761 68
Excavating and repairing under wards, bathrooms, and of veran- das	5,466 09
Intercommunicating telephone system	819 09
Incinerator	300 00
New service building	13,933 49
Machinery and tools	772 45
Windows	1,980 00

Children's ward	13,080 00
New piggery (1918)	846 96
Ambulance (1918)	986 88
New hospital for advanced cases of tuberculosis (1918).....	129,874 03
Equipment and furnishings for new hospital (1918).....	20,125 97
Total cost.....	\$448,029 88

29.—WAGES OF EMPLOYEES.

Superintendent	(per annum).....	1	\$3,300 00
Assistant superintendent	(per annum).....	1	1,800 00
Assistant physician	(per annum).....	1	1,300 00
Treasurer	(per annum).....	1	1,400 00
Assistant secretary	(per month).....	1	20 00
Clerk	(per month).....	1	40 00
Dietitian	(per month).....	1	75 00
Orderlies	(per month).....	3	\$25 00 to 40 00
Nurses	(per month).....	19	25 00 to 33 34
Teacher	(per month).....	1	40 00
Stenographer	(per month).....	1	40 00
Carpenter	(per month).....	1.9	35 00 to 80 00
Engineer	(per month).....	1	108 34
Boiler men	(per month).....	2.7	35 00 to 50 00
Outside men	(per month).....	12.4	35 00 to 45 00
Outside foreman	(per month).....	1	65 00
Chef	(per month).....	1	90 00
Baker	(per month).....	1	85 00
Storeman	(per month).....	1	45 00
Kitchen men	(per month).....	4	35 00 to 50 00
Dishwasher	(per month).....	1	43 00
Waiters and other employees....	(per month).....	28	25 00 to 35 00
Laundrymen	(per month).....	3	25 00 to 60 00
Laundresses	(per month).....	2.3	30 00
Housemaid	(per month).....	1	30 00
Polisher	(per month).....	1	30 00

95.3

TREASURER'S REPORT.

To the Board of Trustees of the State Sanatorium:

GENTLEMEN:—I herewith submit the annual report of the finances of the State Sanatorium for the year ending December 31, 1918:

RECEIPTS.

Received of General Treasurer		\$142,300 00
1. Board of patients	\$4,682 21	
2. Thermometers and sputum cups.....	51 20	
3. Interest on bank account	7 46	
4. L. B. Darling Co., grease sold.....	232 74	
5. Rent	471 02	
6. Telephone	223 37	
7. Express commissions	163 98	
8. Pigs sold	968 43	
9. Chickens sold	1,459 60	
10. Junk sold	13 75	
11. Milk sold	90 32	
12. Board of workmen	50 40	
13. Mail messenger service	72 00	
14. Sundries	47 95	
	<hr/>	\$8,534 43
Credits		848 27
		<hr/>
		\$151,682 70

RECEIPTS AND CREDITS.

1. Board of patients	\$4,682 21	
2. Thermometers and sputum cups	51 20	
3. Interest on bank account	7 46	
4. L. B. Darling Co., grease sold.....	232 74	
5. Rent	471 02	
6. Telephone	223 37	
7. Express commissions	163 98	
8. Pigs sold	968 43	
9. Chickens sold	1,459 60	
10. Junk sold	13 75	
11. Milk sold	90 32	
12. Board of workmen	50 40	
13. Mail messenger service	72 00	
14. Freight returned	93	
15. Paper lost in transit	6 25	
16. Credits	841 09	
17. Sundries	47 95	
	<hr/>	\$9,382 70

EXPENDITURES.

Salaries and wages \$48,500 00

Office.

Traveling expenses	\$582 82
Stationery, supplies	195 10
Postage	656 04
Books, periodicals	67 45
Telephone, telegraph	691 93
Printing	363 00
Miscellaneous	451 40

\$3,007 74

Subsistence.

Beans	\$445 83
Bread	103 13
Oleo 7,796 lbs.....	1,977 56
Cheese 778 lbs.....	207 86
Crackers	232 39
Coffee	322 40
Cocoa	88 30
Meal	310 72
Cereals	408 44
Canned goods	3,037 31
Eggs 2,954 doz.....	1,493 32
Bread flour	1,744 75
Pastry flour	124 20
Graham flour	156 65
Fresh fruit	1,722 23
Dried fruit	239 99
Milk 135,065 qts.....	13,440 87
Molasses	93 53
Olive oil	27 00
Salt	62 93
Syrup	148 57
Split peas	56 16
Sugar 7,306 lbs.....	822 03
Spices and flavoring	105 36
Tea	137 33
Rice	176 00
Vinegar	86 80
Yeast	72 25
Sundry groceries	759 27
Beef 29,916 lbs.....	7,093 15
Lamb 6,798 lbs.....	1,627 02
Pork 9,857 lbs.....	3,294 16

STATE SANATORIUM.

27

Sausage	2,225 lbs.....	407 56	
Turkey	461 lbs.....	209 77	
Lard	1,315 lbs.....	359 62	
Fresh fish		1,414 34	
Salt fish		241 27	
Oysters		56 38	
Clams		153 85	
Potatoes		1,155 38	
Onions		137 30	
Sundry vegetables		465 12	
			<hr/>
			\$45,218 10

Medical.

Medical service		\$576 50	
Surgical instruments		63 18	
Drugs and chemicals		1,894 99	
Sputum cups		647 05	
Paper towels and napkins		12 00	
Miscellaneous		2,763 94	
			<hr/>
			\$5,957 66

Clothing, Dry Goods and Notions.

Cotton cloth		\$44 42	
Crash		71 46	
Table linen		148 44	
Ticking		39 63	
Sundry cloth		241 71	
Notions		80 20	
Clothing		309 09	
Shoes		2 00	
Sundries		109 58	
			<hr/>
			\$1,046 53

House Supplies.

Mattresses		\$291 77	
Beds		2,037 00	
Sundries		762 39	
Kitchen		635 30	
Tinware		275 42	
Crockery		645 35	
Glassware		10 00	
Brooms and brushes		258 60	
Paper, twine, etc.		137 86	
Sundry		859 86	
			<hr/>
			\$5,913 55

School Supplies.

Books	\$5 30	
Sundries	2 08	
		\$7 38

Heat, Light and Power.

Kerosene	\$43 30	
Gasoline	216 78	
Hard coal 89 100/2000 tons.....	267 15	
Soft coal 1756 2000/2240 tons.....	16,343 04	
Lubricating oil	190 39	
Sundry	240 99	
		\$17,301 65

Tools.

Hardware	\$434 80	
Paints	35 67	
Masonry	12 00	
Steam fittings	27 63	
Fire and electrical	524 03	
Labor	1,786 79	
Printers' supplies	38	
Blacksmith supplies	50	
Machinery	23 46	
Miscellaneous	177 98	
		\$3,023 24

Live Stock.

Horses	\$300 00	
Pigs	86 18	
Poultry	406 50	
		\$792 68

Farm and Barn.

Gluten	\$148 20
Meal	348 50
Corn	1,311 59
Oats	1,009 55
Bran	208 70
Feed	8 30
Wheat	259 00
Hay	870 96
Sundries	1,461 68
Manure	138 88
Germicides	32 82

STATE SANATORIUM.

29

Fertilizer	432 32	
Seeds	272 88	
Veterinary	29 00	
Farm implements	90 63	
Sundries	760 43	
	<hr/>	\$7,383 44

Laundry.

Laundry supplies	\$465 81	
House cleaning	6 50	
Soaps	1,323 05	
Washing powder	70 64	
Starch	56 90	
	<hr/>	\$1,922 90

Miscellaneous.

Toilet articles	\$17 25	
Disinfectants	178 40	
Entertainments	58 75	
Empties	348 21	
Freight and express	3,713 61	
Toilet paper	458 83	
Sundries	434 83	
	<hr/>	\$5,209 88

Specials.

Dish trucks	\$72 00	
Butter cutter	125 00	
Board of engineer	164 00	
	<hr/>	\$361 00

Automobile Expense.

Tire and tubes	\$7 29	
	<hr/>	\$7 29

Furnishings.

Beds	\$18 00	
Furniture	423 69	
Floor coverings	90 60	
Curtains	4 76	
	<hr/>	\$537 05

STATE SANATORIUM.

General Repairs.

Hardware	\$106 77	
Lumber	483 93	
Plumbing	361 18	
Paints	373 84	
Masonry	106 22	
Steam fittings	497 53	
Glass	66 95	
Fire and electrical	2,012 31	
Labor	623 87	
Machinery	101 30	
Miscellaneous	194 02	
		\$4,927 92
Total disbursements		\$151,118 01

EXTRAORDINARY EXPENSES.

Improvements.

Construction, rooms in attic.....	\$301 78
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Increase of Equipment.

House furnishings	\$1,079 70	
		\$1,381 48
Total disbursements	\$151,118 01	
Extraordinary expenses	1,381 48	
		\$149,736 53
Disbursements for maintenance		\$151,682 70
Total receipts and credits	\$151,682 70	
Total disbursements	151,118 01	
		\$564 69
Balance on hand January 1, 1919.....		\$564 69

Respectfully submitted,

O. T. INMAN, *Treasurer.*

1919

TENTH ANNUAL REPORT
OF THE
BOARD OF
Food and Drug Commissioners

COMMISSIONERS:

FRANK A. JACKSON, *Chairman.*

FRANKLIN N. STRICKLAND, *Executive Secretary.*

F. WEBSTER COOK.

FRANK A. JACKSON, *Chief Inspector.*

FRANKLIN N. STRICKLAND, *Chemist.*

CHARLES E. HOPKINS, *Deputy Inspector.*

NORA K. BOURNE, *Clerk.*

WILLIAM SHALLCROSS, *Assistant Chemist.*

REPORT

*To the Honorable, the General Assembly, at their January Session,
1919:*

GENTLEMEN:—Your Board of Food and Drug Commissioners respectfully herewith presents its tenth annual report for the year ending December 31, 1918.

MEETINGS. HEARINGS.

During the year the Board has held regular meetings, together with some special meetings, at which meetings the conduct of the business affairs of this Commission was formally presented, as will be noted in the following pages of this report.

The third member of this Commission, Captain F. Webster Cook, is still away in military service.

Likewise, our former assistant chemist, Mr. Roscoe O. Heathman, was called into government service early last spring.

COMPLAINTS.

Like the preceding year, complaints have been presented to this Commission, and in increased numbers. Most of these was the result of the findings of foreign materials in foodstuffs, placed there it was thought through the instigation of German propaganda. As will be noted under the heading of "Food Materials Suspected to Contain Injurious or Poisonous Substances," they were numerous and of considerable variety, all being of sufficient character as to cause suspicion and grave unrest of mind.

EDUCATIONAL.

At the solicitation of members of Granges, Mothers' Clubs, etc., Mr. Jackson has been well received in his talks relative to foods, and food control, during the past year. Members have attended various meetings of the New England Dairy, Food & Drug Officials, the annual convention of the Association of National Dairy, Food & Drug Officials held last summer at Chicago, and the Association of Official Agricultural Chemists.

DAIRY INSPECTIONS.

The Board during the past year has continued its work in the inspection of dairies. It is obvious that, if the milk supply is to be improved, the conditions at the source thereof, i. e., the farms, must be known. With this in mind, Mr. Jackson, assisted by Mr. Hopkins, visited personally each place where cows were kept, irrespective of the number of cows, and at each place obtained, as far as possible, information on the following points: owner of the place, occupant and post office address; number of cows, number of milch cows and their condition; whether or not they had been tested for tuberculosis; the breed; average number of quarts of milk produced per day, whether all was used on the place, a little sold to neighbors, sold to a dealer (in which case, ultimate destination), or sold on a milk route and where; number of quarts of cream; number of pounds of cheese; of butter; the hours of milking and time of delivery; condition of employees; size and cleanliness of the dairy house and whether there was water in it; condition of the yard, and whether other animals, such as pigs, were housed too near the cows; location and condition of the milk room, if any, construction of its walls and floor; location and condition of ice box, if any; where the utensils were washed, where stored, and their condition; whether a modern, small-top milk pail was used, a milking machine; whether the milk was bottled; and any other items of interest.

Eventually the whole state is to be covered. Last year we covered New Shoreham, Jamestown, Newport, Middletown, Portsmouth, Little Compton, Tiverton, Bristol, Warren, Barrington, East Providence (partly), Providence. This year we finished East Providence, Cumberland, Lincoln, North Providence, Smithfield, North Smithfield, Burrillville, Gloucester, Foster, Scituate, Johnston and Cranston. Two thousand eight hundred ninety-nine different places have been inspected. On analysis, the reports yield the following data:

Cows, total number.....	16,247
“ milch	12,762
“ tuberculin tested	2,370
Milk, per day	(about) 100,000 qts.
“ average per cow per day.....	7 2-3 “
“ sold in Providence per day.....	25,000 “
Butter, per year.....	25,000 lbs.
Cheese, “ “	26,650 “

In making our reports we have not included butter made and used on the farm, as no one apparently kept a record of it. We found one farmer in Tiverton who was making about 7500 pounds of cheese a year, for the Fall River market, and one farmer in Cranston who was making 10,000 pounds of Italian cheese a year.

Very few modern, small-top milk pails were found, although they would entail but small expense and would aid materially in keeping dust and casual dirt out of the milk; the general lack of water in the barns is a handicap, also, in the production of clean milk.

The Board would like to bring to the attention of the milk producers the importance of sterilizing the milk utensils on the farm. We believe that the producer who has but one cow, yet sells the surplus milk to his neighbors, should take the same care to safeguard the quality of the milk as the producer who is making milk

in large quantities for market purposes. This belief is fostered by a knowledge of the laxity in the matter of sterilization in some cities and towns where there is no milk inspection or milk regulation. The Board has compiled valuable information regarding methods of sterilizing utensils in large or small dairies. These methods have been recommended by Federal and State dairy officials, and the information will be furnished to all who request it. To those who wish to obtain an inexpensive but highly efficient sterilizer, the Board suggests a visit to its office at the State House, where a demonstration of such a sterilizer, and plan of construction, will be gladly given.

It is noticeable, after examining the records, that in Middletown, Portsmouth, Little Compton, Tiverton, Bristol and Warren, where the producers have to meet the requirements of the Massachusetts law in regard to tuberculin tested cattle, 1576 cows have been tested, or about two-thirds of all the tested cattle that we have found so far in the state. This Board is of the opinion that Rhode Island should have some consistent tuberculin laws, so as to co-operate with neighboring states. The United States Department of Agriculture, Bureau of Animal Industry, particularly is endeavoring to co-operate with the states in such inspection, and is ready to meet part of the expense of condemnations.

It is the purpose of your commissioners to co-operate with every city or town milk inspector who expresses a desire for such cooperation; particularly desirable and valuable should this offer be to the city or town where the equipment and money appropriation is limited. It is preferred that the inspectors collect their own samples and institute their prosecution proceedings; the samples when delivered to our laboratory will be analyzed and any assistance needed for prosecution will be given. But when requested, the Board's inspectors will endeavor to collect the samples from

dealers named by the local milk inspector, make the analyses, and act as prosecuting officers.

At the annual meeting of the Association of American Dairy, Food and Drug Officials in 1917, Mr. Jackson, of this Board, was appointed on a committee to revise the constitution and by-laws. At the annual convention in 1918, that committee reported that the constitution should be so broadened as to make eligible to membership any state or town official having charge of the enforcement of health or food laws. This Board is particularly desirous that the National Association should have at least one representative from each community in Rhode Island.

SEIZURES.

Seizures of food stuffs were made as shown below :

1. 10 gallons of OLIVES; Vincenzo Panozzo, 47 Arthur Avenue, Providence; rotten and unfit for food purposes; seized and destroyed February 26th, by Inspector Charles E. Hopkins.
2. 1 bushel of PEARS; Siboutiono Sato, 40 Utah Street, Providence; decayed and unfit for food purposes; seized and destroyed February 28th by Inspector Charles E. Hopkins.
3. 12 pounds of NUT CANDY; Christos Erinakes, 19 Quidnick Street, Arctic in a filthy and wormy condition, unfit for food purposes; seized and destroyed March 7th by Inspector Charles E. Hopkins.
4. 3½ bushels ORANGES; Gideon Bateman, 5 College Street, Providence; decayed and unfit for food purposes; seized and destroyed March 21st by Inspector Frank A. Jackson.
5. 102 bags BEAN MEAL (about 6 tons); National Wholesale Grocery; had been damaged by fire and water; not fit for human consumption, but on examination by the Board's chemist they were allowed to be sold for hog feed, April 20th.
6. 1 bushel POTATOES; F. J. Gardella, 289 Railroad Street, Woonsocket; had been frozen and were unfit for human food. On guarantee that they would not be so used, they were allowed by Inspector F. A. Jackson to be sold for hog feed, December 12th.
7. OLIVE OIL, so called. Early in the year the Chief of the Eastern Division of the Bureau of Chemistry of the United States Department

of Agriculture called to the attention of the Board the fact that there had been many interstate shipments, made by certain New York firms to Italian dealers throughout the country, of cottonseed oil labeled "Pure Italian Olive Oil." Inspectors Jackson and Hopkins at once became interested in the matter, and after investigation restrained from sale about 585 gallons of such oil, in varying amounts, at the following places:

Giuseppe Bernadoni.....	338	Atwells Ave.
Henry Marcello.....	14	Messenger St.
Mercurio.....	50	South Water St.
Carlo Golato.....	121	Federal St.
Carmine Aceto.....	630	Charles St.
A. Caslagnaci.....	329	Pocasset Ave.
Vincenzo Fazzino.....	42	Arthur St.
Michele Matalena.....	146	Acorn St.
Comincio Giscaroni.....	136	Knight St.
G. Del Rossi.....	143	Knight St.
N. Santangini.....	98	Knight St.
John Marzullo.....	71	Kenyon St.
A. Di Libbero.....	119	Federal St.
Iesualdo Fanato.....		Dean St.
C. Spizzirri.....	38	Spruce St.
Carlo Golato.....	112	Federal St.
D. Dalfonzo.....	1027	Mineral Spring Ave., No. Prov.
Angelo Brogi.....	340	Mineral Spring Ave., Pawt.
Zamperini Bros.....	294	Mineral Spring Ave., Pawt.
Bennie Zinno.....	567	Charles St.
Thomas Greico.....	5	Social St.
Angelo Marocco.....	282	Pocasset Ave.

This was reported to the Chief of the Eastern District, and sale was restrained until we received a report from the Bureau of Chemistry as to the disposition by said Bureau of Chemistry of similar cases in other states. It was found that the Federal authorities allowed such oils to be sold after the original labels had been destroyed and the containers relabeled "Cottonseed Oil Flavored with Olive Oil," or simply "Cottonseed Oil." The Board followed

this procerude. All the destroying of labels and relabeling was done in the presence of Inspector Hopkins.

Two cases of oil, the property of a non-resident of the state, were seized and held until ownership was proven. After the oil had been relabeled "Cottonseed Oil," it was allowed to be shipped out of the state.

In May, Inspectors Jackson and Hopkins visited the store of the Mariani Co. Branch, Inc., 414 Atwells Ave., and found several unmarked five-gallon cans of oil which was a compound. The manager agreed to get a stencil and label the containers properly. When he had done so, the Board allowed the oil to be sold.

In this way the Board saved the people of Rhode Island considerable money, as it gave them a chance to know just what they were buying. Instead of paying olive oil prices for cottonseed oil, they could buy it for just what it was.

In several instances we were suspicious of some of the oil that was being sold, but on analysing samples we found that it was either Spanish or Greek oil, and sold for what it was, no claim being made that it was Italian olive oil. Since the war, of course, it has been practically impossible to get Italian oil, while Spanish and Greek ports have remained open.

In January it came to our attention that Spalding's Plasters were being sold in the state and that they were misbranded under Chapter 183, in that false, misleading and deceptive statements were made on them. Inspector Hopkins was instructed to purchase samples in the open market, and our chemist made an analysis of the plaster. This Board, from the analysis, was of the opinion that it was impossible for the plaster to produce the medicinal effects claimed on the label. The matter was taken up with the manufacturers, and, after some correspondence, a label from which the objectionable statements had been eliminated was passed by the Board.

While it is not within the province of this Board to criticize and pass upon the merits of labels, we have done so in several cases out of courtesy to the inquirers. In this instance particularly we felt that, with the objectionable and misleading information eliminated, we could make an amicable settlement without resorting to court proceedings, and the general public would be protected from deception.

PROSECUTIONS.

The Board has had considerable success in its prosecutions this year, as is shown by the following table:

<i>Name.</i>	<i>Complaint.</i>	<i>Penalty.</i>
J. A. Phaneuf.....	Selling adulterated milk..	Paid costs; case continued.
George Drummond.....	“ “ “	\$20.00 and costs.
William Royal Page.....	“ “ “	\$20.00 and costs.
William Royal Page.....	“ “ “	Case not prosed.
William Royal Page.....	“ “ “	\$50.00 and costs; appealed.
Barnard French.....	“ “ “	Case not prosed.
Fred L. Vaughn.....	“ “ “	\$10.00 and costs.
Don Dame, Jr.....	“ “ “	\$5.00 and costs.
J. H. Tanner.....	“ “ “	\$20.00 and costs.
Manuel D. Mello.....	“ “ “	\$20.00 and costs.
Frederick Delude & Co..	“ “ “	\$20.00 and costs.
Benjamin F. Smith.....	“ “ “	\$20.00 and costs.
Joseph Capparrelli.....	Misbranding oil.....	\$20.00 and costs.
Anderson Candy Co.....	Net contents of package not declared.....	Paid costs; case continued.
Providence Churning Co.	Net contents of package not declared.....	Paid costs; case continued.
Eli Meyer.....	Selling rotten eggs.....	\$20.00 and costs.
George E. Hill.....	Obstructing an officer..	\$20.00 and costs; appealed.

Several more cases are pending, and the campaign is to be carried on vigorously this year.

RULING ON EGG SUBSTITUTES.

(Adopted April 4, 1918.)

- No substitute shall bear a name containing the word "egg" unless such substitute contains fifty-one per cent. of whole egg.

2. No substitute shall contain any artificial coloring matter of any description.
3. Egg substitutes shall not contain any preservatives other than benzoate of soda, and not more than one-tenth of one per cent. of the same.
4. No label on such substitutes shall bear any statement of comparative value unless qualified by the words, "for cooking or baking only."

CO-OPERATION.

Co-operation has been increasingly continued between this Commission and the following officials of this State, its cities and towns, and with departments of our Federal Government:

City of Newport Health Board, particularly with their department of milk inspection.

City of Central Falls, Chief of Police and Milk Inspector.

City of Pawtucket, Milk Inspection Department.

City of Woonsocket, Department of Milk Inspection.

Town of East Providence, Department of Milk Inspection.

Town of Warren, Milk Inspection Department.

American Red Cross, local.

United States Bureau of Information, Tom Howick, Agent.

United States Food Administration, Hon. A. M. Coats, Administrator.

United States Naval Department, New London Station.

United States Secret Service, Thomas J. Callaghan, Agent.

Various Food Manufacturers, Producers and Purveyors.

DEPUTY INSPECTORS APPOINTED.

To further the interests of co-operation between this Commission and the officials of various cities and towns of the State, the following men were appointed deputy inspectors for this Board of Food and Drug Commissioners:

James A. Wood and James Gunn, collectors of samples for the Milk Inspection Department of the City of Providence.

Ralph Chace, Inspector of Milk for the Town of East Providence, and his collector of samples, Lovell Chapin.

Dr. J. B. Munro, Inspector of Milk, Town of Warren.

John F. Johnston, Inspector of Milk, Newport Health Board.

MATERIALS COLLECTED AND EXAMINED.

During the year Inspectors Frank A. Jackson, Charles E. Hopkins, have continued the collection of statistical data relative to the dairy industry of the State. Often times they were able to impart valuable information to inquiring dairymen, and to assist them to a direct knowledge of the character and quality of milks drawn from individual cows, through the collection of milk samples which were later brought to the laboratory for chemical analysis. The collection of such samples was at the personal request of the herd owner, who oftentimes had been informed by various milk inspectors that the product of their herd was somewhat too low to meet the statutory requirements for total milk solids. Subsequent chemical analysis showed the producer whether he could improve the quality of his cows milk through proper feeding or by replacement with another animal.

A comprehensive idea of the character of materials collected by the Board's inspectors, or of those submitted by various citizens will be obtained from the following list:

Absorbent cotton, bay rum, bean meal, beans, bread, buckwheat flour, butter, cake, candy, canned goods, cheese, clams, cocoa, coffee, condensed milk cookies, corn meal, eggs, fish, flour, granular effervescent salts, ice cream, jelly, catsup, licorice extract, maple sugar, marmalade, milk, molasses, oleomargarine, olive oil, oysters, peanut-butter, "perlo," pork, potato flour, prune pie, salted peanuts, soda water, soup, squash pie, stock feed, sugar, tea, tomatoes.

FOODS EXAMINED:

BEAN MEAL.

Nos. 3377-3379. Three samples of bean meal seized at wharf of Providence Line, same being consigned to National Wholesale Grocery, Providence. This meal had been ground from damaged beans,—probably having gone through a fire, became wet, got musty and moldy, becoming wholly unfit for human consumption. The lot was finally released under agreement that the bean meal was to be employed solely as a feed for hogs, and not to be employed in feeding cattle or other animals.

BEANS.

No. 3318. Complaint of Mrs. A. Baxter, Barrington, that beans purchased from the Providence Public Market contained a large amount of gravel,—approximately two ounces in two pounds of beans purchased. Upon looking up the conditions of handling beans at above store, our inspector found that a great quantity of beans are contained in a bin on an upper floor of the building, and brought down through a chute to the automatic weighing device. Gravel is more or less present in dry beans, and in the present instance, it is reasonable to suppose that these stones being heavier than the beans, sifted down toward the bottom of the bin and remained there until the bin was about emptied; hence the relatively large amount of gravel present in the two pounds of beans in question. There appears to be no evidence of an attempt to sell gravel for beans in this case.

No. 3458. Golini & Monachetti of Providence complained that beans they had purchased from Karp-Kirsch Co., Inc., New York, for No. 1 dry beans, when delivered were found to contain different quality than they had contracted for. The beans did contain a relatively large percentage of "dead," discolored and damaged beans, rendering them probably unsaleable for beans of the quality for which they had been purchased. As the beans were not unwhole-

some, or unfit for food, and as their appearance only was against their selling for first quality beans, we recommended that they be shipped back to the brokers in New York, or to refuse to accept them here. Not having heard to the contrary, we assume that the Providence dealers did not have to pay for beans that they could not use in their trade.

BREAD.

No. 3371. Complaint of Oliver Raymond made to Chief of Police McCarty of Central Falls, that bread he had purchased from a local grocery contained some added material that was suspicious. The bread, a portion of a small loaf, was contained in a printed, paraffine wrapper purporting it to have been baked by one of the largest and best bakers in the State.

Examination in this laboratory showed that baked in this bread, thoroughly within the loaf, was an irregular, rather cylindrical mass, which proved to be a piece of human excrement. Unquestionably, this filthy addition was made by some malicious person before the dough was baked. No blame can be attached to the baker whose bread it was purported to be; but some information was obtained that suggested that a rival baker who left bread at the same grocery also, might have substituted a similar style of loaf previously wrapped in the other baker's paraffine paper and placed it within the case where both brands of bread was kept, trusting to the purchaser to make a great commotion about the filthy addition to the bread. This matter was turned over to Chief McCarty for investigation.

No. 3311. Complaint of Annie Wade, of Centreville, that she bought bread baked by the Public Market Co. which had glass in it. Examination showed two pieces,—portions of an incandescent light bulb,—of glass, which probably flying from a broken bulb flew into the dough, was overlooked and baked in the bread.

No. 3348. Tip Top Bread was submitted by City Provision Inspector William J. Beane, on complaint of D. Wilkinson, Providence, who was suspicious of its "pink" color, which was found to be a mold. The bread had a "mildewed" odor. This was a very common occurrence during the period of using corn as a cereal in "war bread," such breads apparently molding much more quickly and easily than wheat-flour breads.

BUTTER.

No.	Town.	Made By:	Per Cent. Moisture.	Remarks.
3250	Bristol	Colt Farms	11.15%	Passed.
3247	Providence	H. P. Hood & Sons	12.57%	Passed.
3248	Providence	The Shepard Company, (Wellington Brand)	14.25%	Passed.
3286	Newport	"Regal Brand," Chapin & Adams Co., Boston	16.50%	*Illegal.
3273	Newport	Purchased from Jas. H. Druery	23.50%	Illegal.
3287	Newport	Louis Fritz	16.58%	Illegal.
3288	Newport	Sold by Jas. H. Druery Co.	9.78%	Passed.

*When butter contains more than 15.99% of water, the water in excess is deemed to be added for the purpose of adulteration. There seems to be no need for a water content above twelve per cent. (12%.)

CLAMS.

See previously reported data relative to normal and adulterated clams.

One pint opened clams purchased:

No.	Town.	Sold By:	Remarks.
3175	Providence	Washington Market	At retail.
3188	Providence	Weybosset Pure Food Market	At retail.

ANALYTICAL DATA OF THE CLAMS:

NO:	NET WEIGHT: (Gram)	WEIGHT DRAINED CLAMS:	PERCENT CLAM LIQ-UOR.	LOSS ON BOILING:	TOTAL SOLIDS:	RE-ASH:	RE-MARKS:
3188....	495.0	423.0	14.58	51.64	15.36	12%	Soaked.
3175....	469.0	367.0	21.74	71.15	11.61		Soaked.

COCOA.

No. 3246. "Royal Cocoa," made by Royal Cocoa Company, Jersey City, N. J. Sold by Mayflower Stores, Auburn. Examination

showed this can to be a great improvement in cleanliness of contents as compared with No. 3222 mentioned in our last report. The contents of this last can appeared to be quite free from visible dirt, only one short hair, apparently a dog's hair, and several fibres of lint present. No metallic pieces as observed in previous examination.

EGGS.

It is a fact that the Cold Storage Egg Law has resulted in a better class of eggs being sold here in Rhode Island. Consumers and egg dealers testify to this fact. Unquestionably, some storage eggs are now and then sold for fresh and "near-by" eggs, but usually such eggs are carefully candled and selected so that even an expert candler might not readily detect the difference.

No. 3396. Eggs, sold for fresh Rhode Island eggs by Louis Chester of Providence, under guarantee by Eli Meyer who sold the eggs as "Rhode Island eggs picked up in Kingston." Eight out of one dozen of the eggs purchased by Inspector Hopkins were "rotten." Meyer was successfully prosecuted for selling Chester these eggs.

FLOUR.

3319. Barrington. *Rye Flour* claimed to have been purchased from the Public Market, Providence by Mrs. A. Baxter of Barrington. Material appeared to be crude rye meal ground for stock feed; it contained much chaff and husks from the grain.

Samples of Rye Flour obtained from above store by Inspector Hopkins were of an entirely different type from above mentioned sample. Mr. Berry, the buyer of cereals for this concern, said positively that the meal complained of never came from his stock.

3313. Centreville. *Graham Flour* put up by F. L. Thornton Co.,

Providence. Sold by Northup's Grocery, Centreville, was complained of by Mr. Wooley, that same contained glass. No glass observed, but a very few grains of quartz sand was found in the mixture.

3314. Centreville. *Graham Flour*, similar to above, but in unopened package. No glass found; very slight trace of sand present.

3411. Providence. "*Kenyon's Famous Rhode Island Johnny Cake Meal*," submitted by William J. Beane, Providence Provision Inspector, because of a very disagreeable taste. This was due to the meal becoming moist at some time, which becoming soured, was rendered unfit for food.

3249. Providence. "*Hecker's Cream Buck Wheat and Wheat Flour Mixture*," purchased from a store at 714 Westminster Street, by a woman who would not give her name. She claimed that upon opening the package "a moth flew out and that inside was a web similar to that of a spider's web." Taking the same back to the store, the dealer refused to exchange goods or refund the purchase price.

The flour had odor of stale flour, and did contain evidence of destructive insects present. Inspector Hopkins had no difficulty in getting the dealer to exchange the package for other goods. This is often the case with cereals which are not very stable; weevils and meal worms as well as rancidity of the natural fats in the cereals will finally develop in such goods improperly kept or stored too long. It is our experience that the wholesaler representing the manufacturer, is always ready to exchange these damaged

goods, so that neither the retailer nor the consumer is the loser.

ICE CREAM.

ANALYTICAL DATA OF THE ICE CREAM:

NO.	TOWN.	MADE BY:	KIND.	PER CENT. BUTTER FAT.	BACTERIA per 1 Cc.
3190	Providence....	L. M. Carr Co.....	Vanilla	29.8	
3191			Chocolate	24.5	
	*Newport....	Meunchinger's	Vanilla	10.	220,000
		Mary Elizabeth's	Vanilla	14.0	1,500,000
		Simon Koschney & Sons...	Strawberry	12.0	1,000,000
			Vanilla	9.00	17,500,000
		Huyler's	Vanilla	18.0	6,000,000
		Newport Beach Ass'n.....	Chocolate	12.0	390,000
			Vanilla	12.0	520,000
		J. R. Lorah & Co.....	Vanilla	22.0	170,000
		Graham Co.....	Vanilla	8.0	6,300,000
		Lofblad's	Vanilla	10.0	128,000
		Green & McLean.....	Cherry	10.0	590,000
		(Made by Maine Creamery			
		J. Asher, Jr.....	Lemon	12.0	80,000
		T. G. Bigalke.....	Pineapple	9.00	900,000
		Tasso Bros.....	Strawberry	12.0	800,000
		Ryan's Pharmacy.....	Vanilla	12.0	70,000
		(Made by Tait Bros.)			
		H. D. Wood.....	Vanilla	11.0	1,600,000
		Herman D. Frasch.....	Chocolate	13.0	450,000
		The Bridge Co.....	Chocolate	10.0	40,000
		(Made by Peckham Davis	Co.)		
		Stamas Logothets.....	Strawberry	15.0	1,600,000

ICE CREAM SUBSTITUTE.

No. 3334. "*Substitute for Fat*" in making ice cream. Submitted by Providence Milk Inspection Department. This proved to be a slightly flavored, "skimmed-condensed milk." Its use as a substitute for butter fat would be fraudulent, as it does not contain any fat.

MAPLE SUGAR.

No. 3339. *Maple Sugar*. This is sugar from maple sap, without adulteration.

No. 3398. Sample submitted by C. W. Collins of the Shell Fish Commission. One dark, somewhat pasty in appearance, due to, in our opinion, overheating causing caramelization. Both samples are coarse grained, inferior products of maple sap.

MILK.

Milk is the most extensively used article of diet than any other food stuff, with the possible exception of bread, for in some way or

other it is employed in a portion of the food of all persons every day.

Milk is the ideal food for infants and constitutes the chief article of diet of most invalids.

Milk is one of the least stable of food stuffs, spoiling readily if made or stored under unfavorable conditions.

Milk is the ideal medium for the rapid growth of germ life of every description; because of this fact, milk may readily carry the micro-organisms of communicable diseases either present in the udder of a cow, or by contamination of the milk from a perfectly healthy animal through some source incident to its delivery and use by the consumer.

In our dairy investigational work about the State we found the larger number of herds had good care, are housed in well lighted and ventilated stables, and that, with some exceptions, the milk is properly cooled, drummed and well cared for. In other instances we found quite the reverse. Old fashioned, ill lighted and ventilated stables are from necessity, employed in housing the dairy stock; often times little attention is paid to the sanitary conditions, care and cleaning of the cattle; cows whose hips, udders and flanks are heavily matted with stable manure, are thus rendered incapable of cleaning off at milking time. As the milking proceeds, particles of manure, dirt, dust, bedding, etc. are worked off by the agitation of milking, falling into the milk in the pail.

Some milkers depend upon straining to remove the greater amount of visible dirt, but the soluble portions of the more or less dried urine and manure remain to contaminate the milk with their ill flavors and filth.

The contrast of clean and dirty milk is no greater than the contrast of their saleability, for it is a fact often commented upon by Messrs. Jackson and Hopkins, that the producer of clean milk has a far better class of customers, makes many more cans of milk,

and even gets a much better price for his product than the producer who is careless and who produces dirty milk. This fact is in itself significant, that it is good and profitable business to make clean milk.

The conditions mentioned in the foregoing paragraphs, more or less unavoidable, renders raw milk more dangerous to infants, invalids or other persons who are particularly susceptible to germs which cause gastric disturbances or diseases. For these reasons, this Commission is of the opinion that all milk should be bottled, sterilized and sold in its original container to the consuming public. Pasteurization would greatly guard against the distribution of poisonous and infectious micro-organisms which otherwise might have contaminated the milk during its production or retail distribution. Straight, clean and wholesome milk is more important than the chemical determination of its solids and fat, about which latter constituents we will remark later on in this report.

It is obvious, from our knowledge gained through reading the current press and listening to remarks relative to milk production and distribution, almost invariably made by persons unacquainted with the making and distribution of milk, that as old a food as milk is known to be, its true value as a food for every person, regardless of age, the methods of production and distribution, the cost to the consumer, and above all, a knowledge of these methods to be employed to ensure clean, wholesome, disease-germ-free for your baby's consumption must needs be a matter of education for the milk buying public. We are not going to attempt any such educational proceeding, other than to say that every person interested in clean, wholesome milk should read up on this subject those articles published on sanitary milk production, inspection of dairy cattle, requirements exacted by State and municipal dairy inspection, comparisons of dairy breeds of cattle, the value of the dairy products of these breeds of cows, costs of feeding stuffs and

care in the maintenance of dairy herds, dairy barns, and their equipment, help problems (for strange to say, much labor is required in milk making), and many other subjects which would tend to inform the reader somewhat of this necessary and great industry, thereby permitting him to draw more accurate conclusions as to whether milk, the fundamental and most important food, is priced too high or not. At least, he will learn that it costs the producer more to make clean, wholesome, disease-germ-free milk, that the public should expect and demand; that it costs the distributor more to maintain the high quality of such milk, and that in turn it has to cost the consumer more, this same health-giving, body-growing food, than it used to do in the days before sanitary requirements, the tuberculin testing of cows, etc.

If every person using milk will become informed upon these subjects indicated in the foregoing, he or she will learn that without exception good, straight, clean and wholesome milk is not priced high, but is positively the cheapest and best single food of them all, for milk is absolutely all available as food; every particle is digested and assimilated, and when taken into the body there is no waste as is the case of other foods.

The Dairy Cow is the Greatest Food Factory in the World. For instance, a good dairy cow will give in ten months, a total of edible and digestible food solids approximating her weight. In other words, she will give by many pounds more real food than that contained in the carcass of a mature steer. To make a concrete example, we know of a heifer during her first lactation period that gave more than 9,000 lbs. of milk, every bit of which was weighed to the half ounce. This quantity of milk approximates more than 7.7 times her body weight. The following table, based upon a single analysis of her milk, makes a startling comparison of the food value of her milk with that of a 1,250 lb. steer:

WEIGHT OF MILK—9,260 lbs.		*OF STEER—1,250 lbs.	
Protein,	3.14% or	290.76 lbs.	172.0 lbs.
Fat,	3.85	356.51	333.0
Sugar,	4.78	442.63	000.0
Mineral ash,	.71	65.74	43.0
<hr/>			
Total solids,	12.48% or	1155.64 lbs.	548.0 lbs.

*Analysis of steer by Dr. P. F. Trowbridge.

"The 548 lbs. represents dry matter, as 56% of the steer's live weight was water. The dry material includes hair, hide, bones, tendons, organs of digestion and respiration; in fact, the entire animal, a considerable portion of which is not edible."

The dry food solids from the 9,260 lbs. of milk amounting to 1155 + lbs. is all edible and digestible. The protein of this milk is equal to that of 1.7 such steers; the fat exceeds that of the steer by 1.07 times, while there is enough of the mineral salts present in the milk to more than supply 1.5 times the weight of such a steer. Aside from this the milk contained "as much food value in its milk sugar, which is worth as much in food value as 442.6 lbs. of ordinary sugar."

"These figures show the remarkable efficiency of the cow as a producer of human food. It is because of this economical use of food that the dairy cow and not the steer is kept on high priced lands."

It is quite probable that the cows of all dairy herds do not produce as many thousand pounds of milk as the heifer cited above, and obviously only a very few that produce twice as much, or more than 18,000 pounds of milk, as the cow used in comparison with the 1250 lb. steer by Prof. Eccles and Dr. P. F. Trowbridge.

While there are many records of cows of all breeds that have given over 10,000 lbs. and upwards, to that of the last world's record of more than 33,000 lbs., made by Tilly Alcatra, during one lactation period, it is very certain that they represent a relatively small percentage of the dairy cows throughout the United States; such cows are usually very high priced and are not within the means of the average dairyman, yet they indirectly benefit the milk

producers in that their offspring is continuously being employed to better the quality and quantity of the average dairy herd, by building up a better class of grade cattle of the various breeds.

Probably the general average of all dairy herd cows is nearer 5,000 lbs. of milk per cow about this locality, with some of course running higher and many lower than this quantity. Now if it cost as much to buy, feed and care for a cow which gives 3,500 lbs. of milk as it does for one that gives 6,000 lbs., it is good business to keep only those which are good producers, just as the merchant aims to keep only that class of goods which makes them a profitable investment.

There are three reasons why a milk producer cannot make a profit on his milk production. Over two of them he has no immediate control; these two are small quantity producing cows and the unwillingness of the distributor and consumer to allow him a profit on his milk. The third reason, and which he may control, is a lack of direct knowledge as to which cow or cows are not profitably paying their way. This could be done by keeping strict account of the cost of feeding such animals, and weighing every pound of milk given by them. Thus small milkers or greatly substandard cows could be gradually weeded out and replaced possibly with another and more profitable milker; this latter procedure however is a part of the first reason mentioned, for it is quite a gamble to pick out heavy or good producing animals even following years of practical experience; yet the milk scales and the Babcock test will bring about this result sooner or later. The dairyman must make a profit or else go out of business.

It is just because of this very last statement that this Commission feels compelled to dwell at this length upon milk and some phases of its production, for in one instance (and there are many similar ones), we know of one large producer who felt greatly discouraged because of his complete inability to supply the number

of quarts of milk demanded by his trade just because he could not buy in the market enough cows at that time giving milk the quality of which would bring his present herd milk above the statutory standard for solids, for under the law any cow or herd of cows giving less than 12% of milk solids, such milk is deemed to be adulterated. Naturally this producer, for many years with a record for making clean, good milk, did not relish the thought that he might be branded as a criminal, just because his herd of healthy cows gave milk deficient in solids to that of the standard set by man. So this producer rightly felt discouraged and was considering "getting out of business." Had he done so, it would have been a great loss to the community, for he was and is making clean, wholesome milk of such excellent nutritive quality that certain specialists recommended his herd milk for un nourished babies.

As we have said, milk is a food product too extensively used to have its production diminished. The making of clean, good milk is to be encouraged by its greater use, assurance of a profit to the man who undertakes to produce it, and a kindly consideration of his efforts to be a public benefactor. Probably there isn't another business requiring more capital in proportion to the gross receipts than dairying. Figure it for yourself. A good cow cannot be bought for less than \$175.00. Buy a string of fifty cows; take a chance of losing them if they come from afar; if they react to the turberculin test; if all are right, feed them with grains averaging \$65 per ton, with hay from \$28 to \$35 per ton, even throw in your labor, if you can do it all, and if you are unusually lucky and your herd averages 5,000 lbs. each, divide these pounds by 2.5 to arrive at the number of quarts of milk you sell at 85c. to 90c. per can of 10 quarts, and then figure that you are paid for your investment and labor, as a business proposition. You will note that nothing has been said about a barn, silo, or interest on the entire investment, which certainly is a part of the expense of doing business. The

producer of dairy products must be encouraged and assured a reasonable return for his labor and investment.

In order that this Commission might encourage and assist the milk producer, we have frequently undertaken the chemical examination of the quality of milk given by individual cows of quite a large number of herds, with the view of assisting the producer to find out the low grade or unprofitable animals. We have been asked to do this during the past several years by different farmers, and milk producers. To this end we have offered them our services. The results of such examination made during the past year will be found under the tabulation of milks examined.

So far as our statistical investigation goes, the greatest number of cows in the herds visited are of the Holstein breed; next will follow the Ayrshires, then Jerseys and Guernseys; while there are pure blooded and grade animals of several other breeds, the four mentioned seem to predominate. In point of milk solids based upon percentage of the number of cows tested, the Holstein breed ranks the highest for solids less than 12%; this is partly because of the greatly increased numbers of these cows over all other breeds, in which other breeds or their grades, we find cows substandard as to their solids. Probably, if any of these were examined in equal numbers with the Holstein, it would be found that their percentage of substandard solids might be increased. As regards the chemical constituents of their milk, particularly as to solids and fats, there is but little difference between the Holstein and the Ayrshire cattle. Both are strong, vigorous cattle giving large quantities of excellent milk which authorities say has "more life-giving, vitalizing power than any other milk. * * * That there is such a thing as vitality in milk, and that it is of equal if not greater importance than its chemical composition. * * * The vitality of the milk is closely associated with the vitality of the animal producing it. Strong, vigorous cows such as Holsteins are animals that are bound to be required

for the purpose." (Professor Carlyle, of Wisconsin Experiment Station). Professor McCollum of Johns Hopkins also is an authority for "vitality in such milks."

We mention the above fact because of the large number of Holstein and Ayrshire cows in the dairy herds of Rhode Island, which being heavy producers of milk are more profitable thru milk production thereby ensuring a greater milk supply than many of the cows of other excellent breeds. The fat in the milk of these cows is divided into smaller globules, quite closely simulating human milk in this particular, making the milk easier to digest for it seems to be the fat in rich milks that causes so much digestive disturbance. (See "Milk and Its Relation to Public Health," Hygienic Laboratory Bulletin No. 56). The following eminent men have gone on record endorsing the milk of the Holstein cow as the one best suited to infant feeding, use of invalids and city supply generally:

Dr. Charles Douglas, Professor of Childrens Diseases in Detroit College of Medicine; Dr. Thomas Morgan Rotch, Professor Pediatrics, Harvard University Medical School; Dr. John Lovett Morse, the eminent specialist; Dr. W. P. Northrup, Professor of Diseases of Children, New York University and Bellevue Hospital Medical College; Dr. Joseph W. Schereschewsky of the United States Public Health Service (See Bulletin No. 56, mentioned above); Prof. H. H. Dean, of Ontario Agricultural College; Dr. S. H. Blodgett, Professor at Boston University Medical School; Dr. Alfred E. P. Rockwell, Worcester, Mass.; Dr. J. S. Crumbine, Secretary Kansas Board of Health, and many others.

There is no question about the quality of milk produced by the Guernsey and Jersey cattle, the other predominating breeds; they are preeminently butter-makers, their milk usually being heavy with butter fat, which being of very large size globules quickly rises to a thick, heavy cream distinctly noticeable by its deep, richly

colored layer at the top of the bottle. Still, because of the coarseness of their fat globules, they do not make milks best adapted for feeding infants or invalids according to the above authorities. and their inability as a breed to produce large quantities of milk for periods of 10 to 12 months, renders them less profitable to the dairyman. Lovers of dairy cattle are bound to be prejudiced toward the breed of cows they best like, and while we can truly say that we have use for and love all breeds, we must admit that when we consider the excellent quality of the lacteal fluid, the great abundance of its supply, the universal way their milk seems to agree with babies and little children, the great strength and vigor of the animals, the heavy weight of their bodies making them desirable and profitable beef animals when they cease to give milk, we must admit, we say, that we are prejudiced toward the Holstein cow.

Oftentimes we find dealers when told that their milk is low who reply, "Oh, most of my dairies are Holstein cows," thus intimating that this breed is continuously below standard. Commercial milk is not the product of an individual cow, but the mixed milk from the entire herd. While it may be possible to find a small herd of Holstein cattle that will fall below 12% milk solids, it has never been our experience to know this of our own knowledge, and we have made analysis of the individual cow's milk and the drummed or herd milk in a large number of instances,—herds numbering from five to more than seventy cows; some of the cows were far below 12%, but those below 11.6% were exceptions, just as we have found some cows to go better than 15% solids and 6% fat for this same breed. In any breeds there is a definite relationship of fat to solids; if the fats are high just so will be the milk solids, and when the fat is normally low so will the solids be lower. For instance, a milk having a fat content of three per cent. will be found to contain close to 11% solids; when milk solids are 12%, the fat present should be approximately 3.75%. A milk having

15% total solids, calls for 6% fat. Therefore it is evident that if a milk contained but 2.5% (our minimum legal standard) of fat, it would call for a milk solid of but 10.3%.

A revision of our standard for milk should be made, particularly as to the percentage of fat; 2.5% is too low and tends to lead to "skimming" of the cream. It should be not less than 3.25%. A perusal of the records of milks examined by the Providence Inspection of Milk Department will show, except in the instances of real adulteration, no herd milks fall below 3.25%. This figure is the standard for milk fat adopted by the Federal authorities, together with 8.5% of solids not fat. If 3.25% was our minimum standard for fat, the solids of herd milk would take care of themselves, for there is so much analytical data relative to normal milks available that there would be no real difficulty in prosecuting an offender for adulterating his milk. It may be shown and we believe that we have already demonstrated that straight, clean and wholesome milks having a milk solid content of something less than 12% may contain greater vitality, nourish the child and promote growth far more rapidly than a milk rich in butter fat. Too many persons judge the quality of the milk by its cream line only.

This Commission feels that in view of the fact that milk is so universally an important food, it should be produced under the most practicable sanitary conditions, from healthy, tuberculin tested cows, and be sold without any of its constituents being taken from, or additions made to, it without severe penalties for such adulteration; in exchange for such milk the producer should receive sufficient profit to encourage him to continually strive to improve the clean, wholesome quality of his milk.

In our Ninth Annual Report we expressed this Board's sentiments relative to milk from tuberculous cows, the need for legislation regulating the tuberculin testing of cattle coming into this State, as well as an expression of opinion of the disposal of the

carcasses of cattle reacting to the tuberculin test. This part of last years report is even more timely today than when it was printed. Tuberculous cattle probably have been with us from time immemorial, and unquestionably will be with us for some time to come, unless we join in with the Bureau of Animal Industry, which Federal department is doing a great work toward the complete eradication of tuberculosis in dairy herds.

In the meantime there is no need to be stampeded by reports of tubercle bacilli in milk, for you may be safeguarded through pasteurization, (heating the milk for 20 minutes at a temperature of 140° Fahrenheit, under proper condition and methods so simple that any one may do this after instruction by any district nurse, physician or health officer). Pasteurization is a necessary precaution, not only against tuberculosis, but most of the other communicable diseases as well. As for the fear that you may buy meat from a tuberculous animal, remember that the very process of cooking the meat destroys any infectious organisms present.

One hundred and eighty-five samples of milk were examined in the Board's laboratory during the year; six analyses were made for physicians; two for citizens; twenty-five for milk dealers; sixty-two for the milk inspection departments of several cities and towns; and ninety for farmers and milk producers.

Out of the entire number of one hundred and eighty-five samples examined, 23, or 12.4%, were dirty milks; 104, or 55.1%, were above the State standard for solids and fats; while 81 samples, or 43.7%, were below the standard for solids; 53, or 28.7%, were sub-standard milks, i. e., milk containing less than 12% total solids, although the fat for each of these was much greater than that required in our milk law. 24, or 12.9%, of the milks contained added water; three milks had been skimmed, and one milk both watered and skimmed.

ANALYTICAL DATA OF THE MILKS:

NO:	TOWN:	Dealer: or Submitted by:	Total Solids:	Fat:	Solids N. F.:	Refractn Sour Milk Serum @ 20 C.:	Ash Sour Milk Serum:	Remarks:
3353	Anthony	F. F. Wooley	13.97	6.20	7.77	40.3		Top of can.
3584	Burrillville	Frank Hobson	12.71	4.60	8.11			
3585	Burrillville	"	12.68	4.10	8.58			
3586	Burrillville	"	11.12	3.20	7.92			
3587	Burrillville	"	12.95	4.00	8.96			
3239	Central Falls	F. Bedard (Milk Inspector)	10.59	3.20	7.39	37.0	.68	Watered.
3240	Central Falls	"	10.77	3.80	6.97	37.5	.66	Watered.
3241	Central Falls	"	12.47	4.20	8.27	38.7	.64	Watered.
3242	Central Falls	"	11.49	4.00	7.49	36.4	.68	Watered.
3308	Central Falls	F. A. Phaneuf	12.60	3.60	9.00			Clean milk.
3309	Central Falls	"	12.37	3.80	8.57			Dirty.
3310	Central Falls	"	13.28	4.20	9.08			Dirty.
3344	Centreville	F. L. Vaughn	10.44	3.70	6.74	36.3		Watered.
3389	Cranston	Done Dame, Jr.	8.98	3.15	5.83	34.6	.49	Watered.
3350	East Greenwich	F. L. Vaughn	11.11	3.60	7.51	37.3	.61	Water'd. Dirty.
3351	East Greenwich	"	10.97	3.60	7.37	38.0	.62	Water'd. Dirty.
3352	East Greenwich	"	10.98	3.69	7.38	37.7	.63	Water'd. Dirty.
3457	East Greenwich	Thorncliffe Farm	13.46	4.80	8.66			
3302	East Providence	B. F. Gravelin (Milk Inspector)	13.18	4.20	8.98	42.0		Dirty.
3383	East Providence	"	11.46	3.40	8.06			
3390	East Providence	"	11.97	3.50	8.47	40.4		
3391	East Providence	"	12.21	3.40	8.76	40.5		Dirty.
3392	East Providence	"	11.78	3.30	8.48	39.8		
3393	East Providence	"	10.06	3.40	6.66			Watered.
3394	East Providence	"	12.15	3.60	8.55			
3395	East Providence	"	12.15	3.40	8.75			
3403	East Providence	"	12.80	4.00	8.80			
3404	East Providence	"	12.06	3.80	8.26			Dirty.
3405	East Providence	"	12.44	3.70	8.74			Dirty.
3406	East Providence	"	11.57	3.20	8.37	39.8		Very Dirty.
3407	East Providence	"	11.95	3.70	8.24	39.6		
3408	East Providence	"	11.32	3.60	7.72			Very Dirty.
3409	East Providence	"	11.56	3.80	7.76			Dirty.
3410	East Providence	"	11.96	3.50	8.26	40.0		Dirty.
3415	East Providence	"	11.53	3.40	8.13			
3416	East Providence	"	11.95	3.50	8.45			
3417	East Providence	"	11.84	4.20	7.64			
3418	East Providence	"	12.30	4.00	8.30			
3588	East Providence	"	11.69	3.00	8.69			Skimmed.
3589	East Providence	"	11.68	2.10	9.58			Skimmed.
3430	Foster Centre	S. E. Bennett	11.67	3.00	8.67	41.4		Skimmed.
3388	Greene	J. H. Tanner	9.98	3.00	6.98	34.8	.64	Watered.
3253	Hope	Senator Clarke	13.36	4.80	8.56			
3254	Hope	"	12.84	3.80	8.04			Dirty.
3255	Hope	"	11.66	3.60	8.06			Clean.
3256	Hope	"	12.30	3.60	8.53			Slight Dirt.
3265	Johnston	3 yr. Heifer	10.70	3.00	7.70			Clean.
3267	Johnston	Hargraves (Guernsey cow)	14.72	4.90	9.82			Clean.
3337	Johnston	3 yr. Heifer	11.84	3.40	8.44			Clean.
3439	Johnston	"	12.00	3.40	8.60	40.6		Clean.
3440	Johnston	Holstein cow	12.40	4.00	8.40			Clean.
3366	Knightsville	C. P. Nichols	12.33	4.00	8.33			Slight Dirt.
3367	Knightsville	"	11.19	3.20	7.99	39.2		Slight Dirt.
3365	Oaklawn	Geo. C. Bennett	11.56	3.40	8.16	39.1		Slight Dirt.
3277	Pawtucket	F. D. Buckman (Milk Inspector)	11.65	3.85	7.80	37.8	.73	Water'd. Dirty.
3278	Pawtucket	"	10.30	3.20	7.10	36.5	.66	Water'd. Dirty.
3279	Pawtucket	"	12.37	3.80	8.57			Dirty.
3280	Pawtucket	"	11.62	3.60	8.02	38.3	.71	Water'd. Dirty.
3281	Pawtucket	"	12.35	3.70	8.65			Dirty.
3303	Pawtucket	"	9.81	3.20	6.61	33.7	.55	Water'd. Dirty.
3461	Pawtucket	Mass. producers						

NO.:	TOWN:	Dealer: or Submitted by:	Total Solids:	Fat:	Solids N. F.:	Refractn Sour Milk Serum @ 20 c.:	Ash Sour Milk Serum:	Remarks:
		selling to Wade & Warnock	13.30	4.20	9.10			
3462	Pawtucket	"	12.05	3.60	8.45			
3463	Pawtucket	"	13.42	4.40	9.02			
3464	Pawtucket	"	13.50	4.60	8.90			
3465	Pawtucket	"	13.00	3.60	9.40			
3466	Pawtucket	"	13.62	4.20	9.42			
3467	Pawtucket	"	12.70	3.60	9.10			
3468	Pawtucket	" (Soured)				40.0		O. K.
3469	Pawtucket	"				41.2		O. K.
3470	Pawtucket	"				39.4		P
3501	Pawtucket	"	12.73	4.00	8.73	41.5		
3502	Pawtucket	"	12.04	4.20	7.84	39.0		Top of can.
3503	Pawtucket	"	12.37	4.00	8.37	40.2		
3504	Pawtucket	"	12.42	4.00	8.42	39.8		
3506	Pawtucket	"	12.85	4.20	8.65	40.3		
3507	Pawtucket	"	12.50	3.80	8.70	40.1		
3508	Pawtucket	"	12.86	4.20	8.66	40.1		
3509	Pawtucket	"	12.76	4.00	8.76	40.3		
3510	Pawtucket	"	12.63	3.60	9.03	41.1		
3511	Pawtucket	"	10.23	3.10	7.13	34.2	.66	
3512	Pawtucket	"	13.96	4.30	9.66	40.0		
3169	Providence	(?)	12.37	3.80	8.57			
3301	Providence	Dr. Geo. T. Spicer	12.56	4.30	9.66			
3312	Providence	"	11.24	3.20	8.04			
3322	Providence	"	12.45	4.40	8.05			
3336	Providence	"	12.87	4.40	8.47			
3304	Providence	Providence Milk Inspection Dept.	11.43	4.00	7.43	37.3	.66	Watered.
3342	Providence	"	11.98	3.50	8.48			
3343	Providence	"	12.04	3.60	8.44			
3381	Providence	"	10.87	3.30	7.57	36.4	.61	Watered.
3431	Providence	"	11.34	3.60	7.74	38.5	.69	Watered.
3432	Providence	"	11.97	4.00	7.97	40.2	.76	
3354	Providence	Dr. H. S. Hincks	12.32	3.60	8.72			
3449	Providence	Mrs. R. H. I. God- dard	13.15	4.70	8.45			
Following analysis <i>individual cow's milk</i> ; herd P. C. Petersen:								
3514	Providence	Grd. Holstein	12.88	4.10	8.78			
3515	Providence	"	11.65	3.60	8.05			
3516	Providence	Grd. Jersey	13.38	4.10	9.28			
3517	Providence	Grd. Holstein	12.40	4.20	8.20			
3518	Providence	"	11.85	3.60	8.25			
3519	Providence	"	11.47	3.80	7.60			
3520	Providence	Ayrshire	13.11	3.80	9.31			
3521	Providence	Holstein	12.42	4.40	8.02			
3522	Providence	"	12.25	4.30	7.95			
3523	Providence	"	12.03	4.20	7.83			
3524	Providence	"	11.23	3.20	8.03			
3525	Providence	"	12.34	3.80	8.54			
3526	Providence	"	10.31	2.40	7.91			
3527	Providence	"	11.96	3.60	8.36			
3528	Providence	"	11.21	3.00	8.21			
3529	Providence	"	11.40	3.80	7.60			
3530	Providence	Holstein	12.72	5.00	7.72			
3531	Providence	Grd. Holstein	12.88	4.40	8.48			
3532	Providence	Holstein	11.60	3.40	8.20			
3533	Providence	Grd. Holstein	13.09	5.20	7.89			
3535	Providence	Holstein	12.29	4.30	7.99			
3536	Providence	Grd. Holstein	13.18	4.40	8.78			
3537	Providence	"	11.81	3.40	8.41			
3538	Providence	"	11.47	3.60	7.87			
3539	Providence	"	13.48	4.60	8.88			
3540	Providence	Blue Cow (Swiss?)	11.34	3.40	7.94			
3541	Providence	Grd. Holstein	13.05	3.90	9.15			
3542	Providence	"	12.06	3.60	8.46			

NO.:	TOWN:	Dealer: or Submitted by:	Total Solids:	Fat:	Solids N. F.:	Refractn Sour Milk Serum @ 20 c.:	Ash Sour Milk Serum:	Remarks:
3543	Providence	Grd Holstein	12.16	3.80	8.36			
3544	Providence	" "	11.49	3.20	8.29			
3545	Providence	" "	11.82	3.20	8.62			
3547	Providence	Jersey	13.15	4.40	8.76			
3548	Providence	" "	12.25	3.70	8.50			
3549	Providence	" "	11.85	3.40	8.45			
3550	Providence	" "	13.53	4.60	8.93			
3551	Providence	Grd. Holstein	12.43	3.60	8.83			
3552	Providence	Gray Cow (Swiss?)	14.23	5.00	9.23			
3553	Providence	Jersey	13.73	4.80	8.93			
3554	Providence	Durham	13.06	4.80	8.26			
3555	Providence	Grd. Holstein	11.90	3.40	8.50			
3558	Providence	Ayrshire	11.40	3.20	8.20			
3559	Providence	Grd. Holstein	12.08	3.80	8.28			
3560	Providence	Blue Cow (Swiss?)	11.49	2.80	8.69			
3561	Providence	Grd. Holstein	11.46	3.80	7.66			
3562	Providence	Gray Cow (Swiss?)	12.20	3.70	8.50			
3563	Providence	Grd. Holstein	10.57	2.80	7.77			
3564	Providence	" "	11.32	3.60	7.72			
3565	Providence	" "	11.77	3.80	7.97			
3566	Providence	Blue Cow (Swiss?)	13.65	4.80	8.83			
3567	Providence	Grd. Holstein	12.28	3.60	8.65			
3568	Providence	" "	11.40	3.40	8.00			
3569	Providence	" "	13.32	4.80	8.52			
3570	Providence	" "	12.76	4.40	8.36			
3571	Providence	Avrshire	11.76	3.40	8.36			
3572	Providence	Yellow Cow (Guernsey)	12.87	4.00	8.87			
3573	Providence	Grd. Holstein	11.18	2.70	8.48			
3574	Providence	Guernsey	12.74	4.40	8.34			
3575	Providence	Avrshire	12.77	3.90	8.87			
3576	Providence	Gray Cow (Swiss?)	11.76	3.40	8.36			
3577	Providence	Grd. Holstein	10.20	2.60	7.60			
3580	Providence	Guernsey	11.54	2.90	8.64			
3581	Providence	" "	12.36	3.70	8.66			
3582	Providence	Grd. Holstein	12.57	3.90	8.67			
3583	Providence	" "	12.58	3.80	8.78			
3591	Providence	" "	11.52	3.60	7.92			
3592	Providence	" "	13.29	4.20	9.09			
3593	Providence	" "	11.04	2.60	8.44			
3594	Providence	" "	11.50	4.00	7.50			
3595	Providence	" "	20.56	11.84	8.72			
3596	Providence	" "	12.62	4.80	7.82			
3597	Providence	" "	13.70	4.20	9.50			
3598	Providence	" "	12.20	3.80	8.20			
3545	Providence	Broadway Dairy Submitted by Sam'l Brown State Police	10.57	2.40	8.17	38.5		Watered and skimmed
3368	So. Auburn	Wm. Helgerson	13.31	4.40	9.31			Clean
3380	So. Scituate	Wm. Royal Page	11.93	3.90	8.03	37.2	.69	Watered.
3381	So. Scituate	" "	10.87	3.30	5.57	36.4	.61	Watered.
3431	So. Scituate	" "	11.34	3.60	7.74	38.5	.69	Watered.
3432	So. Scituate	" "	11.97	4.00	7.97	40.3	.76	Passed.
3414	Warren	Dr. J. B. Munro	15.58	6.45	9.13			Clean.
3452	Warren	(Milk Inspector)	13.08	4.60	8.48			Clean.
3453	Warren	" "	12.30	4.00	8.30			Clean.
3454	Warren	" "	12.59	3.60	8.99			Clean.
3455	Warren	" "	11.42	3.50	7.92			Clean.
3456	Warren	" "	12.35	3.90	8.45			Clean.
3471	Warwick	Wm. Elsbree, Hol.	12.92	3.90	9.02			Clean.
3472	Warwick	" "	13.13	3.95	9.18			Clean.
3473	Warwick	" "	12.87	4.00	8.87			Clean.
3474	Warwick	Wm. Elsbree, Jer.	15.25	5.60	9.65			Clean.
3223	Woonsocket	Dr. Jos. Roswell	11.03	3.00	8.03			Clean.
3450	Woonsocket	Dr. U. S. Richards	10.32	3.40	6.92	37.6	.73	Watered.
3578	Woonsocket	Rockcliffe Farm, (W. C. & H. P. Thayer)	11.66	3.30	8.36			Clean.

The following tabulation of the foregoing record of the cows in the P. C. Petersen herd may prove interesting to those readers who would like to see the comparison of the breeds contained therein, in the quality of their individual milks and the drummed or herd milk:

Cow No.:	Breed:	Below Standard:		Above Standard:		Average	
		Solids:	Fat:	Solids:	Fat:	Solids:	Fat:
8	Holstein	11.60	3.40				
9	"			12.72	5.00		
16	"			12.29	4.30		
— 33 Holstein Cows, Cows below standard, 1, or 33.33%. Cows above standard, 2, or 66.67%.						12.20	4.23
1	Grade Holstein	11.04	2.60				
2	"	11.32	3.60				
3	"	11.77	3.80				
4	"	11.52	3.60				
5	"			12.88	4.40		
6	"			12.34	3.80		
7	"	11.96	3.60				
10	"	11.21	3.00				
11	"	10.31	2.40				
12	"	11.40	3.80				
13	"			13.09	5.20		
14	"	11.50	4.00				
15	"			13.29	4.20		
17	"	11.81	3.40				
18	"			13.18	4.40		
19	"			12.06	3.60		
20	"	11.49	3.20				
21	"			12.16	3.80		
22	"	11.40	3.40				
23	"			12.58	3.80		
25	"			13.32	4.80		
27	"	10.20	2.60				
30	"	11.18	2.70				
37	"			12.43	3.60		
38	"			12.76	4.40		
40	"			13.05	3.90		
41	"	11.47	3.60				
43	"	10.57	2.80				
44	"			12.28	3.60		
47	"			12.08	3.80		
48	"	11.85	3.60				
49	"	11.23	3.20				
50	"			12.03	4.20		
51	"	11.47	3.80				
53	"			12.25	4.30		
55	"			12.42	4.40		
56	"	11.65	3.60				
57	"			12.88	4.10		
58	"			13.48	4.60		
59	"			12.40	4.20		
61	"	11.90	3.40				
64	"	11.46	3.80				
68	"	11.82	3.20				
70	"			20.56	11.84		
62 (new)	"			12.57	3.90		
69 (new)	"			12.62	4.80		
71 (new)	"			13.70	4.20		
— 47 Grade Holstein Cows, Cows below standard, 23, or 48.93%. Cows above standard, 24, or 51.07%.						12.21	3.92
35	Ayrshire			12.77	3.90		
36	"	11.76	3.40				
63	"	11.40	3.20				
52	Grade Ayrshire			13.11	3.80		
— 4 Ayrshire Cows,						12.26	3.57

Cow No.:	Breed:	Below Standard:		Above Standard:		Average:	
		Solids	Fat:	Solids:	Fat:	Solids:	Fat
	Cows below standard, 2, or 50%.						
	Cows above standard, 2, or 50%.						
33	Jersey	11.85	3.40				
69	"			12.25	3.70		
71	"			13.53	4.60		
17	" (new)			13.16	4.40		
54	" (Grade)			13.38	4.10		
—	5 Jersey Cows,					12.83	4.04
	Cows below standard, 1, or 20%.						
	Cows above standard, 4, or 80%.						
28	Guernsey			12.36	3.70		
29	"			12.74	4.40		
34	"	11.54	2.90				
—	3 Guernsey Cows,					12.21	3.67
	Cows below standard, 1, or 33.33%.						
	Cows above standard, 2, or 66.67%.						
45	Blue Cow (Swiss?)			13.65	4.80		
46	"	11.49	2.80				
62	"	11.34	3.40				
—	3 Blue Cows,					12.16	3.67
	Cows below standard, 2, or 66.67%.						
	Cows above standard, 1, or 33.33%.						
32	Gray Cow (Swiss?)	11.76	3.40				
39	"			14.23	5.00		
66	"			12.20	3.70		
—	3 Gray Cows,					12.73	4.06
26	Yellow Cow (Guernsey)			12.87	4.00		
72	Durham			13.06	4.80		
	Total number cows tested, 70.						
	Number below standard, 31, or 44.28%.						
	Number above standard, 39, or 55.72%.						
	Herd average (seventy cows)					12.496	3.963

MOLASSES.

3316. Complaint that molasses had a "bitter" taste, imparting this same bitterness to ginger or molasses cookies was made by J. M. Sisson, Postmaster at Woodville, R. I. Sample was from the bottom of, or the last of the barrel. Bitterness had not been previously noted. Sample in question brought to laboratory by Dr. George B. Peck, who, with our chemist could taste no bitterness. There was an after taste rather disagreeable and suggestive of sulphites, which latter was proved to be the case, as these compounds are considerably employed in bleaching molasses.

OLIVE OIL.

3291. "Superfine Olive Oil. Lucca, Italy. E. Francesconi," and sold by Antonio Pennacchia of Providence, R. I. Sample had been in stock about two years. This was correctly labeled.

3292. "Lucca Brand, Tuscany, Italy. Extra Fine Olive Oil."

(Guaranteed absolutely pure).” Sold by Michale Matalena, Providence, R. I. Sample was straight Cottonseed Oil.

3293. “*Fine Oil. Purissima Olio deBitonto-Bari La Puglia.* We guarantee this olive oil to be absolutely pure under chemical analysis and of finest quality.” Sold by Michael Matalena, Providence. Not olive oil, but was cottonseed oil to which a little olive had been added to give it an olive oil odor, but not enough to influence the flavor to taste.

3294. “*Mariani Virgin Olive Oil. Purest, Choicest Quality for Table and Medicinal Use.* Bottled in Nice, France. Four fluid ounces.” Sample is olive oil.

3306. “*Pure Extra Fine Olive Oil. Extra I.* Packed expressly for Garra & Trusso, New York.” Not olive oil. Is straight cottonseed oil.

3307. “*Finest Quality Olive Oil. Extra Pure. Termini Imerese, Sicilia, Italy.*” This also is straight cottonseed oil.

3317. “*Pure Italian Olive Oil.* Packed and Guaranteed by M. De Robbio & Sons, Providence, R. I. Net Contents 1 lb., 12 ozs.” Sample is as labeled.

3325. *Olive Oil* bought from G. DelRossi, Providence. Sample is not olive, but is cottonseed oil.

3328. “*Extra Fine Olive Oil.*” Sold by Narragansett Wholesale Grocery, Providence. Sample is olive oil.

3332. *Olive Oil* sold by Joseph Bagliore, Providence, R. I. Sample is passed as olive oil.

3335. “*Heinz Pure Olive Oil,*” bought from Dimond Co., Providence. Sample is olive oil.

3364. “*Fine Olive Oil*” imported from Tuscany, Italy by Garra & Trusso, New York.” This sample is straight cottonseed oil.

3412. “*Mariani Pure Olive Oil.*” Sample is olive oil.

3413. Sample sold as "*Pure Olive Oil*," taken from 5 gal. can. Not olive oil, but is straight cottonseed oil.

3330. "*Round Table Brand Olive Oil*," purchased in Westerly Is correctly labeled.

Due to the World War, Italian Olive Oil has been a scarce article in the market during the past two years; consequently the high price of what true olive oil there was offered for sale proved too great a temptation for certain importers and distributors to substitute the cheaper cottonseed oil at the olive oil price. This practice was common, particularly with small dealers and grocers, who purchased the oil in good faith. As a result of this Commission's activities in preventing the sale of much of this inferior article of food, a large amount of spurious olive oil was seized and caused to be relabeled, or to be completely withdrawn from the local market. Working in co-operation with the U. S. Bureau of Chemistry, the dealers in the substitute oil in New York and Boston were prosecuted by the above mentioned Federal authorities for selling and making interstate shipments of the so-called olive oils.

At the time this report is presented the conditions of the olive oil market have been bettered through the release mostly of a large amount of good olive oil (Italy), together with some small shipments to this country. There is a corresponding drop in the wholesale price of this oil.

OYSTERS.

In our Eighth Annual Report, we called attention to the food value of the oysters of Narragansett Bay and its tributary waters as being second to none in the country. At that time the oyster industry was diminishing, due we were informed by the oystermen, to their inability to get oyster sets anywhere in the upper bay, except under unusual circumstances. That this industry, together with the lessening of fish of all kinds in the bay, is in danger of

being completely ruined is evidenced by the present agitation by societies, associations and prominent citizens of the State, wherein they are endeavoring to create a feeling of public opinion that will demand speedy investigation and elimination of polluting elements that are entering the waters of the Providence River and Narragansett Bay from certain industrial plants and many of the cities and towns situated near its shores.

The enormous industry and the economic value of our shell fish foods certainly demands immediate attention, and steps taken to stop and further prevent these waters being polluted with materials which threaten the life of these fish.

But two samples of oysters, this past year, were chemically examined in the laboratory.

Oysters. One pint purchased:

No.	Town.	Sold By:	Remarks.
3176	Providence	Washington Market Co..	At retail.
3189	Providence	Weybosset Pure Food Market	At retail.

ANALYTICAL DATA OF THE OYSTERS:

No:	Net (Weight: Grams)	Weight Drained Oysters:	Weight Oyster Liquor:	Loss on Boiling:	Total Solids:	Ash:	Re- marks:
3176....	475.0	367.0	108.0	57.88	13.22		Soaked.
3189....	499.5	394.0	105.5	56.64	12.87	.21	Soaked.

PORK.

3534. Salt Pork sent in by Dr. J. B. Munro, V. S., of Warren. Specimen was a piece of the belly showing gangrenous appearance just about the mammary glands. It was unsightly, bad smelling and apparently unfit for human food. This specimen was sent by this laboratory to the Pathological Laboratory of the State Board of Health.

SODA WATER.

3436. Bottled Soda Water, "Orangeade," made by the Nectar Bottling Co., Providence, and sold by Charles Tartarian also of Providence, was misbranded in that the Nectar Bottling Co. em-

ployed a bottle belonging to the Puritan Bottling Co., also of Providence.

3437. "Orangeade" made by Nectar Bottling Co., sold by above mentioned Tartarian, was misbranded through the use of a bottle belonging to the Puritan Bottling Co., and by failure to declare the net contents of the beverage.

STOCK FEED.

3434. Corn sold as No. 1 for stock feeding. Sample was badly damaged, in that it was quite completely covered with a green mold, and had a strong, mildewed odor. Wholly unfit for feeding cattle or hogs. When the complaining farmer found that we were inclined to prosecute the miller selling him this corn,—which corn was a direct loss to him,—he refused to co-operate as it would make it hard for him "because he owed the mill something" and would not mention the dealer or miller.

Under the Food and Drugs Act this Commission can prosecute dealers who sell adulterated feeds for stock feeding, just as successfully as when damaged or deleterious or adulterated foods are sold for human consumption. Farmers, dairymen or poultrymen should not hesitate to give this Commission information that will aid this class of business men in getting good and wholesome stock food. There is too much of this being done now and again, and while we have received complaints, either the evidence had been destroyed or else the complainant hesitated "to make trouble for the man" selling him damaged or inferior grains.

To keep your evidence, submit it to us and assist in subsequent prosecution if the remedy is to prosecute, is a duty that every grain and hay feeder should perform in order that his neighbor may not be cheated likewise.

EXAMINATIONS

UNITED STATES DEPARTMENT OF JUSTICE

Bureau of Information

Tom Howick, Agent

3268. "*Xlent Brand Tomatoes*," purchased by Mrs. Arthur D. McCann of Providence, thought to have contained glass. None found, but the tomatoes did contain considerable sand.

3289. *Candy* sent from Newport, thought to contain harmful materials. No injurious substances found.

3321. *Bread* bought from Germania Grocery by Fred Lord, Providence, contained much black mold,—*Aspergillus niger*.

3326. *Peanut Butter*, "Maple Twin Brand," put up by Mayflower Packing Co., Lowell, Mass. Sold by J. Paquin, Central Falls, was said to contain glass. Glass not found; gritiness apparently particles of coarsely ground peanuts.

3327. *Candy* sent in by Chief of Bristol Police on complaint of Denis Farrua that same contained glass. No evidence of glass present in specimens examined.

3333. *Prune Pie* submitted by John F. Keegan, Providence, who bought the pie from the Phillipsdale Store. Baked by New England Baking Co., Pawtucket. Pie did contain four large pieces of white glass, which from shape and appearance it was judged to be portions of an incandescent electric light bulb. Unquestionably the result of an accident from a bursting electric light bulb, pieces happening to fall into the unbaked pie and later cooked into this pie.

This incident is similar to two others in widely distributed bakeries, showing that such an accident is quite likely to happen any time.

3335. *Olive Oil* complained of by Thomas F. Maher of Pawtucket, who claimed that this bottle of "Heinz Pure Olive Oil" contained ground glass. No evidence of glass or other foreign materials found.

3340. *Candy*. Complaint of F. W. Brown, Providence, that "Quality Chocolates" purchased at a local store made his wife ill. They noted a white powder upon the confection and became sus-

picious that that was what caused her illness. This powder proved to be corn starch.

3341. *Candy* sent in by Dr. S. C. Webster, Health Officer of Westerly, who was suspicious that such cheap candy might contain injurious materials. Neither glass or other injurious substances found.

3345. "*Monticelli's Effervescent Granular*," (What the granular effervescent material was, not stated on label). Made by Nazareno Monticello, Philadelphia, was purchased by Vito Parrillo of Providence, who claimed that same contained "something he supposed was glass." The contents did contain several flaky particles of glass, evidently a scaly or flaky portion of an air bubble in the bottle, or glass blister. Apparently not intentionally added.

3346. *Bread* bought from Mayflower Stores by Mrs. V. S. Steere of Providence, who claimed it contained glass. Glass was not found in the portions submitted for examination.

3349. *Candy* containing glass was submitted by the Chief of Police of North Providence, on complaint of some purchaser who bought it from Thos. Ferra, No. Providence, who in turn had purchased it from a wholesaler, C. Moulecalos of Providence. This candy did contain a considerable quantity of fine and coarsely broken glass; this glass evidently intentionally added by parties unknown, was both flint and green glass.

3375. "*Wanetta Chocolate with Nuts*" was submitted by Frank A. Sweeney of Providence to Lieut. M. E. Kelly, 4th Precinct. It was thought to contain glass. No glass found, but two pieces of quartz gravel size of rice kernels were found in this confection, and was probably contained in the unclean nuts.

3376. "*Ginger Snaps*" complained of by Howard Knight, Providence, who bought them from a local market, had been previously submitted to examination at a local drug store, from which came the report that "a large percentage of ground glass" was found.

Another cookie of this lot was submitted to this laboratory. This cookie did not contain any glass. Sugar crystallized on its surface made shinary particles somewhat resembling glass. Three little granules of quartz sand were found in the ash of this cookie.

3384. *Peanut Butter*. Complain of F. V. Thrasher, Edgewood, who said there was glass in it. Ignited portions showed considerable traces of sand.

3385. *Candy*, bought from F. W. Woolworth Co. by Angelo Filippo, of Providence, who submitted a piece of glass found in the candy. Four other pieces of finely broken glass were found in the lot submitted for examination.

3397. *Absorbent Cotton* submitted by the R. I. District Nursing Association contained a "white powder" which seemed suspicious. Cotton was labeled "Sanitary Absorbent Cotton. Geo. L. Claffin Co., Providence, R. I." The powder proved to be talcum, presumably accidentally spilled into the absorbent cotton while rolling.

3400. *Salted Peanuts* thought to contain ground glass was the complaint of a Mr. Bigley, of Providence. No glass, but did contain little sand.

3401. *Camembert Cheese*, Military Brand, made in New York State and bought by Mr. Charles Hubbard, Federal Building, Providence, from Stoll Bros., Boston, was "supposed to contain ground glass." Careful examination failed to show the presence of any glass or other gritty material.

3411A. *Cookies*, sent in by J. Atmore Wright of Wakefield, were considered as suspicious, but examination failed to show presence of any glass.

3435. *Bread*. Two slices of bread baked by Hathaway, Boston, were received from Glengarry Mills, Inc., Oakland, R. I. Glass had been found. Examination of these two slices revealed one large piece of "double-thick" glass, possibly a portion of a broken show case. The piece was too large to be capable of being

swallowed, and was present in the bread as the result of some accident.

3451. *Fruit Biscuit* bought from the Mayflower Stores by Henry McIntosh of Pawtucket. Did contain glass, evidently sprinkled on and rolled into the dough before baking; looked like maliciousness on the part of some employee of the bakery.

3599. Can of "*Gorton's Flaked Fish*," product of Gorton-Pew Fisheries Co., Gloucester, Mass., purchased at Atlantic & Pacific Tea Co. store in Cranston by Mrs. Lillian Jenckes of Norwood, contained material resembling broken glass and the observer being frightened by "the ground glass scare" submitted it for examination. The crystals were common salt.

UNITED STATES NAVAL DEPARTMENT

New London Station

3283. Loaf and slices of *Bread* submitted by Lieut. Hermann Oelrichs in charge at New London, Conn., who was suspicious that same contained "liquid mercury." Careful analysis failed to show any evidence of the presence of mercury, arsenic, antimony or their compounds. No other injurious substances found.

3300. *Stick Extract Licorice*, submitted by Lieut. Oelrichs, who suspected the presence of glass. No glass found, but there was an appreciable trace of sand present.

UNITED STATES FOOD ADMINISTRATION

Hon. A. M. Coats, Administrator

3266. *Raisin Bread* baked and sold by Weybosset Pure Food Market, Providence. Top of loaf frosted with sugar, contrary to Food Administration ruling.

3347. *Wheat and Rye Bread*. Contained masses of black, hair-like fibres which proved to be *Aspergillus niger*, or some fungi of the *Penicillium glaucum* type. Really this bread contained black mold.

3348. *Bread* to determine presence of cereal which was then required. Did contain corn.

3358. *Rye Bread* from Giusti Bros., Providence, containing many black particles thought to be coal. There were wood charcoal or particles of carbon.

3360. *Raisin Bread* submitted by Mrs. J. Selvy, Edgewood, who stated "contained sand or glass; looks alright, but the chewing of it is the test." The only gritty substance observed, either by process of "chewing it" or by examination of the ash, or from microscopical examination of the bread, was portions of seeds from raisins.

3362-3363. *Grape Nuts*, in opened and unopened packages, submitted with the complaint that the product contained glass. Small particles of glass in irregular masses were observed in the opened package. None was found in the contents of the original package or unopened box. The glass found may have been intentionally added by some person seeking notoriety.

3382. *Victory Flour* bought from Olneyville Public Market by Mrs. McCahey, Providence, who complained of its uselessness in making bread. The specimen of bread baked from the purchased flour certainly was very poor in appearance. Microscopical examination proved the "victory flour" to be straight sago starch.

3399. *Flour* to ascertain whether it contained any added cereal. Did contain barley, at that time counted as a cereal.

3433. *Potato Flour* which complainant said had a bad odor proved to be straight potato starch alright, possessing a "mildew" or musty odor and taste. Its water solution was decidedly acid, indicating that the flour had been stored in a damp place and had fermented, becoming unfit for food purposes.

UNITED STATES SECRET SERVICE

Thomas J. Callaghan, Agent

3372. *Bread* submitted by Mrs. Louise May, Providence, who claimed that eating it had made persons ill. Several pieces of white, flint glass were found within the bread.

3373. *Grape Jelly* submitted by Ralph Cipollo, Providence, who claimed that same contained glass. Gritty, glass-like particles noted when placed in the mouth, which when separated dissolved with aid of hot water, indicating that they were crystals of "fruit sugars." This is a common occurrence with grape jelly in particular, as the natural crystalline bodies separate out appearing somewhat like particles of glass.

3374. Another case of complaint of *Grape Jelly* by Mrs. E. J. Jackson of Providence. Not all the particles dissolved as in above instance; a small amount of sand found.

RED CROSS.

3447. "*Reed's Chocolate Wheat Bar*" was examined for the presence of glass, for the Red Cross Canteen at the Union Station. One small piece of glass and some sand was found in the piece of chocolate submitted.

FOOD MATERIALS SUSPECTED TO CONTAIN INJURIOUS OR POISONOUS SUBSTANCES.

3296. Barrington. "*Mrs. Chapin's Orange Marmalade*," submitted by Mrs. Howard Smith because of its grittiness. This jelly contained 1.035 grams of finely powdered glass. By actual count we separated 285 pieces of glass, beside considerable fine, powdered glass incapable of being counted.

3356. Central Falls. "*Security Brand Fat Herring*." Edward Hackney complained of glass being in this fish. No evidence of glass present.

3305. East Greenwich. "*Condensed Milk*." A patient of Dr. C. L. Phillips said she found glass in it. Contained no glass or gritty substance.

3269. East Providence. "*Shawmut Brand Apple and Raspberry Compound.*" Product of Joseph Middleby, Jr., Inc., Boston. Raymond H. Drill objected to glass in his preserves. Contained two large pieces of glass, being portions of a jar similar to the one containing the jelly; also several chippings of the glass.

3386. Hughesdale. "*Table Talk Brand Catsup.*" Pres. Hughes of Johnston Town Council said his chauffeur found glass in it. Bought from store of Dan Farranti. Contained considerable coarsely broken glass. Our Inspector Hopkins purchased a new bottle from above store, but no glass was found in its contents.

3251. Newport. "*Portions of a Nut Caramel.*" Complaint of Miss Theodora Taylor, who suspected glass in candies sold to soldiers and sailors. Contained a piece of glass weighing 10.2 grains. A piece of the rim or neck of a bottle.

3257-3264. Newport. "*Eight Pieces of Candy.*" Collected from store from which above Nut Caramel was sold. No glass or sand found in any of them.

3243. Pawtucket. "*Marble Brand Canned Tomatoes.*" Complaint of Mrs. H. A. Beniot, who thought that they contained glass. All contained considerable sand. No glass present.

3245. Pawtucket. "*Hatchet Brand Tomatoes,*" also submitted by Mrs. Benoit. No glass, but sand is present.

3282. Pawtucket. "*Opened Jar of Jam.*" Sent by Chief of Pawtucket Police upon complaint of Mrs. John Christopher that it contained glass. Contained sand and a very few pieces of glass.

3315. Pawtucket. "*Liberty Cakes.*" Sent in by Chief of Police. No glass. Crystallized sugar was apparently the deceiving particles.

3359. Pawtucket. "*Beechnut Brand Grape Jelly.*" Sent by Chief of Police on complaint of Thos. Thompson. No glass found. Contains crystallized fruit sugars.

3369. Pawtucket. "*Canned Squash.*" Also pie made from some

of this squash. S. T. Hilliard complained that the squash and the pie contained glass. No glass found, but a large amount of sand was present.

3371. Central Falls. "*Bread.*" Sent in by Chief McCarty of Central Falls Police. Contains human dung as stated in this analysis under "bread."

3272. Newport. *Candy.* Sent in by the Health Board. Sample purchased by Peter Turner from H. D. Wood. No glass found

3273. Newport. *Butter,* Complaint from Mrs. James W. Tobin who purchased butter from James A. Dreury & Co. Sample is butter containing excessive water,—23.5%, being 7.6% excess or 46.87% increase over the amount of water allowed. (Butter should not exceed 16% water).

3166-3172. Providence. *Milk,* Coffee and Milk, Tea and Sugar, received from Capt. Robert M. Connors, 4th Precinct. Four children and a nurse said to have been made ill and delirious. Some of the milk contained Tincture of Larkspur.

3270. Providence. *Oleomargarine.* A. Kaltsas thought this oleomargarine made some customers who ate at his restaurant ill. No injurious substances found.

3274. Providence. *Bread.* Mrs. Bourne found hair-like fibres in Ward-Corby Co.'s bread. Appears to be jute fibres from a bur-lap bag.

3275. Providence. *Sugar.* From State House Restaurant. When added to tea, turns latter "inky-black." Contains considerable iron compounds which with the gallo-tannic acid in the tea, forms an iron ink. Not harmful. Sugar was the crude, brown sort employed at times during the sugar shortage of last year.

3285. Providence. *Brown Bread.* Made from flour purchased at Public Market by Mrs. Eyles, who thought it contained glass. Contained a little gritty substance which proved to be sand.

3290. Providence. "*Strawberry. Fresh Fruit Jam.* Curtis

Bros. Co., Rochester, N. Y." Purchased by Henry W. Molloy, who thought that it contained glass. No evidence of glass present. No grit except that of the berry seeds, and a slight trace of sand.

3295. Providence. "*Beechnut Brand Peanut Butter.*" Complaint by Mrs. W. M. Blackwell, who was suspicious of the gritty feel upon her teeth. No sand, glass or other grittiness, except the coarse particles of the ground peanuts.

3324. Providence. "*Peppermint Candy.*" Submitted by A. G. Chaffee who said that the candy made a person ill. No evidence of the presence of poisonous material. Suspicious "greenish spots" in wafers proved to be chlorophyll, due to imperfect incorporation of oil of essence of peppermint with the sugar. Portion of candy so stained was very strong in peppermint flavor. Candy made at Anderson's.

3329. Providence. *Assorted Hard Candy.* Complained of by Mr. Moses A. Sawyer who claimed same made three persons ill; said candy produced gas, abdominal pains and diarrhoea. No evidence of poisonous substances found.

3338. Providence. *Raisin Bread.* Mrs. C. H. Smith bought raisin bread which "smells alright, but tastes as if a cat had polluted it." Examination in this laboratory failed to discover any such "pollution" indicated.

3354. Providence. *Milk.* Submitted by Dr. H. S. Hincks who said his child was made violently ill after drinking some of the milk. No evidence of poisonous substances found.

3361. Providence. *Brown Bread.* Frank D. McKendall claimed bread made from "Chieftain Brown Bread Mixture" contained much grit. Possibly glass. Gritty matters probably due to large number of raisin seeds; no evidence of other gritty materials.

3411. Providence. "*Rhode Island Johnny Cake Meal.*" Dr. Ellen Stone found that a package of this corn meal had a very disagreeable taste. Flour had become damp, and developed a very

sour and disagreeable taste. Its acidity, calculated in terms of acetic acid, amounted to 1.27%.

3420. Providence. *Glass in Candy.* Mrs. James Shields found three quite large pieces of glass in a piece of candy she was eating. The candy submitted failed to show the presence of any more glass; evidently glass found was result of some accident, and not intentionally added.

3428. Providence. *Pure Grape Jelly.* Marion Henry brought in a sample of grape jelly, which she thought contained glass. The gritty particles were crystallized fruit sugars.

3590. Providence. *Frosted Cakes.* Purchased by Lovell Chapin, "did not have a good smell and taste," as he thought cup cakes ought to possess at 50c. per dozen. The flavor of the cakes and the odor of them suggested "stale egg," which proved to be the case. The manager of The Shepard Co., from which the cakes were bought, had already discovered the disagreeable feature, and when our inspector and Mr. Chapin informed him of the cakes, regrets were expressed and purchase price promptly refunded, and the remaining lot of cakes withdrawn from sale.

3600. Providence. *Raisin Bread.* Mrs. Lena Barber purchased raisin bread from R. L. Rose Co., which she claimed contained "bugs." The bread did contain a large number of small black beetles, variety undetermined, but which frequently are found infesting certain grains and cereals. Their presence showed carelessness on the part of the baker making the bread.

3215. Riverside. *"Royal Scarlet Raspberry Jam."* Thirty-eight jars similar to those formerly complained of as containing glass, was restricted from sale at the store of E. S. Penniman until it could be examined. Found to contain no glass; after the examination, the jam was released.

3297. Warren. "*Beardsley's Peanut Butter*" sent in by Dr. Nelson R. Hall contained no grit, sand or glass. Frequently peanut butter contains coarse particles of peanuts which somewhat simulate foreign, gritty materials.

MISCELLANEOUS.

3177. *Bay Rum* sold by Joseph Sisto, Cranston. Contained no wood alcohol.

3200. *Bay Rum* sold by Antonio Laudi, Providence. Contained no wood alcohol.

3355. "*Perlo*," a preparation sold as a disinfectant fluid from house to house. Made by John App, manufacturing chemist, Providence. Purchaser, after reading the name of the manufacturer, became suspicious and submitted sample to this laboratory for examination. Preparation appears to belong to that class of coal-tar products known as Sylpho Naphthol, Creolin, etc. While no comparison of the germicidal value was made, its physical characteristics indicate that "*Perlo*" is not a "superior preparation."

Respectfully submitted,

FRANK A. JACKSON,

Chairman

FRANKLIN N. STRICKLAND,

Executive Secretary

State of Rhode Island and Providence Plantations.

EIGHTEENTH ANNUAL REPORT

OF THE

STATE LIBRARIAN

TWENTY-SECOND ANNUAL REPORT

OF THE

STATE RECORD COMMISSIONER

FOR THE YEAR 1918

PAWTUCKET:
PAWTUCKET LINOTYPING CO.,
1919.

EIGHTEENTH ANNUAL REPORT
OF THE
STATE LIBRARIAN

To the Honorable Secretary of State:

SIR:—I herewith submit the eighteenth annual report of the State Librarian for the year 1918.

The past year has been marked by changes due to war conditions, but the routine work of the library has been conducted efficiently, and in addition the librarian and the staff have found opportunity as occasion demanded to aid the various war activities.

The war has produced changes in the personnel of the library. Miss Grace M. Sherwood, who had been in charge of the Legislative Reference Bureau, became identified with the overseas service of the Young Men's Christian Association and Mr. Theodore S. Butterfield, formerly an assistant, became an officer in the Selective Service, United States Army. Both of these persons have been given leave of absence to perform these duties and Miss Madeline T. Mulgrew, who had been doing substitute work, was made assistant stenographer.

The book additions to the library have been smaller than in previous years, due in large part to restricted printing. The book accessions in detail were as follows: Exchange, 699; gift, 170; purchase, 251; United States Government, 174; state officials in Rhode Island, 190, and bindery, 82, a total of 1566 volumes.

Pamphlets are an important part of the library. While some of the material is ephemeral in nature, much of it is of considerable value. Many of the live topics of discus-

sion on political and social science first appear in pamphlet form, and within a year after publication either become accepted theories or pass into the discard. The library has received during the year 2750 pamphlets.

WAR ACTIVITIES.

The American Library Association has become one of the seven great agencies which have been organized to provide recreational facilities for the soldiers and sailors. The State Librarian was appointed state director in connection with the various campaigns for securing funds and for gathering books. The first drive was started on September 24, 1917 and the sum of \$25,877.15 was obtained for the support of the American Library Association in its special field work. During the week of March 18, 1918 a book drive was undertaken and in this connection the state librarian directed the Providence campaign. Over one thousand people took an active part in soliciting books and as a result forty thousand volumes were assembled at the Providence Public Library, later sent to the dispatch offices and thence forwarded to the various cantonments, forts and other army and navy stations. In all these activities the staff of the library have given freely of their time and energy. In September, 1918, plans were laid for an extensive campaign for funds to support the American Library Association in its war work, but at the request of the President of the United States seven large organizations were merged for fiscal purposes into a United War Work Campaign. By this method the sum of \$1,500,000 was obtained in the state of Rhode Island.

The library has been made an agency for the State House for the sale of War Savings Stamps, and in addition members of the staff have aided after business hours the War

Savings Stamp organization. The librarian has acted as Library Publicity Director for the Rhode Island Food Administration. He served on the Advisory Council of the Administration and has been in close touch with its various functions and in the solution of the problems of food conservation. At the request of Mr. Alfred M. Coats, Food Administrator, he prepared a history of the Rhode Island Food Administration.

In July the librarian attended the annual conference of the American Library Association at Saratoga Springs, New York. While there he took part in the meetings of the State Directors of the Library War Service, and the Library Publicity Directors of the Food Administration. He also visited the city of Albany and inspected the duplicates of the New York State Library. As a result of this inspection 707 books and 942 pamphlets were obtained on exchange account. The Rhode Island State Library is greatly indebted to the New York State Library for this courtesy.

In response to demand, a special collection of books on military subjects was formed and purchases made of all volumes that would be used by persons desiring commissions in the army or navy. Frequent use was made of this collection by persons interested in the subject and a valuable set of military books is now available for consultation.

The influx of books and pamphlets on the subject of the war rendered necessary a special segregation of this material and space was provided for this new feature of the library.

LIBRARY QUARTERS.

The crowded condition of the main library required the erection of additional stacks in Room No. 8. This improve-

ment has given us needed relief, but is only temporary in nature as the routine work of the department is still conducted in the main library, which is detrimental to the best service. Through the courtesy of the State House Commission, the librarian was given the use of two committee rooms adjacent to the main library. One of these rooms, in charge of a record clerk, was devoted to the files of the State Record Commissioner, and the other room was utilized as the private office of the librarian.

LEGISLATIVE REFERENCE BUREAU.

The Legislative Reference Bureau, which is a part of the State Library, has rendered its usual service to the members of the legislature. During 1918, there were prepared for the general assembly 547 bills, memorials and petitions. The cumulative card index has been maintained and in large part rewritten, and the file of printed bills has been freely consulted by the members and bills distributed to any person who inquired for them.

The various books, special commission reports and investigations on political and social science which had been segregated for the use of the Legislative Reference Bureau have been merged into one collection. In addition, the pamphlets, filed convenient to access, have been sorted and reclassified. This method has simplified the use of the two collections and has brought together in one convenient location the material of special value to the Legislative Reference Bureau.

On account of the war conditions, the special course in political science, in connection with Brown University, has been temporarily abandoned. It is hoped that with the resumption of normal college activities, the course will be continued.

EXCHANGES.

Exchanges have been conducted with the various state libraries of the country. The State Librarian again expresses thanks for the kindness of the various state officials of Rhode Island, and especially to the State Printing Commissioner, for aid in obtaining publications for distribution.

In conclusion I desire to extend to you and to your assistants my sincere thanks for courtesies rendered during the past year. I take pleasure in commending to you the faithful services of the assistants in the State Library.

Respectfully submitted,

HERBERT O. BRIGHAM,

State Librarian.

**TWENTY-SECOND ANNUAL REPORT
OF THE
STATE RECORD COMMISSIONER**

Office of the State Record Commissioner,
Providence, R. I.

*To the Honorable the General Assembly of the State of
Rhode Island and Providence Plantations:*

The State Record Commissioner herewith submits his report for the year 1918, covering the functions of the office relating to the inspection and care of the records in the several towns and cities of the state, and in addition the compilation of information relating to service of soldiers in the Revolutionary War.

PUBLIC RECORDS OF THE STATE.

The provisions of Chapter 700 of the Public Laws relating to care and custody of records have been observed by the various towns and cities. In a few cases inferior equipment has been installed, but on the advice of the Commissioner changes have been made to conform with the law. The various towns and cities have been particularly free from fire danger and the protection is yearly being made more adequate.

COMPILATION OF RECORDS.

The compilation of Revolutionary War records has been continued. Special researches have been made on the regimental commands of the Revolution and the material received from our Washington correspondent has been of

the utmost value in establishing the validity of various Revolutionary claims. There have been the usual inquiries from persons who desire to join patriotic societies. Undoubtedly the war will stimulate interest in these societies and create an increased demand for Revolutionary information.

A valuable collection of Revolutionary documents, which have for many years been in the possession of a Boston dealer, have passed into the hands of a prominent Rhode Island collector. This change of ownership is of great value as it assures a proper protection of these valuable records, and an opportunity to give them suitable examination.

Respectfully submitted,

HERBERT O. BRIGHAM,

State Record Commissioner.

State of Rhode Island and Providence Plantations.

ANNUAL REPORT

OF THE

Harbor Commission

MADE TO THE

GENERAL ASSEMBLY

AT ITS

JANUARY SESSION, 1919

FOR

YEAR ENDING DECEMBER 31, 1918

**PROVIDENCE
1919**

REPORT.

To the Honorable, the General Assembly of the State of Rhode Island:

The Harbor Commission respectfully submits its annual report covering a period extending from January 1, 1918, to December 31, 1918, and embracing not only its own activities since May First but those of its predecessors for the first four months of the year, as per the minutes and records turned over to this Commission.

CREATION OF COMMISSION.

The Harbor Commission was created by an Act of the General Assembly, Chapter 1669 of the Public Laws, passed at its January Session, 1918, and approved April 19, 1918, being:

An Act in Amendment of and in addition to Chapter 144 of the General Laws, entitled "Of the Protection of Navigation," and of Chapter 473 of the Public Laws, passed at the January Session, A. D. 1909, entitled "An Act to Create a Commission to Formulate and Report on a Plan for the Permanent Improvement of Navigation in the Seekonk River," and of Chapter 568 of the Public Laws, passed at the January Session, A. D. 1910, entitled "An Act to Authorize the Appointment of and to Define the Powers and Duties of a State Harbor Improvement Commission in Providence, Pawtucket and East Providence,"

and the several Acts in Amendment thereof and in Addition thereto.

ORGANIZATION.

The following is the personnel of the Commission by appointments made in pursuance of said Chapter 1669:

Harry E. Windsor of Providence, Chairman, to serve until February 1, 1924.

George M. Hull of East Providence, to serve until February 1, 1922.

William S. Rogers of Newport, to serve until February 1, 1919. (To fill vacancy caused by resignation of William J. Landers, appointed April 19, 1918.)

Frank A. Page of Providence, Secretary.

The Commission has appointed Franklin N. Blake, of Pawtucket, as Commissioner of the Pawtucket River.

STATE PIER NO. 1, PROVIDENCE.

There are now two steamship companies leasing State Pier No. 1. The Fabre Line, flying the French flag, docks on the south side of the Pier, and the Chesapeake & Curtis Bay R. R. Co., under the American flag, docks on the north side. However, the contract with both tenants allows other vessels to come to the Pier to discharge or take on cargo, so that for the time being the facilities are ample for taking care of tramp vessels whose owners may desire to use the Port of Providence as a distributing or forwarding centre.

The use of the Pier by the Fabre Line during the year has been greatly reduced on account of war conditions,

there having been no arrivals or departures since April. The American agents are hopeful of an early release by the French Government of some of the vessels of this line, when service to French, Italian and Portuguese ports will be resumed.

The Chesapeake & Curtis Bay R. R. Company had planned to establish a line of steamers to Baltimore in connection with a service between Baltimore and the West Indies, and, in due course, possibly, a separate line out of Providence to the West Indies. Altho this Company has been paying rent since July 1, 1918, it has found that Government restrictions on business and shipping have made it impossible to initiate this enterprise.

The U. S. Bureau of Immigration during the year has renewed its lease with the State for quarters at the Pier, and it is anticipated that immigration from Portugal and Italy may recommence by Spring, with the usual accompaniment of commerce in merchandise. The military and naval branches of the Government have shown an active interest in the Pier during the year, but the only tangible results have been the storage of munitions.

The Italian Government and the Canadian Ministry of Munitions have also used the Pier for the storage of military supplies pending shipment to Europe.

Despite the war the collections from the Pier have been the largest of any year, amounting to over \$11,000.

PAWTUCKET WHARF.

The Pawtucket wharf is now ready for use as a shipping and receiving point for coastwise freight. The steel freight

shed is 75 feet by 100 feet, while the total length of the quay wall available for landing freight is 700 feet.

Altho a part of the property is temporarily occupied by Roy H. Beattie, Inc., for the manufacture and shipment of cement blocks for use in building sea walls, the rest of the wharf, including the freight shed, is available and well adapted for a regular freight business with New York. Several transportation companies have interested themselves deeply in a line between Pawtucket and New York, but the difficulty of obtaining suitable boats during war time, except at prohibitive figures, has thus far kept from fruition the splendid initiative of those Pawtucket and Blackstone Valley business men who have been strenuously active in promoting the steamboat proposition.

The income from the wharf for the year, derived from tenancy and options for leasing, amounts to \$4,274.99.

HARBOR LINES.

The Harbor Commissioners approved certain changes in the harbor lines at Fields Point and in Wickford Cove, and the changes were enacted into law by the General Assembly by the passage of Chapters 1619 and 1665 respectively.

CHAPTER 1619.

AN ACT Changing and Establishing the Harbor Line on the Westerly Side of Providence River Near Fields Point as Established by Senate Resolution No. 54, Passed at the January Session of the General Assembly, A. D. 1881.

Approved April 10, 1918.

It is enacted by the General Assembly as follows:

SECTION 1. That part of the harbor line on the westerly side of Providence River near Fields Point between the points marked "c" and "p" in the description of the harbor line established by the Senate Resolution No. 54, passed April 28, 1881, is hereby changed and established as follows:

Beginning at a point marked "c" on a plan designated by the Harbor Commissioners, Jan. 26, 1881, and on file in the office of the Secretary of State, which said point is in latitude south 40019.93 longitude east 42460.18 and is the same point described in Chapter 819 of the Public Laws passed at the January Session of the General Assembly A. D. 1880 as 260 feet beyond the point marked "b" on plan designed by the Harbor Commissioners October 22, 1879; thence running from said point "c" south $42^{\circ} 23' 00''$ E 1100 feet in continuation of the line passing through the points "b" and "c" hereinbefore referred to, to a point marked n' shown on the accompanying plan No. 043282, dated March 12, 1918, being in latitude south 40832.45 longitude east 43201.68; thence south $47^{\circ} 37'$ west, 1605.05 feet making an angle of 90° with a line passing through points "c" and n' hereinbefore referred to, to a point marked p' on the said plan No. 043282, said point being in latitude south 41914.39 longitude east 42016.11; thence running south $2^{\circ} 01' 37''$ west 5929.77 feet making an angle of $134^{\circ} 24' 37''$ with the line n' p' to a point marked p' in latitude south 47840.45 longitude east 41806.37 and in the har-

bor line shown on a plan designed by the Harbor Commissioners January 26, 1881, and approved April 28, 1881, and on file in the office of the Secretary of State.

The latitudes of points are given in feet and hundredths southerly from a line at right angles to the meridian of the United States Coast Survey Station at Fort Independence, and situated forty thousand feet north of said station, and the longitudes are given in feet and hundredths easterly from a line parallel with the meridian of the United States Coast Survey Station at Fort Independence and situated forty thousand feet westerly thereof.

SEC. 2. Upon passage of this act, said accompanying plat shall be kept on file in the office of the Secretary of State.

SEC. 3. This act shall take effect upon its passage.

CHAPTER 1665.

AN ACT Changing and establishing the Harbor Line in Wickford Cove as established by an Act of the General Assembly by "An Act to Establish a Harbor Line in Wickford Harbor from Quonset Point to Rowe's Point, Near Brissell's Cove" Passed April 14, 1885.

Approved April 19, 1918.

It is enacted by the General Assembly as follows:

SECTION 1. That part of the harbor line in Wickford Cove between the points "w" and "y" in the description of the harbor line in Wickford Harbor established by an Act of

the General Assembly April 14, 1885, is hereby changed and established as follows:

Beginning at the point marked "w" described in said Act, which point is in latitude south 121,231.85 feet, longitude east 23,824.10 feet; thence running south 33° 56' 00" west 264 feet to a point in the harbor line "xy" marked "a" on the accompanying plan. Said point "a" is in latitude south 121,450.89 feet, longitude 23,576.73 feet, and is in the line "xy" 111.03 feet from "x."

The latitudes of points are given in feet and hundredths southerly from a line at right angles to the meridian of the United States Coast Survey Station at Fort Independence, and situated forty thousand feet north of said Station, and the longitudes are given in feet and hundredths easterly from a line parallel with the meridian of the United States Coast Survey Station at Fort Independence and situated forty thousand feet westerly thereof.

SEC. 2. Upon passage of this Act, said accompanying plat shall be kept on file in the office of the Secretary of State.

SEC. 3. This act shall take effect upon its passage.

OBSTRUCTIONS.

The Commission has had no serious case of obstruction in the tide waters to consider during the year.

POLLUTION OF TIDE WATERS.

Attention has been given to every complaint made to the commission regarding waste and oil appearing in

Providence Harbor and upper Narragansett Bay, and vigorous measures have been taken to avoid repetition when responsibility has been located.

DREDGING.

The amount of material reported as deposited at the usual dumping ground off Prudence Island is 18,680 cubic yards. Of this amount 10,880 cubic yards consisted of sludge from the precipitation tanks of the City of Providence. The small total of material deposited at the usual dumping ground is due to the fact that a great deal of material has gone to private dumping grounds for filling in purposes under permits issued by the Commission.

LICENSES.

Licenses have been granted during the year for structures in public waters as follows:

No. 718. January 23. Standard Oil Company of New York. To fill area at Vanity Fair and extend sea wall.

No. 719. March 20. Providence Gas Company. To build a trestle at their plant at Sassafras Point.

No. 720. April 3. James McKinnon. To drive 20 piles in Seekonk River opposite north line of his property on Water Street, East Providence.

No. 721. May 22. H. N. Girard. To build wharf in Wickford Cove.

No. 722. May 22. Hamilton Web Company. To build wharf in Wickford Cove.

No. 723. May 22. Standard Oil Company of New York.

To fill area at Silver Spring; build a dike near north line of this property, and a dike from the shore to the rocks and to the north end of the sea wall under construction; and to extend sea wall to north end of Silver Spring property.

No. 724. July 24. Aberthaw Construction Company. To construct two launching ways at Fields Point and dredge area opposite, with the consent of the City of Providence.

No. 725. August 14. John R. White & Son, Inc. To build extension to wharf at Allens Avenue, Providence.

No. 726. September 25. Sayles Finishing Plant. To fill area in Seekonk River in East Providence, adjoining property, with ashes and other mill waste, the filled area to be effectively banked about with heavy material.

ASSENTS.

Assent has been given to applications as follows:

No. 1. January 2. Hamilton Web Company. To drive 84 piles in front of its premises at Wickford.

No. 2. January 9. Walter F. Seymour. To widen wharf to 12 feet.

No. 3. January 9. Narragansett Electric Lighting Company. To dredge slip at foot of Public Street, Providence, to depth of 20 feet at high tide.

No. 4. March 13. Rhode Island State Board of Public Roads. To erect concrete bridge over Narrow River in Narragansett on Boston Neck Road.

No. 5. March 27. Mexican Petroleum Corporation. To

construct two dolphins and connecting bridges fifty feet east of Kettle Point Pier.

No. 6. April 3. Anthony Coal & Cement Company. To dredge a channel 90 feet wide and a berth 75 feet wide to depth of 15 feet opposite their wharf in East Providence, and deposit dredged material at Prudence Island Dumping Grounds.

No. 7. April 3. Wickford Welfare Association. To build a dam across Academy Cove at the Sea View Railroad Bridge in Wickford.

No. 8. April 24. J. S. Packard Dredging Company. To redredge berth at Olney & Payne wharf in Pawtucket to depth of 16 feet, and deposit the material at Prudence Island Dumping Grounds.

No. 9. April 24. Charles A. Stahl, Jr. To drive two piles in Old Warwick Cove five feet from edge of channel opposite land of W. A. Burrows, with his consent.

No. 10. May 1. Glenlyon Dye Works. To dredge small area in front of intake at its Phillipsdale works, and deposit the dredged material against the shore just south of said intake.

No. 11. May 1. Marie L. Champlin. To build a wall from north line of Division Street to south line of King Street, East Greenwich.

No. 12. May 1. J. S. Packard Dredging Company. To deposit about 10,000 cubic yards of material at Prudence Island Dumping Grounds, dredged from berth of American Print works, Fall River, Massachusetts.

No. 13. May 15. East Providence Water Company. To build a coffer dam in Seekonk River at mouth of Ten

Mile River, during repairs to dam.

No. 14. May 15. Herreshoff Manufacturing Company. To install launching railway, of temporary character, for hydro-airplane pontoons in Bristol Harbor. Also to renew railway at Walker's Cove, Bristol Harbor.

No. 15. May 22. R. A. Harrington. To repair Rocky Point Wharf and to drive and fit piles at same place.

No. 16. May 22. Namquit Worsted Mills. To repair and extend its wharf in Bristol 15 feet westward.

No. 17. May 29. Rhode Island Marine Construction and Drydock Corporation. To dredge 100,000 cubic yards of mud, etc., from its location at Portsmouth and dump same at Prudence Island Dumping Grounds.

No. 18. May 29. Rhode Island Marine Construction and Drydock Corporation. To drive piles and build wharf 300 feet out from shore line of its property at Portsmouth, and to dredge area around same to depth of 30 feet.

No. 19. June 5. James McKinnon. To fill flats and build bulkheads at No. 94 and No. 102 South Water Street, East Providence.

No. 20. June 12. J. S. Packard Dredging Company. To dredge extension of berth on north side of Seaconnet Coal Company wharf, Allens Avenue, Providence, to depth of 23 feet mean low water, and deposit the material at Standard Oil Company property at Vanity Fair, East Providence.

No. 21. June 12. Lewis Herreshoff. To rebuild his wharf at Homestead, Prudence Island.

No. 22. June 19. Staples Coal Company. To substi-

tute new plans for building wharf in Warren for which License No. 717 was granted July 18, 1917.

No. 23. June 26. Renaldo C. Castiglioni. To build wharf at Oakland Beach.

No. 24. July 3. J. S. Packard Dredging Company. To redredge berth at City Coal Company, Pawtucket.

No. 25. July 3. J. S. Packard Dredging Company. To redredge berth at Cottrell Lumber Company, Pawtucket.

No. 26. July 3. City of Providence. To allow material dislodged by hydraulic process of excavating hills at Fields Point to flow into Providence River inshore of the harbor line, provided that a dike of heavy material shall first be built along the shore between high and low water so that the westerly end shall be about 1,200 feet westerly of the south end of the sea wall and the easterly end shall begin at high tide near the easterly end of the fill to be made, the top of the dike not to be lower than mean high water.

No. 27. July 10. J. S. Packard Dredging Company. To dredge a channel 1,000 feet by 40 feet to a depth of 6 feet at mean low water at Sassafras Point, to furnish water for condenser intake of Providence Sewage Pumping Station; also to dump the mud (about 10,000 cubic yards) in the edge of the harbor channel, redredge the mud into larger scows and deposit same at Standard Oil Company property at Vanity Fair.

No. 28. July 10. Oakland Beach Civic League. To place seven channel markers at Brushneck Cove, Oakland Beach, with the consent of riparian owners.

No. 29. July 31. Edward V. Brown. To place fish

trap at Rumstick Point opposite Mary E. Dyer property just south of its northerly line.

No. 30. July 31. Blackstone Valley Gas and Electric Company. To dredge berth at foot of Tidewater Street, Pawtucket, to depth of 22 feet mean high water a distance of 300 feet beginning at south end of dock; also to provide new bulkhead along the dock front involved.

No. 31. August 7. Roy H. Beattie, Inc. To construct temporary pile wharf 20 feet by approximately 100 feet on west bank of Pawtucket River, with consent of S. T. Carpenter, riparian owner; also to store concrete blocks in shallow water just south, with consent of Frank A. Sayle, riparian owner, outside channel lines, for a period of not over two months.

No. 32. August 21. Standard Oil Company of New York. To repair wharf at Red Bridge, East Providence.

No. 33. August 28. Tuskettuck Boat Club. To locate float at right angles from Cove Avenue in Brushneck Cove, Oakland Beach, to be extended into the water 40 feet from high water mark and to measure 10 feet by 10 feet.

No. 34. September 4. W. V. Polleys & Company. To replace piling and renew dolphins at Narragansett Boat Club on Seekonk River.

No. 35. September 11. Herreshoff Manufacturing Company, Inc. To repair piers at its main works and at Walker's Cove, Bristol, by driving replacement piles.

No. 36. September 25. Frank Paull. To drive about 25 piles at head of his wharf, 267 Thames Street, Bristol, to replace old ones.

No. 37. September 25. Newell Coal & Lumber Com-

pany. To repair its wharf at Pawtucket by strengthening present wall with a reenforced concrete mat for length of about 50 feet.

No. 38. September 25. Providence Drydock & Marine Railway Company. To drive about 20 fender spiles and relocate a portion of fender spiling at its northern pier.

No. 39. September 25. J. S. Packard Dredging Company. To dredge berth at dock of Providence Drydock & Marine Railway Company, East Providence, to depth of 25 feet mean low water, and to deposit the material at Prudence Island Dumping Grounds or at Standard Oil Company property at Vanity Fair.

No. 40. October 9. William E. Bowen. To repair Payne & Butler Oyster Wharf on east side of Seekonk River, about 800 feet south of old railroad bridge in East Providence.

No. 41. October 9. John R. White & Son, Inc. To drive and fasten 75 piles to wharf on Allens Avenue opposite Blackstone Street, Providence.

No. 42. October 18. F. C. Stender. To repair wharf of Colonial Navigation Company on South Water Street, Providence.

No. 43. December 18. Marine Engineering & Dry Dock Company. To dredge two wet slips and a location for a 3,200 ton marine railway at their leased plot on Allens Avenue, Providence.

FINANCIAL STATEMENT.

Bond Issue

Total Harbor Improvement Bond Issue....		\$1,000,000 00
<hr/>		
Total expended for land, construction and improvements:		
To December 31, 1917	\$922,243 27	
In Year 1918	55,742 96	\$977 986 23
<hr/>		
Unexpended Balance on Hand December 31, 1918		22,013 77
<hr/>		
		\$1,000,000 00
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*Care and Maintenance Account.**Appropriations:*

State Harbor Improvement Commission	\$7,000 00	
Expended by said Commission prior to May 1	2,190 98	
<hr/>		
Balance available to new Harbor Commission .		\$4,809 02
Seekonk River Commission	\$1,387 24	
Expended by said Commission prior to May 1	150 00	
<hr/>		

Balance available to new Harbor Commission.	1,237 24
<hr/>	
Total available to New Harbor Commission	\$6,046 26
Expended, May 1 to December 31	5,604 89
<hr/>	
Unexpended Balance December 31, 1918	\$441 37

Receipts in 1918.

State Pier No. 1, Providence	\$11,357 75
Pawtucket Wharf	4,274 99
<hr/>	
Total	\$15,632 74

Work of the United States Engineer Department.

By courtesy of the District Engineer, U. S. A., Newport, R. I., in charge of river and harbor improvements in this district, we have been furnished with data relating to Rhode Island waters, which may be found in the appendix.

Respectfully submitted,

HARRY E. WINDSOR,

GEORGE M. HULL,

W. S. ROGERS.

Harbor Commissioners.

APPENDIX A.

STATEMENT OF PROGRESS OF RIVER AND HARBOR IMPROVEMENTS IN THE STATE OF RHODE ISLAND
JANUARY 1—DECEMBER 31, 1918.

WAR DEPARTMENT
UNITED STATES ENGINEER OFFICE
284 THAMES STREET
NEWPORT, R. I.

January 29, 1919.

Rhode Island State Harbor Commission,
Room 320, State House,
Providence, R. I.

Gentlemen:

1. Your letter of the 24th relative to commercial statistics and annual report has been received and noted.

2. I have requested the pamphlet copies of the annual report for this district for the fiscal year ending June 30, 1918, but as same has not been received, I will say that the following statement covers activities of this department in Rhode Island waters this year: January 1—December 31, 1918:

Owing to war conditions, the work of improvement of rivers and harbors was suspended except in cases of urgent necessity. Under this policy, only a small amount of work was done in Providence Harbor, resulting in securing a berth with a draft of about 23 feet at the wharf of the Providence Gas Company. Practically all of the effective dredg-

ing plant in this vicinity was commandeered for other localities regarded as of greater war urgency.

Very respectfully,

J. H. WILLARD,

Colonel U. S. Army, Retired.

APPENDIX B.

EXTRACT FROM REPORT OF THE CHIEF OF ENGINEERS, U. S. A. FOR 1918.

PROVIDENCE RIVER AND HARBOR.

Existing project.—This provides for dredging to a depth of 30 feet at mean low water all of the harbor, about 1.6 miles in length by from 1,300 to 1,800 feet in width, from Fox Point to Fields Point, limited on the east and west sides of the harbor lines, excepting the area formerly known as Green Jacket Shoal, and for dredging to the same depth an approach channel 600 feet wide southward from Fields Point to the deep water of Narragansett Bay at a point nearly opposite North Point on Popasquash Neck. The total length of both the river and harbor included within this project is 10.4 miles. The mean tidal range is about 4.7 feet increased to 5.7 feet at time of spring tides; the tidal planes are subject to irregular fluctuations, due to storms, amounting to 2 feet. The estimate of cost for new work revised in 1915, is \$1,112,600, exclusive of amounts expended under previous projects. The latest (1918) ap-

proved estimate for annual cost of maintenance is \$25,000.

The existing project was authorized by the river and harbor act of March 4, 1913 (H Doc. No. 1369, 62d Cong., 3d sess.). The latest published map is in the Annual Report for 1915, page 2068.

Operations and results during fiscal year.—Work under the existing contract for dredging the 30-foot channel to Providence, in progress at the beginning of the fiscal year, was continued through December, when the unusual severity of the weather stopped all dredging. Dredging was resumed in March, 1918, and a small amount was done during that month to connect with private dredging operations carried on by the largest coal-handling plant in the harbor. The dredging was done by plant of inferior capacity, as the larger plant which had been intended for use under the contract has been commandeered for war work of greater urgency. The area increased to 30 feet depth is slight and not continuous as the effort had been to add as far as possible to the facilities of the fuel-handling plants, and to secure the full depth along the city wall where certain items of war manufacturing are being actively prosecuted. The expenditures were \$29,012 98 for new work.

Condition at end of fiscal year.—The existing project is about 70 per cent completed. There is an approach channel 600 feet in width from its southern extremity, opposite the North Point on Popasquash Neck to Fields Point, a distance of about 9 miles, which has been dredged to 30 feet depth at mean low water, the limiting lines of the 30-foot deep channel in the upper part being the same as those of the 25-foot deep channel previously dredged between Gaspee Point and Fields Point. Above Fields Point the entire harbor up to Fox Point has been dredged to a depth

of 25 feet and about 32 per cent of this area has been deepened to 30 feet. That portion of the harbor formerly occupied by the Green Jacket Shoal and not included in the existing project has a depth of from 21 to 26 feet of water. The total expenditure under the existing project was \$767,457.92 for new work and \$49,463.50 for maintenance, a total of \$816,921.42.

Local cooperation.—The river and harbor act of June 25, 1910, provided that; “No part of this amount (\$459,000, estimated cost of the work then provided for) shall be expended until satisfactory assurances that the city of Providence or other local agency will expend on the improvement of the harbor front in accordance with said document (H. Doc. No. 606, 61st Cong., 2d sess.) above referred to, a sum equal to the amount herein appropriated and authorized.” The proper assurances were promptly given, and approved by the Secretary of War September 6, 1910.

The river and harbor act of March 4, 1913, provided as follows:

“That no work in the harbor proper north of Fields Point shall be done until the Secretary of War is satisfied that the State and city have completed their proposed expenditures in the combined Providence and Pawtucket Harbors up to at least \$2,000,000 for public terminals or other permanent public harbor improvements.”

This was modified by the river and harbor act of March 4, 1915 (Rivers and Harbors Committee Doc. No. 9, 63d Cong., 2d sess.), by the addition of the words—

“or shall have given to the Secretary of War assurance satisfactory to him that the expenditure of the \$2,000,000 aforesaid will be completed within a time satisfactory to

him and not later than three years from the passage of this amendment.”

This assurance was given the Secretary of War and was approved by him June 11, 1915. The entire amount was expended by the State of Rhode Island and city of Providence prior to March 4, 1918.

Terminal facilities.—These consist of piers and wharves with a total docking space of 29,250 feet, of which 4,800 feet is publicly owned, about 3,150 feet is open for general public use upon payment of wharfage, and 21,300 feet is privately owned and used. All of these wharves and piers are or can easily be connected with railroad lines which are in operation on all sides of the harbor. The facilities are considered adequate for existing commerce.

Effect of Improvement.—The deepening of the harbor has modified to a considerable extent the character of the vessels using it. Large steam colliers are replacing some of the coal barges formerly bringing coal from southern ports, where the trip involved a considerable ocean voyage; four large oil-producing companies have provided themselves with terminal facilities and have taken advantage of the favorable situation of Providence for southern traffic by making it a distributing center for southeastern New England, bringing their products from the Gulf of Mexico and other points in tank steamers and barges drawing from 21 to 26 feet of water. Additional land adjacent to the new channel about 1 1-4 miles south of Kettle Point is now in course of development as one of the most extensive oil-distributing plants on the North Atlantic coast. An extensive development of industrial plants is in progress at and near Fields Point.

Proposed operations.—The recent development of war industries in Providence immediately on the harbor front

has been such as to render urgent the completion of the 30-foot depth in that portion of the harbor extending along the western harbor line for a width of about 400 feet as far north as the State pier, and the completion of the 30-foot depth on the east side of the harbor as far north as the wharf of the Gulf Refining Co. These industries include the fitting out and completion of vessels built under the Shipping Board, a large boiler plant operating on naval requirements, and the manufacture of coke and the toluol products in addition to large industries away from the direct water front.

It is proposed to apply the available balance or as much thereof as may be necessary to completing the 30-foot depth by dredging at the above localities, the work to be done as soon as it is possible to secure the necessary plant. No estimate for additional funds is submitted as those available are believed to be sufficient to complete the work proposed, but not the project.

PAWTUCKET (SEEKONK) RIVER.

Operations and results during the fiscal year.—No works of improvement or maintenance were in progress during the fiscal year. The expenditures were \$30.33 for contingencies in connection with the supervision of private and State improvements and are charged to maintenance.

Condition at end of fiscal year.—The project was completed during the fiscal year 1913. The channel between Providence and Phillipsdale had a usable depth of 16 feet, between Phillipsdale and Pawtucket 15 feet, and between the wharves at Pawtucket from 15 to 18 feet at mean low tide. The head of navigation is at Pawtucket Falls, about 5.2 miles above the mouth of the river. The expenditure

under the existing project has been \$164,573.40 for new work and \$7,565.69 for maintenance, a total of \$172,139.09. In addition there was expended \$67,792 for new work from contributed funds, a grand total of both United States and contributed funds of \$239,931.09.

Local cooperation.—The river and harbor act of March 2, 1907, required that the State of Rhode Island or other agency should contribute \$67,792, which was complied with.

Terminal facilities.—Including the wharves at Phillipsdale, two in number, these cover about 4,540 feet of docking space, in which 700 feet is owned by the State of Rhode Island and 3,840 feet owned and used by private owners. Of the latter some portions are at times used by the public upon payment of wharfage. The two wharves at Phillipsdale have near-by rail connections in the yards of the owners. The other wharves are not conveniently located for rail connection. The facilities are considered adequate for the existing commerce.

State of Rhode Island and Providence Plantations

TWENTY-FIFTH ANNUAL REPORT

OF

FACTORY INSPECTION

MADE TO THE

GENERAL ASSEMBLY

AT ITS

JANUARY SESSION, 1919

J. ELLERY HUDSON, - - - Chief Factory Inspector

PROVIDENCE

E. L. FREEMAN COMPANY, PRINTERS

1919

RHODE ISLAND FACTORY INSPECTION DEPARTMENT

J. ELLERY HUDSON *Chief Inspector.*
FRANK J. CLINTON *Assistant Inspector.*
GEORGE W. RITCHIE *Assistant Inspector.*
WILFRID JARRET *Assistant Inspector.*
MINNIE H. SHIPPEE *Assistant Inspector.*

LETTER OF TRANSMITTAL

OFFICE OF FACTORY INSPECTORS.

PROVIDENCE, R. I., January, 1919.

To the Honorable General Assembly of the State of Rhode Island:

In accordance with the provisions of Chapter 78 of the General Laws, I have the honor to submit to you this, the twenty-fifth annual report of the Factory Inspectors of this State, covering the inspection of factories, work-shops, mercantile establishments, bake-shops, ice cream and confectionery manufactories, etc., during the year ending December 31, 1918.

Respectfully submitted,

J. ELLERY HUDSON.

Chief Factory Inspector.

REPORT

The Chief Factory Inspector respectfully presents the following as the twenty-fifth annual report of the department:

There have been six thousand seven hundred and eighty-two (6,782) places inspected during the past year, divided as follows:

Bake-shops, stores, etc., employing less than five persons.	4,077
Establishments employing five or more persons.	2,705

Total number of establishments. 6,782

This is a decrease of two hundred and forty-two (242) in the number of places employing less than five persons, and a decrease of fifty-four (54) in the number of places employing more than five persons.

The number of employees in the various establishments was divided as follows:

Males of sixteen years and over.	117,066
Females of sixteen years and over.	61,880

Total adults. 178,946

Males under sixteen years of age.	4,091
Females under sixteen years of age.	4,222

Total number of children. 8,313

Whole number employed. 187,259

The foregoing figures compared with those given in our last report show a decrease of five thousand one hundred and forty-three (5,143) in the number of men employed; an increase of four thousand one hundred and seventy-one (4,171) in the number of women employed; a net decrease of nine hundred and seventy-two (972) in the number of adults; an increase of one thousand and sixty-six (1,066) in the number of children employed; a net increase of ninety-four (94) in

the total number employed. The percentage of child labor is 4.44. For the year 1917 it was 3.87.

The number of employees in the jewelry and silverware manufactories was divided as follows:

Males of sixteen years and over	6,951
Females of sixteen years and over	4,575
	<hr/>
Total adults	11,526
Males under sixteen years of age	307
Females under sixteen years of age	275
	<hr/>
Total children	582
Whole number of employees	12,108

The number of employees in bake-shops, ice cream and confectionery manufactories, stores, etc., employing less than five persons was divided as follows:

Males of sixteen years and over	5,359
Females of sixteen years and over	2,380
	<hr/>
Total adults	7,689
Males under sixteen years of age	96
Females under sixteen years of age	1
	<hr/>
Total children	97
Whole number of employees	7,786

The number of employees in the textile industries was divided as follows:

Males of sixteen years and over	41,734
Females of sixteen years and over	33,394
	<hr/>
Total adults	75,128
Males under sixteen years of age	2,606
Females under sixteen years of age	3,102
	<hr/>
Total children	5,708
Whole number employed in textile industries	80,836

Compared with the figures given in last year's report the foregoing show an increase of one thousand and seventy-one (1,071) in the number of men employed; an increase of one thousand three hundred and sixty-two (1,362) in the number of women employed; an increase of one hundred and sixty-eight (168) in the number of boys employed; an increase of three hundred and seventy (370) in the number of girls employed. This makes a total increase of two thousand four hundred and thirty-three (2,433) in the number of adults employed; a total increase of five hundred and thirty-eight (538) in the number of children employed, and a total increase of two thousand nine hundred and seventy-one (2,971) in the whole number employed in the textile industries. The percentage of child labor in these industries is 7.06. In 1916 it was 6.6.

The following table shows the number of men, women, boys and girls employed in the State, and also the percentage of child labor by counties, cities and towns:

THE STATE, COUNTIES, CITIES AND TOWNS.	ADULTS.			CHILDREN.			Total em- ployed.	Percentage of Children.
	Men.	Women.	Total.	Boys.	Girls.	Total.		
THE STATE.....	117,066	61,880	178,946	4,091	4,222	8,313	187,259	4.44
PROVIDENCE COUNTY.....	99,158	52,459	151,617	3,278	3,504	6,782	158,399	4.28
Burrillville.....	1,927	790	2,717	61	55	116	2,833	4.1
Central Falls.....	2,617	1,822	4,439	88	162	250	4,689	5.33
Cranston.....	3,690	830	4,520	72	58	130	4,650	2.8
Cumberland.....	2,981	1,915	4,896	166	130	296	5,192	5.7
East Providence.....	3,405	1,248	4,653	61	31	92	4,745	1.94
Foster.....	11	6	17	.....	.....	.....	17	.....
Glocester.....	118	43	159	5	9	14	173	8.
Johnston.....	403	634	1,037	60	94	154	1,191	12.93
Lincoln.....	1,948	868	2,816	75	54	129	2,945	4.38
North Providence.....	778	898	1,676	86	85	171	1,847	9.25
North Smithfield.....	1,038	432	1,470	25	33	58	1,528	4.92
Pawtucket.....	16,680	10,766	27,446	823	886	1,709	29,155	5.86
Providence.....	52,215	25,595	77,810	1,273	1,335	2,608	80,418	3.24
Scituate.....	470	248	718	23	18	41	759	5.4
Smithfield.....	838	449	1,287	22	25	47	1,334	3.52
Woonsocket.....	10,041	5,915	15,956	438	529	967	16,923	5.72
BRISTOL COUNTY.....	5,045	2,859	7,904	275	238	513	8,417	6.1
Barrington.....	319	35	354	8	3	11	365	3.
Bristol.....	3,499	2,030	5,529	198	154	352	5,881	5.99
Warren.....	1,227	794	2,021	69	81	150	2,171	6.9
KENT COUNTY.....	6,480	3,410	9,890	343	325	668	10,558	6.22
Coventry.....	1,075	616	1,691	70	72	142	1,833	7.74
East Greenwich.....	389	191	580	13	9	22	602	3.65
Warwick.....	1,764	649	2,413	60	40	100	2,513	3.98
West Greenwich.....	3	1	4	.....	.....	.....	4	.....
West Warwick.....	3,249	1,953	5,202	200	204	404	5,606	7.2
NEWPORT COUNTY.....	3,052	1,570	4,622	74	46	120	4,742	2.53
Jamestown.....	55	14	69	.....	.....	.....	69	.....
Little Compton.....	20	12	32	.....	.....	.....	32	.....
Middletown.....	98	2	100	.....	.....	.....	100	.....
Newport.....	2,290	991	3,281	32	13	45	3,326	1.35
New Shoreham.....	154	170	324	.....	.....	.....	324	.....
Portsmouth.....	28	14	42	.....	.....	42	.....	.....
Tiverton.....	407	367	774	42	33	75	849	8.83
WASHINGTON COUNTY.....	3,331	1,582	4,913	121	109	230	5,143	4.47
Charlestown.....	9	24	33	.....	.....	.....	33	.....
Exeter.....	5	4	9	.....	.....	.....	9	.....
Hopkinton.....	228	112	340	6	8	14	354	3.95
Narragansett.....	223	167	390	.....	.....	.....	390	.....
North Kingstown.....	368	216	584	10	12	22	606	3.63
Richmond.....	370	145	515	19	12	31	546	5.67
South Kingstown.....	615	223	838	32	18	50	888	5.63
Westerly.....	1,513	691	2,204	54	59	113	2,317	4.88

The following table shows the increase or decrease in the number of adults and children employed in the different counties, cities and towns:

THE STATE, COUNTIES, CITIES AND TOWNS.	ADULTS.		CHILDREN.		TOTAL EMPLOYED.	
	Increase.	Decrease.	Increase.	Decrease.	Increase.	Decrease.
THE STATE.....		972	1,066		94	
PROVIDENCE COUNTY.....		335	767		432	
Burrillville.....	16		39		55	
Central Falls.....	243		72		315	
Cranston.....	626		31		657	
Cumberland.....	49			18	31	
East Providence.....	775		24		799	
Foster.....	2				2	
Glocester.....	124		14		138	
Johnston.....		71	63			8
Lincoln.....		691	24			667
North Providence.....		48		30		78
North Smithfield.....		20		1		21
Pawtucket.....	2,577		131		2,708	
Providence.....		2,977	335			2,642
Scituate.....		53		2		55
Smithfield.....	59			2	57	
Woonsocket.....		946	87			859
BRISTOL COUNTY.....	70		127		197	
Barrington.....		226		1		227
Bristol.....	414		133		547	
Warren.....		118		5		123
KENT COUNTY.....		117	83			34
Coventry.....		163	8			155
East Greenwich.....	21			7	14	
Warwick.....	490		26		516	
West Greenwich.....						
West Warwick.....		465	56			409
NEWPORT COUNTY.....		186	17			169
Jamestown.....		74				74
Little Compton.....		27				27
Middletown.....		16				16
Newport.....	17		19		36	
New Shoreham.....		36		1		37
Portsmouth.....		6				6
Tiverton.....		44		1		45
WASHINGTON COUNTY.....		404	72			332
Charlestown.....		2				2
Exeter.....						
Hopkinton.....		21	7			14
Narragansett.....		337				337
North Kingstown.....		45		6		51
Richmond.....	52		8		60	
South Kingstown.....		43	24			19
Westerly.....		8	39		31	

The following table shows the number of men, women, boys and girls employed in the textile industries of the State by counties, cities and towns:

THE STATE, COUNTIES, CITIES AND TOWNS.	Men.	Women.	Boys under 16.	Girls under 16.
THE STATE.....	41,734	33,394	2,606	3,102
PROVIDENCE COUNTY.....	33,636	28,202	2,013	2,547
Burrillville.....	1,788	762	58	54
Central Falls.....	1,382	1,242	42	91
Cranston.....	518	342	42	45
Cumberland.....	2,609	1,822	163	130
East Providence.....	998	198	12	6
Foster.....	4	4		
Glocester.....	103	38	5	9
Johnston.....	362	606	60	94
Lincoln.....	1,776	839	71	54
North Providence.....	722	872	86	85
North Smithfield.....	1,003	428	25	33
Pawtucket.....	9,354	9,368	670	856
Providence.....	6,936	6,794	410	667
Scituate.....	364	232	22	18
Smithfield.....	802	437	22	25
Woonsocket.....	4,915	4,218	325	380
BRISTOL COUNTY.....	1,375	930	120	96
Barrington.....	219	26	6	3
Bristol.....	155	174	46	14
Warren.....	1,001	730	68	79
KENT COUNTY.....	4,491	2,914	322	317
Coventry.....	945	588	65	72
East Greenwich.....	187	140	12	9
Warwick.....	697	386	48	33
West Warwick.....	2,662	1,800	197	203
NEWPORT COUNTY.....	337	347	42	33
Tiverton.....	337	347	42	33
WASHINGTON COUNTY.....	1,895	1,001	109	109
Exeter.....	4	3		
Hopkinton.....	203	106	6	8
North Kingstown.....	299	188	10	12
Richmond.....	352	140	19	12
South Kingstown.....	483	195	32	18
Westerly.....	584	369	42	59

The following table gives a summary of the statistics of the reports of this department for the years that the factory inspection law has been in force:

YEAR.	Number of places visited.	Number of adults employed.	Number of children employed.	Total number employed.	Percentage of children.
1894.....	294	55,109	5,217	60,326	8.5
1895.....	293	53,523	4,473	57,996	7.7
1896.....	379	50,068	4,065	54,133	7.5
1897.....	355	56,072	4,786	60,858	7.9
1898.....	433	63,259	4,539	67,798	6.5
1899.....	549	72,296	4,666	76,962	6.0
1900.....	595	76,552	5,253	81,805	6.4
1901.....	617	81,496	5,068	86,564	5.8
1902.....	628	86,043	5,477	91,520	6.0
1903.....	644	90,165	6,451	96,616	6.7
1904.....	653	88,545	5,895	94,444	6.2
1905.....	1,508	112,377	6,917	119,294	5.8
1906.....	1,742	123,112	6,932	130,044	5.3
1907.....	1,899	131,059	6,150	137,209	4.5
1908.....	1,913	122,060	4,924	126,984	3.9
1909.....	1,973	135,947	5,531	141,478	3.9
1910.....	6,225	151,199	5,699	156,898	3.6
1911.....	6,430	156,808	5,669	162,507	3.5
1912.....	6,520	161,585	5,761	167,346	3.4
1913.....	6,689	164,005	6,026	170,031	3.5
1914.....	6,875	152,777	5,450	158,227	3.4
1915.....	7,028	158,030	5,164	163,194	3.16
1916.....	7,027	175,974	6,839	182,793	3.74
1917.....	7,078	179,912	7,247	187,165	3.87
1918.....	6,782	178,946	8,313	187,259	4.44

BAKE-SHOPS, ICE CREAM AND CONFECTIONERY MANUFACTORIES.

There are in force at the present time two hundred and ninety-eight (298) bake-shop certificates, a decrease of forty-one from the number in force last year. The number of certificates in force for ice cream manufactories is one hundred and forty-one (141), a decrease of thirty-seven. Certificates for the manufacture of confectionery number sixty-two (62), a decrease of twenty-four. The combined number of certificates in force is five hundred and one (501), a decrease of one hundred and two.

RECOMMENDATIONS.

Your attention is again called to the question of providing adequate and safe means of egress from factories and work-shops in case of

fire. This is a matter of great importance and should receive immediate and conscientious attention. That it is the duty of the State to see to it that the lives of the thousands of its workers are protected in every possible way against danger by fire cannot be denied. The use of the best means that engineering knowledge and skill have devised for such protection should be provided for. The "Philadelphia Tower Fire Escape" is such a device. The fundamental idea of it is that the stairway tower has no direct communication with the different rooms and floors of the building and, therefore, is free from danger of smoke or flame. One must go out from the work room into the open air in order to reach the stairway in the tower, and then the way to the ground is safe and easy. It furnishes a place of safety on the level of each floor of the building. This fire escape is not a patented device, but is the adaptation of well known scientific principles, which are free for all to use. It is approved by all scientific authorities and is recommended as the best means known for escape from buildings in case of fire. Acts embodying the foregoing ideas have been repeatedly presented to the General Assembly and in every case set aside. I hope that at the present session the matter will receive favorable consideration.

PROSECUTIONS.

Forty-two cases have been brought before the District Courts of the State during the year. Twenty-eight for employing children under sixteen years of age without certificates; one for employing child under sixteen years of age after eight o'clock P. M.; three for violation of the fifty-four hour law, and ten for violation of Section 18 of Chapter 78 of the General Laws, which provides for the covering of prepared foods, etc. All were sustained and fines were imposed aggregating \$820.

ACCIDENTS.

Two thousand nine hundred and thirty-three (2,933) accidents were reported during the year, including thirty-eight (38) deaths. Nine hundred and twenty-two (922) of these accidents, including twelve (12) deaths were caused by machinery in establishments coming under the supervision of this department, and are classified as follows: Cut, bruised or jammed fingers, 543; cut or bruised leg, arm, hand or foot, 166; loss of eye, 2; loss of fingers and parts of fingers, 110; loss of arm, 2; loss of hand, 2; fractured leg, 3; fractured arm, 26;

fractured hand, 10; fractured fingers, 41; fractured ribs, 5; fractured toes, 8; fractured foot, 2; torn scalp, 2; miscellaneous injuries to other parts of the body, 86.

The accidents by machinery resulting fatally were as follows:

December 19, 1917. Anthony Ferreira, employed by J. N. Polsey & Company, Pawtucket. Climbed on top of machine while same was running. Arm caught in rollers and crushed, ribs broken, exposing lung. Died next day.

January 4, 1918. Norbert Lavallo, aged 60 years, employed by Woonsocket Worsted Mills, Woonsocket, and was operating comb baller. Right arm severely mangled resulting in death. There were no witnesses, but position in which he was found indicated that he was starting new ball, and instead of holding the sliver down with palm of hand, he had tucked it in with fingers.

January 24, 1918. Patrick Gormley, aged 38 years, employed by Providence Dye Works, Providence. Extractor burst causing fragments to fly and hit him, resulting in death.

February 12, 1918. Oscar Moran, aged 31 years, employed by Victoria Mill, Thornton. Clothing caught on shafting and he was drawn around shaft and killed.

February 14, 1918. Joseph Coulombe, aged 45 years, employed by Royal Weaving Co., Pawtucket. After starting elevator he jumped on and in some way was caught between elevator and wall. His neck was broken.

March 1, 1918. Vito Taluetti, aged 15 years, employed by Sydney Worsted Co., Woonsocket. Neck and chest caught between elevator and floor resulting in death.

March 2, 1918. Irving P. Eddy, aged 20 years, employed by Butler Exchange Co., Providence. Was cleaning and oiling elevator and was found smothered on top of the elevator.

March 13, 1918. Joseph Landry, aged 16 years, employed by Dimond Company, Providence. Caught in elevator or dropped down elevator shaft and was instantly killed.

April 3, 1918. Joseph Laurie, aged 16 years, employed by D. Goff & Sons, Pawtucket. Was closing window and shirt caught in gear of spinning frame and twisted into rope around his neck, strangling him to death.

April 26, 1918. Wilfrid Loranger, aged 19 years, employed by Crompton Company, Crompton. He was about to assist in manipulating a clutch in the wheel house, having hold of rope which was attached to the clutch lever. He fell across a jack shaft, and in endeavoring to save himself grasped a friction pulley which was attached to this shaft in motion. He was carried down between pulley and cement pit in which pulley was running.

June 3, 1918. Marshall Chaput, aged 28 years, employed by Tamarack Co., Pawtucket. While working at shipper handle stud, head got caught between lay and breast beam, causing fracture of skull.

July 17, 1918. James Cox, aged 15 years, employed by Royal Weaving Co., Pawtucket. Was cleaning mule carriage before mule stopped and was crushed between carriage and mule beam, causing death.

There were also three deaths caused by the explosion of a boiler in Mount Pleasant Laundry, Providence, on March 4, 1918.

Respectfully submitted,

J. ELLERY HUDSON,

Chief Factory Inspector.

INSPECTION OF FACTORIES, BUSINESS ESTABLISHMENTS AND WORKSHOPS.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
BARRINGTON						
Barrington Steam Brick.....		58	1	2		Good.
Bosworth, Leonard P.....	Hardware, lumber and Groceries.....	7	1			Good.
Higgins, R. R. Co.....	Oysters.....	22				Very Good.
International Rubber Co.....	Rubber textiles.....	79				Good.
O'Bannon Corporation.....	Artificial leather.....	113	1	3		Very Good.
Rhode Island Lace Works.....	Lace.....	27	25	3	3	Very Good.
BRISTOL						
Cranston Worsted Mill.....	Worsted yarn.....	155	174	46	14	Very Good.
Herreshoff Mfg. Co.....	Steam & sailing yachts.....	261		10		Very Good.
Hotel Belvedere.....		3	2			Very Good.
Narragansett Rubber Co.....	Insulated wire & foot wear.....	345	178	18	15	Good.
National India Rubber Co.....	Rubber.....	2,561	1,619	124	125	Excellent.
Paull, Seth Co.....	Groceries, coal & wood.....	7	1			Good.
Providence Telephone Co.....		2	8			Excellent.
Sodini & Giusti.....	Bakery.....	7	1			Good.
Staples Coal Co.....	Coal and wood.....	12				Good.
Wardwell Lumber Co.....	Lumber & hardware.....	7	1			Good.
BURRILLVILLE						
BRIDGETON						
Burrillville Laundry.....		5				Excellent.
New England Dyeing & Finishing Co.....		9	6	1		Excellent.
Potter, E. J.....	Spindles and wet finishing machinery.....	27		1		Very Good
Premier Worsted Mills.....	Fancy worsteds.....	50	25	4	3	Excellent.
Fredergast, W. H.....	Fancy worsteds.....	76	30	2	2	Excellent.
GLENDALE						
Orrell Mills.....	Woolens.....	107	28	3	3	Excellent.
HARRISVILLE						
Brooks, R. F.....	Groceries.....	5	1			Excellent.
Harrisville Co-operative Store.....	Groceries & market.....	1	1	1		Excellent.
Stillwater Worsted Co.—Tinkham Mill, 1, 2, 3.....	Worsted.....	272	96	5	7	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
BURRILLVILLE—Concluded						
MAPLEVILLE						
Coronet Worsted Co., Old Mill.....	Men's woolen goods...	259	95	17	13	Excellent.
New mill.....						
NASONVILLE						
Nasonville Bottling Co.		12				Excellent.
Wanskuck Co.	Worsteds	104	37	2	4	Excellent.
W. & K. Company.....	Men's worsted wear..	193	87	6	6	Excellent.
OAKLAND						
Oakland Worsted Co.	Men's Worsteds.....	129	98	1	2	Excellent.
PASCOAG						
American Woolen Co.—Anchor Mill		157	76	6	4	Excellent.
Pascoag Realty Co.	Worsteds and woolen..	94	32			Excellent.
Providence Telephone Co.		3	6			Excellent.
Roscoe Worsted Mills, Inc.		62	27	2	1	Excellent.
Sayles, Fred L. Co.	Worsteds	131	92	7	9	Excellent.
Smith, James H.	Hardware	5	1			Excellent.
TARKILN						
Mowry, H. E. & E. A.	Woolen and worsted..	84	19	1		Excellent.
WHIPPLE						
Glengary Mill, Inc.	Woolen yarn	61	19	1		Excellent.
CENTRAL FALLS						
American Hair Cloth Co.		24	15			Excellent.
American Supply Co.	Loom harness, reeds & belting.....	26	17	4	2	Excellent.
Arapahoe Mfg. Co.	Mosquito bars for U. S.	8	32			Excellent.
Ashworth, T.	Closed					
August, Joseph.	Bakery	7	1			Good.
Bateson, John.	Bakery	4	1			Excellent.
Beattie, S. S. & Co.	Groceries	5	1			Excellent.
Bengal Silk Mills.		10	9		1	Excellent.
Blackstone Stocking Co.	Hosiery	14	48		3	Excellent.
Bryan-Marsh Electric Works.	Incandescent lamps..	89	355	19	66	Excellent.
Central Falls Bottling Co.	Carbonated beverages.	12		1		Excellent.
Central Warp Mfg. Co., Inc.	Winding yarn.....	22	42	1	1	Excellent.
Champagne, Henry.	Bakery	3	1	1		Very Good.
City Wet Wash.		4	2			Excellent.
Coutu Bros.	Coal, wood & teaming.	11	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
CENTRAL FALLS—Concluded						
Eagle Weaving Co.	Silk	12	2			Excellent.
Family Laundry, Inc.		18	1			Excellent.
Follett & Steere	Express and teaming.	11				Excellent.
Fortuna Silk Mill		45	30			Excellent.
Freeman, E. L. Co.	Printing and binding.	22	6	1		Excellent.
Frost Albert Paper Box Co.		7	14	4	3	Excellent.
Glenyon Dye Works	Yarn department.	66	8	2	1	Excellent.
Gorman, M.	Bakery.	6				Good.
Hamlet Textile Co.	Silk	20	40		7	Excellent.
Hathaway, O. H.	Top roll coverer.	4	2			Excellent.
Hemphill Mfg. Co.	Automatic knitting machine.	274	14	6		Excellent.
Jenkinson, John	Brass foundry	8				Excellent.
Leader Weaving Co.	Cotton back satin	68	79			Excellent.
Leonard, Pierre	Closed.					
Luther, Charles A. & Co.	Cotton machinery	11				Excellent.
Macmillan, A. B.	Auto bodies	5				Very Good.
Monahan, E. F.	Groceries.	4	1			Excellent.
National Spun Silk Co.	Noil yarn for cartridge bags.	52	9			
New York Grocery	Groceries.	7	3			Excellent.
Newell, Fred E.	Gas fixtures	5				Excellent.
Pawtucket Gas Co.		28				Very Good.
Pawtucket Hosiery Co.	Hosiery	98	21	1	28	Excellent.
Pawtucket Spinning Ring Co.	Spinner and twister rings.	11				Excellent.
Pennsylvania Textile Co.	Cotton and silk	145	63	2	3	Excellent.
Pennsylvania Textile Co.	Spooling and winding.	4	28		4	Excellent.
Pews, R. Mfg. Co.	Tin cylinders	11				Excellent.
Poole, R. K. Mfg. Co.	Novelty curtains	2	10			Excellent.
Regina Lace Co.		113	86	6	22	Excellent.
Rhode Island Silk Co.	Cotton and silk	45	6		1	Excellent.
Richardson-Foster Co.	Dyeing.	35	6		1	Very Good.
R. I. Glass Works of General Electric Co.	Bulbs	260	40	3		Excellent.
St. George, J. Adelard	Groceries.	5	1			Very Good.
Sewing Thread Co.		10	10		1	Excellent.
Spaulding, G. H.	Market	7	1			Excellent.
Stafford Mills	Remnants	1	3	1		Excellent.
Star Braiding Co.	Braid	15	17			Excellent.
Stephens Nut & Bolt Co.		25	1			Very Good.
U. S. Cotton Co.	Cotton cloth.	78	74	9	1	Excellent.
U. S. Knitting Co.	Linings	25	88	3	1	Excellent.
Walczak, Thomas	Bakery	4	1			Good.
Wardwell Braiding Machine Co.		106	4	1		Excellent.
Waypoyset Mfg. Co., No. 1	Cotton and silk	461	519	18	18	Excellent.
Weatherhead-Thompson Co.	Beltng, etc.	10				Very Good.
Wilkinson, Seth	Machinery wipers	6	9			Excellent.
Willet, Charles J. & Co.	Cotton and silk	6	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
CHARLESTOWN						
Cross, William D.	Cigars	2	4			Good.
Breakers, The.	Hotel		7			Excellent.
Worcester House	Hotel	1	6			Excellent.
COVENTRY						
ANTHONY						
Capwell, Searles.	Lumber	5				Very Good.
Benoit, Cleophase	Groceries	5				Excellent.
Coventry Company	Cotton	232	161	26	22	Excellent.
Read, Byron	Furniture	5				Excellent.
ARKWRIGHT						
Interlaken Mills	Cotton	17	28	3	3	Good.
Interlaken Mills	Dyeing	161		6		Good.
BLACK ROCK.						
Waco Braid Co.	Shoe strings & braid..	5	9	1	6	Good.
COVENTRY CENTRE						
Cowen Braid Mfg. Co.	Shoe laces and braid..	6	3			Good.
Hill, James H. & Sons	Zinc for shoe string tips	10	1			Excellent.
Rhode Island Processing Co.	Mercerized yarn	50	25		3	Good.
HARRIS						
Campbell, A. A.	Grain, coal and wood	5	1			Very Good.
Douglas, Arthur	Printing	3	4			Good.
Interlaken Mills	Book cloth	115	118	13	17	Excellent.
Keñnon Bros.	Closed					
Nicholas Top Roll Covering Co.		9	1	1		Good.
Pawtuxet Valley Dyeing and Royal Chemical Co.		28	20		2	Very Good.
QUIDNICK.						
Boucher, Arthur	Bakery	6	1			Very Good.
Quidnick Greenhouses		11		2		Very Good.
Matteson & Matteson	Groceries	12	1			Excellent.
Windham Mfg. Co., No. 1	Cotton	104	72	12	14	Good.
Windham Mfg. Co., No. 2	Cotton	103	65		2	Good.
RICE CITY						
Andrews, C. B.	General store	5	1			Very Good.
WASHINGTON						
Knight, William H.	Groceries and market	8	1	1		Excellent.
Livingstone Worsted Co.	Fancy worsted	124	87	4	3	Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
CRANSTON						
ARLINGTON						
Consumers Brewing Co.		47				Good.
French, H. H. & Son.	Hay and grain.	14	1			Very Good.
Langelier Mfg. Co.	Special machinery.	103	4			Excellent.
Narragansett Brewing Co.	Lager beer and ale.	202	3			Good.
Providence Box and Lumber Co.	Wooden boxes.	31	1			Very Good.
Rhode Island Company—Car House.		134				
Rhode Island Company—Store Room.		14				Excellent.
Rhode Island Company—Repair Shop.		154				
AUBURN						
A. A. Spooling and Winding Co.	Yarns.	5	17		1	Very Good.
Budlong Rose Co.	Greenhouses.	125	45			Good.
Budlong Mfg. Co.	Laces and braids.	10	30		1	Excellent.
Central Tool Co., The.	Dental and shop tools.	33	8			Excellent.
Cruthers, F. E.	Bakery.	5	2			Good.
General Fire Extinguisher Co.	Foundry.	229	20			Excellent.
General Fire Extinguisher Co.	Iron and brass pipe & fittings, Sprinklers.	277	10	2		Excellent.
Grant Bros.	Groceries.	5	1			Excellent.
Hope Foundry Co.	Iron castings.	45				Fair.
Hoyle, G. L.	Groceries.	15	5			Excellent.
Kenney Manufacturing Co.	Wooden novelties.	11	4	2	1	Very Good.
Rosengren & Lind.	Bakery.	7	1			Very Good.
Standard Machinery Co.		156	3			Excellent.
United Lace & Braid Mfg. Co.	Shoe and corset laces.	39	133	19	21	Excellent.
United Wire & Supply Co.	Brass & copper tubing.	249	29		6	
Universal Winding Co.	Foundry.	154	14			Excellent.
Universal Winding Co.		859	198	17	3	Excellent.
BELLEFONTE						
Chester, F. E. Co.	Fishing tackle & cork flooring.	40	1	3		Good.
Imperial Printing & Finishing Co.	Dyeing and bleaching cotton cloth.	165	35	6	5	Excellent.
CRANSTON						
Cranston Box Mfg. Co.	Wooden boxes.	22	1			Fair.
Cranston Print Works Co.	Bleaching, dyeing and finishing.	153	35	9	1	Excellent.
Hill, George & Co.	Groceries.	6	1			Excellent.
Narragansett Finishing Co.		81	20	3	2	Excellent.
HOWARD						
Hill & Lacross.	Elastic web and tape.	11	58	4	13	Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
CRANSTON—Concluded						
KNIGHTSVILLE						
Atlantic Tubing Co.	Shoe laces and flexible gas tubing	54	14	1	1	Excellent.
PAWTUXET						
Aluminum Novelty Works .....	.....	4	1	.....	.....	Very Good.
Bentlee Jewelry Co.	Jewelry	2	2	.....	1	Very Good.
Reiner Co.	Drugs	5	.....	.....	.....	.....
Rhodes Bros. Co.	Amusement resort	41	2	.....	.....	Excellent.
Ross Market	Closed .....	.....	.....	.....	.....	.....
Searle, Frank.	Restaurant	2	4	.....	.....	Very Good.
Slocum's	Restaurant	4	7	.....	.....	Excellent.
Wells, W. A. H. Co.	Jewelry	17	27	2	2	Very Good.
CUMBERLAND						
ASHTON						
Ashton Mill	Cotton	145	126	12	4	Excellent.
BERKELEY						
Berkeley Co.	Cambrics	238	179	16	12	Excellent.
LONSDALE						
Bishop, William	Groceries	5	.....	.....	.....	.....
Lonsdale Co., No. 4 Mill	Cotton	194	197	26	11	Excellent.
Lonsdale Co., Ann & Hope Mill	Cotton	385	345	38	32	Excellent.
MANVILLE						
Manville Co.	Cotton	988	657	63	51	Excellent.
VALLEY FALLS						
Burnham Store Co.	Groceries	19	5	.....	.....	Excellent.
Hanshøe Mfg. Co.	Cotton and cotton and silk	162	101	3	.....	Excellent.
Hesse Mfg. Co.	Narrow fabrics	9	27	.....	1	Excellent.
Hindley Mfg. Co.	Wire goods	14	10	.....	.....	Very Good.
Keach & Brown	Shirt waists, etc.	5	35	.....	.....	Excellent.
N. Y., N. H. & H. R. R. Co.—Mechanical Department .....	.....	183	1	.....	.....	Excellent.
Penikees Mill	Silk	173	136	4	14	Excellent.
R. I. Perkins Horse Shoe Co.	Closed .....	.....	.....	.....	.....	.....
River Spinning Co.—Plant B.	Purified cotton	300	.....	.....	.....	Very Good.
Skinner, C. E. & J. F.	Top roll coverer	8	2	.....	.....	Excellent.
Standard Nut & Bolt Co. ....	.....	63	2	.....	.....	Excellent.
Stevenson Bros.	Groceries	7	Excellent.
Wood, Frank Mfg. Co.	Narrow fabrics	15	51	1	5	Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
EAST GREENWICH						
Bergstrom, F. A.	Groceries.	7	2			Excellent.
Boston Wire Stitcher Co.	Wire stitching machine	38	2	1		Excellent.
Earnshaw & Co.	Drugs.	4	1			Excellent.
Elizabeth Mill, No. 2.	Cotton thread.	30	40	4	8	Good.
Esten, A. H.	Dyeing and spooling yarn.	6	12			Very Good.
Farrington, W. W. Est.	Dextrines.	7	1			Very Good.
Gorman Bros.	Groceries.	7	2			Excellent.
Greenwich Bleachery.	Bleaching & finishing.	124	67	1		Very Good
Greenwich Mill, The.	Worsted.	27	21	1		Excellent.
Hansford, W. A.	Groceries.	6				Excellent.
Hotel U'pdike.		8	3			Excellent.
Miner, A. D.	Groceries.	5	1			Very Good.
Munson Bros.	Groceries.	7	1			Excellent..
Nock, Fred S.	Yachts.	20	2			Good.
Parsons & Briggs.	Laundry.	4	10			Very Good.
Providence Drysalters.	Chemicals, mordants, color extracts.	50				Good.
Providence Telephone Co.		3	10			Excellent.
EAST PROVIDENCE						
Bentley, H. A.	Bakery.	4	2			Good.
Bennette, J. W.	Bowling.	5				Excellent.
Broadway Dairy.		12	3			
Doughty, W. F. & Co.	Ice cream manuf'g.	7	1			Very Good.
Eastern Bolt & Nut Co.		181	2	15		Very Good.
Fay's Dance Hall.		23	5			Excellent.
Gorham Mfg. Co.	Hand grenades, loaded shells, boosters.	225	800	10	18	Excellent.
Greene, Charles A.	Cloeed.					
Gulf Refining Co.	Petroleum.	45	3			Very Good.
Holiday Bros.	Hardware, etc.	9	2			Good.
Howard Braiding Co.	Braids and laces.	13	48	2	2	Very Good.
Jumes Mfg. Co.	Soaps and chemicals.	6				Good.
Industrial Chemical Co.	Aniline oils.	27				Very Good.
Jaques, Hugheus.	Lunch.	7	2			Very Good.
Loof Restaurant.		15	4			Excellent.
McCausland, J.	Paper cop tubes.	3	5			Good.
McLaughlin, R. G.	Restaurant.	1	4			Excellent.
McLaughlin, R. G.	Restaurant.	9	2			Excellent.
McCusker, T. H.	Confectionery.	2	7			Very Good.
Metallic Shell & Tube Co.	Cloeed.					
Miller, F. H. Co.	Caterers.	3	2			Excellent.
Murtaugh, Martin.	Restaurant.	5	6			Excellent.
Narragansett Milling Co.	Grain.	20	3			Very Good.
N. Y., N. H. & H. R. R. Co.—Mechanical.		18				
Rhode Island Oyster Farms Co., The.		68	1			Very Good.
Rich & Horton.	Groceries and market.	16	1	2		Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
EAST PROVIDENCE—Concluded						
Riley, J. W. & Co.	Groceries.	7	1			Very Good.
Standard Oil Co. of New York	Petroleum and its products.	90	2			Excellent.
Standard Oil Co., New York (Vanity Fair)		23				Very Good.
Union Webbing Co.		13	14		1	Very Good.
United Railway Signal Co.	Railway torpedoes.	2	6			
Watchmocket Sanitary Laundry Co.		6				Fair.
PHILLIPSDALE						
American Electrical Works	Wire	583	111	6	7	Very Good.
Bird & Son	Building paper.	180				Excellent.
Nonnabo Chemical Co.	Cellulose products.	90	2			Very Good.
Phillipsdale Store	Groceries	4	1			Very Good.
River Spinning Co.	Gun cotton	424	1	2		Very Good.
Rumford Textile Co.	Cotton goods	10	20			Excellent.
Sayles Finishing Plants	Bleaching, dyeing and printing.	538	115	8	3	Excellent.
Washburn Wire Co.		323		1		Very Good
RIVERSIDE						
Mexican Petroleum Corporation	Fuel oil	12				
Penniman & Crumb	Groceries.	6	2			Very Good.
Rhode Island Co.—Car House		70				
RUMFORD						
Coffin, Henry	Closed					
Rumford Chemical Works	Baking powder	188	9	10		Very Good.
Rumford Chemical Works	Groceries.	2	4			Very Good.
EXETER						
Yawgoo Mill	Shirting flannel	4	3			Good.
FOSTER						
HOPKINS MILLS						
Simmons, Fred.	Webbing and lace	4	4			Good.
GLOCESTER						
CHEPACHET						
Brown & Hopkins	Groceries.	5				Excellent.
Blackstone Woolen Mills		41	13	3	5	
Spring Grove Woolen Mill	Custom weaving and spinning	62	25	2	4	Very Good.
HOPKINTON						
ASHAWAY						
Ashaway Line & Twine Mfg. Co.	Fish lines, etc.	31	38		2	Excellent.
Ashaway Woolen Co.		58	20	1		Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
HOPKINTON—Concluded						
BARBERVILLE						
Tillinghast, E. M.	Shoddy mill	4	2			Good.
CANONCHET						
Canonchet Mills	Cotton yarns	7	3			Good.
CENTREVILLE						
Centreville Mill	Yarn	20	6			Good.
HOPE VALLEY						
Bailey, Henry D.	Woolens & worsteds	50	21	4	6	Very Good.
MOSCOW						
Moscow Mill	Fancy twists	8	8	1		Good.
ROCKVILLE						
Yawgo Line & Twine Co.—No. 1	Yarn	25	8			Good.
JAMESTOWN						
Bay View Hotel		5	7			Very Good.
Jamestown & Newport Ferry Co.		40	3			Very Good.
JOHNSTON						
MANTON						
Johnston Wet Wash	Closed					
THORNTON						
British Hosiery Co.		21	20		1	Excellent.
Morgan Mills	Wool	40				Excellent.
National Silk Hosiery Co.	Closed					
Pocasset Worsted Co.	Yarn	114	489	41	66	Excellent.
Priscilla Worsted Mills		16	70	12	24	Very Good.
Victoria Mills	Tops	171	27	7	3	Excellent.
LINCOLN						
ALBION						
Valley Falls Co.	Cotton	195	125	25	18	Excellent.
LONSDALE						
Angell, S. D.	Dry goods	1	4			Excellent.
Lonsdale Co.	Bleachery	324	86	15		Excellent.
Quinham, J. W.	Top roll covering	5	2			Excellent.
Walmsley, Charles	Groceries	6				Excellent.
MANVILLE						
Bouvier, Giroud & Co.	General store	7	2			Excellent.
Contreuxville Mfg. Co.	Cotton plush	95	69			Excellent.
Gauvin, A. & Son	General store	7	1			Excellent.
Home Sanitary Wet Wash		5				Very Good.
Manville Provision Co.	Meat and groceries	10	1			Excellent.
Vose Bros.	General store	13		1		Excellent.

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LINCOLN—Concluded						
SAYLESVILLE						
Crefeld Waste & Batting	Closed					
Glenlyon Dye Works		448	214	10	14	Excellent.
Lonsdale Bakery Co.	Bakery	68	9	3		Excellent.
Sayles Bleacheries	Cotton finished	714	345	21	22	Excellent.
LITTLE COMPTON						
Sakonnet Inn	Hotel	8	7			Excellent.
Wilbur, C. R.	General store	3	2			Very Good.
NARRAGANSETT						
NARRAGANSETT PIER						
Arlington, The	Hotel	5	19			
Bochterle, Charles	Bakery and ice cream	8	2			Very Good.
Gavitt, E. A., Jr.	Soda water	5				Good.
Gladstone Spring Water Co., The	Soda water	5				Very Good.
Gladstone Hotel		35	15			
Imperial, The	Hotel	67	29			Excellent.
Joyce, J. C.	Closed					
McNally, O. F.	Restaurant	11				
Massasoit, The	Hotel	10	21			Excellent.
Metoctoket Hotel		4	21			Excellent.
New Mathewson, The	Closed					
Providence Telephone Co.		6	13			
Quinn, Patrick	Restaurant	2	3			Very Good.
Revere House	Hotel	10	25			Very Good.
Tucker, J. C.	General store	25	6			Very Good.
Willie, William	Restaurant	6	2			Very Good.
NEWPORT						
Academy Lunch	Restaurant	3	2			Very Good.
Acker Merral & Condit Co.	Groceries	10	5			Very Good.
Adams Express Co.		16	2			Good.
Allen, John A.	Painting & supplies	20	1			Very Good.
Almy, Abram Co.	Coal	14				Good.
Aquidneck Dairymen's Association	Retail and wholesale milk	23	3	1		
Armour & Co.	Beef	23				Excellent.
Atlantic Coast Fisheries Co.	Fish, ice and cold storage	165				Very Good.
Austin, John R.	Closed					
Barclay, Mme.	Millinery	1	3	1		Excellent.
Barker, H. H.	Market	10				Very Good.
Barker, Ralph R.	Paints and oils	16	2			Very Good.
Barney, James H. & Co.	Music	6	10			Excellent.
Bay State Street Railway Co.	Electric current	58	6			Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
NEWPORT—Continued						
Bay State Street Railway Co.—Car Barn.		64				Very Good.
Bellevue Laundry		10	24		3	Excellent.
Belmont Lunch	Restaurant	6	2			Excellent.
Bijou Theatre		6	2			Very Good.
Bondreau, Ernest	Tailor	5	2			Excellent.
Bonnetat, Marie	Laundry	1	5			Excellent.
Bonnetat, Mme. V. R.	French laundry		7			Excellent.
Bon Tom	Millinery	1	5			Excellent.
Boston Lunch Co., The		10	7			Excellent.
Bridge Co., The	5 & 10 cent store	3	12			Excellent.
Brierly, John H.	Groceries	5	1			Excellent.
Brown, E. A.	Market	8	2			Very Good.
Burnham, G. H.	Jobbing Machinists	10				Good.
Coggeshall, S. W.	Hardware	4	1			Excellent.
Cole, W. S. G.	Restaurant	1	5			
Colonial Theatre		18	3			Excellent.
Common Sense Gum Co.	Chewing gum	50	83	2	2	Exocellent.
Connelly, Thomas B.	Plumbers' supplies	12	1			Good.
Covell, William K.	House furnishings	16				Very Good.
Crown Restaurant		1	6			
Curry, R. W.	Lumber & supplies	5				Very Good.
David, Moses	Bakery	7	2			Good.
Doran, M. J. Co.	Ladies' furnishings	4	22	1		Excellent.
Downing, Benjamin F., 3d.	Millinery	4	5			Excellent.
Dring & Smith	Paints, wall paper, etc.	10				Very Good.
Drury, James H. & Co.	Groceries	4	1			Excellent.
Dugan, J. J.	Quarry	22				Good.
Dugan, J. J.	Teaming	30	1			Good.
Easton, W. H.	Pork products	6				Excellent.
Eddy, James A.	Groceries	8	1			Excellent.
Evans, Mary E.	Bakery store	1	4			Excellent.
Faerber, F. & Sons	Mineral waters	6	1			Very Good.
Ferretti, A. G.	Fruit	5	2			Very Good.
Flint, Dutee W.	Automobiles	6	1			Excellent.
Frasch, H. D.	Confectionery	9	3			Very Good.
Garifalos, Sam	Restaurant	4	1			Good.
Garretson, E. P. Co.	Groceries	10	7	1		Very Good.
Green & McLean	Confectionery	6				
Haire, John T.	Furniture	40	5			Excellent.
Haire, Joseph Est.	Plumbing	4	1			Very Good.
Hammett, A. & H. G.	Lumber & hardware	8				Good.
Hayman & Nason	Paints and oils	15				Excellent.
Herald Publishing Co.	Newspaper	8	1			Excellent.
Herman's	Jewelry	3	4			Excellent.
Hess Co.	Dry goods	6	26			Excellent.
Hill Top Inn		35	10			Excellent.
Johnson, J. D.	Paints, oils, etc.	5				Very Good.
Kaull, T. Fred	Groceries	8	1			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
NEWPORT—Continued						
Kazanjian, John H. Co.		5	4			Very Good.
Keeher, Thomas F.	Planing mill	20				Good.
King, Herbert H.	Wet Wash laundry	5	3			Good.
King laundry		18	8	1		Very Good.
King & McLeod Co	Dry goods.	30	60			Excellent.
Koschuy, Simon	Bakery, confectionery and ice cream.	6	2			Excellent.
Landers & Peckham	Butter & eggs.	5	1			Excellent.
Lawton, George S., Est.	Market	8				Excellent.
Leys, William Dry Goods Co., The.		10	25			Excellent.
Libby, W. F.	Bakery	10	2			Very Good.
Liggett's Co.	Drugs	7	2			Good.
Lofblad, K.	Restaurant	2	3			Very Good.
Lorah, James R. & Co.	Drugs.	4	4	1	1	Excellent.
McClellan & Heald	Awnings and tents.	2	4			Good.
McGowan Restaurant		3	2			
McKenzie & Winslow	Hay and grain	8				Good.
McLennon, John K.	Ladies' gowns.	7	8			Very Good.
Marks, John H.	Plumbing.	6	1			Very Good.
Mercury Publishing Co.	Newspaper & printing.	4	5			Very Good.
Mill Street Laundry		10	41			Excellent.
Milne Printery.	Job printing.	4	1			Excellent.
Moffit, Godfrey	Sash, mouldings, etc.	5				Good.
Morgan, R.	Closed					
Muenchinger King.	Hotel	3	7			Excellent.
Murphy, P. J. & Co.	Plumbers' supplies.	5				Good.
New Cliff, The.	Hotel	5	5			Excellent.
New England Steamship Co.—Mechanical Department		258	51	1		Good.
Newport Beach Association		95	42	5	7	Excellent.
Newport City Laundry		2	10			Very Good.
Newport Coal Co.	Coal and wood.	38	5	1		Very Good.
Newport Daily News	Newspaper	18	19			Excellent.
Newport Gas Co.—Office & Construction.		18	2			Very Good.
Newport Gas Co.	Gas and by-products.	30				Good.
Newport One Price Clothing Co.	Men's furnishings.	5	2			Excellent.
Newport Opera House		16	2			Excellent.
Newport Paper and Grocery Co.		18	2			Excellent.
Newport Ship Yard.	Ship supplies	22				Very Good.
Newport Trust Co.		10	2			Excellent.
Peckham Co., The.	Hardware	4	1			Excellent.
Peckham, E. S.	Coal.	6				Very Good.
Perry Coal Co.	Coal and wood.	5				Good.
Perry House	Hotel	15	12			
Philadelphia Restaurant.		13	2			
Pinniger & Manchester.	Coal and wood.	6	1			Good.
Plummer, Charles S.	Stationery & music	3	2			Excellent.
Postal Telegraph Co.		4	1	2		Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
NEWPORT—Concluded						
Poulodakis, A.	Restaurant	5	2			
Providence Telephone Co.		30	83	1		Excellent.
Presto Lunch		16				
Quality Lunch	Restaurant	10				Very Good.
Rector, Samuel N.	Bakery	5	2			Good.
Rooney, H. F.	Market	12	2			Excellent.
Scannevin & Potter.	Electrical supplies	27	1			Very Good.
Scott, W. B. Co.	Hardware and house furnishings	10	2			Excellent.
Scott, William C.	Groceries	6	1			Very Good.
Seabury, J. Mumford Co.	Shoes	6	1			Excellent.
Shanahan, Dennis J.	Hay and grain	5	1			Very Good.
Sherman, William B., Jr.	Dry goods	1	14	1		Excellent.
Smith, H. W.	Groceries	12	3			Very Good.
Smith, E. F.	Fish and fruit	5	1			Excellent.
Smith, Robert	Planing mill	5				Good.
Spooner, Thomas & Sons.	Bakery	12	2			Very Good.
Standard Wholesale Grocery Co.		12	5	1		Very Good.
Stewart, A. T. & Sons	Stables	6				Very Good.
Stock Bros.	Garage	5				Very Good.
Sullivan, John F.	Building stone	8				Very Good.
Sullivan, J. J. & Co.	Wood and coal	8	1			Very Good.
Swift & Co.	Beef and provisions	7				Excellent.
Talbot Co.	Clothing	4	1			Excellent.
Tasso Bros.	Confectionery and ice cream	5				Excellent.
Tisdale, Charles & Co.	Groceries	35	4			Excellent.
Titus, A. C. Co.	House furnishings	7	2			Excellent.
United States Hotel		3	2			Very Good
Vernon, George E. Co.	Furniture	22	15			Very Good.
Walsh Bros.	House furnishings	8	2			Very Good.
Western Union Telegraph Co.		5	10	6		Excellent.
Wetherell, John H.	Carriages	6	1			Very Good.
Williams & Manchester	Yachts	5				Good.
Wilmarth & Co.	Tents and awnings	3	2			Very Good.
Woolworth, F. W.	5 and 10 cent store	3	15			Excellent.
Wright Bros.	Paints and oils	5				Very Good.
Young, Dalton E.	Groceries	5	1			Good.
NEW SHOREHAM						
BLOCK ISLAND						
Atlantic Inn		1	4			Very Good.
Ball, C. C.	Groceries	4	1			Very Good.
Barber, L. D.	Restaurant		6			Very Good.
Eureka House		4	7			Very Good.
Highland House.		3	6			Very Good.
Hure, Mrs. Matilda	Restaurant	1	6			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
NEW SHOREHAM—Concluded						
BLOCK ISLAND—Concluded						
Manisecs, The	Hotel	10	20			Excellent.
Mitchell, Noel A.	Confectionery	3	3			Good.
Narragansett House	Closed					
New National House, The	Hotel	16	21			Very Good.
Ocean View Hotel		31	20			Excellent.
Providence Telephone Co		3	4			Excellent.
Spring House		13	10			Excellent.
Surf Hotel, The		14	6			Excellent.
Royal Hotel, The		11	18			Excellent.
Vail Cottage, The	Hotel	6	15			Excellent.
Woonsocket House	Hotel	5	10			Excellent.
NORTH KINGSTOWN						
ALLENTON						
Allenton Woolen Co.	Worsted	20	12			Excellent.
DAVISVILLE						
Davisville Woolen Co.—New Mill		11	2			Fair.
Davisville Woolen Co.—Old Mill		15	9			Fair.
HAMILTON						
Hamilton Web Co.		82	69	5	6	Good.
Rhode Island Co., The—Sea View Dist.		31	2			
LAFAYETTE						
Davis & Slocum	Groceries	5				Very Good
Rodman Mfg. Co.	Woolen and cotton worsteds	109	65	1	3	Good.
SHADY LEA						
Rodman Mfg. Co.	Cotton yarn	32	31	4	3	Excellent.
WICKFORD						
Beacon Oyster Co.		10	1			Very Good.
Lane, Frank L.		12	1			Very Good.
Providence Telephone Co.		2	8			Excellent.
NORTH PROVIDENCE						
ALLENDALE						
Centredale Worsted Co.	Worsted yarn	25	149	8	16	Excellent.
CENTREDALE						
Centredale Worsted Mills.	Worsted yarn	51	127	12	10	Excellent.
GENEVA						
Geneva Mill	Woolen	139	61	6	6	Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
NORTH PROVIDENCE—Concl'd						
GREYSTONE						
Benn, Joseph & Sons	Mohair and alpaca....	321	398	38	32	Excellent.
Greystone Co-operative Store.....	Groceries.....	3	3			Excellent.
LYMANSVILLE						
Kirby, M. J.	Groceries.....	4	1			Very Good.
Lymansville Co.	Worsted.....	186	137	22	21	Excellent.
NORTH SMITHFIELD						
Blackstone Mfg. Co.	Sheetings.....	239	169	11	19	Excellent.
N. Y., N. H. & H. R. R. Co.—Mechanical Department.....		21				
Oak Knoll Farm.....	Ice cream.....	4	1			Excellent.
FORESTDALE						
Forestdale Mfg. Co.	Cotton yarn.....	117	90	7	10	Excellent.
SLATERSVILLE						
Slatersville Finishing Co.		301	51	5	1	Excellent.
WATERFORD						
American Woolen Co.—Saranac Mill.....	Woolen and worsted..	346	118	2	3	Excellent.
PAWTUCKET						
Acme Finishing Co.	Piece goods.....	117	48	7		Excellent.
Aldrich, H. G. Express Co.		20				Excellent.
Allen, Joseph P.	Elastic cord & braids..	16	43		1	Excellent.
American Coated Paper Co.	Glazed paper.....	15	1			Excellent.
American Hair Net Work, Inc.		13	4	4		Excellent.
American Textile Co.	Laces.....	140	120	2	18	Excellent.
Anchor Webbing Co.	Non-adhesive elastic tape.....	46	61	1	1	Excellent.
Armour & Co.	Beef and provisions ..	18				Excellent.
Attleboro Braiding Co.	Shoe laces.....		9			Excellent.
Atwood Crawford Co., The.....	Spool & fancy turning.	62	2	7		Very Good.
Automobile Journal Publishing Co.	Magazine.....	16	14		6	Excellent.
Bancroft, F. J.	Sporting goods.....	10				Excellent.
Bateman, J. K.	Beef and provisions ..	5				Excellent.
B. B. Tip Co.	Shoe laces.....	3	10	1	1	Excellent.
Beard, J. J.	Furniture.....	9	2			Excellent.
Bertozzi, Nicholas.....	Ice cream.....	6	1			Good.
Blackstone Glazed Paper Co.		16	1			Very Good.
Blackstone Lunch.....	Restaurant.....	6	1			Excellent.
Blackstone Reed & Harness Co.	Cotton reeds.....	7	1			Very Good.
Blackstone Steam & Heating Co.		16	1			Excellent.
Blackstone Valley Gas & Electric Co.		121	6			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PAWTUCKET—Continued						
Blake, F. N. Co.	Carriage manufacturer	18	1			Very Good.
Blodgett & Orswell Co.	Thread	49	123		6	Excellent.
Bowen, Philip J.	Hardware	9	2	1		Excellent.
Brannigan, John H.	Cigars	12	3			Excellent.
Branaghan Bottling Co.	Wholesale liquors	14	1			Excellent.
Brassard, Joseph D. R.	Drugs	3	2	1		Excellent.
Burgess Mill.	Cotton	193	174	31	23	Excellent.
Cadoza Sales Co.	Lace	18	37	2	13	Excellent.
Callaghan's Millinery			9			Excellent.
Cameron, Thomas S.	Groceries	4	1			Excellent.
Carpenter Furniture Co.		5	2			Excellent.
Carpenter, J. M. Tap & Die Co.		134	6			Excellent.
Champion Horse Shoe Co.	Horse shoes	104	4	11		Excellent.
Chase Brush Co.	Brushes	1	6	1		Excellent.
Chronicle Printing Co.	Newspaper	8				Excellent.
Citizens Ice Co.		17	1			Excellent.
City Brass Foundry		10				Very Good.
City Coal Co.		35				Excellent.
Coats, J. & P., No. 2 Mill.	} Thread	1,531	2,202	167	301	Excellent.
Coats, J. & P., No. 3 Mill.						
Coats, J. & P., No. 4 Mill.						
Coats, J. & P., No. 5 Mill.						
Cobb, W. R. & Co.	Jewelers' findings	5	3			Excellent.
Collin's Bros.	Machine shop	36		3		Very Good.
Collyer Insulated Wire Co.		59	3	4		Excellent.
Comstock Co.	Hog abattoir	30				Very Good.
Cottrell, John T. Co.	Lumber and coal	70		1		Excellent.
Crosby, J. D. Co.	Flat cold rolled steel	80	4			Excellent.
Crown Confectionery Co.	Confectionery and ice cream	4	2			Good.
Cummings Laundry		17	20			Excellent.
Darling, L. B. Fertilizer Co.		113	2			Very Good.
Darlington Coal Co.	Coal, wood & masons' material	4	1			Excellent.
Darlington Elevator Co.	Hay and grain	7				Excellent.
Darlington Textile Co.	Cotton warp	20	22		1	Excellent.
Darlington Wet Wash Laundry		5	2			Excellent.
Davie, F. W.	Expressing	12				Excellent.
Davis, Frank	Plumbing	5				Excellent.
Dawson, Albert	Corset lace finishing	3	14		1	Excellent.
Deahy Bros.	Dry goods	7	36			Excellent.
Dempsey B. & D. Works.		119	12	5	1	Excellent.
Dexter, John	Closed					
Dexter Yarn Co.	Cotton yarn	89	219	16	15	Excellent.
Draper, J. O. & Co.	Soap and oils	9	2			Very Good.
Dupuis, Frank	Plumber	21	1			Excellent.
Dyson, Joseph	Groceries and bakery	6	1			Excellent.
Eagle Dye Works		25	21		4	Fair.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PAWTUCKET—Continued						
Eastern Advertising Co.	Calenders and printing	6	8			Excellent.
Easton & Burnham.	Machinery.	105				Excellent.
Elms Garage, The.	Garage.	8				Excellent.
Ervma Weaving Co.	Yarn and cloth.	12	7			Excellent.
Eureka Dyeing & Bleaching Co.		40	1			Very Good.
Evening Times, The.	Newspaper.	62	12	1		Excellent.
Fales & Jencks	Cotton machinery	605	3	18		Excellent.
Farber Cornice Works, The.		5	1			Excellent.
Fisk Drug Co.		19	5	1		Excellent.
Five to Fifty Cent Store.	Dry goods.	3	6			Excellent.
Flynn, James.	Closed.					
Follett, F. F. & Son Co.	Cigars	12	5			Excellent.
Fuller, George H. & Son Co.	Jewelry findings.	71	44			Excellent.
Giusti Bakery	Bakery.	5	2			Good.
Giusti, E. O. Co.	Bakery.	4	1			
Glencairn Mfg. Co.	Narrow fabrics.	30	20	1	6	Excellent.
Globe Braiding Co.	Shoe laces	4	7			Excellent.
Globe Clothing Co.	Gents' clothing.	5	1			Excellent.
Globe Theatre.	Closed.					
Goff, D. & Sons	Braid.	288	519	37	71	Excellent.
Green & Daniels Co., Inc.	Cotton yarn	169	191	21	14	Excellent.
Greenhalgh, J. W. Mfg. Co.	Yarn.	2	12			Excellent.
Grimes, William H. & Co.	Liquor and groceries.	8				Excellent.
Guati & Papini	Bakery.	5	1	1		Very Good.
Haldiday, F. F.	Patterns.	6				Excellent.
Hallwell Company, The.	Bleaching, dyeing and mercerising.	23	3	1		Excellent.
Hamlet Textile Co.	Silk	200	239	6	10	Excellent.
Hand Brewing Co.	Beer, ale and porter.	48	2			Excellent.
Harley, David Co., The.	Department store.	25	89		1	Excellent.
Harley Bros.	Laundry.	17	2	1		Very Good.
Haskell, William H.	Bolts and nuts.	174	7	17		Excellent.
H. M. H. Co., The.	Jewelry	4	4			Excellent.
Home Cafe, The.	Restaurant.	1	4			Excellent.
Home Washing Co.	Laundry	12	6			Very Good.
Hope Paper Co.	Glazed paper.	5		1		Excellent.
Hope Webbing Co.	Narrow fabrics.	507	652	35	84	Excellent.
Hotel Belmont.		4	2			Excellent.
Hotel Plaza.		12	2			Excellent.
Houston, F. J.	Cigars.	7	1			Excellent.
Industrial Trust Co.		22	13			Excellent.
Jackson, Samuel Co., The.	Boilers and plumbing.	20	1			Excellent.
Jencks Spinning Co.	Cotton yarn	2,535	1,670	94	32	Excellent.
Jilson, O. A.	Lace leather.	21	1			Fair.
Kennedy, Gough & Murray.	Groceries.	2	1	2		Excellent.
Kenyon, John J. Mfg. Co.	Narrow fabrics.	27	49	6	10	Excellent.
Kreage, S. S.	5 and 10 cent store.	3	15			Excellent.
Laplante, A. P.	Carpenter	4	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PAWTUCKET—Continued						
Lavelle, James	Restaurant	6	1			Excellent.
Lebanon Mill Co.	Knit goods	34	203	7	14	Excellent.
LeBon Bleach & Dye Works		28	7	1		Excellent.
Lenox Lunch	Restaurant	6				Excellent.
Lewis, Enoch & Co.	Cigars and tobacco	4	1			Excellent.
Liggett's Hall & Lyon Stores	Drugs	4	6			Excellent.
Lincoln Machine Co.	Machine tools	54				Excellent.
Little, John W. & Co.	Printers	18	8	5		Excellent.
Lorraine Mfg. Co., No. 1	Cotton	721	881	82	104	Excellent.
Lorraine Mfg. Co. No. 2						
Lorraine Mfg. Co., No. 1	Worsted					
Lorraine Mfg. Co., No. 2						
Lull, H. F. Estate	Concrete	28	2			Excellent.
Lumb Knitting Co.	Underwear	34	241	2	11	Excellent.
Lynd & Murphy	Clothing	15	8			Excellent.
Lyons Delaney Co.—Wholesale	Tea, coffee and spices	18	8			Excellent.
Lyons Delaney Co.—Retail	Tea, coffee and spices	3	2			Excellent.
McCabe, Bernard	Carriage manufacturer	13	1			Very Good.
McCaughey, Bernard	Furniture	10	2			Excellent.
McCormick & Marton	Groceries	4	1			Excellent.
McDevitt & Co.	Clothing	6	5			Excellent.
McDuff Coal & Lumber Co.	Coal and lumber	62	1			Excellent.
McDuff, H. C. Estate	Lumber	20	2			Excellent.
McKensie & McKay Co.	Dyeing, bleaching and mercerizing	46	53	2	2	Excellent.
Mackensie Walton Co.	Seamless wire	30	1			Excellent.
Martin, W. E.	Laundry	3	2			Very Good.
Maryland Club	Restaurant	10				Excellent.
Mason, Robert D.	Dyeing and bleaching	147	20	1		Very Good.
Milano Silk Weaving Co., Inc.	Silk cloth	8	5			Excellent.
Modern Shoe Store	Boots and shoes	8	5			Excellent.
Moncrief Machine Co.		7	1			Excellent.
Moran, Mary A.	Confectionery	9	2			Excellent.
Murray Lunch	Restaurant	5	1			Excellent.
Narotex Co.	Narrow cotton fabrics	10	7			Excellent.
Narragansett Machine Co.	Gymnasium apparatus	220	19	5	1	Excellent.
Narragansett Milling Co.	Grain	13	1			Excellent.
National Biscuit Co.	Rem'd to Providence					
National Coated Paper Corporation	Glazed paper	52	5			Excellent.
New England Lace Co.	Lace	35	65	1	3	Excellent.
Newell Coal & Lumber Co.	Coal, lumber and masons' material	62	1			Excellent.
New England Bakery		70	3			Excellent.
New Public Market		56	42			Excellent.
New England Machine & Electric Co.		30	2			Excellent.
New England Paper Tube Co.		6	2			Excellent.
New System Shoe Repairing		5				Excellent.
Nicholson, J. B.	Groceries & market	4	1			Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PAWTUCKET—Continued						
Norris Bedding Co.	Rem'd to Providence.					
N. Y., N. H. & H. R. R. Co.	Freight House.	39	4			Excellent.
N. Y., N. H. & H. R. R. Co.—Darlington.	Freight House.	10	1			Excellent.
O'Gorman's 25 Cent Store.	Dry goods.	3	34		1	Excellent.
Olney & Payne Bros.	Coal, wood, etc.	69	3			Excellent.
O'Neil, J. H. Jr.	Hand screws.	7	1			Excellent.
Oriental Restaurant.		7				Good.
Oswegatchie Textile Co.		62	42	1		Excellent.
Pawtucket Braided Line Co.		11	35	2	4	Excellent.
Pawtucket Cabinet Builders' Finish Co.		8				Excellent.
Pawtucket Dyeing & Bleaching Co.		115	5			Excellent.
Pawtucket Furniture Co.		11	3			Excellent.
Pawtucket Gas Co.		140	14			Excellent.
Pawtucket Glased Paper Co.		15	1			Very Good.
Pawtucket Ice Co.		28				Excellent.
Pawtucket Institution for Savings.		11	2			Excellent.
Pawtucket Mfg. Co.	Bolts and nuts.	111	4	16		Excellent.
Pawtucket Produce Co.		7				Excellent.
Pawtucket Quick Lunch.	Restaurant.	6				Excellent.
Pawtucket Sash & Blind Co.		85	3	3		Excellent.
Pawtucket Screw Co.	Machine screws.	7	3			Excellent.
Pawtucket Tape Co.	Closed.					
Payne, George W. Co.	Machine shop.	30	2			Very Good.
Peck, George C. & Co.	Department store.	8	15			Excellent.
Pennington, M. A. Co.	Coke and coal.	4	1			Excellent.
Pennsylvania Textile Co.	Silk dress goods.	76	30	2	1	Excellent.
Peoples Quick Lunch.	Restaurant.	5				Excellent.
Peoples Wet Wash, The.	Closed.					
Perry, Buxton, Doane Co.	Scrap iron and metal.	15	1			Excellent.
Perry Express Co.		37	1			Excellent.
Perry, W.	Closed.					
Perry Oil Co.		7	2			Excellent.
Peter's Restaurant.		1	4			Excellent.
Phillips Insulated Wire Co.		393	81	3		Excellent.
Pollock, John L. Estate.	Closed.					
Poisey, J. N. & Co.	Wooden boxes.	56	1			Excellent.
Potter & Johnston.	Machinery.	1,200	3			Excellent.
Providence Braid Co.	Shoe laces.	47	98	2	1	Excellent.
Providence Dressed Meat Co.	Closed.					
Providence Telephone Co.		29	79			Excellent.
Puritan Lunch.		8				Very Good.
Reed, F. I.	Market.	4	1			Excellent.
Reets, Robert C.	Sheet metal work.	7	1			Excellent.
Reliable Broom Shop.		5				Excellent.
Rhode Island Braid Co.	Braid.	2		1		Excellent.
Rhode Island Card Board Co.		74	14	1	3	Very Good.
Rhode Island Crucible Foundry.		22				Very Good.
Rhode Island Restaurant, The.	Closed.					

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Conditions.
		Men.	Women.	Boys under 16.	Girls under 16.	
PAWTUCKET—Continued						
Rhode Island Textile Co.		14	20	4	10	Excellent
Roberts, Roy L.	Machinery tools.	6				Excellent
Rose, R. L. Co.	Groceries.	22	13	1		Excellent
Rowley, Frank C.	Builder.	140	1			Excellent
Royal Weaving Co.	Cotton yarn.	92	52	30		Excellent
Royal Weaving Co.	Cotton and silk mixed goods.	250	361	3	2	Excellent
Salisbury Mfg. Co.	Tags and printing.	32	19	9	2	Excellent
Seekonk Lace Works.		81	64	8	20	Excellent
Sellew Machine Tool Co.		68	1			Excellent
Shannock Narrow Fabric Co.		16	67	1	13	Excellent
Shartenberg & Robinson.	Department store.	90	160	10	8	Excellent
Shove, Isaac Co.	Insurance.	1	5			Excellent
Slater Trust Co.		21	10			Excellent
Slater Yarn Co.	Cotton.	128	185	8	1	Excellent
Slocum, W. H. Co.	Machine and forging.	5	1			Very Good
Smiley, A. F.	Contractor.	14	1			Excellent
Smith, Benjamin F. Co., The.	Contractor & builder.	21				Excellent
Smith, E. Co., The.	Liquors.	14				Excellent
Smith Webbing Co.	Narrow fabrics.	90	147	16	19	Excellent
Solway Dyeing & Textile Co.		202	90	16	12	Excellent
Standard Bottling Co.	Mineral water.	5	1			Excellent
Standard Engineering Works.	Closed.					
Standard Engineering Works, The.		60	1			Excellent
Standard Paper Box Co.		8	19	3	8	Excellent
Steel Specialty Corporation.	Machine screws.	8	3	2		Very Good
Suter, F. & B.	Loom reeds.	16		2		Very Good
Swift & Co.	Beef.	25	1			Excellent
Tamarack Co. (See Jencks Spinning Co.)						
Tanney, A. E.	Machinery.	20				Very Good
Thayer, P. E.	Brushes.	10	30			Excellent
Tingley, Frank E.	Builders' finish.	18	1	1		Excellent
Tools, William K. Co.		26	12	1		Excellent
Troy Hand Laundry.		17	24	1		Excellent
Tubular Woven Fabric Co.	Flexible, woven electrical conduit.	36	14	13		Excellent
United States Finishing Co.	Printing & finishing.	564	100	21		Excellent
United States Glazed Yarn Co.		6	5			Excellent
Union Wadding Co.	Cotton batting.	237	51	6	2	Very Good
United Wire & Supply Co.	Brass & copper tubing.	73				Excellent
Vermont Creamery.		7				Excellent
Waldorf Lunch Co. of R. I., Inc.	Restaurant.	7				Excellent
Warburton, H. A.	Closed.					
Webb, E. C.	Petroleum products.	22				Very Good
Westcott, F. W.	Dry Goods.	3	9			Excellent
What Cheer Chemical Co.	Soap.	23				Very Good
Whatmough & Bros.	Bakery & groceries.	5	1			Excellent
White, J. S. Co.	Foundry.	71	3			Very Good

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PAWTUCKET—Concluded						
Whitney, George L.....	Meat & groceries.....	5	1			Excellent.
Whitney, L. & Co.....	Groceries.....	5	1	1		Excellent.
Wightman Bros.....	Groceries.....	5	1			Excellent.
Wightman Express Co.....		16	2			Excellent.
Wilmarth & Mackillop.....		29				Excellent.
Windsor Webbing Co.....	Tapes, braids & elastic.	9	14	3	14	Excellent.
Woodlawn Finishing Co.....	Bleachers & dyers.....	42	17	1		Excellent.
Woodlawn Machine Screw Co.....	Screw mach. products	16	73	3		Excellent.
Woolworth, F. W. Co.....	5 and 10 cent store...	3	25		1	Excellent.
Wunsch Mfg. Co., The.....	Closed.....					
Zucker, S. H. & Co.....	Bottling beer & cigars.	5	1			Excellent.
PORTSMOUTH						
Chase & Son.....	General store.....	3	2			Very Good.
PROVIDENCE						
Adams Bros., Inc.....	Jewelers' findings.....	12	1			Very Good.
Adams, C. F.....	Ladies' clothing.....	30	8		1	Excellent.
Adams, E. A. Machine Co.....	Jewelers' machinery...	10		1		Excellent.
Advance Button Co.....	Closed.....					
Etna Bottle & Stopper Co.....	Bottle and bottle trim-mings.....	22	36	1	4	Very Good.
Aberman Co.....	Blank books.....	12	7			Excellent.
Aldrich-Eldridge Co.....	Groceries.....	34	3			Excellent.
Alfieda Co.....	Jewelry.....	2	4		1	
Allen Fire Department Supply Co.....	Brass goods.....	32	2			Very Good.
Allen & Northup.....	Restaurant.....	5	2			Good.
Allen & Read, Inc.....	Steam supplies.....	39	10			Excellent.
Allen Wrench & Tool Co.....		12				Very Good.
Almy Water Tube Boiler Co.....		43				Very Good.
Alper, M. S. & Son.....	Paper waste.....	12	5			Excellent.
Alsfeld Electro Plating Co.....		4	1			Excellent.
American Ball Co.....	Steel balls.....	16	3		1	Excellent.
American Bottling Co.....	Liquors.....	56	1			Very Good.
American Brass Co., The.....		7	1			Excellent.
American & British Co.....	Steam engines.....	297	7	1		Good.
American Cotton Oil Co.....	Lubricating oil.....	12	1			Very Good.
American Cotton Oil Co.....	Cotton seed oil.....	45	1			Very Good.
American Emery Wheel Works.....	Grinding wheels.....	113	21			Excellent.
American Enamel Co.....	Wooden enamel.....	208	65	3	7	Excellent.
American File Renewing Co.....		9	3			Very Good.
American Flyer Co.....	Closed.....					
American Glass Works.....	Imitation stones.....	6	1			
American Hand Laundry.....		10	40			Excellent.
American Multiple Fabric Co.....	Cotton.....	13	18			Very Good.
American Oyster Co.....		29	1			Excellent.
American Pennant Manufacturing Co.....	Pennants.....	2	5			Good.
American Plumbing Co.....		9				Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
American Radiator Co.		8	5			Excellent.
American Radiator Works.		6	2			
American Railway Express.		225	19	2		Excellent.
American Roll Gold Leaf Co.		2	11			Excellent.
American Screw Co.—Bay State Mill.	}	688	474			Excellent.
American Screw Co.—Eagle Mill.						
American Screw Co.—Rogers Mill.		63	45			Excellent.
American Screw Co.—N. E. Mill.		260	157			Very Good.
American Silk Spinning Co.	Silk yarns.	269	531	15	65	Excellent.
American Telegraph & Telephone Co.		19	166	1	1	Excellent.
American Woolen Co.—Valley Mill.	Woolen yarns.	138	22	3		Very Good.
American Woolen Co.—Weyboaset Mill.	Woolen & worsted.	480	175	8	5	Excellent.
American Woolen Co.—Manton Mills.	Men's wear.	217	141		5	Excellent.
Anderson, W. H. & Co.	Ladies' underwear.	1	12			Very Good.
Anderson Candy Co.	Bakery & conf.	12	8	1	2	Excellent.
Anderson Candy Co.	Conf. & bakery store.	1	4			Excellent.
Anderson Candy Co.	Conf. & bakery store.		9			Excellent.
Anderton, E. & E. B.	Pork products.	15	1			Excellent.
Andrews & Spellman Co.	Hay and grain.	17	1			Excellent.
Angell, Charles E.	General machine work.	13				Excellent.
Anshen, L. J.	Jewelry.	21	13	1		Very Good.
Anthony, Edwin P.	Drugs.	7	1			Good.
Anthony Furniture Co.	Household furnishings.	30	9			Excellent.
Anthony, J. L. Co.		11	1			Excellent.
Apoo Manufacturing Co.	Auto accessories.	12	9	4	1	Excellent.
Appleton, Joseph.	Plumbing.	10	1			Excellent.
Ardrey & Adams.	Parquetry floors.	15				Good.
Armour & Co.	Beef & provisions.	31	5			Very Good.
Armour Mfg. Co.	Jewelry.	4	2	1		Very Good.
Arnold, H. C. & Co.	Fruit & provisions.	7	2			Good.
Arnold, Hoffman & Co., Inc.	Dye stuffs and chemicals.	17	3			Very Good.
Arnold & Steere.	Jewelry.	26	6	1		Excellent.
Astle, H. J. & Co.	Kitchen furnishings.	36	3			Very Good.
Astor Lunch Co.	Restaurant.	6	2			Excellent.
Astor Lunch.	Closed.					
Atherton Pin Grid Bar Co.	Cotton mill specialties.	4	1			Good.
Atlantic Mills, No. 1, 2, 3, 5.	Dress goods.	727	1,234	98	63	Excellent.
Atlas Machine Co.		45				Very Good.
Atlas Sheet Metal Works.		8				Good.
Auburn Lace & Braid Co.	Shoe laces & elastics.	4	9			Very Good.
Austin Co., The.	Jewelry novelties.	35	10		2	Very Good.
Austin, John & Son.	Gold & silver refiners.	6				Excellent.
Automatic Chain Co.		22	42	1	3	Excellent.
Automobile Mutual Insurance Co. of America.		5	11			Excellent.
Auto Car Sales & Service Co.		30	3			Very Good.
Avck, B.	Enameling.	5	2			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
. & Z. Chain Co.		40	28	1		Very Good.
achman, S.	Burlap bags	9	7			Good.
aird-North Co.	Jewelry (mail order)..	39	149	8	2	Excellent.
aker-Manchester Mfg. Co.	Sterling silver flatware	12	3			Very Good.
aker, George E.	Groceries.	7	2			Excellent.
aker, George M.	Gold & silver refiners..	6	2			Very Good.
aker, James M.	Patterns.	16	1	1		Good.
allou, B. A. & Co.	Jewelry.	94	193	7	17	Excellent.
allou, F. E.	Shoes.	27	9			Excellent.
allou, Johnson & Nichols.	Kitchen furnishings..	24	3			Excellent.
allou Thread Co.	Thread and yarn.	20	60	3	1	Good.
almforth, Ernest.	Groceries & bakery.	4	2			Excellent.
ander & Beeber.	Jewelry.	2	3			Very Good.
anspach Bros.	Bakery.	25	3			Excellent.
arker Artesian Well Co.	Artesian wells.	15				Good.
arker, E. R.	Jewelry.	4	3			Excellent.
Barker, Chadsey & Co.	Hardware.	18	4			Excellent.
Barrett, W. E. Co., The.	Agricultural tools and seeds	25				Excellent.
Barra, Antonia.	Bakery.	4	1			Excellent.
Barstow Stove Co.	Stoves, ranges, furnaces, etc.	182	8			Good.
Bartelt, A. W.	Imitation stones.	5	5			Excellent.
Barton, E. A. & Co.	Jewelry.	1	4	4	1	Very Good.
Behan, John.	Paints & wall paper..	5	1			Excellent.
Baset Jewelry Co.	Jewelry.	32	20	1		Excellent.
Bastini Bros.	Bakery.	27	7			Excellent.
Batusti, Luigi.	Bakery.	5				Excellent.
B. & D. Braid Co.	Narrow fabrics.	1	15		2	Very Good.
Bayer Co., Inc., The.	Chemicals.	8	1			Excellent.
Beach & Sweet.	Insurance.	10	4			Excellent.
Beaman & Smith Co., The.	Machine tools.	100	2			Excellent.
Beaton Bros.	Closed.					
Bedell.	Ladies' garments.	9	58	1	5	Excellent.
Bedford, W. H.	Groceries.	5	1			Excellent.
Beekman & Moran.	Boots and shoes.	12	5			Very Good.
Belcher & Loomis Hardware Co.		102	38	10		Excellent.
Belcher & Loomis Hardware Co.	Warehouse.	27	4	2		
Beleveau & Beleveau.	Chains.	2	2	1		Very Good.
Belien, Morris.	Ice cream mfg.	5				Excellent.
Belmont Lunch Co.—27 Washington St.		6				Excellent.
Belmont Lunch Co.—526 Westminster St.	Closed.					
Belmont Lunch Co.—125 Weybosset St.		8				Excellent.
Belmont Lunch Co.—4 Gould St.	Bakery.	5				Very Good.
Benedictis Bros.	Macaroni & groceries.	4	1			Excellent.
Bennett, E. A. Co.	Gold goods.	6	3			Excellent.
Bennett, F. S. Co.	Jewelry and findings.	1	12			Very Good.
Bennett, T. E. Co.	Jewelry.	22	25		3	Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Bennett, John P. & Son.....	Electroplate.....	5	1	1		Very Good.
Bens, William Co.....	Silverware.....	5	2	1		Good.
Berberian, Z.....	Enamellers.....	5	14		3	Excellent.
Berkander, George F.....	Jewelry.....	53	149	11	23	Excellent.
Berkander, Nels G.....	Electroplating.....	4		1		Fair.
Bernier, Napoleon.....	Carriages.....	5				Good.
Bease-Boeker Co., The.....	Gents' clothing and furnishings.....	7	7			Excellent.
Bethlehem Ship Building Corp.....		820	12			Excellent.
Bigney, C. I. Co.....	Contractors.....	100				Excellent.
Bijou Theatre.....	Amusement.....	9	5			Excellent.
Billings, Edward G.....	Toys, music & pianos.....	11	8			Excellent.
Bishop Bros. & Baker.....	Jewelry.....	3	2			Very Good.
Blacher Bros.....	Mfg. jewelry.....	11	25	1	1	Very Good.
Black, V. E. Co.....	Jewelry.....	40	46	3		Excellent.
Blackstone Canal National Bank.....		8	3			Excellent.
Blackstone Mutual Fire Insurance Co.....		11	23			Excellent.
Blair Shoe Repair Factory.....		3		1		Good.
Blanchard, Young & Co.....	Fancy goods.....	34	9			Very Good.
Blanding & Blanding.....	Drugs.....	24	20	4	1	Excellent.
Blue Ribbon Laundry.....	Closed.....					
Bodell & Co.....	Bankers.....	5	9			Excellent.
Boehne, Oscar R.....	Refiners.....	4	1			Good.
Bolle Mfg. Co.....	Celluloid combs and novelties.....	13	9	3	1	Very Good.
Boland, H. A.....	Closed.....					
Borland, M. H.....	Machinists.....	5				Good.
Boes Electrical Supply Co.....		5	2			Excellent.
Boston Economy Lamp Division of the General Electric Co.....		31	147			Excellent.
Boston Electric Co.....		4	1			Excellent.
Boston & Providence Clothing Co.....	Closed.....					
Boston Radiator Works.....		4	1			Good.
Bourn Rubber Co.....	Rubber overshoes.....	198	196	2	4	Good.
Bourn Rubber Co.....	Wire department.....	39	11	1	1	Excellent.
Bowes, Mabel.....	Dressmaking.....		12			Excellent.
Boyden, George E. & Son.....	Hosiery.....	27	147	7	30	Excellent.
Boyle, Charles J.....	Confectionery.....	3	3		1	Excellent.
Boyle, T. A.....	Fruit and pickles.....	10	1			Good.
Bradbury Motors Co.....	Automobiles.....	11	2			Excellent.
Brady, John F.....	Electroplating.....	25	4	16	1	Excellent.
Braided Fabric Co., The.....	Elastic braids.....	5	9	2		Very Good.
Braley & McLaughlin.....	Furnaces.....	7	1			Good.
Brayton, D. W. Co.....	Fruit and produce.....	6	1			Very Good.
Brennan, C. P.....	Plumbing material.....	7				Good.
Brier Mfg. Co.....	Jewelry.....	30	64	1	6	Excellent.
Briggs, J. & Sons Co.....	Plated wire & tubing.....	16				Excellent.
Briggs, S. J.....	Drugs.....	5	1			Excellent.
Brissett, J.....	Groceries and market.....	4	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-an.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
British-American Machine Chain Co.		8	6			Very Good.
Broadway Sales Co.	Motor cars.	12	1			Excellent.
Broadway Tire Exchange.	Auto tires.	6	1			Excellent.
Bromley & Co.	Clothing.	6	2			Excellent.
Brooks, Clarence E.	Restaurant.	8	14			Excellent.
Brooks, C. E. Co.	Confectionery & fruit.	7	1			Excellent.
Brooks, C. F.	Restaurant.	7				Very Good.
Brooks, George B.	Remnants.	16	12			Fair.
Brown, H. L. Co.	Butter, eggs, etc.	18	1			Excellent.
Brown Bros. Co.	Textile mill supplies.	5	2			
Brown, William R.	Printing and badges.	4	1			Excellent.
Brown & Dean Co., The.	Gold & silver refiners.	5	1			Very Good.
Brown & Mills, Inc.	Jewelry.	10	8			Excellent.
Brown & Sharpe Mfg. Co.	Machinery and small tools.	5,343	1,427	26	17	Excellent.
Brownell & Field Co.	Groceries.	59	34			Excellent.
Brownell Machinery Co., The.		8	2			Excellent.
Brownell Mfg. Co.	Book binding.	3	2			Excellent.
Browning, King & Co.	Clothing & furnishings.	35	10	2		Excellent.
Brunckow, C. G. Co.	Sheet metals.	19				Very Good.
Buckingham & Co.	Fruit & vegetables.	7				Good.
Budlong, S. E.	Jewelers.	2	3			Very Good.
Buffington, F. H.	Paper boxes.	23	47	3	4	Very Good.
Buick Agency.	Service station.	10	1			Excellent.
Buick Agency.	Automobiles.	6	1			Excellent.
Builders' Iron Foundry—Coddling St.		685	28	8		Excellent.
Builders' Iron Foundry—Kinsley Ave.		125	10			Excellent.
Bun Fong Lon Co.	Restaurant.	7				Excellent.
Burdick-Clark Co.	Wholesale confec'ery.	8	3			Very Good.
Burke Bros.	Liquors.	9				Very Good.
Burke, Tarr & Graef.	Furniture.	8	1			Excellent.
Burlingame, J. P. & Co.	Jewelry findings.	6	1	1		Excellent.
Burns, M. Teaming Co.		12				Good.
Burrows & Kenyon.	Lumber.	23	3			Excellent.
Burroughs Adding Machine Co.		11	1			Excellent.
Burt Mfg. Co.	Closed.					
Bush, Charles S. Co.	Drugs and chemicals.	23	18			Excellent.
Butler, Charles L. & Son.	Ice cream & conf.	7	2			Excellent.
Butman & Tucker.	Modern hand laundry.	19	45			Excellent.
Buxton, S. E. Co.	Mfg. jewelry & novelties.	1	5			Excellent.
Cadillac Auto Co. of Rhode Island.		72	6			Excellent.
Cady, C. A. Co.	Ford parts.	6	1			Excellent.
Cady Moving & Storage Co.		10	1			Very Good.
Cahoone, George H. Co.	Jewelry.	58	10	2		Excellent.
Calef Bros.	Market.	8	2			Excellent.
California Wine Co.	Liquors.	5	1			Good.
Callender, McAulan & Troupe Co.	Department store.	266	364	11	10	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Capasso, Frank	Bakery	7	1			Excellent
Capron Co.	Jewelry	48	19	2	2	Excellent
Cardin Mfg. Co.	Sample cases & trays.	1	13		2	Excellent
Carlton Hotel	Closed					
Carlton Tea Rooms	Restaurant	1	12			Excellent
Carpenter, H. T. & Son	Refiners	6				Good
Carpenter Loan Co.	Closed					
Carr, Laura M. Co.	Catering	5	6			Excellent
Cartier, M. N. & Sons Co.	Roofing material	28	2			Very Good
Casey, John & Co.	Groceries	5	2			Very Good
Casino Bowling Parlor		6				Excellent
Casino Theatre	Amusement	5	3			Excellent
Castner, Curran & Bullitt, Inc.	Coal	21				Fair
Cavalleire, A. F. & Co.	Bakery	4	1			Excellent
Castiglioni, Emelia	Bakery	2	3			Excellent
Cate, George B. & Co.	Bakery	8	3			Excellent
Central Hotel		5	3			Excellent
Cantredale Worsted Mill	Worsted tops	88	9			Excellent
Champlin, S. B. Co.	Jewelry	23	21			Excellent
Chandler Co.	Die sinking	2		1		Excellent
Chandler Motors of R. I., Inc.	Automobiles	8	1			Excellent
Chapin & Hollister Co.	Jewelry	42	32			Excellent
Charles & Hedison Mfg. Co.	Jewelry	10	8	1	4	Very Good
Chase, Charles A. B.	Restaurant	1	14			Excellent
Chase, F. A. & Co.	Mill supplies	28	39	2	6	Very Good
Chase, William B.	Groceries	8	1			Excellent
Chatterton File Works	Hand cut files	11				Very Good
Cherry & Webb	Ladies' garments	29	187	4	1	Excellent
Chester, F. E. & Co.	Fishing tackle	8	17		5	Very Good
Chevrolet Motor Co. of N. Y., Inc.	Automobiles	15	2			Excellent
Child & Miller Co.	Closed					
Childs, A. B.	Dressmaking		12			Excellent
Childs Co. of Providence	Restaurant	18	23			Excellent
Church, E. C. Co.	Blacksmith's supplies	20	5			Very Good
Clafin, George L. Co.	Pharmaceuticals	55	13	5		Excellent
Clapp, B. P. Ammonia Co.		6				Very Good
Clapp, Otis & Son	Pharmaceuticals	5	3	1		Excellent
Clark Mfg. Co.	Burial cases	36	1			Excellent
Clark & Coombs Co.	Seamless rings	75	45	2	2	Excellent
Clark, John T.	Enameling	3	6		2	Good
Clark's Casino	Bowling	5				Very Good
Clason Architectural Metal Works	Roofing & sheet metal	29	1			Very Good
Clayton, Alice	Restaurant	1	7			Excellent
Cloudman	Groceries	5				Excellent
Cough & Co.	Hair dressing	5				Excellent
Cobb, Pothin & Co.	Millinery	4	12			Excellent
Coe, William H. Mfg. Co.	Gold leaf	5	11			Excellent
Cogan, Edward	Bakery	3	2			Excellent

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Cohen Mfg. Co.	Jewelry	3	10		1	Excellent.
Cohn & Rosenberger	Jewelry	39	29	1		Excellent.
Cole Motor Sales Co.	Automobiles	5	1			Excellent.
Cole Teaming Co.		25				Good.
Collateral Loan Co.		5				Excellent.
Collier, P. F. & Son	Books	7	7			Excellent.
Collingwood, J. H. & Co.	Enameling	7	16	1		Very Good.
Colonial Lunch	Closed					
Colonial Theatre	Amusement	16	7			Excellent.
Colored Worsted Mill	Worsted yarn	48	153	5	10	Excellent.
Colvin Foundry Co.	Iron castings	110				Good.
Colwell, C. S.	Restaurant	5	4			Excellent.
Colwell Worsted Mills	Ladies' dress goods	62	41	1	1	Excellent.
Combination Ladder Co.		50	5	1		Very Good.
Comstock & Co.	Pork packers	70	2			Excellent.
Comstock, J. F. & Sons	Beef	8				Excellent.
Congdon & Carpenter Co., The	Carriage supplies	60	11	1		Very Good.
Congdon, W. & Son	Hardware	5				Very Good.
Conley & Straight	Gold & silver refining	7	1			Very Good.
Continental Metals Co., Inc		22				Excellent.
Cook, Dunbar, Smith Co.	Seamless wire & rolled plate	35	9			Very Good.
Cook, Edwin M. Plate Co.	Gold & silver plate	26	1			Excellent.
Cooke, C. H. Co.	Jewelry	20	5			Excellent.
Cooke, Henry W. Co.	Real estate	11	4			Excellent.
Cooper, Gerald	Mercerizing	85	23			Excellent.
Cooper & Sisson	Butter, eggs, cheese, etc.	41	2			Very Good.
Cornell, H. P.	Groceries	45	2			Excellent.
Corp Bros	Bicycles	10				Excellent.
Corporation Shop	Clothing	8				Good.
Cory & Reynolds Co.	Jewelry	8	8			Excellent.
Costanzo & De Angelis Jewelry Co.		6	3	1	8	Very Good.
Costello & Co.	Findings	6	4		4	Good.
Craft & Newton	Jewelry	6	4			Good.
Cranston & Swift	Jewelry	2	3			Very Good.
Crees & Court	Steel dies	8				Very Good.
Crescent Braiding Co.	Shoe laces	4	40			Very Good.
Criscione, Gerogie	Macaroni mfg.	4	2			Excellent.
Crompton & Knowles Loom Works		361	45	7	1	Excellent.
Crooker Mantel & Tile Co.		25	6			Excellent.
Crossley, Frank A.	Produce	14	1			Good.
Crown Hotel		100	36			Excellent.
Crown Worsted Mills	Worsted yarns	23	121	8	19	Excellent.
Crucible Steel Co. of America	Safts	5	3			Excellent.
Cudahy Packing Co.	Beef	12				Very Good.
Cuddy Gardiner Co.	Drug racks	5	1			Very Good.
Cull & Williams	Mantel and tiles	6	1			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Cullen & Galligan.....	Wet wash laundry....	12				Good.
Curran & Burton.....	Coal.....	100	4			Excellent.
Cutler, H. B.....	Bakery.....	8				Excellent.
Cutler Jewelry.....	Gold filled rings.....	31	26	1	3	Excellent.
Cutler Shoe Store, The.....	Shoes.....	10	3			Excellent.
Cutler & Wood.....	Machinists' supplies..	6	3			Very Good.
Cutter, Frank.....	Colorer.....	5				Very Good.
Cwaik, A.....	Suits and dresses.....	4	7			Excellent.
Dagget & Miller.....	Pharmaceuticals.....	6	7			Excellent.
Danielson Advertising Agency.....		9	5			Very Good.
Darling, C. C. & Co.....	Emblems.....	8	3			Excellent.
Darling, C. P. Co., The.....	Boxes.....	62	1	2		Very Good.
Dart, E. M. Mfg. Co.....	Pipe fittings.....	45	3			Excellent.
Davidian Bros.....	Jewelry.....	2	7			Very Good.
Davidson, W. & J. H.....	Groceries.....	5				Very Good.
Davis & Marinaky.....	Ladies' tailor.....	3	10			Excellent.
Davis, Henry A. & Sons.....	Shoddy manufacturer.	19				Good.
Davol Rubber Co.....	Druggists' supplies...	204	254	31	36	Excellent.
Dean, Calvin.....	Jewelers' findings.....	13	15	1	5	Excellent.
Dean, John M. Co.....	House furnishings.....	35	4			Excellent.
De Boer & Bach Co.....	Cutlery.....	8	1			Very Good.
Deignan Bros.....	Groceries.....	3	2			Very Good.
Del Matto, Pietro.....	Bakery.....	6	1			Excellent.
Del Rossi, G. D. Co.....	Macaroni bakery.....	7				Very Good.
De Luxe Hosiery Co.....	Silk hosiery.....	47	95	4	7	Excellent.
Dennison, A. J. & Co.....	Mfg. jewelers.....	4	3			Excellent.
Deuts, Max.....	Jewelry.....	2	6			Excellent.
Desmond Publishing Co.....	Books.....	6	3			Excellent.
Deveroux, O. C. Co.....	Jewelry.....	5	3			Very Good.
Dillman Bakery, Inc.....		25	1			Excellent.
Dillon & Douglas.....	Butter, eggs, etc.....	10	2			Excellent.
Dime Messenger Co.....		6				Excellent.
Dimond, L. & Sons.....	Department store.....	65	130		3	Excellent.
Dimond's Meat Market.....		12	6	1		Excellent.
Direct Rubber Co.....	Boots and shoes.....	8	2			Very Good.
Dodge & Camfield.....	Groceries & liquors...	23	4	1		Excellent.
Doe & Little Co.....	Coal and wood.....	25				Good.
Dolan, D.....	Tailor.....	3	5			Good.
Dolby Ice Cream Co.....	Ice cream.....	37	10			Excellent.
Domaky, A. M.....	Restaurant.....	2	3			
Donahue, T. F. & Co.....	Groceries wines and liquors.....	4	2			Very Good.
Donle, Charles B. & Son, Inc.....	Jewelers' tools & dies..	8	1			Excellent.
Doran, James C. & Son.....	Jewelry.....	21	20	2	1	Excellent.
Dotta, Louis.....	Bakery.....	10	1			Excellent.
Doughty Tire Co.....	Auto tires.....	16				Good.
Dover, George W., Inc.....	Tools and jewelers findings.....	75	30	2	1	Excellent.
Dowding, Edwin J.....	Groceries.....	20	8			Excellent.

NAMES OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Dowling, M. A. & M. E.	Gowns		16			Excellent.
Doyle, Thomas F.	Plumbing	7				Very Good.
Drummond's Laundry		13	35		2	Excellent.
Dudley Hardware Co.		6	3			Very Good.
Duffy Bros.	Hardware	3	1	2		Very Good.
Dumford Mfg. Co.	Closed					
Dunn, John C.	Plumbing	4	1			Good.
Dunn & Buckley	Jewelers' tools	5				Very Good.
Dunn & Rodenberg.	Gold filled chains	13	25		2	Excellent.
Dutemple, W. R. & Co.	Jewelry	4	1		1	Good.
Dyer Transportation Line.		25	3			Good.
D. & N. Mfg. Co., Inc.	Jewelry	9	20			Very Good.
D. & W. Fuse Co.	Electrical goods	250	218	4	13	Excellent.
D. W. F. Engineering Co.	Specialties	30	20			Very Good.
Eagle Brewing Co.	Ale, porter and lager	35				Very Good.
Early, Thomas H. & Co.	Hardware	4	1			Very Good.
Eastern Coal Co.—Dyer St.		14				
Eastern Coal Co.—Eddy St.		10	3			
Eastern Coal Co.—Point St.		155	3			
Eastern Coal Co.—Weybosset St.		4	2			
Eastern Glass Co.	Cameos and stones	8	2			Very Good.
Eastern Nail Co.	Nails	14	3			Excellent.
Eastern Waist Co.	Ladies' waists	2	12		1	Excellent.
Eastman, Mrs. Rose	Gowns	4	37			Excellent.
Eddy & Fisher Co., The.	Liquor, cigars, etc.	15				Very Good.
Eddy Bros.	Fruit	8				Very Good.
Eddy Rotary Oil Burner, Inc., The.		20				Very Good.
Edwards & Lanphear Motor Co.		4	1			Excellent.
Edwards & Walker		4	2			Very Good.
Elia, John D.	Jewelry	2	16	1	2	Very Good.
Elmwood Box Co.	Paper boxes	2	12			Excellent.
Elmwood Steam Laundry	Closed					
Elabree-Valleau Co.	Hats and furnishings	6	2			Very Good.
Emerson, A. & Co.	Cotton waste	13	17			Very Good.
Emery Bowling Alleys—99 Eddy St.		10				Excellent.
Emery Bowling Alleys—99 Washington St.		18				Excellent.
Emery's Majestic Theatre	Amusement	34	4			Excellent.
Emery Theatre	Amusement	18	7			Excellent.
Empire Enameling Co.		4	8			Very Good.
Empire Mfg. Co.	Jewelry jobbers	6	9	1		Very Good.
Empire Theatre	Amusement	11	6			Excellent.
Era Mfg. Co., The	Machinery	4	1	1		Excellent.
Ernstof, J.	Clothing	5	8			Excellent.
Erskine & Morrison	Electros	10	1	2		Very Good.
Essenzel Co., The	Knitting needles	4	4			Very Good.
Esty, George W.	Restaurant	4	5			Excellent.
Ettlinger, M.	Men's furnishings	5	1			Excellent.
Evans, Henry R. & Son Co.	Contractors & builders	5				Excellent.
Everett & Barron Co.	Shoe dressings	11	21		1	Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Evers, Henry A.	Rubber stamps	5	1			Very Good.
Excell Mfg. Co.	Closed					
Excelsior Nickel Plating Works		5				Very Good.
Excelsior Mfg. Co.	Plated rings	8	2			Very Good.
Fairbanks Co., The	Scales	13	4			
Fairchild, A. W.	Kitchen furnishings	5	4			Excellent.
Fales, Lewis L. Corporation	Vim Truck Agents	14	2			Excellent
Fales Textile Co.	Converting yarns	2	10			Very Good.
Far East Restaurant		16	3			Excellent.
Farland & Merriot	Knit goods	3	2			
Fay's Theatre		24	14			Excellent.
Fearney, J. T. & Son	Fish market	12	3			Very Good.
Federal Screw Corporation	Machine work	136	14	2		Very Good.
Federal Truck Sales Co. of R. I.		12	1			Excellent.
Feeley, John H.	Dry goods	2	3			Excellent.
Feeley, J. R. & Co.	Ecclesiastical wares	10	4	1		Very Good.
Feeley, W. J.	Gold and silver	84	46			Excellent.
Fernstein, Philip	Dry goods	3	5			Very Good.
Fessenden & Co.	Silverware	8	1			Very Good.
Field, Charles H.	Engine turning machine	5	1			Very Good.
Fields Point Mfg. Co.	Chemicals	25	1			Good.
Files Engineering & Heating Co., The	Construction and engineering	7	3			Excellent.
	Closed					
Fine, Louis		9	7			Excellent.
Firemen's Mutual Insurance Co.		19	24	4	4	Very Good.
Fischer & Pruefer	Jewelry	12	3			Excellent.
Fisk Rubber Co.	Rubber tires	11	2			Excellent.
Fiske, H. B. & Co.	Fruit and produce	13		1		Excellent.
Fleischmann Yeast Co., The						
Flexograph Mfg. Co.	Printing & autographic registers	7	2			
Flink, B. & Son	Groceries	9	2			Very Good.
Flint-Blood & Co.	Jewelry	16	4			Very Good.
Flint, Dutee W.	Ford autos	39	29	1		Excellent.
Flint, Dutee W. Gasoline Co., Inc.	Gasoline and oil	10	2			Excellent.
Flint & Co.	Furniture, carpets, etc.	18	4			Excellent.
Florence Drug Store		6				
Flynn, Frank	Jewelry	4	14		4	
Fondi, Parido	Bakery	6	1			Excellent.
Ford Perry Co.	Jewelry	20	22	1		Excellent.
Foss Hughes Co.	Auto trucks & service	33	4			Excellent.
Foster, J. A. Co.	Diamonds, watches, etc	28	14	1		Excellent.
Foster, Theodore W. & Bro. Co.	Jewelry & silverware	128	58	4	1	Excellent.
Foster, Smith Co.	Repairing	16				Very Good.
Foster, Smith Co.—Office		4	1			Excellent.
Fountain Street Garage		4	1			Very Good.
Fowler Bros.	Mourning jewelry	7	4	1		Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	[NUMBER EMPLOYED.]				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Fox, C. J. Company, The.....	Jewelers' cards, etc. . . .	51	37	4	1	Excellent.
Fox, John F. Co., The.....	Heating engineering... .	5	1			Good.
Fox & Co.....	Bakery.....	20	3			Excellent.
Foxen Co., Inc., The.....	Labels.....	8	2	1		Very Good.
Francesconi, E.....	Bakery.....	6	1			Very Good.
Franklin Cafe.....		7				Excellent.
Franklin Machine Co.....		196	3			Good.
Franklin Machine Co.—Harris-Corliss Plant.....		104	4			Excellent.
Franklin Process Co.....	Yarn dyeing and drying machine.....	64	50	3	3	Very Good.
Franklin Specialty Co.....	Fixtures.....	5				Very Good.
Fraser, J. M. & Co.....	Jewelry.....	1	12	1	2	Good.
Freeman, E. L. Co.....	Stationery.....	1	9	2		Excellent.
Freeman's.....	Restaurant.....	5	10			Excellent.
French, M. L.....	Millinery.....		5			Excellent.
Fry Bros.....	Jewelry.....	4	3			Very Good.
Fryer-Austin Company & Charles H. Fryer Printing Co.....	Closed.....					
Fulford Mfg. Co.....	Metal specialties.....	100	100	5	13	Very Good.
Fuller Iron Works.....	Iron casting.....	52				Good.
Gaiety Theatre.....		7	3			Excellent.
Galanis, John.....	Closed.....					
Galassi, T. V. & Co.....	Marble, tile and slate.....	12	1			Excellent.
Galkin, Samuel Co.....	Metal workers.....	7	1			Good.
Gardiner, Charles C.....	Lumber.....	18	1			Excellent.
Gardiner, F. O.....	Meat.....	9	1			Very Good.
Gardiner, Herbert W.....	Men's clothing.....	5				Excellent.
Gardiner, R. A.....	Restaurant.....	3	2			Very Good.
Gardiner, W. H. & Sons.....	Photo engraving.....	4		1		Very Good.
Gearin, E. P. & Co.....	Fruit and produce.....	16	2			Good.
Geffner, H.....	Manufacturer bed springs.....	5				
General Baking Co., The.....	Bakery.....	89	3			Excellent.
General Chemical Co.....	Acids & heavy chemicals.....	33				Excellent.
General Fire Extinguisher Co.....	Pipe fittings & automatic sprinklers.....	348	37	8		Excellent.
General Machinery Co.....		28				Very Good.
General Manufacturing and Export Co.....	Religious goods.....	4	9			Very Good.
Gerlach, H. A.....		6	2			Excellent.
Gibson, J. Fred Company—						
1 Exchange Place.....	Soda, confectionery & cigars.....	12	2			Excellent.
81 Exchange Place.....	Confectionery, lunch & cigars.....	5	4			Excellent.
Corner Dorrance and Westminster.....	Confectionery, soda & cigars.....	7				Excellent.
176 Mathewson St.....	Confectionery & lunch.....	2	28		2	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold..	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Gibson, J. Fred Company— 220 West Exchange St.....	Manufacturing department, bakery & confectionery.....	25	63	1	8	Excellent.
169 Westminster St.....	Confectionery and cigars.....	4	4			Excellent.
343 Westminster St.....	Drugs, confectionery, lunch and cigars....	11	24			Excellent.
1349 Westminster St.....	Drugs.....	9	3			Excellent.
1349 Westminster St	Ice cream mfg.....	5				Excellent.
Gilbreth-Brown Co.....	Closed.....					
Giusti, Bros.....	Bakery.....	14	4	1		Excellent.
Giusti Luigi.....	Bakery.....	6	4			Very Good.
Gladding Dry Goods Co.....		48	182	3	2	Excellent.
Gledhill, John A.....	Patterns & mouldings.....	15	1			Good.
Glendale Elastic Fabric Co.....		30	90	6	13	Excellent.
Goff, James E. Co.....	Masons' materials.....	22				Very Good.
Goff & Darling.....	Closed.....					
Golden, A.....	Scrap iron.....	6				Good.
Golden Mfg. Co.....	Celluloid hair novelties.....	10	4	3		Very Good.
Goldsmith & Harsberg.....	Jewelry.....	4	38		2	Excellent.
Goldstein, Jules P.....	Jewelry and novelties..	20	4			Very Good.
Goodby, Rankin & Co.....	Auto supplies.....	19	3			Good.
Goodchild & Goodchild.....	Groceries.....	4	1			Very Good.
Goodchild, Jeremiah.....	Groceries.....	4	1			Excellent.
Goodspeed's.....	Ladies' clothing.....	1	4			Excellent.
Goodwell Mfg. Co.....	Jewelry.....	2	3			Very Good.
Goodwin Bradley Pattern Co.....	Pattern models.....	16	1			Excellent.
Goodyear Tire & Rubber Co.....	Auto tires & supplies..	6	3			Excellent.
Gordon Manufacturing Co.....	Shoe laces.....	2	8			Very Good.
Gorham Manufacturing Co.....	Gold and silverware... 1,474	214	17	5		Excellent.
Gorham Manufacturing Co.—Casino.....	Restaurant.....	1	5			Excellent.
Gorman & Co.....	Groceries and liquors..	5				Very Good.
Gowdy, J. A. Reed & Harness Mfg. Co.....		20		1		Excellent.
Graham Manufacturing Co.....	Jewelry.....	7	1			Very Good.
Grand, F. & W.....	Dry goods.....	5	36			Very Good.
Granger, G. B. Co.....	Enamel goods.....	4	5	1		Very good.
Grant Supply Co.....	Remnants.....	2	3			Excellent.
Grant Mill.....	Cotton.....	81	78	4	2	Excellent.
Grant, Daniel & Son Co.....	Wagons.....	10	1			Good.
Gray, Alexander T.....	Bakery.....	3	2			Excellent.
Greene, A. A. Co.....	Jewelry.....	21	8			Very Good.
Greene, Anthony & Co.....	Shoes.....	23	8	1		Very Good.
Greene, R. L. Paper Co.....	Paper, twine, roofing & asbestos.....	35	5			Excellent.
Greene, John F. Co.....	Printing.....	5	1			Very Good.
Greene, William C. Co.....	Jewelry.....	33	9			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Greenhalgh, Henry C.	Groceries.	6	1			Very Good.
Greenstein & Kosman.	Pants	3	4			Very Good.
Greenwood's Laundry.		5	1	1		Excellent.
Griffin, George M. & Co.	Butter, cheese, etc.	18	5			Very Good.
Griffith, R. L. & Son Co.	Jewelry	55	56	1	1	Very Good.
Grimwood, H. A. Co.	Building material.	6	1			Excellent.
Grocers' Baking Co.	Bakery.	35	2			Excellent.
Grode Bros.	Chair trimming.	5				Very Good.
Gross, G. L. & H. J.	Real estate & insurance	19	16	1		Excellent.
Guarantee Clothing Co.	Clothing.	6	3			Very Good.
Hadley Co., The	Jewelry	9	41	1	11	Excellent.
Halcrow, William J.	Carpenters & builders.	7	1			Very Good.
Haley & Blanch.	Elevators.	5	1			Very Good.
Hall, J. C. Co., The.	Lithographs and printing	100	100			Excellent.
Hall, F. A. Co.	Tools	26				Very Good.
Hall Machine Tool Co.	Machine tools.	24	1			Excellent.
Hallam-Rice Co.	Jewelry	18	5	2		Very Good.
Hambly, J. H.		6	9			
Hamilton & Hamilton, Jr.	Jewelry	33	18	2		Excellent.
Hamilton, George Co.	Jewelers' tools.	8				Very Good.
Hammel Oil Burning Equipment Co.		22	2			Excellent.
Hammond, H. T.	Engraving and printing	6	5			Excellent.
Hancock, Charles E. Co.	Jewelry	46	15	2		Excellent.
Hancock, John Co. Inc.	Insurance	5	2			Excellent.
Hancock, John Mutual Life Insurance Co.		87	3			Excellent.
Hanley, James Brewing Co., The.	Ale and porter.	134	3			Excellent.
Hanley, Hoyo Co.	Liquors	10				Excellent.
Harlacker, J. C.	Jewelry and novelties.	2	3			Excellent.
Harris, A. W. Oil Co.	Oils and greases.	10	8			Good.
Harris, S. P.	Jewelers' cards.	6	16		2	Very Good.
Harris, W. M. & Co.	Lumber and saw mill.	20				Good.
Harris, William, Jr.	Lumber and masons' materials.	24	1			Excellent.
Harvey & Otis	Jewelry	26	12	1	1	Excellent.
Hasselbaum A. Co.	Wholesale groceries, wine and liquors.	4	1			
Haakell, Fred A.	Engraving.	5				Good.
Haslam Heating & Ventilating Co.	Steam fitters' supplies.	8				Good.
Hawkins & Withington	Pork house products.	5	1			Excellent.
Heathcote, John & Son.	Woolen machinery.	14	1			Excellent.
Heald Hat Works.	Hats.	3	4			Very Good.
Heffernan & Kempton	Signs.	7	1			Good.
Heimberger & Pearson	Jewelers' findings.	5	1	1		Very Good.
Hellenic Baking Co.	Bakery.	5				Very Good.
Hellman, L. J. Co.	Jewelry	5	20	3	1	
Hennessey Laundry Co.		24	52	1	4	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Women.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Henry Co., The	Closed					
Henry, C. P. Novelty Co.	Curtain rods	26	19	5	2	Good.
Henson, Logan Wet Wash Laundry		8	2			Good.
Herbo-Phosa Co.		8	2	3		Very Good.
Hersey & Hess	Tools and dies	4	1			
Hicks Boiler Works		7				Good.
Higgins, J. H. Co.	Scrap iron	20				Excellent.
Hill James Mfg. Co.	Steel metal goods	20				Good.
Hoefler, Fisher Co., The	Draperies & furniture	3	3			Good.
Hogan, Thomas P.	Lumber and building material	5				Good.
Holbrook Raw Hide Co.		68	3			Excellent.
Holden, E. W.	Jewelry	2	5			Very Good.
Holmes Co., The	Mail order & jewelry	5	15			Excellent.
Holmes, D. F. & Co.	Plumbing	7				Very Good.
Holmes, George H. & Co.	Jewelry	20	13			Excellent.
Holt, A. & Co.	Rolled gold plate	7				Excellent.
Home Cafe & Bowling Alleys		7				Very Good.
Hood, H. P. & Sons	Ice cream and lunch	4	5	1		Excellent.
Hope Glass Works	Cut glass	5				Very Good.
Hope Mill Supply Co.	Mill supplies	5	1			Excellent.
Hope Optical Co.		7	4	1		Very Good.
Hope, John & Sons Engraving & Mfg. Co.		28	11	1		Excellent.
Hope Rubber Co.	Rubber goods	4	6			Very Good.
Hope Teaming Co.		20				Good.
Hopkins Transfer Co.		8				Excellent.
Horton, C. S.	Millinery	1	10			Very Good.
Horton, H. F. & Sons Co.	Real estate	5	3			Excellent.
Horton Grocery Co.	Groceries	6	1			Excellent.
Hotel Allen		4	5			Excellent.
Hotel Berkshire		10	10			Excellent.
Hotel Dorrance		11	8			Excellent.
Hotel Dreyfys		40	15			Excellent.
Hotel Franklin		8	8			Excellent.
Hotel Lincoln		7	1			Excellent.
Hotel Lincoln Restaurant		7				Excellent.
Hotel Perrin		5	2			Excellent.
Hough, W. S., Jr. Co.		39	4			Excellent.
Household Furniture Co.		19	10			Excellent.
Hovey Lumber Co.		4	1			Good.
Howe, H. M. Co.	Carriage and auto repairing	6				Very Good.
Hozsie, Rouse F.	Groceries	6	1		1	Very Good.
Hub Shoe Repairing Co.		9				Good.
Hudson Auto Co.	Automobiles	9	1			Excellent.
Hudson & Co.	Chasers	8	1	1		Very Good.
Hunt, T. F. Mfg. Co.	Jewelry	4	8			Very Good.
Hunt, William E. & Co.	Manufacturing jewelry	12	7	1		Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Huntoon & Gorham Co.	Cigars.	30	16	1		Excellent.
Hurd Bros.	Hay & grain.	12				Good.
Huse, W. A. & Son.	Electricians.	6	1			Very Good.
Hutchinson & Huestis.	Jewelry.	30	2	2		Excellent.
Iacone, Peter.	Ice cream.	5				Excellent.
Ideal Ventilator Co.		8		1		Very Good.
Ideal Wet Wash.	Laundry.	9				Good.
Imperial Jewelry Co.		6	10			Very Good.
Imperial Knife Co.		18	4	2		Very Good.
Improved Seamless Wire Co., The.		35				Excellent.
Industrial Chemical Co.	Dye stuffs.	13				Good.
Industrial Trust Co.		77	50	3		Excellent.
Inglis Electric Co.		5				Good.
Inlaid Co. Inc., The.	French and Ivory novel-ties.	24	30		5	Very Good.
International Braid Co.—Elmwood Plant.	Shoe laces.	116	306	42	18	Very Good.
International Braid Co.—Fletcher Mills.	Braids and laces.	201	270	10	21	Very Good.
Irons & Russell.	Jewelry, emblems.	65	55	1		Excellent.
Italo-American Mutual Trust Co.	Bank.	6	4			Excellent.
Ivoryloid Co.	Novelties.	5	6		1	Excellent.
J. & H. Electric Co.		27				Excellent.
Jager, Charles J. & Co.	Gasoline engines, etc.	9	1			Very good.
Japanese Wood Novelty Co.	Calendars, novelties, etc.	2	40		3	Excellent.
Jasie, Joseph.	Bakery.	5	2			Excellent.
Jeffers, C. H. & Co.	Groceries & market.	7	1			Excellent.
Jeffries & Kraner.	Manufacturing jewelry.	3	4			
Jenkes Paper Box Co.		37	85	7	8	Excellent.
Jepherson, George A.	Lumber.	7	1			Excellent.
Jersauld, J. A.	Jewelry.	5	5	1	1	Excellent.
Jette, William M.	Shoe laces.	5	10			Very Good.
Jewel Tea Co., Inc.	Groceries.	21	19			Very Good.
Jewelers Products Corporation.		18	8			Very Good.
Jewelers' Supply Co.	Findings.	13	16	9	5	Excellent.
John The Shoeman.	Shoes and rubbers.	19	12			Excellent.
Johnson, E. A. & Co.	Book & job printing.	10	3	2		Very Good.
Johnson, E. M. Co.	Glass workers.	10	2	2		Excellent.
Johnson & Raftery.	Jewelers' cases.	2	3	1		Very Good.
Johnson, O. R.	Jewelry.	4	14			Excellent.
Johnson, Oliver & Co.	Paints.	9	3			Excellent.
Johnson, Oliver & Co.	Paints.	12	1	1		Excellent.
Johnston, A. C. & Co.	Braid.	2	6			Excellent.
Jones & Co.	Dry goods.	4	19			Excellent.
Jones, Edward S. Sons Company.	Printers.	14	7			Excellent.
Jones, Edward S. Sons Company.	Advertising.	4	2			Excellent.
Jones Lunch Co.		14	7			Excellent.
Jones Lunch Co.		10				Excellent.
Joslin Mfg. Co.—Dyerville Mill.	Yarns and shoe laces.	37	45	4	4	Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Joslin Mfg. Co.—Merino Mill.....	Shoe and corset laces..	100	149	6	4	Very Good
Joy, D. F.....	Bakery.....	10	2			Excellent
Joyce Bros. & Co.....	Clothing.....	9	11	1		Excellent
Jurgens, A. C. Co.....	Jewelry.....	17	9			Very Good
K. Mfg. Co., The.....	Jewelry.....	10	10			Excellent
Kalunian, B. & Co.....	Variety store.....	4	15			Very Good
Kane, John F. & Co.....	Cotton underwear.....	1	4			Good
Kanelakos & Bergeris.....	Conf. & ice cream.....	6	5			Excellent
Kaps & Reinacher Co.....	Furs.....	4	2			Excellent
Karpeles Co., The.....	Precious and imitation stones.....	4	65	1		Excellent
Keith's Theatre.....	Amusement.....	37	23			Excellent
Kelly, George S. Co., The.....	Closed.....					
Kelly, John F.....	Ice cream.....	9				Excellent
Kelly, S. J. Estate.....	Enamellers.....	3	2			Very Good
Kendall Mfg. Co.....	Soap and soapine.....	67	21	6		Good
Kennedy, James.....	Closed.....					
Kennedy Co., The.....	Clothing & furnishings.....	48	7	1		Excellent
Kennedy, John.....	Bread, pies, etc.....	19	3			Excellent
Keppler & Weidlich.....	Closed.....					
Kescot Mfg. Co.....	Metal novelties.....	9	6	3	1	Very Good
Kimball & Colwell Co., The.....	Pork products.....	66	2	1		Very Good
King, S. C.....	Towel supply.....	4	2			Excellent
King Fong.....	Restaurant.....	16				Excellent
Kinney Co.....	Jewelry.....	33	15	2		Excellent
Kirby, H. A.....	Jewelry.....	7	5			Good
Klein, S. Co.....	Rags.....	9				Good
Klein, S. & Sons.....	Rags.....	16	2			Very Good
Klein, G. & Sons.....	Religious goods.....	36	31	6	7	Excellent
Kleiner Co.....	Jewelry.....	2	5			Very Good
Kolnoor Novelty Co., Inc.....	Celluloid novelties.....	3	5		1	Good
Kopelman, Joseph.....	Florist.....	4	1			Good
Koppers, H.....	Chemicals.....	5				Good
Korb, Philip.....	Bakery.....	7	3			Excellent
Kraus, Henry C.....	Groceries.....	5				
Kreage, S. S.....	5 and 10 cent store.....	18	67			Excellent
Kreage, S. S.....	Restaurant.....	3	7			Excellent
Krichbaum, L. & Co.....	Jewelry.....	20	4	1	1	Excellent
Kuehner, Oscar Co.....	Metal rubber goods findings.....	2	14		1	
Kummer, George A.....	Closed.....					
Lafayette Quick Lunch & Restaurant.....		6	5			Excellent
Lamberton, S. J. & C. G.....	Groceries.....	8	1	2		Excellent
Lancor Mfg. Co.....	Jewelry.....	6	1			Very Good
Langford Worsted Mills.....	Worsted and yarns.....	60	58	5	15	Very Good
Lansing Lumber Co.....		21	3			Excellent
Lapray, Mrs. Josephine M.....	Gowns.....		5			Excellent
Large, Shea.....	Bakery.....	5	2			Very Good

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Askey's	Ladies' garments	4	12			Excellent.
Atine, S.	Bakery	4	1			Excellent.
Avell, James & Son	Closed					
Aw & Hawxhurst	Gas & electric fixtures	5				Very Good.
Awlor, C. C.	Restaurant	5	14			Excellent.
Bederer, Henry & Bros.	Jewelry	20	26	1		Excellent.
Bederer, S. & B.	Jewelry	56	57			Good.
Bederer Bros. Co.	Screw machine products	35	5			Very Good.
Bee, Charles H. Co.	Tailors	15	1			Excellent.
Bee, Chas.	Restaurant	26				Excellent.
Beech-Judge Co.	Magazines	14	6			Excellent.
Bewis, John D.	Dyewood & extract	5				Good.
Bewis, T. R. Jr. & Co.	Enamellers	3	5			
Biberty Laundry	Wet wash	6				Good.
Bibury Bureau	Card systems	6	2	1		Excellent.
Biddle, J. & Sons	Bakery	4	1			Very Good.
Biggett, Louis K. Co.—47 Olneyville Sq.	Drugs	6				Excellent.
Biggett, Louis K. Co.—211 Westminster St.	Drugs	25	28			Excellent.
Biggett, Louis K. Co.—252 Westminster St.	Drugs	9	11			Excellent.
Biggett, Louis K. Co.—108 Weybosset St.	Drugs	7	7			Excellent.
Biggett, Louis K. Co.—227 Weybosset St.	Drugs	6	9			Excellent.
Bind, J. A. Co.	Machinery	14	4	2	1	Very Good.
Bind, T. W. Co.	Jewelers' findings	34				Very Good.
Bindol, H. C. & Co.	Jewelry	47	15	2		Excellent.
Binton & Co.	Rolled gold plate	8				Very Good.
Binton, P. & A.	Jewelry	17	9			Very Good.
Bippman Bros.	Groceries and pork products	11	2			Very Good.
Bittle & Co.	Jewelers' dies & tools	5				Excellent.
Bivernore & Knight Co.	Advertising novelties	47	79	1		Excellent.
Boeb, William & Co.	Jewelry	27	18			Excellent.
Boeber, Abram.	Bakery	3	2			Good.
Bojee, E. L. & Co.	Manufacturing jewelers	11	8			Excellent.
Bohrmann, E. H.	Hubs and dies	6				Very Good.
Bong, D. J.	Groceries	5				Excellent.
Bongley Motor Sales Co.	Closed					
Bord, F. S.	Novelties	1	7	1	3	Very Good.
Bord Construction Co., The		461		3		Excellent.
Bose Leaf Mfg. Co.	Printing	14	5			Excellent.
Bose-Wiles Biscuit Co.		31	4	2		Excellent.
Borsch, Albert & Company, Inc.	Precious and imitation stones	10	5			Excellent.
Bouttit Home Hand Laundry		29	73		2	Excellent.
Lovegrove & Burlingame	Closed					
Lowe, Edwin & Co.	Jewelry	15	2	1		Excellent.
Luther, H. C. & Co.	Lapidary	6	1			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Luther, William H. & Son	Closed					
Lyons Mfg. Co.	Jewelry	115	60	5	3	Excellent.
MacCabe, W. H. Co.	Cabinet maker	7				Very Good.
MacIntosh, J. G. & Son	Carriages and automobiles	20				Excellent.
MacWatty Belting Co.		5	1			Excellent.
Mackey Jewelry Co.		8	3			Very Good.
Macnair, Charles S.	Florist	1	5	4		Excellent.
Macreath's Oyster Chop House		7	2			Very Good.
Magoon, A. J. & Son	Stoves, etc.	17	3			Very Good.
Mahogany Restaurant		13				Excellent.
Maine Creamery Co.	Ice cream	40	4			Excellent.
Majestic Bowling Alleys		5	1			Excellent.
Majestic Hotel		5	1			Excellent.
Makepiece, C. R. & Co.	Architects	4	1			Excellent.
Manchester, A. C. Co.	Contractors	11				Very Good.
Manchester & Hudson	Masons' materials	12				Very Good.
Manhattan Grocery Co.		11	2			Very Good.
Manney, Thomas E.	Plumbing supplies	6				Very Good.
Manufacturers Building Co.	Renting floor space	14	1			Excellent.
Manufacturers Mutual Fire Ins. Co.		21	52			Excellent.
Marden & Kettlety	Jewelry	9	5			Very Good.
Markham & Stone	Jewelry	18	20	11	5	Excellent.
Martin, J. W.	Sausage factory	5				Very Good.
Martin-Copeland Co.	Jewelry	115	101	4	2	Excellent.
Marvel, Leroy J.	Colorer	2		2		Good.
Maryland Club—37 Westminster St.		10				Excellent.
Maryland Club—145 Westminster St.		19	5			Excellent.
Maryland Club—309 Westminster St.	Closed					
Mason, C. H. Jewelry Co.		10	10		1	Very Good.
Mason, Volney W. & Co.	Hoisting machinery	5				Good.
Mason Mfg. Co.	Tin cans	80	46	4	3	Excellent.
Mauran, John T. Mfg. Co.	Jewelry	30	16	1		Excellent.
Maynard Jewelry Co.	Closed					
Maynard Land Co.		4	3			Excellent.
McCarthy, Dennis	Plumbing	5				Very Good.
McCarthy, F.	Dressmaker		6			Excellent.
McDermott, W. J.	Enameling	5	11			Very Good.
McGrath, Thomas	Rings	45	60	15	14	Excellent.
McIntosh Bardsley Co.		1	5	1		Excellent.
McKenna, P. H.	Electroplate	3	2	1		Good.
McKensie, H. K.	Restaurant	2	9			Excellent.
McLean, H. D.	Hardwood floors	4	1			Excellent.
McMillen & Kennison, Inc.	Jewelry findings	7	1			Very Good.
McWilliams, Thomas	Jewelers' machinery	5	1			Good.
McWright, Charles	Conf. & ice cream	4	5			Very Good.
Mechanical Fabric Co.	Rubber goods	87	47			Excellent.
Mechanics National Bank of Providence, The		13	10			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Meiklejohn Co., The.....	Pianos.....	18	2			Excellent.
Melaragno, P.....	Cigar manufacturer.....	3	3			Very Good.
Mercantile Mutual Fire Insurance Co.....		5	3	1		Excellent.
Merchants Cold Storage Co.....		70	9			Excellent.
Merchants National Bank.....		16	6			Excellent.
Mercurio, G. A. Co.....	Produce.....	7	2			Good.
Merriam Co., The.....	Wall papers.....	6	5			Excellent.
Merrill, S. K. Co.....	Jewelry.....	33	12			Excellent.
Messler, A. C. Co., The.....	Jewelry.....	82	40		2	Very Good.
Metal Products Corporation, The.....	Closed.....					
Metals Corporation, The.....		24	40	2	5	Excellent.
Metropolitan Life Insurance Co.—						
Narragansett District.....		36	6			Excellent.
Providence District.....		38	4			Excellent.
What Cheer District.....		34	5			Excellent.
Metropolitan Mfg. Co.....	Furniture.....	8	2			Excellent.
Me Wah Hing.....	Restaurant.....	5				Excellent.
Mexican Petroleum Corporation.....	Fuel oil.....	16				Excellent.
Meyer, R. W. Mfg. Co.....	Jewelry.....	4	1			Good.
Midwood, H. & Sons.....	Wholesale groceries.....	50	13	1		Excellent.
Miller, Charles & Co.....	Painters.....	7				Very Good.
Miller, C. L.....	Enameling.....	3	12			Very Good.
Miller, Frank E. & Son.....	Baked enameling.....	1	2	1		Very Good.
Miller, J. E. Co.....	Dress fasteners.....	4	7	1	2	Very Good.
Miller, William Co.....	Wool combs.....	24		4		Excellent.
Miller, William H. & Sons.....	Blacksmiths.....	12				Good.
Mills, William & Son.....	Photography.....	3	2			Excellent.
Miner, D. W. Co.....	Beef.....	5	1			Very Good.
Misch, Cmesar.....	Clothing.....	23	25			Excellent.
Mitchel the Tailor.....		4	2			Very Good.
Modern Enameling Soldering Co.....		2	5			Very Good.
Modern Wet Wash.....	Laundry.....	12				Fair.
Modern Theatre.....	Amusement.....	6	9			Excellent.
Monette, J. B. & Co., Inc.....	Store fixtures.....	5				Excellent.
Monohansett Worsted Mills.....		80	71	7	4	Excellent.
Monroe Block Co.....	Jewelry.....	8	22		7	Excellent.
Moore, J. W. Co.....	Sheet metal works.....	25	1			Very Good.
Moorehead, R. L. & Co.....	Jewelry.....	12	5			Very Good.
Morgan Jewelry Co., The.....	Jewelry.....	14	3	3		Very Good.
Morris, E. L. & Co.....	Office outfitters.....	4	1			Excellent.
Morris & Company.....	Beef.....	18	1			Very Good.
Morrison, Bertqn E.....	Infant shoes mfg.....	4	3			
Morse, Fred W. Co.....	Kitchen goods.....	17	1			Very Good
Morvillo, G. & Sons.....	Jewelry.....	9	6	2	2	Excellent.
Mossberg Wrench Co.....	Textile machinery specialties.....	24	3			Excellent.
Mount Hope Distillery Co.....		7	2			Good.
Mount Pleasant Laundry.....	Closed.....					

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Mourin, J. P. Co.....	Women's apparel.....	1	13			Excellent.
Mueller Metal Co.....		1		1		Good.
Mumford, Benjamin.....	Restaurant.....	7	17			Excellent.
Murphy, Edward.....	Market.....	4	1			Excellent.
Murray, C. L.....	Periodicals.....	3	2			Excellent.
Mylod, A. E. & Sons.....	Closed.....					
M. & T. Button Co.....	Shoe buttons.....	7	3			Excellent.
Narragansett Bay Oyster Co.....		60	2			Very Good.
Narragansett Belting Co.....		6				Excellent.
Narragansett Card Co.....	Closed.....					
Narragansett Dairy Co. Ltd.....	Oleomargarine.....	6	4			Excellent.
Narragansett Electric Lighting Co.....	Power house.....	350	2			Very Good.
Narragansett Electric Lighting Co.....	Office.....	60	43	1		Excellent.
Narragansett Hotel.....		96	56			Excellent.
Narragansett Improvement Co.....	Asphalt.....	15				Good.
Narragansett Jewelry Co.....	Bracelets.....	6				Very Good.
Narragansett Tailoring Co.....	Cleaning & pressing.....	4	1			Good.
Narragansett Wholesale Grocery Co.....		11	4			Very Good.
Natanian, H.....	Jewelry manufacturing.....	3	3			
National Bank of Commerce.....		13	8			Excellent.
National Biscuit Co.....		40	4			Excellent.
National Exchange Bank.....		24	21			Excellent.
National Home Supply.....	Removed.....					
National Mfg. & Electro Plating Co.....		5				Very Good.
National & Providence Worsted Co.—						
Mill No. 1 }.....	Yarn.....					
Mill No. 3 }.....						
Mill No. 2 }.....	Yarn and weaving.....					
Mill No. 6 }.....						
Mill No. 4 }.....		677	592	43	98	Very Good.
Mill No. 5 }.....	Weaving & finishing.....					
Mill No. 7 }.....						
Mill No. 8 }.....						
National Ring Traveler Co.....	Wire goods.....	32	8	1	1	Excellent.
National Wholesale Grocery Co.....	Tea, coffee, etc.....	22	9			Excellent.
Neilen's Typewriter Exchange.....		3	2	1		Excellent.
Newark Rubber Co.....		35	30			Good.
Newell, L. D.....	Hats blocked.....		5			Very Good.
New England Butt Co.....	Machinery and iron castings.....	277	17	5		Excellent.
New England Enameling Co.....	Enameling.....	2	5			Very Good.
New England Engraving Works.....		9		2		Excellent.
New England Glass Works.....	Jewelry.....	20	7	3		Very Good.
New England Hosiery Co.....	Infants' hosiery.....	4	30	1	4	Excellent.
New England Window & House Cleaning Co.....		21	1			Bad.
New England Supply Co.....	Dried beef and potato chips.....	37	42	1		Excellent.
New England Ventilating & Heating Co.....		12	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
New Enterprise Wet Wash		5				Very Good.
New Idea Store	Variety	3	4			Very Good.
Newman Hotel Co.	Closed					
New Method Laundry		17	5			Good.
New York Restaurant		4	1			Good.
Nichols Mfg. Co.	Celluloid goods.	3	11			Excellent.
Nicholson File Co.	Files and rasps.	1,295	180	20	3	Excellent.
Nickerson Art Metal Co., The	Tools, jig & fixture work	65	1			Excellent.
Nickle Theatre	Closed					
Nightingale, Baker & Salisbury	Iron and steel.	6	2			Excellent.
Nikko Restaurant		7				Excellent.
Nilson, Charles E.	Restaurant	5				Very Good.
Nitro-Tungston Lamp Co.		3	9			Excellent.
Nolan, Philip F.	Restaurant	1	4			
Nordlinger, H. & Son	Precious stones.	6	3	1		Excellent.
Norris Bedding Co.		12	8			Very Good.
Norton's Garage		6	1			Excellent.
Norton Taxi Motor Co.		49	3			Very Good.
North Western Mutual Life Ins. Co.		6	3			Excellent.
Nuttingham Mill		66	59	2	3	Good.
Nussebaum & Hunold	Sterling silver toilet ware.	35	17	2	1	Excellent.
N. Y., N. H. & H. R. R. Co.	Restaurant	10	11			Excellent.
N. Y., N. H. & H. R. R. Co.—West Exchange St.	Freight House	265				
N. Y., N. H. & H. R. R. Co.	Offices	102	18			Excellent.
N. Y., N. H. & H. R. R. Co.—Fox Point	Freight House	9				
N. Y., N. H. & H. R. R. Co.	Baggage room	39	4			
N. Y., N. H. & H. R. R. Co.—Oregon St.	Mechanical dept.	340				
N. Y., N. H. & H. R. R. Co.	Yard offices	11				
New York Waist Store	Dry goods.	1	6			Excellent.
N'Brien, Robert	Pattern maker	15	1			Excellent.
'Donnell, John	Automobiles	22	4			Excellent.
'Driscoll Bros.	Lumber and coal	7				Good.
'Gorman's 25 Cent Store.	Dry goods		18		1	Good.
'Loughlin, William & Sons	Baskets	4		1		Good.
'Neil, James H. Co.	Emblems	5	4			Very Good.
'Neill & Black	Manufacturing jeweler	6	2			Very Good.
Nesdale Mfg. Co.	Oleomargarine	14	5			Very Good.
Nesbitt, C. S. Co.	Painting contractors	50	2			Excellent.
Nesbitt Pearl Co.	Pearl goods.	5				Very Good.
Nesbitt Bros.	Tailors	5				Excellent.
Nesbitt Colony Advertising Co.	Bill posting	21	3			Excellent.
Nesbitt Automobile Co., The	Automobiles	19	2			Excellent.
Nesbitt, Louis	Studio	3	3			Excellent.
Nesbitt, Joseph & Sons	Coal and wood	45				Good.
Nesbitt, John & Son	Hardening and tempering	4	1	1		Excellent.
Nesbitt Mfg. Co.	Jewelry	9	15			Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Ostby & Barton.....	Jewelry.....	288	456	9	8	Excellent.
Otis Elevator Co.....	Repairing.....	27	1			Good.
Outlet Co.....	Department store.....	295	591	4	19	Excellent.
Outlet Garage & Storehouse.....		46	2		3	Excellent.
Overland Lunch.....	Closed.....					
Owen, Ole B.....	Enamellers.....	3	5			Very Good.
Oxford Linotype Composition Co.....		14	2	1		Very Good.
Owl Tea Rooms, The.....			8			
Packard Motor Car Co. of Boston.....	Office.....	40	10			Excellent.
Packard Motor Car Co. of Boston.....	Shop.....	37		1		Very Good.
Paige Motor Co. of Rhode Island.....	Automobiles.....	7	1			Excellent.
Palmer & Capron.....	Jewelry.....	10	2			Excellent.
Papano, K.....	Market.....	4	1			
Paquin, Orma J.....	Closed.....					
Paragon Worsted Co.....	Worsted.....	180	113	4	6	Very Good.
Park Market & Grocery Co.....		5	2			Excellent.
Parker Tobacco Co.....	Tobacco & cigars.....	12				Good.
Parkin Yarn Co.....		2	3			Very Good.
Parkinson Mfg. Co.....	Mill supplies.....	6				Good.
Parkinson Piano House.....		3	2			Excellent.
Parks, G. W.....	Closed.....					
Parks Bros. & Rogers.....	Jewelry.....	79	64	1	10	Excellent.
Patriacco, Frederico.....	Bakery.....	4	1			Excellent.
Pattou-MacGuyer Co.....	Brass goods.....	12	10			Excellent.
Pavloski, A.....	Tailoring.....	4	2			Very Good.
Pawtucket Hosiery Co.....	Hosiery.....	2	40			Very Good.
Pay, Charles & Co.....	Blacksmiths.....	28				Good.
Payne, E.....	Restaurant.....	2	3			Excellent.
Payton, H. Co.....	Jewelry.....	12	1			Very Good.
Payton & Kelley.....	Jewelry.....	27	15	2	1	Excellent.
Pearce, F. T. Co.....	Jewelry.....	15	5			Very Good.
Pearson Bros.....	Auto repairs.....	8	1			Excellent.
Pease, L. F. Co.....	Sails, awnings, tents.....	8	5			Very Good.
Peck, Asa & Co.....	Wool, noils, etc.....	15	35			Excellent.
Peck, B. W. & Son.....	Painters.....	20	1			Very Good.
Peck, Cyril C.....	Groceries.....	8	1			Excellent.
Peck, J. D.....		17	2			Very Good.
Peerless Box Co.....	Paper boxes.....	1	15		1	Excellent.
Peerless Electric Co.....	Electric construction.....	10	2			Excellent.
Peerless Engineering Co.....	Small tools.....	14				Very Good.
Peoples' Credit Co.....	Men's clothing.....	6	12	1		Excellent.
Peoples Savings Bank in Providence.....		9	9			Excellent.
Perkins Bros Co.....	Retail lumber.....	6	1			Excellent.
Perry-Buxton-Doane Co., The.....	Scrap iron.....	30				Excellent.
Perry Printing Co.....		4	2			Very Good.
Pervear, H. N. Co., The.....	Closed.....					
Peterson Co., The.....	Jewelers' findings.....	9	15	1	4	Very Good.
Phenix National Bank.....		5	1			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Phillips Lead & Supply Co.	Plumbing supplies.	13	6			Very Good.
Pickford Engraving Co.	Engraving.	9	1			Excellent.
Pierce, Thomas F. & Son.	Shoes.	7	8	1		Excellent.
Pike Bros.	Restaurant.	5	1			Very Good.
Pilgrim Novelty Co., The.		3	2			Excellent.
Piling Chain Co.	Chains.	3	5			
Place, Oscar E. & Sons Co.	Jewelry.	5	1			Very Good.
Plaza Lunch Co.		15				Excellent.
Poble, H. C. Co.	Groceries.	4	1			Excellent.
Poliatti, Emilio.	Tailoring.	5	1			Very Good.
Pollard & Darling.	Jewelry.	4	17	1	2	Excellent.
Poole, John T.	Paper boxes.	2	4			Excellent.
Post & Lester.	Auto supplies.	8	3			Excellent.
Postal Telegraph Co.		10	8	6		Excellent.
Potter, E. A. Co.	Jewelry.	12	5			Excellent.
Potter, James A. & Co.	Lumber.	26	2			Excellent.
Potter & Buffington.	Solid gold jewelry.	42	13			Excellent.
Pournaras, W. N.	Restaurant.	4	1			Very Good.
Powers & Meyer Mfg. Co.	Jewelry.	25	1			Excellent.
Presbrey, A. A. & Son Co.	Wooden boxes & house finish.	24				Good.
Prassel Bros.	Ladies' tailors.	4	2			Excellent.
Preston & Rounds.	Booksellers and stationers.	6	7			Very Good.
Preston, J. H. & Co.	Fruit and produce.	29	4			Excellent.
Primavera Bros. Co.	Jewelry.	2	3			Very Good.
Progressive Ring Co., The.		22	11			Very Good.
Providence Art Metal Co.	Metal ornaments.	35	1	4		Excellent.
Providence Auto Equipment Co.	Auto supplies.	5	2			Excellent.
Providence Bag & Burlap Co.	Bags.	14	6			Good.
Providence Banking Co.		6				Excellent.
Providence Base Works of the General Electric Co.	Incandescent lamp bases.	314	118	4	21	Excellent.
Providence Blank Book Co.		7	5	1		Very Good.
Providence Body Co.	Motor truck bodies.	110	4			Very Good.
Providence Brewing Co.		93	3			Excellent.
Providence Cap Co.		3	2			Very Good.
Providence Churning Co.	Butterine.	35	21			Excellent.
Providence Coal Co.		45				Good.
Providence Combining Co.	Wool tops.	78	12	1		Excellent.
Providence Cornice Co.		12	1			Very Good.
Providence Dairy Co.	Milk and cream.	63	9			Excellent.
Providence D. B. & C. Co.	Bleaching.	174	64			Excellent.
Providence Dye Works.	Dyers of cotton yarn.	37	32			Very Good.
Providence Electrical Mfg. Co.	Flash light.	8	1			Excellent.
Providence Electrotyping & Plating Works.		6				Good.
Providence Enamel Co.		12	2			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Providence Engineering Works.....	Machinery.....	124	3			Excellent.
Providence Gas Co.—Office.....		29	63	1	1	Excellent.
Providence Gas Co.—Distribution Dept..		59				Good.
Providence Gas Co.—Gas and Coke.....		528	5			
Providence Gas Co.—Meter Department.		57	1			
Providence Gas Co.—Stable.....		46				
Providence Gas Co.—Stove store.....		14	2			
Providence Granite Co.....		10				Very Good.
Providence Ice Cream Co.....		5	1			Excellent.
Providence Italian Manufacturing Co.	Macaroni.....	4	1			Very Good.
Providence Journal Co.....	Newspaper.....	310	41			Excellent.
Providence Lithograph Co.....		62	20	3		Excellent.
Providence Lumber Co.....	Lumber.....	5	1			Excellent.
Providence Mfg. Co.....	Jewelry.....	16	6			Very Good.
Providence Mfg. & Tool Co.....	Fare registers.....	12				Very Good.
Providence Mill Supply Co.....		8	3			Excellent.
Providence News.....	Newspaper.....	36	6			Very Good.
Providence Novelty Co.....		7	3			
Providence Office Supply Co.....	Office supplies.....	4	1			Very Good.
Providence Opera House.....	Amusement.....	21	5			Excellent.
Providence Ornamental Iron Works.....		6				Very Good.
Providence Paper Co.....	Paper, twine, bags, etc.	16	15	1		Excellent.
Providence Parlor Furniture Co.....		7	2			Good.
Providence Pearl Co.....		5				Very Good.
Providence Plumbing Supply Co.....		4	1			Excellent.
Providence Printing Co.....		5	3			Excellent.
Providence Public Market Co.—						
380 Westminster St.....	Market & groceries.....	264	102	8		Excellent.
380 Westminster St.....	Bakery.....	23				Excellent.
1890 Westminster St.....	Market & groceries.....	23	26			Excellent.
1890 Westminster St.....	Bakery.....	6				Excellent.
93 Weybosset St.....	Market and groceries.....	89	27	1		Excellent.
93 Weybosset St.....	Bakery.....	15				Excellent.
35 South Main St.....	Market and groceries.....	14	7			Excellent.
Providence Silk Hosiery Co.....		41	75		4	Excellent.
Providence Steel & Iron Co.....	Dies.....	70	3			Very Good.
Providence Stock Co.....	Jewelry.....	32	15	1		Excellent.
Providence Telephone Co.—						
Angell.....						
Broad.....						
Centredale.....						
East Providence.....						
Union.....						
West.....						
Providence Telephone Co.....	Central stock room.....	18	1			Excellent.
Providence Telephone Co.....	Construction dept.....	47				Excellent.
Providence Telephone Co.....	Contract dept.....	24	21	1		Excellent.
Providence Telephone Co.....	Engineering dept.....	28	2			Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Providence Telephone Co.....	General.....	45	72	1	.....	Excellent.
Providence Telephone Co.....	Maintenance.....	123	14	2	.....	Excellent.
Providence Telephone Co.....	Operator's school.....	.....	26	.....	.....	Excellent.
Providence Telephone Co.....	Plant, clerical.....	7	16	1	.....	Excellent.
Providence Telephone Co.....	Stable and garage.....	5	1	.....	.....	Excellent.
Providence Telephone Co.....	Traffic.....	7	19	.....	.....	Excellent.
Providence Tribune Co.....	Newspaper.....	82	13	3	.....	Excellent.
Providence Ventilating Co.....	.....	12	.....	.....	.....	Very Good.
Providence Wall Paper House.....	.....	4	2	.....	.....	Excellent.
Providence-Washington Insurance Co.....	.....	46	94	.....	.....	Excellent.
Providence Wholesale Drug Co.....	Drugs.....	5	3	.....	.....	Very Good.
Prudential Insurance Co.....	Insurance.....	19	2	.....	.....	Excellent.
Prudential Insurance Co.....	Insurance.....	36	2	.....	.....	Excellent.
Pugh Bros.....	Automobiles.....	53	3	.....	.....	Excellent.
Purcell, William.....	Restaurant.....	3	2	.....	.....	Good.
Puritan Bottling Co.....	Carbonated beverages.....	6	.....	.....	.....	Good.
Puritan Life Insurance Co.....	.....	8	4	.....	.....	Excellent.
Puritan Lunch Co.....	.....	6	.....	.....	.....	Excellent.
Putnam Foundry & Machinery Co.....	Boilers.....	15	1	.....	.....	Very Good.
Quality Hard Enamel Co.....	Enameling.....	3	5	1	.....	Very Good.
Quartaroli, Berardo.....	Tailor.....	5	.....	.....	.....	Very Good.
Quarters, W. F.....	Electroplates.....	4	4	.....	.....	Good.
Quayle, T. & Co.....	Jewelry.....	22	8	2	.....	Excellent.
Queen Dyeing Co.....	.....	414	79	2	2	Excellent.
Rathakeller Co., Inc., The.....	Food, wines & cigars.....	39	9	.....	.....	Excellent.
Rau Fastener Co.....	Fasteners.....	40	34	.....	.....	Very Good.
R. C. N. Fabric Co.....	Shoe laces.....	2	12	.....	.....	.....
Reardon & Company.....	Plumbing & heating.....	4	1	.....	.....	Very Good.
Redfern Mfg. Co., The.....	Closed.....	.....	.....	.....	.....	.....
Regal Shoe Co.....	.....	5	3	.....	.....	Excellent.
Reiner Co.—15 Dorrance St.....	Drugs.....	12	2	.....	.....	Excellent.
Reiner Co.—270 Thayer St.....	Drugs.....	6	.....	.....	.....	Excellent.
Reiner Co.—120 Washington St.....	Drugs.....	10	2	.....	.....	Excellent.
Reiner Co.—25 Westminster St.....	Drugs.....	7	.....	.....	.....	Excellent.
Reiner Co.—372 Westminster St.....	Drugs.....	16	3	.....	.....	Excellent.
Reiner Co.—15 Weybosset St.....	Drugs.....	1	4	.....	.....	Excellent.
Reliable Hard Enamel Co.....	.....	1	6	.....	.....	Excellent.
Reliance Mfg. Co.....	Jewelry.....	9	3	.....	.....	Excellent.
Remington, Horace & Son Co.....	Refiners.....	11	1	.....	.....	Very Good.
Remington Printing Co.....	.....	19	5	3	.....	Excellent.
Remington Typewriter Co.....	.....	10	4	.....	.....	Very Good.
Revere Hotel.....	.....	16	3	.....	.....	Excellent.
Revere Rubber Co.....	Rubber tires.....	788	591	11	80	Excellent.
Rex Manufacturing Co.....	Dies and hubs.....	8	9	2	1	Very Good.
Reynolds, C. S.....	Printing.....	7	2	.....	.....	Very Good.
Rhode Island Baking Co.....	Bakery.....	9	2	.....	.....	Excellent.
Rhode Island Braiding Machine Co.....	.....	37	1	1	.....	Excellent.
Rhode Island Brush Co.....	.....	5	4	.....	.....	Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Rhode Island Cap Co.		5	2			Very Good.
Rhode Island Co-operative Coal Co., The.	Coal and wood.	10				Good.
Rhode Island Co.—						
100 Fountain St.	Office.	62	64	1		Excellent.
582 Academy Ave.	Car House.	101				
Broad St.	Car House.	330				
Earl and Bucklin Sts.	Stables.	395				
446 Eddy St.	Freight House.	160		1		Excellent.
Elmwood Ave.	Car House.	193				
Manchester St.	Power House.	69				
North Main St.	Car House.	385				
Olneyville.	Car House.	291				
Traverse St.	Car House.	50				
Rhode Island Covering Co.	Asbestos covering.	5				Good.
Rhode Island Electric Equipment Co.		20	1			Very Good.
Rhode Island Fish Co.		10	1			Very Good.
Rhode Island Hospital Trust Co.		88	48	1		Excellent.
Rhode Island Label Works.	Printed labels.	12	3	1		Very Good.
Rhode Island News Co.	Periodicals.	12	13			Very Good.
Rhode Island Printing Co.		4	1			Very Good.
Rhode Island Rug Works.		14	6			Very Good.
Rhode Island Shell Fish Co.	Shell fish.	9	1			Good.
Rhode Island Supply Co.	Furniture.	9	2			Excellent.
Rhode Island Supply & Engineering Co.	Steam supplies.	48	11			Excellent.
Rhode Island Telephone & Electric Co.		8	1			Very Good.
Rhode Island Tool Co.		368	17	24		Excellent.
Rhode Island Welding Co.		5	1			Excellent.
Rhode Island Wholesale Grocery Co.		5	1			
Rhode Island Window Cleaning Co.		15	1			Good.
Rhode Island Wire Works.		20	1			Excellent.
Rhode Island Yarn Co.	Harness twines.	12	29			Very Good.
Richards, I. P. Co.	Punches, dies & couplings.	5	1			Excellent.
Richards, Joseph.	Furniture.	4	1			Very Good.
Richards, John R.	Monuments.	5				Very Good.
Richardson, J. W. & Co.	Jewelry.	31	2			Very Good.
Richmond Street Garage.		5	1			Very Good.
Richter Mfg. Co.	Closed.					
Riverside Worsted Mill—No. 1						
Riverside Worsted Mill—No. 2.						
Riverside Worsted Mill—No. 3. }	Men's suitings.	662	683	43	94	Excellent.
Roberts Mfg. Co.	Jewelry cases and boxes.	3	7			Very Good.
Robinson Bros.	Closed.					
Robinson, C. H.	Furniture.	24	5			Excellent.
Rocco, Felix.	Fruit and produce.	5				Good.
Roccheleau, M. F.	Dressmaking.		9			Excellent.
Rocky Point Oyster Co.		23				Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Rogers Co.	Men's clothing & furnishings	4	4			Excellent.
Roland & Whytock	Jewelry findings	4	16	1		Very Good.
Rondeau, Alicide	Bakery	6				Excellent.
Rose, R. L. Co.	Bakery	6				Excellent.
Rose, R. L. Co.	Groceries	54	27		1	Excellent.
Roseknit Hosiery Co. ....	.....	1	10			Excellent.
Rosendale, M. Co., The	Millinery	2	4			Excellent.
Rosenfeld Mfg. Co.	Shirts	2	49		3	Good.
Ross Mfg. Co.	Closed					
Rossi, A.	Tailor	3	2			Very Good.
Rothschild Mfg. Co.	Jewelry	12	8			Very Good.
Rounds, T. W. Co., Ltd., The	Leather findings	3	2	1		Very Good.
Roy, L. J. & Co.	Jewelry	6	10			Very Good.
Royal Carbonating Co. ....	.....	5				Excellent.
Royal Restaurant .....	.....	12	4			Excellent.
Royal Sales Co. ....	.....	10	2			Very Good.
Royal Theatre .....	.....	15	1			Excellent.
Rueckert, E. F.	Dies and tools	7	1			Very Good.
Rueckert Mfg. Co.	Jewelers' cases and trays	50	54	8	6	Excellent.
Rufrano, Charles	Bakery	3	2			Excellent.
Rumford Chemical Works	Special chemicals	146	115	22	14	Excellent.
Rust, H. B. Co.	Electrical supplies	9	1			Very Good.
Ryan, A. M. & Co.	Millinery		5			Excellent.
St. Clair Co., Inc.	Conf. and ice cream	5	15			Excellent.
Saccuerici, Henri	Coat maker	8	1			Very Good.
Sacs-Krolme Co.	Jewelry	1	4			Very Good.
Sampson & Murdock Co.	Directories	11	3			Excellent.
Samuels, H. C.	Millinery	2	10	1		Very Good.
Sanders Mfg. Co.	Chain goods	6	5			Excellent.
Saneck, M.	Millinery	3	2			Excellent.
Sanford, C. P.	Market	7	3			Excellent.
San Souci, J. O. Co.	Department store	29	41	2		Excellent.
Saugy, Augustus, Inc.	Bologna	16	2			Very Good.
Sawyer, Ephraim	Groceries	4		1		
Sayer Planing Mill Co. ....	.....	12				Good.
Scanevin & Potter	Electrical work	12	1			Very Good.
Scardusio, Michael	Wet wash	6	1			Fair.
Scattergood, A. T. Co.	Furniture & carpets	27	3			Excellent.
Schedley, Joseph	Restaurant	9	3			Excellent.
Schedley, William	Closed					
Schloes, William & Son	Milliners	5	29			Excellent.
Schock Bros.	Groceries	4	1			Very Good.
Schofield, Battley & Co.	Closed					
Schott, Suter Co.	Meat products	12				Excellent.
Schrieber, A. H. & Co.	Silver jewelry	22	21	3	1	Very Good.
Schwarzkopf & Co.	Jewelry	3	12	3	3	Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Scott, Henry L. & Co.	Machinery	34	2			Excellent.
Screw Machine Products Corp.		145	80	2	1	Excellent.
Scullian Bros.	Jewelry	8	3			Very Good.
Seaconnet Coal Co.	Coal	50				Good.
Senate Cafe		10				Excellent.
Service Dyeing & Winding	Dyeing & bleaching	4	16			Excellent.
Seymour & Hunt Co.	Teaming	28	2			Very Good.
Shabeck, John C.	Jewelry	10	26	6	4	Excellent.
Shepard Co., The	Department store	249	515	1	5	Excellent.
Shepard Co., The	Bakery, ice cream and confectionery	15	1			Excellent.
Siegel, Harry	Conf. and ice cream	1	4			Excellent.
Silverman Bros.	Jewelry	64	103	10	13	Excellent.
Simmons Braid Co.		2	6			Excellent.
Simpson Brainerd Co.	Jewelry	3	3	1	1	Very Good.
Singer Sewing Machine Co.		3	4			Excellent.
Skouras, James	Restaurant	4	1			Very Good.
Slater Shoe Store	Shoes	9	2			Excellent.
Slocomb, J. T. Co.	Machinist's tools	210	30	10		Excellent.
Smart & Austin Co.	Women's furnishings	1	5			Excellent.
Smith Bros.	Jewelry	22	35	4	3	Very Good.
Smith, C. Sydney Co.	Jewelry	14	7			Excellent.
Smith, E. E. Co.	Wood turning	37		3		Very Good.
Smith, George S.	Engraving	22	16			Excellent.
Smith, J. T.	Engraving and engine turning	5	4			Excellent.
Smith, Robert E. Co.	Coal	21	1			Good.
Smith-Holden Co.	Paints	6	2			Very Good.
Snell, E.	Macaroni bakery	5				Good.
Snowden Worsted Mills	Worsted yarn	3	29	2	3	Excellent.
Snow & Farnham Co.	Printers	19	8	4		Excellent.
Snow & Westcott	Gold jewelry	12	1	1		Excellent.
Society for Organising Charities			12			Excellent.
Solinger, J. & Co.	Jewelry	16	14	1		Very Good.
Smith-Gibbs Co.	Heating apparatus	16				Very Good.
Speidel, Fred	Closed					
Spencer, E. L.	Jewelry	57	38	1	2	Excellent.
Spooner, B. Franklin	Small wares & notions	6				Very Good.
Spooner, E. G.	Tool maker	9	13			Very Good.
Squires, John P.	Pork packers	10	2			Excellent.
Standard Auto Repair Co.		5				Excellent.
Standard Emblem Co.	Emblems	26	14	1		Very Good.
Standard Mill Supply Co.	Textile mill supplies	5	4			Good.
Standard Oil Co.	Petroleum and its products	15	1			Very Good.
Standard Printing Co.		17	6			Excellent.
Standish, Granville	Advertising agency	7	3			Excellent.
Stanley, C. F.	Shoe repairer	5				Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Stanley & McGibbons	Dresses and suits		8			Excellent.
Stappas & Stappas	Restaurant	4		1		Very Good.
Starkweather & Shepley	Insurance	76	186	1		Excellent.
Starkweather & Williams	Photo supplies, oils, paints & chemicals	18		1		Very Good.
Stead Mfg. Co.	Novelties	1	5			Excellent.
Steer Worsted Mill	Worsted yarn	119	116	29	40	Excellent.
Steinert, M. & Son Co.	Pianos, etc.	14	10	1		Excellent.
Stergis, Peter	Restaurant	4	1			
Sterling Coal Co.		7				Good.
Sterling Silver Mfg. Co., The		24	5			Excellent.
Stern, Louis Co.	Jewelry	34	42			Excellent.
Stevens & Co.	Optical goods	125	92	8	3	Excellent.
Stierle, Paul Co.	Fancy pads and display goods	5	12			Excellent.
Stoller Hilgers Silk Mills		14	13		3	Very Good.
Stone, C. Moulton	Calf skins	11	1			Excellent.
Strand, The	Theatre	14	8			Excellent.
Strand Bowling Alleys	Closed					
Sulsberger Bros	Jewelry	48	22			Excellent.
Summersfield Co.	Furniture	30	8			Excellent.
Summer Street Machine Shop		6				Bad.
Summit Avenue Grocery	Groceries	5				Excellent.
Sunderland, F. S.	Bakery	4	3			Excellent.
Sunshine Baking Co.		6	4			Excellent.
Sunshine Restaurant, The		3	3			
Swarts Mfg. Co.	Jewelry	2	4			Very Good.
Sweet, B. D.	Carpenter	5				Very Good.
Sweet, J. H. & J. B.	Hay and straw	4	1			Very Good.
Sweet, William S. & Son	Fruit	20	2			Very Good.
Swift & Co.	Meat, poultry, etc.	46	3	1		Excellent.
Swiss Cleansing Company		11	16		2	Excellent.
S. & D. Jewelry Co.		3	6			Very Good.
S. & S. Novelty Co.	Pearl and ivory	14	4	1	2	Very Good.
S. & W. Machine Shop		6		1		Excellent.
Taber & Temkin	Jewelry	2	3			Very Good.
Talcott, W. O.	Belt hooks	13	2	3		Excellent.
Tanner, Charles S. Co.	Starch, gums, etc.	12	3			Good.
Taylor, Charles F. Co.	Cop tubes	3	5			Very Good.
Taylor, O. H.	Watch and clock supplies	7	3			Excellent.
Taylor Card & Box Co.	Paper boxes	12	55	1	9	Excellent.
Taylor-Symonds & Co.		24	3			Excellent.
Terminal Warehouse Co. of R. I., Inc.		40	3			Excellent.
Tetreault, George	Enameler	5	8			Very Good.
Texas Company		126	6			Fair.
Textile Finishing Machine Co., Harris Ave.		205	2			Very Good.
Textile Finishing Machine Co., Pike Street		104		1		Excellent.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Thomas, Mrs and Miss Lambert.....	Gowns.....	5				Excellent.
Thompson, John R. Co.....	Bakery and lunch room	13	9			Excellent.
Thompson Hardware & Chandelier Co.....		9	1			Excellent.
Thompson & Thompson.....	Printing, jewelers' cards, etc.....	20	14	2		Excellent.
Thornton Bros. Co.....	Jewelry.....	27	6	3		Excellent.
Thurston Mfg. Co.....	Machinery.....	35	2	1		Excellent.
Tierney-Colgan Co.....	Plumbing.....	16	1			Excellent.
Tierney, P. & J. Co., The.....	Plumbing.....	9				Excellent.
Tilden-Thurber Co.....	Silverware, etc.....	58	34	9	1	Excellent.
Tillinghast, L. H. Supply Co.....	Plumbers' supplies.....	14	3			Excellent.
Tillinghast-Stiles Co.....	Cotton yarns.....	7	40		5	Good.
Tillotson Humidifier Company.....	Machinery.....	14	1			Excellent.
Tirochi, A. & L.....	Gowns.....	9				Excellent.
Tockwotten Co.....	Leather headed nails and buttons.....	2	3			Very Good.
Tourtellot, A. M.....	Fruit and produce.....	28	3			Very Good.
Tourtellot & Co.....	Produce.....	14	3			Very Good.
Tower, James H. Iron Works, Allen Ave.....		20				Excellent.
Tower, James H. Iron Works, Borden St.....		90	3			Very Good.
Townsend Braiding Co.....		3	38		2	Excellent.
Townsend, Thomas.....	Machine combs.....	5	4	3	2	Very Good.
Tripp & Olsson.....	Tailors.....	10	3			Excellent.
Tubular Rivet Stud Co.....	Closed.....					
Tuell, Fred M.....	Beef and provisions.....	8	1			Excellent.
Turbitt & Co.....	Mineral waters.....	4	1			Very Good.
Turner Centre Dairying Association.....	Butter, cream & eggs.....	24	5			Excellent.
Tuttle & Stark.....	Jewelry.....	4	17			Excellent.
Uncs Manufacturing Co.....	Jewelry.....	38	21	2	1	Very Good.
Underwood Typewriting Co.....		7	3			Excellent.
Union Electric Supply Co.....		12	2			Very Good.
Union Furniture Co.....	Furniture and decorating.....	25	3			Excellent.
Union Hand Laundry.....		9	33	1		Very Good.
Union Motor Car Co.....	Closed.....					
Union Paper Co.....		12	3			Very Good.
Union Plating & Enameling Co.....		4	4	1	1	
Union Trust Co.....		36	9	1		Excellent.
Unique Findings & Supply Co.....	Jewelers' ornaments.....	5	1			Very Good.
United Coal Co.....	Coal.....	16				Good.
United Coal Co.....	Coal.....	30	2			Excellent.
United Importers Co., The.....		5				
United Overall Co.....		2	5			Good.
United States Finishing Co.....	Bleaching & finishing.....	872	82	14	18	Excellent.
U. S. Mfg. & Enameling Co.....		5	9			
U. S. Gutta Percha Paint Co.....		75	19	1		Excellent.
U. S. Oil & Supply Co.....	Oil and mill supplies.....	4	1			Excellent.
U. S. Ring Traveler Co.....		12	2			Very Good.

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		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Universal Braid Co.....	Candle wicks.....	2	4			Fair.
Universal Optical Corporation.....	Optical goods.....	30	30	3	1	Excellent.
Universal Plate & Wire Co.....	Gold plate & seamless wire.....	22	17			Excellent.
Van Allen & Co.....	Jewelry.....	3	2			Excellent.
Van Dyke, James Co.....	Teas and coffee.....	2	4			Very Good.
Vaughn, L. Co.....	Sash, doors & blinds.....	50	1			Excellent.
Vennerbeck & Class Co.....	Jewelry.....	18	2	1		Excellent.
Vesta Underwear Co., Inc.....	Underwear.....	25	137			Very Good.
Vester, Alfred & Sons.....	Metal ornaments.....	22	5	2		Excellent.
Vicario, Vincenzo.....	Bakery.....	5	2			Excellent.
Victor Shaw Ring Traveler Co.....		22	5			Very Good.
Vienna Restaurant.....		2	3			Excellent.
Vincent Mfg. Co.....	Jewelry novelties.....	4	7		1	Excellent.
Visitor Printing Co.....	Newspaper & printing.....	11	1			Excellent.
Vocalian Co., The.....	Closed.....					
Voe, George L. Mfg. Co., The.....	Jewelry.....	15	20		2	Very Good.
Wasenheimer Bros.....	Jewelry.....	33	21	1		Very Good.
Wachussetta Creamery Co.....		4	1			Very Good.
Waite Auto Supply Co.....		16	4			Very Good.
Waite-Evans Co.....	Jewelry.....	27	11	1		Excellent.
Waite-Threasher & Co.....	Jewelry.....	75	40	2	3	Very Good.
Waldorf Lunch Co. of Rhode Island—						
17 Byron St.....	Bakery.....	14	3			Excellent.
40 Dorrance St.....	Restaurant.....	8				Excellent.
19 Richmond St.....	Restaurant.....	5				Excellent.
111 Washington St.....	Restaurant.....	9				Excellent.
10 Westminster St.....	Restaurant.....	8				Excellent.
364 Westminster St.....	Restaurant.....	8				Excellent.
187 Weybosset St.....	Restaurant.....	15	3			Excellent.
Walker, Albert Co., The.....	Jewelry and watches.....	10	1			Excellent.
Walk Over Shoe Co.....	Shoes and rubbers.....	8	3			Excellent.
Wall, A. T. Co.....	Seamless wire & rolled plate.....	75	14	3		Excellent.
Walsham, Josiah Co.....	Jewelers' findings.....	12	1	2		Very Good.
Wanskuck Mills.....	Worsted.....	469	447	29	95	Excellent.
Ward-Corby Co.....	Bakery.....	163	5			Excellent.
Warren Teaming Co.....	General teaming.....	28	1			
Warwick Sterling Co.....	Silver novelties.....	11	2			Excellent.
Washington Hand Laundry.....	Closed.....					
Washington Restaurant.....		3	4			Excellent.
Washington Market.....		21	13			Excellent.
Wasilewski, B. & W.....	Bakery.....	5	1			Excellent.
Watkins, D. M. Co.....	Jewelers' findings.....	27	31		1	Very Good.
Watts F. W.....	Pattern maker.....	5				Very Good.
Weaver & Co.....	Paints and oils.....	10	2			Very Good.
Welsbach Co.....	Gas lamps.....	20	2			Excellent.
Welsh & McGreen.....	Stucco work.....	6	1			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Continued						
Westcott, Slade & Balcom Co.	Paints and oils	9	3	2		Good.
Western Electric Co.	Closed					
Western Union Telegraph Co.		47	37	11	1	Excellent
Westminster Bank.		20	1			Excellent
Westminster Tea Room & Cafeteria.			24			Excellent
Weybosset Jewelry Co.	Jewelry & silverware.	5	2			Excellent
Weybosset Pure Food Market.		54	26	18	4	Excellent
Weybosset Tailoring Co.		3	2			Very Good
Whaley, J. A. & Co.	Coal and wood.	9				Good.
What Cheer Beef Co.		12				Very Good.
What Cheer Braid Co.			4		1	Very Good
What Cheer Laundry.		56	80	1	2	Excellent
What Cheer Mutual Fire Insurance Co.		9	13			Excellent
What Cheer Printing Co.		11	3	1		Excellent
What Cheer Shirt Co.	Custom shirts.	5	6			Excellent
Wheeler & Chadbourns, Inc.	Manufacturers of optical goods.	7	3			Very Good
Whipple, F. W. & Co.	Butter, eggs, etc.	17	1			Excellent
White, John R. & Son, Inc.	Coal.	50				Good.
White, J. J. Mfg. Co.	Jewelry.	32	9			Very Good
White, Stillman Foundry Co.	Brass casting.	20				Very Good.
White, Z. Co.	Celluloid novelties.	4	3	1		Very Good.
Whitefield & Gilmore.		8	1			Excellent
White Stone Jewelry Co., The.	Jewelry.	4	2			Very Good
Whitfield, H. & H.	Shoe lacings.	2	2		1	Good.
Whitmore Shoe Shop.		3	3			Excellent.
Whitten Motor Vehicle Co.	Closed					
Wholey Boiler Works.		30				Good
Widess, C. M.	Wholesale groceries.	10	2			Very Good.
Wightman & Hough.	Jewelry.	60	33	1	2	Excellent.
Wilcox, D. & Co.	Jewelry.	11	1			Excellent
Wilcox, Wallace L.	Automobiles.	5	1			Excellent
Wild, S. S. & Son.	Jewelry.	3	15	1		Very Good.
Wildpret & Saacks.	Solid gold rings.	87	2	1		Very Good.
Willemin Mfg. Co., Inc.	Die sinkers.	19	11	3	1	Good
Wilhelm & Vogel.	Refining.	5				Good.
Wilkinson, C. A. Co.	Jewelry.	48	50	3	9	Excellent
Wilkinson, Edward & Co.	Carpenter.	24	1			Very Good
Williams & Anderson Co., The.	Jewelry.	66	76	1		Excellent
Williams, M. F. Co.	Jewelry.	64	84	1	1	Excellent.
Williams, W. W.	Jewelry.	4	1			Excellent
Williams & Payton.	Jewelry.	6	17			Excellent
Wilmarth, Frank L. Co.	Mfg. jewelers.	7	7	1		Very Good
Wilson, Frank A.	Enameling.	4	2	9		Very Good
Wilson Company.	Beef and provisions.	35	1			Very Good
Wilson & Mitchell.	Cigar manufacturer.	29	7			Good
Wing, Newton A.	Jewelry and tool making.	3	4			Very Good.
Winsor, F. E. & Co.	Fruit and produce.	9	1			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
PROVIDENCE—Concluded						
Winsor & Jerauld Mfg. Co.....	Machinery.....	60		3		Very Good.
Wirth, Jacob & Co., Inc.....	Bottled goods.....	25	2			Excellent.
Wixon & King.....	Jewelry.....	4	3		2	Very Good.
Wolcott Mfg. Co.....	Jewelry.....	29	22	1	1	Excellent.
Wolk Jewelry Co.....		6	1			Excellent.
Wolsterholms Mfg. Co.....	Jewelry.....	7	6			Excellent.
Woodmansee, William A.....	Groceries.....	6	1			Excellent.
Woolworth, F. W. Co.—285 Westminster.	5 and 10 cent store...	9	33			Very Good.
Woolworth, F. W. Co.—1991 Westminster.	5 and 10 cent store...	1	8			Excellent.
Workman, A. P. & Son.....	Jewelry.....	2	12			Very Good.
Wunderle, Philip.....	Enameling.....	5	9	1		Very Good.
W. W. Jewelry Co.....		5	4			Very Good.
Yale Jewelry Mfg. Co.....		8	13	1	1	Excellent.
Yen Nom Co.....	Restaurant.....	12				Excellent.
Ye Rose Studio.....	Photography.....	2	3			Excellent.
Young Bros.....	Mattresses.....	8	2			Good.
Young Bros.....	Paper boxes.....	30	63	6	6	Excellent.
Young, George F. & Bro.....	Tobacco and cigars.....	18	6			Excellent.
Youngs, Mrs. Marion.....	Fancy work & conf.....		5			Excellent.
Young, Leonard & Harrall Co.....	Stationery & conf.....	10	4			Very Good.
Young Women's Christian Association...	Restaurant.....	4	17			Excellent.
Z. & B. Enameling Co.....	Enameling jewelry...	2	10			Very Good.
RICHMOND						
ARCADIA.						
Arcadia Print Works.....	Bleaching, printing, dyeing & mercerizing	45	7	1		Excellent.
ALTON.						
Richmond Lace Works.....	Lace.....	76	43	5	4	Very Good.
CAROLINA.						
Carolina Mills.....	Woolens.....	57	18	3	1	Good.
HOPE VALLEY.						
Mystic Woolen Mills.....	Cotton worsteds.....	57	25	2	1	Good.
KENYON.						
Eastern Finishing Works, Inc.....	Waterproofing & finishing cloth.....	39	4	2		Excellent.
SHANNOCK.						
Columbia Narrow Fabric Co.....	Elastic webbing.....	58	41	6	6	Excellent.
WYOMING.						
Regina Spinning Co.....	Woolen yarns.....	18	2			Good.
SCITUATE						
ASHLAND.						
Ashland Mill.....	Sheeting.....	21	18		2	Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
SCITUATE—Concluded						
CLAYVILLE.						
Joslin Mfg. Co.	Shoe & corset laces.	24	12	.....	2	Good.
HOPE.						
Hope Co.	Sheetings.	124	86	15	6	Very Good.
Smith, Harry L.	Groceries.	5	1	1	.....	Very Good.
JACKSON.						
Jackson Mill.	Cotton.	22	15	.....	2	Good.
NORTH SCITUATE.						
North Scituate Cotton Mills.	Netting and dress linings.	84	44	4	2	Good.
Pentecostal Trades' School.	Brooms.	3	4	.....	.....	Very Good.
PONAGANSETT.						
Joslin Mfg. Co.	Cotton yarn.	19	12	1	1	Good.
Joslin Shoddy Mill.	Shoe strings.	7	6	.....	.....	Good.
RICHMOND						
Joslin Mfg. Co.	Shoe & corset laces.	20.	13	1	.....	Good.
SOUTH SCITUATE.						
Bobbin Factory.	Bobbins.	13	1	.....	.....	Very Good.
ROCKLAND.						
Joslin Mfg. Co.	Glazed yarn.	43	26	1	3	Good.
Rhode Island Co., The.	Prov. & Dan'l'n Dist.	59	.....	.....	.....	.....
SMITHFIELD						
ESMOND.						
Esmond Mills.	Blankets.	547	222	17	13	Excellent.
GEORGIAVILLE.						
Bernon Mills.	Twills and satins.	129	106	2	2	Excellent.
GREENVILLE.						
Greenville Finishing Co., Inc.	Bleaching and dyeing of cotton and piece goods.	23	39	.....	3	Excellent.
Namquit Worsted Co.	Cloth worsteds.	67	22	2	1	Excellent.
STILLWATER.						
Centredale Worsted Mill.	Worsted yarn.	36	48	1	6	Excellent.
Stillwater Grain Mill. ....	.....	12	.....	.....	.....	Very Good.
SOUTH KINGSTOWN						
PEACE DALE.						
Peace Dale Mfg. Co.	Worsted and woolen.	387	173	31	18	Good.
U. S. Railroad Administration.	Narragansett Pier.	36	3	.....	.....	.....

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
ROTH KINGSTOWN—Concl'd						
WAKEFIELD.						
Warragansett Laundry		2	3			Good.
Warragansett Times	Newspaper & printing.	8				Very Good.
Weldon, John T.	House finishing and storage.	4	1			Good.
Wicker, J. C.	General store.	4	1			Good.
Wakefield Mills Co.	Army blankets.	96	22	1		Good.
WERTON						
Wourn Mills	Cotton.	300	315	35	12	Excellent.
Wambly, George C.	Groceries and market.	3	1			Very Good.
Wuphrey, P. D.	Lumber.	11				Good.
Wiche, Victor	Groceries.	5				Good.
Wove Mill No. 2.	Cotton yarn.	37	32	7	20	Good.
Wone Bridge House		2	3			Very Good.
Walker Bros.	Groceries and market.	7	1			Very Good.
WARREN						
Wount, E. C.	Oysters.	5				Very Good.
Wutler Mfg. Co.	Braids.	3	3	1		Good.
Wouit Handkerchief Co.		1	20		2	Very Good.
Wrench Mfg. Co.	Thread.	18	46		10	Very Good.
Wreene, George T.	Oysters.	12				Very Good.
Wynn Rubber Mfg. Co.		3	6			Very Good.
Wyalloy, John M.	Groceries.	4	1			Good.
Wount Hope Spinning Co.	Tire yarns.	51	43	3	5	Excellent.
Warragansett Woolen Mill.	Woolen yarns.	19	51	5	10	Excellent.
Welle, Mattin E.	Closed.					
W. Y., N. H. & H. R. R. Co.	Mechanical dept.	24				
Waquin, Napoleon.	Groceries.	4	1			Good.
Warker Mills No. 2.	Cotton.	188	173	11	8	Good.
Wack, John D.	Hay and grain.	14				Very Good.
Wrovidence Telephone Co.		6	11			Excellent.
Waples Coal Co.		10				Very Good.
Wwise Textile Co.	Sanitary goods.	4	15		3	Very Good.
Warren Handkerchief Co.		2	4			Very Good.
Warren Mfg. Co.	Cotton cloth & yarn.	718	399	48	43	Very Good.
Warren Oyster Co.	Oysters.	11				Very Good.
WARWICK						
APPONAUG.						
Wapponaug Co.	Bleaching & printing.	270	64	13	2	Very Good.
Woslow & Blade.	Burned.					
Warwick Lumber Co.		5				Very Good.
CHIPPEWANOXETT.						
Wallaudet Air Craft Corporation.		568	100	3	3	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
WARWICK—Concluded						
COWESSETT.						
Warwick Coal Co.		8				Very Good.
HILLSGROVE.						
Elisabeth Mill No. 1.	Thread yarn.	120	193	18	20	Very Good.
R. I. Fitting Co.	Pipe fittings.	44				Excellent.
R. I. Malleable Iron Works.	Castings.	208	22	2	3	Excellent.
LONGMEADOW.						
Dodge, David R.	Oysters.	6				Very Good.
OAKLAND BEACH.						
Castiglioni Co.	Jewelry.	4	3	4	1	Very Good.
Oakland Beach Casino.	Confectionery.	20				Very Good.
PAWTUXET.						
Vogel, M.	Cafe.	1	4			Excellent.
Wilbour, B. T. Cash Grocery.		4	1			Excellent.
PONTIAC.						
Pontiac Bleachery.		118	46	9	2	Good.
Pontiac Mill.	Cotton.	189	83	8	9	Good.
Pontiac Store.	General store.	5	1			Excellent.
WARWICK—ROCKY POINT.						
Harrington, R. A.	Hotel.	15	14			Excellent.
Lyon, C. E.	Shore dinners.	40				Excellent.
Meixner Bros.	Conf. & corn crisp.	3	3			Excellent.
Paine, F. E.	Groceries.	5	1			Excellent.
Providence Telephone Co.			7			Excellent.
WESTERLY						
Andrews & Co.	Coal.	7	2			Very Good.
Armour Co.	Meats.	5				Excellent.
Bannon, Thomas J.	Drugs.	3	2	1		Excellent.
Barbour, C. M. & Co.	Drugs.	6				Excellent.
Bentley, Clark Auto Co.	Garage.	5	1			Very Good.
Clark, Milo M.	Market.	5	1			Excellent.
Coduri, Joseph Granite Co.		45				Good.
Columbia Granite Works.	Monuments.	12				Good.
Davey & Maxwell.	Plumbing.	4	1			Excellent.
Drysdale, Robert & Co.	Plumbing.	5				Excellent.
Edmond, J. T. Co.	Groceries.	5	1			Excellent.
Farrell, A. & Sons.	Monuments.	5				Good.
Federal Felting Co.		35	10			
Fenslon, Edward J.	Bakery.	5	2			Very Good.
Fisher Bros.	Dry goods.	2	16	1		Excellent.
Flynn, Maurice.	Monuments.	5				Good.
Haswell, F. F. & Sons.	Groceries.	8	2			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
WESTERLY—Continued						
Hotel Martin		2	3			Excellent.
Industrial Trust Co.	Banking	7	2			Excellent.
Kenyon, H. T. & Co.	Builders & contractors.	16				Very Good.
Kimball & Combe Co.	Monuments	7				Good.
Knight, E. F.	Restaurant	2	3			Very Good.
Mohican Co.	Groceries and bakery..	4	6			Excellent.
Minchen, William	Bakery	3	2			Excellent.
Moore, George C. Co.	Elastic webbing	67	120	9	37	Excellent.
New England Granite Works ..		193	2	3		Good.
Opie, P. H. Co., The.	Dry goods	5	40	2		Excellent.
Rhode Island House		6	3			Excellent.
Richmond, C. W.	Ice cream	4	2			Excellent.
Rueter, S. J.	Closed					
Segar, William Co., The.	Groceries	5	3			Excellent.
Sherman, R. A. & Sons	Lumber	37	2	1		Very Good.
Smalley, Henry C.	Pink and red granite..	12	2			Good.
Smith Granite Co.	Monuments	111	1			Good.
Spa, The	Ice cream and conf.	2	6			Excellent.
Stantons Bazaar	Silverware, crockery & glassware	3	2			Very Good.
Westerly Automatic Telephone Co.		13	14			Excellent.
Westerly Daily Sun	Newspaper	17	6			Excellent.
Westerly Furniture Co.		8	1			Excellent.
Westerly Light & Power Co.		30	7	1		Excellent.
Westerly Lumber Co.	Lumber	7				Excellent.
Westerly Textile Co.	Netting	55	80	10	4	Very Good.
Whitall Electric Co.	Electrical supplies	15	2			Excellent.
Willard, C. W. Co.	Hardware	4	1			Excellent.
Woolworth, F. W. & Co.	5 and 10 cent store	1	7			Very Good.
BRADFORD.						
Bradford Dyeing Association	Dyeing, bleaching and finishing	208	32	8	7	Excellent.
Crumb Quarry Co.	Granite	50	1			Good.
PLEASANT VIEW.						
Pleasant View Hotel		2	5			Excellent.
Spooner, Frank	Confectionery	1	5			Excellent.
POTTER HILL.						
Pawcatuck Woolen Mill	Woolen	90	46	3	4	Good.
WATCH HILL.						
Barber, Edwin	Ice cream	3	2			Excellent.
Columbia Hotel	Closed					
Littlefield, Henry A.	Restaurant	3	7			Excellent.
Narragansett House		2	5			Excellent.
Ocean House		105	79	2		Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom- en.	Boys under 16.	Girls under 16.	
WESTERLY—Concluded						
WATCH HILL—Concluded						
Plimpton Hotel.....		12	17			Excellent.
Segar, William & Co.....	Groceries.....	5	3	1		Excellent.
WHITE ROCK						
White Rock Mills.....	Cotton.....	129	81	12	7	Good.
White Rock Store.....	Groceries.....	4	1			Good.
WEST WARWICK						
ARCTIC						
Arctic Cabinet Works.....	Lumber.....	27				Good.
Arctic Mill.....	Cotton.....	116	102	13	14	Good.
Belanger, Benjamin.....	Groceries.....	6				Very Good.
Chase, I. F. & Sons.....	Printers.....	4	1	1		Very Good.
Dellobbe, John H.....	Bakery.....	15	1			Very Good.
Biltmore, The.....	Restaurant.....	5				
Joubert, A. L.....	Groceries.....	3	2			Very Good.
Lefebvre, H. F.....	Dry goods.....	1	6			Excellent.
Maynard, John B.....	Groceries.....	4	1			Very Good.
Maynard, Joseph.....	Groceries.....	4	1			Very Good.
Metropolitan Life Insurance Co.....		16	2			Very Good.
Northup & Whitman.....	Groceries.....	5			1	Excellent.
Olevson Bros.....	Clothing.....	3	6			Very Good.
Pawtuxet Valley Daily Times.....	Newspaper.....	6	1			Excellent.
St. Onge, S.....	Dry goods.....	11	3			Excellent.
Sinnott Bros.....	Dry goods.....	6	26			Excellent.
Woolworth, F. W. & Co.....	5 and 10 cent store.....	2	7			Very Good.
CENTREVILLE						
Archambault, Joseph B.....	Grain and hay.....	6				Very Good.
Centreville Mill.....	Shade cloth and sheet- ing.....	168	114	21	21	Very Good.
Champlin Lumber Co.....		15	1			Very Good.
Forsyth, R. & Son.....	Grain.....	8	1			Very Good.
Kent Mfg. Co.....	Wool worsteds.....	60	44		1	Excellent.
Knight, B. B. & R.....	Groceries.....	4	1			Excellent.
Northup Grocery Co.....	Groceries.....	5				Excellent.
Tellier, John B.....	Groceries.....	6	1			Very Good.
Warwick Mills.....	Lawns.....	370	412	35	43	Excellent.
CLYDE.						
Clyde Bleachery & Print Works.....		231	33	61	2	Good.
Duke, Charles & Co.....	Groceries.....	9				Excellent.
Rhode Island Co.....	Car House.....	91				
CROMPTON.						
Crompton Co.—Fustian Dept.....	Corduroys and velvets.....	293	60	3		Good.
Crompton Co.....	Corduroys and velvets.....	354	284	28	24	Excellent.
New System Wet Wash.....		3	2			Very Good.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
WEST WARWICK—Concluded						
LIPPITT.						
Blanchard W. F.	Groceries.....	9	1			Very Good.
Lippitt Mill	Cotton.....	47	41	6	3	Excellent.
NATICK.						
Knight, B. B. & R.	Groceries.....	4	2			Excellent.
Nailloux, Ernest J.	Groceries.....	5	2			Excellent.
Natick Mill	Cotton.....	486	325	30	40	Good.
PHENIX.						
Conley, J. C. & Co.	Wholesale liquors.....	6	1			Very Good.
Hope Company	Cotton.....	121	94	19	8	Excellent.
Morrell, A. J.	Groceries.....	4	1			Very Good.
Phenix Electric Co.	Electrical supplies.....	14				Very Good.
Phenix Lace Mills		34	26	4	6	Very Good.
Phenix Public Market.....	Groceries.....	8				Very Good.
RIVERPOINT.						
Arnold, William H.	Bottled goods.....	10				Excellent.
Brayton, L. Foundry Co.	Grey iron castings.....	39	1			Good.
Carroll Bros.	Groceries.....	8				Excellent.
Continental Finishing Co.	Dyeing and finishing ..	18	7		1	Good.
Cowen Braid Mfg. Co.	Shoe laces.....	8	32		3	Very Good.
Knight, A. W. & Son	Harness and teaming ..	13				Very Good.
Knight, B. B. & R.	Groceries.....	4	1			Excellent.
McCaughery Confectionery Co.	Conf. and ice cream.....	4	2			Very Good.
Pawtuxet Valley Textile Co.	Cotton back satin	21	17		3	Excellent.
Potter, F. E.	Grain mill	12	2			Excellent.
Providence Telephone Co.		4	12			Excellent.
Royal Mill	Sheetings.....	221	150	18	13	Good.
Thornton's Theatre.....		4	1			Excellent.
Valley Queen Mill	Sheetings and cambric ..	77	58	1	4	Good.
Warwick Lace Works	Lace.....	37	21	3	17	Very Good.
WOONSOCKET						
American Railway Express.....		22	3			Excellent.
Alaace Worsted Co.	Worsted yarn	138	169	16	12	Excellent.
American Paper Tube Co.		70	71	5	59	Excellent.
American Wringer Co.		460	13	20		Excellent.
Anchor Webbing Co.		18	48	1	5	Excellent.
Armour Co.		17				Excellent.
Arseneau & Son	Closed.....					
Barnai Worsted Co.	Worsted.....	98	50		1	Very Good.
Begin Bros.	Dry goods.....	1	9			Excellent.
Belisle Bros.	Bakery.....	14	2			Excellent.
Beliveau, A. P.	Electrical contractor ..	4	1			Very Good.
Berard Bros.	Groceries.....	5				Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Women.	Boys under 16.	Girls under 16.	
WOONSOCKET						
Berard & North.....	Drugs.....	4	1			Excellent
Bernard, Miss V.....	Millinery.....		8			Excellent
Bernon Wet Wash Laundry.....		7	1			Very Good
Blackstone Valley Gas & Electric Co.....		93	9			Excellent
Boucher-Tetu Co., The.....	Shoes.....	3	3			Excellent
Boursier, Bastien.....	Teaming.....	5				Excellent
Brennan Bros.....	Scrap iron.....	5	1			Very Good
Bresnahan Grocery Co.....		55	9			Excellent
Bresnahan, P. J.....	Bakery.....	8	1			Very Good
Brodeur, Edward & Son.....	Wood work.....	11	1	1		Excellent
Brodeur, Louis.....	Bakery.....	14				Excellent
Buckley, C. T.....	Tailor.....	6	1			Excellent
Burdick, H. F.....	Confectionery.....	2	2		1	Excellent
Burke's Restaurant.....		3	5			Excellent
Burlingame, H.....	Meat market.....	4	1			Excellent
Caya, F. X.....	Closed.....					
Choquette Bros.....	Groceries.....	5	1			Excellent
City Brass Foundry.....		7				Very Good
City Fuel & Feed Co.....		8				Very Good
City Lumber Co.....	Doors and sash.....	8	1			Excellent
City Teaming Co.....		11				
Clinton Mfg. Co.....	Cotton.....	120	61	13	5	Very Good
Coleman & Croke.....	Cigars.....	7				Excellent
Colwell, F. A.....	Handkerchiefs.....	2	15		1	Excellent
Colwell, F. A.....	Paper boxes.....	8	10			Very Good
Cooke, A. S. Co.....	Household furnishings.....	11	2			Excellent
Cote, Joseph & Sons.....	Groceries.....	6	1			Excellent
Cronan, J. F.....	Ice cream.....	5				Good
Crystal Ice Co.....		5				Excellent
Cumberland Worsted Mill.....	Worsted yarn.....	3	23	1	5	Excellent
Daigneault, G.....	Wood and coal.....	7				Excellent
Daigneault, Godfrey.....	Planing mill.....	30	1			Very Good
Darling Garage.....		8	1			Very Good
Darling, C. H.....	Hardware.....	6	2			Excellent
Demers, Emery.....	Bakery.....	4		1		Excellent
Desrocher, Henri.....	Drugs.....	4	1			Excellent
Desaulniers, G. L.....	Teas and crockery.....	3	2			Excellent
Desjarlais, Camille P.....	Closed.....					
Desjardins, J. L.....	Bakery.....	4	1			Good
Desrocher, Albert.....	Drugs.....	4	1			Excellent
Desrumont, Jules Worsted Co.....		151	175	16	7	Excellent
Dextras & Son.....	Closed.....					
Dion, Omer.....	Tailoring.....	3	3			Excellent
Dunn Worsted Mills.....	Fine Worsted.....	238	128	1	5	Excellent
Eagle Mills.....	Fancy cotton.....	177	102	1		Very Good
Eastern Construction Co.....	Contractors.....	60	1			Excellent
Economy Handkerchief Co.....		3	26		4	Excellent
Emidy Bros.....	Bakery.....	12	2			Excellent

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Women.	Boys under 16.	Girls under 16.	
SOCKET—Continued						
Dye Works	Piece dyeing	40	3			Excellent.
Co.	Top roll covering	6	4			Excellent.
all, The	Newspaper	32	6			Excellent.
Foundry Co.	Grey iron castings	52	2	1		Very Good.
Foundry & Engineering Works		8				Excellent.
	Clothing	2	3			Excellent.
Mills	Woolen and merino yarns	101	7		1	Very Good.
B. Co.	Paints, chemicals and oils	8	2			Excellent.
he	Millinery	1	5			Excellent.
ye Works		20	1			Fair.
sted Co.	Yarns	235	165	20	25	Excellent.
J.	Fruit	5	1			Excellent.
W. M.	Restaurant	7	2			Excellent.
S.	Tin cylinders	5				Excellent.
A.	Dry goods	2	5			Excellent.
ill	Dyeing of worsted cloth	15				Good.
sted Co.	Worsteds	30	26	4	4	Excellent.
Co.	Coal and wood	21				Excellent.
Knitting Co.	Jerseys & bathing suits	12	24	1		Excellent.
xander	Restaurant	3	6			Excellent.
n Tea Store	Tea and coffee	5				Excellent.
M.	Top roll covering	9				Excellent.
Glove Co.	Cotton gloves	2	11	1	4	Excellent.
anning Co.	Woolen and merino yarns	189	44	2	2	Excellent.
xtile Co.	Silks and satins	96	199	2	6	Excellent.
owry Co., The	Department store	40	85			Excellent.
m Reed & Harness Co.		4		1		Very Good.
lix	Teaming	10	1			Excellent.
ge	Market	4	3			Excellent.
mandie		2	3			Excellent.
x & Suit Co.		1	5			Excellent.
Trust Co.		8	2			Excellent.
seph	Jewelers	4	2			Excellent.
Rocheleau Co.	Clothing	5	1			Excellent.
orge C.	Machine jobber	5				Very Good.
Worsted Co.	Worsted top and yarn	413	229	46	31	Very Good.
ohn B.	Liquors	17	2			Excellent.
e Publishing Co.	Newspaper	17	2	1		Excellent.
St. Jean Baptiste d'Amerique		11	5			Excellent.
inning Co.	Cotton yarn	197	313	35	50	Excellent.
E.	Tailor	5	1			Excellent.
T. & T. Co.	Transferring and teaming	68	1			Excellent.
Knitting Co.	Underwear	16	68	1	6	Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
WOONSOCKET—Continued						
Liberty Tool & Gauge Works.....	Mfg. tools & gauges...	24	1	1		
Lippitt Woolen Co.....	Worsted.....	157	109	5	14	Very Good
Longley, C. E. & Co.....	Clothing.....	5	1			Excellent
Lowland Worsted Co.....	Yarn.....	28	58	6	13	Excellent
Lussier, P.....	Blacksmith.....	7				Very Good
McCarthy, Dry Goods Co.....		25	80			Excellent
Mackey, George & Son.....	Dyeing.....	3	2	1		Very Good
Macrodie Fiber Co.....	Fiber spools.....	19	1	2		Very Good
Mailoux, J. C. & Son.....	Department store.....	16	17			Excellent
Manchester Co.....	Corduroy.....	38	81			Excellent
Manufacturers Power Co.....		7				Excellent
Manville Co.—Globe Mill.....	Cotton.....	220	150	15	3	Very Good
Manville Co.—Nourse Mill.....	Cotton.....	170	201	9	6	Excellent
Manville Co.—Social Mill.....	Cotton.....	478	388	28	18	Excellent
Marioni, Victor.....	Bakery.....	4	1			Very Good
Marrah, J. W.....	Meat & provisions.....	5				Excellent
Martin, M. A.....	Shoes.....	5	1			Excellent
Marty, C. H.....	Dry goods.....	4	12	3		Excellent
Mee, Edward & Sons.....	Bottling liquors.....	17				Excellent
Mee, P. J.....	Coal and wood.....	6				Excellent
Metropolitan Life Insurance Co.....		21	3			Excellent
Meunier, J. & Son.....	Wholesale produce.....	4	1			Excellent
Miller, G. H.....	Coal.....	5	1			Excellent
Milot Bros Company.....	Hay and grain.....	3	2			Excellent
Model Dyeing & Printing Co.....		16				Fair
Model Spinning Co.....	Woolen yarns.....	10	1			Very Good
Modern Shoe Store.....	Shoes.....	3	3			Excellent
Monahan Hardware Co.....	Hardware.....	4	1			Excellent
Montrose Woolen Co.....	Worsted and woolen.....	128	101	2	4	Excellent
Monument House.....		7	5			Excellent
Morse & Brook.....	Hats and trousers.....	5	15	1		Excellent
Mowry, A. Co.....	Hay and grain.....	15	2			Excellent
Mullen, James & Co.....	Furniture.....	6	2			Excellent
Mulvey, Peter B. Plumbing Co.....		18	3			Excellent
Murray, Thomas P.....	Granite.....	6				Excellent
National Biscuit Co.....		6				Excellent
National Globe Bank.....		5	2			Excellent
New England Coal Co.....		32	4			Excellent
Model Laundry.....		7				Very Good
Nickel Theatre, The.....		3	2			Excellent
Novelty Knitting Co.....	Cotton worsted.....	3	27	2	3	Excellent
Nyansa Mill.....	Fancy cotton yarn.....	269	342	28	43	Excellent
N. Y., N. H. & H. R. R.....	Freight House.....	57	8			
O'Donnell, F. P.....	Plumbing.....	5				Very Good
O'Donnell, P. J. & Sons.....	Hides and tallowes.....	6	1			Very Good
Park Spring Dyeing & Bleaching Co.....		17	6			Excellent
People's 5 and 25 Cent Store.....	Variety.....	1	6			Excellent
People's Laundry.....		6	1			Very Good

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Women.	Boys under 16.	Girls under 16.	
SOCKET—Continued						
and Pad Co.	Harness findings	22	10			Excellent.
ance Worsted Co.	Fancy worsted	197	157	9	9	Excellent.
Savings Bank		10	2			Excellent.
Confectionery Co.	Conf. and ice cream	4	2			Excellent.
ce Knitting Co.	Jerseys and bathing suits	6	13	1	2	Excellent.
ce Telephone Co.		15	41			Excellent.
J.	Men's union & bathing suits	2	13			Excellent.
A. B.	Wholesale beef	4	1			Excellent.
Knitting Co.	Linings	79	32	3	1	Excellent.
ar K. Est.	Cotton waste	24	14			Very Good.
ar K. Est.	Carded cotton	15				Very Good.
land Co., The—Park Avenue.	Car House	11				Excellent.
land Co., The—Social Street.	Car House	76				Excellent.
land Knitting Co.	Bathing suits and jerseys	1	10			
anning Co.	Woolen and worsted	248	28	1	2	Very Good.
t Dyeing Co.	Custom dyeing	60	19			Fair.
& Brown	Drugs	12	3			Excellent.
Worsted Co.	Worsted yarn	54	204	17	25	Excellent.
ig. Co.	Closed					
orsted Mills	Worsted	193	131	1		Excellent.
Shuttle Co.		113	9			Excellent.
& Co.	Closed					
& Maxon	Groceries	4	1			Excellent.
ool Co.	Metal machine work	58	1			Very Good.
E. M. Co.	Hardware	9				Excellent.
eatre	Amusement	4	2			Excellent.
ah Market	Groceries	5	1			Excellent.
Laundry	Burned					
Oil Co. of New York		11				
ery		8	2			Excellent.
oonising Co., The.	Scouring and carbonising	14				Excellent.
tric Co., The		10	1			Excellent.
Handkerchief Co.		1	35		6	Excellent.
Hotel		10	7			Excellent.
C. & A.	Millinery		5			Excellent.
C. & Co.	Provisions & produce	19	1			Excellent.
Worsted Co.	Worsted yarn	16	67	10	33	Excellent.
, Aldore J.	Closed					
& Brodeur	Hardware	8	1			Excellent.
ce Mfg. Co.	Machinery & tools	817	156	18	2	Excellent.
J. F.	Bakery	9				Excellent.
anderkerchief Co.		4	42		1	Excellent.
Worsted Company	Corduroy	4	35	11	6	Excellent.
ett, Francois.	Bakery	5				Excellent.

NAME OF ESTABLISHMENT.	Nature of Business and Goods Manufactured or Sold.	NUMBER EMPLOYED.				Sanitary Condition.
		Men.	Wom-en.	Boys under 16.	Girls under 16.	
WOONSOCKET—Concluded						
Voelker, George W. & Co.....	Textile machinery.....	8	1			Excellent.
Wales, H. T. Co.....	Teaming.....	12				.....
Wales & Smith Baking Co.....		25	2			Good.
Washington Bowling Alleys.....		2		1		Excellent.
Weeks Furniture Co.....	House furnishings.....	6	2			Excellent.
White Cash Market.....	Groceries and market.....	17	4			Excellent.
Woolworth, F. W. Co.....	5 and 10 cent store.....	4	21			Excellent.
Woonsocket Brush Co.....		7	10	1	3	Excellent.
Woonsocket Co., The.....	Restaurant and rooming house.....	2	5			Excellent.
Woonsocket Comb Co.....		8		6		Excellent.
Woonsocket Dyeing & Bleaching Co.....	Custom dyeing.....	58	15	1		Very Good.
Woonsocket Falls Mills.....	Plush.....	69	14			Excellent.
Woonsocket Fruit & Produce Co.....		6	1			Excellent.
Woonsocket Home Service.....	Liquors.....	4	1			Excellent.
Woonsocket Hotel.....		5	4			Excellent.
Woonsocket Institution for Savings.....		9	2			Excellent.
Woonsocket Lumber Co.....	Doors and sash.....	6	1			Excellent.
Woonsocket Machine & Press Co.....		629	24	11		Excellent.
Woonsocket Motor Mart.....		7				Excellent.
Woonsocket Napping Machinery Co.....	Textile machinery.....	75	2			Excellent.
Woonsocket Paper Box Co.....		2	2		1	Excellent.
Woonsocket Rubber Co.....	Rubber shoes.....	697	590	28	67	Excellent.
Woonsocket Shuttle Co.....	Closed.....					.....
Woonsocket Spinning Co.....	Woolen and merino yarn.....	19	2			Excellent.
Woonsocket Supply Co.....	Mill supplies.....	28	2	1		Excellent.
Woonsocket Wagon Mfg. Co.....		50	3			Good.
Woonsocket Wholesale Grocery Co.....		6	1			Excellent.
Woonsocket Wet Wash Laundry.....		6				Very Good.
Woonsocket Wood & Coal Co.....		5				Excellent.
Woonsocket Worsted Mills.....	Worsted yarns.....	75	180	16	33	Excellent.
Wrigley, Nelson M.....	Closed.....					.....

of Rhode Island and Providence Plantations.

FORTY-NINTH ANNUAL REPORT

OF THE

State Board of Pharmacy

MADE TO THE

GENERAL ASSEMBLY

AT ITS

JANUARY SESSION, 1919

PROVIDENCE:

1919

REPORT

To the Honorable the General Assembly of the State of Rhode Island, at its January Session, A. D. 1919.

In compliance with Chapter 178 of the General Laws of 1909, regulating the sale of medicines and poisons, the State Board of Pharmacy respectfully presents this its forty-ninth annual report upon the condition of pharmacy, together with a list of all persons registered as registered pharmacists and registered assistant pharmacists.

On February 5th, 1918, the new Board appointed by his Excellency, Governor R. Livingston Beekman, and approved by the Senate, composed of William J. McCaw, M. D., Michael H. Corrigan and Edward T. Colton of Providence; James T. Wright of Newport; Howard A. Pearce and Nicholas F. Reiner of Cranston; and William R. Fortin of Pawtucket, met and organized by the election of Nicholas F. Reiner of Cranston, as president, and Howard A. Pearce of Cranston, as secretary and registrar, each for the term of one year.

The Board has held nine meetings during the year for the transaction of business and the examination of candidates, and has examined thirty candidates.

	R. A. P.	Passed.	Failed.	Total.	Attendance.
Jan. 4					
Feb. 5	1	1		1	7
Mar. 5	7	5	2	7	7
Apr. 2	3	2	1	3	7
May 7	5	5		5	7
June 4	10	8	2	10	7
July 11					7
Oct. 1	2	2		2	6
Dec. 3	2	2		2	7
Total	30	25	5	30	

The names of 42 registered pharmacists and the names of 29 registered assistant pharmacists who failed to renew July 1, 1918, were stricken from the list.

At a special meeting July 11, and at subsequent meetings during the year the name of 29 registered pharmacists and nine registered assistant pharmacists were restored to the list. The unusual number failing to renew July 1, was owing in a great measure to war conditions. The registration of nine registered pharmacists and twenty-five registered assistant pharmacists who were absent from home in the military or naval service of the United States was renewed by the Board.

Four new stores were opened during the year.

Twelve stores were closed during the year.

Nine notices of dissolution of copartnership were filed.

Twelve changes of location have been granted during the year.

The names of thirteen registered assistant pharmacists were transferred to the list of registered pharmacists.

There are now 283 registered stores.

There are now 387 registered pharmacist.

There are now 262 registered assistant pharmacists.

A total of 648 registered pharmacists and registered assistant pharmacists.

Twelve have died during the year.

There are 118 registered pharmacists and 120 registered assistant pharmacists without location.

The Board again respectfully offers the following recommendation:

The great danger in the use of habit forming drugs makes it important that a law be enacted forbidding the manufacture and sale of any patent medicine containing opium or any of its derivatives or preparations. This enactment would require the constant services of an inspector to secure the proper observance of the law and your board respectfully recommends that such an office be created. The Board further recommends that legislation be enacted placing restrictions on the sale of paregoric.

A new narcotic law and an amendment to the pharmacy law was enacted which we append as a part of this report.

The board wishes to call the attention of the pharmacists to the following:

The law requires that the name of the registered pharmacist shall appear on all poison, prescription and drug labels. Trade names are insufficient.

As all preparations must conform to the standard of the Pharmacopoeia and National Formulary, it is necessary that every pharmacist should have a copy of the latest editions of these publications in each store.

Registration becomes null and void upon the conviction of the illegal sale of liquor.

The law requires that prescriptions shall be kept by the pharmacist.

No pharmacist has a right to open a store until his application has been granted by the Board.

Any pharmacist who changes location or withdraws his registration from a store must notify the Board of Pharmacy.

The Board again calls attention to Chapter 178, Section 1, which reads as follows:

Section 1. No person, unless a registered pharmacist, or registered assistant pharmacist in the employ of a registered pharmacist, or unless acting as an aid under the immediate supervision of a registered pharmacist or a registered assistant pharmacist within the meaning of this chapter, shall retail, compound or dispense medicines or poisons, except as hereinafter provided.

It is therefore apparent that persons who are not pharmacists must not compound or sell medicines or poisons during the absence of the registered pharmacist or registered assistant pharmacist.

If the registrar is notified of the death of pharmacists it will greatly assist him in the keeping of a correct record.

All of which is respectfully submitted,

WILLIAM J. McCAW,
JAMES T. WRIGHT,
NICHOLAS F. REINER,

President.

WILLIAM R. FORTIN,
MICHAEL H. CORRIGAN,
EDWARD T. COLTON,
HOWARD A. PEARCE,

Secretary and Registrar.

REGISTERED PHARMACISTS

Abbe, Charles G., 514 Broad street	Providence
Alianiello, Canio, 590 Charles street	Providence
Allen, Arthur E., 122 Taunton avenue	East Providence
Almy, Willis E.	Providence
Angell, Louis D., 245 Prairie avenue	Providence
Anthony, Edwin P., 178 Angell street	Providence
Anthony, Frank	Providence
Anthony, Jerome, 103 Ives street	Providence
Archambault, Albert, Lewis Block	Washington
Archambault, F. J., corner Mineral Spring and Smithfield avenues	Pawtucket
Armstrong, George T., 55 Academy avenue	Providence
Arnold, Fred W.	Providence
Arnold, William P.	Providence
Atkinson, Wm. H., corner Webster and Pocasset avenues	Providence
Austin, Alonzo O., 279 Broad street	Providence
Authier, Moise J., 938 Main street	Pawtucket
Bailey, William P.	Providence
Bakst, Adolph	Providence
Balcom, Walter L.	Providence
Bannon, William J., 10-12 Canal street	Westerly
Barbour, Lewis E., 18 Broad street	Westerly
Barker, H. Howard	Providence
Barnes, Clarence A.	Providence
Barrett, Owen E., 309 Smith street	Providence
Barrett, Owen E., 419 Smith street	Providence
Barrows, Fred H., 1349 Westminster street	Providence
Barry, P. H., Broadway and Japonica streets	Pawtucket
Barth, Alfred	Providence
Batcheller, Stephen E.	Providence
Beaupre, E. Arthur, corner Sayles and River streets	Woonsocket
Beland, Theode, 957 Main street	Pawtucket
Bennett, William S., 162 Main street	Warren
Berard, Henry, Jr., Main and Federal streets	Woonsocket
Berg, Carl V., 460 Westminster street	Providence
Bernard, Joseph A., Main street	Natick
Blanchette, Adelard, State Institution	Howard
Blanding, William O., 54-58 Weybosset street	Providence
Blumenkranz, Emil S.	Providence
Bonin, Romeo	Providence
Booth, Richard A. D., 143 Smith street	Providence
Boss, Herbert A.	Providence
Boston, Arthur W., 161 Chestnut street	Providence
Brad, George R.	Providence
Brassard, Joseph D. R., 919 Main street	Pawtucket
Brennan, James E., 5 North Union street	Pawtucket
Broad, Frank H.	Providence
Broderick, Paul C., 1336 Cranston street	Cranston
Brosseau, Phillip A.	Providence
Brown, Joseph Jr., 188 Main street	Woonsocket
Buckley, Timothy F., 129 Putnam street	Providence
Buckman, Foster D., 583 Central avenue	Pawtucket
Burr, Ernest J.	Providence
Burrows, William E., 21 Aborn street	Providence
Byrne, David J., 128 Broadway	Newport
Cadoret, Prime E.	Providence
Cahill, Joseph P., 381 Plainfield street	Providence
Cahill, William A., 397 Elmwood avenue	Providence

STATE BOARD OF PHARMACY

in, John M., 229 Spring street	.....Newport
on, Earl L., 841 Broad street	.....Providence
ell, William F., 137 Washington street	.....Central Falls
illo, Sylvestro	.....Providence
ll, Frederick L.	.....Providence
on, Charles O.	.....Providence
n, Carl G., 391 Smith street	.....Providence
ater, Fremont	.....Providence
ater, Joseph H.,	.....Providence
Thomas H., 1907 Westminster street	.....Providence
on, Charles E.	.....Arctic Centre
ley, James J.,	.....Providence
rton, Herbert L., 100 Broad street	.....Providence
Joseph B., 40 George	.....Pawtucket
Michael M., 415 Central avenue	.....Pawtucket
, Albert W., 62-64 South Main street	.....Providence
, Arthur W., 62-64 South Main street	.....Providence
, Thomas J., 4-6 Benefit street	.....Providence
J. Wilkinson, 417 Westminster street	.....Providence
Chester M., 485 Bullocks Point avenue	.....Riverside
, Louis, 236 Charles street	.....Providence
ct, Cosmo, 605 Douglas avenue	.....Providence
Charles M., 302 Thames street	.....Newport
, Edward T., 465 Pine street	.....Providence
n, George E., 106 Broadway	.....Newport
lly, John F., 304 Broad street	.....Central Falls
gan, Michael H., 1654 Westminster street	.....Providence
lo, Joseph E., Main street	.....Block Island
William A., 1 Miller street	.....Warren
and, Alphonso B., 122 Broad street	.....Providence
inshield, Edward B.	.....Providence
ingham, Edward M., 963 Broad street	.....Providence
, Patrick, 265 Union avenue	.....Providence
Peter B., Exchange Place	.....Narragansett Pier
l, David L., Thames and Pelham	.....Newport
Willard M., 215 Academy avenue	.....Providence
zon, Joseph	.....Providence
uriers, Emile L.	.....Providence
asquale, Emilio, 41 Aborn street	.....Providence
chers, Albert, 232 Main street	.....Woonsocket
chers, Henri, 3 Cumberland street	.....Woonsocket
ng, Alfred F., 203 Camp street	.....Providence
Wolf, Howard K., 162 Main street	.....Warren
David L., 1538 Smith street	.....North Providence
rty, Clarence P., 31 Beacon avenue	.....Providence
rty, Thomas E., 1916 Westminster street	.....Providence
n, Martin, 734 Park avenue	.....Auburn
na, Frank E.	.....Providence
on, Lawrence A.	.....Providence
ey, Thomas M., 435 So. Main street	.....Providence
ning, Benjamin F., Jr., 42 Broadway	.....Newport
ning, George F., 42 Broadway	.....Newport
kwater, John B.	.....Providence
ar, George N., 394 Westminster street	.....Providence
ante, Joseph, 139 Ninth street	.....Providence
n, Nicholas J., Pleasant Grove street	.....Lonsdale

Dwan, Thomas S., cor. Broad and Pleasant streets	Lonsdale
Dympna, Sister Mary	Providence
Earnshaw, Arthur A., 70 Main street	East Greenwich
Earnshaw, Elmer E., 70 Main street	East Greenwich
Edwards, Lemuel E., Odd Fellows' Hall	Pascoag
Egan, William S.	Providence
Eklund, Edward N.	Providence
Ellis, Herbert J., 90 Main street	Woonsocket
Evison, George A.	Providence
Fairbanks, George W., 394 Wickenden street	Providence
Falcon, Hector P., 222 Broad street	Providence
Farron, James W.	Providence
Farron, Joshua	Providence
Fenner, Albert, 869 Westminster street	Providence
Fenner, Alexander W.	Providence
Ferri, Vincent J., 460 Atwells avenue	Providence
Finley, Francis H., 49 Camp street	Providence
Flower, Claude E., 277 Plainfield street	Providence
Fortin, William R., 40 Broadway	Pawtucket
Fox, Louis A., 330 North Main street	Providence
Fraser, Alexander S.	Providence
Fratantuono, Joseph, 106 Knight street	Providence
Frigault, Wilfred A., 712 Broadway	Pawtucket
Gallagher, Edward J., 654 North Main street	Providence
Gaskin, Peter J., cor. Titus and Broad streets	Valley Falls
Geddes, George H., Mendon Road	Ashton
Geissler, Edson O.	Providence
Gibbs, Charles W.	Providence
Gibson, J. Fred, 179 Westminster street	Providence
Gibson, J. Fred, 1349 Westminster street	Providence
Gibson, J. Fred, 343 Westminster street	Providence
Gilbert, Charles A., 210 Dean street	Providence
Gilbert, Frederick E., 91½ Branch avenue	Providence
Gilbert, Stanilas, 63 Cumberland street	Woonsocket
Gilson, Charles F., 2030 Smith street	Centerville
Glancy, Charles A.	Providence
Glancy, Edward L., 1661 Lonsdale avenue	Lonsdale
Glancy, Frank J.	Providence
Glavin, Robert E., 178 Broad street	Providence
Golini, William J., 1365 Plainfield street	Thornton
Goulais, Archie P.	Providence
Graton, Louis	Providence
Graham, John A., 116 Broadway	Providence
Greene, William H.	Providence
Greene, William R., Main street	Natick
Griffin, Daniel B., Main street	Wakefield
Groff, John E., R. I. Hospital	Providence
Guertin, Amie, 451 Broad street	Central Falls
Guny, Louis, 182 Charles street	Providence
Hagan, Edward, 64 Japonica street	Pawtucket
Hall, William W., 675 Atwells avenue	Providence
Hanaway, Owen J., 508 Plainfield street	Providence
Hand, William F., 119 Olo street	Woonsocket
Harrison, Herbert P.	Providence
Harrop, William, 244 Mineral Spring avenue	Pawtucket
Hart, Herbert L.	Providence
Hart, Philip J., 100 Pawtucket avenue	Pawtucket

Havens, George H., 383 Admiral street	Providence
Havey, Henry O., 675 Main street.....	Pawtucket
Haynes, Herbert, 159 Broadway	Providence
Helmer, William A., 92 Chestnut street	Providence
Hewlett, George W.	Providence
Higgins, C. Leo, 21 Broad street	Westerly
Himes, S. Winfield	Providence
Hougrand, Eugene, 278 Public street	Providence
Hobson, Samuel M.	Providence
Hough, Henry I., 613 Cranston street	Providence
Houtman, Edward, 60 Spring street	Manville
Hulme, Thomas R., 710 Cranston street	Providence
Hunt, Thomas E., 144 Thames street	Newport
Jackson, Frank A.	Providence
Jackvony, Albert H., 638 Charles street	Providence
Jean, Napoleon L.	Providence
Johnson, Alfred J., Jr., 386 Main street	Pawtucket
Johnson, James G., 1 Lincoln avenue	Riverside
Johnston, James E.	Providence
Jones, Fred H., 434 Dexter street	Central Falls
Jones, John L., Central street	Central Falls
Jones, Thomas H.	Providence
Kalkman, Henry A., 106 Broadway	Newport
Kalkman, Henry A., 475 Thames street	Newport
Kalkman, Henry A., 22 Washington square	Newport
Kane, Benjamin N., 1132 Broad street	Providence
Kane, Esther M., 183 Prairie avenue	Providence
Kayatta, Francis P.	Providence
Kayatta, Joseph P., 98J Broad street	Providence
Keighley, Frank R., 919 Cranston street	Providence
Keller, Charles A., 5 Quindnick street	Arctic
Kelley, Edward, 384 Cranston street	Providence
Kelley, James J., 137 Central street	Central Falls
Kelley, Walter W., 43 Broad street	Pawtucket
Lambert, Charles W., 452 Cranston street	Providence
Langlais, Thomas	Providence
Lamourcux, Alfred E., Main street	Quindnick
Lambert, Thomas J.	Providence
Larson, August, 57 High street	Westerly
Lavault, Roch, 7 Main street	North Tiverton
Lawlor, John B.	Providence
Leddy, James A., 257 Atwells avenue	Providence
Leith, Harvey I., 790 North Main street	Providence
Lincoln, Winthrop C., Elmwood and Park avenue	Auburn
Linton, Robert F., 4 Monument square	Woonsocket
Lisker, Samuel	Providence
Livingston, Henry J. D., 27 Child street	Warren
Lockwood, Frank E., Main street	Block Island
Lorah, James R., 141 Bellevue avenue	Newport
Louzon, Maurice J., 326 Weybosset street	Providence
Lowe, Charles E.	Providence
Lynch, Charles P., 258 Point street	Providence
MacCartney, William E., 159 Manton avenue	Providence
Mailhot, Louis L.	Providence
Malone, George H., 131 Regent avenue.....	Providence
Malone, Robert M., Memorial Hospital	Pawtucket
Malone, William E., Fountain square	Pascoag

Marcotte, Arthur D., 77 Broad street	Pawtucket
Marcus, Israel, 188 Atwells avenue	Providence
Markensohn,, Frank, 37 Camp street	Providence
Markensohn, Max, 139 Orms street	Providence
Martin, Joseph L., 137 Summit street	Pawtucket
Mason, Bradford A. W., corner Broad and Farragut streets	Providence
Mathewson, B. Elmer, 297 Hope street	Bristol
Matteo, Frank I.	Providence
Matteson, James, 71 Camp street	Providence
Matthews, Frederick G., 526 Pontiac avenue	Cranston
Matthews, Herbert D., 120 Washington street	Providence
Matthews, W. H., 62 Thames street	Newport
Mattison, Edgar F.	Providence
Maynard, Dona, 5 Railroad avenue	Pawtucket
McAllen, J. Arthur	Providence
McCann, Vincent L., 1184 North Main street	Providence
McCanna, Edward S.	Providence
McCaw, Arthur M., 458 Hope street	Bristol
McCaw, William J.	Providence
McCully, Samuel S., 209 Westminster street	Providence
McCully, Samuel S., 252 Westminster street	Providence
McCully, Samuel S., 108 Weybosset street	Providence
McCully, Samuel S., 225 Weybosset street	Providence
McCully, Samuel S., 47 Olneyville square	Providence
McCully, Samuel S., 220 Main street	Pawtucket
McCully, Samuel S., 124 Thames street	Newport
McDonald, James P., 523 Elmwood avenue	Providence
McDonald, Joseph L., 811 Eddy street	Providence
McGeough, John J., 187 South Main street	Woonsocket
McGorty, John B., 219 Manton avenue	Providence
McGrane, John F.	Providence
McGrane, William J. T.	Providence
McGunagle, Alexander, 527 Dexter street	Central Falls
McIntyre, William H., 187 Messer street	Providence
McNally, Peter A., 319 Broadway	Providence
McNally, Richard A.	Providence
McNally, William J.	Providence
Meade, Albert F.	Providence
Messier, J. Henry, 481 Broad street	Central Falls
Metzger, John, 230 North Main street	Providence
Meunier, Doria P., 169 Benefit street	Pawtucket
Meunier, Doria P., 749 Central avenue	Pawtucket
Mignacca, Antonio, 506 Broadway	Providence
Minto, John H.	Providence
Moore, Charles M., 58 Main street	Pawtucket
Moore, Joseph H., 377 Broadway	Providence
Morgan, George S., Corner Broadway and Exchange street	Pawtucket
Morgan, James E., 653 Dexter street	Central Falls
Morn, Wm. E., corner Mineral Spring avenue and Charles street	North Providence
Mullen, P. J. H., 235 Mineral Spring avenue	Pawtucket
Murphy, John A., cor. Walcott and So. Bend streets	Pawtucket
Myers, Andrew J., 248 Atwells avenue	Providence
Neary, John F., 83 Prairie avenue	Providence
Nichols, Mark S.	Providence
North, Joseph B., Main and Federal streets	Woonsocket
Northup, Lincoln B., 105 Westminster street	Providence
Northup, Lincoln B., corner Angell and South Angell streets	Providence

Walter E., 153 Ohio avenue	Providence
mor, John F., Jr., 784 Broadway	East Providence
mor, John J., 621 Main street	Pawtucket
, Thomas J., 550 Charles street	Providence
Arthur A.	Providence
, Edward T., 308 Thurbers avenue	Providence
, Gilbert R.	Providence
, T. Roswell, 5 Hartford avenue	Providence
, William T., 559 Charles street	Providence
on, John D., 1437 Broad street	Providence
George W., 11 Warren avenue	East Providence
, Howard A., 370 Elmwood avenue	Providence
Samuel L.	Providence
Manton D.	Providence
s, James L.	Providence
t, William A., 701 Main street	Pawtucket
oo, Charles L., 279 Pocasset avenue	Providence
Fred H., 226 Main street	Pawtucket
, William R.	Providence
Arthur N., 229 Vernon street	Woonsocket
Bryce W., Baker and Main streets	Warren
ge, Monroe W.	Providence
, F. X. Leonidas	Providence
s, James A.	Providence
Edward J.	Providence
, Nicholas F., 1752 Broad street	Edgewood
, Nicholas F., Washington and Dorrance streets	Providence
, Nicholas F., 25 Westminster street	Providence
, Nicholas F., Washington and Mathewson streets	Providence
, Nicholas F., 372 Westminster street	Providence
r, Nicholas F., Meeting and Thayer streets	Providence
gton, Amasa E.	Providence
d, Aime E., Buttonwoods road	Oakland Beach
s, Edwin D., 236 Charles street	Providence
s, Oscar, 46 North Main street	Warren
son, Frederick, 944 Manton avenue	Providence
weig, Herman O., 765 Westminster street	Providence
Joseph C.	Providence
reau, Henry, 188 Main street	Woonsocket
, Brayton A.	Providence
e, Augustus H., 691 Broad street	Providence
ll, William, Jr.	Providence
Patrick J., 78 Thames street	Newport
, James P.	Providence
cia, Angelo, 1723 Cranston street	Cranston
rn, Arthur P., 110 Elmwood avenue	Providence
er, Alphonse B.	Providence
d, J. B. H., 10 Rathbun street	Woonsocket
er, Albert E., Broad and Pacific streets	Central Falls
Henry B., 115 Washington street	Providence
Sumner E., 337 Ives street	Providence
roft, Joseph, 355 Manton avenue	Providence
Arthur A., 841 Broad street	Providence
Arthur A., 1481 Broad street	Providence
Arthur A., 97 Governor street	Providence
rt, Max H., 173 Weybasset	Providence
George W., 612 Pawtucket avenue	Pawtucket

Shaw, Thomas W.	Providence
Shea, John F.	Providence
Shean, Charles E., 147 Brook street	Providence
Sherman, Harold G., 399 Wood	Bristol
Silva, Thomas F., 913 Eddy street	Providence
Silva, Thomas F., Beach ave. and W. Shore road	Cominicut
Sima-d, Yvonne	Providence
Simonds, Luther W.	Providence
Simone, Luigi A., 1353 Plainfield street	Johnston
Slocum, Horace F., 637 Park avenue	Anson
Smith, Arthur T.	Providence
Smith, Byren A., 19 Olneyville square	Providence
Smith, Byron A., Jr., 19 Olneyville square	Providence
Smith, Charles H.	Providence
Smith, Daniel E., 220 Cranston street	Providence
Smith, Frank G., 303 Atwells avenue	Providence
Smith, Joseph V., Main street	Arctic
Smith, William D.	Providence
Smith, William J., 137 Main street	Warren
Staples, James A.	Providence
Stefano, Cono V.	Providence
Stephenson, William H.	Providence
Stewart, Walter G.,	Providence
St Germain, F. M. Ponton de, 642 Dexter street	Central Falls
Stott, Oscar C., 6 Main street	Westerly
Strachan, William D., 582 Smithfield avenue	Pawtucket
Sullivan, John C., 300 Broad street	Valley Falls
Sullivan, Michael A., 120 Pine street	Pawtucket
Sundin, Axel K. H.	Providence
Sutherland, J. D., 1011 Eddy street	Providence
Swindells, Harry L., 910 Manton avenue	Providence
Talbot, Joseph A., Quidnick and Main streets	Arctic Centre
Tcath, Jacob, 488 Hartford avenue	Providence
Thomas, Charles S.	Providence
Thomas, Nat H.	Providence
Thompson, J. Fred, 326 Weybosset street	Providence
Thornton, Louis E., 1191 Westminster street	Providence
Thurrott, Angus E., 200 Main street.....	Pawtucket
Tiernan, Charles P.	Providence
Tiernan, Peter W.	Providence
Tobin, John M., Main street	Narragansett Pier
Tourtellot, Leland A.	Providence
Turcotte, Samuel J.	Providence
Vanasse, Ulric E., Main street	Phenix
Ventrone, Anthony C.	Providence
Viall, William A.	Providence
Viens, Arthur	Providence
Walch, Clinton E.	Providence
Watson, Frank V., 97 Aborn street	Providence
Watson, Walter E., 2206 Broad street	Pawtucket
Weaver, Ermer H., 354 Friendship street	Providence
Weaver, Ermer H., 2191 Broad street	Providence
West, Cromwell P., 18 Kingston avenue	Newport
Wheaton, Wayland A., 140 Wickenden street	Providence
White, Frank B., 1191 Westminster street	Providence
Whitford, Dalton E. Y., 45 Thames street	Newport
Whitney, Henry A.	Providence

STATE BOARD OF PHARMACY

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Whittaker, Albert E., 265 Pawtucket avenue	Pawtucket
Wiessel, Morris	Providence
Wood, Willard L., 285 Main street	Pawtucket
Wood, William J., 1476 Broad street	Providence
Woodward, LeRoy A.	Providence
Wright, James A., Bell Block	Wakefield
Wright, James T.	Providence
Wyman, Fred, 346 Atwells avenue	Providence
Young, Elwin E., Bridge	Wickford
Young, Jeremiah H., 479 Hope street	Bristol
Zoolomian, George H., 280 Broad street	Providence
Zoolomian, Leon H., 129 Douglas avenue	Providence
Zurlinden, Albert, 50 Spring street.....	Manville

REGISTERED ASSISTANT PHARMACISTS

EMPLOYED BY

Allsop, Henry L.	Allsop & Carlson	Providence
Arnold, Joseph	Otis Clapp & Sons	Providence
Atkin, Herbert	T. R. Hulme	Providence
Auger, Geo. LeMaitre		Providence
Baldwin, George E.		Providence
Bannon, Thomas J.	Bannon Drug Co.	Westerly
Barker, Charles J.		Providence
Barnes, Walter V.	J. F. Gibson	Providence
Bassett, Peter G.		Providence
Batchelder, Walter J.		Providence
Baxter, Le Roy W.	Reiner Co.	Providence
Beizer Hyman		Providence
Bennett, Charles M.		Providence
Bennett, J. Bamford		Providence
Benoit, Aram	Desrochers Bros.	Woonsocket
Bernier, Albert J.		Providence
Bigelow, Edward P.		Providence
Black, Charles E.	E. P. Anthony	Providence
Blais, Eugene H.	W. O. Blanding	Providence
Blake, James H.		Providence
Bolduc, J. Alexander		Providence
Bolster, John A.		Providence
Bonin, Herman O.		Providence
Bonin, Pierre O.	Rousseau & Brown	Woonsocket
Bonneville, Avellino A.		Providence
Booth, Richard A.		Providence
Rowen, Charles P.		Providence
Bowen, Harry L.		Providence
Bowmer, Clarence	H. A. Pearce Co.	Providence
Brady, Peter H.		Providence
Brandes, Frederic A.		Providence
Bray, George H.		Providence
Brooks, William F.	W. O. Blanding	Providence
Brule, Abundinus A.		Providence
Brunelle, Herve J.	Desrochers Bros.	Woonsocket
Burke, Edward F.	Franklin Pharmacy	Providence
Burke, John L.		Providence
Burke, William H.		Providence
Byrnes, John A.	Fisk Drug Co.	Pawtucket
Cady, Arthur B.	Reiner Co.	Edgewood
Caisse, P. Wolford		Providence
Calder, William C.		Providence
Calise, Domenico	W. O. Blanding	Providence
Capwell, Arthur A.		Providence
Casey, Thomas M.	Fisk Co.	Pawtucket

STATE BOARD OF PHARMACY

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EMPLOYED BY

Chandley, Edward J.	L. K. Liggett Co.	Pawtucket
Chartier, Charles O.	Providence
Chartier, Lucien S.	Rosseau & Brown.	Woonsocket
Chenette, Joseph E. ....	.....	Providence
Clark, Jesse A. ....	.....	Providence
Clark, Leo C. ....	.....	Providence
Clift, Charles K.	Flower, Claude E.	Providence
Codere, Ernest E. ....	.....	Providence
Coffey, John B. ....	.....	Providence
Cohn, Sydney	Liggett Co.	Providence
Colacci, Frank	Eagle Park Pharmacy.	Providence
Coleman, John	W. L. Wood.	Providence
Coman, Harry Howard ....	.....	Providence
Connors, Timothy J. Jr.	C. M. Barbour.	Westerly
Copeland, William H.	W. L. Wood.	Providence
Cornell, Alverin M.	J. F. Gibson.	Providence
Corvese, Anthony ....	.....	Providence
Cox, Jerome Leo ....	.....	Providence
Creamer, John A. ....	.....	Providence
Crosby, Frederic	Reiner Co.	Providence
Cunningham, Alex W. ....	.....	Providence
Davis, Herbert S.	Liggett Co.	Newport
Deady, Michael J.	C. Leo Higgins	Westerly
DeAngelis, Raffaele	Chemical Industrial Co.	Providence
De Fasi, Carlo ....	.....	Providence
DeFray, Antoine ....	.....	Providence
De Nomme Leonide A. ....	.....	Providence
Dickinson, Ernest N. ....	.....	Providence
Dion, Victor B. ....	.....	Providence
Dolan, William A.	S. J. Briggs Co.	Providence
Donahue, Frank ....	.....	Providence
Dow, Walter H.	W. O. Blanding.	Providence
Drinkwater John B.	Fisk Drug Co.	Providence
Duchesneau, Raymond W.	Fisk Co.	Pawtucket
Dunn, John A. ....	.....	Providence
Eaton, F. Elmer ....	.....	Providence
Ellis, Leon C. ....	.....	Providence
Emery, Arthur L. ....	.....	Providence
Evans, Albert E.	L. K. Liggett Co.	Pawtucket
Fales, George H. ....	.....	Providence
Fanning, Frederick F. ....	.....	Providence
Fanning, William F.	M. H. Corrigan.	Providence
Fasteson, Gilbert E. ....	.....	Providence
Fenner, Wallace R. ....	.....	Providence
Fenton, Timothy, Jr. ....	.....	Providence
Ferrara, Peter	W. O. Blanding.	Providence
Fiebich, Carl R.	Reiner Co.	Providence
Field, Leon W.	L. K. Liggett Co.	Pawtucket
Fitzpatrick, Edward E. ....	.....	Providence
Fitzsimon, Vincent J. ....	.....	Providence
Forcier, George O.	Handy Drug Co.	Providence
Frigault, Rodolphe	Doria P. Meunier.	Pawtucket
Galdieri, Augustus L. ....	.....	Providence
Gale, Charles A.	W. O. Blanding.	Providence
Gallant, Herve M.	Desrochers Bros.	Woonsocket
Gardner, Willis T.	R. I. Col. of Pharmacy.	Providence

STATE BOARD OF PHARMACY

EMPLOYED BY		
Garrett, Lillian G.	R. I. College of Pharmacy.....	Providence
Garrett, William L.	T. F. Buckley.....	Providence
Gaskell, Edward W.		Providence
Gibbs, Arthur C.		Providence
Gilbert, Frederick C.	F. A. Gilbert	Providence
Gilbert, Charles O.	Herbert Haynes	Providence
Gill, Frederick C.	Liggett Co.	Pawtucket
Gleason, Leo W.	Ellis & Gleason	Woonsocket
Goldberg, Barney	L. K. Liggett Co.	Providence
Goodrum, George W.		Providence
Grady, Thomas F.	Liggett Co.	Providence
Gray, Andrew H.	W. O. Blanding	Providence
Greene, Arthur I.		Providence
Greene, Charles E.	Geo. E. Greene	Hope Valley
Greene, Edwin R.		Providence
Greene, Nathaniel T.	Handy Drug Co.	Providence
Greenhalgh, Henry C.		Providence
Guild, Milo A.	J. A. Wright	Wakefield
Hanscom, Jessie L.		Providence
Harrington, John V.	Hope Drug Co.	Providence
Haskins, Robert H.	S. J. Briggs Co.	Providence
Hatch, Elwin F.		Providence
Head, John P.	P. J. H. Mullen	Pawtucket
Heany, Edward W.	Liggett Co.	Pawtucket
Heathman, Roscoe		Providence
Hecker, Morris	Delerzon Pharmacy	Providence
Helgesen, Fred	J. R. Lorah	Newport
Hickey, J. Raymond	Liggett Co.	Providence
Hillis, William T.	H. L. Thayer	Providence
Hilton, Arthur	W. O. Blanding	Providence
Himes, Alonzo R.		Providence
Himes, Raymond		Providence
Hindle, George W.	Liggett Co.	Pawtucket
Hoffman, Theodore A.	F. R. Keighley	Providence
Hopkins, Samuel	Geo. L. Clafin Co.	Providence
Horowitz, Morris		Providence
Hotchkiss, Fred M.	A. J. Johnson, Jr.	Pawtucket
Hough, Annie	H. I. Hough	Providence
Hough, Henry L., Jr.	H. I. Hough	Providence
Houle, Rudolph	Doria P. Meunier.....	Pawtucket
Hulme, Samuel R.		Providence
Ide, George D.	J. E. Brennan & Co.	Pawtucket
Inventasch, William		Providence
Jarvis, William E.	Liggett Co.	Newport
Jeschke, Walter H.	Reiner Co.	Providence
Jones, Frank J.	Liggett Co.	Newport
Jones, Thomas		Providence
Johnson, Benjamin F.		Providence
Johnston, Wilber E.	E. P. Anthony.....	Providence
Karnowsky, Charles	Reiner Co.	Providence
Kelly, John J.	E. H. Weaver.....	Providence
Kelsey, Harmon J.		Providence
Kennedy, Russell S.	Hope Drug Co.	Bristol
Koch, George	Reiner Co.	Providence
LaFlame, Philip		Providence

STATE BOARD OF PHARMACY

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EMPLOYED BY

Lee, Edward M.	R. E. Linton.....	Woonsocket
Leith, Fred G.	H. I. Leith	Providence
LeMaitre, Gideon M. ....	.....	Providence
Lenz, Howard G.	Liggett Co.	Providence
LePage, Arsene .....	.....	Woonsocket
L'Esperance, Ernest A. ....	.....	Providence
Levinson, Arthur .....	.....	Providence
Lucitt, John B. ....	.....	Providence
Lussier, Arthur E.	Rosseau & Brown.....	Woonsocket
Lussier, Victor, Jr. ....	.....	Providence
MacDowell, Percy B. ....	.....	Providence
Mahoney, Joseph E.	L. K. Liggett Co.	Providence
Maille, Arthur J.	L. K. Liggett Co.	Providence
Mann, Gilbert	L. K. Liggett Co.	Providence
Marcotte, Olivina C.	Marcotte Drug Co.	Pawtucket
Marcoux, Arthur H. ....	.....	Providence
Marshall, Stephen T. ....	.....	Providence
Martel, Arthur B.	Rosseau & Brown.....	Woonsocket
Mason, Earle H.	Albert Fenner	Providence
Mason, William G.	Reiner Co.	Providence
Masse, Edward W.	W. R. Fortin.....	Pawtucket
Massey, John C. ....	.....	Providence
Mayo, C. Edward .....	.....	Providence
McCallum, Charles A. ....	.....	Providence
McCann, Edward J.	Liggett Co.	Providence
McCarthy, Joseph F.	Robbins & Cohen.....	Providence
McDonnell, Andrew S. ....	.....	Providence
McGarty, Walter V.	J. P. Cahill.....	Providence
McGowan, John B.	Phillips Drug Store.....	Providence
McGuire, Joseph B.	Liggett Co.	Providence
McGunagle, George E. ....	.....	Providence
McGunagle, John A.	Alex. McGunagle	Central Falls
McKenna, Thomas H.	O'Hare's Pharmacy	Providence
McManus, Charles J. T.	R. I. Hospital.....	Providence
McManus, John J. ....	.....	Providence
McNelly, Edward C.	C. M. Barbour Co.	Westerly
Meacon, Joseph S. ....	.....	Providence
Miller, James A. ....	.....	Providence
Milligan, P. A.	E. H. Weaver.....	Providence
Moore, Thomas L.	I. F. Gibson.....	Providence
Moorehouse, Ernest	L. K. Liggett Co.	Providence
Moreau, Harley V.	E. H. Weaver.....	Providence
Morrisette, Frank A.	C. A. Keller	Arctic
Mowry, Albert E. ....	.....	Providence
Mulcahey, John J.	E. P. Anthony.....	Providence
Mullen, John J.	J. Fred Gibson.....	Providence
Mulligan, John J.	L. K. Liggett Co.	Providence
Murdy, William F. ....	.....	Providence
Murphy, John J.	Liggett Co.	Providence
Murphy, James A. ....	.....	Providence
Nadeau, Ephrem .....	.....	Providence
Nason, Arthur S. ....	.....	Providence
Newberry, Harry M. ....	.....	Providence
O'Connor, Benedict C.	T. E. Doherty.....	Providence
O'Donnell, J. Raymond	Beaupre Arnold	Woonsocket

STATE BOARD OF PHARMACY

EMPLOYED BY

O'Hara, Charles I.	Fisk Co.	Pawtucket
O'Hare P. Frank		Providence
O'Neil, John H.	L. K. Liggett Co.	Providence
Page, Philip F.	A. W. Boston	Providence
Palmer, Joseph E.	E. T. Colton	Providence
Parent, Alfred		Providence
Parent, Joseph E.	J. V. Smith Co.	Arctic
Parent, Napoleon		Providence
Pastille, John J.	W. O. Blanding	Providence
Payan, Roch J.		Providence
Petit, Alex A.		Providence
Phaneuf, Louis E.		Providence
Phillips, Charles D.	Fisk Co.	Providence
Plummer, William H.	Liggett Co.	Providence
Porter, Mary H.		Providence
Pouliot, Alfred W.	Reiner Co	Providence
Primeau, Clifford G.		Providence
Quinlan, James F.	Liggett Co.	Providence
Raiford, Inez E.		Providence
Read, Gilbert S.	W. O. Blanding	Providence
Reaves, Edmund, Jr.		Providence
Richard, Blaine R.	D. J. Byrne	Newport
Riley, Walter R.		Providence
Rivard, William Henry	Geo. L. Clafin Co.	Providence
Roberge, Oscar A.	Rousseau & Brown	Woonsocket
Robinson, Bertha L.	Frederick L.	Providence
Rougier, Brennand A.		Providence
Round, Eda M.		Providence
Rouslin, Charles		Providence
Ruoff, John G.	H. L. Chatterton	Providence
Sanderson, Harry F.		Providence
Saugy, Max A.	Standard Pharmacy	Warren
Schneider, August A.	Frank Markensohn	Providence
Schilling, Carl A.		Providence
Schneider, William J.	D. J. Byrne	Newport
Scowcroft, George T.	Joseph Scowcroft	Providence
Seibold, George H.		Providence
Sesto, Frank Del	Edward J. Gallagher	Providence
Shalleross, William	F. H. Pond	Pawtucket
Shaw, William B.		Providence
Shea, Stephen A.		Providence
Sherman, George H.	Downing Bros.	Newport
Sherman, Millard F., Jr.	James R. Lorah	Newport
Shurtleff, Arthur K., Jr.	L. K. Liggett Co.	Providence
Smith, Almond B.	Albert Fenner	Providence
Smith, Don W. T.	E. P. Anthony	Providence
Smith, J. Albert		Providence
Stanton, Frederick W.		Providence
Stearns, John		Providence
St. Germain, Louis A.		Providence
Storey, Arthur H.		Providence
Strickland, Franklin N.		Providence
Sundin, Joseph A.		Providence
Sweetland, Elmer Z.		Providence
Swift, Charles N.		Providence
Swindells, Earle O.	Reiner Co.	Providence

STATE BOARD OF PHARMACY

EMPLOYED BY

Edmund P.		Providence
ay, Henry O.	Desrochers Bros.	Woonsocket
r, William J.		Providence
e, Emma		Providence
e, Walter R.	Reiner Co.	Providence
Percival A.		Providence
y, Daniel J.	W. E. Malone	Pascoag
Frank L.		Providence
ley, Wesley	W. O. Blanding	Providence
Fred E.		Providence
oria. Sister Mary	St. Joseph Hospital	Providence
y, Eldredge W.	Hall & Lyon Co.	Providence
r, Joseph E.		Providence
ncourt, Henry J.		Providence
, James L.		Providence
, Fred S.		Providence
George H.	Geo. L. Clatin Co.	Providence
t, Frank H.	Geo. L. Clatin Co.	Providence
ms, William E.		Providence

The Registrar has been informed that the following named registered pharmacists registered assistant pharmacists are in the service of the United States, either army or navy:

Anthony
 J. Bassett
 n Beizer
 e H. Blair
 ur J. Brunelle
 J. Chandlee
 A. Clark
 t E. Codere
 y Cohn
 H. Coman
 e Cox
 L. Deslauriers
 rd F. Dufresne
 W. Farron
 rd E. Fitzpatrick
 e O. Forcier
 phe Frigault
 M. Gallant
 rt P. Harrison
 rd W. Heaney
 ce Hecker
 r Hilton

Edward M. Lee
 Fred G. Leith
 Arthur Levinson
 John B. Lucitt
 Arthur E. Lussier
 Prosper M. Marcotte
 John P. Martin
 Earle H. Mason
 William J. McNally
 William F. Murdy
 J. Raymond ODonnell
 William A. Pinault
 William H. Plummer
 Clifford H. Primeau
 James F. Quinlan
 Oscar A. Roberge
 Angelo Saccoccia
 Frank Del Sesto
 John F. Shea
 Byron A. Smith, Jr.
 Frederick W. Stanton
 Walter R. Thorpe

Angus E. Thurrott

STATE BOARD OF PHARMACY

DIED.

Registered Pharmacists.

James A. Farrell	Oct. 5, 1918
Arthur W. Anderson	Oct. 6, 1918
Amedee Archambault	Oct. 9, 1918
Frederick J. Brightman	Oct. 18, 1918
Benjamin H. Gravlin	Oct. 18, 1918
William B. Shaw	Dec. 20, 1918
Harold L. Thayer	Dec. 30, 1918

Registered Assistant Pharmacists.

Asa F. Bosworth	April 8, 1918
James J. Dillon	July 9, 1918
Clifford E. Tabor, (Killed in action)	Sept. 29, 1918
William J. Wilbur	Oct. 21, 1918
Henry T. Nangle	Oct. 29, 1918

ate of Rhode Island and Providence Plantations

THIRTIETH ANNUAL REPORT

OF THE

ate Board of Soldiers' Relief

MADE TO THE

GENERAL ASSEMBLY

AT ITS

JANUARY SESSION, 1919

PROVIDENCE, R. I.

THE OXFORD, PRESS PRINTERS

1919

R E P O R T

PROVIDENCE, R. I.,

December 31, 1918.

to the Honorable General Assembly of Rhode Island:

Complying with the provisions of Chapter 104, General Laws of Rhode Island, the State Board of Soldiers' Relief presents its thirteenth report.

ORGANIZATION.

The Board as at present constituted is:

Governor R. Livingston Beekman, *Chairman.*

General Treasurer, Richard W. Jennings, *Treasurer.*

Adjutant General, Charles W. Abbot, Jr.

Colonel Andrew K. McMahon, Second R. I. Volunteers, term expires, 1919.

Henry J. Pickersgill, Esq., First N. Y. Infantry, term expires, 1919.

Honorable Edwin R. Allen, Seventh R. I. Volunteers, term expires, 1920.

Honorable Ezra Dixon, Forty-second Mass. Volunteer Infantry, term expires, 1920.

Honorable Marinus W. Hudson, First R. I. Cavalry, term expires, 1921.

Wardock C. McKenzie, Esq., U. S. Signal Corps, term expires, 1921.

Captain E. R. Barker, 1st R. I. U. S. Vol. Light Battery, term expires, 1920.

Major Sydney D. Harvey, 1st R. I. U. S. Volunteer Infantry, term expires, 1919.

Thomas M. Holden, 17th Illinois Cavalry Volunteers, *Secretary.*

SOLDIERS' HOME.

The officers of the home are as follows:

Murdock C. McKenzie, U. S. Signal Corps, Commandant.
Dr. Alfred M. Merriman, Surgeon.
S. M. Sheple, Clerk.

As reported one year ago, we are obliged to report again that the Home has been under extra heavy expense, with still more added costs on account of the advance in cost of food and coal, although the fuel expense has been kept down somewhat, by the use of wood cut on land belonging to the Home property.

In many buildings repairs were made imperative to save the property from further damage, and also save additional expense if delayed.

The Commandant of the Home was notified early in the year by the Inspector General's Department of the National Home for Disabled Volunteer Soldiers', that on account of the War and other circumstances there would be no inspection for the year 1918.

The amount received during the year under the Act of Congress providing aid to the State Territorial Home is eight thousand nine hundred and twenty-five dollars (\$8,925.00).

The Home was visited by the Department Commander of the Rhode Island, Grand Army of the Republic and staff, and by several organizations of the Women's Relief Corps, Sons of Veterans and Spanish War Veterans on various dates during the year. Fourteen meetings of the Board were held during the year, two of which were held at the Home. Members of the Board have also made other official visits to the Home, and the Executive Committee frequent meetings there.

DEATHS.

Captain Gideon Spencer, Secretary of the Board, for many years, died March 3, 1918.

Colonel Philip S. Chase, the first Secretary of the Board and later member of the Executive Committee, died April 3, 1918.

Captain Walter A. Read, Treasurer of the Board, died December 12, 1918.

The membership of the Home December 31, 1918.....	114
Total number admitted since opening of the Home.....	1009

VITAL STATISTICS.

Average age of members admitted during the year.....	77-4
Average number present during the year.....	84
Number of deaths during the year.....	21
Average age of decedents for the year.....	76-5
Death rate in 1000 of average present.....	242
Total number of deaths since opening of the Home.....	457

MAINTENANCE.

Average Cost of maintenance per capita.....	\$530 00
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FINANCIAL STATEMENT.

Balance Industrial Trust Company, January 1, 1918 and receipts:

Balance Industrial Trust Company, Participation Account.....	\$3,000 00
Balance Industrial Trust Company, Call Account.....	3,600 00
Received appropriation 1918	30,000 00
Received from United States 1918.....	8,925 00
Received from interest	153 71
Received from sales and other sources.....	289 79.
	<hr/>
	\$45,968 50

Expenditures and Balances, January 1, 1919:

Balance Industrial Trust Company, Call Account.....	\$447 39
Disbursements per schedule	38,925 00
Disbursements extraordinary	4,121 58
Perpetual care, Bristol Burial Lot.....	1,000 00
Deposited January 2, Industrial Trust Company.....	1,484 53
	<hr/>
	\$45,968 50

Unpaid bills	Part November schedule \$2,837 71
	December schedule 4,166 99

JANUARY SESSION, A. D. 1918.

RESOLUTION MAKING AN APPROPRIATION OF SEVEN HUNDRED DOLLARS FOR THE PURPOSE OF DEFRAYING THE EXPENSES OF DECORATING GRAVES OF THE WAR VETERANS.

Resolved. That the sum of seven hundred dollars, or so much thereof as necessary, be and the same is hereby appropriated, out of any money in the

treasury, not otherwise appropriated, for the purpose of defraying the expenses of decorating on Memorial Day the graves of the Civil War veterans and of the veterans of any other war of the United States, said sum to be expended under the supervision and direction of the State board of soldiers' relief; and the State auditor is hereby directed to draw his orders upon the general treasurer for the payment of said sum or so much thereof as may from time to time be required, upon receipt by him of proper vouchers approved by the chairman and secretary of the State board of soldiers' relief.

Expenditures and Balance, December 31, 1918.

Appropriation	\$700 00
Civil War Disbursements	462 83
	<hr/>
Balance with General Treasurer	\$237 17

RESOLUTION MAKING PROVISION FOR THE PLACING METALLIC MARKERS ON THE GRAVES OF SOLDIERS AND SAILORS WHO HAVE SERVED IN THE DIFFERENT WARS OF THE UNITED STATES, APPROVED APRIL 12, 1917.

Resolved, That the sum of five hundred dollars or so much thereof as may be necessary, be and the same is hereby appropriated out of any money in the treasury not otherwise appropriated, to the addition to the unexpended balance of an appropriation made by Resolution No. 62, entitled, "Resolution making provisions for the placing of markers on the graves of persons who served in the Spanish-American War, passed at the January Session, A. D., 1910, and the unexpended balance of an appropriation made by Resolution No. 61, entitled, "Resolution appropriating three hundred dollars for the purpose of purchasing metallic markers to be placed on the graves of soldiers and sailors who served in the Civil War," passed at the January Session, A. D., 1916, which said unexpended balances are hereby reappropriated for the purpose of this resolution, and for the purpose of purchasing metallic markers to be placed on the graves of persons who served in the army and navy of the United States during the different wars of the United States, said sum and unexpended balances to be expended under the direction of the State board of soldiers' relief and the State auditor is hereby directed to draw his orders upon the general treasurer for the payment of said sums upon receipt by him of properly authenticated vouchers, approved by the State board of soldiers' relief.

GRAVE MARKERS.

Balance of appropriation, December 31, 1917.	\$384 15
Expenditures and balance, December 31, 1918:	
Civil War	\$247 30
Balance, General Treasurer	136 85
	<hr/>
Total	\$384 15

ACT IN AMENDMENT OF SECTION 1 OF CHAPTER 104 OF THE GENERAL LAWS, ENTITLED "OF THE RHODE ISLAND SOLDIERS' HOME" AS AMENDED BY CHAPTER 1045 OF THE PUBLIC LAWS PASSED AT THE JANUARY SESSION, A. D., 1914.

enacted by the General Assembly as follows:

SECTION 1. Section 1 of Chapter 104 of the General Laws, entitled "the Rhode Island Soldiers' Home" as amended by Chapter 1045 of the Public Laws, passed at the January Session, A. D., 1914, is hereby further amended so as to read as follows:

SECTION 1. The management and control of the Rhode Island Soldiers' Home, established in this State for those men who served in the army or navy of the United States in the war of the rebellion and were honorably discharged therefrom, who, by reason of, wounds, disease, old age, or other infirmities, are unable to earn their living and have no adequate means of support, shall continue to be in a State board to consist of the Governor, the Governor shall be chairman, the general treasurer, who shall be treasurer, the lieutenant general and eight qualified electors of the State, six of whom shall have served in the army or navy of the United States during the war of the rebellion and were honorably discharged therefrom, and two of whom shall have served in the army or navy of the United States during any foreign war in which the United States shall have been engaged and were honorably discharged therefrom. Said eight qualified electors shall be appointed by the Governor, by and with the advice of the senate; and said six qualified electors, now in office, who served in the war of the rebellion, shall continue to serve for and during the terms for which they were appointed. At the January Session of the General Assembly of the year 1914, the governor shall, with the advice and consent of the senate, appoint two qualified electors, who served in the Spanish-American war, for the following terms: one shall serve for two years, and one to serve for one year. At the January Session of the General Assembly in each year thereafter, three such qualified electors, two of the war of the rebellion, and one of any foreign war in which the United States shall have been engaged, shall hold their offices from the first day of February in the second year after their appointment. Any vacancy which may occur in said board when the senate is not in session shall be filled by the Governor until the next session thereof, when he shall, with the advice and consent of the senate appoint some person to fill the vacancy for the remainder of the term. Said members so appointed shall be duly commissioned and sworn to the faithful discharge of their duties under the provisions of this chapter. Said board shall be known as "State Board of Soldier' relief."

SECTION 2. This act shall take effect upon its passage and all acts and parts of acts inconsistent herewith are hereby repealed.

Enclosures accompany this report as follows:

- A. Report of the Secretary, as State Pension Agent.
- B. Report of the Secretary, as State Agent of Soldiers' Relief.
- C. Report of Agent, Soldiers' Relief, War with Spain, etc.
- D. Report of Commandant, Soldiers' Home.
- E. Report of Surgeon of the Rhode Island Soldiers' Home.
- F. Roll of members of the Rhode Island Soldiers' Home.
- G. Schedule of bills approved and orders drawn from January 1, 1918 to December 31, 1918, inclusive.

Respectfully submitted,

R. LIVINGSTON BEECKMAN, *Governor,*
Chairman.

RICHARD W. JENNINGS, *Treasurer,*
Treasurer.

CHARLES W. ABBOT, *Adjutant General.*
ANDREW K. McMAHON,
HENRY J. PICKERSGILL,
EDWIN R. ALLEN,
EZRA DIXON,
MARINUS W. HUDSON,
MURDOCK C. McKENZIE,
EDGAR R. BARKER,
SYDNEY D. HARVEY.

State Board of Soldiers' Relief.

THOMAS M. HOLDEN, *Secretary.*

ENCLOSURES

A.

REPORT OF STATE PENSION AGENT

PROVIDENCE, R. I., December 31, 1918.

the State Board of Soldiers' Relief:

have the honor to submit the following statement of the work performed
State Pension Agent for the year 1918.

Number of claims filed by this office during the year..... 283

classified as follows:

Soldiers' and Sailors' pension act of May 11, 1912, amended June 10, 1918	47
Widows' pension act of April 19, 1908, amended September 8, 1916 and October 6, 1917	51
Married widows' pension	1
Spanish War widows' pension act of July 16, 1918.....	31
Half pension for widows.....	2
Spanish War pension	3
Dependent mother's pension	1
General Law pensions	2
Reimbursement claims	38
Guardian claims	3
Final discharge	1
Payment of checks without administration	1
Massachusetts gratuity claim	1
Record of birth	1
Forfeiture of checks for pensioners	75
Change of addresses for pensioners	25

Total number of claims filed in the department at Washington by the State
Pension Agent to December 31, 1918, was 11, 381.

About eighteen hundred affidavits and papers were executed in 1918.

Respectfully,

THOMAS M. HOLDEN,

State Pension Agent.

June 10, 1918, the following Pension Law was passed by Congress:

(Public—No. 167—66th Congress.)

(H. R. 9959.)

"Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the general pension Act of May 11, 1912, is hereby amended by adding a new section, to read as follows:

"Sec. 6. That from and after the passage of this amendment the rate of pension for any person who served ninety days or more in the military or naval service of the United States during the Civil War, now on the roll or hereafter to be placed on the pension roll and entitled to receive a less rate than hereinafter provided, shall be thirty dollars per month. In case such person has reached the age of seventy-two years and served six months, the rate shall be \$32 per month, one year, \$35 per month; one and a half years, \$38 per month; two years or over, \$40 per month; Provided, that this amendment shall not be so construed as to reduce any pension under any Act, public or private."

July 16, 1918, the following Pension Law was passed by Congress.

(Public—66th Congress.)

(S. 4444)

A bill granting pensions to the widows and minor children of deceased soldiers, sailors, and marines of the War with Spain, the insurrection in the Philippines, and the China Relief Expedition.

Be it enacted, etc., That from and after the passage of this Act if any volunteer officer or enlisted man who served 90 days or more in the Army, Navy or Marine Corps of the United States, during the War with Spain or the Philippine Insurrection between April 21, 1898 and July 4, 1902, inclusive, service to be computed from date of enlistment to date of discharge, or any officer or enlisted man of the Regular Establishment who rendered 90 days or more actual military service in the United States Army, Navy or Marine Corps in the War with Spain or in the Philippine Insurrection, between April 21, 1898, and July 4, 1902, inclusive, or as a participant in the Chinese Boxer Rebellion campaign between June 16, 1900, and October 1, 1900, and who has been honorably discharged therefrom, has died or shall hereafter die leaving a widow without means of support other than her daily labor, and an actual net income not exceeding \$250 per year, or leaving a minor child or children under the age of 16 years, such widow shall upon due proof of her husbands death, without proving his death to be the result of his Army or Navy service, be placed on the pension roll from date of

ing of her application therefor under this Act, at the rate of \$12 per month during her widowhood, and shall also be paid \$2 per month for each child of such officer or enlisted man under 16 years of age, and in case of the death or remarriage of the widow, leaving a child or children of such officer or enlisted man under the age of 16 years, such pension shall be paid to such child or children until the age of 16: Provided, That in case a minor child is insane, idiotic, or otherwise permanently helpless, the pension shall continue during the life of said child, or during the period of such disability, and shall commence from the date of application therefor after the passage of this Act: Provided, further that said widow shall have married said officer or enlisted man previous to the passage of this Act: Provided, however, That this Act shall not so construe as to reduce any pension under any law public or private.

2. That no agent, attorney, or other person engaged in preparing, presenting, or prosecuting any claim under the provisions of this Act shall, directly or indirectly, contract for, demand, receive or retain for such services in preparing, presenting, or prosecuting such claim a sum greater than the amount which sum shall be payable only on the order of the Commissioner of Pensions; and any person who shall violate any provisions of this section, shall wrongfully withhold from the pensioner or claimant the whole or any part of a pension or claim allowed or due such pensioner or claimant under this Act, shall be deemed guilty of a misdemeanor, and upon conviction hereof shall, for each and every offense, be fined not exceeding \$500 or imprisoned not exceeding one year, or both in the discretion of the

B.

REPORT OF AGENT, SOLDIERS' RELIEF.

PROVIDENCE, R. I. December 31, 1918.

To the State Board of Soldiers' Relief:

I have the honor to submit the following statement of the work performed as Agent, Soldiers' Relief, for the year 1918.

The method of dispensing the fund for Soldiers' relief continues the same as in previous years.

On account of the increase in pensions granted Veterans of the Civil War by the Act of June 10, 1918, and the decrease in number caused by death, it was thought by many that there would be a decrease in the amount required for aid, but the increased infirmities of the pensioners and their wives due to age and sickness, together with the great increase in cost of living, has increased the demand upon this fund, the new calls for aid exceeding the decrease caused by death.

Soldiers and sailors who have died while receiving relief in 1918....	8
Soldiers and sailors admitted to the State Home receiving relief in 1918	3
Widows who have obtained pensions while receiving aid in 1918....	2
Number of orders for groceries issued in 1918.....	1076
Appropriation for 1918	\$9,000 00
Disbursements for 1918	9,000 00

Respectfully,

THOMAS M. HOLDEN, *Secretary,*

Agent for Soldiers' Relief.

C.

REPORT OF AGENT, SOLDIERS' RELIEF, WAR WITH SPAIN.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

January Session, A. D., 1918.

Act in Amendment of Section 1 of Chapter 806 of the Public Laws, passed at the January Session, A. D., 1912, Entitled "An Act providing for the Relief of Honorable Discharged Dependent Soldiers, Sailors and Marines, Who served in the Army or Navy of the United States during the War with Spain" as amended by Chapter 1031 of the Public Laws passed at the January Session, A. D., 1914.

SECTION 1. Section 1 of Chapter 806 of the Public Laws passed at the January Session, A. D., 1912, entitled "An Act providing for the relief of honorably discharged dependent soldiers, sailors and marines who served in the army or navy of the United States during the War with Spain" as amended by Chapter 1031 of the Public Laws, passed at the January Session, A. D., 1914, is hereby further amended so as to read as follows:

SECTION 1. The sum of two thousand dollars, or so much thereof as may be necessary, is hereby appropriated annually for the relief of worthy, dependent families of such soldiers, sailors and marines who served in the Army or Navy of the United States, either as a regular or volunteer, during any war in which the United States shall have been engaged, or any expedition or campaign for which the United States Government issued a campaign medal, and were honorably discharged from such service.

c. 2. This Act shall take effect upon its passage and all Acts and parts of Acts, inconsistent herewith are repealed.

WAR WITH SPAIN.

Applications for aid have been received since January, 1918. Two hundred and fifty-five orders for groceries have been issued during the year together with temporary cash aid.

aid while receiving relief	2
appropriation for 1918	\$2,000 00
bursements for 1918	2,000 00

Respectfully,

THOMAS M. HOLDEN, *Secretary.*

Agent for Soldiers' Relief.

D.

REPORT OF THE COMMANDANT.

To the Board of Managers, Board of Soldiers' Relief:

Gentlemen:—I have the honor to submit herewith my first annual report as Commandant.

The gains and losses exhibited in the following tables, show the present status of membership of the Home, as compared with the year preceding, as follows:

December 31, 1917, present	90
December 31, 1917, absent	22
Total	112
Actual Gain during the Year	20
Total	132
Actual Loss during the Year	22
Present and Absent December 31, 1918.....	109

<i>Actual Gain.</i>		<i>Actual Loss.</i>	
By Admission	18	By Discharge	1
By Re-admission	2	By Death.	21
Total	20	Total	22

Whole number cared for during the year.....	151
Total admitted since the Home opened.....	912

Of the number present, 30 are reported sick in hospital and 8 on extra duty, the latter as follows:

Laundry	2	Assistant nurses	3
Librarian	1	Laborer	1
Storehouse	1		

CIVILIAN EMPLOYEES.

Member	1	Farmer	1
Man	2	Stableman	1
Nurse	1	Cooks	2
Assistant nurse	1	Cook's assistants	3
Barber	1	Barber	1

AGE OF MEMBERS.

The youngest 67 years; the oldest, 91 years.

Age of those admitted during the year	77-4
Age of decedents	76-5

AVERAGES DURING THE YEAR.

Present.

Present and Absent.

Quarter ending March 31	92	Quarter ending March 31	113
Quarter ending June 30	79	Quarter ending June 30	111
Quarter ending Sept. 30	83	Quarter ending Sept. 30	112
Quarter ending Dec. 31	82	Quarter ending Dec. 31	110
<hr/>		<hr/>	
Average	84	Average	112

Number of deaths since the Home opened 457.

the several Womans' Relief Corps, who have visited the Home from time to time during the year and brought cheer and generous contributions, to the Sons of Veterans for their gifts at Christmas, many thanks are

to the members of the Board of Managers I express my most sincere appreciation of their kind assistance and counsel in the performance of my duties.

Respectfully submitted,

M. C. McKenzie,

Commandant.

DEATHS.

Henry A. Gardner, B, 1st R. I. L. Art. Admitted October 28, 1895. Died January 30, 1918. Cause, arterio sclerosis. Place of burial unknown. Age

Thomas Corrigan, B, 1st R. I. L. Art. Admitted October 15, 1895. Died March 3, 1918. Age 80. Cause, arterio sclerosis. Place of burial, St. Mary's Cemetery, Bristol, R. I.

Charles H. Peckham, C, 5th R. I. H. Art. Admitted December 13, 1916. Died March 11, 1918. Age 86. Cause, arterio sclerosis. Remains taken to Newport, R. I.

Wanton W. Hazard, K, 12th R. I. Inf. Admitted March 9, 1918. Died March 21, 1918. Age 84. Cause, arterio sclerosis. Remains taken to East Greenwich, R. I.

Enoch F. Hoxie, B, 10th R. I. Inf. C, 11th R. R. Inf. Admitted July 1, 1917. Died March 21, 1918. Age 83. Cause, cerebral hemorrhage. Remains taken to East Providence, R. I.

Cornelius Sullivan, B, 18th Mass. Inf. I, 32nd Mass. Inf. Admitted September 29, 1917. Died March 23, 1918. Age 75. Cause, arterio sclerosis. Remains taken to Newport, R. I.

Leonard B. Barrus, B, 5th R. I. H. Art. Admitted March 27, 1918. Died March 29, 1918. Age 84. Cause, arterio sclerosis. Remains taken to Westerly, R. I.

Edward F. Williams, C, 1st R. I. L. Art. Admitted October 20, 1917. Died April 4, 1918. Age 74. Cause, arterio sclerosis. Remains taken by relatives.

George O. Parker, U. S. Navy. Admitted March 25, 1915. Died May 4, 1918. Age 89. Cause, arterio sclerosis. Remains taken to Apponaug, R. I.

Stephen Joslin, A, 1st R. I. Cav. Admitted December 6, 1917. Died June 19, 1918. Age 73. Cause, arterio sclerosis. Buried in North Cemetery, Bristol, R. I.

John Sweeney, G, 18th N. H. Inf. Admitted September 10, 1915. Died June 28, 1918. Age 87. Cause, arterio sclerosis. Remains taken to Westerly, R. I.

Frederick A. Horr, D, 3rd R. I. H. Art. Admitted March 6, 1915. Died June 28, 1918. Age 70. Cause, general exhaustion. Remains taken to Providence, R. I.

Marvin J. Converse, C, 7th R. I. Inf. Admitted March 29, 1917. Died November 12, 1918. Age 84. While on furlough. Place of burial unknown.

Albert Darling, H, 2nd R. I. Inf. Admitted July 3, 1916. Died October 19, 1918. Age 77. Cause, arterio sclerosis. Remains taken by relatives.

Alonzo Hapgood, D, 5th R. I. H. Art. Admitted January 18, 1917. Died September 11, 1918. Age 73. Cause, arterio sclerosis. Remains taken by relatives.

James M. Manchester, C, 3rd R. I. H. Art. Admitted October 6, 1917. Died August 16, 1918. Age 78. Cause, arterio sclerosis. Remains taken by relatives.

James McDonald, G, 1st R. I. L. Art. Admitted June 29, 1917. Died August 7, 1918. Age 74. Cause, arterio sclerosis. Remains taken by relatives.

Marcus M. Streeter, G, 1st R. I. L. Art. Admitted September 23, 1905. Died November 5, 1918. Age 76. Cause, arterio sclerosis. Buried in North Cemetery, Bristol, R. I.

George H. Tyler, G, 10th R. I. Inf. Admitted May 11, 1913. Died October 5, 1918. Age 74. Cause, arterio sclerosis. Remains taken by relatives.

William Woodworth, Co. E, 10th Lt. Bat. R. I. V. Admitted September 1918. Died October 20, 1918. Age 73. Cause, arterio sclerosis. Buried in North Cemetery, Bristol, R. I.

Henry Hendry, C, 5th N. Y. H. Art. Admitted September 27, 1897. Died September 7, 1918. Age 74. Cause, arterio sclerosis. Remains taken by relatives.

E.

REPORT OF THE SURGEON OF THE HOME.

State Board of Soldiers' Relief:

Messrs:—I beg to submit the following report of the Medical Department of the Home for the year 1918. 75 men have reported at sick call with a total of 607 visits. Since the war the price of several drugs in daily use has so far advanced that for the sake of economy all the men taking these drugs—and these are always quite a number—go after each meal to the Hospital where the medicine is given to them by the nurse.

The following is the work of the Hospital:

No. remaining January 1, 1918	34
No. admitted within the year	57
No. admitted from outside	11
No. admitted from wards	46
No. discharged	23
No. committed to Insane Hospital	1
No. died	21
No. remaining December 31, 1918.	32

The oldest man in Hospital is 91; the youngest is 69.

Respectfully submitted,

ALFRED M. MERRIMAN, M. D., *Surgeon.*

F.—DESCRIPTIVE ROLL OF MEMBERS OF THE RHODE ISLAND
SOLDIERS' HOME.

NAME.	Company and Regiment.	Age at Admission.	Pension per Month.	Admitted From.	When Admitted.	Status.
Acheson, James.....	A, 12th R. I. Inf.....	66	\$32 00	Pawtucket.....	Oct. 1, 1906	Present.
Armstrong, Ezra M.....	F, 11th R. I. Inf.....	73	?	Providence.....	Aug. 6, 1900	Present.
Baird, William.....	E, 30th Mass. L. A....	61	40 00	Westerly.....	Oct. 17, 1907	Present.
Baker, William G.....	{F, 1st R. I. Cav..... {G, 3rd V. R. C.....	68	40 00	Providence.....	July 30, 1914	Present.
Bartlett, William F.....	C, 3rd N. Y. L. A....	74	?	Providence.....	Aug. 27, 1910	Present.
Baton, Nicholas S.....	I, 12th R. I. Inf.....	58	?	Providence.....	June 14, 1900	Present.
Baxter, John.....	H, 11th R. I. Inf.....	65	32 00	Providence.....	Jan. 7, 1908	Present.
Blanding, Phillip M....	U. S. Navy.....	66	35 00	Providence.....	Oct. 12, 1903	Present.
Brayman, George W....	K, 2nd R. I. Inf.....	66	40 00	Providence.....	Jan. 21, 1909	Present.
Brayton, Frederick C...	J, 1st R. I. L. A.....	66	30 00	Providence.....	Oct. 26, 1912	Present.
Brown, George W.....	U. S. Navy.....	68	?	Providence.....	Nov. 3, 1909	Present.
Brown, Marcus M.....	{D, C & I, 7th R. I. {Inf.....	50	40 00	Woonsocket.....	Aug. 5, 1891	Present.
Blount, Jubal.....	{A, 9th R. I. Inf..... {H, 12th R. I. Inf.....	80	?	Pawtucket.....	Jan. 10, 1916	Present.
Brown, Oliver P.....	H, 2nd R. I. Inf.....	74	40 00	Hillsgrove.....	Jan. 17, 1916	Present.
Barrus, Leonard B.....	B, 5th R. I. H. A....	84	36 00	Westerly.....	March 28, 1918	Died, Mar. 29, 1918.
Brennan, Timothy J....	L, 3rd R. I. H. A....	80	40 00	Woonsocket.....	Oct. 24, 1918	Present.
Corrigan, Thomas.....	D, 1st R. I. L. A....	57	24 00	Providence.....	Oct. 15, 1895	Died, Mar. 3, 1918.
Crook, Henry.....	F, 49th Penn. Inf.....	57	?	Providence.....	Aug. 14, 1901	Present.
Cady, William S.....	A, 2nd R. I. Inf.....	71	?	Providence.....	April 8, 1904	Present.
Clough, William.....	K, 12th R. I. Inf.....	49	32 00	Providence.....	Sept. 9, 1891	Present.
Cole, Charles W.....	{R. I. Hospital Gds... {15th U. S. Inf.....	63	40 00	E. Providence...	July 6, 1903	Present.
Church, Albert C.....	E & A, 3rd R. I. H. A.	70	?	Lafayette.....	June 22, 1910	Present.
Crosby, George F. L....	1st R. I. L. A.....	62	?	Providence.....	Jan. 22, 1911	Present.
Cook, Daniel.....	A, 3rd R. I. H. A....	61	?	Providence.....	March 7, 1905	Present.
Corbin, William H.....	K, 7th R. I. Inf.....	66	32 00	Apponaug.....	April 6, 1914	Present.
Colwell, George W.....	K, 7th R. I. Inf.....	82	40 00	E. Providence...	Aug. 4, 1914	Present.

F.—DESCRIPTIVE ROLL OF MEMBERS OF THE RHODE ISLAND SOLDIERS' HOME.—Continued.

NAME.	Company and Regiment.	Age at Admission.	Pension per Month.	Admitted From.	When Admitted.	Status.
Cook, George B.....	G, 11th Md. Inf.....	76	40 00	Woonsocket.....	Nov. 17, 1914	Present.
Colwell, Otis P.....	C, 12th R. I. Inf.....	87	?	Providence.....	March 28, 1916	Present.
Converse, Marvin J...	C, 7th R. I. Inf.....	84	24 00	Chepachet.....	March 29, 1917	Died, Nov. 12, 1918. Present.
Chase, John H.....	D, 1st N. H. Cav.....	78	40 00	Providence.....	Oct. 15, 1918	Present.
Cooney, James.....	G, 2nd R. I. Vol.....	51	40 00	Providence.....	Jan. 17, 1893	Present.
Dawley, Sullivan H...	A, 11th R. I. Inf.....	72	32 00	Providence.....	Aug. 10, 1911	Present.
Darling, Albert.....	H, 2nd R. I. Inf.....	75	22 50	Providence.....	July 3, 1916	Died, Oct. 19, 1918. Present.
Donahoe, Michael.....	F, 4th Mass. H. A....	71	40 00	Cumberland.....	Sept. 20, 1917	Present.
Daley, John P.....	{D, 3rd R. I. Cav..... {B, 11th R. I. Inf.....	72	30 00	Providence.....	March 17, 1918	Present.
Ennis, John.....	K & B, 3rd R. I. H. A.	54	40 00	Providence.....	Aug. 10, 1911	Present.
Eagan, John.....	D, 1st R. I. L. A....	62	40 00	Providence.....	Dec. 12, 1904	Present.
Eddy, Job R.....	M, 3rd R. I. H. A....	71	40 00	Providence.....	Nov. 10, 1908	Present.
Elgar, William H.....	E, 7th Vt. Vet. Inf..	69	40 00	Providence.....	Sept. 25, 1914	Present.
Easterbrooks, Gardner..	E, 12th R. I. Inf.....	63	40 00	Bristol.....	Sept. 19, 1898	Present.
Fisher, Henry.....	K, 11th R. I. Inf.....	50	32 00	Hartford, Conn..	Oct. 6, 1892	Present.
Farmer, Thomas.....	C, 9th R. I. Inf.....	67	30 00	Wickford.....	July 29, 1912	Present.
Fuller, Albert E.....	H, 10th R. I. Inf.....	57	?	Providence.....	July 26, 1899	Present.
Fenner, John A.....	I, 12th R. I. Inf.....	66	32 00	Scituate.....	Jan. 10, 1911	Present.
Fieldsend, Joseph.....	{4th R. I. Inf..... {D, 7th R. I. Inf.....	74	40 00	Richmond.....	June 17, 1914	Present.
Gibson, Charles T.....	{E, 10th Mass. Inf.... {2nd N. Y. H. A.....	46	40 00	Scituate.....	May 14, 1891	Present.
Gardner, Henry A.....	B, 1st R. I. L. A....	55	30 00	Providence.....	Oct. 28, 1895	Died, Jan. 30, 1918. Present.
Gilmore, Patrick.....	D, 1st Conn. Inf.....	57	32 00	Woonsocket.....	Nov. 24, 1903	Present.
Goodwin, William S...	B, 7th Sqd. R. I. Cav.	66	30 00	Providence.....	Dec. 22, 1909	Present.
Gardner, Nicholas.....	D, 2nd R. I. Inf.....	80	35 00	Providence.....	Nov. 21, 1918	Present.
Hendry, Henry.....	C, 5th N. Y. H. A....	53	22 50	Providence.....	Sept. 27, 1897	Died, Dec. 7, 1918. Present.
Holton, William H....	{I, 6th Mass. Inf.... {K, New England Cav.	49	?	Providence.....	Jan. 12, 1892	Present.

F.—DESCRIPTIVE ROLL OF MEMBERS OF THE RHODE ISLAND
SOLDIERS' HOME.—Continued.

NAME.	Company and Regiment.	Age at Admission.	Pension per Month.	Admitted From.	When Admitted.	Status.
Hudson, David.....	{Musician, 4th R. I. Inf.....	71	32 00	Providence.....	July 15, 1910	Present.
Holbrook, Cephas B...	U. S. Navy.....	66	35 00	Providence.....	Jan. 3, 1912	Present.
Handy, William R.....	G, 2nd R. I. Inf.....	69	40 00	Providence.....	July 5, 1910	Present.
Horr, Frederick A.....	D, 3rd R. I. H. A....	67	19 00	Providence.....	March 6, 1915	Died, June 28, 1918.
Hopkins, Jeremiah D..	D, 1st R. I. L. A....	76	35 00	Providence.....	Oct. 16, 1917	Present.
Hoxie, Enoch F.....	{B, 10th R. I. Inf.... C, 11th R. I. Inf....	83	24 00	E. Providence...	July 5, 1917	Died, Mar. 21, 1918.
Higgins, Michael J....	M, 3rd R. I. H. A....	70	40 00	Providence.....	June 29, 1915	Present.
Hunter, George H.....	I, 9th R. I. Inf.....	73	?	Providence.....	Jan. 25, 1916	Present.
Holmes, Joseph B.....	{F, 3rd Mass. Inf.... B, 4th Mass. Cav.... 21st U. S. Cold T'ps.	71	40 00	Anthony.....	Sept. 28, 1916	Present.
Hapgood, Alonzo.....	D, 5th R. I. H. A....	72	25 00	Rehoboth.....	January, 1917	Died, Sept. 11, 1918.
Hazard, Wanton W....	K, 12th R. I. Inf....	84	22 50	E. Greenwich....	March 9, 1918	Died, March 21, 1918
Hamilton, Samuel.....	{K, 51st Mass..... U. S. Navy.....	74	40 00	Providence.....	Jan. 10, 1918	Present.
Johnson, Thomas.....	{K, 8th N. Y. State M. A, 37th N. J. Inf.... 5th N. J. Lt. Batt'y.	72	35 00	Providence.....	Nov. 9, 1914	Present.
Jackson, Anthony.....	I, 27th Me. Inf.....	73	32 00	Warren.....	June 18, 1917	Present.
Joslin, Stephen.....	A, 1st R. I. Cav.....	73	18 00	Providence.....	Dec. 6, 1917	Died, June 19, 1918.
Kelly, John.....	B, 1st R. I. Cav.....	57	40 00	Pawtucket.....	July 7, 1899	Present.
Kelley, Timothy.....	G, 2nd N. Y. Inf....	59	32 00	Providence.....	Sept. 15, 1899	Present.
Keating, Robert.....	G, 2nd R. I. Inf....	81	?	Bristol.....	July 19, 1914	Present.
Leonard, William.....	L, 3rd R. I. H. A....	75	?	Providence.....	May 26, 1907	Present.
Luther, William H....	K, 12th R. I. Inf....	66	?	Swansea Mass...	April 17, 1913	Present.
Longstreet, Daniel F..	{I, 1st R. I. Inf.... D, 7th R. I. Inf....	69	35 00	Providence.....	Oct. 7, 1915	Present.
Manchester, James M..	C, 3rd R. I. H. A....	77	30 00	Providence.....	June 6, 1917	Died, Aug. 16, 1918.
Matteson, George E....	C, 12th R. I. Inf....	61	?	Arctic.....	June 27, 1899	Present.
Martin, Daniel.....	C, 1st N. Y. Lt. Inf..	61	30 00	Providence.....	July 23, 1909	Present.

F.—DESCRIPTIVE ROLL OF MEMBERS OF THE RHODE ISLAND
SOLDIERS' HOME.—Continued.

NAME.	Company and Regiment.	Age at Admission.	Pension per Month.	Admitted From.	When Admitted.	Status.
Melville, James.....	{L, 9th R. I. Inf..... {D, 12th R. I. Inf.....	74	?	Newport.....	Jan. 24, 1912	Present.
Mitchell, Benjamin....	5th Conn. Inf.....	70	35 00	Providence.....	March 22, 1900	Present.
Mulvey, John.....	D, 12th R. I. Inf.....	66	30 00	Newport.....	Sept. 15, 1904	Present.
Mulharen, James.....	C, 11th R. I. Inf....	57	25 00	Providence.....	Oct. 6, 1916	Dis. Dis., Dec. 22, 1918.
McGowan, John.....	D, 3rd R. I. H. A....	74	?	Providence.....	Sept. 26, 1917	Present.
McSoley, James.....	A, 3rd R. I. H. A....	56	30 00	Providence.....	Aug. 1, 1905	Present.
McDonald, James.....	G, 1st R. I. L. A....	73	25 00	Providence.....	June 29, 1917	Died, Aug. 7, 1918.
McCabe, Peter.....	G, 5th R. I. H. A....	83	10 00	Providence.....	Dec. 30, 1918	Present.
Nichols, Benjamin D...	U. S. Navy.....	67	30 00	Bristol.....	Oct. 11, 1899	Present.
Nye, Robert E.....	E, 2nd R. I. Inf.....	57	30 00	Providence.....	July 28, 1904	Present.
Nelson, John.....	U. S. Navy.....	65	40 00	Providence.....	April 17, 1906	Present.
Noon, Michael.....	B, 1st R. I. D. M....	71	30 00	Newport.....	Oct. 9, 1912	Present.
Nutting, Almy E.....	B, 2nd R. I. Inf....	78	40 00	Conn.....	June 13, 1917	Present.
Oxx, Henry B.....	U. S. Navy.....	63	30 00	Pawtucket.....	Sept. 27, 1913	Present.
Oldridge, Daniel H....	{18th Co. Unattached { Mass. Inf.....	70	?	E. Providence...	Sept. 28, 1914	Present.
Owens, Michael F.....	{E, 4th R. I. Inf.... {B, 7th R. I. Inf....	74	?	Woonsocket.....	Jan. 12, 1916	Present.
Place, William K.....	C, 5th R. I. H. A....	63	?	Exeter.....	Nov. 26, 1912	Present.
Parkhurst, John G....	H, 5th R. I. H. A....	47	?	Woonsocket.....	Feb. 23, 1895	Present.
Potter, Charles H.....	{C, 1st R. I. Inf.... {K, 12th R. I. Inf.... {B, 14th R. I. H. A....	78	?	Providence.....	July 11, 1906	Present.
Poland, James.....	D, 9th R. I. Inf.....	74	30 00	Newport.....	Jan. 24, 1912	Present.
Potter, Philip I.....	D, 4th R. I. Inf.....	70	?	Providence.....	April 30, 1913	Present.
Prestwich, Thomas....	C, 4th R. I. Inf.....	68	40 00	Providence.....	Oct. 18, 1913	Present.
Parker, George O.....	U. S. Navy.....	86	30 00	Apponaug.....	May 25, 1915	Died, May 4, 1918.
Peck, John H.....	E, 5th R. I. H. A....	74	?	Barrington.....	Jan. 15, 1916	Present.
Pratt, Henry L.....	A, 1st R. I. L. A....	76	?	Pawtucket.....	Nov. 1, 1916	Present.
Peckham, Charles H....	C, 5th R. I. H. A....	85	22 50	Providence.....	Dec. 13, 1916	Died, Mar. 11, 1918.

F.—DESCRIPTIVE ROLL OF MEMBERS OF THE RHODE ISLAND
SOLDIERS' HOME.—Concluded.

NAME.	Company and Regiment.	Age at Admission.	Pension per Month.	Admitted From.	When Admitted.	Status.
Pollard, George B.	F, 9th R. I. Inf.	75	?	Fall River, Mass.	July 17, 1918	Present.
Potter, George H.	K, 7th R. I. Inf.	79	40 00	Newport.	Dec. 30, 1918	Present.
Reynolds, John.	F, 5th R. I. H. A.	62	40 00	Providence.	Feb. 1, 1904	Present.
Redding, Edwin A.	U. S. Navy.	65	32 00	Providence.	Nov. 28, 1911	Present.
Rouse, Barnum S.	H, 5th Conn. Inf.	71	30 00	Providence.	Jan. 24, 1910	Present.
Riley, Peter.	E, 2nd R. I. Inf.	71	30 00	Pawtucket.	Jan. 25, 1917	Present.
Randall, John M.	{A, 12th U. S. Inf. {E, 2nd R. I. Inf.	71	32 00	Riverpoint.	Jan. 1, 1918	Present.
Rhodes, Charles W.	C, 1st R. I. Inf.	80	30 00	Providence.	Sept. 28, 1918	Present.
Streeter, Orville D.	C, 11th R. I. Inf.	67	35 00	Providence.	Jan. 18, 1912	Present.
Sullivan, Maurice.	G, 1st R. I. L. A.	68	40 00	Westerly.	June 8, 1914	Present.
Smith, Alexander G.	G, 17th Mass. Inf.	82	24 00	Providence.	July 15, 1918	Hon. Dis., Sept. 27, 1918.
Sullivan, Cornelius.	D, 18th Mass. Inf.	75	30 00	Newport.	Sept. 29, 1917	Died, Mar. 23, 1918.
Streeter, Marcus M.	G, 1st R. I. L. A.	63	25 00	Providence.	Sept. 22, 1905	Died, Nov. 5, 1918.
Swindell, Joseph.	{B, 7th Mass. Inf. {F, 3rd R. I. Cav.	75	40 00	Cumberland.	June 28, 1915	Present.
Sweeney, John.	G, 18th N. Y. Inf.	85	22 50	Westerly.	Sept. 10, 1915	Died, June 28, 1918.
Steele, Franklin A.	B, 10th R. I. Inf.	73	30 00	Providence.	Sept. 23, 1915	Present.
Sweet, Elias.	L, 3rd R. I. H. A.	73	40 00	N. Scituate.	Dec. 8, 1916	Present.
Schmidt, Louis.	G, 1st R. I. L. A.	72	40 00	Providence.	April 2, 1918	Present.
Sanford, William H.	D, 2nd R. I. Inf.	75	40 00	E. Providence.	Jan. 13, 1918	Present.
Taylor, James.	H, 6th N. Y. Arty.	55	?	Providence.	March 2, 1897	Present.
Tyler, George H.	G, 10th R. I. Inf.	69	18 00	Pawtucket.	May 11, 1913	Died, Oct. 5, 1918.
Thompson, Charles W.	F, 8th Conn. Inf.	58	?	Providence.	Jan. 9, 1899	Present.
Tucker, William O.	D, 1st Mass. Cav.	70	?	Providence.	Jan. 29, 1915	Present.
Wadkins, Albert J.	A, 1st R. I. Cav.	66	?	Providence.	May 1, 1907	Present.
Wilmarth, Jr., Horace.	B, 1st R. I. H. A.	66	?	Riverside.	Dec. 18, 1906	Present.
Williams, Edward S.	C, 1st R. I. L. A.	74	25 00	Providence.	Oct. 20, 1917	Died, Apr. 14, 1918.
Woodworth, William E.	10th R. I. Lt. Bat'y.	73	30 00	Tiverton.	Sept. 21, 1918	Died, Oct. 20, 1918.
Wilbur, Calvin D.	B, 2nd Conn. Inf.	76	30 00	Providence.	March 20, 1918	Present.
Wigfall, Walter E.	A, 3rd R. I. H. A.	76	?	Providence.	June 11, 1918	Present.
Young, William E.	G, 2nd R. I. Inf.	62	?	Providence.	Aug. 14, 1908	Present.

*Orders Drawn for Maintenance of Soldiers' Home from January,
1918, to December, 1918.*

January.....	Pay roll—January	\$990 90
February.....	Pay roll—February	985 90
	January bills	3,755 04
March.....	Pay roll—March	988 20
	February bills	3,230 87
April.....	Pay roll—April	986 00
	March bills	2,708 21
May.....	Pay roll—May	1,025 83
	April bills	2,400 60
June.....	Pay roll—June	1,078 00
	May bills	1,972 46
July.....	Pay roll—July	1,081 00
	June bills	1,547 92
August.....	Pay roll—August	1,040 61
	July bills	1,376 93
September.....	Pay roll—September	1,089 66
	August bills	3,964 43
October.....	Pay roll—October	1,047 20
	September bills	3,824 42
November.....	Pay roll—November	1,094 49
December.....	Pay roll—December	1,180 63
	Part of November bills.....	1,356 59
		\$38,925 00

Orders drawn for Soldiers' Relief from January 1, 1918 to December 31, 1918.

January—January bills	\$707 10	
February—February bills	708 25	
March—March bills	647 00	
April—April bills	705 33	
May—May bills.....	779 65	
June—June bills	805 62	
July—July bills	798 67	
August—August bills	797 32	
September—September bills	753 31	
October—October bills	809 67	
November—November bills	650 51	
December—December bills	837 57	
		\$9,000 00

*Drawn for Dependent Families of Soldiers, Sailors and Marines,
for Any Foreign War, Expedition or Campaign for Which the
United States Issued a Campaign Medal.*

January—January schedule	\$174 00
January—February schedule	181 00
February—March schedule	156 00
March—April schedule	137 00
April—May schedule	134 00
May—June schedule	127 00
June—July schedule	127 00
July—August schedule	127 00
August—September schedule	127 00
September—October schedule	137 00
October—November schedule	137 00
November—December schedule	436 00
	<hr/>
	\$2,000 00

Summary of Expenditures.

Soldiers' Home	\$38,925 00
Soldiers' Relief	9,000 00
Soldiers' Relief, War with Spain, etc.	2,000 00
Office expenses	1,200 00
Grave markers	247 30
Decorating graves	462 83
Perpetual care, burial lot, Bristol, R. I.	1,000 00
Extraordinary disbursements	4,121 58
	<hr/>
	\$56,956 71

NECROLOGY.

CAPTAIN GIDEON SPENCER, Secretary of the Board of Soldiers' Relief for twenty-three years, died on the 3rd of March, 1918. He was among the first to respond to the call of President Lincoln in 1861. He achieved a notable record and won rapid promotion.

He served his town on two different occasions, in the House of Representatives 1888 to 1891, and from 1906 to 1913.

His War record was as follows: Private in Co. D., 1st R. I. Light Artillery, 1861, and later was appointed Corporal and Sergeant. Re-enlisting in 1864 he was commissioned a 2nd Lieutenant, and May 16, 1865, a 1st Lieutenant. After having served three years and ten months he was mustered out July 7th, 1865; end of the War.

He spent six months of his service in Southern prisons.

In 1888 he was elected Department Commander of the G. A. R., also appointed the G. A. R. committee which appeared before the General Assembly in behalf of the Soldiers' Home. He assisted in drawing the bill which gave to Rhode Island the Soldiers' Home, at Bristol, R. I.

He was appointed to the State Board of Soldiers' Relief in 1889, and was one of the Commissioners agents for dispersing of State aid.

PHILIP S. CHASE, Chairman of the Executive Committee, died April 3rd, 1918.

He was City Auditor for twenty-three years and earned the reputation of being one of the most industrious and efficient officials in the City's employ.

He was born in Portsmouth, November 3, 1843. He enlisted September, 1861, at the age of 17, Battery "F," 1st R. I. Light Artillery. With this command he served as a private, Corporal, Sergeant, 1st Sergeant and 2nd Lieutenant.

In 1868 was Assistant Adjutant General with the rank of Lieutenant Colonel.

In 1889 was Secretary of the State Board of Soldiers' Relief.

The Soldiers' Home, Bristol, R. I. was built on plans recommended by him.

He resigned as Secretary 1895, but continued actively on the Board for many years, and at the time of his death was chairman of the Executive Committee.

Was Department Commander G. A. R. in 1883, and Quartermas-

ter of Prescott Post No. 1 from January 1, 1882, until the time of his death.

In addition he was for many years Assistant Adjutant General, Department of Rhode Island G. A. R.

He was a member of Eureka Lodge, No. 22, F. and A. M., of the I. O. O. F., Workman's Beneficial Association, the Massachusetts Commandry Loyal Legion, and the Soldiers and Sailors' Historical Society.

WALTER ALLEN READ, was the descendent of one of the oldest settled families in New England. The Reads emigrated to Plymouth, Massachusetts, from England about the year 1660. He was born July 6, 1842, in Blackstone, Massachusetts, moving to Chepachet when 11 years of age. His opportunities for education were limited and he had to depend mainly on self instruction.

Although but 19 years of age on August, 1861, he enlisted in Co. D, Fourth R. I. Infantry. On November 2nd of the same year was commissioned 2nd Lieutenant, and on August 2nd, 1862 was promoted to Captain.

With his regiment he participated in many of the most important campaigns of the Civil War, and as Senior Captain commanded his regiment after the battle of the Mine until it was mustered out in Providence on October 15, 1864, after a service of nearly three years and three months.

Following the War Mr. Read was engaged in the merchantile business until 1899.

His first public office was that of Postmaster of Chepachet, from June, 1866 until 1885 when he was appointed a Commissioner of the State Board of Soldiers' Relief serving in that capacity until 1890, but continued as Agent of the Board until 1896.

As General Treasurer Captain Read was a member of the Board of Soldiers' Relief for over twenty years, taking a keen interest in all matters appertaining to the Soldiers' Home and Veterans of the Civil War. His presence and wise council will be missed in the meetings and deliberations of the Board.

Mr. Read was the oldest of the general officers of the State, having served continuously as Treasurer over 20 years. He had the distinction of having been returned to office year after year with the largest plurality given any of the State Officers.

He was a charter member and first Commander of Charles E. Guild Post and a Past Department Commander of the G. A. R. in Rhode Island.

He was also a member of the Loyal Legion, of several social clubs, and a Past Master of Friendship Lodge No. 1, A. F. and A. M.

His funeral was attended by the General Officers of the State, members of the Legislature, Judges of the Supreme and Superior Courts, members of the G. A. R. and other organizations.

TIN OF RHODE ISLAND STATE COLLEGE

IV NO. 4

FOR FEBRUARY 1919

REPORT OF THE BOARD OF MANAGERS



KINGSTON, R. I.

1919

**PUBLISHED QUARTERLY BY THE COLLEGE
MAY, AUGUST, NOVEMBER, FEBRUARY**

ENTERED AT KINGSTON, RHODE ISLAND, AS SECOND-CLASS MATTER

The Pawtucket Linotyping Co., Pawtucket, R. I.

RHODE ISLAND STATE COLLEGE

Corporation

N. WALTER E. RANGER, *President*, State Commissioner of Schools,
ex-officio Providence
N. ZENAS W. BLISS, *Vice-President*..... Providence Co., Providence
N. ROBERT S. BURLINGAME, *Clerk and Treasurer*.....
..... Newport Co., Newport
N. THOMAS G. MATHEWSON..... Gent Co., East Greenwich
N. CHARLES ESTES Bristol Co., Warren
N. ROWLAND HAZARD..... Washington Co., Peace Dale
N. PHILIP A. MONEY, Member of State Board of Agriculture. Slocum

Board of Visitors for 1918-19

S. RICHARD JACKSON BARKER..... Tiverton
DLEY E. CAMPBELL Newport
SS CAROLINE HAZARD, *Chairman*..... Peace Dale
ANK L. PIERCE, *Vice-Chairman* Providence
S. LENA FENNER DENNETT Providence
E. CHARLES CARROLL, Ph. D..... Providence
RS. DAVID J. WHITE..... East Greenwich
ENRY A. MARTIN Barrington

REPORT.

*To His Excellency R. Livingston Beeckman, Governor, and the
Honorable General Assembly of the State of Rhode Island and
Providence Plantations, at its January session, 1919:*

I have the honor to submit herewith the Thirty-first Annual Report of the Board of Managers of Rhode Island State College, as required by law.

WALTER E. RANGER,
President, Board of Managers.

REPORT OF THE PRESIDENT OF THE COLLEGE.

to the Board of Managers of Rhode Island State College;

GENTLEMEN: I have the honor to submit the following as my report for the year 1918.

The College Man as a Resource in War.

The year has been greatly broken up so far as college work has been concerned. In this respect, indeed, our experience has been similar to that of all other educational institutions of the country. In the face of the urge and necessity of the war, things have been done and methods have been adopted that were entirely unique in the experience of American colleges. But the net result has been that the colleges and universities have been recognized as never before as a great resource of strength and a bulwark of safety for the Nation in all times of stress and danger. In this war science and the trained mind have played an overwhelmingly important part, and it is due to the universities and colleges that the Nation has had to turn to for its supply of both. The Army and the Navy have recognized this from the very beginning, and the calls from them have been numerous and insistent. More than ever, too, the administration of the affairs of the Nation, the work in shop and factory and on the farm, have called for the college man. And the call has not been in vain. Self-sacrificingly and efficiently the college man and woman have responded, and it is not too much to say that the Nation has been enabled to realize its peril, to recognize its duty, to organize its great resources, to put forth its conquering strength, to save itself and the world from barbarism through the science and leadership that the institutions of learning have provided throughout the long years that have gone before.

Once and for all, the higher education in America has been gloriously vindicated. If there had been, during the years of peace, a return whatever to the Nation for the large expenditures on our colleges and universities (and that there have been abundant returns year by year all thinking men are well aware), it would

have been well worth all the cost to have in its gethsemane of peril and agony, this great resource of intelligence and leadership which the institutions of learning have provided.

In a very real sense the colleges have proved a substitute for the large standing armies and navies which other nations throughout the years preceding the great war have maintained as insurance of safety. Naturally disinclined to militarism, busied with our own internal development, and looking upon ourselves as isolated and protected by the broad oceans that separate us from other lands, we had neglected the art of war and had refused to envisage changed conditions which we now recognize as threatening extreme danger to us. And when the danger did stand naked and revealed, when war actually did come, we then began to look around us to see what weapons of offense and defense we could seize upon. We had hardly the skeleton of an army; there were no stored up supplies of arms, artillery, ammunition, or supplies, we knew nothing of war in the air, and but little of war under the sea. The whole panoply of a great nation's military organization and equipment had to be created outright and at once. It was a discouraging outlook, and our enemies openly scoffed at our impotence.

But the survey of our resources did reveal one priceless possession—a relatively small but numerically large body of college men, keen of intellect, acquainted with nature and man, orderly and logical in their thinking, sound of ideals, trained to seize quickly on essentials, and ready and versatile in dealing with new problems. These it was that came to the rescue of the Nation. There were ready to hand vast masses of men to form an army. There were great resources of material to fashion into armament and equipment. There were workmen and tools and machines and immense stores of fixed and liquid capital to build the machines and accoutrements of war. But there was needed everywhere the leadership to organize, to direct, to coordinate, to fuse and energize all these unconnected possibilities and to do it in the shortest possible time. And it was the college man that organized and fused and energized these uncoordinated masses. He roused our conscience and will to action; he redirected our industries; he marshaled our wealth; he set tasks for our science; he rallied our workers; he officered, trained and led our armies; he concentrated all the great energies

of a great nation to the one great purpose of winning the war. The crisis demanded men of heroic purpose, of fine powers, of wide knowledge, of trained judgment, of daring originality, and of tremendous driving force—the highest type of the race. And the American College man was equal to the demand. He went into the field with the farmer and enabled him to feed the world. As chemist and physicist and engineer he made our industries. As economist, sociologist and statesman he organized our national life, and as soldier and leader he fought and bled and died on the fields of France.

Rhode Island State College in the War.

In all this work this little college of twenty-five years' growth carried its full share. There are many that exceeded it in the number of the sons that they gave, the prominence that their men attained, the wealth of equipment that they offered, or the range of influence that they exerted. There are none that exceeded it in range and quality of accomplishment as compared with number of men and amount of resources at its disposal, in the fineness of spirit with which sacrifices were made, in the prompt readiness with which all that it had was devoted to the cause, or in the ratio of dreadful losses with which its sons proved their courage and devotion on the battlefield.

The college has always maintained military training. There has been much of antagonism to it, and for those in charge it has been no easy task to keep up interest and efficiency in the military work. Students said they were wasting their time at it. Parents frequently objected to it because they thought it morally wrong to train young men for war. Others called it child's play, and ridiculed it as having no place in a college curriculum. Like Noah of old we were building an ark for people who could see no signs of a flood, and they marvelled at our stupidity or mocked at our visionary prophesies, or openly laughed us to scorn.

But the great flood did come, a greater than even our visions had fore-warned us of, and there was bitter need for an ark. Naturally, the little this college could do in supplying men with military training was infinitesimal as compared with the tremendous need that was upon us. It is not wrong, however, and it is a comfort, to

reflect that our men were in demand, that they were more nearly fitted than were others to meet the demand, and that our policy was vindicated. And this was true, not only in military matters, but also and eminently in other lines of training peculiarly characteristic.

Against threatened internal disorder at the very beginning of the war the college could offer and did offer a body of 250 men, organized, trained, equipped, and ready to hand for military service.

At the call for greater food production, it placed in the field from among its faculty and students one hundred and twenty-two workers, many of them specially trained and fitted for direction and leadership in the work. It was ready to furnish and did furnish trained workers for problems in engineering and in the bacteriological and chemical laboratories of great war councils. Its faculty were busy in the constabulary and state guard, in state and national committees and commissions and research councils.

Record of Rhode Island College in the Army and Navy.

While the work at home in the war was equally as important and necessary as the work in the army and navy, yet it was not to be expected or desired that any body of red-blooded young men and women should not be largely represented in the trenches and on our battle-ships. Indeed, the communities and organizations most zealous and efficient at home were precisely those who were most largely represented in army and navy, and the record of military service was an index and measure of home activities less spectacular and less capable of tabular enumeration, while equally necessary in the final result. This college takes great pride, therefore, in the sacrifices and achievements of its young men who went out to meet battle and death.

So far as we have been able to gather the facts, the college was represented by three hundred and two men in the actual military service. In addition there were an unascertained number of men and women in army hospital work, in munitions factories, in army investigational work, and in the ranks of the Y. M. C. A. Of this 301, there were commissioned a total of one hundred and forty-one, or 46½ per cent. The non-commissioned officers were twenty-seven in number, and the privates numbered one hundred and

ty-four. As indicative of the character of the military service rendered, it should be stated that twenty-three men lost their lives in service, and ten were seriously wounded, a total major casualty of over ten per cent. In addition several were more or less seriously gassed, and one was invalided home from the battlefields of France. Seven men were cited for bravery, one receiving three citations; one received the D. S. C., and two the French war cross. Two were on torpedoed vessels and were finally rescued from the sea where many others perished. Several were in German prison camps, one of them escaping under extraordinarily adventurous conditions. One had a remarkable escape from death in the air, and one died the saddest of deaths as a wounded prisoner in a German camp. A tabular statement of service is presented below. Of the 269 members of the Student Army Training Corps at the college none, except those who were transferred to army camps or returned here from army camps, is included in this table or in the foregoing statements.

RODE ISLAND STATE COLLEGE MEN IN ACTUAL MILITARY SERVICE.

RANK.	Army.	Navy.	Marines.	Totals.
Major	2			1
Captains	15		4	19
Lieutenants	33		1	34
Signs		18		18
Lieutenants	68		1	69
Sergeants	18			18
Corporals	9			9
Privates	90	41	2	133
Total	233	59	8	301

The foregoing record does not need comment. In unmistakable language it tells its own story of loyalty, devotion, sacrifice, efficiency, training and courage. The story must not be allowed to perish. The college is poor in physical wealth and resources; its numbers among its friends few of high position, large possessions, or powerful influence, but it has here evidence of a wealth of noble service, of high sense of duty, of heroic sacrifice that must

forever be preserved as its most cherished tradition, and that compels the gratitude and respect of the people of our State. Somewhere, somehow we must preserve this story in imperishable stone and bronze.

Names of Student Soldiers who Lost Their Lives and of Those who were Seriously Wounded in the Great War.

In memory of a gallantry, devotion and sacrifice that has been surpassed never and nowhere—neither in the classic stories that loom large and vague on the far horizon of history, at Marathon or Thermopylae; nor in the romantic pages of middle-age chivalry and mysticism, at Tours or Roncesvalles; nor in the grim records of European dynastic and territorial struggles, at Leipzig or at Waterloo; nor yet again by our fathers and forefathers at Saratoga or Yorktown, at Antietam or Gettysburg—: in loyal gratitude for the splendid college traditions of service that these men have hallowed with their blood; in loving personal remembrance of glorious young American manhood which it has been my privilege to touch and influence, I here set down in this permanent record of the college the names of those of our faculty and students who in the great war of the Nations gave up their lives or whose broken bodies are a sacrifice daily renewed to the cause of liberty and justice.

Faculty Member.

Paul E. Corriveau, Instructor in Horticulture, First Lieutenant, U. S. Marine Corps, killed in action, France.

Students.

Robert Harris Barker, Private, Infantry, U. S. Army, killed in action, France.

Henry Harold Barrows, Private, Infantry, U. S. Army, died of wounds in France.

Donald Ellsworth Carlton, Candidate, Officers' Training Camp, Aviation Section, killed in accident in England on aviation field.

Wallace Charles Craig, Naval Reserve, died of pneumonia in Chelsea Naval Hospital, Feb. 11, 1918

Edwin Baker Davis, Private, Students' Army Training Corps, died of influenza, Rhode Island State College.

Rowland Sever Dodge, Second Lieutenant, Infantry, killed in action, France.

John Henry Fernandez, Corporal, Infantry, U. S. A., died of wounds in France.

Lloyd Harold Gledhill, Sergeant, Infantry, U. S. A., wounded in action and died as prisoner of war in Germany.

Edwin Matteson Greene, Private, Infantry, U. S. A., Tacoma Park, died of influenza, Radio School, Md.

William Frank Hanlin, First Lieutenant, Infantry, U. S. A., killed in action, France, Oct. 7, 1918.

Marchmont Hayward, Private, Ordnance Department, U. S. A., killed in accident, Midland, Mich.

Beverley Shibley Lake, Chief Mechanic, Battery A, 103rd Regiment, 26th Division, gassed, died in France of bronchial pneumonia, March 12, 1919.

Alexander Farnum Lippitt, First Lieutenant, Infantry, U. S. A., died of wounds incurred in action in France, in hospital in New Jersey.

Marcus George Mullins, Private, Infantry, U. S. A., died of influenza, Camp Devens.

Chester Arthur Olsen, Candidate, Officers' Training School, died in hospital at Plattsburg, N. Y.

David Adam Redford, Second Lieutenant, U. S. Marines, killed in action, France.

George Searle Shepard, First Lieutenant, Infantry, U. S. A., killed in action, France.

Harold Manning Spaulding, Seaman, U. S. Naval Reserve, died of pneumonia, Newport, R. I.

Irving Smith Tillotson, Private, Infantry, U. S. A., killed in action, France.

Preston Wayland Towne, Corporal, Coast Artillery, U. S. A., died of influenza, Fort Washington.

David Lamson Wood, First Lieutenant, Infantry, U. S. A., killed in action, France.

Fred Mansur Woods, Private, Infantry, U. S. A., died of pneumonia in France.

Harold Congdon Anthony, Second Lieutenant, Infantry, U. S. A., wounded in France, October, 1918.

Walter Brighton Davis, Second Lieutenant, Infantry, U. S. A., wounded in France, summer 1918.

Wilfred Ross Easterbrooks, Private, Field Artillery, U. S. A., injured while acting as motorcycle dispatch bearer.

George Howard Fleck, First Lieutenant, Infantry, U. S. A., wounded in France, September, 1918.

Harold Pearson Gibson, First Lieutenant, Infantry, U. S. A., wounded in France, September, 1918.

Alfred Patrick Kivlin, Second Lieutenant, Engineers, U. S. A., wounded in France.

Albert Alphonse LeBoeuf, First Lieutenant, U. S. Marines, wounded in France, October, 1918.

Harold Quentin Moore, Second Lieutenant, Infantry, U. S. A., wounded and gassed in France, July, 1918.

Franklin Hoxsie Springer, Second Lieutenant, Infantry, U. S. A., twice wounded in France, July and September, 1918.

William Havens Wood, Private, Field Artillery, U. S. A., wounded in France, October, 1918.

The College as a Military Camp.

Another phase of college effort in connection with the war was the utilization of the grounds and buildings from May 1 to October 1 as a military camp for training soldiers as mechanics; and the establishment of a unit of the Student Army Training Corps running from October 1 to December 20.

Early in 1918 letters were sent out by the Vocational Education Board in behalf of the War Department, stating that mechanics of all kinds and in enormous numbers were needed by the army then in process of creation; that these mechanics were not to be had, were not in existence, in fact, and had to be created, along with thousands of other needs, by a process of intensive training. It was represented that the only places in the country where the appliances, facilities, and equipment necessary for setting in motion such intensive training were the college and university plants thruout the various states. Above all, the need for haste was emphasized and the colleges were urged to place their facilities at once at the disposal of the Government.

Our student body, which commenced the year 1917-18 in September, 1917, with 251 students, had already been greatly depleted by the beginning of the year 1918, and it seemed in our power to render considerable service to our country by undertaking the work proposed, even though it involved large sacrifice in the way of an

entire dismantling of our existing organization and equipment and the installation of new appliances, equipment and teaching force.

Accordingly, with the approval of your Board, arrangements were made and a contract was entered into. The regular work of the college year 1917-18 was forced ahead, and brought to a close April 28, 1918, the commencement being held on that date and a senior class of twenty-five being graduated.

By May 7, the college plant had been readjusted, a teaching force consisting of five of our original college faculty and thirteen master mechanics taken from the trades had been assembled, a corps of five army officers and three assistants had arrived and been installed, with offices and office equipment assigned; a hospital had been fitted up, necessary barracks and storerooms provided, shops had been set up and teaching equipment, such as trucks, automobiles, engines, tools, lumber, steel, etc., had been installed, and an adequate commissary department had been organized. No pains nor necessary expense were spared to prepare for the duties undertaken. On that day the first unit of 252 men arrived.

The men were raw recruits drawn from New Jersey by various draft-boards and sent here directly from their homes. These men remained for eight weeks and were then distributed to various army camps. Their places were immediately taken by a second unit of 263 men, recruits of the same kind as the first and taken from Massachusetts. This unit remained here in whole for eight weeks and in part until September 25, the War Department apparently having lost cognizance of a remnant of 73 men left here after the removal of the main body of the unit.

The total number of men passed through training here was 515. The work consisted of training for automobile mechanics and drivers (205 men), carpenters (143 men), electricians (84 men), machinists (42 men), and blacksmiths (41 men).

The success of the work was rendered difficult by the failure clearly to make plain to officers and men the main purpose of the camp. Indeed the War Department itself seems to have oscillated between the idea of using the college plants as overflows from the army camps for the military training of soldiers, and that of training men for mechanics' work in the army. It was frequently stated that the idea was to make the men soldiers first and mechanics

afterwards. Consequently, the men got the impression that the teaching work was of minor importance. Indeed, to accomplish the task of taking a bank clerk or a stevedore and making of him *either* a soldier *or* a carpenter would have demanded *all* his time for eight weeks and more. To accomplish both in the time set was out of the question. The officers were naturally determined that the soldier-training should not suffer, because their own standing and advancement depended on success in this part of the work.

Moreover, the divided authority presented great complications. The men were regularly enrolled soldiers of the U. S. Army under assigned officers of the army, and these officers were quite jealous of their authority, openly repudiating anything like orders to their men from instructors or anyone in charge of grounds or equipment or buildings. Friction was, therefore, frequent and the maintenance of discipline in classes very difficult.

We cannot therefore flatter ourselves that achievement coordinate with the sacrifices made or the money expended was obtained. Nevertheless, we had the satisfaction of knowing that we had undertaken the work that needed to be done and had carried it to whatever degree of success was possible under the difficulties encountered. At least we had not spared ourselves nor that which we controlled in advancing the common cause.

The Student Army Training Corps.

Concluding our Mechanic Unit work September 25, we undertook new war work with the War Department organization known as the Student Army Training Corps on October first. At that time, also, we undertook to begin the college year for 1918-19. As I shall have occasion later to explain, however, we shall in our college records regard this college year as beginning January 2, 1919, and terminating June 28, 1919.

The Student Army Training Corps was an effort on the part of the War Department to apply the methods of the Mechanic Units to the training of officer material, in such a way that the college student might divert his college training to war purposes while at the same time learning the art of war, and the duties of a soldier and officer. The students were regularly enrolled privates in the U. S. Army or Navy, and were under the charge of army officers.

We began the new arrangement with a new set of officers, less insistent on their authority, more ready to cooperate with the college officers, and more thoroughly imbued with an appreciation of the value of instructional work.

The method of selecting these students was also conducive to the establishment in their minds of a proper respect for the teaching corps and a readiness to conform to teaching requirements. Men applying for admission to the S. A. T. C. sent on their high-school records to the college registrar's office, where they were admitted or rejected in accordance with college entrance requirements. On admission they were physically examined by the army medical officer and, if accepted by him, were inducted in the usual way into the U. S. Army and assigned to duty.

To prepare for the opening on October 1, another entire readjustment of the college premises had to be made; tools and appliances used in the mechanics instruction had to be removed and stored and college apparatus and appliances had to be reinstalled.

On account of the influenza prevalent at that time, the actual reception of students was deferred from the time set, October 1, to October 10. As a matter of fact, however, while many other places suffered severely from the influenza, it troubled us but slightly, comparatively speaking, and my feeling was that it was not necessary to delay the opening. The military department deemed it best, and notice was hurriedly sent at the last moment to all enrolled students.

Our difficulties with the S. A. T. C. proceeded from frequent and repeated changes in requirements as to the courses of study. No settled policy was determined upon and adhered to, and the division finally established into classes for men twenty years old, classes for men nineteen years old, and classes for men eighteen years old, together with requirement of certain subjects of all these classes was subversive of effort at serious academic work in college courses. Some work was done here and there by individual students; but the situation was such at the time of the Armistice and the consequent disbanding of the organization that it seemed best to the faculty on beginning the year January 2, 1919, to recom-

mence all academic work and to declare that no degree credit could be given for time spent in the S. A. T. C. except for military work and other work in individual cases to be considered one by one.

The attendance on this term, commencing theoretically October 1 (Actually October 10) and ending December 12, was as follows:

Students enrolled as members of the S. A. T. C.....	268
Male students under eighteen, hence ineligible to the S. A. T. C.....	32
Female students	44

344

The College Year 1918-1919.

As has been already stated, it has seemed best to have the academic record for the current college year begin on January 2, 1919, and run until June 28 of the same year.

The idea and purpose of this arrangement is to enable returning soldiers from the various camps and others who may have been restrained from entering college during the war, to begin the college year now and as far as possible to complete it by July 1. Those not able to do essential work of the year during that time will be given opportunity during July and August to make up deficiencies. Thus the whole body of students will be able in September, 1919, to begin the year 1919-20 without deficiencies, and the war will not have caused the loss of a whole year to the returning soldier.

Attendance During 1918-1919.

The enrollment October 1, 1918, for the S. A. T. C. was, as already stated, 268. Of this number, one hundred and five, or 39 per cent, failed to return on their own expense at the opening January 2. I find that in other colleges the losses ran as high as 50 per cent or more. In truth, a large part of the young men enrolling in the S. A. T. C. had neither the desire nor the aptitude for a college course. They came into the colleges because they saw in the S. A. T. C. an avenue of approach to an officer's commission in the army, and being subject to the draft, anyhow, they came into the college army instead of going directly to the army camps. When the maintenance and pay of the army were withdrawn and they were discharged, they had no inclination or were not financially able to make any sacrifice to obtain a college education.

The tables of attendance, therefore, with the exception of the first, take no cognizance of students not registering in the term beginning January 2, 1919.

COLLEGE ATTENDANCE.

TABLE No. I.

Showing Attendance by Classes During the Years From 1917-1919.

CLASSES.	1917.	1918.	1919.
Graduate Students	6	2	2
Seniors	38	25	32
Juniors	51	46	43
Sophomores	94	65	48
Freshmen	122	98	125
Irregular	8	7	5
Total, college	319	243	255
Two-year courses	17	8	.....
Student Army Training Corps.....			268
Total			523
Names repeated			121
			402
Two Mechanic Units.....			515
Final Totals			917

TABLE II.
Showing Number of Men and Women, of New and
and Number in the Several Courses by Classes
Year 1918-19.
(After Jan. 2, 1919.)

CLASS.	SEX		DATE OF MATRICULATION.		RE- AGRICULTURE.
	Men.	Women.	Previous to 1918-19.	1918-19.	
Graduates		2	1	1	.....
Seniors	24	8	32	.....	7
Juniors	33	10	43	.....	7
Sophomores	37	11	47	1	7
Freshmen	108	17	4	121	12
Irregulars	4	1	3	2	.....
Total (College)	206	49	130	125	33

HOME RESIDENCE OF STUDENTS

A. Resident outside of the State:

Connecticut	7	New York	
Massachusetts	25		
		Total	

B. Resident in the State by Counties and Towns.

Bristol County:		East Providence
Barrington	5	Johnston
Bristol	6	Lincoln
Warren	3	North Providence
		Pawtucket
	14	Providence
Providence County:		Scituate
		Smithfield
Central Falls	4	Woonsocket
Cranston	8	
Cumberland	2	

Newport County:		Washington County:	
Little Compton	1	Hopkinton	4
Newport	8	North Kingstown	5
Portsmouth	1	Richmond	2
Tiverton	1	South Kingstown	18
	---	Westerly	14
	11		---
Kent County:			43
Coventry	1	Total for Rhode Island.....	222
East Greenwich	3		---
Warwick	3	Grand total	255
West Warwick	2		

	9		

Entrance Statistics for Class Registering in 1918.

Total enrollment of class.....	125
Entering with condition of one-half unit, required work.....	22
Entering with condition of one unit, required work	18
Entering with condition of one and one-half units, required work.....	4
Entering with condition of two units, required work.....	3
Entering with condition of two and one-half units, required work.....	1
Entering with condition of three units, required work	1

Total with conditions	49
Of these, number credited with total of 14 units or more.....	34
Of these, number credited with total of 13½ units.....	6
Of these, number credited with total of 13 units.....	8
Of these, number credited with total of 12½ units.....	1

Total entering without condition.....	76
Average age of men and women at entrance.	
Oct. 10, 1918, was.....	18 yrs. 11 mos. 10 days
Age of youngest member of class, Oct. 10, 1918.....	16 yrs. 5 mos. 10 days
Age of oldest member of class, Oct. 10, 1918.....	22 yrs. 28 days

School Represented in Registration of Freshman Class.

In Rhode Island:			
Barrington High	1	Cumberland High	1
Bristol, Colt Memorial.....	5	East Greenwich Academy.....	1
Cranston High	7	East Providence High.....	8

Newport, Rogers High.....	3	In Connecticut:	
Pawtucket High	2	New London, Bulkeley	3
Providence—Classical High....	8	West Hartford High	1
English	4		<hr/>
La Salle Academy.....	1		4
Morris Heights	1	In Massachusetts:	
Technical High	37	Bridgewater High	2
South Kingstown High.....	4	Boston—English High	1
Warren High	2	College High	1
Westerly High	7	Brockton High	5
West Warwick High	4		<hr/>
Woonsocket High	2		9
	<hr/>	In New Hampshire:	
	98	Kimball Union Academy.....	1

SUMMARY.

Received from high schools.....	112
Transferred from other colleges	2
Repeating freshman subjects from previous year.....	11
	<hr/>
Total.....	125

Finances.

Up to May first, when the work of the college year 1917-18 was terminated, the finances of the college were taking their normal course, with the exception that the withdrawals to enter the army and for other causes connected with unsettled public conditions were decreasing receipts for board, tuition, dormitory and other fees, while the expenses for labor and materials were increasing by leaps and bounds. Financial difficulties after that date were greatly increased by expenditures to make readjustments, to buy new and very costly equipment, to procure mechanics teachers at salaries far beyond ordinary wages because of the necessity for taking them from industries that were paying unheard-of prices for skilled labor, to meet needs arising from entirely new and unforeseen conditions, and to carry out contracts with teachers that under new conditions could not be utilized at the work for which they were engaged.

A further difficulty lay in the fact that the War Department could not definitely state its needs and was unable to name a definite price other than the promise of a specific per capita payment and a subse-

ent adjustment of costs. Responsible agents of the Government
 ged the assumption of undertakings which other responsible
 ents subsequently repudiated. It is extremely difficult, too, to
 arate expenses incurred directly on account of army service from
 er expenses indirectly connected which would not have been in-
 rred but for this service.

Beginning with May first and running to December 31, I have
 de an earnest effort to separate expenses that would have had
 be made, had there been no assumption of control by the United
 ates Government, from those which it seems to me are consequent
 on and conditioned by the army service rendered during the eight
 onths of such service, with the following result:

Statement of Receipts and Expenditures Incident to Maintenance of Mechanics Units May 1 to Oct. 1, 1918.

(Two units totaling 515 men.)

operation and maintenance of college so far as concerns premises used for the war work and salaries of officers and teachers whose services were directly utilized.....	\$21,041 56
outside instruction procured for these specific purposes.....	6,936 54
tools, machines and material provided specifically and only for mechanics' instruction	14,180 42
boarding and housing	21,318 50
	<hr/>
Total.....	\$63,477 02
payments by United States under contract.....	56,315 65
	<hr/>
loss	7,161 37

Statement of Receipts and Expenditures Incident to Maintenance of Unit of S. A. T. C. October 1 to December 1, 1918.

Unit enrolling 269 men.

Total college enrollment 345.

total cost of operation and maintenance of instructional work of college, including housing and board of all students.....	\$41,196 14
cost as above for 269 students out of a total of 345 (in the ratio of 269 to 345)	32,111 29
receipts from United States under contract.....	16,804 23
loss	15,307 06

The total expense to the State, therefore, for the conducting of
 this war work has been \$22,464.43, and on comparing contracts

entered into by the Government with endowed institutions with the contracts entered into with State institutions, we find that it seems to have been intended to cause State funds to bear a part of the cost.

On the other hand, it is to be borne in mind that had it not been for the utilization of the colleges by the Government, there would have been few or no students to instruct because of the draft extending from eighteen years upward. The expense of maintaining grounds and buildings in order would have continued without any return. Contracts with officers and professors would have been either repudiated or their salaries would have continued without labor return from them, and disorganization and distress would have resulted in any event.

Notwithstanding mistakes, strain and stress on officers and teachers, and financial cost to the State, we feel proud that the college was permitted and enabled to make its full contribution and take its full share in the great work of winning the war.

Patriotic Loyalty and Sacrifice of our Faculty and Students.

It is a source of pride to us that from 1914 on, our college has been loyal and true to high ideals of America's duty and needs. At no time has passivism or selfishness or false conceptions of policy or disloyalty to the finest traditions of Americanism been evident among us. I take great pride personally in noting that present results and conditions have vindicated every public utterance of mine since the very beginning of the great war in 1914. While at first these utterances stood in strong contrast with those of many leaders of thought among us, and before April, 1917, were seriously questioned and once or twice openly and even bitterly attacked, in the end the views that I espoused have been generally accepted, and not I but others have had to change their views.

The college has shown itself "one hundred per cent American" in its contributions to the various war service organizations, mainly the Red Cross, the Y. M. C. A., the K. of C., and the Salvation Army. We have no adequate record of the totals contributed, but we know that the contributions went beyond allotments. Besides purchases made through other channels, there were taken through the college office Liberty Bonds of the four issues amounting to \$14,450.

Changes in the Faculty.

In 1917 the total number of officers in the Faculty, including teaching staff, officers of the Experiment Station, and Extension workers resident at the college, was 51. At the opening on January 2, 1919, the same total was 38. The resignations were mainly in order to enter on some phase of war work. The comparative numbers are cited merely to indicate that coincidentally with the reduction in attendance of students a more than corresponding reduction in the faculty took place.

Especially to be noted are the following changes:

L. W. Boardman, professor of English literature, resigned to enter the Y. M. C. A. service abroad. Prof. Boardman is now an official of the "Khaki University," being appointed superintendent of a unit in France.

Captain W. E. Dove was relieved by the War Department of his professorship in Military Science and Tactics and transferred first to Columbia University and subsequently as S. A. T. C. commandant to St. Viator's College, Bourbonnais, Illinois. It is a pleasure to note that at the opening of the new year in January, Captain Dove was, at our earnest request, reappointed to his old position here.

F. H. Smith, assistant professor of chemistry, resigned to take a war service position as chemist with the DuPont Powder Co. at Wilmington, Del.

Physical Director James Baldwin resigned to enter the Y. M. C. A. work as physical director, and is now engaged at Nice, France.

Miss Alta M. Bailey, formerly head of our women's dormitory, is now dean of women at Beaver College, Pa.

Mr. W. C. Irons, assistant in field experiments, resigned to go to an officers' training camp, where he was commissioned second lieutenant.

Two appointments were made during the year. Mrs. Lillian L. Peppard was appointed professor of domestic art. Mrs. Peppard comes to us from the Michigan Agricultural College, from which she obtained the bachelor's degree, and where she was employed as an instructor. She received the degree of Master of Science from Chicago University in 1917. She has also had summer work in Columbia University, New York. At the time of her transfer to

this institution, she was director of the clothing and textile section of the Home Economics department of the Michigan Agricultural College.

Mr. C. E. Brett was elected from a school in Lawrence, Pa., to the position of instructor in poultry here. He is a B. S. of Rhode Island State, class of 1913.

Needs of the College as Presented to the Legislature.

The following schedule of immediate needs was agreed upon by your Board for presentation to the General Assembly:

1	An appropriation in addition to and supplementary of the amount appropriated two years ago (and still unexpended) for the purpose of housing the Departments of Agriculture and Home Economics	\$25,000
2	For repairs	10,000
3	For increase of salaries	5,000
4	For enlargement of the teaching of farm management and markets into a department as per recommendation of the Governor.	5,000
5	For the purchase of land	10,000
6	For maintenance of the Experiment Station.	2,000
7	For maintenance of the Extension Service.	2,000
	Total.	\$59,000

It was agreed that number one of these items should be put into a separate resolution, while the remaining six items should be incorporated into a second resolution. It was further agreed that an Act should be drawn up amending the organic law of the college so as to increase the annual appropriation for maintenance from forty to fifty thousand yearly, the act to take effect January 1, 1919, so as to continue items three and four after the current year. These resolutions and the act mentioned were introduced accordingly and are now before the General Assembly. A mimeographed explanation of the measures has been circulated. Briefly—Item 1 is due to increased cost of construction. Item 2 is required for immediate necessities. For five years and more no appropriation for repairs has been made. Item 3 is due to increase in cost of living. Item 4 is made necessary for teaching as to distribution problems which are assuming paramount importance in New England. Item 5 is a request that has appeared for some years with

otonous regularity and without avail so far. No one who
ws the conditions will for a moment dispute the merit of the
n. Items 6 and 7 are imperative and are due to increasing costs
all labor and material.

Acknowledgments of Aid.

at the opening in October and consequent upon readjustments,
found that the women's quarters in South Hall were greatly in
d of furniture. Such college funds as were available were used
fitting up these quarters; but still the social room of the women
ents was quite scantily furnished. Noticing this, the Chairman
our Board of Visitors, Miss Caroline Hazard of Peace Dale,
etly proceeded out of her own resources to provide for the needs
the young women, giving them furniture to the value of several
dred dollars. We desire here to acknowledge our obligations
ner for her quick perception of the need and her ready generosity
helping to meet it.

The Federation of Women's Clubs has again offered to the young
men a scholarship of \$50. This scholarship was recently
arded by a committee from the women of the Faculty and from
Triangle Club of Kingston to Miss Ruhama Nichols of Slocum.
is a great encouragement to have this practical and substantial
dence from the organized women of the State of serious, intel-
ent and generous interest in our young women, and we hereby
ress our appreciation and thanks.

The Experiment Station and Extension Service.

I shall not comment on the work of the Experiment Station and
Extension Service, except to say that the Experiment Station has
managed to continue its experimental work and has taken on special
blems where possible; and the Extension Service, through the
nerous financial cooperation of the Department of Agriculture,
s been able, while working in close and friendly association with
e State Food Administration under Mr. Coates, immensely to
large its operations and to extend its benefits to every part of
e State.

The report of the Director of the Experiment Station and that
the Director of the Extension Service are hereto appended.

Commencement.

As noted elsewhere, the commencement was quietly held on Sunday, April 28. A class of 25 was graduated. At that time the public outlook was exceedingly dark. The forces of the Central Empires in Europe were making their last great military effort and our allies were everywhere outnumbered and outfought. Our own armies were beginning to arrive in numbers on the scene, and news of losses among them were already arriving. My address on the commencement occasion was entitled "A Civilization in Peril." It was intended to emphasize the tremendous importance of the cause for which we were fighting and to nerve our people to courage and readiness for the sacrifices impending.

It may not be immodest in me to mention that this address and that of 1916, entitled the "Legacy of the Fathers," received the high honor of approval from Congressman Stiness and, on his motion, they were printed in the Congressional Record.

All of which is respectfully submitted.

HOWARD EDWARDS,

President.

REPORT OF THE TREASURER.

BURLINGAME, TREASURER, *in account with the different funds of RHODE ISLAND STATE COLLEGE, for the year ending December 31, 1918.*

MORRILL FUND OF 1890 AND NELSON ACT OF 1907.

8.			
1.	To balance on hand.....	\$25,365 98	
1.	To U. S. Warrant for year ending June 30, 1919.....	50,000 00	
31.	By instruction	\$44,344 91	
	Apparatus	678 36	
	Tools and machinery	43 47	
	Live stock	2,040 00	
	Feed	2,331 10	
	Text books and reference books.....	233 91	
	Seeds	46 28	
	Laboratory supplies	773 10	
	Periodicals	287 61	
	Binding	76 00	
	Miscellaneous	88 69	
31	Balance on hand	24,422 55	
		\$75,365 98	\$75,365 98

MORRILL FUND OF 1862.

918.			
1.	To cash from landscript fund.....	\$2,500 00	
31.	By instruction	\$2,500 00	
		\$2,500 00	\$2,500 00

SMITH-LEVER FUND OF 1914.

918.			
1.	To balance on hand	\$5,366 07	
	U. S. Warrant year ending June 30, 1919.....	10,764 10	
31.	By salaries	\$5,694 03	
	Postage, telephone and express.....	60 80	
	Seeds, plants and supplies.....	278 45	

RHODE ISLAND STATE COLLEGE.

Stationery and printing	678 74	
Traveling	1,948 93	
Scientific apparatus	4 26	
Furniture and fixtures	1,222 70	
Labor	68 85	
Tools and machinery	19 66	
Library	9 26	
Publications	59 68	
Balance on hand	6,084 81	
		<hr/>
	\$16,130 17	\$16,130 17

STATE—MAINTENANCE FUND.

1918.			
Jan. 1.	To State appropriation		\$40,000 00
Dec. 31.	By salaries	\$8,005 09	
	Labor (janitor, farm, etc.).....	7,695 73	
	Traveling	883 44	
	Postage, stationery and printing.....	1,119 42	
	Construction and repairs	3,002 40	
	Fuel	13,416 98	
	Feed	1,481 47	
	Rental of dormitories and land.....	828 99	
	Oil and gasoline	915 28	
	Commencement	124 97	
	Stable and auto supplies	442 54	
	Furniture and fixtures	8 98	
	Horseshoeing	44 00	
	Janitors' supplies	10 55	
	Tools and machinery	238 92	
	Fertilizer	865 65	
	Seeds	128 45	
	Advertising	132 52	
	Electric current furnished	57 68	
	Miscellaneous	596 94	
			<hr/>
		\$40,000 00	\$40,000 00

CURRENT FUND.

1918.			
Jan. 1.	To reserve fund		\$2,000 00
	Dormitory fees		6,916 33
	Department fees		3,810 45

Department sales		27,800 68	
Department service, including receipts from War Department for expense incurred for Training Detachment			44,165 88
Interest		992 61	
Tuition		525 00	
31. By balance overdrawn	\$1,774 02		
Salaries	5,982 82		
Labor (janitor, farm, student)	22,029 81		
Traveling	753 76		
Postage, stationery and printing	629 45		
Construction and repairs	7,302 00		
Fuel	2,043 71		
Feed	731 60		
Freight and express	647 70		
Advertising in publications	725 12		
Entertainment	71 07		
Telephone and telegraph	874 21		
Oil and gasoline	1,068 84		
Apparatus	1,153 15		
Horseshoeing	37 25		
Stable and auto supplies	163 23		
Furniture and fixtures	703 34		
Tools and machinery	5,831 74		
Rental of dormitories	2,266 03		
Refunds	1,182 48		
Janitor supplies	326 77		
Books	23 69		
Fertilizers	438 80		
Seeds and plants	42 32		
Laboratory supplies	2,617 99		
Electric current furnished	620 24		
Miscellaneous, including expense in- curred for Training Detachment	21,813 79		
Reserve fund	2,000 00		
Balance on hand	2,356 02		
		<hr/>	<hr/>
		\$86,210 95	\$86,210 95

TRUST FUND.

918.			
1. To balance on hand		\$ 36 82	
Boarding receipts		27,329 01	
Store receipts		4,800 41	

Amount overdrawn		2,327 29
By boarding	\$29,476 31	
Store	5,017 22	
	<hr/>	<hr/>
	\$34,493 53	\$34,493 53

HATCH FUND.

1918.		
Jan. 1.	To United States check for quarter.....	\$3,750 00
	United States check for quarter.....	3,750 00
	United States check for quarter.....	3,750 00
	United States check for quarter.....	3,750 00
Dec. 31.	By debit from last year	\$1,156 52
	Salaries	5,435 10
	Labor	3,594 05
	Publications	243 93
	Postage and stationery	233 87
	Freight and express	177 37
	Heat, light, water and power.....	153 66
	Chemical supplies	10 09
	Seeds and plants	449 57
	Fertilizers	1,137 17
	Feeding stuffs	371 43
	Library	198 98
	Tools, implements	224 45
	Scientific apparatus	6 35
	Furniture and fixtures	11 35
	Traveling expenses	1 48
	Buildings and land	131 65
	Balance on hand	1,462 98
		<hr/>
		\$15,000 00 \$15,000 00

ADAMS FUND—EXPERIMENT STATION.

1918.		
Jan. 1.	To United States check for quarter.....	\$3,750 00
Apr. 1.	To United States check for quarter.....	3,750 00
July 1.	To United States check for quarter.....	3,750 00
Oct. 1.	To United States check for quarter.....	3,750 00
Dec. 31.	By debit balance from last year.....	\$1,646 35
	Salaries	5,905 89
	Labor	3,024 07
	Publications	10 00
	Postage and stationery	82 99
	Freight and express	21 56

Heat, light, water and power.....	224 89	
Chemical supplies	214 94	
Seeds, plants	126 54	
Feeding stuffs	1,935 88	
Library	5 78	
Tools and implements	186 75	
Furniture and fixtures	135 87	
Scientific apparatus	37 13	
Live stock	180 41	
Traveling expenses	4 94	
Contingent expense	1 82	
Buildings and land	68 59	
Balance on hand	1,185 60	
	<hr/>	<hr/>
	15,000 00	\$15,000 00

MISCELLANEOUS FUND—EXPERIMENT STATION.

918.

1. To balance on hand		\$5,091 06
Department sales		4,134 21
Department service		358 53
Interest		112 79
By salaries	\$1,713 88	
Labor	2,530 98	
Postage and stationery	52 89	
Freight and express	201 66	
Library	180 91	
Tools and machinery	279 31	
Chemical supplies	84 61	
Fertilizers	185 70	
Heat, light, water and power	383 04	
Live stock	28 50	
Traveling	84 96	
Furniture and fixtures	24 98	
Buildings and land	100 13	
Seeds, plants	444 97	
Feeding stuffs	1,210 81	
Contingent expense	10 00	
Balance on hand	2,179 26	
	<hr/>	<hr/>
	\$9,696 59	\$9,696 59

SUMMARY, EXCLUSIVE OF EXPERIMENT STATION.

Total income, including balances:

United States—1890	\$75,365 98	
United States—1862	2,500 00	
United States—1914	16,130 17	
		\$93,996 15

State:

Maintenance	\$40,000 00	\$40,000 00
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Instruction:

Current	\$86,210 95	
Trust	2,166 24	
		\$118,377 19

\$252,373 34

Total expenditures:

United States—1890	\$50,943 43	
United States—1862	2,500 00	
United States—1914	10,045 36	
		\$63,488 79

State:

Maintenance	\$40,000 00	\$40,000 00
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Institution:

Current	\$83,854 93	
Trust	34,493 53	
		\$118,348 46

\$221,837 25

\$30,536 09

Balance held as follows:

Morrill fund,—1890	\$24,422 55	
Smith-Lever fund—1914	6,084 81	
Current fund	2,356 02	
Trust deficit	2,327 29	
		\$30,536 09

I hereby certify that the above is correct and true, and truly represents the details of expenditures for the period and by the institution named.

R. S. BURLINGAME,

Treasurer.

This is to certify that we, the undersigned, auditing committee of the Board of Managers of Rhode Island State College, have examined the accounts of R. S. Burlingame, treasurer of the said college, and find the same correct.

THOMAS G. MATHEWSON,
CHARLES ESTES,

Auditors.

REPORT OF THE BOARD OF VISITORS FOR THE YEAR 1919.

To the Board of Managers of Rhode Island State College;

GENTLEMEN:—The Board of Visitors commends the promptness with which the college was turned over to the use of the Federal Government, and takes much pride in knowing of the help which this State Institution rendered in the war crisis.

May we here record some of the college affairs, that all other citizens may share in the appreciation of this Rhode Island educational institution.

In April, when the War Department desired that training be afforded enlisted men, commencement was moved ahead and the regular 1918 class, which at that time had been reduced (largely by students entering service) to twenty-five, was graduated. On the 7th of May, with every building on the campus refitted and with new instructors available, training of the two hundred and fifty-two mechanics sent by the War Department was started. After two months, this contingent was replaced by a second unit of two hundred and sixty-three, which remained until late September. On October 1st (slowed up somewhat by the outbreak of influenza), under Federal control, a unit of two hundred and sixty-nine students in the S. A. T. C. started training, continuing same up to December 12.

We appreciate that the required instruction staff was provided and that the necessary machinery and equipment were procured, without sparing of money, to carry out the undertaking with the Government and to make the best of the arrangement.

The courses for young women, discontinued in April, 1918, were resumed on somewhat parallel arrangement to the S. A. T. C. courses on October 1, 1918, and forty-seven young women regularly pursued the work thru to the closing of the year.

The young men and young women who have been able to give so much help to the nation during this period of stress clearly give approval to the teaching made available by our Rhode Island State College.

The indications at Kingston, as well as elsewhere, clearly show prospects of increased attendance at educational institutions, and the Board unanimously recognizes the need of additional facilities for the college. A new building fitted for use by the Department of Agriculture is required; also one suitable for agricultural and extension work, and to include quarters for administration work. Further changes are required in the present Davis Hall, permitting same to be solely available for the women students. With the above additions, space will be provided, as was contemplated in 1917, for the requirements for vocational work. Small additions to two other buildings will provide what is required for the use of Home Economics.

The temporary makeshift arrangement in renting land may well be discontinued, and present seems to be a favorable time to obtain additional near-by land, conveniently situated to cover fundamental requirements and needs for experimental and demonstration work. It may be noted in passing that most of the land held by the college suitable for use by the important Department of Agriculture is actually required by and turned over to use of the Federal Experiment Station, and cannot be made available for the work of the college on problems, the results from which are so directly valuable to our citizens.

It is to be noted that the unusual and rather hard service, incident to the continuous operation of the property under the peculiar conditions existing for some time, shows itself in the need of repairs, perhaps more plainly than any other way now noticeable.

The Board recommends, as absolutely essential, measures to provide compensation for an increased instructional force, and definitely urges prompt starting of the Department of Farm Management and Accounts. This department, as recommended by the Governor, offers the greatest of practical possibilities for help to our citizens in obtaining the largest income incident to our almost only home "raw material."

The Board approved of the extension work covering Agriculture and Home Economics, and in general finds many evidences of real practical benefits arising from this service, conducted by the college and the United States Department of Agriculture.

In view of the call for such help to our citizens and community can only be given by this Institution, we urge that definite provision be made for the required developments outlined above. The Board respectfully submits this report.

FRANK L. PIERCE,
Vice-Chairman,

D. E. CAMPBELL,
HENRY A. MARTIN,
MRS. DAVID J. WHITE,
CHARLES CARROLL,
LENA FENNER DENNETT,
ELIZA H. L. BARKER,

REPORT OF THE EXTENSION SERVICE R. I. STATE COLLEGE, 1919.

PRESIDENT HOWARD EDWARDS,
Rhode Island State College.

DEAR SIR: There has been no special change in the organization of our Extension work during the past year. We are cooperating as heretofore with the State Relation Service, Department of Agriculture, especially along the lines of County Agent Work, Home Economics and Boys' and Girls' Club work. We are also cooperating with the Bureau of Animal Industry of the United States Department of Agriculture in the employment of a special club worker in Poultry Husbandry, and with the Bureau of Animal Industry and the Rhode Island State Board of Agriculture in the employment of a State Dairyman. Within the State most of our Extension work is conducted through the Farm Bureaus, and both the Farm Bureaus and the College are maintaining cooperative relations with other organizations in the State. This is especially true with regard to the State Board of Agriculture, the State Commissioner of Public Schools and Public School Superintendents throughout the State, the State Corn Growers' Association, Poultry Association, both State and local, Local Dairy Associations, the Grange, Women's Associations, Boards of Trade, Rhode Island League of Improvement Societies, etc. As a result of the war emergency work we have come in close contact with the State Food Administration, especially in connection with our Home Demonstration Work. The Food Administration planned a great deal of work in Home Economics for the purpose of conserving food, and this raised quite a problem with regard to the coordination of the efforts of our Home Demonstrators and the workers connected with the Food Administration.

Through arrangements made by President Edwards with the Food Administrator for Rhode Island, Mr. Coates, and the cordial spirit of cooperation manifested by Mr. Coates and by the Home

conomics workers connected with his office, a very effective plan of cooperation was inaugurated. A written project covering methods of cooperation was prepared in the extension office. This provided for a coordinating committee consisting of the State Director in Home Economics for the Food Administration, the Chairman of the Food Committee of the Council of Defense, the State Leader in Home Economics, the Professor of Home Economics of the State College, and a fifth member agreed upon by these agencies. This committee met from time to time, generally once a month, to plan the work of the Food Administration workers and home demonstrators from the State College, the Farm Bureaus and the Federal Department of Agriculture.

Changes in Personnel.

Due to the demands of the war and war work, it has been exceedingly difficult to secure well-trained men and women and hold them for any definite length of time. Appropriations for the work in Congress to the Department of Agriculture have also been meager, and the amount of money to be appropriated has been under debate, so that it has been more or less difficult to make plans to employ workers with any degree of certainty that the work would be continued even during the period of the war. The following is a list of positions filled or of employees whose employment began or ended during the year just past:

Mr. Arthur G. Skinner, County Agent Southern Rhode Island, resigned November 1, 1917, and Frederick G. Comins was appointed to this position and began his labors January 1. Elwin H. Forsythe, who took up the work as County Agent in Providence County, December 26, 1917, resigned February 15. No one has been appointed in his place, and the Assistant Agent, Mr. Howard Macrae, is now in charge. Mr. Henry R. Strand was appointed Emergency Assistant Agent in Newport County, April 1, and severed his connections with this office on June 30. Mr. Lester D. Jones was appointed Emergency Assistant Agent for Southern Rhode Island Farm Bureaus beginning April 1, and has continued until the present time. Mr. Howard H. Hawes took up a similar position with the Providence County Farm Bureau on April 15, and is still employed. Mr. Patrick F. Reynolds was employed with the

Newport County Farm Bureau from April 22 until August 1, to assist in garden work, and Mr. Geo L. Waugh held a similar position in Southern Rhode Island Farm Bureau from May 1 to May 18, when he was called to the colors. Mr. Sherburne Sweetland assisted in garden work in Providence County from May 15 to June 30. Mr. Lester W. Lloyd, County Agent for Newport County, enlisted in August and was sent to an officers' training school September 1. Mr. Sumner D. Hollis was appointed to take this position on October 10.

In Home Economics, Miss Grace Lillian Rieckel resigned as Urban Home Demonstrator for Providence County on March 2 and became Mrs. Lester W. Lloyd. She was again employed as Assistant Home Demonstrator in the Newport County Farm Bureau from April 22 to September 1. Sarah Hudson LeValley was employed as Home Demonstrator for rural work in Providence County April 15. Miss Esther Wold was employed at the same time as specialist in clothing work, but was unable to take up her work until May 15. Miss Madeline Shaw was employed as Assistant Home Demonstrator beginning July 1. In addition there were seven students and graduates of the State College who were employed for a period of from three to five weeks, ending July 30, to carry on a special campaign for food conservation throughout the State.

In Club Work, Mr. Lorenzo F. Kinney was employed as Assistant State Club Leader beginning July 1, and is still holding this position. In addition to the permanent employees in club work, there have been twenty-eight men and women, mostly teachers and superintendents, who have been employed as local club leaders for periods varying from one to five months.

In the office, Miss Lucy H. Young, filing clerk, resigned August 30, and Miss Hope Essex Swift was appointed to take her place and began work September 23.

Office Equipment.

Owing to a failure to secure the necessary cooperation from other State organizations, a small fund which had been set aside to meet an offer of cooperation from the United States Department of Agriculture remained available towards the end of the year and was

used in securing some greatly needed equipment. An electrically driven addressing machine, and a cabinet for filing the address plates was secured, also two oak and one steel letter files, a storage cabinet for stationery, a drawer cabinet for filing halftones and cuts used in bulletins, two small show cases for home economics exhibits at fairs, a dictaphone, a new typewriter and a flat-top desk. A few much-needed books were added to the library.

Conferences During the Year.

During the year there have been held regular monthly conferences of extension workers resident at the college, also two general conferences of all extension workers. The monthly conferences have usually been held on the first Monday of the month, and the purpose has been to coordinate work so far as possible, and to develop new plans or call attention to changes in the existing ones. Several other conferences have been held with the County Agents, Home Demonstration Agents and Club workers, at which the State Leaders or committees resident at the college have taken up with these workers, plans for the prosecution and development of their work. Representatives of the Extension office have also held conferences from time to time thruout the year with Farm Bureau Executive Committees and cooperative employees stationed in farm bureau offices.

Special Campaigns.

Early in the spring a representative of the Department of Agriculture came to the state and placed before our extension workers the needs of the Western states for seed corn. A campaign for the collection of seed corn was carried on by the Extension Agronomist and the County agents, and as a result several carloads of seed corn which passed the required germination test of 85 per cent were shipped to the West. The price was \$4.25 per bushel delivered at the cars and netted the farmers who sold the corn very good returns. Some assistance was given to home gardeners in cities and mill villages. Home economics campaigns for increased use of milk, both of whole milk and in the form of cottage cheese, were carried on by the home demonstration agents.

Publications.

The Extension Bulletin, which has been published for a number of years, has been continued, and two numbers have been published or are in preparation at this time. One, "Thrift in Clothing," by Miss Esther Wold, was printed in time for distribution at the county fairs. The other, entitled "Rural School Lunch," by the Misses LeValley, Hardin, and Hoxsie, is now in the hands of the printer and will be used in connection with the hot school-lunch work where this enterprise is to be taken up. News Letters have been issued from time to time, both from the Extension Service as a whole and from the workers in charge of special lines. These letters are generally sent to newspapers and periodicals, but are also sent to men and women who are closely connected with the work being done. A four-page monthly periodical called the "Extension Review" has been started. The purpose of this publication is to give to the people of the State generally, an outline of the work that is going on in the Extension Service as a whole, also to give certain seasonable information which may be of value to the people of the State. At the instance of the State Leader of County Agents, the Farm Bureaus of the State have joined in publishing a Farm Bureau paper for the State, to be known as the "Rhode Island Farm Bureau News." The three Farm Bureaus share the responsibility for this paper. Most of the space is reserved for Farm Bureau news, and the Farm Bureau workers share equally in providing the reading material. The County Agents also furnish material as they find time for a few pages of general matter. The paper is edited and issued at the State College, and two of the resident staff, R. B. Cooley and George Baldwin, function as Editor and Business Manager respectively. An annual report of the Extension Service is prepared and printed in the report of the Board of Managers of the State College.

Mailing List of Publications.

Progress has been made in preparing a mailing list of persons in the State who we know are interested in publications on Home Economics and Agriculture. This list now embraces about three thousand names for which we have addressograph plates. It is proposed to classify this by grouping the plates under various

heads, and also by a checking device which will enable us to put a group of addressograph plates through the addressing machine and have the machine automatically pick out plates for printing which have names of persons who are classified as likely to be interested in the publication to be issued.

Educational Exhibits.

Educational exhibits were prepared and were staged in cooperation with the State Council of Defense in a large war work exhibition made by that organization at the three principal fairs of the State, namely: Washington, Providence, and Newport Counties. In addition, parts of this exhibition were displayed at a number of small grange and local fairs. Our workers also assisted at all the fairs in judging and by giving lectures and demonstrations. The main exhibit was at the Washington County Fair at Kingston, and occupied over 2200 square feet in a large tent 200x80 feet. It consisted of exhibits in Agronomy, Livestock Work, Farm Bureau Work by the Southern Rhode Island Farm Bureau, Club Work and five Home Economics Exhibits, emphasizing five different lines of thrift of importance in connection with the prosecution of the war.

The exhibit at the Washington County Fair was divided into two parts, one being sent to North Scituate, where the Providence County Farm Bureau joined in; the other to Newport, where the Newport County Farm Bureau added its exhibit. A heavy rain on Thursday evening of the Washington County Fair week damaged exhibits considerably, and the following week weather conditions were decidedly unfavorable. Frequent heavy rains soaked through the tents, wetting many of the exhibits. At Newport a heavy wind-storm, which completely demolished the tent, accompanied the rain on Wednesday afternoon. Exhibits were salvaged so far as possible and removed to the main exhibition hall, but many of them were damaged beyond rehabilitation. Club work and other exhibits have been held in connection with poultry and other shows during the late fall and early winter months.

The Extension Agronomist, the club workers and home demonstrators took an active part in the Annual Corn Show in December, which was, without doubt, the best exhibition of its kind held in the State.

Miscellaneous Observations and Recommendations.

In the office work, progress has been made in preparing an outline of the filing system, which was mentioned in my last report. Maps for indicating the work of all the different lines in the Extension Service have been mounted in a wall display fixture, and are ready for the persons in charge of the different lines of work to indicate with glass-headed pins the location of the different activities throughout the State.

An effort has been made, so far as possible, under the emergency conditions which have existed to plan the work so that it may be put on a permanent and definitely organized basis. Special stress has been laid on careful planning of any work to be undertaken and the presentation of plans in the form of written projects.

Finances.

Regular Funds, College and United States Department of Agriculture:

Federal, Smith Lever funds	\$10,552 17
State, Smith Lever funds, contributed by the College.....	582 17
College funds	760 96
Federal Funds from the regular appropriation for the Department of griculture available only for salaries	
County Agent Work	3,001 00
Club Work	2,400 00

We have continued cooperative relations with the Bureau of Animal Industry, Department of Agriculture, thru which they contribute \$1500 to pay the salary of the State Specialist in Poultry work and \$1000 towards the salary of the State Dairy Specialist. The State Board of Agriculture and the State College contribute \$500 each for the remainder of the salary of the Dairy Specialist, and not to exceed \$250 each towards traveling expenses. A cooperative relationship with regard to a State specialist in sheep husbandry was entered into with the Massachusetts Agricultural College and the Department of Agriculture, but this arrangement was found unsatisfactory and was discontinued July 1.

Emergency Funds, U. S. Department of Agriculture.

The Department of Agriculture again last spring asked of Congress appropriations of emergency funds to be used in cooperation

with the different States in the continuance of County Agent and Home Economics Work and Club Work, but this bill did not go through until December. Meanwhile funds to be used by the Federal Department in continuing the work as begun last year were provided by monthly resolutions. On this basis we were allotted the same amount of money as last year. The money was divided as follows:

County Agent Work	\$4,000 00
Home Economics Work	10,200 00
Club Work	3,000 00

As in past years it has been the policy of the Department to have these funds used primarily for salaries. Whenever it is possible for local associations to pay traveling expenses, this rule is adhered to, but on account of the small amount of State funds available, the Department has, in most cases, paid a good share or all of the traveling expenses of emergency workers as well as their salaries.

Acknowledgments.

The Director of the Extension Service acknowledges with pleasure the hearty cooperation in the work by his associates and the general spirit of team work which has been displayed by the individual extension workers. Grateful acknowledgment is also extended to President Edwards of the College, and other College authorities for the encouragement of the work which they have given, to college professors and instructors for assistance rendered in extension work, and to the officials of the States Relations Service, United States Department of Agriculture, for the spirit of helpfulness which they have always manifested, and the practical assistance which they have given on a large number of occasions.

Plans for the Future.

The past two years, since the declaration of war against Germany, have been years of strenuous effort to organize the extension work so that it might contribute as far as possible towards a successful termination of the war. In Rhode Island this effort has, of course, been directed largely towards making the State more nearly self-supporting, in order that its inhabitants might draw less on the surplus food supplies of other States. It is essential also, as a

general proposition for times of peace, that self-sustenance for the State, especially in connection with perishable food products, should be maintained and the Extension Department should bend every effort towards achieving this purpose. It has been fortunate for the extension work that emergency funds from the Federal Department of Agriculture have been available. We feel that good use has been made of these funds, and hope that a sufficient amount of money may be secured for the future, either through State or Federal appropriations, so that the framework of our extension work which has been built up during the past two years may be maintained.

We have at present the following plans under way: First, the completion of the organization of the office so that the work may be carried on more readily and more systematically. To this end we are preparing what may be termed a manual of office work wherein a fairly definite outline will be given of all office work. This will be used as a guide to office workers and particularly to acquaint new workers with their duties when changes have to be made. A more vigorous effort will be made this year to plan all our extension work carefully and to put the main projects in written form for future guidance. In order to obtain efficiency we must get away from or reorganize as far as possible a good deal of the miscellaneous work which comes in and which, although useful itself, will not be effective in securing definite, tangible and lasting results.

Another problem which we have before us is to develop more effective methods in extension teaching. One of the first requirements in this direction will be a more definite organization of such teaching so as to arouse the interest and meet the needs of people who regard themselves as beyond school age and have gotten out of the habit of doing systematic studying. Another purpose which we must keep in mind in this connection is the acquisition or preparation of teaching accessories, such as charts, maps, photographs, lantern slides, moving pictures, models, exhibits, and other illustrative materials. In order to maintain an adequate agency to carry on extension teaching in Rhode Island, experience of the past four years seems to indicate that the following plan represents the framework of what should be an effective plan of organization.

To begin with, the work should be divided into three main groups: County Agent Work dealing with adult men, Home Economics Work with adult women, and Club Work, through which elementary Agriculture and Home Economics can be imparted to children in the homes. In the County Agent Work, we should have one agent in each of three or four districts with a State Leader or the Director in charge. In Home Economics, we should have a Home Demonstrator in each district, with a State Leader to supervise the work. A similar organization also seems to give the best results for Club Work throughout the country.

To reinforce these workers and give assistance throughout the State wherever it may be needed, we should have four or five men and women, who can specialize in certain definite subjects. Our experience seems to indicate that we have the greatest need for specialists along the following lines: Agronomy, Farm Management, Animal Husbandry and Horticulture, with especial attention to Market Gardening. A Clothing Specialist will be very helpful and almost necessary in connection with our Home Demonstration work.

Our Extension Work can accomplish very little in reaching the large number of people who ought to be reached by our workers unless we can get the cooperation of local people. This cooperation must be, at least for the present, voluntary and unpaid, and consequently must be secured from public-spirited individuals who are interested in the problems of Agriculture and Home Economics and who are willing to give of their time in interesting and helping others. To this end all extension workers must give a great deal of attention to local organizations; in fact, with the relatively small number of regular employees which we have, and the large number of people who should be reached, local organization and instruction of volunteer assistants must take up a very large part of the time of every field extension worker.

Work with Projects.

Project I. *Administration.* The work under this project has been considered to a great extent in the introductory report. In a general way, the plans have not varied a great deal from what they were last year. Efforts towards a more definite organization

of the different lines and towards securing a more systematic reporting of the work have been continued. In this connection, display maps have been secured and are now ready for use. Drafts for small town maps to be used in connection with reports are in the process of completion. It is proposed to have line-cuts made of these and to print a sufficient number of each map so that every worker may at all times have copies of a good map of the district in which he is working, on which to report the development or completion of his plans.

The card index of farmers has been very largely extended during the year, and we probably now have a fairly complete list of all the farmers of Rhode Island. This index is arranged by towns and will form the nucleus for a more complete and thorough-going record of farms and farm work of the State.

As already noted, the filing system of the office is undergoing a revision, and we trust that during the coming year this revision will be completed. During the past year there has been so much work in preparing the mailing list and in doing miscellaneous office work that the filing clerk has not had much time to give to her regular work.

The work arising from the use of Federal Emergency funds has necessitated considerable recording for which special blanks have been made in order to save time in making entries.

Project II. *County Agent Work*, The principal difficulty during the past year as in previous years has been the frequent changes in the personnel of the County Agents. Considerable progress, however, has been made in the development of the work, and we hope that with fewer changes in County Agent positions we may in the near future place this work on an entirely satisfactory basis.

In Southern Rhode Island Farm Bureau district, County Agent Comins has continued emphasizing the development of the dairy industry by stimulating the use of a larger proportion of home-grown dairy feeds, more effective feeding by the use of balanced rations, the improvement of dairy herds by eliminating the "boarder cow," and the introduction of registered or high-grade dairy stock. Forty-eight registered cows and eight registered bulls have been

purchased during the year by farmers in the district. Mr. Comins has also given considerable time to organization work, and five communities have been organized with good working committees.

In Providence County, Assistant Agent Macrae has emphasized primarily the business side of farming and, especially, cooperative purchasing and marketing; farm loan work in connection with the Federal Farm Loan Bank of Springfield, Massachusetts; the liming of soils; growing of clover, alfalfa and soy beans; orchard and potato spraying; introduction of pure-bred or high-grade stock has also received attention. Assistance has been given to the dairymen in securing a bonding law which will prevent milk dealers from contracting for milk for which they cannot or do not intend to pay.

County Agent Lloyd, Newport County, secured excellent results during the time that he was employed. Assistance was given to the Aquidneck Dairymen's Association in planning their milk distributing plant. The use of improved seed corn; supplementing stable manure with phosphoric acid; growing clover, alfalfa and soy beans; the introduction of registered live stock and the organization of boys' pig clubs received attention. Mr. Hollis, who succeeded Mr. Lloyd, has taken up the work in an able way where his predecessor left off, and is developing the work along the same lines.

There have been several instances of excellent County Agent work in Rhode Island, but the development of an efficient cooperative milk distributing plant in Newport is probably the most prominent. This cooperative enterprise is the direct outgrowth of the Aquidneck Dairymen's Association organized from the Extension office in 1915, primarily for the purpose of conducting cow testing. This feature of the work was dropped after about a year, but the association hung together and functioned as a cooperative buying association until 1917, when the diphtheria epidemic broke out in Newport and raised the question of a better milk supply. The association had shown excellent signs of cooperative enterprise, and through a generous offer of financial assistance from a Newport County resident, and with the vigorous aid of the County Agent and specialists from this office and the United States Department of Agriculture, an up-to-date milk distributing plant was started. The milk is now handled so as to be cleaner and more uniform in

quality, and pasteurized so as to reduce to the minimum danger from transmission of disease. In December milk was retailed to the consumer at 15c. a quart, or about two cents less than the prevailing price in neighboring cities. The producers were paid $9\frac{1}{2}$ c., which was somewhat more than the prevailing price received by New England farmers, and 11-10 cents more than New York farmers were receiving at the time.

The plant distributes from 7,000 to 11,000 quarts of whole milk daily. Assuming an average of 8,000 quarts daily, the yearly gain to consumers in Newport over those in other cities is, at 2c. per quart, \$58,400. The producers were receiving a better price, but leaving this out and considering only the gain from labor saved in more economic collection and distribution, we find that the plan saved each farmer, on the basis of \$5.00 per day for man and team, approximately \$260 a year. As there were about forty farmers delivering milk before the establishment of the plant, this represents a total saving of \$10,400 per year. In recent months also the plant, in addition to paying all expenses and interest on capital stock, has had a net profit of as high as \$4,500 per month, part of which will be used for repairs and improvements and part set aside as a sinking fund.

Extending the Agents' Work in the Counties.

	1918.	Total
Different farmers visited on their farms.....		427
Total number of farm visits made.....		705
Calls on agents at offices		2014
Meetings held under auspices of organizations or agents.....		115
Total of all meetings in which the agents took part.....		214
Total attendance of such meetings.....		7907
Membership in Farm Bureaus, Dec. 1, 1918.....		288
Associations organized for adults (1918).....		1
Membership of adults' associations		108
Boys' and Girls' Clubs organized in 1918.....		1
Total membership in such clubs.....		30
Agricultural articles written by agents and published in local papers..		107
Agricultural articles written by agents for Farm Bureau News.....		9
Letters mailed		2,141
Circulation of circulars and circular letters.....		10,355
Local Extension Schools and Institutes at which agents assisted.....		2

Days devoted to above schools.....	4
Total enrollment of these Extension Schools.....	210
Agricultural observation parties conducted	8
Number of persons in such parties.....	115
Meetings or demonstrations held with specialists.....	6
Days in office	402
Days' leave	25

Project III. *Home Economics Work.* The Home Economics work of the Extension Service under Miss Meloche has contributed very effectively to the efforts for the conservation of food as required by the Federal Food Administration. The work has been carefully organized along the lines laid down by the project agreement between the Department of Agriculture and the College. Brief monthly meetings to assist workers have been held, also a few conferences of longer duration, at which plans for campaigns have been carefully worked out. As already noted, the State Leader has been a member of the State Coordinating Committee in Home Economics, through which the duplication of work by the Food Administration and the Extension Service has been prevented.

In the early spring there was held at the College a four-day "Home Economics Week" at which fifty were present. Stormy weather prevented a larger attendance, but it was impossible to give to a number of people instruction and inspiration which would enable them to do better work in their homes and also as local leaders in home economics.

The women of the State were asked to save meat, sugar, wheat, and fats, and the home demonstration agents in cooperation with the Food Administration endeavored to give the women the necessary information to carry out this work effectively. Demonstrations in wheat substitutes, saving of fats and meats, sugarless desserts, use of corn products, value of milk and milk products in the diet and other lines were given.

A surplus of potatoes was found early in the summer, and the home economics agents gave demonstrations all over the State to increase the use of potatoes. As a result, it is estimated that sales in Rhode Island were increased 50 per cent during the month in which the demonstrations were held. Ninety-six demonstrations

in the use of milk in the diet were given in different parts of the State. Canning as a food-saving method is of great importance, and in order to extend the work in this line as far as possible, the home demonstrators trained eighty-five volunteer demonstrators who helped to extend the work out over the State. One-fourth of the women who attended canning demonstrations sent in reports showing that they had canned 88,927 quarts of fruit and vegetables and put up 32,340 jars of preserves. At lowest wholesale prices based on valuation at canning centers in Connecticut and Rhode Island, these canned goods were worth \$23,9467.80. According to retail prices secured from stores in Rhode Island and used as a basis for club work estimates, these goods were worth \$54,165.50. The construction and use of fireless cookers, and the use of better cooking methods and utensils was made the subject of demonstrations intended to save fuel.

Clothing conservation was found to be almost as necessary as food conservation, and "Made-overs from Left-overs" was made the slogan. It is estimated that over \$2000 worth of garments were made in classes of women organized to receive instruction. Besides this, there was undoubtedly a much larger amount saved by the women, who afterward applied the lessons learned to clothing work in their homes. A bulletin on "Thrift in Clothing" was prepared and distributed at fairs, to women in classes, and to all who inquired for information on this subject.

During the year, nineteen different mothers' clubs were reached; twenty-one demonstrations on food and fourteen demonstrations in clothing work were given at these clubs. Four Federal clubs had the food series and one Federated club received the clothing series. Of the thirty-nine granges in the State, twenty-nine were reached by lectures or demonstrations, eleven of them had series of food demonstrations. Nineteen series of food demonstrations were given in cooperation with the local leaders of the State Council of Defense; 1717 home visits were made; 13,000 Food Administration leaflets and 40,000 bulletins, circulars and recipe sheets and other literature were distributed. It is estimated that approximately 25,000 people were reached, and demonstrations have been held in practically every community in the State; twenty-three calls for series demonstrations have been refused for lack of time.

Project IV. *Club Work.* Additional funds secured from emergency appropriations by the Department of Agriculture enabled Mr. Thomas, State Leader, to develop the club work very effectively during the past year. Especial effort has been made to secure definite results by follow-up work and through systematic campaigns to have boys and girls complete the projects which were undertaken by them at the beginning of the season. The result of this work is enumerated as follows:

Boys and girls have been interested in twelve projects during the year, as follows: Gardening, Canning, Poultry, Corn, Pig, Potato, Baking, Cooking, Sewing, Handicraft, Rabbit, Pigeon. A few boys have been interested in Sheep, Goats, Bees, Guinea Pigs and Ducks.

As in former years, the most popular clubs have been the Gardening, Canning and Poultry. This may be explained by the fact that these club projects have been given the greatest amount of time and attention.

In the Gardening project, there were 5741 members enrolled. Of these, 4856 reported crops produced to the value of \$97,665.00.

In the Canning project, there were 3888 members enrolled. Of these, 3065 members reported products conserved to the value of \$36,280.00. Over 72,890 quarts of products were conserved by these members reporting.

In the Poultry project, there were 1029 members enrolled. Of these, 590 reported having produced poultry products to the value of \$41,075.00; 7194 chicks were hatched; 6030 laying hens were managed, and 21,675 dozen eggs produced.

There seems to be a growing interest in live stock projects. One hundred and sixty-six members reported on pigs, 91 on rabbits, 55 on pigeons, and a few on sheep, goats, Guinea pigs and ducks.

A large number of girls are taking an interest in the Baking and Cooking Club work, and in helping prepare meals at home with the assistance of their mothers.

In the Sewing Clubs, 362 girls reported products valued at \$2425.00.

Much of the sewing work this year has been for the children of France and Belgium and for the Red Cross.

Club Members Interested in Other Projects.

The 9,642 Club Members reporting showed that many of them were actively interested in one or more projects other than the one on which they had reported.

Activities of Club Leaders.

During the year, Club Leaders have conducted the following activities:

DEMONSTRATIONS.

Canning, baking, sewing, garden, poultry.....	534	Attendance	9,133
Field meetings	388	"	6,100
Club festivals	2	"	60
Leaders' training conferences	13	"	86
Club exhibits held	46	"	7,000
Club plats visited	1,405	"	5,063
Number club meetings	1,126	"	24,562
Number other meetings, lectures, conferences, etc.	931	"	12,839
Number meetings of all kinds.....	4,435		
		Total Attendance	64,843

Number paid leaders, permanent, 4. Two to five months, 27.

Total months time worked during calendar year by all leaders, 109½ months.

In addition to the food production and conservation already noted, club workers have contributed service to the Red Cross, have purchased Thrift Stamps and Liberty Bonds and have assisted in collecting stone fruit seeds and nut shells for gas mask factories, all of which has been of assistance in the prosecution of the war.

Project V. *Agronomy*. This project has been carried out so far as possible by Mr. Baldwin in connection with his work as Assistant County Agent at large for the State.

The following demonstrations have been conducted in cooperation with Farm Bureaus: 9 alfalfa, 6 soy bean, 3 silage corn, 2 in liming for turnips and mangels, 5 on manure plus acid phosphate, and 8 on rape. During the year 318 samples of soil have been tested and recommendations about use of lime given. Seed corn collection for the Western States and farm accounts received considerable attention. Assistance was given in carrying on the State Corn Show and in the garden campaign conducted

last spring, also in preparing and staging exhibits at the fairs. Thirty-one trips to advise with regard to agronomy problems were made during the year.

In carrying out the extension work in agronomy during 1918, four ideas were developed, which seemed to be of prime importance:

1. To maintain fertility and to improve worn-out soils by growing leguminous green manuring crops.
2. To increase the farm profits by producing more of the small grains and more legumes or protein crops, the crops so grown to be fed on the farm.
3. To improve the quality and to decrease the cost of dairy rations by producing home-grown roughages and home-grown concentrates.
4. To demonstrate the value of the proper handling of manure, and to show that it is good practice to supplement manure with acid phosphate.

Project VI. *Poultry Husbandry*. This project was dropped as a definite line of work for adults in the extension service when Mr. Lambert took up his duties as Extension Club Leader in Poultry Husbandry. There has, however, been quite a good deal of adult work coming in which Mr. Lambert has endeavored to take care of so far as possible. In many cases he has found that visits to poultry club members brought him in contact with the fathers and mothers of the boys and girls and almost invariably it was possible for him to give them also suggestions which were of value to them. Such correspondence as has come to the office has been handled very largely by Mr. Lambert.

Project VII. *Dairy Extension Work*. This has been carried on very much the same as last year, Mr. Cooley being employed as State Dairy Specialist by the Bureau of Animal Industry, Department of Agriculture, the State Board of Agriculture and the State College Extension Service. In this project, continued emphasis has been placed on the production of more protein roughage for live stock on Rhode Island farms. Especial emphasis has been given to encourage the use of clover, alfalfa and soy beans. The construction of silos and use of silage has also been stimulated. Attention has been given to the planning of

rations for dairy stock, weighing of feeds in order to determine the optimum quantities to be fed to different cows and to the weighing of milk to determine what cows produce sufficient milk to pay their board and yield an income to the owner. Some attention has also been given to the improvement of barns and to better housing of dairy herds. Perhaps the greatest results from work of this kind have come from the introduction, very largely in co-operation with County Agents, of quite a number of registered or high-grade bulls and cows in the State. Assistance has been given at the various fairs in preparing and staking exhibits, and in live-stock judging. Boys' live-stock judging contests have also been conducted. In response to requests for advice coming through the County Agent from the Aquidneck Dairymen's Association, assistance was given to this organization in promoting and planning a cooperative milk distributing plant in the city of Newport. The State dairymen cooperated with the home demonstration workers in connection with the campaigns for increased use of milk and milk products.

Project VIII. *Sheep Extension Work* was continued by Mr. Haslett up to July 1 and resulted in the introduction of a considerable number of sheep in this State. Demonstrations in shearing and dipping of sheep were given, and considerable advice was handed out in relation to the care and feeding of sheep. As already noted, it proved unsatisfactory to divide the specialist's time between two States, so the Massachusetts Agricultural College took over Mr. Haslett for full time, beginning July 1, 1918.

Project IX. *Entomological Extension Work*. An offer of assistance in Economic Entomology came to us from the United States Department of Agriculture in the late spring, and after due consideration it was accepted and, by a cooperative arrangement, turned over to the State Board of Agriculture for further development. After several conferences a definite plan was worked out, and Mr. F. J. Rimoldi was sent to Rhode Island by the Bureau of Entomology of the Department of Agriculture, and took up definite work in connection with the Entomological Department of the State Board of Agriculture. As Mr. Rimoldi wished to be in close touch with an insect collection and with the general Entomological Department of the Institution, he received the con-

sent of Secretary Dunn of the State Board of Agriculture to transfer his headquarters to Kingston and was given a desk in Professor Barlow's office. His connection with the work in Rhode Island was terminated by the Bureau of Entomology the first of December.

Respectfully submitted,

A. E. STENE,
Director.

THIRTY-FIRST ANNUAL REPORT

of the

Director of the Agricultural Experiment Station of the Rhode
Island State College.

DR. HOWARD EDWARDS, *President.*

DEAR SIR: I submit hereby, in non-technical form, references to such experimental results obtained during 1918 as will indicate the nature of most of the more important lines of work.

In such a report of progress it should be understood clearly that present ideas regarding the results are liable to modification in the future as the experiments are continued. Nevertheless, it seems desirable to transmit annually the impressions which are derived, even if some of the readers do attach too much importance to certain indications.

Publications. Those which have been issued since the last annual report are as follows:

Miscellaneous experiments with corn. Bul. 173, April, 1918, 27 pp.

The colon-typhoid intermediates as causative agents of disease in birds:

I. The paratyphoid bacteria. Bul. 174, May, 1918, 216 pp.

The influence of crop plants on those which follow: I. Bul. 175, June, 1918, 29 pp.

Thirtieth annual report of the station. *In* Bul. of Rhode Island State College, XIII, 4 (35-42).

Analyses of feeding stuffs. Inspection Bul., May, 1918, 12 pp.

Analyses of commercial fertilizers. Inspection Bul., October, 1918, 14 pp.

*Contribution No. 249.

Studies on fowl cholera: V. Toxin production of *Bacillus avisepticus*. *In* Jour. Bact., May, 1918, III, 3 (277-291).

Aluminum as a factor influencing the effect of acid soils on different crops.

In Jour. Amer. Soc. Agron., X, 1, January, 1918 (45-47).

The presence of aluminum as a reason for the difference in the effect of so-called acid soil on barley and rye. *In* Soil Science, VI, 4, October, 1918 (259-281).

Weather. Detailed records may be found with the New England Climatological Data of the United States Weather Bureau. The mean temperature in April was the highest for the month since 1910, in May the highest within 29 years' records, in August the highest since 1906, and in October and November the highest since 1913. The last killing frost in the spring was on April 20 and the first in autumn not until November 3. April was the wettest month in the year, the precipitation being 5.60 inches; and October the driest, 1.42 inches. July and August were below the normal in precipitation, and above the normal in temperature. Between June 23 and July 29 only 1.10 inches of rain fell, and there was no rain between August 15 and 28. Nevertheless, no positive benefit was derived from overhead irrigation.

Organic Matter for the Soil. The four legumes which had been sown separately in sweet corn the preceding year received winter injury in the following increasing order: alfalfa, mammoth clover, winter vetch, and sweet clover, the latter having been heaved badly. The yields of early garden peas grown upon the plats devoted to winter legumes were quite uniform.

Where corn is grown continually and about half a stand of winter rye, 10 to 12 inches high, was plowed in, 56 bushels* of corn were produced. This was also the yield where legumes have always been used instead of rye as a cover crop, but where less nitrogen is applied. Without the rye cover crop, but otherwise treated the same, 50 bushels of corn were produced.

On land which had received all except nitrogenous fertilizers for over twenty years, a sod in which considerable clover had persisted was plowed in for corn, and 78 bushels were produced. Only two bushels more were produced on an adjoining plat which was similar except that it had always received nitrogen (60 pounds in 1918) and had no clover remaining in the sod.

In conjunction with fertilizer chemicals, muck composted with slaked lime is being compared with 16 tons of stable manure furnishing the same amount of organic matter. About equal yields of early cabbages and of late beets resulted; but the manure was

*Unless otherwise stated, manurial applications and crop yields are on an acre basis.

superior in case of lettuce, tomatoes, celery and fall spinach. There are indications, however, that the acidity of the muck has not yet been entirely counteracted by lime. Where green manures were plowed under, and fertilizer chemicals used in preparation for celery, the yield of celery was not so large as where stable manure was used; but the early cabbages in the following spring have yielded as well during the last three years where green manures as where stable manure had been used. Fertilizer chemicals were added in each case. As high as 468 barrels (90 lbs. each) of the Charleston Wakefield cabbages were produced in 1918. Early tomatoes have yielded much better on the stable manure than on the rather poor winter cover crops which have been plowed in thus far in the experiment.

In the greenhouse, no combination of muck, lime and fertilizer chemicals was found, in the first attempt, to equal stable manure for growing lettuce; although sand, muck and fertilizer chemicals again proved equal to composted manure and soil for carnations.

A plat which receives at the rate of ten cords of manure each year produced only a little more sweet corn in 1918 than an adjoining plat which receives only fertilizer chemicals; the latter supplying, in 1918, 75 pounds of nitrogen, 150 pounds of phosphoric oxid and 50 pounds of potassium oxid per acre.

Apparently there has been only a very small average advantage in the past from plowing sod under in the fall instead of in the spring in preparation for potatoes, and in 1918 there was no advantage.

Efficiency of Fertilizers and Other Manures. Experiments in pots were continued to determine the relative availability of nitrogen in different sources and in the insoluble part of different brands of commercial fertilizers. The farmer should not be satisfied to purchase fertilizers in which the guaranty of nitrogen is maintained by any considerable amount of inferior nitrogenous material.

In the autumn of 1917, four-year applications of raw rock phosphate or floats were plowed in with a good second growth of clover for comparison in 1918 with a one-year application (50 pounds of phosphoric oxid) of acid phosphate, and other sources of phosphorus. In 1918 there was an opportunity to compare the

effect of one part of phosphorus in acid phosphate with four and with nine parts in floats. The needs of rape were small and were therefore about fully supplied in each case. The yield of table beets, with acid phosphate, was between those from the two different amounts of floats. For tomatoes one part of phosphorus in acid phosphate was more efficient than even nine parts in floats. Also in 1914 and 1915 for beets and tomatoes, one part of phosphorus in acid phosphate was superior to two and a quarter parts in floats.

About 3.5 tons of hay were produced, whether fertilizer chemicals, or about four cords of cow manure with straw bedding, or an equivalent amount of cow manure with planer-shavings bedding, is used annually; nor did supplementing the latter with potassium or with phosphorus increase the yield of hay. The ruta bagas which followed the hay, however, without a fresh application of cow manure, grew satisfactorily only on those plats where acid phosphate is used on each crop, to supplement the manure added in the spring. On the shavings-manure plats only about 6.5 tons of turnips were produced on only the manure residue from the spring applications, while about 9.5 and 13.5 tons were produced where 30 and 60 pounds, respectively, of phosphoric oxid is added in acid phosphate for each crop. Again, the dependence of turnips on readily available phosphorus was emphasized. It is good judgment always to give plenty of phosphorus to turnips.

Hay which yielded only 2280 pounds, because potassium had been withheld for many years, was increased to 3660 pounds by the application of about 200 pounds of either common salt or soda ash. In a mixed herbage, the clover was markedly reduced by the continued omission of potassium from the top-dressing; clover seems to be more sensitive than many crops to a lack of potassium.

On alfalfa, the "American Rock Potash" was again fully equal to sulfate of potash when supplying the same amount of soluble potassium; and yearly applications of as much as 2600 pounds of the former have never appeared deleterious on the light soil where it was used.

The results of the last year of the preliminary round of certain three-year market-garden rotations were obtained in 1918, so that three years' results with each crop for the different applications are

now available. In case of each crop, the average yields with 32 tons of only horse manure with straw bedding have been less than with half the amount of manure when supplemented with some combination of fertilizer chemicals. The standard application of the latter for the spring crops of 1918 was equivalent to about 1500 pounds of a 4-10-2 fertilizer. However, cabbages and tomatoes responded, in 1918, to an extra amount of nitrate of soda, the potassium apparently being sufficient. For the second crops, beets, spinach and celery, the standard application, added only where 16 tons of manure were applied in the spring, was equivalent to about half a ton of 3.8-7.5-5 fertilizer. This was supplemented advantageously not only by nitrate of soda, but by still more potassium, indicating that the potassium which had become available since the preceding season, as well as from the spring application of manure, was largely removed by the first crops. Although early cabbages have been grown satisfactorily without stable manure, an attempt to use green manures in place of stable manure has not yet been fully successful with early tomatoes and late celery. The scarcity of stable manure warrants continued activity in this direction.

For carnations, the addition of nitrogen to manure and soil compost has proved of doubtful value; potassium has been neutral in its effect, but there have been indications that phosphorus was somewhat beneficial.

Specific Plant Differences and Needs. Eureka and Early Mastodon silage corn, which are of nearly the same type, yielded the most, about 27 tons, followed by Northern White dent, 20.7 tons; Beardsley's Leamin, 18.9 tons; Webber's dent, 17.8 tons; and Century dent, 14.5 tons. Some of the smaller yielding varieties are considered the most desirable because of greater ear development.

The comparative yields per acre, in 30-pound bushels, of different varieties of early peas were as follows: Thomas Laxton, 268; Nott's Excelsior, 210; Gradus, 172; Gregory's Surprise, 164; and Early Morn, 152. A "shelling contest" indicated the range which may occur in given measures of different varieties, namely:

2 Bu. Nott's Excelsior weighed 64 lbs., 41 of pods and 23 of peas.

2 Bu. Thomas Laxton weighed 54 lbs., 38 of pods and 16 of peas.

The Thomas Laxton and Gradus varieties gave the largest number of bushels prior to the fourth of July, whereas even the first picking of Early Morn was not ready until the tenth of July. The grower of the seed thinks that some other than the Early Morn variety must have been sent by mistake.

The unusual interest in home-grown foods led to variety tests of beans, planted May 24 and left to mature. White Kidney and Medium White produced 15 bushels; Low's Champion and Red Kidney, 13; Burpee's Stringless, 12; and Hodson's Wax, 11. White Kidney beans, planted June 14 under more favorable conditions, produced 26 bushels, and Yellow Eyes, 20.

Six varieties of yellow-colored soy beans were compared to determine their merits primarily for silage purposes; but, nevertheless, it was desired that they be sufficiently early to reproduce themselves. On September 28, when a portion of each variety was cut for the silo, the Hollybrook and Haberlandt varieties were the least mature, although they produced viable seed even in the short season of 1917, and the Hollybrook produced the largest yield of any, 11.8 tons. The least productive for silage purposes, but earliest to mature and the best bean yielders (21 bushels) were the Amherst and Elton varieties. Other varieties intermediate in maturity were the Swan and Austin.

Preliminary tests of many other soy bean varieties were made, partly to find some which would twine around field corn. Wilson Five, a black bean, had fine and twining vines, but they inclined to form a tangle between the rows quite as much as to climb the corn. It seems probable that the New Era cowpea may be useful in this connection. Such legume crops should constitute from a fourth to a fifth part of silage in order to reduce the purchase of protein concentrates.

The best-yielding variety of potatoes was the Norcross, 386 bushels; the Green Mountain variety itself and other members of the group, Gold Coin, Mill's Pride and Pride of Vermont, were likewise heavy yielders, as was also the American Giant. Rural New-Yorker and other members of that group, such as Carman No. 3, Sir Walter Raleigh, World's Wonder, Dibble's Russet and Kasoag Russet, yielded less than 265 bushels.

In 1918, 70 to 80 bushels of hard corn were produced on sod land with fertilizer chemicals alone, regardless of whether 60 or 80 pounds of nitrogen, 50 or 100 pounds of phosphoric oxid, and 60 or 120 pounds of potassium oxid were used. It made no difference in yield whether the fertilizer was applied broadcast or in the hills.

The regular rotation formula for spring top-dressing of winter rye, namely, 125 pounds of nitrate of soda, 300 pounds of acid phosphate and 100 pounds of a high-grade potash salt, caused a yield of 29 bushels of rye and 1.6 tons of straw. Where this was compared with a third less of the fertilizer, there was a consequent reduction in yield to 18 bushels of rye and 1.2 tons of straw.

The relative ability of different kinds of plants to satisfy their requirements for phosphorus has been shown plainly by growing a number of different crops under the same conditions. Carrots secured their entire needs under conditions where turnips were practically unable to grow without phosphatic application; millet and tomatoes ranked next to carrots; and beets and rape next to turnips.

An accurate determination was made of the nutrient requirements of barley, wheat and oats at different stages of their growth to maturity in solution. Until such information is obtained, mistakes are liable to be made in attributing retarded growth to deficiencies of plant food, because of a lack of knowledge of the necessary requirements.

Effect of Crops on Each Other. With liberal amounts of fertilizer, the marked effect of crops which had preceded them on onions was shown by the fact that only 92 bushels of onions were produced after beets; 288, after beans; 319, after onions; and 400, after endive, where the soil was quite acid; whereas, when considerable lime had been added, the variation was only from 485 to 590 bushels. The kind of lime, whether high in magnesium or in calcium, or in carbonate or hydrate form, made no practical difference, when applied in a fine condition and in quantities sufficient to neutralize an equal amount of acid.

In order that the cumulative effect of alfalfa, barley, beets and carrots might be served on another crop, barley, which is also rather sensitive to conditions accompanying acid soils, was planted

uniformly where each of these crops had been planted singly in the five preceding years. Fertilizer chemicals were applied in generous amounts each year; nevertheless, on the unlimed plats, even though beets could not make a satisfactory growth, they and the carrots were followed generally by the poorest growth of barley. The best barley on the unlimed plats was where barley itself had been the preceding crop. On the limed plats, however, the growth of barley was even greater following beets than it was following barley.

In Bulletin 175 other observations of a similar kind are discussed, and there is reserved for a subsequent Bulletin on the same general subject much material obtained in pot experiments. The data in these bulletins form the basis for the following few general statements appropriate to this report. It seems probable that crops, like beets, which remove from the small amount of active soil constituents a considerable excess of basic over acidic ingredients, may, because of that fact, affect injuriously especially crops which are sensitive to acid soil conditions. When an abundance of basic material is present, this effect seems largely to disappear. Certain publications of the year have also shown that in acid granitic soils, aluminum, apart from the acidity arising from its salts, is the soil constituent which, with certain plants at least, is responsible for the difference in the effect of so-called acid soils on some crops when compared with others. Both basic material and acid phosphate render the aluminum less active and deleterious, but it cannot be stated now to what extent these observations may explain the very potent influence which crops have, under many circumstances, on those which follow.

Inheritance Studies with Poultry and Rabbits. The inheritable character to lay large eggs is not joined with high annual production; but a high percentage increase in egg-weight, usually during April and September, does appear to be associated with high annual production in numbers, at least for the first year.*

The first reciprocal crosses between heavy-weight (Cornish)

*A brief paper on this subject has been submitted to the *Journal of the Assoc. of Instructors and Investigators in Poultry Husbandry*; and one to *The American Naturalist*.

stock and light-weight (Hamburg) stock were made in 1918, but the results have not been submitted to analysis.

By working with English piebald rabbits, it has been shown that there exists a tendency for the dark area to increase and then to remain permanent when male rabbits with a larger proportion of dark areas are used as sires. To this extent, then, selection appears to be effective and to have much of the importance which was formerly ascribed to it.

Diseases of Poultry. During the past year the study of the so-called paratyphoid bacteria as causative agents of diseases in birds was brought to completion. The results were published in Bulletin 174. The study is being continued with reference to the paracolon bacteria.

Respectfully submitted,
BURT L. HARTWELL,
Director.

Kingston, R. I.

APPENDIX A.

Summaries Dealing with Certain Phases of Receipts and Expenditures for the Year Ending June 30, 1918.

SUMMARY FOR YEAR.

Balance on hand July 1, 1917.....	\$21,311 80
Total income during year	203,095 51
Total	\$224,407 31
Total expenditures during year	221,114 05
Balance on hand July 1, 1918.....	\$3,293 26.

INCOME.

Income from students:

Tuition fees	\$1,272 50
Matriculation and incidental fees	2,298 20
Chemicals and laboratory supplies	1,251 43
Dormitory fees	5,251 57
Dining hall	24,719 15
Store sales	4,338 16
	\$39,131 01

Income from State and Nation:

State—Maintenance appropriation	\$40,000 00
Federal—Morrill Act of 1890 and Nelson Act of 1907	50,000 00
Morrill Act of 1862	2,500 00
Hatch Act of 1887—Experiment Station.....	15,000 00
Adams Act of 1906—Experiment Station.....	15,000 00
Smith-Lever Act of 1914—Extension Service.....	10,582 17
	\$133,082 17

Income from other sources:

Sales and service of departments, including receipts from War Department for expense incurred for Training Detachment.....	\$24,409 57	
Interest	1,414 73	
Experiment Station—		
Sales and service	\$4,914 99	
Interest	143 34	
	<u>5,058 33</u>	
		<u>\$30,882 63</u>
Total income		\$203,095 81

Receipts from tuition:

Students taking course of one year or more.....	251
Students paying tuition (non-resident in Rhode Island).....	46
Amount of tuition paid	\$1,272 50

EXPENDITURES.

Expenditures, exclusive of Experiment Station and Extension Service:

Advertising	\$1,467 29
Apparatus	1,747 89
Boarding	23,996 19
Books and periodicals	623 84
Commencement	144 07
Construction and repairs	7,447 53
Dormitory and land rental	2,505 37
Electric current furnished from outside college... .	264 96
Entertainment	309 50
Feed	3,824 34
Fertilizer	514 00
Freight and express	420 53
Fuel	14,343 43
Furniture	313 64
Gasolene	1,526 25
Labor (engineers, poultrymen, farm, etc.).....	13,320 75
Labor (undergraduate, exclusive of boarding department).	7,095 80
Laboratory supplies	3,706 85
Live stock	710 73
Postage, stationery and printing.....	1,472 51
Salaries	61,252 29
Seeds	169 13
Stable and auto supplies	635 96
Store	4,735 11
Telephone and telegraph	584 22

Tools and machinery	5,924 38	
Traveling	1,677 68	
Miscellaneous, including expense incurred for maintenance of Training Detachment.....	12,983 00	
		<u>\$173,717 24</u>
Expenditures, Experiment Station		35,471 51
Expenditures, Extension Service		11,925 30
		<u>221,114 05</u>
Total expenditures		\$221,114 05

SUMMARY OF BALANCES, JULY 1.

Morrill Fund of 1862.....			
Morrill Fund of 1890.....			
Smith-Lever Fund, Extension Service.....			
Hatch Fund, Experiment Station.....			
Adams Fund, Experiment Station.....			
State—Maintenance	\$15,797 75		\$11,429 84
State—Repairs and Improvements	314 42		
Current Fund	3,079 49	Dr.	10,169 55
Trust Fund	Dr. 2,637 47	Dr.	2,311 46
Miscellaneous—Experiment Station	2,757 61		2,344 43
Reserve Fund	2,000 00		2,000 00
	<u>\$21,311 80</u>		<u>\$3,293 26</u>

State of Rhode Island and Providence Plantations

ANNUAL REPORT

OF

THE ADJUTANT GENERAL

AND

QUARTERMASTER GENERAL

OF THE

STATE OF RHODE ISLAND

FOR THE YEAR 1918

PROVIDENCE

R. L. FREEMAN COMPANY, PRINTERS

1919

THE ADJUTANT GENERAL'S REPORT.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, R. I., December 31, 1918.

His Excellency, R. Livingston Beeckman, Governor and Commander-in-Chief.

SIR:—I have the honor to report as follows upon the work of the military department during the year just ending.

Reference was made in the report of last year concerning the steps taken to make certain of the Independent Chartered Military Organizations available for duty in case of necessity after the National Guard had been called into Federal service on July 25, 1917, also to the fact that legislation was necessary and desirable looking to an increase in the force. As soon as practicable after the session of the General Assembly began, a bill for the organization of a State Guard, with an appropriation for its equipment and maintenance, was introduced. There was much discussion of the measure all over the State and various hearings were had, resulting finally in the passage of "An Act to Provide for the Organization of a State Guard," which was published in General Orders, No. 8, dated May 9, from this office, as follows:

"It is enacted by the General Assembly as follows:

SECTION 1. The governor is hereby authorized and empowered to raise by voluntary enlistment, and to organize a State guard from citizens of the United States, being inhabitants of this State, who are over eighteen years of age, for service during the period of the present

war of the United States with any other country, and for six months after the termination thereof. Section 80 of Chapter 394 of the Public Laws, entitled 'An Act in relation to the organization, maintenance, government and discipline of the militia,' passed at the January Session, A. D. 1909, shall apply to the State guard so organized.

SEC. 2. The State guard shall consist of not more than thirty-six nor less than eighteen companies with an enlisted strength of one hundred men each. These companies shall be so organized, maintained, armed, and equipped for service within the State and formed into regiments or battalions of appropriate strength as the commander-in-chief may by executive order determine.

SEC. 3. The commander-in-chief shall appoint officers for such units and organizations of the State guard as he may establish as like units and organizations are officered in the United States army; and such officers shall exercise the same military authority as specified by the statutes of the State for the duly chosen officers of the national guard.

The provisions of Chapter 394, Sections 32, 39, 48, 49, and 79 of the Public Laws, passed at the January Session, A. D. 1909, shall not apply to the State guard.

SEC. 4. The commander-in-chief may authorize the independent chartered military organizations in the State to organize units of the State guard, provided, that their rights and privileges under their respective charters and the amendments thereof shall be in nowise affected, and further provided that no officer of such organization shall be recognized as an officer of the State guard, as holding higher rank than the numbers of unit or units so organized from his chartered organization shall call for or require, and further provided, that all such officers shall be subject to the same requirements to determine their fitness to hold office as may be required of all other officers of like grade in the State guard. Such units, to be admitted to the State guard, shall be of the numerical strength and shall be officered as prescribed for the units of the State guard.

SEC. 5. The provisions of Chapter 394 of the Public Laws, passed at the January Session, A. D. 1909, and the acts in amendment thereof and in addition thereto, shall apply to the State guard, except so far as the same shall be inconsistent with the express provisions or requirements of this act.

SEC. 6. To carry out the provisions of this act, during the fiscal year ending December 31, 1918, the sum of fifty thousand dollars (\$50,000) is hereby appropriated, out of any money in the treasury not otherwise appropriated; and the state auditor is hereby directed to draw his orders upon the general treasurer for the payment of said sum or so much thereof as may from time to time be required, upon the receipt of proper vouchers approved by the commander-in-chief.

SEC. 7. This act shall take effect upon its passage."

Under date of January 30, Colonel Alvin A. Barker, Rhode Island Militia, was assigned to duty by General Orders, No. 3, herewith, to assist in putting the Independent Chartered Military Organizations and all recognized constabulary commands in such a condition of efficiency as to make them suitable for a Home Guard force. He was given a desk in this office and has worked most faithfully all through the year. By General Orders, No. 5, herewith, a tentative recognition of commands of the Independent Chartered Military Organizations as units of the State Guard was made as follows: In the Newport Artillery Company, Kentish Guards, United Train of Artillery, Bristol Train of Artillery and Warren Artillery, one company each, in the First Light Infantry Regiment, five, and in the Cranston Blues two companies. Any such company having one hundred duly enlisted men would be recognized and an inspection ordered for muster-in to the State Guard, after which requisition might be made for the necessary arms and other equipment. It was provided that the status of men serving three year enlistments should hold, but all new or re-enlistments should be for service during the present war and six months thereafter. Physical fitness was to be determined by a competent medical officer. In like manner several Constabulary Commands which had previously been reported to the War Department as authorized to bear arms, were tentatively recognized, viz:—Westerly, South Kingstown, Woonsocket, and East Providence. Verbal authority given for the organization of commands in Pawtucket and Smithfield was confirmed. Authority was also given for the organization of a machine gun and

sanitary detachment, a headquarters and supply company. General Orders, No. 9, herewith, prescribed the composition of a unit of the State Guard, as follows:—one captain, one first lieutenant, one second lieutenant, one first sergeant, one mess sergeant, one supply sergeant, six sergeants, eleven corporals, one mechanic, two cooks, two buglers and seventy-five privates, total commissioned three. enlisted one hundred, aggregate one hundred and three. It was further provided that commanding officers might detail boards for the examination of candidates for non-commissioned officers, and appoint those qualified. General Orders, No. 10, herewith, directed the organization of a sanitary detachment to consist of one commissioned officer and six men for each company now or hereafter to be recognized. By July 1st all units had been recognized and mustered into service and General Orders, No. 14, herewith, announced the organization of a provisional regiment with numerical designation and location of companies, as follows:—1st Company, Woonsocket; 2nd Company, South Kingstown; 3rd Company, Newport (Newport Artillery Company); 4th Company, Westerly; 5th Company, Providence, (United Train of Artillery); 6th Company, Pawtucket; 7th Company, Pawtucket; 8th Company, Providence, (Co. A, First Light Infantry Regiment); 9th Company, Providence, (Co. B, First Light Infantry Regiment); 10th Company, Providence, (Co. D, First Light Infantry Regiment); 11th Company, Providence, (Co. E, First Light Infantry Regiment); 12th Company, Providence, (Co. F, First Light Infantry Regiment); 13th Company, Bristol, (Bristol Train of Artillery); 14th Company, Smithfield; 15th Company, East Providence; 16th Company, East Greenwich, (Varnum Continentals); 17th Company, Cranston, (Co. B, Cranston Blues); 18th Company, Cranston, (Co. A, Cranston Blues); Headquarters and Supply Company, Providence; Machine Gun Detachment, Providence; Sanitary Detachment, Providence.

Appointments of field and staff officers were announced as follows: Lieutenant-Colonel, James F. Phetteplace; Majors, Charles H. Ledward, Herbert Bliss, Walter G. Gatchell, Alonzo R. Williams,

Archibald C. Matteson; Major William F. Flanagan, Ordnance Officer; Captain John J. Finnegan, Inspector of Rifle Practice; Captain Howard Sheffield, Supply Officer; Captain Irvin C. Elmer, Adjutant; Captain Stanley C. Hughes, Chaplain; 1st Lieutenant Arthur Power, Adjutant 2nd Battalion; 1st Lieutenant Henry W. Sutcliffe, Adjutant, 1st Battalion; 1st Lieutenant Albert B. Coulters, Adjutant, 4th Battalion; 1st Lieutenant William G. Christie, Adjutant, 3rd Battalion.

The assignment of companies to battalions with commanding officers was as follows:—1st Battalion, 2nd, 4th, and 16th, Major Charles H. Ledward; 2nd Battalion, 3rd, 13th, and 15th, Major Herbert Bliss; 3rd Battalion, 1st, 6th, 7th, and 14th, Major Walter G. Gatchell; 4th Battalion, 9th, 10th, 11th, and 12th, Major Alonzo R. Williams; 5th Battalion, 5th, 8th, 17th, and 18th, Major Archibald C. Matteson; Headquarters and Supply Company, Captain Irvin C. Elmer; Machine Gun Detachment, Captain E. Merle Bixby; Sanitary Detachment, Major N. Darrell Harvey.

An examining board for officers was appointed and General Orders, No. 15, herewith, states all the requirements. These requirements are substantially those formerly prescribed for the National Guard except that only infantry and medical and staff corps and departments which are represented in the State Guard are included. Examinations were held on September 9 and October 28. With few exceptions all officers passed, and have been duly commissioned. The appointments of a few who failed were revoked and others substituted.

As soon as the appropriation was assured, orders were sent to the leading military dealers for the necessary articles of equipment as follows:—haversacks and straps, canteens and straps, tin cups, knives, forks and spoons, webbing cartridge belts with pockets, Colt's revolvers, cal. .38, with belts and holsters, trumpets and cords, and hat cords. Violet was adopted as the color of cords. Sky blue overcoats and capes, old pattern were also secured with great difficulty, the available stock in the country being nearly exhausted.

In ordering the above articles, the supply on hand in the storehouse and the various organizations was considered. Several hundred shelter halves of brown duck made in 1898, but still in good condition, were on hand. Enough ponchos changed over to serve as shelter halves were secured to make up the full complement. A few blue grey blankets were distributed to organizations which desired to go into camp or on hikes. The matter of uniforms was the most important, and as the appropriation was not sufficient to provide service hats, coats, breeches and leggins, organizations were encouraged to secure the necessary funds by solicitation in the various communities. This plan was successful, but only olive drab cotton material for coats and breeches could be thus secured. At various times arms were supplied by the War Department, as follows:—Springfield cal. .45, five hundred; Krag Jorgensen's cal. .30, two hundred and fifty. The Newport Artillery Company had one hundred U. S. Magazine Rifles cal. .30. There were about six hundred old Springfield 45's belonging to the State distributed through the Chartered Organizations. A visit to Washington resulted in an order for fourteen hundred Russian rifles so-called, which necessitated the return of the five hundred Springfield's and two hundred and fifty Krag's. By distributing eighty Russian rifles and twenty Springfield 45's to each company and fifty to the Machine Gun Detachment, all were fully armed.

In January, a request was received from the Navy Department for the use of the State Range for Naval purposes. With your approval the matter was referred to the lessors and their consent secured. The Range was turned over to a Naval detachment, May 1, it being understood that the State Guard and citizens generally might use it under proper supervision, rifles and ammunition being furnished. Major George A. Forsyth, Ordnance Department, Inspector of Small Arms Practice, was assigned to duty as a representative of the State. Fifty-five targets are in operation, located as follows:—600 yards, 32; 500, 8; 300, 4; 200, 7; pistol, 4. Buildings have been erected as follows:—three barracks, officers' quarters, an

office and garage combined, infirmary, lavatory, mess hall and storehouse. These are all temporary frame structures, easily removed if necessary.

General Orders, No. 11, published regulations for small arms practice during the season, based on methods formerly prescribed for the National Guard, except that no qualifications were required, and no trophies or medals provided for. The report of the Inspector of Small Arms Practice is herewith. There was less apparent interest than during former years, but this is accounted for largely by the fact that due to the war men were unable to leave their employment. A rifle team to represent the State was sent to Camp Perry, Ohio, to take part in the national competition. There was a fall tournament on November 10, with individual and team competitions in which ten teams participated, chiefly from the Navy. A State Guard team hastily organized, finished seventh on the list.

Practical instruction by means of Saturday and Sunday hikes was had by a number of organizations and a provisional battalion went into camp at its own expense over Labor Day. A report of the tour by the Commanding Officer, Major Archibald C. Matteson, is herewith. Among the hikes was one by the 2nd Company, Wakefield, also at its own expense, to Fort Kearney, in coöperation with the regular garrison, August 26 to 29. Besides the practice march, various exercises were had at the Fort under the supervision of the officers there, resulting in much benefit to the command. A provisional battalion made up of companies A, B, D, E, and F, First Light Infantry Regiment, under Major Alonzo R. Williams, took part in a tactical problem in coöperation with the Reserve Officers' Training Corps at Brown University in May. The exercise was in the Lincoln Woods Reservation, and consisted of an attempt by the invading Blues (First Light Infantry Regiment) to seize an artillery position which was defended by the Browns. On the return, rear and advance guard formations were taken, involving a running fight. The Machine Gun Detachment had several hikes in the vicinity of the reservation of former Troop C, Cavalry, at

Meshanticut, all resulting in helpful instruction. The Providence Chamber of Commerce very generously donated a machine gun of the Browning type, to the State. It was turned over to the Detachment. On October 26, the Guard paraded in Providence, the route of march being from Post Office Square, through Exchange Place, north side, West Exchange, Fountain, Broadway, and Courtland Streets to the Dexter Training Ground where a very beautiful set of colors, national and regimental, was presented to the Guard by Mrs. French Vanderbilt. Your Excellency received them and turned them over to the Guard, after which the regiment passed in review. The parade was in heavy marching order, overcoats being rolled in shelter halves. A large percentage of the command was present, the marching was excellent, the formations well taken, and altogether it was a most creditable affair, and could not fail to impress the citizens of the State, with the fact that there was a dependable and well equipped force of soldiery at hand in case of emergency. On Thanksgiving Day a military pageant was given at the Nerragansett Trotting Park, exemplifying the action of the Canadian troops against the Germans on a certain sector of the operations resulting in the capture of Vimy Ridge. A reproduction of the trenches of the sector was traced in the oval within the track, and the excavations made so far as practicable. Over two thousand dollars worth of explosives were disposed in various ways about the ground to illustrate a barrage, the fire of heavy and field artillery and trench mortars. Some were placed in holes connected by electric wires, others were in sections of drain pipe either in the extreme rear, or in trenches. Switchboards controlled the wired parts. The "Canadian" forces were represented by the 4th, 1st, 2nd, and parts of the 3rd Battalions and Machine Gun Detachment, also the Students Army Training Corps from Brown University. The 5th Battalion, 14th Company, and remainder of the Machine Gun Detachment were "Germans" and wore the grey uniform. A portion of the 3rd Battalion acted as heavy artillery. The barrage began at 10:20 A. M., and was followed by the attacking battalions advancing by

waves in the order named. For an hour and fifteen minutes there was advance and retreat following as nearly as practicable the actual happenings on the particular sector, the "German" position being finally taken and the defenders killed, made prisoners, or driven back. During the various stages men simulating killed and wounded fell in their tracks and were examined and attended to by the Sanitary Detachment. A field hospital with all accessories was established, the litter bearers constantly searched the field, first aid was administered and all the operations were most realistically represented. A premature discharge of explosives in one of the trenches injured two men, not seriously, and there were others slightly burned and bruised. After the action, there was a review of all the troops on the race track. The enterprise was for the purpose of raising funds to provide woolen uniforms for the Guard, but although the day was perfect, the attendance was too short of what was expected, the expenses were heavy, and the proceeds not sufficient to put any funds in the treasury. As a spectacle, it was a decided success, the instruction attendant upon the execution was very valuable, but the financial result was a great disappointment and leaves the Guard no better off than before in the matter of woolen uniforms. During the severe epidemic of influenza the Sanitary Detachment of the 3rd Battalion rendered very efficient service in Pawtucket for about three weeks. A detailed report is herewith.

This office has exercised supervision of the Registration and Selection for Military Service, which has continued under the personal direction of Captain George H. Webb, Infantry, U. S. Army, with whom I have been closely in touch every day advising and consulting. His reports will cover the entire subject.

The work of the office through the year, while not as exacting as in 1917, has been more than sufficient to keep the entire force closely applied. There have been constant calls in person by telephone and letter for information on almost every conceivable subject, even remotely connected with the war. Every effort has been made to comply with the wishes of the inquirers.

The State is under very deep obligations to Colonel Alvin A. Barker, Commanding the State Guard, who has from purely patriotic motives, at considerable expense and without any compensation, devoted practically his entire time to the affairs of the Guard. Its splendid efficiency and morale, as demonstrated on many occasions, are largely the result of his energy, capacity and soldierly spirit, and I trust that there may be some means in the future by which his services may be fittingly recognized.

Many inquiries have been received from other States as to our future plans concerning the reorganization of the National Guard. It seems advisable to take no steps in this particular until it is definitely known what the War Department is planning. The State Guard may legally exist until six months after the war is over, or to make it more definite, until the treaty of peace becomes effective I strongly recommend, however, that the appropriation for the general expenses of the coming year in this department shall be under the former title of "Militia and Military Affairs" instead of for the State Guard only, as was provided in the act establishing the same.

APPROPRIATIONS AND EXPENDITURES FOR THE MILITIA FROM JANUARY 1ST TO
DECEMBER 31ST, 1918.

For salary of The Adjutant General	\$1,200 00
Expended for same	1,200 00
	<hr/>
For clerical assistance in office of The Adjutant General	\$2,700 00
Expended for same	2,700 00
	<hr/>
For additional clerical assistance in office of The Adjutant General . .	\$300 00
Expended for same . . . . .	.....
	<hr/>
Unexpended	\$300 00
	<hr/>
For clerical assistance to officers of the National Guard	\$750 00
Expended for same	67 08
	<hr/>
Unexpended	\$682 92
	<hr/>

For "State Guard"	\$50,000 00
Expended for same	49,993 30
Unexpended	<u>\$6 70</u>
For salary of Quartermaster General	\$1,000 00
Expended for same	1,000 00
For clerical assistance in office of Quartermaster General	\$1,560 00
Expended for same	1,560 00
For additional clerical services in office of Quartermaster General ...	\$300 00
Expended for same	100 00
Unexpended	<u>\$200 00</u>
Lockers and repairs, State Armory, Westerly	\$2 01
Expended for same .....	.....
Unexpended	<u>\$2 01</u>
Furniture, lockers, etc., 11th Co., C. A. C., N. G. R. I.	\$152 82
Expended for same .....	.....
Unexpended	<u>\$152 82</u>
Heating, lighting, repairing and pay of armorers for armories of Independent Chartered Military Companies	\$1,900 00
Expended for same	1,700 00
Unexpended	<u>\$200 00</u>
Heating, lighting and maintenance, State Arsenal, Benefit St.	\$1,000 00
Expended for same	999 98
Unexpended	<u>\$ 02</u>
Heating, lighting and furnishing armory, Kentish Artillery	\$188 76
Expended for same	95 56
Unexpended	<u>\$93 20</u>
Lockers, State Armory, Bristol	\$137 09
Expended for same	112 45
Unexpended	<u>\$24 64</u>

Repairing State Armory, Newport, R. I.	\$105 92
Expended for same .....	.....

Unexpended	\$105 92

Watchman, State Camp Ground	\$600 00
Expended for same	600 00

Care and maintenance of armories	\$10,000 00
Expended for same	9,283 46

Unexpended	\$716 54

Rent of armories	\$570 00
Expended for same	570 00

Repairing interior and exterior State Armory, Bristol, R. I.	\$ 71
Expended for same .....	.....

Unexpended	\$ 71

Repairs to buildings and for purchasing and installing a new pump, etc., at the State Camp Grounds, Quonset Point, R. I.	\$436 16
Expended for same	406 79

Unexpended	\$29 37

Repairs to armories	\$ 08
Expended for same .....	.....

Unexpended	\$ 08

Purchasing and installing steel lockers in the armories at Pawtucket, Woonsocket, Westerly and Riverpoint	\$69 00
Expended for same	6 41

Unexpended	\$62 59

Purchasing of necessary furniture for the Pawtucket and Woonsocket armories	\$400 00
Expended for same	203 35

Unexpended	\$196 65

Remodelling, repairing and equipping the ward room, so-called, on Harrison St., in the city of Providence, to be used as an armory for the United Train of Artillery and for other military purposes.	\$9,000 00
Expended for same.....	4,593 50
	<hr/>
Unexpended.....	\$4,406 50
	<hr/>
Proceeds State Camp Ground.....	\$ 55
Expended for same.....	.....
	<hr/>
Unexpended.....	\$ 55
	<hr/>

OFFICE BUSINESS.

The following have been a part of the work performed in this office during the year:

Letters received.....	1,626
Letters written.....	1,149
Circulars issued.....	5
General Orders issued.....	23
Special Orders issued.....	85
Commissions issued.....	147
Certificates of service issued.....	73
Long service medals issued.....	7
Number of men qualifying in small arms practice.....	193
State medals (War with Spain) issued.....	3
Resignations.....	25
Honorable discharges granted.....	324
Other discharges.....	23
Retired.....	6

ENCLOSURES.

I have the honor to transmit herewith the following:

Report of Major Archibald C. Matteson, commanding the Fifth Battalion, Rhode Island State Guard, with the report of Captain Howard Sheffield, Supply Officer, Rhode Island State Guard, of the encampment of the Fifth Battalion, Rhode Island State Guard, at Quonset Point, R. I., August 30 to September 2, inclusive, 1918.

Report of Captain Charles C. Purdum, commanding the Sanitary Detachment, Third Battalion, Rhode Island State Guard, of the

duty of the Sanitary Detachment at Pawtucket, Rhode Island, October 12 to 31, inclusive, 1918.

Report of Inspector of Small Arms Practice for the season of 1918.

Annual return of the Rhode Island Militia for the year ending December 31, 1918.

Roster of the Rhode Island Militia.

Copies of some General Orders issued during the year 1918.

Retired List of Commissioned Officers and Enlisted Men of the Rhode Island Militia.

Respectfully submitted,

CHARLES W. ABBOT,

The Adjutant General.

REPORT OF MAJOR ARCHIBALD C. MATTESON, COMMANDING FIFTH BATTALION, RHODE ISLAND STATE GUARD, WITH THE REPORT OF CAPTAIN HOWARD SHEFFIELD, SUPPLY OFFICER, R. I. S. G., OF THE ENCAMPMENT OF THE FIFTH BATTALION, R. I. S. G., AT QUONSET POINT, R. I., AUGUST 30 TO SEPTEMBER 2, INCLUSIVE, 1918.

FIFTH BATTALION, PROVISIONAL REGIMENT,
RHODE ISLAND STATE GUARD.

PROVIDENCE R. I., September 23rd, 1918.

FROM: Major Archibald C. Matteson, Commanding 5th Battalion.

TO: The Adjutant General.

SUBJECT: Tour of Duty at State Camp, Quonset Point, August 30, 31 and September 1 and 2, 1918.

Pursuant to paragraphs 7 to 11, inclusive, S. O. No. 55, A. G. O., R. I., c. s., I attended the above camp on the above dates as commanding officer.

1. I reached camp with 1st Lieutenant Robert N. Fiske, Battalion Adjutant, at 4 o'clock on the afternoon of Saturday, August 31st. The 5th Company was already encamped in double shelter tents at the point assigned in the Camp Order. The men were supplied with a sufficient quantity of clean straw with ponchos, woolen blankets of various patterns and colors, and serviceable blue cape overcoats. Shortly after my arrival, the 17th and 18th Companies arrived in motor trucks, and proceeded to pitch double shelter tents at the points assigned. These tents were provided with sufficient straw, and the men had brought with them rubber

and woolen blankets, and serviceable, though obsolete, blue cape overcoats. By the time camp was pitched, and the men had had supper, it had become dark, and as the weather was rainy and threatening, it was impracticable to hold any instruction of the men as a whole. The officers were summoned to headquarters, and a routine of duty considered and discussed.

2. The following list of calls was prepared and posted, and the routine of the camp conducted in accordance therewith:—

“HEADQUARTERS, FIFTH BATTALION.

Rhode Island State Guard.

QUONSET POINT, R. I., August 31, 1918.

GENERAL ORDERS, {
No. 1. }

Service and roll calls will be as follows:—

Reveille (not under arms).

First Call	5:40 A. M.
Reveille	5:50 “
Assembly	5:55 “

To be followed by setting up exercises.

Mess (breakfast)	6:30 “
Police of quarters	7:15 “
Drill	7:50 “
Assembly	8:00 “
Recall from Drill	10:00 “
Inspection of Quarters	10:20 “
Swimming Party	10:30 “
Swimming Party returns	11:45 “
Mess (Dinner)	12:00 Noon
Officer's Call	1:00 P. M.

To be followed by school for non-commissioned officers.

Guard Mount	2:25 P. M.
Assembly	2:30 "
Recall	4:00 "
Mess (Supper)	6:00 "

Retreat (under Arms).

First Call	7:15 P. M.
Assembly	7:25 "
Retreat	At Signal.
Tattoo	10:00 P. M.
Taps	10:30 "

An officer will be present with each command at roll call and will report the result of the same to the Adjutant.

By order of Major Matteson,

ROBERT N. FISKE,
1st Lieutenant, R. I. S. G.,
Adjutant."

3. We were so fortunate as to have a visit from the Regimental Commander, who remained until Sunday forenoon, and who attended the discussion of the officers on Saturday evening.

Company and Squad drill occupied the time of the Battalion during Saturday and Sunday forenoon. The Battalion Commander attempted to visit each subdivision, to note irregularities and to subsequently call the same to the attention of the various subdivision commanders. At the drill period on Sunday afternoon formal guard mount was held. The entire Battalion marched on in seven strong details. The ceremony was gone over four times, until it was thoroughly understood by all present.

The progress made in all the drills was perceptible. In most cases the companies continued to drill after the recall had sounded; this at the request of many of the men, and at the sacrifice of time allotted for baseball or for swimming.

4. The above routine was continued until September 2nd at four o'clock, when the camp was simultaneously struck on signal, the rolls made up, the straw and other property returned and the ground thoroughly policed. The organizations returned to Providence in the motor trucks which had brought them from the city.

5. This tour was made possible by the energy of 1st Lieutenants Charles W. Smith and Fred N. Joy of the 5th Company, who planned it early in the month when it seemed that only their organization would take part in it. When the plan was brought to the attention of the Commanding Officers of the 17th and 18th Companies, they gave it immediate and enthusiastic support.

6. Strength:

	OFFICERS.	MEN.	TOTAL.
Batt. Headquarters	2	..	2
5th Company	2	64	66
17th Company	2	40	42
18th Company	3	37	40
Supply Company	1	2	3
	—	—	—
	10	143	153

7. All the officers and men entered into the work with great industry and zeal, and plainly endeavored to make the most of the brief opportunity afforded them. The Battalion Commander believes that the frequent repetition of this, or similar tours, will be of important assistance in arousing and maintaining an interest in the State Guard and its work. The progress made, in the limited number of subjects taken up, was perceptible, even in the short time thus spent.

8. Attention is invited to the report of Captain Howard Sheffield, Supply Officer, hereto appended.

ARCHIBALD C. MATTESON.

REPORT OF CAPTAIN HOWARD SHEFFIELD, SUPPLY OFFICER, RHODE ISLAND STATE GUARD, OF THE ENCAMPMENT OF THE FIFTH BATTALION, R. I. S. G., AT QUONSET POINT, RHODE ISLAND, AUGUST 30 TO SEPTEMBER 2, INCLUSIVE, 1918.

HEADQUARTERS, FIFTH BATTALION,

R HODE ISLAND STATE GUARD.

FROM: Capt. Howard Sheffield, Supply Officer, R. I. S. G.

TO: Major A. C. Matteson, Commanding 5th Battalion.

SUBJECT: Tour of duty at State Camp, Quonset Point.

I wish to report that the pursuant special orders, No. 55, second section, I attended Camp of a detachment of the 5th Battalion at Quonset Point from noon, August 30, to 6:30 P. M., September 2, as Camp Quartermaster, assisted by 1st Sergeant Charles and Battalion Supply Sergeant Hull.

1. On August 30, camp was laid out for a column of companies, Companies 17, 18 and 5 in order named, and for Battalion Commander and Staff and Supply Train, all officers and men using shelter tents with one large wall tent for Headquarter's Office. The 5th Company arrived at 11:45 P. M., August 30, and were issued straw and made camp. August 31, 5th Company established a canteen with soft drinks, tobacco, etc., in kitchen No. 2. Companies 17 and 18 arrived at 5:45 P. M. Mess and kitchen were in charge of non-commissioned officers of the 5th Company assisted by details from 17th and 18th Companies. Assembly was sounded for breaking camp at 1:00 P. M., September 2. 17th and 18th Companies left at 4:00 P. M., and the 5th Company at 6:00 P. M. Barracks No 1

was used for mess, for kitchen detail and supply train stores, and kitchen No. 1 was also used.

2. I inspected the permanent latrines and found them sanitary and used them. I found two temporary latrines covered by tents placed by Boy Scouts and removed the same, storing the benches in the barracks and tents in the storehouse.

3. Barracks No. 1 and kitchen, I found occupied by a troop of Boy Scouts who coöperated with us in every way. I do not know the condition of the grounds and buildings before their occupancy. Before leaving, the grounds were thoroughly policed and left absolutely free from bedding straw and other debris. The barracks were cleaned and put in order. The kitchen was thoroughly cleaned and all movable cooking utensils removed to the storehouse. All debris was burned and buried and kitchen refuse delivered to Camp Custodian, Mr. Cole.

4. The following damage occurred during my tour:

(a) The second spigot in the main water line along the north side of the parade ground was broken off by reason of a man stumbling over it in the darkness, the warning lantern having been removed by some men unknown for use in pitching camp. About 1:00 A. M., August 31, I plugged this temporarily and Camp Custodian, Mr. Cole, opened spigot No. 3 for use. See recommendations as to spigots for cause of this breakage.

(b) Motor truck used by the 17th Company backed into the gate at the southwest corner of the camp grounds, breaking upright at the end of the gate next to the post. To repair same will require 12 feet of 2" x 3" lumber and about 12 feet of 6" x 1½". There seemed to be no special negligence in connection with this.

5. After the departure of all detachments I inspected the ground, barracks No. 1 and 2, kitchens No. 1 and 2, and latrines and found them left in good order with no signs of use.

6. There was no disorder whatsoever of any nature throughout the tour and all details worked cheerfully and well and the thoroughness of the final policing by all of the companies should be commended.

7. I found the following conditions existing at the State Camp grounds:

The three barracks are in good condition with the exception of window shutters. Fastenings used to close the same and to hold the same extended when opened, being defective in most cases. The keys to most doors are also missing and all three barracks may be entered at any time. The storehouse was in good condition and the second floor locked. The kitchens were in good condition except as to shutters, the lack of any screening and stoves. All three stoves require minor repairs and should be greased to prevent further deterioration by rust. There is sufficient kitchen equipment for one kitchen in the storehouse. The permanent latrines are in good condition except the roofs, which need shingling. These have heretofore been condemned for sanitary reasons, but through lack of use are at present perfectly clean in all respects. There are in the barracks, six temporary latrine benches and platforms in good condition and two are in position in the Headquarter's latrines. There are a large number of cots and stretcher cots, the latter property of the F. L. I. Regiment, about thirty-five of which are usable and about one hundred and twenty-five which could be made usable by tacks and nails. The balance require new canvas. All three barracks are properly equipped with temporary tables and stools for mess. The water supply is good and sufficient. I did not inspect the pump house, but noted that it was usable. From the tanks extending east along the northerly side of the parade ground is a main with spigots at intervals. Each spigot is enclosed in a box two feet square and about forty-two inches deep. The spigot pipe after leaving the main has two right angle couplings with a cut-off between. It then extends upward between five and six feet. These pipes are

in no way supported or braced so that the entire leverage comes upon the coupling with the main line. The use of the spigot easily bends the pipe and breaks the coupling. The spigot wells should be larger, so that the cut-off of the main line, which is in each well and the cut-off to the spigots may be more easily accessible and the perpendicular pipe should be braced at the top of the well.

8. All buildings are deficient in lighting provisions. There are four large brass lamps and five small lamps in the buildings and storehouse. None are provided with chimneys.

HOWARD SHEFFIELD,
Capt., Supply Officer, R. I. S. G.

REPORT OF CAPTAIN CHARLES C. PURDUM, COMMANDING SANITARY DETACHMENT, THIRD BATTALION, RHODE ISLAND STATE GUARD, OF THE DUTY OF THE SANITARY DETACHMENT AT PAWTUCKET, RHODE ISLAND, OCTOBER 12 TO 31, INCLUSIVE, 1918.

SANITARY DETACHMENT.

3RD BATTALION, R. I. S. G.

PAWTUCKET, R. I., November 15th, 1918.

FROM: Commanding Officer, Sanitary Detachment, R. I. S. G.

TO: The Adjutant General, R. I. (through channels).

SUBJECT: Report of Tour of Duty.

Under Special Orders, A. G. O., dated October 12th, 1918, the Sanitary Detachment, 3rd Battalion, R. I. S. G., was assigned to duty in Pawtucket, R. I. Strength, 1 officer and 18 enlisted men.

The Baldwin Street School (locally known as Slater School) was under direction of Commanding Officer transformed into a military hospital within six hours.

The detachment performed all duties of the hospital, including men's ward service, police and ambulance service, until the closing of the hospital, October 31st, 1918.

The detachment ambulance manned by men of the detachment transported during this period two hundred and thirty-six cases to this hospital and others in the city of Pawtucket and Providence.

Ninety-six male cases of influenza were attended in wards during the service, and all other work of the hospital was performed by the detachment.

During the service, one enlisted man contracted the disease and was absent from duty from October 20th to 31st, inclusive.

Major N. Darrell Harvey, Commanding Sanitary Detachment, R. I. S. G., inspected the detachment October 22nd, 1918.

The detachment was relieved from duty October 31st, 1918, at 6 P. M.

CHARLES C. PURDUM,
*Captain, Sanitary Detachment,
3rd Battalion, R. I. S. G.*

REPORT OF INSPECTOR OF SMALL ARMS PRACTICE FOR THE
SEASON OF 1918.

CONSOLIDATED REPORT OF RIFLE PRACTICE, RHODE ISLAND
STATE GUARD AND RHODE ISLAND MILITIA, 1918.

ORGANIZATION.	Short Course.	Marksmen.	Sharpshooter.	Expert.	Total Firing, Short Course.
Rhode Island State Guard:					
Headquarters	7	2	1	1	8
First Company	9	6			25
Second Company	57	12	4		83
Third Company	33	12	3		55
Fifth Company	16	8	1		30
Sixth Company	31	5	1	1	84
Seventh Company	38	4			73
Eighth Company	13	7	3		25
Ninth Company	32	11	3		51
Tenth Company	21	5	1		50
Eleventh Company	26	5	1	1	51
Twelfth Company	24	16	4	2	37
Thirteenth Company	5	1	1	1	6
Fourteenth Company	4				11
Fifteenth Company	43	10	4		63
Sixteenth Company	8	4			17
Seventeenth Company	42	16	2		86
Eighteenth Company	57	23	3	2	88
Machine Gun Detachment	22	4			39
Sanitary Detachment	8				15
Band	6	2			13
Warren Artillery	3				13
Totals	505	153	32	8	923

ANNUAL RETURN OF THE RHODE ISLAND MILITIA FOR THE YEAR ENDING DECEMBER 31, 1918.

THE ADJUTANT GENERAL'S REPORT.

ARMS OF SERVICE.	COMMISSIONED OFFICERS.										Total commissioned.	Enlisted Men.	Aggregate.				
	Staff Corps and Departments.			Line.													
Number of Companies of all Organizations.	Aides-de-Camp.	The Adjutant General's Department.	Quartermaster Corps.	Judge-Advocate General's Department.	Ordnance Department.	Colonel.	Lieutenant-Colonel.	Majors.	Adjutants.	Ordnance Officer.	Supply Officer.	Inspector of Rifle Practice.	Chaplain.	Captains.	First Lieutenants.	Second Lieutenants.	
Governor's Staff.....	4	1															5
National Guard.....																	1
National Guard Reserve.....																	2
State Guard.....			1	1													17
Field and Staff.....						1	6	1	1	1	1	1	1	17	18	17	52
1st to 18th Companies.....																	1796
Headquarters and Supply Company.....																	1847
Machine Gun Detachment.....																	51
Sanitary Detachment.....																	101
Infantry Rhode Island Militia.....																	104
*Independent Organizations.....																	79
																	92
																	2
																	101
																	1396
																	1497

*Figures include some officers and men in the State Guard.

ROSTER OF THE RHODE ISLAND MILITIA.

Commander-in-Chief.

R. LIVINGSTON BEECKMAN, of Newport.

Governor of the State.

Inaugurated January 5, 1915.

ADJUTANT GENERAL'S DEPARTMENT.

The Adjutant, Inspector and Paymaster General.

With Rank of Brigadier General.

Abbot, Charles W., Providence.....February 1, 1911.

RHODE ISLAND NATIONAL GUARD.

QUARTERMASTER CORPS.

Quartermaster.

With Rank of Major

Manchester, Horace L., Barrington.....July 21, 1906.

NATIONAL GUARD RESERVE.

JUDGE-ADVOCATE GENERAL'S DEPARTMENT.

Judge-Advocate.

With Rank of Major.

Dubois, Henry D. C., Providence.....June 14, 1917.

ORDNANCE DEPARTMENT.

With Rank of Major.

Forsyth, George A., Providence.....April 30, 1914.

AIDS TO COMMANDER-IN-CHIEF.

Lieut.-Col. Michael J. Lynch.....Providence.....Jan. 5, 1915.

Lieut.-Col. Joseph Samuels.....Providence.....Oct. 23, 1917.

Lieut.-Col. Percy W. Gardner, First L. I. Regt.. Providence.....May 7, 1918.

Captain Arthur Power, Newport Artillery Co.... Newport.....April 28, 1914.

APPOINTED UNDER THE PROVISIONS OF SECTION 20, CHAPTER 394 OF THE PUBLIC LAWS.

INFANTRY, R. I. MILITIA.

1st Lieut. Frederick M. Rhodes.....Providence.....May 3, 1918.

2nd Lieut. Theodore S. Butterfield.....Providence.....May 3, 1918.

STATE GUARD.

HEADQUARTERS—PROVIDENCE.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Alvin A. Barker	Colonel	April 24, 1918 . . .	Newport.
Charles H. Ledward	Lieut -Col	Sept. 27, 1918 . . .	Westerly.
<i>Adjutant.</i>			
Irvin C. Elmer	Captain	July 12, 1918 . . .	Providence.
<i>Supply Officer.</i>			
Howard Sheffield	Captain	July 12, 1918 . . .	Providence.
<i>Ordnance Officer.</i>			
William F. Flanagan	Major	July 12, 1918 . . .	Providence.
<i>Inspector of Rifle Practice.</i>			
*John J. Finnigan	Captain	July 12, 1918 . . .	Cranston.
<i>Chaplain.</i>			
Stanley C. Hughes	Captain	July 12, 1918 . . .	Newport.

FIRST BATTALION.

Everett E. Whipple	Major	Sept. 27, 1918 . . .	Westerly.
<i>Adjutant.</i>			
Henry W. Sutcliffe	1st Lieut	July 12, 1918 . . .	Westerly.

Second Company.—South Kingstown.

Grafton I. Kenyon	Captain	Sept. 9, 1918 . . .	Wakefield.
Charles V. Johnson	1st Lieut	Sept. 9, 1918 . . .	Wakefield.
Chesman O. Childs	2nd Lieut	Sept. 9, 1918 . . .	Peacedale.

Fourth Company—Westerly

Abraham P. Datson	Captain	Sept. 27, 1918 . . .	Westerly.
Henry M. Clarke	1st Lieut	Sept. 27, 1918 . . .	Westerly.
William Mitchell	2nd Lieut	Oct. 28, 1918 . . .	Westerly.

*Sixteenth Company.—East Greenwich.**(Varnum Continentals.)*

Howard V. Allen	Captain	Sept. 9, 1918 . . .	East Greenwich.
Daniel Howland	1st Lieut	Sept. 9, 1918 . . .	East Greenwich.
Henry E. Cockrell	2nd Lieut	Sept. 9, 1918 . . .	East Greenwich.

*Subject to examination.

STATE GUARD.—CONTINUED.

SECOND BATTALION.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Herbert Bliss <i>Adjutant.</i>	Major	July 12, 1918	Newport.
Arthur Power	1st Lieut	July 12, 1918	Newport.

*Third Company.—Newport.**(Newport Artillery Company.)*

William Knowe	Captain	Sept. 9, 1918	Newport.
William E. Braley	1st Lieut	Sept. 9, 1918	Newport.
William M. Thompson	2nd Lieut	Sept. 9, 1918	Newport.

*Thirteenth Company.—Bristol.**(Bristol Train of Artillery.)*

Stephen W Bourn	Captain	Oct. 28, 1918	Bristol.
Thomas H. DeCoudres	1st Lieut	Sept. 9, 1918	Bristol.
Henry H. Bullock	2nd Lieut	Sept. 9, 1918	Bristol.

Fifteenth Company.—East Providence.

Oscar E. Stone	Captain	Sept. 9, 1918	Rumford.
Roger S. Robinson	1st Lieut	Sept. 9, 1918	East Providence.
*Charles R. MacKay	2nd Lieut	Sept. 9, 1918	East Providence.

THIRD BATTALION.

Henry C. Card <i>Adjutant.</i>	Major	Sept. 27, 1918	Woonsocket.
William G. Christie	1st Lieut	July 12, 1918	Pawtucket.

First Company.—Woonsocket.

Allen C. Arey	Captain	Sept. 9, 1918	Woonsocket.
Charles F. Parker	1st Lieut	Sept. 9, 1918	Woonsocket
*Robert Menard	2nd Lieut	Sept. 9, 1918	Woonsocket.

Sixth Company.—Pawtucket.

Charles A. Bailey	Captain	Sept. 9, 1918	Pawtucket.
Charles E. Dessault	1st Lieut	Sept. 9, 1918	Pawtucket.
Walter B. Macmillan	2nd Lieut	Sept. 9, 1918	Pawtucket.

*Subject to examination.

STATE GUARD.—CONTINUED.

THIRD BATTALION—Concluded.

Seventh Company.—Pawtucket.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Thomas A. O'Gorman, Jr.	Captain	Sept. 9, 1918.	Providence.
*James McKinnon	1st Lieut.	Nov. 16, 1918.	Pawtucket.
.....	2nd Lieut. . . . .	.....	.....

Fourteenth Company.—Smithfield.

*Edward M. Fuller	Captain	June 24, 1918.	Providence.
*Caleb E. Moffitt	1st Lieut.	Nov. 18, 1918.	Greenville
*William E. Norton	2nd Lieut.	Nov. 18, 1918.	Esmond.

FOURTH BATTALION.

Alonzo R. Williams	Major	July 12, 1918.	Providence.
<i>Adjutant.</i>			
Albert B. Coulters	1st Lieut.	July 12, 1918.	Arlington.

*Ninth Company.—Providence.**(Company B, First Light Infantry Regiment.)*

Frederic S. McCausland, Jr.	Captain	Sept. 9, 1918.	Providence.
Willis H. Hatch	1st Lieut.	Sept. 9, 1918.	Providence.
J. Gilbert Dudley	2nd Lieut.	Sept. 9, 1918.	Providence.

*Tenth Company.—Providence.**(Company D, First Light Infantry Regiment.)*

Francis J. Harris	Captain	Sept. 9, 1918.	Providence.
Fred B. Cole	1st Lieut.	Sept. 9, 1918.	Cranston.
Earl W. Folsom	2nd Lieut.	Sept. 9, 1918.	Providence.

*Eleventh Company.—Providence.**(Company E, First Light Infantry Regiment.)*

Frank L. Barrows	Captain	Sept. 9, 1918.	Providence.
*William H. Bezely	1st Lieut.	Sept. 9, 1918.	Providence.
George L. Butts	2nd Lieut.	Sept. 9, 1918.	Providence.

*Twelfth Company.—Providence.**(Company F, First Light Infantry Regiment.)*

.....	Captain . . . . .	.....	.....
Frank E. Van Olinda	1st Lieut.	Sept. 9, 1918.	Providence.
Howard E. Branch	2nd Lieut.	Sept. 9, 1918.	Providence.

*Subject to examination.

THE ADJUTANT GENERAL'S REPORT.

STATE GUARD.—CONTINUED.

FIFTH BATTALION.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Archibald C. Matteson..... <i>Adjutant.</i>	Major.....	July 12, 1918....	Providence.
Robert N. Fiske.....	1st Lieut....	Aug. 23, 1918....	Providence.

FIFTH COMPANY.—PROVIDENCE.

(United Train of Artillery.)

Fred N. Joy.....	Captain.....	Sept. 9, 1918....	Providence.
Frank G. Bagshaw.....	1st Lieut.....	Nov. 12, 1918....	Providence.
Henry C. Plott.....	2nd Lieut....	Nov. 12, 1918....	Providence.

EIGHTH COMPANY.—PROVIDENCE.

(Company A, First Light Infantry Regiment.)

Joseph H. Bourck.....	Captain.....	Sept. 9, 1918....	Providence.
.....	1st Lieut.....	.....	.....
Spencer H. Over.....	2nd Lieut....	Sept. 9, 1918....	Providence.

Seventeenth Company.—Cranston.

(Company B, Cranston Blues.)

Dexter T. Knight.....	Captain.....	Sept. 9, 1918....	Cranston.
Ralph B. Glines.....	1st Lieut.....	Sept. 9, 1918....	Cranston.
Lloyd P. Williams.....	2nd Lieut....	Sept. 9, 1918....	Providence.

Eighteenth Company.—Cranston.

(Company A, Cranston Blues.)

Paige B. Coons.....	Captain.....	Sept. 9, 1918....	Cranston.
Ralph K. Stone.....	1st Lieut.....	Sept. 9, 1918....	Providence.
Arthur H. Walker.....	2nd Lieut....	Sept. 9, 1918....	Cranston.

Machine Gun Detachment.—Providence.

E. Merle Bixby.....	Captain.....	Sept. 9, 1918....	Providence.
Grafton G. Greenleaf.....	1st Lieut.....	Sept. 9, 1918....	Auburn.
Earl H. Williams.....	2nd Lieut....	Sept. 9, 1918....	Cranston.

STATE GUARD.—CONCLUDED.

Sanitary Detachment.—Providence.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
N. Darrell Harvey	Major	Sept. 9, 1918.	Providence.
*William Hindle	Captain	Sept. 9, 1918.	Providence.
Nathaniel H. Gifford	Captain	Sept. 9, 1918.	Providence.
Charles C. Purdum	Captain	Sept. 9, 1918.	Pawtucket.
Herbert H. Armington	Captain	Sept. 9, 1918.	Providence.
*William H. Peters	Captain	Nov. 19, 1918.	Providence.
*Edwin G. Thompson	1st Lieut	Sept. 9, 1918.	Providence.
William A. Sherman	1st Lieut	Sept. 9, 1918.	Newport.
Charles L. Phillips	1st Lieut	Sept. 9, 1918.	East Greenwich.
		DATE OF APPOINTMENT.	
*Frank I. Payne	1st Lieut	July 1, 1918.	Westerly.
*Alfred M. Merriman	1st Lieut	July 1, 1918.	Bristol.
*William W. Hunt	1st Lieut	July 1, 1918.	East Providence.
*Thomas J. McLaughlin	1st Lieut	Aug. 5, 1918.	Woonsocket.

*Subject to examination.

CHARTERED COMPANIES

NEWPORT ARTILLERY COMPANY.—NEWPORT.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Alvin A. Barker	Colonel	July 31, 1917	Newport.
William Knowe	Lieut.-Col.	July 30, 1918	Newport.
William E. Braley	Major	July 30, 1918	Newport.
William M. Thompson <i>Surgeon.</i>	Captain	July 30, 1918	Newport.
William A. Sherman <i>Adjutant.</i>	Major	Feb. 29, 1916	Newport.
Arthur Power <i>Quartermaster.</i>	Captain	April 28, 1914	Newport.
Horace S. Brown <i>Paymaster.</i>	1st Lieut.	July 30, 1918	Newport.
. <i>Assistant Surgeon.</i>	1st Lieut. . . . .	. . . . .	. . . . .
Douglas P. A. Jacoby <i>Commissary.</i>	1st Lieut.	May 30, 1916	Newport.
Clarence A. Peabody <i>Inspector of Rifle Practice.</i>	1st Lieut.	April 28, 1914	Newport.
Harry H. Hayden <i>Assistant Paymaster.</i>	1st Lieut.	April 28, 1908	Newport.
James S. Groff <i>Chaplain.</i>	2nd Lieut.	April 27, 1915	Newport.
Stanley C. Hughes	1st Lieut.	April 28, 1914	Newport.

KENTISH GUARDS.—EAST GREENWICH.

Melville A. Newcomb	Colonel	April 28, 1915	East Greenwich.
Edward A. Graves	Lieut.-Col.	April 24, 1912	East Greenwich.
James G. Miller	Major	April 24, 1918	East Greenwich.
William S. Rice <i>Adjutant.</i>	Captain	April 24, 1918	East Greenwich.
William A. Congdon <i>Quartermaster.</i>	1st Lieut.	April 24, 1918	East Greenwich.
Ora O. Booth <i>Commissary.</i>	1st Lieut.	April 24, 1918	East Greenwich.
William R. Nason <i>Surgeon.</i>	1st Lieut.	April 24, 1918	East Greenwich.
Herbert B. Horton <i>Paymaster.</i>	Major	April 24, 1912	East Greenwich.
Louis W. Dugdale <i>Judge-Advocate.</i>	1st Lieut.	April 24, 1918	East Greenwich.
William E. Reddy <i>Chaplain.</i>	1st Lieut.	April 28, 1915	Riverpoint.
William Worthington	1st Lieut.	June 14, 1905	Providence.

CHARTERED COMPANIES—CONTINUED

BRISTOL TRAIN OF ARTILLERY.—BRISTOL.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
John H. Bailey, Jr.	Colonel	Dec. 6, 1917. . . .	Bristol.
Asa W. Hathaway.	Lieut.-Col. . . .	April 4, 1918. . . .	Bristol.
Stephen W. Bourn.	Major	April 4, 1918. . . .	Bristol.
<i>Adjutant.</i>			
William G. Dixon.	Captain	Dec. 6, 1917	Bristol.
<i>Judge-Advocate.</i>			
.....	1st Lieut.		
<i>Quartermaster.</i>			
Octave LeClair.	1st Lieut. . . .	Dec. 6, 1917. . . .	Bristol.
<i>Commissary.</i>			
Henry Wheeler.	1st Lieut. . . .	April 4, 1918. . . .	Bristol.
<i>Surgeon.</i>			
Alfred M. Merriman.	Major	April 6, 1916. . . .	Bristol.
<i>Paymaster.</i>			
Fred Wilbur.	1st Lieut. . . .	April 4, 1918. . . .	Bristol.
<i>Inspector of Rifle Practice.</i>			
Howard W. Church.	Captain	April 4, 1918. . . .	Bristol.
<i>Chaplain.</i>			
Adam C. McGilton.	1st Lieut. . . .	April 1, 1915. . . .	Bristol.

Company A.—Bristol.

.....	Captain		
Henry H. Bullock.	1st Lieut. . . .	April 6, 1916. . . .	Bristol.
Charles J. Sartini.	2nd Lieut. . . .	April 4, 1918. . . .	Bristol.

Company B.—Bristol.

.....	Captain		
George R. Fish.	1st Lieut. . . .	April 2, 1914. . . .	Bristol.
.....	2nd Lieut. . . .		

Company C.—Bristol.

Thomas H. DeCoudres.	Captain	April 4, 1918. . . .	Bristol.
William Bradford.	1st Lieut. . . .	April 4, 1918. . . .	Bristol.
George L. Drown, Jr.	2nd Lieut. . . .	April 4, 1918	Bristol.

KENTISH ARTILLERY.—APPONAUO.

John J. Brant.	Colonel.	April 25, 1918. . . .	Apponaug.
John G. Townsend.	Lieut.-Col. . . .	April 25, 1917. . . .	Apponaug.
William A. Waterman.	Major	April 25, 1917. . . .	Apponaug.
Thomas A. Leland.	Captain.	April 25, 1918. . . .	Apponaug.
<i>Surgeon.</i>			
Samuel H. Long.	Captain.	April 24, 1912. . . .	Apponaug.

CHARTERED COMPANIES—CONTINUED

FIRST LIGHT INFANTRY REGIMENT.—PROVIDENCE.

NAME.	RANK	DATE OF RANK.	P. O. ADDRESS.
William F. Flanagan	Colonel	May 1, 1916	Providence.
Percy W. Gardner	Lieut.-Col	April 9, 1917	Providence.
Alonso R. Williams	Major	Jan. 14, 1918	Providence.
.....	Captain . . . . .	.....	.....
.....	1st Lieut. . . . .	.....	.....
.....	2nd Lieut. . . . .	.....	.....
<i>Surgeon.</i>			
N. Darrell Harvey	Major	Jan. 21, 1918	Providence.
<i>Adjutant.</i>			
.....	Captain . . . . .	.....	.....
<i>Quartermaster.</i>			
Howard Sheffield	Captain	Feb. 28, 1918	Providence.
<i>Assistant Quartermaster.</i>			
Eugene C. McManus	2nd Lieut.	Mar. 4, 1918	Providence
<i>Paymaster.</i>			
Charles R. Leonard	Captain	Jan 16, 1911	East Providence.
<i>Inspector of Small Arms Practice.</i>			
Albert B. Coulters	Captain	Jan. 10, 1916	Providence.
<i>Assistant Surgeons.</i>			
William Hindle	Captain	Jan. 21, 1918	Providence.
Nat. H. Gifford	Captain	Jan. 28, 1918	Providence.

Company A—Providence.

Joseph H. Bocruk	Captain	Jan. 14, 1918	Providence.
.....	1st Lieut. . . . .	.....	.....
Spencer H. Over	2nd Lieut.	Jan. 14, 1918	Providence.

Company B.—Providence.

Frederic S. McCausland, Jr.	Captain	Aug. 5, 1918	Providence.
Willis H. Hatch	1st Lieut.	Aug. 5, 1918	Providence.
J. Gilbert Dudley	2nd Lieut.	Aug. 5, 1918	Providence.

Company D.—Providence.

Francis J. Harris	Captain	July 1, 1918	Providence.
Fred B. Cole	1st Lieut.	July 1, 1918	Cranston.
Earl W. Folsom	2nd Lieut.	Aug. 5, 1918	Providence.

CHARTERED COMPANIES—CONTINUED.

FIRST LIGHT INFANTRY REGIMENT.—PROVIDENCE—Concluded.

Company E.—Providence.

NAME.	RANK.	DATE OF RANK.	P. O. ADDRESS.
Frank L. Barrows.....	Captain....	April 23, 1917....	Providence.
William H. Bezely.....	1st Lieut....	April 23, 1917....	Providence.
George L. Butts.....	2nd Lieut....	April 23, 1917....	Providence.

Company F.—Providence.

.....	Captain....	.....	.....
Frank E. Van Olinda.....	1st Lieut....	June 18, 1917....	Providence.
Howard E. Branch.....	2nd Lieut....	Sept. 7, 1917....	Providence.

WARREN ARTILLERY.—WARREN.

Stephen F. Brayton.....	Colonel....	Oct. 21, 1918....	Warren.
.....	Lieut.-Col.	.....	.....
.....	Major.....	.....	.....
Otto J. Alletag.....	Captain....	Oct. 21, 1918....	Warren.
Isaac Bouffard.....	1st Lieut....	Oct. 21, 1918....	Warren.
Thomas Burns.....	2nd Lieut....	Oct. 21, 1918....	Warren.
<i>Adjutant.</i>			
Elmer Lothar.....	1st Lieut....	April 21, 1913....	Warren.
<i>Commissary.</i>			
.....	1st Lieut....	.....	.....
<i>Quartermaster.</i>			
Roy L. Sawin.....	1st Lieut....	April 16, 1917....	Warren.
<i>Paymaster.</i>			
Michael P. Griffin.....	1st Lieut....	May 24, 1915....	Warren.
<i>Surgeon.</i>			
Charles E. Scott.....	1st Lieut....	April 25, 1910....	Warren.
<i>Chaplain</i>			
Herman W. Watjen.....	1st Lieut....	May 18, 1898....	Warren.

CRANSTON BLUES.—CRANSTON.

John J. Finnegan.....	Major.....	May 29, 1918....	Cranston
<i>Adjutant</i>			
Lowndes A. Smith, Jr.....	1st Lieut....	July 24, 1918....	Cranston.
<i>Supply Officer.</i>			
G. Frederick Bohl.....	1st Lieut....	May 1, 1918....	Cranston.
<i>Surgeon.</i>			
William H. Peters.....	1st Lieut....	May 1, 1918....	Providence.

CHARTERED COMPANIES.—CONCLUDED.

CRANSTON BLUES.—CRANSTON—Concluded.

Company A.—Cranston.

NAME	RANK.	DATE OF RANK.	P. O. ADDRESS.
Paige B. Coons	Captain	May 29, 1918.	Cranston.
Ralph K. Stone	1st Lieut.	May 1, 1918.	Cranston.
Arthur H. Walker	2nd Lieut.	May 1, 1918.	Providence.

Company B.—Cranston.

Dexter T. Knight	Captain	May 1, 1918	Cranston.
Ralph B. Glines	1st Lieut.	May 1, 1918.	Cranston.
Lloyd P. Williams	2nd Lieut.	July 24, 1918.	Providence.

COPIES OF SOME GENERAL ORDERS ISSUED DURING
THE YEAR 1918.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, January 30, 1918.

GENERAL ORDERS, }
No. 3. }

I. Colonel Alvin A. Barker, Rhode Island Militia, is hereby placed on special duty to date from February 1st, 1918, and will report to The Adjutant General to assist in putting the Independent Chartered Military Organizations and any recognized constabulary commands that may be available, in such a condition of efficiency as to make them suitable for a Home Guard force. Colonel Barker is assigned to command such force and will be obeyed and respected accordingly.

II. All commands constituting the Home Guard as per paragraph I will follow a schedule of drill and instruction to be promulgated from this office, and will render such reports and returns as may from time to time be required on blanks to be furnished.

By order of R. LIVINGSTON BEECKMAN,
Governor and Commander-in-Chief.

CHARLES W. ABBOT,
The Adjutant General.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, April 24, 1918.

GENERAL ORDERS, }
No. 5. }

I. Complying with the provisions of Section 4 of Substitute C, for an "Act to Provide for the Organization of a State Guard," passed at the January session, 1918, a tentative recognition of commands of the independent chartered military organizations as units of the State Guard is hereby announced as follows: Newport Artillery Company, one company; Kentish Guards, one company; United Train of Artillery, one company; Bristol Train of Artillery, one company; First Light Infantry Regiment, Companies A, B, D, E, and F; Warren Artillery, one company; Cranston Blues, Companies A and B. A return will be made at once on receipt of blanks from this office by the companies above enumerated, showing their present enlisted strength. All having the necessary enlisted strength of one hundred will be fully recognized and an inspection ordered. If satisfactory, requisitions may be made for the necessary arms and other supplies to fully complete the equipment. Companies not now having the required strength are enjoined to begin recruiting at once on enlistment papers furnished by this office.

The status of all men now serving three year enlistment will remain as at present. A re-enlistment or new enlistment will be for service during the present war and six months thereafter. Physical fitness must first be determined by examination by a competent medical official. Enlistment papers will then be filled in and completed except for the muster-in. When a company has been recruited to the required strength, report will be made to this office, when an inspection will be ordered and if satisfactory, the muster-in will be made and the enlistment papers completed. Requisition will then be forwarded as before specified.

II. The following Constabulary Commands having been reported to the War Department as duly authorized to bear arms are also tentatively recognized as units of the State Guard, viz.: Westerly, South Kingstown, Woonsocket, and East Providence. The procedure outlined in paragraph I as regards recruiting to the required strength, reporting to this office for inspection and muster-in, and requiring for arms and supplies after full recognition, will apply to the above named commands.

III. The verbal authority given from this office for the organization of commands in Pawtucket and Smithfield is hereby confirmed and procedure directed as prescribed in paragraphs I and II.

IV. Authority is hereby given for the organization of a machine gun detachment, a sanitary detachment, a headquarters and supply company under regulations to be hereafter announced.

V. Paragraph I, General Orders, No. 3, c. s., this office, assigning Colonel Alvin A. Barker, Rhode Island Militia, to command a Home Guard force is amended so as to assign him to command the State Guard as before provided. He will be obeyed and respected accordingly. Instructions concerning reports and returns will be published later.

By order of R. LIVINGSTON BEECKMAN,
Governor and Commander-in-Chief.

CHARLES W. ABBOT,
The Adjutant General.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, May 17, 1918.

GENERAL ORDERS, }
No. 9. }

I. In accordance with Section 22, Chapter 394 of the Public Laws, as amended, Major George A. Forsyth, Rhode Island Ordnance Department, National Guard Reserve, is hereby appointed Range Officer of the State Range, Rumford, R. I., upon the recommendation of the Quartermaster General, to take effect May 10, 1918.

II. Units of the State Guard, as provided for in General Orders, No. 5, c. s., this office, will be constituted as follows:—1 captain, 1 1st lieutenant, 1 2nd lieutenant, 1 1st sergeant, 1 mess sergeant, 1 supply sergeant, 6 sergeants, 11 corporals, 1 mechanic, 2 cooks, 2 buglers and 75 privates, total commissioned 3, enlisted 100, aggregate 103.

III. Following the requirements of Section 61, Chapter 394 of the Public Laws, as amended the Commanding Officers of the Independent Chartered Military Organizations which may have companies recognised as units of the State Guard as per General Orders, No. 5, c. s., this office, and the Commanding Officers of unattached companies recognised as per same order, will detail boards for the examination of candidates for non-commissioned officers in their respective commands, and will appoint those found duly qualified. Blank warrants may be obtained from this office to be signed by the appointing officers.

By order of R. LIVINGSTON BEECKMAN,
Governor and Commander-in-Chief.
 CHARLES W. ABBOT,
The Adjutant General.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, June 11, 1918.

GENERAL ORDERS, }
 No. 10. }

I. Major N. Darrell Harvey, Surgeon, First Light Infantry Regiment, is hereby authorized and directed to organize a Sanitary Detachment for the State Guard to consist of six men for each company now, and hereafter to be recognized. The junior medical officers of the First Light Infantry Regiment will be recognized when the five companies have qualified. One medical officer in each Chartered Organization will also be recognized when his command has qualified. In all out of town companies the physician, who has been authorized to make the physical examination, will be recognized and appointed as a medical officer with the rank of 1st lieutenant, as soon as the command has qualified, and directed to secure the six men as before mentioned. Should there be two companies the rank will be captain. Until further orders the medical officers of the First Light Infantry Regiment will perform the duties of their position for the Machine Gun Detachment at the Cranston Street Armory, securing the required six men.

II. The recognized text books for the instruction of the State Guard will be the following of the U. S. Army, viz.: Army Regulations, Infantry Drill Regulations, Manual of Interior Guard Duty, Field Service Regulations and Small Arms Firing Regulations, also Army Paper Work by Moss.

The scope of training will be as follows:

Infantry Drill Regulations:—Paragraphs, 1-44, 48-257, 350-377, 636-660, 745-748, 755-765. Special attention to 135-138, 604-622, 694-696, all inclusive. For Company Musicians, specially paragraphs 45-48, inclusive. Manual of Interior Guard Duty:—Paragraphs, 1-256, 299-307, 337-367, all inclusive.

Small Arms Firing Regulations.—Paragraphs, 22-60, inclusive.

By order of R. LIVINGSTON BEECKMAN,
Governor and Commander-in-Chief.
 CHARLES W. ABBOT,
The Adjutant General.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, July 12, 1918.

GENERAL ORDERS, }
No. 14.

I. All units of the Rhode Island State Guard having now been mustered into service, the organization as a provisional regiment of infantry is announced as follows:

II. Numerical designation and location of companies are hereby announced as follows based upon date of muster-in of the respective commands:—

1st Company	Woonsocket.
2nd " "	South Kingstown.
3rd " "	Newport, (Newport Artillery Company).
4th " "	Westerly.
5th " "	Providence, (United Train of Artillery).
6th " "	Pawtucket.
7th " "	Pawtucket
8th " "	Providence, (Co. A, First Light Inf. Regt.).
9th " "	Providence, (Co. B, " " " ").
10th " "	Providence, (Co. D, " " " ").
11th " "	Providence, (Co. E, " " " ").
12th " "	Providence, (Co. F, " " " ").
13th " "	Bristol, (Bristol Train of Artillery).
14th " "	Smithfield.
15th " "	East Providence.
16th " "	East Greenwich, (Varnum Continentals).
17th " "	Cranston, (Co. B, Cranston Blues).
18th " "	Cranston, (Co. A, " ").
Headquarters and Supply Company	Providence.
Machine Gun Detachment	"
Sanitary Detachment	"

III. Appointments as field and staff officers are hereby announced, subject to examination.

Lieut.-Colonel	James F. Phetteplace.
Major	Charles H. Ledward.
" "	Herbert Bliss.
" "	Walter G. Gatchell.
" "	Alonzo R. Williams.
" "	Archibald C. Matteson
Major	William F. Flanagan, Ordnance Officer.
Captain	John J. Finnegan, Inspector of Rifle Practice.
" "	Howard Sheffield, Supply Officer.
" "	Irvin C. Elmer, Adjutant.
" "	Stanley C. Hughes, Chaplain.

- 1st Lieut Arthur Power, Adjutant, 2nd Battalion.
 " " Henry W. Sutcliffe, Adjutant, 1st Battalion.
 " " Albert B. Coulters, Adjutant, 4th Battalion.
 " " William G. Christie, Adjutant, 3rd Battalion.

IV Companies are hereby assigned to battalions as follows:—

1st Battalion.

2nd, 4th, 16th Major Charles H. Ledward.

2nd Battalion.

3rd, 13th, 15th Major Herbert Bliss.

3rd Battalion.

1st, 6th, 7th, 14th Major Walter G. Gatchell.

4th Battalion.

9th, 10th, 11th, 12th Major Alonso R. Williams.

5th Battalion.

5th, 8th, 17th, 18th Major Archibald C. Matteson.

Headquarters and Supply Company Captain Irvin C. Elmer.

Machine Gun Detachment Captain E. Merle Bixby.

Sanitary Detachment Major N. Darrell Harvey.

V. On the briefing fold of enlistment papers of men mustered in to the State Guard units which are also companies in Independent Chartered Military Organizations, will be entered the company number followed by the name of the Chartered Command.

VI. A board of examination for officers of the State Guard is hereby appointed to meet at the call of the President.

Detail for the Board.

Brigadier General Charles W. Abbot, The Adjutant General.

Colonel Alvin A. Barker, Commanding Rhode Island State Guard.

Major Augustus W. Calder, Chief Surgeon, R. I. Medical Corps, N. G.

Major N. Darrell Harvey, Medical Corps, Rhode Island State Guard.

Regulations concerning the examination will be published as soon as practicable.

VII. The following appointments in the 10th Company, Rhode Island State Guard to date from July 1, 1918, subject to examination, are hereby announced:—

As Captain Francis J. Harris.

As 1st Lieutenant Fred B. Cole.

VIII Names of medical and company officers will be announced later.

By order of R. LIVINGSTON BEECKMAN,

Governor and Commander-in-Chief.

CHARLES W. ABBOT,

The Adjutant General.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS.

THE ADJUTANT GENERAL'S OFFICE,

PROVIDENCE, July 15, 1918.

GENERAL ORDERS, }
No. 15.

The following instructions to govern the examination of officers as required by Section 44, Militia Law, State of Rhode Island, 1909, and as subsequently amended, are hereby published for the information and guidance of all concerned.

When a candidate is ordered to appear before the examining board, if a member of any organization, he will use the text books and blank forms which have been issued to such organization. If any are lacking, or if he is not a member of any organization, he will apply to this office for whatever may be necessary. Books and blanks must be returned in good condition, without fail when the candidate presents himself before the board. The following are the official text books.

Drill Regulations for Infantry (corrected to April 15, 1917); Sanitary Troops (1914); Small Arms Firing Manual (1913); Description and Rules for the Management of the Rifle furnished the State Guard; Manual of Interior Guard Duty (1914); Field Service Regulations (1914); Manual for Courts Martial, etc., (1917); the above all being the regulation War Department publications for use in the United States Army.

Militia Law of the State of Rhode Island (1909) as amended; Riot Duty, Moss; and Paperwork, Moss.

The following blank forms pertaining to the Rhode Island State Guard will be furnished:

- Pay and muster rolls.
- Weekly and monthly drill reports.
- Enlistment paper.
- Application for discharge.
- Company and consolidated morning report.
- Ration return.
- Company and consolidated sick reports.
- Duty Roster.

All candidates upon appearing before the board for the first time will be required to write a letter in official form stating place and date of birth; extent and nature of education; business experience, with present occupation; and sketch of militia or other military service. This letter, in grammatical construction, penmanship and spelling must indicate such a degree of educational acquirements as shall be satisfactory to the Board

If at any time an officer shall, through lack of application, show himself to be unqualified for his office, it will be the duty of his commanding officer to report the matter through the proper channels, whereupon the officer may be ordered before the examining board for examination.

A candidate for any grade higher than the one next above that which he holds, may, in the discretion of the board, be required to show himself proficient in what is prescribed for the intermediate grade or grades.

SUBJECTS FOR EXAMINATION.

Every candidate appearing before the Board will be examined physically according to the provisions of Circular No. 5, War Department, Militia Bureau, series of 1916, and in general must be found to fulfill the requirements prescribed therein. He will present a medical officer's report of physical examination with a letter authorizing his appearance before the Board. In arriving at a decision, the Board will use its own judgment in the case of any one who has rendered long and faithful service. Should serious doubt exist, the matter will be referred to the Commander-in-Chief.

Inquiry will be made into a candidate's moral character, a full and fair hearing being given in any case where doubt exists, the final decision resting with the Commander-in-Chief.

The Board will ask as many questions in each subject, as hereinafter specified, as may seem desirable. A percentage of 70 will be necessary for proficiency.

FOR SECOND LIEUTENANT OF INFANTRY.

Prepare in presence of Board a pay and muster roll, weekly and monthly drill reports, enlistment paper and application for discharge. Militia Law, State of Rhode Island.

Infantry Drill Regulations, United States Army,—definitions, paragraphs 1 to 257, 584 to 622, 804 to 807, inclusive.

Manual of Interior Guard Duty,—paragraphs 41 to 256, 337 to 367, inclusive.

Description and Rules for the Management of the Rifle, furnished the State Guard.

FOR FIRST LIEUTENANT OF INFANTRY.

Infantry Drill Regulations, United States Army,—same as for second lieutenant, and add paragraphs 258 to 326, 623 to 707, 792 to 803, inclusive.

Manual of Interior Guard Duty,—paragraphs 29 to 40, inclusive.

FOR CAPTAIN OF INFANTRY.

Infantry Drill Regulations, United States Army,—paragraphs 159 to 346, 350 to 807, inclusive.

Manual of Interior Guard Duty,—paragraphs 27 and 28.

FOR MAJOR OF INFANTRY.

Riot duty.

Infantry Drill Regulations, United States Army,—paragraphs 347 to 349, inclusive.

Field Service Regulations, United States Army,—paragraphs 37 to 246, inclusive.

FOR COLONEL OR LIEUTENANT-COLONEL OF INFANTRY.

Same as for major in the discretion of the Commander-in-Chief.

FOR ALL OFFICERS OF THE MEDICAL CORPS.

Must be graduates of medicine and surgery, and admitted to practice in this State.

Prepare in presence of Board, a pay and muster roll, weekly and monthly drill reports, enlistment paper, application for discharge, daily and consolidated sick report, morning report, requisition for quartermaster supplies. Militia Law, State of Rhode Island.

Drill Regulations for Sanitary Troops.

Examination of recruits as prescribed in Circular No. 5, M. B., War Department, 1916.

FOR ALL STAFF OFFICERS.

The examination prescribed for the grade in the arm of service to which candidate is appointed, unless he has already passed such examination, also familiarity with property pertaining to his department.

Special for staff officers in addition to foregoing.

FOR ADJUTANTS.

Preparation of consolidated morning report and ration return. Method of keeping records and conducting official correspondence.

Infantry Drill Regulations, United States Army,—paragraphs 258 to 348, 708 to 737, 749 to 791, 804 to 807, inclusive.

Manual of Interior Guard Duty,—paragraphs 1 to 26, inclusive; appendices A and B.

FOR SUPPLY OFFICER.

Infantry Drill Regulations, United States Army,—paragraphs 661 to 677, 792 to 803, inclusive.

Field Service Regulations, United States Army,—paragraphs 232 to 248, 264 to 312, 386 to 410, inclusive.

Making and handling of bills of lading, informal contracts and transportation requests. Preparation of ration returns. General knowledge of the ration; how to obtain and issue same. Preparation of muster and pay rolls. Familiarity with property pertaining to different departments.

FOR JUDGE ADVOCATE.

Must be a member of the Rhode Island bar, with special knowledge of the State Militia Law.

Field Service Regulations, United States Army, 1914,—appendix 6, pages 190 to 204.

Manual for Courts Martial, etc., 1917.

FOR ORDNANCE OFFICER AND INSPECTOR OF RIFLE PRACTICE.

Special knowledge of rifle and revolver firing, as laid down in Small Arms Firing Manual.

FOR CHAPLAIN.

Must be regularly ordained minister of the Gospel.

By order of R. LIVINGSTON BEECKMAN,
Governor and Commander-in-Chief.

CHARLES W. ABBOT,
The Adjutant General.

RETIRED LIST OF COMMISSIONED OFFICERS AND ENLISTED MEN OF THE RHODE ISLAND MILITIA.

NATIONAL GUARD.

BRIGADIER GENERALS.

3. Chace, Thomas W. General Orders No. 1, January 30, 1892.
47. Wilson, Charles A. General Orders No. 38, August 26, 1898.
96. Forsyth, George A. General Orders No. 20, May 20, 1909.
107. Wetherell, John H. General Orders No. 8, February 1, 1911.
118. Stiness, Walter R. General Orders No. 6, January 31, 1913.
127. Walker, W. Howard. General Orders No. 18, June 9, 1914.
142. Peckham, Charles F. General Orders No. 28, September 29, 1915.
158. Tanner, Herbert S. General Orders No. 19, June 11, 1917.

COLONELS.

1. Pendleton, Eugene B. General Orders No. 1, January 30, 1892.
87. Whipple, Everett E. General Orders No. 4, January 22, 1907.
104. Matteson, Archibald C. General Orders No. 38, December 27, 1910.
105. Knight, Webster. General Orders No. 39, December 30, 1910.
106. Ledward, Charles H. General Orders No. 39, December 30, 1910.
159. Smith, Nathaniel W. General Orders No. 20, June 13, 1917.

LIEUTENANT-COLONELS.

4. Brown, J. Albert. General Orders No. 3, February 11, 1892.
42. Rose, Henry B. General Orders No. 8, March 22, 1898.
51. Donahue, Thomas H. General Orders No. 13, May 9, 1899.
62. McCrudden, John. General Orders No. 27, December 3, 1900.
63. Easterbrooks, Giles W. General Orders No. 3, January 30, 1901.
67. French, Charles H. General Orders No. 19, December 22, 1902.
75. Harvey, N. Darrell. General Orders No. 11, April 6, 1904.
76. Callan, Luke H. General Orders No. 2, January 9, 1905.
99. Tingley, George S. General Orders No. 35, September 24, 1909.
100. Allenson, Charles. General Orders No. 41, November 24, 1909.
102. McGill, Thomas F. General Orders No. 30, October 1, 1910.
122. Fanning, Martin S. General Orders No. 32, December 2, 1913.
132. Rodgers, Thomas F. General Orders No. 25, September 18, 1914.
143. Kane, James R. General Orders No. 33, November 18, 1915.
145. Jones, Henry A. General Orders No. 1, January 3, 1916.
162. Sweet, Charles F. General Orders No. 34, December 27, 1917.

MAJORS.

- 52. Lally, Frank M. General Orders No. 15, June 15, 1899.
- 66. Ely, William General Orders No. 13, April 29, 1902.
- 84. Maynard, William A. General Orders No. 24, November 18, 1905.
- 89. Sweeney, Peter A. General Orders No. 21, July 31, 1907.
- 93. Bowen, Richard LeBaron Act of Legislature, May 7, 1908.
- 101. Harrington, Walter E. General Orders No. 19, June 10, 1910.
- 103. Corey, John A. General Orders No. 33, November 5, 1910.
- 116. Cook, Maurice H. General Orders No. 3, January 8, 1913.
- 124. Wilcox, Howard D. General Orders No. 3, January 9, 1914.
- 125. Bixby, E. Merle. General Orders No. 8, March 23, 1914.

CAPTAINS.

- 7. Lewis, Azro N. General Orders No. 4, February 27, 1892.
- 16. Maxson, C. Clarence General Orders No. 7, March 21, 1892.
- 19. Draper, Edwin General Orders No. 13, May 12, 1892.
- 21. McSoley, Bartholomew General Orders No. 22, June 27, 1892.
- 35. West, Stephen J. General Orders No. 6, April 29, 1895.
- 55. Wolcott, Henry Act of Legislature, May 1, 1900.
- 57. Barker, Edgar R. General Orders No. 14, June 14, 1900.
- 60. Canning, Frank General Orders No. 18, July 19, 1900.
- 64. Clarke, Edward M. General Orders No. 9, May 4, 1901.
- 68. Bray, Ferdinand General Orders No. 19, December 22, 1902.
- 72. Phillips, John M. General Orders No. 16, November 18, 1903.
- 73. Slyne, Walter D. General Orders No. 3, February 17, 1904.
- 86. Blunt, Harry W. General Orders No. 16, June 16, 1906.
- 90. Datson, Abraham P. General Orders No. 24, December 18, 1907.
- 91. Rittmann, Charles Act of Legislature, April 13, 1906.
- 92. Roberts, Arthur F. General Orders No. 10, April 21, 1908.
- 109. McKenna, P. Henry General Orders No. 45, December 11, 1911.
- 110. McAuley, John T. General Orders No. 4, January 16, 1912.
- 111. Gallagher, Thomas F. General Orders No. 5, January 19, 1912.
- 115. Crosby, Henry A. General Orders No. 28, October 9, 1912.
- 133. Reilly, Joseph P. General Orders No. 28, October 15, 1914.
- 139. Wall, Howard F. General Orders No. 13, April 29, 1915.
- 155. Richards, Charles H. General Orders, No. 5, January 22, 1917.
- 161. Lythgoe, John C. General Orders, No. 30, October 1, 1917.
- 165. FitzGerald, Jerome M. General Orders, No. 6, May 4, 1918.

FIRST LIEUTENANTS.

- 10. Downey, James E. General Orders No. 5, March 12, 1892.
- 44. Gates, Hobert L. General Orders No. 11, April 12, 1898.
- 95. Parker, Robert B. General Orders No. 30, December 3, 1908.
- 114. Crowshaw, Joseph A. General Orders No. 20, June 27, 1912.
- 131. Jackovitz, Joseph. General Orders No. 23, August 24, 1914.
- 140. Auty, Joseph, Jr. General Orders No. 19, June 22, 1915.
- 152. Russell, Thomas. General Orders, No. 26, July 14, 1916.
- 160. Nield, Fred B. General Orders, No. 25, July 11, 1917.

THE ADJUTANT GENERAL'S REPORT.

QUARTERMASTER SERGEANT.

123. Stage, George W. Special Orders No. 87, June 27, 1913.

FIRST SERGEANT.

126. Collins, Denerson E. Special Orders No. 79, May 13, 1914.

NAVAL MILITIA.

CAPTAIN.

138. Bliss, William C. General Orders No. 12, April 22, 1915.

COMMANDERS.

117. Lawton, Charles N. General Orders No. 5, January 16, 1913.
 157. Gladding, Edward P. General Orders, No. 8, April 4, 1917.

LIEUTENANT COMMANDER.

121. Lawton, Charles E. General Orders No. 30, October 27, 1913.

LIEUTENANTS.

128. Stone, Oscar E. General Orders No. 19, July 1, 1914.
 135. Campbell, Peter G. General Orders No. 33, December 19, 1914.
 141. Walsh, Charles A. General Orders No. 26, July 14, 1915.

LIEUTENANT (Junior Grade).

97. Richardson, William A. General Orders No. 20, May 20, 1909.

ENSIGN.

149. Walsh, James H. General Orders, No. 8, March 23, 1916.

PHARMACIST.

134. Hart, Herbert L. Special Orders No. 155, October 13, 1914.

CHARTERED ORGANIZATIONS.

COLONELS.

54. Barker, Alvin A. Act of Legislature, April 26, 1899.
 70. Bliss, Herbert. General Orders No. 8, April 30, 1903.
 79. Hunt, Sumner B. General Orders No. 9, May 4, 1905.
 82. Greene, Charles W. General Orders No. 20, August 1, 1905.
 108. Hall, Nelson R. General Orders No. 24, May 24, 1911.
 119. Bowen, William M. P. General Orders No. 10, March 18, 1913.
 120. Allen, Thomas. General Orders No. 19, May 22, 1913.
 129. White, Sanford C. General Orders No. 20, July 6, 1914.
 130. Bourn, Stephen W. General Orders No. 20, July 6, 1914.
 137. Greene, Randolph A. General Orders No. 8, March 26, 1915.
 144. King, Frank P. General Orders No. 34, November 22, 1915.

- 153. Sherman, Arthur A General Orders No. 26, July 14, 1916.
- 154. Johnson, Charles G General Orders No. 33, October 9, 1916.
- 156. Bain, Robert General Orders No. 5, January 22, 1917.
- 166. Seymour, George E General Orders No. 12, June 21, 1918.

LIEUTENANT-COLONELS.

- 34. Danforth, Edmund C General Orders No. 6, April 29, 1895.
- 80. Wiggin, Frank L General Orders No. 9, May 4, 1905.
- 113. French, Irving T General Orders No. 9, March 27, 1912.
- 136. Prior, John General Orders No. 33, December 19, 1914.
- 167. Ebbs, Robert C General Orders, No. 13, July 8, 1918.

MAJORS.

- 98. Patterson, Frank S General Orders No. 20, May 20, 1909.
- 146. Barker, Christopher F General Orders No. 7, February 16, 1916.
- 151. Williams, Alonso R General Orders No. 16, May 17, 1916.
- 164. Hall, Albert H General Orders No. 6, May 4, 1918.

CAPTAINS.

- 81. Perrin, William D General Orders No. 9, May 4, 1905.
- 150. Baker, Walter M General Orders No. 16, May 17, 1916.
- 163. Swarts, George G General Orders No. 4, April 9, 1918.

FIRST LIEUTENANTS.

- 26. Bosworth, Edward T General Orders No. 25, August 4, 1892.
- 83. Tilley, George W General Orders No. 23, October 7, 1905.
- 88. Cole, Charles M General Orders No. 15, June 7, 1907.
- 112. Keith, Theodore B General Orders No. 6, February 7, 1912.
- 147. Porter, Emery H General Orders No. 7, February 16, 1916.
- 148. Hazard, Silas H General Orders No. 7, February 16, 1916.

DECEASED.

MAJOR GENERALS.

- 22. Walker, William R General Orders No. 25, August 4, 1892.
- 27. Arnold, Olney General Orders No. 27, October 13, 1892.

BRIGADIER GENERALS.

- 11. Rhodes, Elisha H General Orders No. 6, March 21, 1892.
- 29. Budlong, John C General Orders No. 18, August 13, 1894.
- 37. Dyer, Elisha Ex. Mil. Orders No. 1, October 31, 1895.
- 38. White, Hunter C Ex. Mil. Orders No. 3, November 4, 1895.
- 46. Dennis, Charles R General Orders No. 34, June 30, 1898.
- 53. Barney, Caleb H General Orders No. 17, June 20, 1899.
- 65. Kendall, Hiram General Orders No. 7, April 9, 1902.

COLONELS.

- 6. Card, Henry C. General Orders No. 4, February 27, 1892.
- 15. Jencks, John J. General Orders No. 7, March 21, 1892.
- 18. Martin, Benjamin B. General Orders No. 11, April 12, 1892.
- 23. Horton, Jere W. General Orders No. 25, August 4, 1892.
- 25. Vaughn, George H. General Orders No. 25, August 4, 1892.
- 28. Thornton, William H. General Orders No. 22, December 27, 1893.
- 33. Van Slyck, Cyrus M. General Orders No. 6, April 29, 1895.
- 39. Clarke, William E. General Orders No. 13, May 2, 1896.
- 48. Goddard, Robert H. I. General Orders No. 54, December 14, 1898.
- 56. Meiggs, Andrew B. General Orders No. 9, May 16, 1900.
- 59. Moran, James. General Orders No. 18, July 19, 1900.
- 69. Eccleston, Alvin H. General Orders No. 5, February 13, 1903.
- 71. Gladding, Daniel W. General Orders No. 8, April 30, 1903.

LIEUTENANT-COLONELS.

- 5. Kendrick, Joseph H. General Orders No. 3, February 11, 1892.
- 12. Chase, Philip S. General Orders No. 7, March 21, 1892.
- 13. Carr, George W. General Orders No. 7, March 21, 1892.

MAJORS.

- 14. Bradford, William J. General Orders No. 7, March 21, 1892.
- 24. Smith, George T. General Orders No. 25, August 4, 1892.
- 31. Brug, George A. General Orders No. 21, November 28, 1894.
- 40. Strauss, Alexander General Orders No. 38, October 23, 1897.
- 41. Carter, John A. General Orders No. 41, December 14, 1897.
- 94. Patstone, Lewis. General Orders No. 27, November 16, 1908.

CAPTAINS.

- 9. Gray, Andrew. General Orders No. 5, March 12, 1892.
- 17. Howe, John. General Orders No. 7, March 21, 1892.
- 20. Schneider, Philip F. General Orders No. 13, May 12, 1892.
- 49. Brown, Albert F. General Orders No. 2, January 31, 1899.
- 50. Jones, Edward T. General Orders No. 5, March 18, 1899.
- 74. Blunt, Robert W. General Orders No. 5, March 12, 1904.
- 77. Cornell, Frank M. General Orders No. 7, April 20, 1905.

FIRST LIEUTENANTS.

- 2. Webb, Emanuel H. General Orders No. 1, January 30, 1892.
- 32. Martin, Hezekiah. General Orders No. 21, November 28, 1894.
- 45. Child, Thomas. General Orders No. 13, April 26, 1898.
- 61. Brady, Thomas. General Orders No. 18, July 19, 1900.

Total number of applications granted	160
Total number on retired list.	118
Deceased.	42

REPORT OF THE QUARTERMASTER GENERAL.

PROVIDENCE, R. I., December 31, 1918.

*To The Adjutant General,
State of Rhode Island.*

SIR:—I have the honor to submit this report of the department for the year ending December 31, 1918.

FEDERAL PROPERTY.

The Federal property for which the State Quartermaster as property and disbursing officer National Guard of Rhode Island is in charge, consists principally of Ordnance and Engineer property in connection with the fire control of the 12'' mortar and 10'' rifle, the balance having been turned in to Federal arsenals.

The Quartermaster property has been accounted for and practically all remaining shipped by order of the War Department to the Reclamation Base, Hoboken, N. J.

Three hundred Springfield rifles, cal. .45, and 250 magazine rifles, cal. .30, model 1898, with ammunition, loaned to the Governor of Rhode Island by the Federal Government have also been returned.

ARMORIES.

By agreement, the lease of armory at Riverpoint was cancelled June 30, 1918, and the Federal and State property contained therein removed to storehouse in Cranston Street Armory, Providence.

The Pawtucket, Woonsocket, Westerly and Bristol armories were occupied by organizations of State Constabulary in the early part of the year, which largely became the nucleus of the State Guard; the Newport Armory is still being used by the Navy Department. Most of the State furniture I have had stored in the loft.

There have been many occasions and requests for use of armories in consequence of activities patriotic, by reason of the war. So far as possible and consistent with the safety of property, this department has deemed it advisable to cooperate with the various events and communities.

Sanitary units of the State Guard have been on duty many times night and day in different armories and have rendered freely, great assistance during the recent epidemics.

In consequence of the extreme cold during 1917-18 many extra plumbing repairs were necessary; changes and additions have been made in the heating apparatus at Pawtucket and Woonsocket to burn soft coal; other changes in heating installation at Pawtucket have been made, so that perhaps for the first time this plant is operating efficiently.

The tar and gravel roofing of head house and tower of Bristol Armory will need soon to be renewed.

It has been necessary to provide quarters for State Guard organizations in new localities; in one instance at Esmond, the Esmond Mill Company have not only furnished quarters, without expense, for the 14th Company, R. I. S. G., but have furnished motor transportation for supplies and equipment; the thanks of the State should be extended to this loyal corporation.

Lockers have been rebuilt and repaired in armories at Bristol, and East Providence, and some steel lockers installed from the surplus in storehouse; lockers from same source have also been installed in the quarters of Sanitary Company in Cranston Street Armory, Providence.

NEW ARMORY.

By a resolution of the General Assembly passed at its 1918 session, an appropriation of \$9,000.00 was made for the purpose of remodelling the Harrison Street school house in Providence for the United Train of Artillery and other military purposes, under the direction of the Quartermaster General. The legal transfers being arranged by the

State and City departments, the old armory on Canal Street was vacated by the United Train of Artillery, and possession taken by this department of the Harrison Street school house

Permission was obtained from the War Industries Board and upon competitive bids the contract was let.

This work is going along nicely considering the conditions, and it is expected to be completed about the middle of February, 1919.

RIFLE RANGE.

May 18th the State Rifle Range at Rumford was, by agreement with the owners and State, temporarily turned over to the Navy, who have largely increased its facilities whereby men of the Navy in large numbers, members of our State Guard, and some civilians have received training and practice in the use of small arms. This arrangement, especially since the number of targets were increased, has been generally satisfactory to our State Guard.

STATE CAMP GROUND.

September 18th, between 12:00 noon and 1:00 P. M., the barn at State Camp Ground known as "Brigade Headquarters Stable," was entirely consumed by fire of unknown origin, with a loss of considerable hay also. With the small appropriation available, the use of old material, and the donation of some labor, a small barn has been erected to comfortably house the animals. An appropriation will be asked for to complete the building.

The camp was occupied August 30 to September 3 and September 21 and 22 by a battalion and companies of the State Guard for instructions and maneuvers, and during July and August, authority of the General Assembly, 1918 session, by the Pawtucket and Central Falls Councils of Boy Scouts.

The Artillery and Cavalry stables are in very bad condition, and if ever used a large amount of repairs will be necessary.

EQUIPMENT OF STATE GUARD.

Pursuant to orders of the Commander-in-Chief, all organizations of the State Guard have been equipped as far as possible with new material, and such property as was on hand, uniformly.

Fourteen hundred magazine rifles, known as "Russian," have been loaned to the State by the Federal Government: with these, and Springfield rifles, cal. .45, owned by the State, the Guard, with exception of 3rd Company at Newport, who own Springfield rifles, cal. .30, have been armed.

While the so-called Russian rifles are doubtless effective, there is much in their construction not practical for drill purposes. If the use for these rifles is continued it is possible they might be exchanged for Springfield, cal. .30, or the magazine rifle cal. .30, model 1898.

In conclusion I desire to express appreciation for much courteous information from your office which has been of great assistance to me in taking up the affairs of this department, and for the loyal interest of the clerical force in this office.

HORACE L. MANCHESTER,

Quartermaster General.

State of Rhode Island and Providence Plantations.

FORTY-NINTH ANNUAL REPORT

OF THE

**COMMISSIONERS OF INLAND
FISHERIES**

FOR THE

Year Ending December 31, 1918

MADE TO THE

GENERAL ASSEMBLY

AT ITS

January Session 1919

THE OXFORD PRESS, PROVIDENCE, R. I.

1919

Honorable Daniel B. Fearing

At Newport

May 26, 1918

Since its last report this Commission has experienced a severe loss in the death of the Honorable Daniel B. Fearing at that time President of the Board. Mr. Fearing's death came very suddenly on May 26, 1918, while assisting in the direction of a Red Cross Drive at Newport Beach, Newport.

He was first appointed to the Board of Inland Fisheries August 18, 1910, and served continuously until death—a period of slightly less than eight years. In 1912 he was chosen Vice President of the Board and, in 1916, succeeded Charles W. Willard as President retaining this position for two years.

Mr. Fearing was born in Newport in 1859 and was educated at Saint Mark's School, Southborough, Massachusetts. Later he was a member of the class of 1882 of Harvard University. In 1894 he was made Mayor of Newport for one term. Prior to this time he had served as Alderman for two years. He was a life member of the American Fisheries Society and a member of many similar organizations. His enthusiasm and interest in fishing led him to make a collection of all the books he could find on the subject. This library numbered at his death approximately ten thousand volumes and was probably the largest private library on angling in the world. Adorning the walls of his library were many choice specimens of varieties of fish found in Rhode Island waters and a very complete collection of fishing devices used in their capture.

COMMISSIONERS OF INLAND FISHERIES.

WILLIAM H. BOARDMAN, CENTRAL FALLS, *President.*

THEOPHILE GUERIN, WOONSOCKET, *Vice President.*

JAMES G. JOHNSON, RIVERSIDE, *Secretary.*

JOHN C. COSSEBOOM, WOONSOCKET, *Treasurer.*

JOHN L. CURRAN, PROVIDENCE, *Auditor.*

EDWIN R. LEWIS, M. D., WESTERLY.

J. ALTON BARKER, NEWPORT.

SUPERINTENDENT.

EARNEST W. BARNES, AUBURN, R. I.

LOBSTER DEPUTIES.

WILLIAM T. LUTH, NEWPORT, *Chief Deputy.*

JAMES HARRINGTON, NEWPORT.

ANDREW V. WILLIS, NEW SHOREHAM.

CURTIS H. SPRAGUE, NEW SHOREHAM.

FRESH WATER DEPUTIES.

Sixty-one deputies from various sections of the State were appointed by the Commissioners in 1918 to enforce the laws relating to fresh-water fishing.

REPORT

To the Honorable the General Assembly of the State of Rhode Island and Providence Plantations, at its January Session, 1919:

The Commissioners of Inland Fisheries herewith present their forty-ninth annual report, for the year 1918, which contains, as required by law, data and statistics with respect to the fisheries under their jurisdiction and such recommendations as they deem for the best interests of these fisheries.

The efforts of your Commissioners during this period may be outlined as follows—a detailed report of the various items will be found in the body of the report—

The stocking of fresh-water ponds and streams.

The hatching and rearing of trout.

The enforcement of laws relating to fresh-water fishes.

The granting of licenses to catch lobsters.

The employment of deputies to enforce the lobster laws.

The purchase of egg-bearing lobsters.

The rearing of lobsters to the bottom-seeking stage.

The gathering of data and statistics with respect to food-fishes.

The co-operation with fisheries authorities of neighboring states and abroad.

GIRARD SPRING TROUT HATCHERY

The rearing of brook trout in 1918, which was the first complete year that your Commissioners operated the Girard Spring Trout Hatchery, was attended with gratifying results. Sixty-two thousand brook trout were raised to fingerling size ranging from three

inches in length to six inches and were liberated in suitable waters. A list of the brooks in which they were placed is given later on in the body of the report. The attitude of the sportsmen of the State toward this project is evidenced by the number of volunteer cars which were freely offered for assistance in distribution. The table below giving the annual output of trout for the past seven years shows the value of a State operated hatchery. If to these statistics are added such important items as, more uniformly large fish, the fact that the trout reach the streams in better condition (an item of vital importance in itself), a distribution regulated to the most opportune time, and sundry other facts all aiding in the accomplishment of more satisfactory results, we shall have ample reason for vindicating the project.

TABLE OF DISTRIBUTION OF BROOK TROUT, 1912-1918.

1912.	1913.	1914.	1915.	1916.	1917.	1918.
3,500 in 12 brooks.	11,600 in 23 brooks	5,300 in 13 brooks	4,500 in 18 brooks	5,100 in 10 brooks.	39,113 in 57 brooks	62,000 in 63 brooks
Avg. number 275	Avg. number 504	Avg. number 423	Avg. number 250	Avg. number 510	Avg. number 686	Avg. number 984

FROM STATE HATCHERY.

Total brook trout distributed in 1912-1916, 30,200 placed in 59 different brooks.
 Brook trout distributed in 1917, 39,113 placed in 57 different brooks.
 Brook trout distributed in 1918, 62,000 placed in 63 different brooks.

STATE OWNED HATCHERY DESIRED.

As stated in a previous report it is sincerely hoped that before the expiration of the present lease of the Girard Spring Hatchery some provision may be made by which the State may own a hatchery—either by purchasing the present one or obtaining a suitable site where one may be built. It is desired to call the attention of

your Honorable Body to the need of such action. In addition to saving a considerable sum now expended uselessly in rent (almost half of the total cost of operating—42% to be exact) from which no returns are derived, it would be entirely feasible and certainly very desirable to possess a hatchery where ponds could be added for raising black bass, blue-gills and other fish much needed in our streams and ponds but which we are at present unable to obtain in suitable quantities.

The value to the state of operating its own trout hatchery your Commissioners feel has been proven and the justification of supplying by this means recreation and healthful sport to the citizens of the state we also feel has been maintained. The plan ranking at least equal if not superior to park systems, etc. There is however a large class of citizens of the state who do not fish primarily for sport but partly if not largely to obtain food. Your Commissioners feel that fish of this sort should also be systemically supplied to our streams and ponds and as pointed out above they can be easily and regularly supplied at a very nominal expense from a state owned hatchery.

There is no state in the union that possesses an equal number of good streams and ponds in comparison to the size of the state and density of the population. Yet most all states have a state owned hatchery and the more populous states have several and very extensive ones.

ANGLERS LICENSE.

As mentioned in last years report the Commissioners advocate an anglers license for fresh water fishing in our state. The principles upon which the idea rests are sound and the plan has furthermore been tried in other states to the satisfaction of practically everyone. The principal benefits that may be derived from licensing anglers are as follows:

1. The financial support of stocking our streams and ponds would be placed upon those who derive the greatest benefits therefrom.
2. It would provide a dependable and adequate source of revenue that would enable the Board to carry out annually some plan of stocking.
3. The licensee's badge or button would serve at once as a means of identification. This would be of immense aid in preventing the abuse of our fisheries laws and would furthermore give protection to property holders along our water ways identifying at once those few who persistently disregard property rights.

These few advantages would in our opinion offset any possible disadvantage which might result from a licensing system especially if certain exemptions enumerated below may be made.

The ideas which we feel it is most desirable to have included in this law are:

A moderate license fee; e. g., fifty cents plus a slight recording fee. (This should bring in not less than four thousand dollars.)

A convenient place for obtaining the license such as Town Clerk's office.

Exemption of persons under sixteen years of age, also women and bonafide property holders with their immediate families when fishing on their own property.

A provision that the income from such system be either directly available to the Board for stocking purposes or be made the basis for an appropriation for such purpose.

THE LOBSTER INDUSTRY.

The attention of your Honorable Body is called to the flourishing condition of the lobster industry in Rhode Island at a time when

other states along our Atlantic Coast and the Dominion of Canada are reporting a serious falling off in the catch. Tables supporting this fact will be found in the body of the report. This condition becomes all the more remarkable when we consider that our state is located in the very center of the greatest lobster-consuming district in the country. Your Commissioners feel that the high standard of propagation and law enforcement which they have maintained has been the principal factor responsible for bringing about this condition and they confidently hope and expect that the immediate future will still further vindicate the methods employed. An extremely rapid increase is however not to be expected as will be very apparent when it is considered that there is a constant drain from the 16,000 to upwards of 24,000 lobster pots set each year in our own waters. Furthermore there is a gradual limiting of the area favorable to lobster fishing, as a result of the steady stream of pollution which is poured into the upper parts of the Bay and the increase of the oyster beds which still further tends to work against the efforts to increase the supply.

THE FUTURE OF OUR FISHERIES.

As a result of the impetus which all sources of food supply have received from war conditions one of the most pronounced and lasting benefits has been in the attention turned to the development of our aquatic resources. There is no branch of our fisheries which is not capable of immense improvement and when taken collectively the value to the state of such an improved fisheries would aggregate millions of dollars.

Among the reasons for the undevelopment of our fisheries there is no factor so potent as the continually increasing pollution of our waterways. The facts of this pollution have been pointed out repeatedly in our previous reports. Allowing for all seemingly con-

tradicting facts, it is clear that gradually along our principal waterways the fisheries are being forced further and further out toward the sea through the accumulating discharge of manufacturing wastes and such of our fisheries as remain, by reason of the hardiness of the species or the fact of their being non-motile, have become less desirable and less productive. Serious attention to this matter is very desirable particularly at this time when the products of our waters are so urgently needed to increase our food supply. Antiquated laws difficult of interpretation and often with no specific authorization for enforcement have prevented serious prosecution.

Your Commissioners desire at this time to express their appreciation for the assistance and courtesies received from many sources both private and public. Among these special mention is made of the Massachusetts Fish and Game Commission, the Rhode Island Fish and Game Protective Association, Mr. Bradford Norman, Mrs. C. Norman and the Newport Water Works Corporation for privileges of obtaining white perch from their private ponds, and the New York, New Haven and Hartford Railroad Company for free transportation of fish and messengers. We furthermore desire to express our grateful appreciation to those who kindly volunteered their motor cars for trout distribution.

The financial statement for the year 1918 is as follows:

State of Rhode Island in account with the Commissioners of Inland Fisheries.

1918.	DEBIT.	
Dec. 31.	To expenses of the Commissioners.....	\$506 39
	To expenses and services of Superintendent	2,437 75
	To expenses and services of deputies under the lobster law	3,836 51
	To expenditures in operating the Wickford Hatchery and Experiment Station.....	4,304 86
	To purchase of egg lobsters.....	3,245 92
	To expenses of securing and distributing fresh-water fishes and investigating alleged violations of the laws relating to fresh- water fishes	436 27
	To rent of Girard Spring Hatchery.....	1,200 00
	To expenses of operating Girard Spring Hatchery	1,627 54
		<hr/>
		\$17,595 24

1918.	CREDIT.	
Dec. 31.	By received from the State Treasurer.....	\$17,327 54
	Amount received for 243 lobster licenses at \$5.00 each, as per receipts from the State Treasurer	\$1,215 00

Respectfully submitted,

WILLIAM H. BOARDMAN,
JAMES G. JOHNSON,
THEOPHILE GUERIN,
JOHN L. CURRAN,
EDWIN R. LEWIS, M. D.,
JOHN G. COSSEBOOM,
J. ALTON BARKER.

STOCKING THE FRESH-WATER PONDS AND STREAMS

Very many good catches were reported this past year from all sections of the state as a result of the rather extensive stocking with brook trout and white perch in 1917. At present these fish are running rather small and it will require at least another year before sizeable fish can be expected. We confidently believe that our policy of regular and systematic stocking will soon result in excellent fishing throughout the state. The 1918 output while not quite so varied as that of 1917 was considerably larger in the two principal varieties of fish—trout and white perch—as will be seen in the table given below. It is the intention of the Board in 1919 to still further increase the stocking program, including if possible a few other species—principally food fish and bait fish. It is particularly desired to obtain black bass since no stocking of any importance with this species has been made for many years. Some ponds in the meantime have become depleted of bass. In certain others the bass though still numerous are undersized, largely from inbreeding, although in certain instances from lack of proper food. As far as possible your Commissioners will make an effort this coming year to correct these conditions.

Among the fish distributed this year were:—

28,000		White Perch
	3 inches to 5½ inches in length.	
62,000		Brook Trout
	2½ inches to 6 inches in length.	

A list of the ponds and streams stocked by the Commission:—

WHITE PERCH.

- Slack's Reservoir, Smithfield and Johnston.
- Waterman's Reservoir, Gloucester and Smithfield.
- Quidneck Reservoir, Coventry.
- Randall Pond, Cranston.

Blackmore Pond, Cranston.
 Belleville Pond, North Kingston.
 Carr Pond, North Kingston.
 Gorton's Pond, Warwick.
 Sand or Woquoganset Pond, Warwick.
 Larkin's Pond, South Kingston.
 Herring Pond, Burrillville.
 Cooma Reservoir, Gloucester.
 Wallum Lake, Burrillville.
 Mishnock Pond, West Greenwich.
 Fenner's Pond, Cranston.
 Marshapaug Pond, Providence.
 Oak Swamp Reservoir, Johnston.

BROOK TROUT.

Round Top Brook, Burrillville.
 Tarklin Brook, Burrillville, North Smithfield and Gloucester.
 Cherry Brook, North Smithfield.
 Aldrich Brook, Lincoln and Smithfield.
 Pearson Brook, Gloucester.
 Baker's Sawmill Brook, Gloucester.
 Mosquitohawk Brook, Gloucester and Scituate.
 Huntinghouse Brook, Gloucester and Scituate.
 Killey's Brook, Gloucester and Foster.
 Turkey Meadow Brook, Foster and Coventry.
 Brushy Brook, Hopkinton.
 Dolly Cole Brook, Foster.
 Ponagansett River, Foster.
 Shippee Brook, Foster.
 Hemlock Brook, Foster.
 Cork Brook, Scituate.
 Spruce Brook, Scituate.
 Rush Brook, Scituate.
 Bennett Brook, Johnston.
 Whipple Brook, Johnston.
 Pocasset Brook, West Branch, Johnston.
 Pocasset Brook, North Branch, Johnston.
 Old Furnace Brook, Cranston.
 Warwick Brook, Coventry.
 Buck's Horn Brook, Coventry.
 Potterville Brook, Coventry.
 Hardig Brook, Warwick.
 Falls River Brook, West Greenwich and Exeter.
 Fry's Brook, East Greenwich.
 Hunt's River, East Greenwich.
 Putt's Bog, East Greenwich.
 Pine River, North Kingston.
 Congdon Brook, North Kingston.
 Tomaquog Brook, West Branch, Hopkinton.
 Tomaquog Brook, East Branch, Hopkinton.
 Saugatucket River, South Kingston.
 Mink Brook, South Kingston.
 Chickasheen Brook, South Kingston.
 Mill Pond, Tiverton.

Mill Brook, Little Compton and Tiverton.
Shippee Pond, Foster.
Paine Brook, Foster.
North Branch Brook, Smithfield.
Onion Meadow Brook, Smithfield.
Hughesdale Brook, Johnston.
Oak Swamp Brook, Johnston.
Perkin's Brook, Johnston.
Brandy Brook, Gloucester.
Keach Brook, Burrillville.
Roaring Brook, Richmond and Exeter.
Mooresfield Brook, South Kingston.
Mowrey Paine Brook, Gloucester.
Richardson Brook, North Smithfield.
Ironstone Brook, North Smithfield.
Meadow Brook, Richmond.
Razee Brook, Cumberland.
Catamint Brook, Cumberland.
Mowry Brook, North Smithfield.
Carr River, West Greenwich.
Lame Tom Brook, West Greenwich.
Bill Pierce Brook, Coventry.
Boyd Brook, Coventry.
Diamond Hill Brook, Cumberland.

DATA AND STATISTICS RELATING TO THE COMMERCIAL FISHERIES.

As mentioned in previous reports every effort has been made to make this branch of the Commissioner's work reliable and trustworthy but the absence of laws making returns compulsory has prevented us from having this data as complete as might be desired.

THE LOBSTER INDUSTRY.

As will be seen from the accompanying table the total amount of lobsters caught in Rhode Island waters in 1919 was more than 120,000 pounds greater than in 1917. This result was obtained in spite of a decrease in the number of pots used and a slightly restricted area on account of war conditions. The average number of pounds per lobster pot was greatly increased. Fishermen still continue to report a large percentage of undersized lobsters in their catch which looks promising for the future.

TABLE I.

Table Comparing the Number of Pounds of Lobsters, Number of Pots, and Average of Pounds Per Pot, for the Years 1912-1918.

YEAR.	Total Catch.	Number Pots.	Average Number Pounds Per Pot.
1912	745,257	17,259	43
1913	1,210,094	17,335	69
1914	1,037,552	23,122	44
1915	1,203,089	24,524	49
1916	1,130,472	20,241	55
1917	1,240,262	18,870	65
1918	1,362,686	16,845	80

TABLE II.

Number of Pounds of Lobsters Handled by the Principal Markets in Rhode Island for the Years 1914-1918.

FISH MARKETS.	1914.	1915.	1916.	1917.	1918.
Newport (wholesale)	322,709	245,915	250,000	300,000	319,591
Newport (retail)	165,316	187,867	203,674	201,690	201,095
Sakonnet (wholesale)	32,081	31,374	9,800	15,000	15,000
Tiverton (wholesale)	45,296	79,283	31,789	30,000	25,000
Block Island (wholesale).....	250,000	436,000	205,000	380,000	272,000
Point Judith (wholesale)		75,000	78,709	93,000	100,000
Watch Hill (wholesale).....	122,150	25,000	25,000	30,000	35,000
Narragansett Pier (wholesale).....		22,650	26,500	28,000	30,000
Wickford (wholesale)				62,936	165,000
Other markets	100,000	100,000	300,000	100,000	200,000
Total	1,037,552	1,203,089	1,130,472	1,240,626	1,362,686

TABLE III.

Number of Pots, Boats and Men Engaged in Lobster Fishing in Rhode Island in 1918.

LOCATION.	Men.	Boats.	Pots.
Block Island	40	28	4,000
Bristol	2	2	120
Charlestown	2	2	200
Hamilton	2	2	75
Jamestown	11	11	560
Little Compton	7	7	350
Middletown	6	6	373
Narragansett Pier	20	18	1,377
Newport	90	76	6,955
Point Judith	2	1	120
Portsmouth	2	1	60
Prudence Island	3	3	240
Sakonnet	1	1	30
Saunderstown	5	4	235
Tiverton	9	7	275
Wakefield	9	8	479
Warren	5	2	110
Watch Hill	1	1	30
Westerly	12	12	966
Wickford	5	4	110
*Other places	9	6	180
Total	243	202	16,845

*In addition to these, a few boats fish just beyond the three-mile limit. The bulk of their lobsters are brought into Rhode Island.

List of Lobster Licenses Granted in 1918.

License

No.	Name.	Location.
1.	Joseph L. Eaton	Saunderstown.
2.	Joseph L. Eaton, Jr.	"
3.	Henry K. Littlefield	Block Island.
4.	Victor D. Gray	Tiverton.
5.	Samuel E. Gray	"
6.	William H. Dodge	Block Island.
7.	Lewis Smith	"
8.	Earle A. Smith	"
10.	Arthur Dodge	"
11.	Prentice A. Lanphear	Westerly.
12.	Wilbour E. Dodge	Block Island.
13.	Manuel Amarante	Newport.
15.	Albert W. Smith	Block Island.

License No.	Name.	Location.
16.	George E. Smith	Block Island.
17.	Richard Knight	Providence.
21.	John E. Littlefield	Block Island.
22.	Rouse B. Dodge	"
25.	Sylvanus Willis	"
26.	Johannes Jacobson	"
27.	Henry T. Mitchell	"
29.	Antonio De Sousa	Avondale.
30.	Howard Fisher	Block Island.
33.	George Trunejes	Newport.
36.	Samuel B. Dickens	Block Island.
37.	Elias Littlefield	"
38.	Albert S. Hayes	"
39.	Edgar Littlefield	"
40.	Addison Rose	"
40.	Milton Steadman	"
42.	George J. Melisotte	Narragansett Pier.
43.	Albert Anderson	Block Island.
47.	William N. Ball	"
49.	James Carpetis	Newport.
50.	Elmer E. Babcock	Wakefield.
53.	Stannos Janitos	Newport.
61.	Frank Browning	Narragansett Pier.
62.	Irving M. Ball	Block Island.
67.	Stanton C. Allen	"
68.	Emery A. Dickens	"
69.	Joshua P. Smith	"
70.	Ulysses E. Westcott	"
76.	John F. Hayes	"
77.	Amaunel Allen, Sr.	"
78.	Apostolls Fisfis	Newport.
80.	Carder H. Champlin	Narragansett Pier.
81.	Nicholas Skapinakis	Newport.
82.	Lyman Hall	Westerly.
83.	Charles E. Allen	Newport.
84.	Richard Steadman	Block Island.
85.	Silas C. Hall	"
86.	Charles A. Hall	"
87.	Frank M. Gross	Prudence Island.
88.	Dimitrios Damascus	Newport.
90.	Oscar T. Dykstra	Wakefield.
91.	Adrian Dykstra	"
92.	Bernal H. Dodge	Block Island.
94.	George F. Tew	Newport.
95.	Andrew J. Tew	"
96.	Eugene A. Tew	"
99.	Peter Andrews	"
101.	Perikles Booras	"
102.	John Cummings	"
104.	Restcom E. Peabody	Middletown.
105.	Beck Anderson	Newport.
106.	Daniel A. Jordan	Apponaug.

License No.	Name.	Location.
109.	Harry G. Violet	Newport.
110.	Isaac Allen	Narragansett Pier.
112.	Jerome T. Blount	Newport.
113.	Roscoe E. Simmons	Little Compton.
114.	Frank J. Hareter	Phenix.
119.	Nicholas Trocotas	Newport.
120.	George Lathrop	Prudence Island.
121.	George A. Carpenter	Saunderstown.
122.	Clarence H. King	Jamestown.
125.	George Frank	Narragansett Pier.
129.	Constantine Mataronas	Newport.
130.	Edgar F. Grinnell	"
131.	Anastacio Angelo	"
134.	Nicholas Julius	"
136.	Nicholas Mataronas	"
137.	Stamos Domotaris	"
138.	Vasilas Hanos	"
139.	Frank Parlenas	"
140.	John Giones	"
141.	John Violet	"
142.	Clarence Jacobs	Block Island.
144.	Mark Violet	Newport.
145.	James Raptack	"
146.	John Triandafilos	"
147.	James Virgines	"
150.	Charles R. Gray	Sakonnet.
151.	Laurence Milliken	Block Island.
152.	Henry C. Bush	Bristol.
153.	Demetrios Giones	Newport.
154.	Vasilas Paris	"
155.	Benjamin A. Kinnecom	Narragansett Pier.
156.	Constantine Conomus	Newport.
157.	Ernest F. Dickens	Block Island.
158.	W. H. Barlow	Newport.
160.	William Handling	Point Judith.
161.	Angelo Maniotis	Newport.
165.	Stamos Salonikas	"
168.	Constantine Hanos	"
170.	Walter Chace	"
173.	James Cook	Wakefield.
174.	William F. Briggs	Little Compton.
176.	E. E. McQuaide	Westerly.
177.	Ferdinand Armbrust	Jamestown.
178.	Jesse E. Crowell	Homestead.
180.	Herbert A. Warner	Bristol.
181.	Marcus Huftalen	Warren.
182.	Fortis Tregonis	Newport.
183.	William C. Allen	Narragansett Pier.
184.	Thomas J. Clarke	Bradford.
185.	Edward E. Littlefield	Block Island.
190.	John Michael	Newport.
192.	Alfred Peckham	Tiverton.

License No.	Name.	Location.
195.	Stamatos Logothetis	Newport.
197.	Hiram C. Matterson	Narragansett Pier.
199.	Manuel Jacobs	Block Island.
200.	Clinton A. Young	Abbott Run.
201.	Byron J. Hathaway	Newport.
205.	Walter H. Munro	Warren.
206.	Arthur Damascus	Newport.
208.	Harold Barry	"
209.	John H. Chappell	Narragansett Pier.
210.	Fred B. Tucker	" "
212.	Floyd Huftalen	Warren.
214.	Manuel Silveria	Little Compton.
215.	Frank Brown	"
218.	Ernest E. Streeter	Wakefield.
223.	Holder N. Wilcox	Newport.
226.	William H. Brown	Tiverton.
228.	John Taylor	Jamestown.
229.	George Babcock	Peacedale.
231.	Antonio R. Medeiros	Middletown.
232.	Alfred Peckham, Jr.	Tiverton.
233.	John G. Sousa*	Middletown.
235.	Procopios Mataronas	Newport.
236.	George Mataronas	"
237.	Samuel D. Wright	Narragansett Pier.
238.	Steven Protopapas	Newport.
239.	Robert P. Hall	Westerly.
241.	Elvin M. Scott	"
243.	Joseph C. Whaley	Wakefield.
246.	Asahel B. Larkin	Westerly.
249.	Thomas T. Saunders	"
251.	Charles Gross*	Newport.
253.	Philip A. Mott, Jr.	Block Island.
254.	John Espaniola	Newport.
261.	Henry M. Hareter	Point Judith.
265.	Joshua G. Champlin	Narragansett Pier.
269.	Constantine D. Damascus	Newport.
271.	Harold L. Ryan	Middletown.
273.	Henry C. Johnson, 2d.	Hamilton.
276.	Frank W. Johnson	"
277.	John S. Petritis	Jamestown.
279.	John P. Taylor	Newport.
281.	George A. Martin	"
282.	John Mustacas	"
286.	Leman Wardsworth	Wickford.
290.	C. Scott Northup	"
291.	Willard F. Borden	Tiverton.
294.	Arthur E. Northup	Wickford.
295.	Nicholas Battis	Newport.
297.	Marcus M. Wilcox	Tiverton.
298.	F. O. Lanphear	Westerly.
299.	George P. Gardner	Narragansett Pier.
302.	John Larson	Newport.

*License revoked.

COMMISSIONERS OF INLAND FISHERIES.

License No.	Name.	Location.
303.	John H. Smith	Middletown.
304.	Benjamin Johnson	Newport.
305.	Herbert M. Barnaby	Narragansett Pier.
306.	Rudolph Schade	Jamestown.
307.	James H. Smith	Wickford.
308.	E. M. Gladding	Newport.
309.	Bernard Murphy	"
310.	Jack M. Nerunka	Jamestown.
313.	Julio Barbato	Newport.
314.	Einar S. Johnson	"
316.	Joshua F. Clarke	Narragansett Pier.
320.	Horace Webster	" "
323.	Ellis B. Wilbour	Little Compton.
324.	Herbert Wilcox	Charlestown.
326.	Stephen C. Peckham	"
330.	Thomas P. George	Jamestown.
331.	James Mataronas	Newport.
332.	Anthony Axlotes	"
333.	Jacques A. Biastre	"
334.	Charles L. Aylsworth	Wakefield.
336.	Stamos J. Deomatares	Newport.
338.	George S. Ragias	"
341.	Lester H. Coggeshall	"
344.	Patrick H. Dillon	Narragansett Pier.
350.	Jeremiah Littlefield, Sr.	Block Island.
353.	Louis Adams	Newport.
354.	James McLelah, Jr.	"
356.	William P. Smith	Jamestown.
357.	Walter S. H. Bliven	Newport.
358.	Ralph E. Crowell	"
361.	Rufus Hines	Little Compton.
363.	William B. Hall	Warren.
365.	William H. Spooner	Newport.
368.	Odesas Booras	Newport.
369.	William Christiansen	"
372.	John C. Molden	Middletown.
373.	Nicholas Klousis	Newport.
374.	William A. Wright	Narragansett Pier.
375.	Anastaso Salonikas	Newport.
376.	Albert E. Sherman	"
377.	Anthony Constantine	"
378.	Edward M. Harvey	Portsmouth.
381.	William H. Dickerson	Warren.
382.	Henry C. Durfee	Tiverton.
384.	George D. Anthony	Jamestown.
387.	Harry I. Mosher	Wickford.
390.	James F. Chase	Newport.
394.	James Gregory	Watch Hill.
397.	Siderys Siderys	Newport.
401.	George L. Hoxsie	"
402.	Louis G. McKenna	Pawtucket.

License

No.	Name.	Location.
406.	John D. Doyle	Newport.
407.	Louis Miller	Saunderstown.
408.	James Skapinakis	Newport.
410.	John Coffinas	"
414.	Charles A. McKenna	Pawtucket.
416.	Walter T. Caswell	Narragansett Pier.
417.	Norman Brownell	Portsmouth.
418.	Leroy C. Wilbour	Little Compton.
419.	Henry Bannister	Narragansett Pier.
420.	Joe Frank Rose	Jamestown.
424.	Josephine L. Towle	Wakefield.
425.	Frank Stein	Newport.
426.	W. Everett Gray	"
427.	Clifford B. Winn	Providence.
428.	Roland L. Manchester	Tiverton.
431.	Leonard Nichols	Providence.
433.	Everett A. Morgan	Westerly.
435.	August L. Caswell	Newport.
436.	Harrison M. Littlefield	Jamestown.
437.	Howard L. Vars	Saunderstown.
438.	Pardon G. Gray	Newport.
439.	John F. Maxson	Westerly.

FISH TRAPS SET IN RHODE ISLAND WATERS

The accompanying tables show a steady decrease in the number of fish-traps in waters of Rhode Island which began in 1910. This past year in certain localities there was a slight increase in the number of traps and with the growing importance of fish in our national food supply we may look for another slight increase in fish-traps as soon as help and materials become more plentiful.

TABLE IV.

Fish-traps Set in Rhode Island Waters in 1918.

Providence River	6
Greenwich Bay	10
West Passage	14
Mount Hope Bay	10
Sakonnet River	78
East Passage	12
Off Shore	58
Block Island	6
Watch Hill	4
Total	198

TABLE V.

Total Number of Traps Set in 1898 and 1910-1918.

1898	119	1914	252
1910	283	1915	246
1911	277	1916	215
1912	261	1917	199
1913	267	1918	198

DEEP WATER FISHING OFF NEWPORT IN 1918.

The first reported catch of the various marketable fish in traps off Newport is given in the accompanying tables.

TABLE VI.
Calendar of Scup Season off Newport, 1914-1918.

	1914.	1915.	1916.	1917.	1918.
First appearance.....	April 28.	April 18.	May 2.	April 24.	May 4.
Run commences.....	May 7.	April 28.	May 10.	June 1.	May 10.
Run ends.....	July 1.	June 25.	June 20.	June 15.	June 15.
Most abundant.....	May 10 to June 9.	May 10 to June 5.	May 10 to June 10.	June 4 to June 8.	May 15 to June 1.

TABLE VII.
Calendar of Mackerel Season off Newport, 1914-1918.

	1914.	1915.	1916.	1917.	1918.
First caught in trap.....	April 25.	May 7.	May 6.	April 28.	May 6.
First last shipment from Newport..	May 16.	May 14.	May 14.	June 11.	May 16.
Most abundant	May 16 to June 25.	May 14 to June 16.	May 14 to June 20.	June 11 to July 1.	May 16 to June 20.
Record day	June 12.	May 26.	.....	June 11.	.....
Season ends at Newport.....	June 30.	July 1.	Aug. 1.	Aug. 1.	Aug. 1.

TABLE VIII.
First Appearance of Various Marketable Fish in Traps off Newport, 1914-1918.

	1914.	1915.	1916.	1917.	1918.
Butterfish	May 1.	April 19.	May 1.	May 4.	May 1.
King Fish	May 18.	May 10.	May 12.	May 9.	May 10.
Mackerel	April 25.	May 7.	May 6.	April 28.	May 6.
Sea bass	May 7.	May 1.	May 4.	April 30.	May 6.
Sea robins	April 29.	April 19.	April 20.	April 30.	May 1.
Scup	April 28.	April 18.	May 2.	April 24.	May 4.
Squid	May 7.	May 1.	May 1.	May 2.	May 2.
Squiteague	May 2.	May 10.	May 20.	May 8.	May 20.
Striped bass	May 4.	April 29.	April 30.	May 7.	May 6.
Tuna	June 27.	June 28.	June 21.	June 12.	June 12.

TUNA FISHING

Tuna fishing as a sport was not carried on as extensively off our coast in 1918 as in years past owing to war conditions. The following report from the Secretary of The Atlantic Tuna Club briefly summarizes the operations in this line. It is interesting to note that this year a new record was made for the largest tuna taken in Rhode Island under Club rules. Up to this year the record was 45 pounds taken on heavy tackle. The record fish this year weighed 76 pounds.

“The past year, due to the war, has not been as successful as former years on account of so many of our members being in the service of their country. Plans are, however, being made for a larger and better season in 1919.

“The Steward reported 278 Tuna taken by the Club members on rod and reel, which were weighed by him, also one Swordfish weighing 261 pounds and one Shark which weighed 420 pounds.

“The following prizes were awarded for Tuna taken by Club members under the rules.”

HEAVY TACKLE CLASS.

(Wood rod, not less than 6 feet 9 inches overall. Tip, not less than 5 feet, weight not over 16 ounces. Line, not to exceed 24 thread.)

First	Hobart J. Parks	76 lbs.
Second	Robert Graves	46½ lbs.
Third	Zenas W. Bliss	35¾ lbs.
Fourth	William Wilson	32 lbs.

LIGHT TACKLE CLASS.

(Wood rod, not less than 6 feet overall. Tip, not less than 5 feet. Weight, not over 6 ounces. Line, not to exceed 9 thread.)

First	William P. Thompson	44 lbs.
Second	R. S. Hale	36¾ lbs.
Third	Andrew G. Weeks	34 lbs.
Fourth	L. Dana Chapman	32¾ lbs.

J. T. CRANDALL, Secretary.”

ENFORCEMENT OF STATE LAWS.

UNDER THE LOBSTER LAWS.

Jamestown, July 5, hauling lobster pots without license.....	Under Government jurisdiction
Newport, July 13, 11 short lobsters.....	\$55 00 license revoked
Newport, July 26, shorts thrown overboard.....	License revoked
Wakefield, November 25, fishing for lobsters, closed season.....	\$20 00
Wakefield, November 25, fishing for lobsters, closed season.....	20 00
Wakefield, November 25, fishing for lobsters, closed season.....	20 00

UNDER THE GENERAL FISHERIES LAWS.

Kingston, February 10, bass out of season.....	\$20 00
Kingston, February 10, bass out of season.....	20 00
Kingston, February 10, bass out of season.....	20 00
Kingston, February 11, bass out of season.....	20 00
Kingston, February 11, bass out of season.....	20 00
Kingston, February 11, bass out of season.....	20 00
Manville, May 6, bass out of season.....	20 00

 \$255 00

Total amount of fines	\$255 00
Number of licenses revoked	2

The ANNUAL EXHIBIT OF LIVE FISH was made at the Kingston Fair Grounds, September 10th to 13th, in co-operation with the Washington County Agricultural Society. As usual, both marine and fresh-water fishes as well as lobsters were exhibited—special prominence being given to the kinds of fish distributed by the State. Exhibits of this sort aside from being very popular are of great educational value and the idea should be further developed and extended. At such gatherings in addition to the interest created in the live specimens, problems connected with the stocking and protecting of the water-ways of the state are freely discussed and much is done in this way to create a more wholesome attitude toward conservation of our aquatic life.

BIOLOGICAL RECORDS were continued at the Wickford Hatchery 1918 as usual. In addition to these the facilities of the hatchery and laboratory were extended to two investigators from departments of the Federal Government, both of whom were working on problems connected with the oyster industry.

OYSTER INVESTIGATIONS AT THE WICKFORD HATCHERY.

I.

Dr. Philip H. Mitchell of Brown University, an agent of the United States Bureau of Fisheries, Department of Commerce, remained at the Wickford Hatchery from July 1st to September 15th, investigating certain problems in the propagation of oysters in Narragansett Bay. He summarizes the results as follows:

“Two projects were undertaken: (1) to observe the general conditions of oyster propagation in the bay,—the spawn of oysters on the beds, the time of emitting the spawn, the presence and distribution of set at the end of the season; (2) to attempt an artificial propagation of oysters by a modification of the method used in lobster hatching at the Wickford plant.

“The results of the observations and experiments showed that oysters in various representative localities of the bay contained a good quantity of spawn which from oysters in the main part of the bay was emitted for the most part rather late in the season, namely, during the last week in July. Oyster fry were not found in the water samples taken in various parts of the bay until August 3, but were found, though few in number, in samples taken from August 3 to August 24, inclusive. The examination of shells dredged from various parts of the bay in September showed a complete failure of set in the main part of the bay, south of Conimicut Point, as only very spat, too small to be of practical value were found. Above Conimicut Point, however, a set of fair quantity and size was found quite generally distributed from Conimicut Point to Great Bed. Set was also found on the float and cars of the Wickford Hatchery. These observations seem to indicate that although plentiful spawn is produced by Narragansett Bay oysters the really valuable spawn, possessing satisfactory vitality and produced early enough in the summer, comes only from oysters in the Providence River and some other more or less confined waters. The amount of this spawn is not sufficient to populate any considerable part of the bay. The means of avoiding this difficulty should be the subject of future investigations.

"The attempt at artificial propagation did not succeed, but since the condition of the water at the hatchery favored the development of larvae for a natural set there, the experiment seems to indicate the importance of a study of the vitality of spawn from oysters under various natural and cultivated conditions."

II.

Certain investigations on oysters were also carried on at our Wickford Hatchery during July, August and September, 1918, by Dr. Albert C. Hunter of the Microbiological Laboratory of the Bureau of Chemistry, United States Department of Agriculture. The nature of these experiments and the results obtained have been summarized by Dr. Hunter as follows:

"Two sets of experiments were conducted, the first having as its object the determination of the minimum length of time necessary for polluted oysters to cleanse themselves when transplanted to pure salt water. The second set of experiments was to determine to what extent oysters grown in brackish water will lose in water content, or in other words, gain in total solids when transplanted to salt water of greater density than that in which they were grown.

"Owing to the particularly favorable location of the hatchery for these experiments, the results obtained were very satisfactory to me. The proximity of the hatchery to both brackish and salt water simplified the procedure of the second experiment greatly, while the very clean waters about Wickford made the first experiment successful."

PROPAGATION OF LOBSTERS AT WICKFORD.

The Wickford Hatchery opened its 1918 season for rearing lobsters to the crawling stage on May 30th and continued until August 22d. A total of 812,500 young lobsters were released beyond the latter part of fourth stage. The effects of the unusually severe winter upon the egg lobsters which were carried over winter in our cars were not as noticeable as had been expected. The principal result was in a decrease in the number of eggs which, while

it was scarcely noticeable, in certain individual lobsters, resulted in a total decrease of about 10% in number of fry produced. About the same proportionate increase was observed in lobsters which were brought in by fishermen in the spring from the waters of the Bay. The lobster rearing was conducted in about the usual manner. A few experiments were made, however, looking toward economy in operation. These must be continued another season before their value can be ascertained.

The feeding of cooked fish was relied upon exclusively and good results obtained.

In spite of slightly increased salaries of employees and the very great increase in the cost of all materials the hatchery was operated at a reduced cost of about \$200.00 less than the previous year.

TABLE IX.

Total Number of Fourth and Fifth Stage Lobsters Reared Each Year Since 1900.

YEAR.	Fourth Stage.	Fifth Stage.
1900	3,425	
1901	8,974	
1902	27,300	
1903	13,500	
1904	50,597	
1905	103,572	
1906	189,384	24,800
1907	294,896	4,900
1908	322,672	5,481
1909	176,542	
1910	511,274	28,372
1911	*299,042	
1912	*521,861	
1913	*469,344	
1914	*682,348	
1915	*683,840	
1916	*624,674	
1917	*852,621	
1918	*812,500	

*The entire number liberated in these years were in the latter part of the fourth stage and beyond.

**TITLES OF SPECIAL PAPERS PUBLISHED IN THE ANNUAL REPORTS
OF THE COMMISSIONERS OF INLAND FISHERIES
OF THE STATE OF RHODE ISLAND.**

1. MEAD, A. D. The Starfish. (First paper.) Twenty-eighth Annual Report. 1898.
2. MEAD, A. D. The Starfish. (Second paper.) Twenty-ninth Annual Report. 1899.
3. TOWER, R. W. Improvements in the Methods of Preparation of Fish for Shipment. Twenty-ninth Annual Report. 1899.
4. BUMPUS, H. C. The Extension of the Commercial Fisheries of the State. Twenty-ninth Annual Report. 1899.
5. KELLOGG, J. L. The Life History of the Common Clam. Twenty-ninth Annual Report. 1899.
6. MASON, N. R. A List of the Diatoms Found in the Water Over the Clam, Mussel, and Oyster Beds. in Narragansett Bay. Thirtieth Annual Report. 1900.
7. MEAD, A. D. Observations on the Soft-shell Clam. Thirtieth Annual Report. 1900.
8. MEAD, A. D. Observations on the Soft-shell Clam. (Second paper.) Thirty-first Annual Report. 1901.
9. RISSER, J. R. Habits and Life History of the Scallop. Thirty-first Annual Report. 1901.
10. MEAD, A. D. Habits and Growth of Young Lobsters and Experiments in Lobster Culture. Thirty-first Annual Report. 1901.
11. MEAD, A. D. Observations on the Soft-shell Clam. (Third paper.) Thirty-second Annual Report. 1902.
12. MEAD, A. D. Habits and Growth of Young Lobsters and Experiments in Lobster Culture. (Second paper.) Thirty-second Annual Report. 1902.
13. MEAD, A. D., and WILLIAMS, L. W. Habits and Growth of the Lobster and Experiments in Lobster Culture. (Third paper.) Thirty-third Annual Report. 1903.
14. MEAD, A. D., and BARNES, E. W. Observations on the Soft-shell Clam. (Fourth paper.) Thirty-third Annual Report. 1903.
15. MEAD, A. D., and BARNES, E. W. Observations on the Soft-shell Clam. (Fifth paper.) Thirty-fourth Annual Report. 1904.
16. BARNES, E. W. Preliminary Inquiry into the Natural History of the Paddler Crab. (*Callinectes hastatus*), with Remarks on the Soft-shell Crab Industry of Rhode Island. Thirty-fourth Annual Report. 1904.
17. MEAD, A. D. Experiments in Lobster Culture. (Fourth paper.) Thirty-fourth Annual Report. 1904.

18. MEAD, A. D. Experiments in Lobster Culture. (Fifth paper.) Thirty-fifth Annual Report. 1905.
19. HADLEY, P. B. Changes in Form and Color in Successive Stages of the American Lobster. Thirty-fifth Annual Report. 1905.
20. EMMEL, V. E. The Regeneration of Lost Parts in the Lobster. Thirty-fifth Annual Report. 1905.
21. TRACY, H. C. A List of the Fishes of Rhode Island. Plates I-XII. Thirty-sixth Annual Report. 1906.
22. TRACY, H. C. The Common Fishes of the Herring Family. Plates VII-XII. Thirty-sixth Annual Report. 1906.
23. BARNES, E. W. Methods of Protecting and Propagating the Lobster, with a Brief Outline of its Natural History. Plates XIII-XXVI and XXVIII, XXXI, XXXII, XXXVI. Thirty-sixth Annual Report. 1906.
24. HADLEY, P. B. Regarding the Rate of Growth of the American Lobster. Plates XXVI-XXXVII, and XL. Thirty-sixth Annual Report. 1906.
25. HADLEY, P. B. Observations on Some Influences of Light upon the Larval and Early Adolescent Stage of *Homarus Americanus*. Plates XXXVIII-XL. Thirty-sixth Annual Report. 1906.
27. EMMEL, V. E. The Relation of Regeneration to the Molting Process in the Lobster. Plates XL-XLI. Thirty-sixth Annual Report. 1906.
28. TRACY, H. C. The Fishes of Rhode Island, III. The Fishes of the Mackerel Family. Thirty-seventh Annual Report. 1907.
29. TRACY, H. C. A List of Rare Fishes Taken in Rhode Island in the Year 1906. Thirty-seventh Annual Report. 1907.
30. WILLIAMS, DR. LEONARD W. List of the Rhode Island Copepoda, Phyllopoda, and Ostracoda, with new species of Copepoda. Thirty-seventh Annual Report. 1907.
31. EMMEL, V. E. Regenerated and Abnormal Appendages in the Lobster. Thirty-seventh Annual Report. 1907.
32. WILLIAMS, L. W. The Stomach of the Lobster and the Food of Larval Lobsters. Thirty-seventh Annual Report. 1907.
33. HADLEY, P. B. Regarding the Behavior of the Larval and Early Adolescent Stages of the American Lobster. Thirty-seventh Annual Report. 1907.
34. BARNES, E. W. Lobster Culture at Wickford, Rhode Island in 1906. Thirty-seventh Annual Report. 1907.
35. BARNES, E. W. Lobster Culture at Wickford, Rhode Island, in 1907. Thirty-eighth Annual Report. 1908.
36. TRACY, H. C. The Fishes of Rhode Island, V. The Flatfishes. Thirty-eighth Annual Report. 1908.
37. TRACY, H. C. The Fishes of Rhode Island, VI. A Description of two young Specimens of *Squeteague* (*Cynoscion regalis*), with Notes on the Rate of their Growth. Thirty-eighth Annual Report. 1908.

38. EMMEL, V. E. The Problem of Feeding in Artificial Lobster Culture. Thirty-eighth Annual Report. 1908.
39. TRACY, H. C. The Fishes of Rhode Island, VII. The Life History of the Common Eel. Thirty-ninth Annual Report. 1909.
40. SULLIVAN, W. E. Notes on the Crabs Found in Narragansett Bay. Thirty-ninth Annual Report. 1909.
41. MEAD, A. D. A Method of Fish Culture and of Transporting Live Fishes. Thirty-ninth Annual Report. 1909. (Paper Presented Before the Fourth International Fishery Congress, Washington, 1908.)
42. MEAD, A. D. A Method of Lobster Culture. Thirty-ninth Annual Report. 1909. (Paper Presented Before the International Fishery Congress, Washington, 1909.)
43. TRACY, H. C. Annotated List of Fishes Known to Inhabit the Waters of Rhode Island. Fortieth Annual Report. 1910.
44. BARNES, E. W. Notes on the Spring and Summer Fishing in Deep Water off Newport During the Years 1905-1909. Fortieth Annual Report. 1910.
45. BARNES, E. W. The Plague of Sea Clams at Easton's Beach, Newport. Fortieth Annual Report. 1910.
46. HADLEY, P. B. Additional Notes Upon the Development of the Lobster. Fortieth Annual Report. 1910.
47. BARNES, E. W. Revised Edition of Methods of Protecting and Propagating the Lobster with a Brief Outline of its Natural History. Plates IV-XXIV. Forty-first Annual Report. 1911.

State of Rhode Island and Providence Plantations.

SIXTH ANNUAL REPORT

OF THE

PUBLIC UTILITIES COMMISSION

OF THE

STATE OF RHODE ISLAND

FOR THE

YEAR ENDING DECEMBER 31, 1918

MADE TO

HIS EXCELLENCY R. LIVINGSTON BEECKMAN

GOVERNOR

OF THE

STATE OF RHODE ISLAND

PAWTUCKET.

PAWTUCKET LINOTYPING CO., PRINTERS

1919

REPORT

To His Excellency R. Livingston Beekman, Governor of the State of Rhode Island.

SIR:—Complying with the provisions of Section 9 of Chapter 795 of the Public Laws of Rhode Island, the Public Utilities Commission presents its seventh annual report.

RECOMMENDATIONS.

At the January Session of 1918 the General Assembly enacted a portion of the legislation recommended by the Commission in its reports for several years preceding that time, authorizing the Commission to order the suspension of any rate or practice of any public utility company, thereby enabling the Commission to have sufficient time to adjudicate any complaint concerning any rate before such rate became effective.

No action was taken, however, by the General Assembly, on the recommendations made by the Commission relative to legislation requiring reports to be furnished by railroad and railway companies and a change in the date upon which the Commission's report shall be presented to the Governor.

The Commission therefore again recommends that an amendment to the law be enacted requiring all railroad and railway companies to file with the Commission on or before the thirty-first day of March in each year a report in such form as may be prescribed by the Commission for the year ending on the thirty-first day of December next preceding.

The Commission further recommends that a change be made in the law relative to the date upon which its report shall be presented to the Governor.

This law now requires that such report shall be presented to the Governor on the fifteenth day of January and it is obvious that under the existing provision the statistical tables cannot be for the preceding calendar year, but must, of necessity be a year old.

By fixing by law the thirty-first of March as the time for filing reports by the railroads and railways as heretofore suggested, the Commission, by insisting upon a strict compliance with the law, would be able to prepare a report containing statistics of the preceding calendar year which could be presented to the Governor previous to the adjournment of the Legislature.

It is therefore recommended that the provision of the Act relative to the presentation of the Commission's report to the Governor be amended so that such report may be presented at any time prior to the adjournment of the Legislature.

COMPLAINTS.

There were three complaints filed against utilities and the Commission, on its own motion, instituted summary investigations in three instances, the reasonableness of rates filed being the questions involved in all instances, except one, in which the adequacy, sufficiency and suitability of a water company's plant was involved.

The rate cases were *The Rhode Island Company vs. Blackstone Valley Gas & Electric Company, Commission, On Its Own Motion vs. Providence Gas Company, Commission, On Its Own Motion vs. The Rhode Island Company, City of Newport vs. Newport Gas Light Company* and *Town Council of Warren vs. Bristol County Gas & Electric Company.*

The matter of the adequacy, sufficiency and suitability to public needs of the plant and equipment of the Pascoag Water Company was considered by the Commission and notice of investigation, on the motion of the Commission, was issued.

The Commission held numerous hearings on the proceedings which it instituted against the Providence Gas Company and The Rhode Island Company and both cases were determined.

The case instituted by the Commission against the Providence Gas Company during the previous year was also further heard and determined and the cases of the City of Newport vs. Newport Water

Works and Edward L. Spencer et al. vs. Newport Water Works were also determined.

Appeals from the orders of the Commission were entered in the Supreme Court in the case instituted on July 17, 1918, by the Commission vs. Providence Gas Company, the case instituted by the Commission vs. The Rhode Island Company and the cases of the City of Newport vs Newport Water Works and Edward L. Spencer vs Newport Water Works. None of these appeals have yet been heard.

The Commission also further heard in part the complaint of James J. Walsh et al. vs. the Bristol and Warren Water Works Company.

INFORMAL COMPLAINTS.

The usual large number of complaints of an informal nature have reached the Commission. These complaints, as in the past, have been of various natures and have in some instances, been considered informally by the Commission but as a rule have been investigated by the agent of the Commission and in many instances have been adjusted, after conferences with the parties interested.

BRIDGE HEARINGS.

The Commission during the year held several hearings for the purpose of determining what amount of the cost of construction should be paid by the public utilities using the Bristol, Warren and Whipple Bridges and these matters are still pending.

RAILROAD RETURNS.

For the year ending December 31, 1917, annual returns were received from the following railroad corporations, viz.: The New York, New Haven and Hartford Railroad Company, Boston and Providence Railroad Corporation, Old Colony Railroad Company Providence and Worcester Rail Road Company, Providence, Warren & Bristol Railroad Company, Narragansett Pier Railroad Company, Moshassuck Valley Railroad Company, and Wood River Branch Railroad Company.

There were no changes in the list of operating companies: The

New York, New Haven and Hartford Railroad Company, Moshassuck Valley Railroad Company, and Wood River Branch Railroad Company being the only operating companies, the last two operating their own lines only, and the first named operating, in addition to its own line, the Boston and Providence Railroad Corporation, Old Colony Railroad Company, Providence, Warren & Bristol Railroad Company and Providence and Worcester Rail Road Company.

The Narragansett Pier Railroad Company is operated by the The Rhode Island Company, and the operating statistics again, as in the past, are included in the statistics of street railways.

CAPITAL STOCK.

The total par value of authorized capital stock of the railroad-owning or operating lines within the State is \$211,379,400.00, the amount being the same as previously reported and the amount of capital stock outstanding is \$188,226,300.00, the same as the amount reported for the year ending June 30, 1917.

The companies reporting outstanding capital stock in excess of \$1,000,000.00 are The New York, New Haven and Hartford Railroad Company, with a total of \$157,117,900.00; Boston and Providence Railroad Corporation, \$3,996,000.00; Old Colony Railroad Company, \$22,294,000.00; Providence & Worcester Rail Road Company, \$3,500,000.00. all of the amounts being the same as previously reported.

DIVIDENDS.

The dividends paid amounted to \$2,368,008.00, the total being the same as reported for the previous year. This is accounted for by the fact that, as in the preceding year, none of the operating companies paid dividends and that the amounts paid are sums guaranteed to the non-operating by the operating companies.

ASSETS.

The total assets reported amount to \$542,925,933.05, comprising the following items: road and equipment, \$260,304,672.88; all other investments, \$246,724.78; current assets, \$30,239,952.12; deferred assets, \$211,588.44; unadjusted debits, \$5,444,719.83.

There was a net increase of \$5,789,926.04 in the value of road and equipment, The New York, New Haven and Hartford Railroad Company showing an increase of \$5,411,876.34; the Old Colony Railroad Company an increase of \$383,580.45 and the Moshassuck Valley Railroad Company an increase of \$11,897.38. The Wood River Branch Railroad Company reported a decrease of \$17,427.74.

There was a net decrease of all other investments of \$11,582,512.88. The New York, New Haven and Hartford Railroad Company reporting an increase of \$11,562,754.27; the Old Colony Railroad Company an increase of \$13,547.44; Providence and Worcester Railroad Company an increase of \$38,825.00 and the Moshassuck Valley Railroad Company a decrease of \$32,612.73.

In current assets there was a net increase of \$1,039,119.45, The New York, New Haven and Hartford Railroad Company reporting an increase of \$1,012,203.91, the Moshassuck Valley Railroad Company, an increase of \$52,442.87, the Providence & Worcester Railroad Company, a decrease of \$36,790, and the Providence, Warren & Bristol Railroad Company, an increase of \$204.38; Boston and Providence Railroad Corporation, an increase of \$4,622.78; Old Colony Railroad Company, a decrease of \$1,296.76 and the Wood River Branch Railroad Company, an increase of \$7,732.27.

The deferred assets showed an increase of \$26,217.88, of which \$26,187.88 was reported by the New York, New Haven and Hartford Railroad Company.

The New York, New Haven and Hartford Railroad Company reported an increase of \$1,502,346.56 in unadjusted debits and the Moshassuck Valley Railroad Company an increase of \$48.16 making a total increase of \$1,502,394.72.

The total assets as reported disclosed a net increase of \$19,940,172.36, of which \$19,515,368.96 was reported by the New York, New Haven and Hartford Railroad Company, \$395,831.13 by the Old Colony Railroad Company, \$2,035.00 by the Providence & Worcester Railroad Company, \$204.38 by the Providence, Warren & Bristol Railroad Company, \$31,775.58 by the Moshassuck Valley Railroad Company and \$4,622.78 by the Boston and Providence Railroad Corporation. The Wood River Branch Railroad Company reported a decrease of \$9,665.47.

LIABILITIES.

The total liabilities reported comprise the following items: total stock, \$214,565,136.34; long term debt, including governmental grant of \$50,455.03, \$234,950,006.02; current liabilities, \$62,161,615.60; deferred liabilities, \$249,592.52; unadjusted credits, \$14,556,255.10; corporate surplus, \$16,443,327.47.

The governmental grants reported showed an increase of \$12,925.-75, all of which was reported by the New York, New Haven and Hartford Railroad Company and the long term debt an increase of \$2,520,015.42: The New York, New Haven and Hartford Railroad Company reporting an increase of \$2,524,515.42 and the Wood River Branch Railroad Company a decrease of \$4,500.00.

There was a net increase in current liabilities of \$22,760,869.39, The New York, New Haven and Hartford Railroad Company reporting an increase of \$22,307,364.55, The Boston and Providence Railroad Corporation a decrease of \$699.10 and the Moshassuck Valley Railroad Company, an increase of \$21,977.48; Old Colony Railroad Company, an increase of \$382,283.69; Providence & Worcester Railroad Company, a decrease of \$37.80; Providence, Warren & Bristol Railroad Company, an increase of \$111.00, and Wood River Branch Railroad Company, an increase of \$21,977.48.

There was a net increase in deferred liabilities of \$81,594.40, The New York, New Haven and Hartford Railroad Company reporting an increase of \$92,848.19 and the Wood River Branch Railroad Company a decrease of \$11,253.79.

There was a net increase of unadjusted credits of \$3,996,429.12, The New York, New Haven and Hartford Railroad Company reporting an increase of \$3,995,497.39, the Moshassuck Valley Railroad Company an increase of \$8,842.37 and the Old Colony Railroad Company reporting a decrease of \$6,960.64 and the Wood River Branch Railroad Company a decrease of \$950.00

There was a net decrease in corporate surplus of \$9,418,735.97, reported as follows: The New York, New Haven and Hartford Railroad Company, a decrease of \$9,404,856.59; Old Colony Railroad Company, an increase of \$20,508.08, Providence & Worcester Railroad Company, an increase of \$2,072.80; Providence, Warren & Bristol Railroad Company, an increase of \$93.38; the Moshassuck

Valley Railroad Company, an increase of \$955.23; Boston and Providence Railroad Corporation, an increase of \$5,321.88; the Wood River Branch Railroad Company, a decrease of \$42,831.25.

OPERATING INCOME.

The total operating income reported, \$20,519,562.37 was a net decrease of \$2,568,912.16, The New York, New Haven and Hartford Railroad Company reporting a decrease of \$2,577,431.06, the Moshassuck Valley Railroad Company an increase of \$26,123.59 and the Wood River Branch Railroad Company a decrease of \$17,604.69.

The total railway operating revenues reported amounted to \$85,921,006.85, all of the operating companies showing an increase, that of the New York, New Haven and Hartford Railroad Company being \$5,352,726.21, Moshassuck Valley Railroad Company, \$33,819.57 and the Wood River Branch Railroad Company, \$233.65 making a total of \$5,386,779.43.

The railway operating expenses amounted to \$62,064,537.23, an increase of \$7,623,725.35, The New York, New Haven and Hartford Railroad Company reporting an increase of \$7,598,031.04, the Wood River Branch Railroad Company an increase of \$17,810.50 and the Moshassuck Valley Railroad Company an increase of \$7,883.81.

The total net revenue from railway operations amounted to \$23,856,469.62, which was a decrease of \$2,236,945.92, of which The New York, New Haven and Hartford Railroad Company reported \$2,245,304.83, the Moshassuck Valley Railroad Company, an increase of \$25,935.76, and the Wood River Branch Railroad Company a decrease of \$17,576.85.

The total net railway operating income was \$20,510,492.35, the same being a net decrease of \$2,568,660.70. The New York, New Haven and Hartford Railroad Company reported a decrease of \$2,577,179.60, the Moshassuck Valley Railroad Company, an increase of \$26,123.59, and the Wood River Branch Railroad Company, a decrease of \$17,604.69. The railway operating income of the Wood River Branch Railroad Company disclosed a deficit.

The only miscellaneous operating income was reported by The

New York, New Haven and Hartford Railroad Company, the amount being \$9,070.02, a decrease of \$251.46.

NON-OPERATING INCOME.

The total non-operating income reported amounted to \$10,375-307.21, The New York, New Haven and Hartford Railroad Company showing a decrease of \$27,491.10, the Old Colony Railroad Company a decrease of \$2,709.94, Providence & Worcester Railroad Company an increase of \$69.59, Providence, Warren & Bristol Railroad Company an increase of \$2.97, the Moshassuck Valley Railroad Company a decrease of \$5,372.61, Wood River Branch Railroad Company an increase of \$47.77, and the Boston and Providence Railroad Corporation an increase of \$4,927.93, making a net decrease of \$30,525.39.

The gross income reported amounted to \$30,894,869.58, the deductions from the gross income, \$26,131,442.52, making a net income of \$4,763,427.06. The gross income as reported was a decrease of \$2,600,437.55, reported as follows: The New York, New Haven and Hartford Railroad Company, a decrease of \$2,604,922.16, the Old Colony Railroad Company, a decrease of \$2,709.94, the Providence & Worcester Rail Road Company, an increase of \$69.69, Providence, Warren & Bristol Railroad Company, an increase of \$2.97, Moshassuck Valley Railroad Company, an increase of \$19,750.98, Wood River Branch Railroad Company, a decrease of \$17,556.92, Boston and Providence Railroad Corporation, an increase of \$4,927.93.

There was a net increase of \$590,930.22 in the deductions from gross income, increases being reported as follows: The New York, New Haven and Hartford Railroad Company, \$545,959.76; Moshassuck Valley Railroad Company, \$39,464.18, Boston and Providence Railroad Corporation, \$639.44; Old Colony Railroad Company, \$240.38. The Providence & Worcester Railroad Company reported a decrease of \$369.06; Wood River Branch Railroad Company, \$4,995.52.

The net income reported amounted to \$4,763,427.06, which was a net decrease of \$3,191,367.77, reported as follows: The New York, New Haven and Hartford Railroad Company, a decrease of \$3,150,881.92; Old Colony Railroad Company, a decrease of

\$2,950.32; Moshassuck Valley Railroad Company, a decrease of \$19,713.20; Wood River Branch Railroad Company, a decrease of \$22,552.44; Boston and Providence Railroad Corporation, an increase of \$4,288.49; Providence and Worcester Rail Road Company, an increase of \$438.65, and the Providence, Warren & Bristol Railroad Company, an increase of \$2.97.

RAILWAY OPERATING REVENUES.

The total rail line transportation revenues amounted to \$81,833,426.76, an increase of \$5,338,896.45; The New York, New Haven and Hartford Railroad Company's increase being \$5,327,376.69; that of the Moshassuck Valley Railroad Company, \$11,515.61, and that of the Wood River Branch Railroad Company, \$84.15. The rail line transportation revenues were divided as follows: Freight, \$40,477,064.02, passenger, \$34,432,513.26; all other, \$6,923,849.48. The freight revenues showed an increase of \$1,679,885.50, of which The New York, New Haven and Hartford Railroad Company reported an increase of \$1,668,573.84, Moshassuck Valley Railroad Company, an increase of \$12,177.50 and the Wood River Branch Railroad Company, a decrease of \$866.14. The passenger revenues were an increase of \$3,343,053.07, of which amount The New York, New Haven and Hartford Railroad Company reported \$3,342,766.22. The Moshassuck Valley Railroad Company and the Wood River Branch Railroad Company both showed a slight increase. The New York, New Haven and Hartford Railroad Company reported an increase of \$316,036.61 in other rail line transportation revenues, the Wood River Branch Railroad Company a slight increase and Moshassuck Valley Railroad Company, a slight decrease.

The total incidental operating revenues amounted to \$3,335,078.91, a net increase of \$1,216.54; The New York, New Haven and Hartford Railroad Company reported a decrease of \$21,316.92; the Moshassuck Valley Railroad Company, an increase of \$22,303.96 and the Wood River Branch Railroad Company, the remainder.

RAILWAY OPERATING EXPENSES.

The total railway operating expenses reported amounted to \$62,064,537.23, a net increase of \$7,623,725.35. The New York,

New Haven and Hartford Railroad Company reported an increase of \$7,597,977.04, the Wood River Branch Railroad Company, an increase of \$17,810.50 and the Moshassuck Valley Railroad Company, an increase of \$7,883.81. The Railway operating expenses were divided as follows: maintenance of ways and structures, \$9,034,992.10; maintenance of equipment, \$12,200,400.53; traffic expenses, \$52,076.63; transportation expenses, \$36,434,965.50; miscellaneous operations, \$1,404,428.39; general \$2,485,093.86. The maintenance of ways and structures was an increase of \$48,961.68, of which \$42,288.99 was reported by The New York, New Haven and Hartford Railroad Company; maintenance of equipment, an increase of \$1,500,889.67, of which The New York, New Haven and Hartford Railroad Company reported \$1,497,360.45. The traffic expenses showed an increase of \$16,989.81, of which The New York, New Haven and Hartford Railroad Company reported \$16,954.54 and the Moshassuck Valley Railroad Company, the remainder.

In transportation expenses there was an increase of \$5,182,270.07. The New York, New Haven and Hartford Railroad Company reporting an increase of \$5,161,411.79, Moshassuck Valley Railroad Company an increase of \$4,330.61, the Wood River Branch Railroad Company an increase of \$16,527.67. There was an increase of \$350,102.84 in miscellaneous expenses, all of which was reported by The New York, New Haven and Hartford Railroad Company. There was a net increase in general expenses of \$489,930.29, The New York, New Haven and Hartford Railroad Company showing an increase of \$495,331.84, the Moshassuck Valley Railroad Company a decrease of \$6,071.63 and the Wood River Branch Company a decrease of \$670.08.

TRAIN MILES.

The total transportation service train mileage reported amounted to 21,896,416 miles, and the work service train mileage, 1,407,197 miles. The transportation service train mileage was divided as follows: freight, 6,843,741 miles, a decrease of 816,966 miles, of which a decrease of 817,261 miles was reported by The New York, New Haven and Hartford Railroad Company and an increase of 295 miles by the Moshassuck Valley Railroad Company; passenger,

14,894,227 miles, a decrease of 499,661 miles, of which The New York, New Haven and Hartford Railroad Company reported 497,553 miles; mixed, 150,697 miles, a decrease of 52,036 miles; The New York, New Haven and Hartford Railroad Company reporting a decrease of 53,834 miles and the Wood River Branch Railroad Company an increase of 1,798 miles; special, 7,711 miles, all of which was reported by The New York, New Haven and Hartford Railroad Company, same being a decrease of 4,781 miles, making a total net decrease in the total transportation service train mileage of 1,373,444 miles, of which 1,373,429 miles was reported by The New York, New Haven and Hartford Railroad Company, 19 miles by the Moshassuck Valley Railroad Company and a decrease of 34 miles by the Wood River Branch Railroad Company.

LOCOMOTIVE MILES.

The total transportation service locomotive mileage reported amounted to 31,426,299 miles, a decrease of 1,487,134 miles, of which 1,485,757 miles was reported by The New York, New Haven and Hartford Railroad Company, 34 miles by the Wood River Branch Railroad Company and 1,343 miles by the Moshassuck Valley Railroad Company. The locomotive mileage was divided as follows: freight, 7,899,203 miles, a net decrease of 729,512 miles, of which a decrease of 729,807 miles was reported by The New York, New Haven and Hartford Railroad Company and an increase of 295 miles by the Moshassuck Valley Railroad Company; passenger, 15,752,742 miles, a decrease of 532,795 miles, The New York, New Haven and Hartford Railroad Company reporting a decrease of 530,687 miles and the Moshassuck Valley Railroad Company and the Wood River Branch Railroad Company both slight decreases; mixed, 149,176 miles, a net decrease of 53,012 miles; The New York, New Haven and Hartford Railroad Company reporting a decrease of 54,810 miles and the Wood River Branch Railroad Company an increase of 1,798 miles; special 8,149 miles, all of which was reported by The New York, New Haven and Hartford Railroad Company and which was a decrease of 4,956 miles; train switching, 1,254,627 miles, which was an increase of 154,990 miles, The New York, New Haven and Hartford Rail-

road Company showing an increase of 154,984 miles and the Moshassuck Valley Railroad Company a small increase; yard switching, 6,362,402 miles, a decrease of 321,849 miles, The New York, New Haven and Hartford Railroad Company showing a decrease of 320,481 miles and the Moshassuck Valley Railroad Company a decrease of 1,368 miles.

CAR MILES.

The total transportation service car mileage reported was 287,449,158 miles and the work service car mileage 4,637,532 miles. The total transportation service car mileage was a decrease of 7,067,325 miles, The New York, New Haven and Hartford Railroad Company reporting a decrease of 7,156,795 miles, the Moshassuck Valley Railroad Company a decrease of 244 miles and the Wood River Branch Railroad Company an increase of 89,714 miles. The work service car mileage was all reported by The New York, New Haven and Hartford Railroad Company and was an increase of 1,543,395 miles. The transportation service car mileage was divided as follows: freight, 204,431,474 miles, which was a decrease of 8,708,433 miles, The New York, New Haven and Hartford Railroad Company showing a decrease of 8,703,521 miles and the Moshassuck Valley Railroad Company a decrease of 4,912 miles; passenger, 181,875,918 miles; an increase of 2,124,785 miles, The New York, New Haven and Hartford Railroad Company showing an increase of 2,121,887 miles, the Moshassuck Valley Railroad Company, an increase of 4,668 miles, and the Wood River Branch Railroad Company a decrease of 1,770 miles; mixed train, 1,038,806 miles, a decrease of 428,604 miles, of which The New York, New Haven and Hartford Railroad Company reported a decrease of 520,088 miles and the Wood River Branch Railroad Company an increase of 91,484 miles; special train, 102,960 miles, all of which was reported by The New York, New Haven and Hartford Railroad Company and which was a decrease of 55,073 miles.

PASSENGER SERVICE.

The total revenue passengers carried numbered 92,662,515, which was an increase of 6,438,388, The New York, New Haven and Hart-

ford Railroad Company reporting an increase of 6,423,921, the Moshassuck Valley Railroad Company an increase of 13,423, the Wood River Branch Railroad Company an increase of 1,034.

The revenue passenger mileage reported was 1,814,630,742, an increase of 164,010,068, The New York, New Haven and Hartford Railroad Company reporting an increase of 163,985,855, the Moshassuck Valley Railroad Company an increase of 26,846 and the Wood River Branch Railroad Company a decrease of 2,633 miles.

TONS AND TON MILES.

The total tons of freight reported was 33,851,032, of which 30,487,789 tons were revenue and 3,363,243 tons were non-revenue freight. The revenue freight carried was an increase of 852,076 tons of which 841,770 tons increase were reported by The New York, New Haven and Hartford Railroad Company, 11,635 tons increase by the Moshassuck Valley Railroad Company and by the Wood River Branch Railroad Company a decrease of 1,329 tons. The non-revenue freight was an increase of 334,901 tons, making a total increase of 1,186,977 tons.

The total number of ton miles reported was 2,955,902,008, of which 2,776,721,316 was revenue and 179,180,692 non-revenue. There was an increase of 208,328,286 ton miles of revenue freight, of which an increase of 208,312,591 ton miles was reported by The New York, New Haven and Hartford Railroad Company, and the balance by the Moshassuck Valley Railroad Company and by the Wood River Branch Railroad Company. The ton miles of non-revenue freight was an increase of 37,477,577 ton miles, making a total increase in ton mileage of 245,805,863.

ROAD MILEAGE AND EQUIPMENT.

The total miles of road owned by companies making reports amounted to 1,875.44 miles; miles of second track, 775.87, and the miles of all tracks, 4,180.49.

The total miles of all tracks operated by companies making operating reports was 4,606.46 miles.

The total miles of road, single track reported owned in Rhode

Island was 209.49 miles, and the total operated single track 203.09 miles. The mileage reported owned in Rhode Island includes 8.50 miles owned by the Narragansett Pier R. R. Co., which is operated by the Rhode Island Company.

The total locomotives in service as reported numbered 1,261, of which 1,096 are owned and 165 are leased or held under equipment trust. The total cars in service numbered 38,521, of which 139 are owned and 1,382 operated either under lease or equipment trust. The cars in service are divided as follows: freight, 34,116 owned, 555 operated under lease, etc.; passenger, 1,819 owned, 710 operated under lease, etc.; company service, 1,204 owned, 117 operated under lease, etc.

RAILWAY RETURNS.

Eleven street railway companies, one less than in the preceding year, filed returns, four of which, Bay State Street Railway Company, Newport & Providence Railway Company, The Rhode Island Company, and The Shore Line Electric Railway Company filed operating returns. No return was filed by the Norwich & Westerly Traction Company, as the company was purchased by The Shore Line Electric Railway Company.

The non-operating companies filing returns were Newport & Fall River Street Railway Company, Pawtucket Street Railway Company, Providence Cable Tramway Company, Providence & Danielson Railway Company, Rhode Island Suburban Railway Company, Sea View Railroad Company and Union Railroad Company, all of these companies except the Newport & Fall River Street Railway Company, which is operated by the Bay State Street Railway Company, being operated by The Rhode Island Company.

CAPITAL STOCK.

There was a net increase in the total par value of capital stock authorized of \$756,100, of which amount \$606,100 was reported by the Bay State Street Railway Company and \$150,000 by the Newport and Fall River Street Railway Company. The amount outstanding was an increase of \$671,000 of which the Bay State Street Railway Company reported \$530,000 and the Newport and Fall River Street Railway Company, \$141,000.

DIVIDENDS.

The total dividends paid by companies owning or operating railway lines within the State, amounted to \$1,052,759.00, which was \$126,021 less than the amount previously reported.

The Bay State Street Railway Company was the only company operating within the State which paid a dividend and the amount was \$133,751.00 less than that previously reported.

The dividends paid on stock of the non-operating companies were the same as previously reported, except in the case of the Newport & Fall River Street Railway Company and the Sea View Railroad Company, the dividend of the Newport & Fall River Street Railway Company being increased \$4,230, and that of the Sea View Railroad Company was increased \$3,500.00.

ASSETS.

The total assets reported amounted to \$110,568,157.43, divided as follows: road and equipment, \$95,454,253.91; all other investments, \$5,340.55; current assets, \$3,313,165.40; deferred assets, \$50,455.52; unadjusted debits, \$6,400,346.05; The net increase in assets reported amounted to \$4,730,205.91, the road and equipment being a net decrease of \$257,040.10; other investments being an increase of \$1,721,418.86; current assets a net decrease of \$494,854.84; deferred assets a net increase of \$11,290; unadjusted debits, an increase of \$3,749,392.07.

In road and equipment, the Bay State Street Railway Company showed an increase of \$821,564.71; Newport & Fall River Street Railway Company, an increase of \$83,549.33; the Newport & Providence Railway Company, an increase of \$2,895.37; The Rhode Island Company, an increase of \$470,353.67, and The Shore Line Electric Railway Company, an increase of \$7,726.16.

Increases in other investments were reported as follows: Bay State Street Railway Company, \$1,652,385.63; The Rhode Island Company, \$33,830.40; The Shore Line Electric Railway Company, \$34,202.85.

Increases and decreases in current assets were reported as follows: Bay State Street Railway Company, a decrease of \$27,081.25; Newport & Providence Railway Company, an increase of \$25,137.62; Pawtucket Street Railway Company, an increase of \$11.94; The Rhode Island Company, a decrease of \$241,697.64; Rhode Island Suburban Railway Company, an increase of \$129.03; Union Railroad Company, an increase of \$65.32; The Shore Line Electric Railway Company, a decrease of \$251,401.70.

The increase in deferred assets of \$11,290.00 was all reported by the Bay State Street Railway Company.

An increase in unadjusted debits of \$3,762,030.82 was reported by Bay State Street Railway Company, and decreases as follows: Newport & Providence Railway Company, \$463.52; The Rhode Island Company, \$11,809.57; The Shore Line Electric Railway Company, \$365.65.

LIABILITIES.

The total liabilities reported were divided as follows: Total stock, \$53,724,575.75; long term debt, \$40,230,200.00; current liabilities, \$8,362,285.71; deferred liabilities, \$50,557.34; unadjusted credits, \$4,243,610.24; corporate surplus, \$3,956,928.39.

There was a net increase in long term debt of \$374,500.00, all reported by the Bay State Street Railway Company.

In current liabilities there was a net increase of \$1,669,074.01, Bay State Street Railway Company reporting an increase of \$856,932.53, The Shore Line Electric Railway Company reporting \$114,734.43; Newport & Providence Railway Company, \$2,823.77; The Rhode Island Company, \$694,583.28. There was a net decrease of \$73,530.77 in deferred liabilities, Newport & Fall River Street Railway Company reporting a decrease of \$57,450.67; Bay State Street Railway Company a decrease of \$16,080.10.

In unadjusted credits there was a net increase of \$2,772,321.42, the Newport & Providence Railway Company reporting \$18,546.21; Bay State Street Railway Company, \$2,691,496.75; The Rhode Island Company, \$98,268.01 and The Shore Line Electric Railway Company, a decrease of \$35,989.55.

The corporate surplus reported showed a net decrease of \$683,

158.65. The Bay State Street Railway Company reported an increase of \$140,211.31; Newport & Providence Railway Company, an increase of \$6,109.49; Pawtucket Street Railway Company, an increase of \$65.94; The Rhode Island Company, a decrease of \$542,174.49; Rhode Island Suburban Railway Company, an increase of \$57.03; The Shore Line Electric Railway Company, a decrease of \$287,583.25; Union Railroad Company, an increase of \$65.32.

OPERATING INCOME.

The total railway operating revenues reported amounted to \$18,237,409.73, which was a net increase of \$834,940.25. Increases were reported as follows: Bay State Street Railway Company, \$468,903.60; Newport & Providence Railway Company, \$42,188.47; The Rhode Island Company, \$188,605.89; The Shore Line Electric Railway Company, \$260,621.61, from which should be deducted \$125,370.32 reported by The Norwich & Westerly Traction Company last year.

The railway operating expenses reported amounted to \$14,392,910.15, which was a net increase of \$1,767,599.13. Increases were reported in railway operating expenses as follows: Bay State Street Railway Company, \$660,958.01; The Rhode Island Company, \$797,433.40; The Shore Line Electric Railway Company, \$272,415.33 over the amount previously reported by itself and the Norwich & Westerly Traction Company; Newport & Providence Railway Company, \$36,791.59.

The net revenue from railway operation amounted to \$3,844,499.58, which was a net decrease of \$932,649.88. Decreases in net revenue from railway operation were reported as follows: Bay State Street Railway Company, \$192,055.21; The Rhode Island Company, \$608,827.51; The Shore Line Electric Railway Company, \$137,164.04, the amount previously reported by The Norwich & Westerly Traction Company being taken into consideration. The Newport & Providence Railway Company reported an increase of \$5,396.88. The net revenue from auxiliary operation as reported amounted to \$139,115.36, a net decrease of \$8,411.39, the Bay State Street Railway Company reporting a decrease of \$17,461.73 and The Shore Line Electric Railway Company an increase of \$9,050.34.

The net operating revenue was \$3,983,614.94, which was a net

decrease of \$941,061.27. Decreases in net operating revenue were reported as follows: Bay State Street Railway Company, \$209,516.94; The Rhode Island Company, \$608,827.51; The Shore Line Electric Railway Company, including amount previously reported by The Norwich & Westerly Traction Company of \$128,113.70. The Newport & Providence Railway Company reported an increase of \$5,396.88.

The operating income reported amounted to \$2,777,579.03, which was a net decrease of \$985,589.21. Decreases in operating incomes were reported as follows: Bay State Street Railway Company, \$105,058.52; The Rhode Island Company, \$759,414.44; the Shore Line Electric Railway Company, including amount previously reported by The Norwich & Westerly Traction Company of \$126,513.13. The Newport & Providence Railway Company reported an increase of \$5,396.88.

GROSS INCOME.

The non-operating income reported amounted to \$1,141,984.38, which was a net decrease of \$4,497.04. An increase of \$5,215.82 was reported by the Newport & Fall River Street Railway Company: an increase of \$1,822.06 by The Shore Line Electric Railway Company and small increases by other companies. The Rhode Island Company reported a decrease of \$3,482.79; Bay State Street Railway Company a decrease of \$8,477.77 and the other companies small decreases.

The total gross income reported amounted to \$3,919,563.41, which was a net decrease of \$990,086.25. The Bay State Street Railway Company reported a decrease of \$113,536.29; Newport & Fall River Street Railway Company an increase of \$5,215.82; Newport & Providence Railway Company an increase of \$5,818.42; The Rhode Island Company a decrease of \$762,897.23 and The Shore Line Electric Railway Company, including the amount previously reported by The Norwich & Westerly Traction Company, a decrease of \$124,691.07.

The deductions from gross income amounted to \$3,373,735.14, which was a net increase of \$99,829.98. The Bay State Street Railway reported an increase of \$75,935.73; the Newport and Providence

Railway Company an increase of \$8,651.87; The Rhode Island Company an increase of \$53,271.28 and The Shore Line Electric Railway Company a decrease of \$38,031.90.

The income balances reported amounted to \$545,828.27, which was a net decrease of \$1,089,916.23. Decreases in income balances were reported as follows: Bay State Street Railway Company, \$189,472.02; Newport & Providence Railway Company, \$2,833.45; The Rhode Island Company, \$816,168.51; The Shore Line Electric Railway Company, \$86,662.17. The Newport & Fall River Street Railway Company reported an increase of \$5,215.82.

CAR MILEAGE AND HOURS.

The total car mileage reported amounted to 54,091,949 miles, which was a decrease of 17,069 miles. The car mileage reported by The Rhode Island Company was 16,997,668 miles, an increase of 141,748 miles.

The total car hours as reported amounted to 6,676,693 hours, a net increase of 429,143 hours. The car hours of The Rhode Island Company amounted to 2,400,116 hours, an increase of 487,950 hours.

PASSENGERS STATISTICS.

The total number of revenue passengers reported carried was 316,920,803, which was a decrease of 1,887,791 over the number reported for the preceding year. The Rhode Island Company reported 111,330,937 revenue passengers, which was an increase of 3,049,937.

The total passengers carried was 356,702,496, which was a decrease of 5,660,561. The Rhode Island Company carried 126,332,767, an increase of 1,360,819.

The total passenger revenue reported amounted to \$16,912,961.76, which was an increase of \$797,790.99. The passenger revenue of The Rhode Island Company was \$5,518,365.24, an increase of \$151,853.83.

The total revenue from transportation reported amounted to \$17,898,951.96, which was an increase of \$837,422.94. The total revenue from transportation of The Rhode Island Company was \$5,900,030.74, an increase of \$193,455.36.

ROAD MILEAGE.

The total miles of road reported by companies operating within the State was as follows: miles of road owned, 876.73; miles of road operated, 1,306.81; total all tracks owned, 1,069.63; operated, 1,619.87; single track in Rhode Island owned, 69.91 miles; single track operated and not owned, 281.97 miles.

ACCIDENTS.

The total number of accidents reported for the year ending June 30, 1918, was 1,691, which was an increase of 385 over the number reported for the preceding year. In these accidents 48 persons were killed and 1,809 injured, the number killed being a decrease of ten from the preceding year, and the number injured an increase of 423. In the 666 accidents reported by railroad companies, 25 persons were killed and 638 injured; in 828 accidents reported by railway companies, 17 persons were killed and 974 injured, and in 197 accidents reported by other utilities, six were killed and 197 injured.

The percentage of persons killed by railroads, railways and other utilities to the total number killed, the percentage of persons injured by these three classes of utilities to the total number injured, and the percentage of killed and injured to the total number killed and injured is as follows:

	Killed	Injured	Killed and Injured
Railroads	52.08	35.27	35.70
Railways	35.42	53.84	53.37
Other Utilities	12.50	10.89	10.93
Totals	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

CLASSIFICATION OF KILLED AND INJURED.

The total number of passengers reported killed was two, a decrease of two and the total number injured 639, an increase of 204. All of the passengers killed were reported by a railway company.

One person carried under agreement was reported killed, by a railroad company, a decrease of two and one injured, an increase of one.

Sixteen employees on duty were reported killed, an increase of six and 799 injured, an increase of 190. Of the employees killed, eight, an increase of three, were reported by railroads, three, an increase of two, by street railways and five, an increase of two, by other utilities. Of the employees injured, 502 were reported by railroads, 127 by railways, and 170 by other utilities.

Two employees, not on duty, the same as in the preceding year, were reported killed by a railroad company, and 11 employees, not on duty, were reported injured, nine being reported by railroads and two by railways.

Fifteen highway travellers were reported killed, which was a decrease of two from the number reported the preceding year. Of these, two were reported by railroads, 12 by street railways and one by an express company. There were 266 highway travellers reported injured, 12 by railroads, 241 by street railways and 13 by other utilities.

Two non-trespassers, other than a highway traveller, were reported killed by a railroad company, and 68 were reported injured, 55 by railroads, two by street railways and 11 by other utilities.

There were ten trespassers reported killed, nine less than previously reported by railroads. The number of trespassers injured was 25, 13 of whom were reported by railroads, nine by railways and three by other utilities.

PERCENTAGE OF PASSENGERS, EMPLOYEES, ETC.

The percentage of passengers, employees, highway travellers, trespassers and other persons killed and injured to the total number of casualties reported by all classes of utilities during the year is shown by the following table:

	Killed.	Injured.	Total.
Passengers	4.17	35.32	34.52
Persons under agreement	2.08	.06	.11
Employees	33.33	44.17	43.89
Employees off duty	4.17	.61	.70
Highway Travellers	31.25	14.70	15.13
Other non-trespassers	4.17	3.76	3.77
Trespassers	20.83	1.38	1.88

UTILITIES REPORTING ACCIDENTS.

The various utilities reported accidents as follows: Adams Express Company, seven; Bay State Street Railway Company, one; Blackstone Valley Gas and Electric Company, Pawtucket Division, 28; Blackstone Valley Gas and Electric Company, Woonsocket Division, 22; Bristol County Gas and Electric Company, three; Jamestown & Newport Ferry Company, two; Narragansett Electric Lighting Company, 116; Newport Gas Light Company, one; Newport & Providence Railway Company, two; The New York, New Haven and Hartford Railroad Company, 662; Providence Steam Company, one; Providence Telephone Company, three; The Rhode Island Company, 829; Westerly Automatic Telephone Company, one; Westerly Light and Power Company, 11; Western Union Telegraph Company, two.

RAILROAD ACCIDENTS.

The total number of railroad accidents reported was 666, which was 57 more than the number reported for the preceding year. Of these, all except four, reported by The Rhode Island Company, Narragansett Pier Division, were reported by The New York, New Haven and Hartford Railroad Company.

The number of persons reported killed was 25, a decrease of 13 from the preceding year, and all of the persons killed were reported by The New York, New Haven and Hartford Railway Company. The number reported injured was 638, which was 66 more than the number reported injured the preceding year. There were 26 accidents reported, in which no one was either killed or injured, 24 being derailments and two collisions.

PERCENTAGE OF PASSENGERS, EMPLOYEES, ETC.

The percentage of passengers, employees, highway travellers and other persons killed and injured to the total number of casualties is shown by the following table:

	Killed.	Injured.	Total.
Passengers .....	.....	7.21	6.94
Persons under agreement	4.00	0.16	.30
Employees	32.00	78.68	76.92
Employees off duty	8.00	1.41	1.66
Highway Travellers	4.00	1.88	1.96
Other non-trespassers	12.00	8.62	8.75
Trespassers	40.00	2.04	3.47
	<hr/>	<hr/>	<hr/>
	100.00	100.00	100.00

CHARACTER OF ACCIDENTS.

The number of persons killed classified by the character of accidents was as follows: overhead or side obstruction, one; same as in the previous year; falling, six, an increase of four; walking on or crossing track, 14, a decrease of 13; working on track, one, a decrease of one; other, three, an increase of one. There were no persons reported killed in getting on or off trains as compared with four in the preceding year.

The classification of character of accidents of those injured was as follows: collision, two, the same as in the previous year; derailments, ten, an increase of six; overhead or side obstruction, 13, a decrease of one; coupling, two, a decrease of two, falling, 86, a decrease of 26; walking on or crossing track, 21, a decrease of 11; getting on or off trains, 38, a decrease of 14; working on track, 67, an increase of 39; other, 401, an increase of 97.

The class of accidents which resulted in the greatest number of deaths was walking on or crossing track and of the persons of this class reported killed, seven or 50% were trespassers. The percentage of trespassers in this class was 13 less than in the preceding year.

There were no fatal accidents at stations as compared with three reported for the preceding year and the number injured at stations was 92, a decrease of 30 from the previous year.

Two persons were killed and 12 injured at grade crossings. Both of the fatalities at grade crossings were at protected crossings. Of the persons injured at grade crossings, ten were injured at protected and two at unprotected crossings. The number of persons killed at crossings was five less than reported during the preceding year and the number injured was the same.

PASSENGERS.

No passengers were killed as compared with four in the preceding year.

The total number of passengers injured was 44, which was a decrease of 42 from the number reported the previous year. The character of accidents in which passengers were injured were as follows: falling, seven, a decrease of 14 from the preceding year; 13 in getting on or off trains, a decrease of 14, and 26 in unclassified accidents, a decrease of ten. No passengers were reported injured in collisions, as against two in the preceding year.

EMPLOYEES.

The total number of employees killed during the year was ten, two of whom were off duty. The number killed while on duty was eight, which was two more than the number reported in the preceding year.

The number of employees injured was 511, nine of whom were not on duty. This was a decrease of 100 in the number injured on duty.

Classification of service of the employees killed while on duty was as follows: yard trainmen, four, an increase of one; trackmen and bridgemen, two, an increase of one. No trainmen were killed as compared with two during the preceding year. The classification of service of the employees injured while on duty was as follows: trainmen, 62; trainmen in yards, 31; yard trainmen, 58; trackmen and bridgemen, 80; other employees, 271.

The number of employees killed while on duty, classified according to the character of accidents was as follows: overhead or side obstruction, one, same as last year, falling, two; same as last year; walking on or crossing track, three, an increase of two; working on track, one, same as last year; other, one, an increase of one. The number of employees injured while on duty, classified according to the character of accidents were as follows: collision, two; derailment, nine; overhead or side obstruction, 13; falling, 66; walking on or crossing track, two; getting on or off moving trains, eight; getting on or off stationary trains, 15; working on track, 67; coupling, two; other, 318.

HIGHWAY TRAVELLERS.

The number of highway travellers reported killed was two, a decrease of two, and the number injured was 12, a decrease of three from the number reported the preceding year. Both fatal accidents to highway travellers occurred at protected grade crossings. Of those injured, ten were injured at protected grade crossings and two at unprotected crossings.

NON-TRESPASSERS NOT HIGHWAY TRAVELLERS.

There were two persons reported killed and 55 injured in this class, the character of accidents being as follows: falling, seven injured; other, two killed and 48 injured.

TRESPASSERS.

The number of trespassers reported killed was 13, which was a decrease of five over the number reported the preceding year. Of these three were killed by falling and seven walking on or crossing tracks.

There was a decrease of one in the number of trespassers reported injured, the total number reported being 13. The character of the accidents in which trespassers were injured were as follows: derailment, one; falling, four; walking on or crossing track, four; getting on or off train, two; other, two.

RAILWAY ACCIDENTS.

The total number of railway accidents reported was 828, which was an increase of 302 over the number reported the previous year.

In these accidents 17 persons were killed and 974 injured, an increase of two in the number killed and of 307 in the number injured. Of the total number of accidents, all except three, were reported by The Rhode Island Company, two being reported by the Newport and Providence Street Railway Company and one by the Bay State Street Railway Company. One person was killed in the accident reported by the Bay State Street Railway Company, and two were injured in the accidents reported by the Newport and Providence Street Railway Company. There were 761 accidents in

which one person was either killed or injured; 34 in which two persons were either killed or injured; 14 in which three persons were either killed or injured; eight in which four were either killed or injured; five in which five persons were either killed or injured; three in which eight were either killed or injured; one in which 11 were either killed or injured and one in which 28 persons were either killed or injured.

CLASSIFICATION OF KILLED AND INJURED.

Two passengers, two more than the preceding year, three employees, two more than in the preceding year and 12 highway travellers, one more than in the preceding year were reported killed. Sixteen of these persons were killed in public highways, four of the fatalities occurring at protected grade crossings.

Of the persons reported injured, 593 were passengers, an increase of 216; 127 employees, an increase of 58; two employees not on duty, an increase of one; 241 highway travellers, an increase of 25; two non-trespassers, not highway travellers, an increase of one and nine trespassers, an increase of six.

CHARACTER OF ACCIDENTS.

The number of persons killed classified according to the character of accidents were as follows: collision with street railway, three; collision with vehicles, six; overhead or side obstruction, one; crossing track, four; other, three.

The number of persons injured classified according to the character of accidents were as follows: collision between street railway cars, 80; collision with vehicles, 193; derailments, 20; overhead or side obstruction, five; falling, 66; walking on or crossing track, 55; getting on or off moving cars, 188; getting on or off stationary cars, 151; working on track, two; coupling, one; other 213.

There were four collisions between street railway cars in which two persons were injured; three in which three were injured; one in which four were injured; one in which five were injured; two in which eight were injured; one in which three were killed and 25 injured and 13 in each of which one person was injured.

There was one collision with a vehicle in which one person was

killed; 122 in each of which one person was injured; 16 in each of which two persons were injured; one in which one person was killed and one injured; six in which three persons were injured; two in each of which two were killed and two injured; three in each of which four were injured and one in which five were injured.

Two of the persons killed in collision with vehicles were killed at protected grade crossings on private rights of way and eight of these injured were injured at similar locations. Two of the persons were injured at unprotected and one at a private crossing.

There were six derailments in each of which one person was injured; three in each of which two were injured and two in each of which four were injured.

The greatest number of accidents in any one class was in getting on or off moving cars, the number injured being an increase of 69 over the number injured the preceding year. There was an increase of 80 in the number injured in getting on or off cars not in motion.

The number of persons killed in collisions with vehicles was four less than the number reported the preceding year and the number of persons injured in this class of accidents was an increase of 36 over the preceding year.

There were 25 collisions between street cars reported which was six more than in the preceding year and in these accidents there was an increase of 61 in the number injured.

The number of derailments reported was 11, a decrease of five from the number reported the preceding year and the number of persons reported injured in these accidents was a decrease of 18.

There was one person killed and 25 injured while riding on running boards of open cars. The classification of persons killed and injured in accidents of this kind was as follows: passengers, ten injured; motormen, one injured; conductors, one killed and 14 injured. The fatality resulted from a side obstruction and the persons injured were hurt either by coming in contact with objects near the track, or by falling.

There were eleven controller accidents in which 28 passengers and four motormen were injured, there being two such accidents in each of which two were injured, three in each of which five were injured and one in which eight were injured.

PASSENGERS.

Both passengers reported killed, were killed in collisions between street railway cars.

The number of passengers injured, classified according to the character of accidents were as follows: collision with street railway, 73, a decrease of seven; collision with vehicles, 20, an increase of nine; getting on or off moving car, 185, an increase of 66; getting on or off stationary car, 147, an increase of 87; falling, 48, an increase of 16; derailments, 20, a decrease of 15; side obstructions, one, an increase of one; crossing track, one, an increase of one; other, 98, an increase of 69.

EMPLOYEES.

The classification of character of service of the employees killed and injured on duty was as follows: motormen, one killed, an increase of one; 21 injured, an increase of seven; conductors, one killed, an increase of one; injured, 41, an increase of eight; trackmen, two injured, a decrease of two; power station employees, eight injured, an increase of six; car house and shopmen, 17 injured; an increase of 15; trackmen, five injured, an increase of five; linemen, four injured, an increase of four; other employees, one killed, an increase of one; 31 injured, an increase of 15. There were no power station men killed, a decrease of one.

The number of employees killed and injured classified according to the character of the accidents was as follows: collisions with street railways, one killed, an increase of one; six injured, an increase of one; collisions with vehicles, four injured, a decrease of three; side obstruction, one killed, an increase of one; four injured; falling, 12 injured, a decrease of two; crossing track, one injured, same as previously reported; getting on or off moving car, one injured, an increase of one; getting on or off stationary car, four injured, an increase of four; working on track, two injured, an increase of two; coupling, one injured, an increase of one; other, one killed, an increase of one; injured, 92, an increase of 47. There was a decrease of two in the number reported injured in derailments.

Two employees, not on duty was reported injured, an increase of one from the number reported the preceding year.

HIGHWAY TRAVELLERS.

The number of highway travellers killed and injured classified according to the character of accidents was as follows: collisions with vehicles, six killed, a decrease of one and 169 injured, an increase of 25; crossing tracks, four killed, a decrease of one; 51 injured, a decrease of four; other, two killed, an increase of one and 21 injured, an increase of nine.

TRESPASSERS.

No trespassers were reported killed, as compared with one in the preceding year and nine were injured, four by falling and two in leaving moving cars.

OTHER UTILITY ACCIDENTS.

Utilities other than railroads and railways reported 197 accidents, an increase of 26 over the number reported for the preceding year.

In these accidents six persons, one more than in the preceding year were killed and 197 persons, 50 more than in the preceding year were injured.

The persons killed and injured were reported by the following companies: Adams Express Company, one killed, an increase of one; six injured, a decrease of five; Blackstone Valley Gas and Electric Company, Pawtucket Division, 28 injured, an increase of 12; Blackstone Valley Gas and Electric Company, Woonsocket Division, 22 injured, a decrease of 23 and a decrease of one in the number killed; Bristol County Gas and Electric Company, three injured, an increase of one; Jamestown & Newport Ferry Company, two injured, an increase of two; Narragansett Electric Lighting Company, four killed, the same as in the preceding year, and 117 injured, an increase of 67; Newport Gas Light Company, two injured, an increase of two; Providence Steam Company, one injured, an increase of one; Providence Telephone Company, three injured, an increase of two; Westerly Automatic Telephone Company, two injured, an increase of two; Westerly Light and Power Company, one killed, an

increase of one and ten injured, an increase of four; Western Union Telegraph Company, two injured, a decrease of four.

CLASSIFICATION OF KILLED AND INJURED.

There was one power station employee killed, an increase of one; one employee of gas distributing system, an increase of one; two linemen, same as in the preceding year; one other employee, same as in the preceding year, and one highway traveller, an increase of one.

The classification of the persons injured was as follows: power station employees, 29, an increase of 12; gas plant employees, seven, an increase of two; gas distributing system employees, four, a decrease of six; linemen, 35, a decrease of six; other employees, 95, an increase of 43; highway travellers, 13, an increase of eight; non-trespassers, not highway travellers, 11, the same as in the preceding year; three trespassers, an increase of three.

INVESTIGATION OF THE AFFAIRS OF THE RHODE ISLAND COMPANY.

Following are the findings of the Special Commission for the Investigation of the Affairs of The Rhode Island Company, with the order of the Public Utilities Commission thereon; the record of the Act of the General Assembly, approved March 19, 1918, repealing Section 3 of Chapter 1516 of the Public Laws and revoking the authority therein conferred upon the Public Utilities Commission and annulling and revoking any and all orders of the Public Utilities Commission under authority of said Section 3; the record of the Act of the General Assembly, approved April 18, 1918, authorizing the Public Utilities Commission to approve an increase in the fares of The Rhode Island Company and the orders of said Commission entered under authority conferred by said Act.

STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS PUBLIC UTILITIES COMMISSION.

In the Matter of the Report and Determination of the Special Commission for the Investigation of the Affairs of The Rhode Island Company. } No. 0421.

The General Assembly of the State of Rhode Island at the January Session A. D. 1917, by the provisions of Chapter 1516, of the Public Laws, entitled "An Act Providing for an Investigation of the Affairs of The Rhode Island Company," created a special commission for the investigation of the affairs of The Rhode Island Company.

Section 3 of said Act reads as follows:

"**Sec. 3.** When such determination shall have been made and the same shall have been certified to the public utilities commission, the said public utilities commission is hereby authorized and directed to order The Rhode Island Company to make such modification of the rates of fare charged by it, or of its transfer system, or other modifications in its system of fares and transfers, as such special commission shall by its said determination find to be just and equitable, and from such order there shall be the right of appeal as provided in the public utilities act. Such modifications shall be subject to change from time to time by the public utilities commission, whenever in its opinion the public interest shall so demand and the affairs of The Rhode Island Company shall warrant."

The Special Commission for the Investigation of the Affairs of The Rhode Island Company has made a determination upon such modification of the rates of fare charged by The Rhode Island Company, and of its transfer system, and upon such other modifications of its system of fares and transfers as said commission has found to be just and equitable, and in accordance with the provisions of section three above quoted, has certified its said determination to the Public Utilities Commission, together with a copy of its report upon said investigation. The said determination as received reads as follows:

"To the Public Utilities Commission of the State of Rhode Island,
State House,

Providence, R. I.

In accordance with the provisions of Section 2 of Chapter 1516 of the Public Laws, passed at the January Session, A. D. 1917, and approved April 19, 1917, the Special Commission for the Investigation of the Affairs of The Rhode Island Company hereby finds that the following modification of the rates of fare charged by The Rhode Island Company, and of its transfer system, and of its system of rates and transfers is just and equitable, and in accordance with the provisions of said Section 2 the said Special Commission for the Investigation of the Affairs of The Rhode Island Company does hereby certify said determination to the Public Utilities Commission, to wit:

The existing rates of fare charged by The Rhode Island Company, and its existing transfer system, and its existing system of rates and transfers, in order that the same may be just and equitable, are modified as follows:

Single Five Cent Fare and Transfer Zones.

Single five cent fare and transfer zones as established shall be identical. Four transfer zones shall be provided for the following centres, viz.: Providence, Pawtucket, Woonsocket and Clyde Square at River Point. Limited local five cent fare and transfer zones shall be provided for Cranston and East Providence. A local five cent fare zone shall be provided from Olneyville Square, Providence.

1. *Providence Single Five Cent Fare and Transfer Zone.*

The Providence single five cent fare and transfer zone shall in-

clude the area within a radius of approximately two and one-half miles from Exchange Place as a centre, excepting in the direction of Pawtucket, where the city limits of Providence and Pawtucket shall continue as the transfer limit between the two cities.

The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	FARE AND TRANSFER LIMIT.
1. Pawtucket-Hope Street.	At Providence city line, on Hope Street.
2. Pawtucket lines.	At Providence city line, on North Main Street.
3. Smithfield Avenue.	At St. Francis Cemetery, on Smithfield Avenue.
4. Woonsocket.	At Providence city line, on Charles Street.
5. Branch Avenue-Douglas Avenue.	At Wild Street, Providence, near Branch Avenue car house.
6. Centredale, Chepachet.	At Gem Street, Providence, near turn out.
7. Manton Avenue.	At Ridgeway Street, Providence.
8. Hartford Avenue.	At Lowell Avenue, Providence.
9. Danielson Connection.	At Lowell Avenue, Providence.
10. Plainfield Street.	At intersection Lowell Avenue, Providence.
11. Dyer Avenue.	At Cranston-Providence city line, on Dyer Avenue.
12. Cranston Street.	At Cranston car house, on Cranston Street.
13. River Point.	At Providence-Cranston city line, on Reservoir Avenue.
14. Reservoir Avenue.	At Providence-Cranston city line, on Reservoir Avenue.
15. Elmwood Avenue.	At entrance to Roger Williams Park, on Elmwood Avenue.
16. East Greenwich.	At entrance to Roger Williams Park, on Elmwood Avenue.
17. Broad Street.	At Providence-Cranston city line, on Broad Street.
18. Rocky Point.	At Providence-Cranston city line, on Broad Street.
19. Edgewood.	At Providence-Cranston city line, on Maryland Avenue.
20. Riverside, Bristol.	At Ingrahams Corner, East Providence.
21. Taunton Avenue.	On Taunton Avenue, at cross-over just east of Broadway Six Corners, East Providence.
22. Taunton Connection.	On Taunton Avenue, at cross-over just east of Broadway Six Corners, East Providence.
23. Luthers Corners.	At Broadway Six Corners, East Providence.
24. Rumford, Hunts Mills.	On North Broadway at Walker Avenue, East Providence.
25. Phillipsdale.	On North Broadway at Walker Avenue, East Providence.

2. Pawtucket Single Five Cent Fare and Transfer Zone.

The Pawtucket single five cent fare and transfer zone shall include the area in the State of Rhode Island within a radius of approximately two miles from Main Street Square as a centre, excepting in the direction of Providence, where the city limits of Pawtucket and Providence shall continue as the transfer limit between the cities.

The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below:

LINES.	FARE AND TRANSFER LIMIT.
1. Pawtucket-Hope Street.	At Pawtucket city line, on Hope Street.
2. Providence Lines.	At Pawtucket city line, on North Main Street.
3. Smithfield Avenue.	At Pawtucket city line, on Smithfield Avenue.
4. Mineral Spring Avenue.	At Marieville, North Providence, on Charles Street.
5. Prospect Hill.	At Prospect Hill, end of route.
6. John Street.	At Town Hall, Valley Falls, Cumberland.
7. Broad Street.	At Town Hall, Valley Falls, Cumberland.
8. North Attleboro.	At State line, on Broadway, Pawtucket.
9. Benefit Street.	At end of line at intersection of Central Avenue.
10. Attleboro.	At State Line, Central Avenue, Pawtucket.
11. Pawtucket-East Providence.	At Pawtucket-East Providence Line.

3. Woonsocket Single Five Cent Fare and Transfer Zone.

The Woonsocket Single Five Cent Fare and Transfer Zone shall include the area in the State of Rhode Island within a radius of approximately two miles from Main Street turnout, Woonsocket as a centre. The single five cent fare and transfer limits on the several street car lines, entering and leaving this zone are indicated below:

LINES.	FARE AND TRANSFER LIMIT.
1. Pascoag.	At Branch River Bridge.
2. Worcester Consolidated.	At State line, Woonsocket.
3. Milford-Attleboro and Woonsocket.	At State line, Woonsocket.
4. Providence.	One-half mile south of city line of Woonsocket, upon private right of way.
5. Manville.	At junction of Cumberland and Mendon Roads.

4. *Clyde Square, River Point, Single Five Cent Fare and Transfer Zone.*

The Clyde Square, River Point, Single Five Cent Fare and Transfer Zone shall include the area within a radius of approximately two miles from Clyde Square, in the town of West Warwick as a centre. The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	LOCAL FARE AND TRANSFER LIMIT.
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- | | |
|-----------------|---------------------------|
| 1. Providence. | Near Westcott turn out. |
| 2. Washington. | At Cemetery. |
| 3. Hope. | At Fiskeville. |
| 4. Rocky Point. | Near Westcott turn out. |
| 5. Crompton. | At end of line, Crompton. |

5. *Cranston Local Single Five Cent Fare and Transfer Zone.*

The existing local five cent fare and transfer limits within the city of Cranston shall be continued.

6. *East Providence Local Single Five Cent Fare and Transfer Zone.*

The East Providence Local Five Cent Fare and Transfer Zone shall include the area within the town of East Providence included within a radius of approximately two miles from Broadway Six Corners as a centre. The local single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	LOCAL FARE AND TRANSFER LIMIT.
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- | | |
|--|--|
| 1. Phillipsdale. | Red Bridge-end of line at Phillipsdale. |
| 2. Pawtucket-East Providence. | On Roger Williams Avenue, at Nelson Street-Boyden Heights. |
| 3. Rumford-Hunts Mills | Red Bridge-end of line at Hunts Mills. |
| 4. Taunton Connection. | Washington Bridge-State line, Taunton Avenue. |
| 5. Taunton Avenue. | Washington Bridge-terminus on Taunton Avenue. |
| 6. Luthers Corners, Fall River Connection. | Washington Bridge-State line, Warren Avenue. |
| 7. Riverside. | Washington Bridge-Boyden Heights. |

Olneyville Local Five Cent Fare Zone.

A five cent fare shall entitle a passenger to travel between Olney-

ville Square and the following termini, in either direction, without any transfer privilege, viz.:

Centerdale via Manton Avenue.

Terminus at Manton Village.

Providence city line on Hartford Avenue.

Thornton and Hughesdale.

Terminus of Dyer Avenue line at Cranston Street.

Interurban and Suburban Lines.

Outside of the central single five cent fare and transfer zones as above described there shall be established intermediate zones with a fare of two cents for travel through each such zone, with a minimum fare of five cents entitling a passenger to travel through two of such zones.

Upon the Danielson, Sea View, Pawtucket-Cumberland Hill and Chepachet lines, which present similar low earnings, the average length of such zones shall reflect a rate of approximately two and one-half cents per mile. Upon these lines a minimum fare of five cents shall entitle a passenger to travel through three of such zones.

Upon the other interurban or suburban lines the average length of such zones varies from 1.18 to 2.08 miles and the average rate from .96 cents to 1.69 cents per mile. In the case of these lines a properly advanced through rate was determined upon, having in mind the existing rate, the nature and density of traffic, and the probable effect of such increased rate upon travel.

The adoption of a theory of division of the intervening distance between the five cent fare and transfer limits and the termini of the interurban and suburban lines into zones of equal length would result in a fare increased from the present five cents to nine cents for many people who have located their homes at or near the extreme limits of the present five cent fare zones about Providence. In justice to such people it was deemed fair to adopt the existing five cent fare limits as the new seven cent limits about Providence, thus making a uniform increase of fare of two cents to all persons living in the area included between the old and the new five cent fare limits, riding to and from Providence, but entitling such passengers therefor to a transfer within the Providence transfer limits.

An exception, however, was made in the case of two lines leading

out of Providence where the existing five cent fare zone was abnormally long. The Oaklawn line is 7.31 miles in length with a five cent fare from the Providence centre, and the seven cent fare limit has been placed at Knightsville.

Special book tickets, ten for fifty cents, have been in use on the Riverside line, entitling a passenger to ride a maximum of 7.29 miles for five cents. The seven cent limit from Providence on the Riverside line has been located at Boyden Heights, which will make the new fare to Riverside Square, nine cents, and to Crescent Park, eleven cents. A transfer privilege within the Providence transfer area accompanies the new fare.

On the Woonsocket-Pascoag line where the present five cent fare zone is abnormally long, the seven cent limit has been placed at Forestdale, making the new fare for points between Forestdale and Slaterville into Woonsocket, nine cents, with a transfer privilege in Woonsocket.

On the Woonsocket-Manville line where the present five cent fare zone to Manville is abnormally long, the seven cent limit from Woonsocket has been placed at the junction of Cumberland and Mendon Roads, and the fare to Manville has been raised to nine cents.

The total track mileage, the track mileage local to each end, the intermediate track mileage for each interurban and suburban line, as well as the number, the average length, and the rate in cents per mile of the intermediate zones, together with a statement of the new and old total rates of fare, with increases or decreases indicated, are contained in the following table:

INTERURBAN AND SUBURBAN LINES.

Interurban and Suburban Lines.	Track Mileage.			Intermediate Zones.				Total Fare.			
	Total.	Local.	Inter-mediate.	Local.	No.	Length.	Cts. per Mile	New.	Old	In-crease.	De-crease.
1. Providence-Woonsocket	14.79	2.84	9.74	2.21	8	1.22	1.64	.26	.20	.06	...
2. Providence-Rocky Point	11.00	3.40	7.60	.....	6	1.27	1.58	.17	.10	.07	...
3. Providence-Buttonwoods	13.37	3.40	9.97	.....	8	1.25	1.61	.21	.15	.06	...
4. Providence-East Greenwich	14.11	3.45	10.66	.....	9	1.18	1.69	.23	.20	.03	...
5. Providence-River Point	12.70	3.11	7.15	2.44	6	1.19	1.68	.22	.15	.07	...
6. Providence-Washington	16.24	3.11	8.31	4.82	7	1.19	1.68	.24	.20	.04	...
7. Providence-Riverside	5.86	2.43	3.43	.....	2	1.71	1.17	.09	.10	.....	.01
8. Providence-Crescent Park	6.83	2.43	4.40	.....	3	1.47	1.36	.11	.05*	.04	...
9. Woonsocket-Pascoag	15.07	2.14	12.93	.....	8	1.62	1.24	.21	.15	.06	...
10. River Point-Rocky Point	9.65	2.05	7.60	.....	5	1.52	1.32	.15	.10	.05	...
11. Pawtucket-Crescent Park	9.47	1.64	7.83	.....	4	1.96	.98	.13	.10	.03	...
12. Providence-Esmond	7.13	2.96	4.17	.....	2	2.08	.95	.09	.10	.....	.01
13. Providence-Oaklawn	7.31	3.23	4.08	.....	2	2.04	.98	.09	.05	.04	...
14. Woonsocket-Manville	5.98	3.25	2.73	.....	2	1.36	1.47	.09	.05	.04	...
15. Providence-Prospect Hill	6.72	2.76	3.96	.....	2	1.98	1.00	.09	.10	.....	.01

INTERURBAN AND SUBURBAN LINES, With Low Earnings.

1. Pawtucket-Cumberland Hill	8.38	2.52	5.86	.....	7	.84	2.39	.19	.10	.09	...
2. Providence-Chapchet	15.22	2.96	12.26	.....	15	.82	2.5	.35	.30	.05	...
3. Providence-Danielson (State Line)	27.19	2.62	24.57	.....	30	.80	2.5	.65	.55	.10	...
4. Sea View Railroad	19.14	.....	19.14	.....	24	.80	2.5	.48	.50	.....	.03
5. Barrington, Warren and Bristol (Crescent Park to Bristol)	10.57	.....	10.57	.....	10	1.00	2.	.20	.15	.05	...

*Special book tickets, ten trips for fifty cents, have been issued to residents of East Providence, entitling passengers to ride between East Providence-Barrington town line and Post Office, Providence, without Providence transfer privilege, for five cents for each ride.

Providence Seven Cent Fare Limits.

The seven-cent fare limits on the several street car lines entering and leaving the Providence transfer zone are indicated below :

LINES.	SEVEN CENT FARE LIMIT.
1. Pawtucket-Hope Street.	At Main Street Square, Pawtucket.
2. Pawtucket.	At Main Street Square, Pawtucket.
3. Smithfield Avenue.	At Lonsdale Avenue, Lincoln.
4. Woonsocket.	At Miners turn out.
5. Branch Avenue-Douglas Avenue.	At end of line.
6. Centredale; Chepachet.	At Centredale.
7. Smith Street.	At Greystone.
8. Manton Avenue.	At end of line.
9. Hartford Avenue.	At Providence, city line terminus.
10. Danielson Connection.	At end of private right of way.
11. Plainfield Street.	At end of line.
12. Thornton and Hughesdale.	At end of line, at Hughesdale.
13. Dyer Avenue.	At end of line.
14. Cranston Street.	At Knightsville, Cranston.
15. River Point.	At Davis turn out.
16. Reservoir Avenue.	At end of line.
17. Elmwood Avenue.	At Pawtuxet River Bridge.
18. East Greenwich.	At Pawtuxet River Bridge.
19. Broad Street.	At Pawtuxet terminus.
20. Rocky Point.	At Warwick and Waite Avenues, Cranston.
21. Riverside; Bristol.	At Boyden Heights.
22. Taunton Avenue.	At State line, Taunton Avenue, East Providence.
23. Taunton Connection.	At State line, Taunton Avenue, East Providence.
24. Luthers Corners; Fall River Connection.	At State line, Warren Avenue, East Providence.
25. Rumford-Hunts Mills.	At end of line.
26. Phillipsdale.	At Phillipsdale terminus.

School Tickets.

The use of School Tickets may be continued as at present upon the lines where they are now in use.

Discontinuance of Special Tickets.

The Rhode Island Company shall discontinue the use of commutation, round trip, and trip tickets, as now in use on the Danielson

and Sea View lines, except that excursion tickets at less than the regular rates may be sold between Providence and Narragansett Pier or Wakefield.

Location of Intermediate Zone Limits.

The exact location of the intermediate zone limits shall be submitted by The Company to the Public Utilities Commission for approval.

Minimum Fare.

Where the lines of the Providence-East Greenwich and the Sea View Railroad meet at East Greenwich the payment of a minimum fare of five cents on the Sea View Railroad shall entitle a passenger to ride through two zones on the Sea View and one zone on the Providence-East Greenwich line, and the payment of a minimum fare of five cents on the Providence-East Greenwich line shall entitle a passenger to ride through the last zone on the Providence-East Greenwich line and the first two zones upon the Sea View Railroad and thereafter two cents shall be paid for each additional zone through which such passenger may travel.

Modification of Rates of Fare and Transfer System.

When to Become Effective

The Rhode Island Company shall file with Public Utilities Commission new schedules of rates of fare and transfer regulations and a cancellation of such existing rates of fare and transfer regulations as may be necessary to place in effect the determination herein made, such new schedules to become effective on or before April 1, 1918, upon at least five days' notice to the Public Utilities Commission and the public; provided that the Public Utilities Commission may, for cause shown by The Rhode Island Company, extend the date upon which such new schedules shall become effective."

"Dated at Providence this sixth day of March, A. D. 1918.

ZENAS W. BLISS,
WILLIAM C. BLISS,
GEO. H. NEWHALL,

Special Commission for the Investigation of the Affairs of the Rhode Island Company.

In accordance with the authority and direction contained in Chapter 1516 of the Public Laws, passed at the January Session, A. D. 1917, entitled "An Act Providing for an Investigation of the Affairs of The Rhode Island Company."

It is ORDERED, ADJUDGED AND DECREED:

That the existing rates of fare charged by The Rhode Island Company, and its existing transfer system, and its existing system of rates and transfers, are hereby modified as follows, such modifications having been found by the determination of the Special Commission for the Investigation of the Affairs of The Rhode Island Company to be just and equitable.

Single Five Cent Fare and Transfer Zones.

Single five cent fare and transfer zones as established shall be identical. Four transfer zones shall be provided for the following centres, viz.: Providence, Pawtucket, Woonsocket and Clyde Square at River Point. Limited local five cent fare and transfer zones shall be provided for Cranston and East Providence. A local five cent fare zone shall be provided from Olneyville Square, Providence.

1 *Providence Single Five Cent Fare and Transfer Zone.*

The Providence single five cent fare and transfer zone shall include the area within a radius of approximately two and one-half miles from Exchange Place as a centre, excepting in the direction of Pawtucket, where the city limits of Providence and Pawtucket shall continue as the transfer limit between the two cities.

The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below:

LINES.	FARE AND TRANSFER LIMIT.
1. Pawtucket-Hope Street.	At Providence city line, on Hope Street
2. Pawtucket lines.	At Providence city line, on North Main Street.
3. Smithfield Avenue.	At St. Francis Cemetery, on Smithfield Avenue.
4. Woonsocket.	At Providence city line, on Charles Street.
5. Branch Avenue-Douglas Avenue.	At Wild Street, Providence, near Branch Avenue car house.
6. Centredale, Chepachet.	At Gem Street, Providence, near turnout.
7. Manton Avenue.	At Ridgeway Street, Providence.

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|--|--|
| 8. Hartford Avenue. | At Lowell Avenue, Providence. |
| 9. Danielson Connection. | At Lowell Avenue, Providence. |
| 10. Plainfield Street. | At intersection Lowell Avenue, Providence. |
| 11. Dyer Avenue. | At Cranston-Providence city line, on Dyer Avenue. |
| 12. Cranston Street. | At Cranston car house, on Cranston Street. |
| 13. River Point. | At Providence-Cranston city line, on Reservoir Avenue. |
| 14. Reservoir Avenue. | At Providence-Cranston city line, on Reservoir Avenue. |
| 15. Elmwood Avenue. | At entrance to Roger Williams Park, on Elmwood Avenue. |
| 16. East Greenwich. | At entrance to Roger Williams Park, on Elmwood Avenue. |
| 17. Broad Street. | At Providence-Cranston city line, on Broad Street. |
| 18. Rocky Point. | At Providence-Cranston city line, on Broad Street. |
| 19. Edgewood. | At Providence-Cranston city line, on Maryland Avenue. |
| 20. Riverside, Bristol. | At Ingrahams Corner, East Providence. |
| 21. Taunton Avenue. | On Taunton Avenue, at cross-over just east of Broadway Six Corners, East Providence. |
| 22. Taunton Connection. | On Taunton Avenue, at cross-over just east of Broadway Six Corners, East Providence. |
| 23. Luthers Corners. | At Broadway Six Corners, East Providence. |
| 24. Rumford, Hunts Mills. | On North Broadway at Walker Avenue, East Providence. |
| 25. Phillipsdale. | On North Broadway at Walker Avenue, East Providence. |
| 2. <i>Pawtucket Single Five Cent Fare and Transfer Zone.</i> | |

The Pawtucket single five cent fare and transfer zone shall include the area in the State of Rhode Island within a radius of approximately two miles from Main Street Square as a centre, excepting in the direction of Providence, where the city limits of Pawtucket and Providence shall continue as the transfer limit between the cities.

The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	FARE AND TRANSFER LIMIT.
1. Pawtucket-Hope Street.	At Pawtucket city line, on Hope Street.
2. Providence Lines.	At Pawtucket city line, on North Main Street.
3. Smithfield Avenue.	At Pawtucket city line, on Smithfield Avenue.
4. Mineral Spring Avenue.	At Marieville, North Providence, on Charles Street.
5. Prospect Hill.	At Prospect Hill, end of route.
6. John Street.	At Town Hall, Valley Falls, Cumberland.
7. Broad Street.	At Town Hall, Valley Falls, Cumberland.
8. North Attleboro.	At State line, on Broadway, Pawtucket.
9. Benefit Street.	At end of line at intersection of Central Avenue.
10. Attleboro.	At State Line, Central Avenue, Pawtucket.
11. Pawtucket-East Providence.	At Pawtucket-East Providence Line.
3. <i>Woonsocket Single Five Cent Fare and Transfer Zone.</i>	

The Woonsocket Single Five Cent Fare and Transfer Zone shall include the area in the State of Rhode Island within a radius of approximately two miles from Main Street turnout, Woonsocket as a centre. The single five cent fare and transfer limits on the several street car lines, entering and leaving this zone are indicated below :

LINES.	FARE AND TRANSFER LIMIT.
1. Pascoag.	At Branch River Bridge.
2. Worcester Consolidated.	At State line, Woonsocket.
3. Milford-Attleboro and Woonsocket.	At State line, Woonsocket.
4. Providence.	One-half mile south of city line of Woonsocket, upon private right of way.
5. Manville.	At junction of Cumberland and Mendon Roads.
4. <i>Clyde Square, River Point, Single Five Cent Fare and Transfer Zone.</i>	

The Clyde Square, River Point, Single Five Cent Fare and Transfer Zone shall include the area within a radius of approximately

4. *Clyde Square, River Point, Single Five Cent Fare and Transfer Zone.*

The Clyde Square, River Point, Single Five Cent Fare and Transfer Zone shall include the area within a radius of approximately two miles from Clyde Square, in the town of West Warwick as a centre. The single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	LOCAL FARE AND TRANSFER LIMIT.
1. Providence.	Near Westcott turn out.
2. Washington.	At Cemetery.
3. Hope.	At Fiskeville.
4. Rocky Point.	Near Westcott turn out.
5. Crompton.	At end of line, Crompton.

5. *Cranston Local Single Five Cent Fare and Transfer Zone.*

The existing local five cent fare and transfer limits within the city of Cranston shall be continued.

6. *East Providence Local Single Five Cent Fare and Transfer Zone.*

The East Providence Local Five Cent Fare and Transfer Zone shall include the area within the town of East Providence included within a radius of approximately two miles from Broadway Six Corners as a centre. The local single five cent fare and transfer limits on the several street car lines entering and leaving this zone are indicated below :

LINES.	LOCAL FARE AND TRANSFER LIMIT.
1. Phillipsdale.	Red Bridge-end of line at Phillipsdale.
2. Pawtucket-East Providence.	On Roger Williams Avenue, at Nelson Street-Boyden Heights.
3. Rumford-Hunts Mills	Red Bridge-end of line at Hunts Mills.
4. Taunton Connection.	Washington Bridge-State line, Taunton Avenue.
5. Taunton Avenue.	Washington Bridge-terminus on Taunton Avenue.
6. Luthers Corners, Fall River Connection.	Washington Bridge-State line, Warren Avenue.
7. Riverside.	Washington Bridge-Boyden Heights.

Olneyville Local Five Cent Fare Zone.

A five cent fare shall entitle a passenger to travel between Olneyville Square and the following termini, in either direction, without any transfer privilege, viz.:

Centerdale via Manton Avenue.

Terminus at Manton Village.

Providence city line on Hartford Avenue.

Thornton and Hughesdale.

Terminus of Dyer Avenue line at Cranston Street.

Interurban and Suburban Lines.

Outside of the central single five cent fare and transfer zones as above described there shall be established intermediate zones with a fare of two cents for travel through each such zone, with a minimum fare of five cents entitling a passenger to travel through two of such zones.

Upon the Danielson, Sea View, Pawtucket-Cumberland Hill and Chepachet lines, which present similar low earnings, the average length of such zones shall reflect a rate of approximately two and one-half cents per mile. Upon these lines a minimum fare of five cents shall entitle a passenger to travel through three of such zones.

Upon the other interurban or suburban lines the average length of such zones varies from 1.18 to 2.08 miles and the average rate from .96 cents to 1.69 cents per mile. In the case of these lines a properly advanced through rate was determined upon, having in mind the existing rate, the nature and density of traffic, and the probable effect of such increased rate upon travel.

The adoption of a theory of division of the intervening distance between the five cent fare and transfer limits and the termini of the interurban and suburban lines into zones of equal length would result in a fare increased from the present five cents to nine cents for many people who have located their homes at or near the extreme limits of the present five cent fare zones about Providence. In justice to such people it was deemed fair to adopt the existing five cent fare limits as the new seven cent limits about Providence, thus making a uniform increase of fare of two cents to all persons living in the area included between the old and the new five cent

fare limits, riding to and from Providence, but entitling such passengers therefor to a transfer within the Providence transfer limits.

An exception, however, was made in the case of two lines leading out of Providence where the existing five cent fare zone was abnormally long. The Oaklawn line is 7.31 miles in length with a five cent fare from the Providence centre, and the seven cent fare limit has been placed at Knightsville.

Special book tickets, ten for fifty cents, have been in use on the Riverside line, entitling a passenger to ride a maximum of 7.29 miles for five cents. The seven cent limit from Providence on the Riverside line has been located at Boyden Heights, which will make the new fare to Riverside Square, nine cents, and to Crescent Park, eleven cents. A transfer privilege within the Providence transfer area accompanies the new fare.

On the Woonsocket-Pascoag line where the present five cent fare zone is abnormally long, the seven cent limit has been placed at Forestdale, making the new fare for points between Forestdale and Slatersville into Woonsocket, nine cents, with a transfer privilege in Woonsocket.

On the Woonsocket-Manville line where the present five cent fare zone to Manville is abnormally long, the seven cent limit from Woonsocket has been placed at the junction of Cumberland and Mendon Roads, and the fare to Manville has been raised to nine cents.

The total track mileage, the track mileage local to each end, and the intermediate track mileage for each interurban and suburban line, as well as the number, the average length, and the rate in cents per mile of the intermediate zones, together with a statement of the new and old total rates of fare, with increases or decreases indicated, are contained in the following table:

INTERURBAN AND SUBURBAN LINES.

Interurban and Suburban Lines.	Track Mileage.			Intermediate Zones.				Total Fare.			
	Total.	Local.	Inter-mediate.	Local.	No.	Length, per mile.	Cls.	New.	Old.	In-crease.	De-crease.
1. Providence-Woonsocket	14.79	2.84	9.74	2.21	8	1.22	1.64	.26	.20	.06	.....
2. Providence-Rocky Point	11.00	3.40	7.60	.....	6	1.27	1.58	.17	.10	.07	.....
3. Providence-Buttonwoods	13.37	3.40	9.97	.....	8	1.25	1.61	.21	.15	.06	.....
4. Providence-East Greenwich	14.11	3.45	10.66	.....	9	1.18	1.69	.23	.20	.03	.....
5. Providence-River Point	12.70	3.11	7.15	2.44	6	1.19	1.68	.22	.15	.07	.....
6. Providence-Washington	16.24	3.11	8.31	4.82	7	1.19	1.68	.24	.20	.04	.....
7. Providence-Riverside	5.86	2.43	3.43	.....	2	1.71	1.17	.09	.10	.....	.01
8. Providence-Crescent Park	6.83	2.43	4.40	.....	3	1.47	1.36	.11	.10	.01	.....
9. Woonsocket-Pascoag	15.07	5.14	12.93	.....	8	1.62	1.24	.21	.15	.06	.....
10. River Point-Rocky Point	9.65	2.05	7.60	.....	5	1.52	1.32	.15	.10	.05	.....
11. Pawtucket-Crescent Park	9.47	1.64	7.83	.....	4	1.96	.98	.13	.10	.03	.....
12. Providence-Esmond	7.13	2.96	4.17	.....	2	2.08	.96	.09	.10	.....	.01
13. Providence-Oaklawn	7.31	3.23	4.08	.....	2	2.04	.98	.09	.05	.04	.....
14. Woonsocket-Manville	5.98	3.25	2.73	.....	2	1.36	1.47	.09	.05	.04	.....
15. Providence-Prospect Hill	6.72	2.76	3.96	.....	2	1.98	1.00	.09	.10	.....	.01

INTERURBAN AND SUBURBAN LINES, With Low Earnings.

1. Pawtucket-Cumberland Hill	8.38	2.52	5.86	.....	7	.84	2.39	.19	.10	.09	.....
2. Providence-Chepachet	15.22	2.66	12.26	.....	15	.82	2.5	.35	.30	.05	.....
3. Providence-Danielson (State Line)	27.19	2.62	24.57	.....	30	.80	2.5	.65	.55	.10	.....
4. Sea View Railroad	19.14	.....	19.14	.....	24	.80	2.5	.48	.50	.....	.02
5. Barrington, Warren and Bristol (Crescent Park to Bristol)	10.57	.....	10.57	.....	10	1.00	2.	.20	.15	.05	.....

* Special book tickets, ten trips for fifty cents, have been issued to residents of East Providence, entitling passengers to ride between East Providence-Barrington town line and Post Office, Providence, without Providence transfer privilege, for five cents for each ride.

Providence Seven Cent Fare Limits.

The seven-cent fare limits on the several street car lines entering and leaving the Providence transfer zone are indicated below :

LINES.	SEVEN CENT FARE LIMIT.
1. Pawtucket-Hope Street.	At Main Street Square, Pawtucket.
2. Pawtucket.	At Main Street Square, Pawtucket.
3. Smithfield Avenue.	At Lonsdale Avenue, Lincoln.
4. Woonsocket.	At Miners turn out.
5. Branch Avenue-Douglas Avenue.	At end of line.
6. Centredale; Chepachet.	At Centredale.
7. Smith Street.	At Greystone.
8. Manton Avenue.	At end of line.
9. Hartford Avenue.	At Providence, city line terminus.
10. Danielson Connection.	At end of private right of way.
11. Plainfield Street.	At end of line.
12. Thornton and Hughesdale.	At end of line, at Hughesdale.
13. Dyer Avenue.	At end of line.
14. Cranston Street.	At Knightsville, Cranston.
15. River Point.	At Davis turn out.
16. Reservoir Avenue.	At end of line.
17. Elmwood Avenue.	At Pawtuxet River Bridge.
18. East Greenwich.	At Pawtuxet River Bridge.
19. Broad Street.	At Pawtuxet terminus.
20. Rocky Point.	At Warwick and Waite Avenues, Cranston.
21. Riverside; Bristol.	At Boyden Heights.
22. Taunton Avenue.	At State line, Taunton Avenue, East Providence.
23. Taunton Connection.	At State line, Taunton Avenue, East Providence.
24. Luthers Corners; Fall River Connection.	At State line, Warren Avenue, East Providence.
25. Rumford-Hunts Mills.	At end of line.
26. Phillipsdale.	At Phillipsdale terminus.

School Tickets.

The use of School Tickets may be continued as at present upon the lines where they are now in use.

Discontinuance of Special Tickets.

The Rhode Island Company shall discontinue the use of commu-

regular rates may be sold between Providence and Narragansett Pier or Wakefield.

Location of Intermediate Zone Limits.

The exact location of the intermediate zone limits shall be submitted by The Company to the Public Utilities Commission for approval.

Minimum Fare.

Where the lines of the Providence-East Greenwich and the Sea View Railroad meet at East Greenwich the payment of a minimum fare of five cents on the Sea View Railroad shall entitle a passenger to ride through two zones on the Sea View and one zone on the Providence-East Greenwich line, and the payment of a minimum fare of five cents on the Providence-East Greenwich line shall entitle a passenger to ride through the last zone on the Providence-East Greenwich line and the first two zones upon the Sea View Railroad and thereafter two cents shall be paid for each additional zone through which such passenger may travel.

Dated this twenty-seventh day of April , A. D. 1918.

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,
Commissioners.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

Upon consideration of the matter of the exact location of the intermediate zone limits on interurban or suburban lines of The Rhode Island Company, said Company having submitted to the Commission a list of such zones and filed blue prints designating the same and the distances thereof,

It is ORDERED, ADJUDGED AND DECREED:

That said intermediate zone limits be and the same are approved as follows:

<i>No.</i>	<i>Length in Feet.</i>
PROVIDENCE-WOONSOCKET	
1 Providence City Line-Miner's Turnout	6,639
2 Miner's Turnout-Turnout No. 2	6,867
3 Turnout No. 2-Pole 256	6,031
4 Pole 256-Wilbur Road	6,955
5 Wilbur Road-Turnout No. 4	5,107
6 Turnout No. 4-Reservoir Road	7,043
7 Reservoir Road-Manville Road	4,400
8 Manville Road-Woonsocket 5c Limit	7,504
	50,546
Number of zones	8
Average length of zones	6,318
PROVIDENCE-BUTTONWOODS VIA BROAD STREET	
9 Prov.-Crans. City Line-Warwick & Waite Aves.	5,896
10 Warwick & Waite Aves.-Lakewood	6,478
11 Lakewood-Hoxsie	8,830
12 Hoxsie-Conimicut	6,422
13 Conimicut-Longmeadow	7,118
14 Longmeadow-Warwick Station	5,275
15 Warwick Station-Oakland Beach Station	6,898
16 Oakland Beach Station-Buttonwoods	3,485
	50,402
Number of zones	8
Average length of zones	6,300

PROVIDENCE-BUTTONWOODS VIA ELMWOOD AVENUE

17	Entrance Roger Wms. Pl.-Private Right of Way	6,393
18	Private Right of Way-Lakewood	7,817
11	Lakewood-Hoxsie	8,830
12	Hoxsie Conimicut	6,422
13	Conimicut-Longmeadow	7,118
14	Longmeadow-Warwick Station	5,275
15	Warwick Station-Oakland Beach Station	6,898
16	Oakland Beach Station-Buttonwoods.....	3,485

52,238

Number of zones	8
Average length of zones.....	6,530

PROVIDENCE-ROCKY POINT VIA BROAD STREET

9	Prov.-Cr. City Line-Warwick & Waite Aves.	5,896
10	Warwick & Waite Aves.-Lakewood	6,478
11	Lakewood-Hoxsie	8,830
12	Hoxsie-Conimicut	6,422
13	Conimicut-Longmeadow	7,118
19	Longmeadow-Rocky Point	5,999

40,743

Number of zones	6
Average length of zones.....	6,790

PROVIDENCE-EAST GREENWICH

20	Roger Wms. Park-Pawtuxet River Bridge	8,304
21	Pawtuxet Riv. Bridge-Cor. Budlong & Pettaconsett	5,761
22	Cor. Budlong & Pettaconsett-Lincoln Avenue	5,132
23	Lincoln Avenue-Collingwood Turnout	7,754
24	Collingwood Turnout-Greenwood Turnout	3,881
25	Greenwood Turnout-Apponaug Four Corners	5,959
26	Apponaug Four Corners-Cowesett Post Office	7,000
27	Cowesett Post Office-East Greenwich P. O.....	7,282
28	East Greenwich P. O.-Sea View Waiting Room	3,052

54,125

Number of zones	9
Average length of zones	6,014

PROVIDENCE-RIVERPOINT-WASHINGTON

29	Prov. Crans. C. L.-Davis Turnout	9,046
30	Davis Turnout-Prison Turnout	6,776
31	Prison Turnout-South End Insane Asylum	5,120
32	So. End Insane Asylum-Central St., Pontiac	4,661
33	Central St., Pontiac-Cranston & W. Warwick.....	5,930
34	Cranston & W. Warwick-Westcott	8,530
35	Knotty Oak Turnout-Washington	3,283

43,346

Number of zones	7
Average length of zones.....	6,192

PROVIDENCE-RIVERSIDE-CRESCENT PARK

36	Ingraham's Cor.-Boyden Heights	10,867
37	Boyden Heights-Riverside	7,210
38	Riverside-Crescent Park	5,763
		<hr/>
		23,840
	Number of zones	3
	Average length of zones.....	7,947

PASCOAG-WOONSOCKET

39	Branch River-Slatersville Post Office	8,534
40	Slatersville P. O.-Town Line N. S. & Bur.	7,670
41	Town Line N. S. & Burrillville-Nasonville	5,494
42	Nasonville-Glendale	8,150
43	Glendale-Oakland Turnout	7,091
44	Oakland Turnout-Harrisville Turnout	11,818
45	Harrisville Turnout-White Mill	8,812
46	White Mill-Terminus	8,612
		<hr/>
		66,181
	Number of zones	8
	Average length of zones	8,273

RIVERPOINT-ROCKY POINT

47	Westcott-Apponaug Four Corners	11,038
48	Apponaug Four Corners-Carpenter's Corner	8,191
49	Carpenter's Corner-Buttonwoods Station	8,722
50	Buttonwoods Station-Oakland Beach Station	3,485
51	Oakland Beach Station-Rocky Point Grounds	12,320
		<hr/>
		43,756
	Number of zones	5
	Average length of zones	8,751

PAWTUCKET-CRESCENT PARK

52	Pawt. E. Prov. Boundary Line-Ingraham's Cor.	19,007
53	Ingraham's Corner-Boyden Heights	10,867
37	Boyden Heights-Riverside	7,210
38	Riverside-Crescent Park	5,763
		<hr/>
		42,847
	Number of zones	4
	Average length of zones	10,712

PROVIDENCE-ESMOND

54 Old Road-Greystone	13,295
55 Greystone-Esmond	5,455
	18,750
Number of zones	2
Average length of zones	9,375

PROVIDENCE-OAKLAWN

56 Cranston Car House-Oaklawn Avenue	8,972
57 Oaklawn Avenue-Oaklawn	12,405
	21,377
Number of zones	2
Average length of zones	10,688

WOONSOCKET-MANVILLE

58 Woonsocket 5c Limit-Cumberland Hill	8,923
59 Cumberland Hill-Manville	7,554
	16,477
Number of zones	2
Average length of zones.....	8,238

PROVIDENCE-PROSPECT HILL

60 St. Francis Cemetery-Chapel St. Junction	11,965
61 Chapel St. Junction-Prospect Hill	7,812
	19,777
Number of zones	2
Average length of zones	9,888

PAWTUCKET-CUMBERLAND HILL

62 Town Hall, Valley Falls-Garvin's Turnout	6,482
63 Garvin's Turnout-Berkeley Turnout	6,481
64 Berkeley's Turnout-Ashton Road to Depot.....	5,113
65 Ashton Rd. to Depot-Albion Road Turnout	5,113
66 Albion Road Turnout-Pole 572	3,974
67 Pole 572-Pole 618	3,974
68 Pole 618-Cumerland Hill	3,974
	35,111
Number of zones	7
Average length of zones	5,016

PROVIDENCE-CHEPACHET

69	Old Road-Railroad, Centredale	11,220
70	Railroad, Centredale-Pole 43, Graniteville	3,539
71	Pole 43, Graniteville-Road to Esmond	4,037
72	Road to Esmond-Turnout No. 1	3,043
73	Turnout No. 1-Barnes Farm	4,578
74	Barnes Farm-Greenville Baptist Church	4,537
75	Greenville Baptist Church-Turnout No. 2	4,090
76	Turnout No. 2-Smithfield, Gloucester Town Line	3,739
77	Smithfield, Gloucester Town Line-Pole 396	3,854
78	Pole 396-Pole 450	3,803
79	Pole 450-Brown's Hill	3,902
80	Brown's Hill-Pole 568	3,755
81	Pole 568-Pole 625	3,813
82	Pole 625-Turnout No. 4	3,842
83	Turnout No. 4-Terminus	6,637
		<hr/>
	Number of zones	68,389
	Average length of zones	15
		4,559

PROVIDENCE-DANIELSON

84	Lowell Ave.-Private Right of Way	2,903
85	Private Right of Way-Pole 97	5,714
86	Pole 97-Pocasset Turnout	5,831
87	Pocasset Turnout-Pole 210	4,779
88	Pole 210-Pole 263	4,594
89	Pole 263-Bailey's	4,779
90	Bailey's-Hopkins Avenue	3,108
91	Hopkins Avenue-Pentacostal Institute Road	5,308
92	Pentacostal Institute Road-Adams Mill	4,350
93	Adams Mill-Saundersville Turnout	4,403
94	Saundersville Turnout-Parker's Crossing	4,431
95	Parker's Crossing-Pole 626	3,500
96	Pole 626-Ashland Crossing	3,500
97	Ashland Crossing-Pole 736	4,876
98	Pole 736-Richmond Post Office	3,741
99	Richmond Post Office-Riverview Turnout	4,258
100	Riverview Turnout-East End Private Right of Way	4,372
101	E. End Private R. of Way-W. End Private R. of Way	2,506
102	W. End Private R. of Way-Rockland Mill	3,394
103	Rockland Mill-Clayville Turnout	4,573
104	Clayville Turnout-Jencks School House	4,865
105	Jencks School House-Pole 1176	5,222
106	Pole 1176-Foster Centre Turnout	4,390

107	Foster Centre Turnout-Cook's Spur	5,503
108	Cook's Spur-Pole 1337	4,521
109	Pole 1337-Pole 1391	4,620
110	Pole 1391-North Foster Baptist Church	4,540
111	North Foster Baptist Church-Pole 1472	3,769
112	Pole 1472-Pole 1507	3,881
113	Pole 1507-State Line	3,825
		130,056
	Number of zones	30
	Average length of zones	4.335

SEA VIEW RAILROAD

114	Sea View Waiting Room-Nelson Crossing	6,885
115	Nelson Crossing-Essex or Potowomut	6,000
116	Essex or Potowomut-Sand Hill	3,485
117	Sand Hill-Newcomb's	4,435
118	Newcomb's-Camp Avenue	3,830
119	Camp Avenue-Red Gate	2,626
120	Red Gate-Babbitt Cottage	3,924
121	Babbitt Cottage-Wickford Railroad Depot	5,600
122	Wickford Railroad Depot-State Road	4,650
123	State Road-Hamilton, Pole 869	2,850
124	Hamilton, Pole 869-Green Farm	2,900
125	Green Farm-Picnic Grove	5,900
126	Picnic Grove-Cottrell's Road	4,800
127	Cottrell's Road-Saunderstown	4,200
128	Saunderstown-Robinson's	3,958
129	Robinson's-South Ferry Turnout	2,372
130	South Ferry Turnout-Boston Neck Road	5,069
131	Boston Neck Road-Browning's	4,432
132	Browning's-Middle Bridge	4,098
133	Middle Bridge-Conroy's	4,900
134	Conroy's-Narragansett Pier Station	4,670
135	Narragansett Pier Sta.-Town Line S. Kings. Narra.	6,067
136	Town Line S. Kings. Narra.-Dale Carlia Corner	3,039
137	Dale Carlia Corner-Terminus	3,039
		103,629
	Number of zones	24
	Average length of zones	4.318

BARRINGTON, WARREN & BRISTOL.

138	Crescent Park-E. Prov., Barrington Line.....	4,341
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139	E. Prov., Barrington Line-West Barrington	4,830
140	West Barrington-White Church	6,640
141	White Church-Barrington Town Hall	3,622
142	Barrington Town Hall-E. End of W. Bridge, Hampden Meadows	5,428
143	E. End W. Bridge, Hampden Meadows-Warren Turnout ...	7,241
144	Warren T. O.-Warren, Bristol Town Line T. O.	5,431
145	Warren, Bristol Town Line T. O.-Walnut St.	5,902
146	Walnut Street-Usher Place	3,550
147	Usher Place-Terminus	8,182
		<hr/> 55,167
	Number of zones	10
	Average length of zones	5.517
April 29, 1918.		No. 406

OPINIONS AND ORDERS.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

DOCKET NO. 0399.

IN THE MATTER OF PETITION OF THE NEW YORK, NEW HAVEN AND HARTFORD RAILROAD COMPANY FOR APPROVAL OF AN ISSUE OF 450,000 SHARES OF PREFERRED STOCK OF THE PAR VALUE OF \$100 EACH.

On November 20, 1917, the following petition was received, to wit:

TO THE HONORABLE PUBLIC UTILITIES COMMISSION OF THE STATE OF RHODE ISLAND:

The petition of The New York, New Haven and Hartford Railroad Company represents:

1. That it is a legally existing corporation of the State of Rhode Island and Providence Plantations.

2. That its charter in this State was amended by an Act approved March 26th, 1915, and entitled: "An act in amendment of and in addition to an Act, Entitled 'An Act to incorporate the New York, New Haven and Hartford Railroad Company, a corporation in this State,' passed by the General Assembly at its January Session, A. D. 1893."

3. That said amendment was duly accepted by your petitioner at a stockholders' meeting duly called and held on the 24th day of April, 1915.

4. That your petitioner has outstanding a floating indebtedness of the principal amount of \$45,000,000. covered by its promissory notes aggregating that amount, secured by the deposit of collateral and maturing April 15, 1918, which it proposes to pay by an issue of 450,000 shares of preferred stock of the par value of \$100, each as duly authorized and upon the terms and conditions determined by a vote of more than two-thirds in interest of the common stockholders of said corporation as hereinafter described.

5. That at a special meeting of the stockholders of said corporation duly warned and held for the purpose at New Haven Connecticut, on October 24th, 1917, the following vote was passed by the affirmative votes of more than two-thirds in interest of the common

stock-holders of said corporation, said vote authorizing the issue of 450,000 shares of preferred stock of the par value of \$100 each for the purpose of paying said floating indebtedness and prescribing the preferences and rights to which such preferred stock shall be entitled and the restrictions and qualifications to which it shall be subject:

"VOTED, That, for the purpose of paying its floating indebtedness, this Company issue 450,000 shares of preferred stock of the par value of one hundred dollars (\$100) each, the holders of which shall be entitled to receive out of the annual net income of the company or surplus accruing therefrom dividends of seven per centum per annum, payable semi-annually, and if the net income of any year together with such surplus shall not be sufficient to pay said dividends the same shall be cumulative and shall be paid out of the net income of any subsequent year and any such surplus when available, without interest, and such preferred stock dividends shall be declared and set apart or paid in preference to and before any dividends are set apart or paid upon the common stock. In case of liquidation or dissolution of the Company the preferred stock, together with all accumulated and unpaid dividends thereon, shall be paid in full out of the net assets available for distribution to stockholders at par before any payment is made to the holders of common stock. The holders of the preferred stock shall in all matters be entitled to one vote for each share of preferred stock owned by them. The said shares of preferred stock shall be first offered for subscription at such price as the directors shall fix, not less than par, proportionately to the holders of this Company's common stock and their assigns and to the holders of this Company's Six Per Cent. Convertible Debentures due January 15, 1948, convertible into stock between January 15, 1923, and January 15, 1948, then outstanding, and their assigns, upon the basis provided in said debentures, to wit, that each one hundred dollars (\$100) of the principal amount of said debentures shall be considered the equivalent of one share of common stock. Said shares of preferred stock, or any part thereof, shall be subject to call for redemption and retirement on any dividend date upon not less than thirty days prior written notice given by mail to each preferred stockholder and upon payment of \$110 per share and all accrued and unpaid dividends. If less than all the shares of preferred stock are called for redemption and retirement such proportion thereof held by each preferred stockholder shall be redeemed as the total amount of said stock called shall bear to the total amount of preferred stock then outstanding, but in determining such proportion all fractional shares shall be disregarded and the amount of each stockholder's preferred stock so to be redeemed shall be the number of whole shares to which his proportion entitles him. At least three-fourths of the cash proceeds received by this Company from any sale of securities pursuant to the decree of the United States Court entered October

17th, 1914, in the Dissolution Suit, as the same is now or may hereafter be modified shall be applied to the retirement of said shares in amounts of not less than 10,000 shares, either by call for redemption as aforesaid, or by purchase from the lowest bidder or bidders upon not less than thirty days prior written offer to purchase given by mail to each of the said preferred stockholders. The Directors of the Company are hereby authorized and directed for and in behalf of the Company to perform all acts and take all steps in their judgment necessary or proper to carry out the purposes of this vote, and they are hereby vested with full power and right to determine the time, manner and conditions of the issue, sale and retirement of said preferred stock."

WHEREFORE, your petitioner prays that Your Honorable Commission approve the increase in your petitioner's capital stock by the issue of 450,000 shares of preferred stock of the par value of \$100 each, with the preferences and voting powers and with the restrictions and qualifications as to such preferred shares as set forth in the above vote of your petitioner's common stockholders.

DATED at Providence, Rhode Island, this 19th day of of November, 1917.

*The New York, New Haven and Hartford
Railroad Company,*
E. J. Pearson, President.

The foregoing petition was duly assigned for hearing at the office of the Commission in Providence, on Wednesday, December 5, 1917 at 11:00 o'clock in the forenoon, at which time and place the petitioner, represented by Counsel and Vice President Edward G. Buckland, appeared and was fully heard.

This is a petition for approval by the Commission of an issue of 450,000 shares of preferred stock, at par, and having a total par value of \$45,000,000, the proceeds to be used to pay the floating indebtedness of said Company covered by its promissory notes, secured by the deposit of collateral and maturing April 15, 1918.

Said petition is brought under the provisions of "*An Act in amendment of and in addition to an Act, entitled 'An Act to Incorporate the New York, New Haven and Hartford Railroad Company, a Corporation in this State,' passed by the General Assembly at its January Session, A. D. 1893,*" passed at the January Session A. D.

1915, and approved March 26, A. D. 1915, which reads as follows:

"It is enacted by the General Assembly as follows:

SECTION 1. The corporate name of the New York, New Haven and Hartford Railroad Company is hereby declared to be The New York, New Haven and Hartford Railroad Company.

SEC. 2. The New York, New Haven and Hartford Railroad Company, incorporated in this state under an act, entitled "An act to incorporate The New York, New Haven and Hartford Railroad Company, a corporation in this state," passed by the general assembly at its January session, A. D. 1893, is hereby declared to be, and ever since the passage of said act to have been, a legally existing corporation of this state.

SEC. 3. The New York, New Haven and Hartford Railroad Company is authorized to issue and to have issued and outstanding from time to time bonds, notes and other evidences of indebtedness, not exceeding in the aggregate twice the sum of the par value of its capital stock then issued and outstanding and premiums thereon actually paid in cash into its treasury; and authority is hereby given to said company to execute any mortgage or mortgages to secure any of its bonds, notes or other evidences of indebtedness, which mortgage or mortgages may include a part or all of the property and franchises of said company in this state, including property to be afterwards acquired; and for the purpose of determining the aggregate amount to which said company may now issue and have issued and outstanding, bonds, notes and other evidences of indebtedness, the capital stock of said company, issued under the authority of either or both of the states of Connecticut and Massachusetts, and outstanding on June 30th, 1914, is hereby held and declared to be 1,571,179 shares of the par value of \$157,117,900, plus premiums thereon amounting to \$19,282,887.50, aggregating \$176,400,787.50 as shown in the company's general statement for the fiscal year ending June 30, 1914.

Said corporation may hereafter increase its capital stock by the issue, from time to time, of such additional shares, either general (to wit, common) or preferred, or both, as shall be approved by the public utilities commission, and with such preferences and voting powers or with such restrictions or qualifications as to such preferred shares as shall be approved by the public utilities commission; and authority in the premises is hereby conferred upon the said commission. And if and whenever said corporation shall so increase its capital stock it shall pay into the general treasury, for the use of the State of Rhode Island, such proportion of the tax then imposed by the state generally upon the increase in the capital stock of corporations of this state, as the miles of road owned by said corporation in this state bear to the total miles of road owned by said corporation, both within and without this state at the end of the fiscal year of said corporation next preceding the time of such increase of stock. But the above provision for payment of tax shall not be construed to impose a tax upon the stock of said corporation hereto-

fore issued and now outstanding as aforesaid.

No preferred stock shall be issued until the same shall be authorized by a vote of not less than two-thirds in interest of all the outstanding stock of the company, at a meeting duly called for that purpose.

SEC. 4. The sale of the property and franchises of The New England Railroad Company to The New York, New Haven and Hartford Railroad Company, under the authority of Chapter 252 of the acts and resolves passed by the general court of Massachusetts, in the year 1905, is hereby ratified and approved; and The New York, New Haven and Hartford Railroad Company shall be vested with the property and railroads of The New England Railroad Company in this state, and with respect to the same shall, without limiting or impairing any existing rights, contracts, privileges and franchises, hereafter have, hold, exercise and enjoy in addition thereto the rights, contracts, powers, privileges and franchises, and shall be subject to the duties, obligations and liabilities of The New England Railroad Company.

SEC. 5. This act shall take effect from and after its passage, and all acts and parts of acts inconsistent herewith are hereby repealed."

At a special meeting of the stockholders of The New York, New Haven and Hartford Railroad Company, held in accordance with, and in pursuance of, notice given in conformity to the by-laws of the Company, and the statutes, in the City of New Haven, Connecticut, on Saturday, the twenty-fourth day of April, A. D. 1915, it was

Resolved, That the Company accept the provisions of an Act entitled "An Act in Amendment of and in addition to an Act, entitled 'An Act to Incorporate The New York, New Haven and Hartford Railroad Company a Corporation in this State,' passed by the General Assembly at its January Session, A. D. 1893, passed by the General Assembly of Rhode Island at its January Session, A. D. 1915, and approved March 26, 1915," and that the Secretary be instructed to file a copy of this Resolution with the Secretary of State of the State of Rhode Island, which has been done.

Said issue of preferred stock was authorized at a meeting of the stockholders of said Company, duly warned and held for that purpose on October 24, 1917, by a vote of not less than two-thirds in interest of all the outstanding stock of the Company.

A certified copy of said vote was offered in evidence and the same is recited in full in paragraph 5 of the petition hereinbefore embodied.

The petition in this case, in conformity with the vote of the stockholders, asks for an approval of said issue of preferred stock upon the terms set forth in said vote, the proceeds to be used for the purpose of paying the floating indebtedness of said company. It appeared in the evidence and on the balance sheet of the petitioner for October 31, 1917, that its floating indebtedness was \$44,220,000.

The amount and terms of the issue are limited by the laws of the several states specifically applicable thereto and by the decrees of the several commissions having authority to approve such issue. In this case the maximum amount is limited by the vote of the stockholders to the amount of its floating indebtedness, namely, \$44,220,000. Said floating indebtedness is represented by one-year notes, and these are without question a source of varying expense and financial danger to the company. It is clearly a wise economic policy that such floating indebtedness should be permanently funded, and the Commission is of the opinion that the method proposed by the company of issuing preferred stock, even with the right of the holders to receive cumulative of seven per cent. per annum, is the most practical under existing conditions.

Since the hearing on this petition, the President by proclamation has taken possession of and assumed control of the operation of all the railroads in this country, as a war measure, to meet the requirements of a military and naval emergency. Apparently there is nothing in the President's proclamation or subsequent control by the Director-General of Railroads thereunder, that diminishes the power of the state or supercedes the necessity of Commission action in the issuances of said preferred stock. If, however, as a result of such governmental control, money can be obtained for the maturing obligations of said company on better terms, the company should avail itself of any such opportunity before and instead of issuing such preferred stock.

It is proposed in said stockholders' vote that "Said shares of preferred stock or any part thereof shall be subject to call for redemption and retirement on any dividend date upon not less than thirty days prior written notice given by mail to each preferred stockholder and upon payment of \$110 per share and all accrued and unpaid dividends." A doubt is entertained, however, under the

legal requirements of the different states having jurisdiction over said issue, whether the proceeds from the sale of securities under the court decree could be used to pay premium on stock retired, over and above the issue price, and for this reason a proviso will be entered in the order.

Based upon all the facts presented in this case, the Commission is of opinion and finds that approval, should be granted of the issue of \$44,220,000 of preferred stock, subject to the proviso hereinbefore referred to. Wherefore it is hereby ordered and decreed as follows:

ORDER.

ORDERED, That the approval of the Commission be and it hereby is given to the issue by the New York, New Haven and Hartford Railroad Company, at the price not less than one hundred dollars (\$100) per share, of not exceeding four hundred forty-two thousand, two hundred (442,200) preferred shares of capital stock, to be known as the preferred stock, amounting at par value to forty-four million, two hundred twenty thousand dollars (\$44,220,000), having the preferences, rights, restrictions and limitations and being entitled to the rate of preferred dividends which has been determined by a vote of stockholders holding not less than two-thirds of the stock of such company at a meeting held October 24, 1917, with and subject to the following proviso: any cash proceeds from the sale or conversion of assets, used in calling or purchasing such stock, shall be applicable only to the extent of one hundred dollars (\$100) for each share so retired, and any new stock or other securities issued for such purpose shall not exceed in par value the stock so retired, any amount in excess necessary for such retirement to be provided in either case by the company from earnings or the surplus account; and which preferences, rights, restrictions, limitations and rate of dividends are hereby approved, as set out in a copy of said vote on file in this office and in said proviso, as an issue of stock reasonably necessary and of the amount required for the purpose of paying the floating indebtedness of the company outstanding on October 31, 1917.

We hereby determine and direct that notice of the foregoing finding and decree be given to the petitioner by John W. Rowe, Secretary of this Commission, by forwarding by registered mail, a true and attested copy hereof addressed to Arthur E. Clark, Secretary, The New York, New Haven and Hartford Railroad Company, New Haven, Connecticut, on or before the second day of March, 1918, and due return make hereon.

Dated at Providence, Rhode Island, this 25th day of February, A. D. 1916.

PUBLIC UTILITIES COMMISSION.

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN.

Commissioners.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

COMMISSION ON IT'S OWN MOTION

vs.

PROVIDENCE GAS COMPANY.

} No. 39.

This was an investigation by the Commission on its own motion into the reasonableness of a schedule of rates for gas contained in certain schedules of rates filed by the Providence Gas Company with the Public Utilities Commission on August 20, 1917, which rates were to become effective on October 1, 1917. These schedules of rates were effective for gas furnished in the Cities of Providence and Cranston and in the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence. The City Councils of Providence and Cranston and the Town Councils of North Providence, Johnston, Smithfield, Warwick and East Providence were duly notified of the investigation.

Hearings were held on September 26, October 4 and October 8, 1917 and on February 26, 1918. The following appearances were made: For the Providence Gas Company, Frank H. Swan, Esq., for the City of Providence, Elmer S. Chace, Esq., City Solicitor, for the Town of North Providence, Arthur Cushing, Esq. and for the City of Cranston, Frank H. Wildes, Esq.,

The former schedule of rates of the Providence Gas Company which was cancelled by the schedule which became effective on October 1, 1917 was as follows:

"R. I. P. U. C. No. 1.

PROVIDENCE GAS COMPANY.

The price of gas to the general consumers of this Company will be 95c per thousand cubic feet for all gas consumed after October 1st, 1912.

A discount of 10c per thousand cubic feet of gas consumed will be made to consumers who pay their bills within fifteen days of the date of the bill, making the net price to such consumers 85c per thousand cubic feet.

A reduction of 1c per thousand cubic feet for each one million cubic feet of gas used during the calendar year will be made to consumers who have paid their bills as rendered, within the discount period.

The amount of this reduction is to be paid by check, at the end of the calendar year.

There will be a minimum charge of 50c per month, with refund if bills exceed \$6.00 per year."

Received August 21, 1912.

Public Utilities Commission."

"R. I. P. U. C. No. 3.
Amending R. I. P. U. C. No. 1.

PROVIDENCE GAS COMPANY.

Retail Rates for Gas in the Riverside District.

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Riverside District to all consumers at the following rates:

RATES.

\$1.10 gross for each thousand cubic feet of gas consumed with a discount of 10 cents per thousand cubic feet of gas consumed if the entire bill is paid within 15 days after the date of the bill and there are no unpaid bills outstanding.

A minimum rate of 50 cents per month will be charged, subject to a refund in case the consumer's bills exceed \$6.00 per year.

The above rates are to become effective on March 1, 1917, and will apply to all bills rendered on and after that date."

"Received January 5, 1917.

Public Utilities Commission."

The new schedule which was filed to become effective October 1, 1917 is as follows:

"R. I. P. U. C. No. 5.
Cancelling R. I. P. U. C. No. 1.

PROVIDENCE GAS COMPANY.

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Cities of Providence and Cranston, and the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence, except the Riverside district, to all consumers at the following rates:

RATES.

For the first 10,000 cubic feet used in any one month, \$1.10 per thousand

cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 15,000 cubic feet used in any one month, \$1.05 per thousand cubic feet gross; 95c per thousand cubic feet net.

For the next 25,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

For the next 50,000 cubic feet used in any one month, 95c per thousand cubic feet gross; 85c per thousand cubic feet net.

For the next 100,000 cubic feet used in any one month, 90c per thousand cubic feet gross; 80c per thousand cubic feet net.

For all in excess of 200,000 cubic feet used in any one month, 85c per thousand cubic feet gross; 75c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on October 1st, 1917, and will apply to all bills rendered on and after that date.

Issued August 20th, 1917.

Effective October 1st, 1917.

PROVIDENCE GAS COMPANY,

by

C. H. MANCHESTER,

Vice President."

"Received August 20, 1917.
Public Utilities Commission."

"R. I. P. U. C. No. 6.
Cancelling R. I. P. U. C. No. 3.

PROVIDENCE GAS COMPANY.

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Riverside district of the Town of East Providence to all consumers at the following rates:

RATES.

For the first 10,000 cubic feet used in any one month, \$1.25 per thousand cubic feet gross; \$1.15 per thousand cubic feet net.

For the next 15,000 cubic feet used in any one month, \$1.20 per thousand cubic feet gross; \$1.10 per thousand cubic feet net.

For the next 25,000 cubic feet used in any one month, \$1.15 per thousand cubic feet gross; \$1.05 per thousand cubic feet net.

For the next 50,000 cubic feet used in any one month, \$1.10 per thousand cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 100,000 cubic feet used in any one month, 1.05 per thousand

cubic feet gross; 95c per thousand cubic feet net.

For all in excess of 200,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on October 1st, 1917, and will apply to all bills rendered on and after that date.

Issued August 20th, 1917.

Effective October 1st, 1917.

PROVIDENCE GAS COMPANY,

by

C. H. MANCHESTER,

Vice President."

"Received August 20, 1917.
Public Utilities Commission."

For the purpose of this investigation the Commission has assumed that the pre-war returns of the Company were not unreasonable and has undertaken to ascertain whether the increased manufacturing costs of gas due to the emergency war conditions justify the increase in rates as placed in effect by the Company.

The Company has kept an accurate and up to date record of its manufacturing costs for the past five years, and at the request of the Commission has filed exhibits containing a detailed statement of the manufacturing costs per thousand cubic feet of gas for the four years 1913 to 1916 inclusive, for the first seven months of the year 1917, and thereafter for each remaining month of the year 1917. These costs are indicated in the following table:

TABLE A.
 PROVIDENCE GAS COMPANY
 COMPARATIVE COSTS—1913 TO 1916 INCLUSIVE.

COAL GAS.	1913.		1914.		1915.		1916.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Gas Coal	\$265,943	\$.317	\$284,352	\$.324	\$299,259	\$.309	\$312,955	\$.326
@	(3.57)		(3.55)		(3.55)		(3.59)	
Fuel under Retorts	80,426	.096	74,374	.085	76,425	.079	120,488	.125
@	(4.36)		(4.24)		(4.25)		(5.70)	
Boiler Fuel	8,392	.010	8,787	.010	9,337	.010	18,002	.019
@	(2.12)		(2.55)		(2.42)		(3.20)	
Mfg. Labor	23,289	.028	25,751	.030	23,180	.024	26,620	.028
Retort Hse. Labor	34,333	.041	34,319	.039	40,251	.042	50,124	.052
Mfg. Salaries ...	7,051	.008	8,186	.009	7,735	.008	9,387	.010
Purification Labor	759	.001	1,082	.001	1,293	.001	2,213	.002
Purification Exp..	2,935	.004	3,069	.004	1,915	.002	1,722	.002
Expense Works ..	12,449	.013	14,740	.017	15,500	.016	16,075	.017
Repairs Works...	28,898	.035	29,239	.033	28,877	.029	41,389	.043
Repairs Benches..	11,054	.013	5,102	.006	6,757	.007	6,347	.006
Water Tax	474	.001	483		731	.001	1,414	.002
Totals	\$476,010	\$.567	\$489,489	\$.558	\$511,265	\$.528	\$606,742	\$.632
<i>Residuals.</i>								
Coke	\$238,369	\$.284	\$239,690	\$.273	\$251,836	\$.260	\$318,334	\$.331
@	(3.97)		(3.79)		(3.83)		(4.93)	
Coal Tar, .03¼..	3,486	.037	35,463	.041	38,942	.040	37,096	.039
Ammonia, .07 ..	32,169	.038	35,353	.040	36,107	.037	38,135	.040
Total Residual Cr.	\$302,025	\$.359	\$310,507	\$.354	\$326,886	\$.337	\$393,565	\$.410
Steam Sold	8,130	.010	9,610	.011	10,943	.011	11,041	.011
Net Cost of Coal								
Gas	165,854	.198	169,371	.193	173,434	.180	202,134	.211
Lump Coke @...	(4.20)		(4.00)		(4.03)		(5.20)	
Breeze @	(2.00)		(2.00)		(2.00)		(2.00)	

TABLE B.

PROVIDENCE GAS COMPANY
COMPARATIVE COSTS—1913 TO 1916 INCLUSIVE.

WATER GAS.	1913.		1914.		1915.		1916.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Generator Fuel... @	\$62,505 (5.12)	\$.074	\$61,094 (5.29)	\$.072	\$67,267 (5.30)	\$.083	\$90,225 (6.15)	\$.095
Gas Oil	193,453 (.053)	.230	243,602 (.069)	.286	100,898 (.034)	.125	102,693 (.031)	.108
Boiler Fuel	22,741 (3.27)	.027	20,504 (3.62)	.024	22,616 (3.28)	.028	39,981 (4.34)	.042
Mfg. Labor	12,378	.015	12,687	.015	13,947	.017	16,991	.018
Gen. Hse. Labor.	7,958	.010	8,991	.011	8,757	.011	8,783	.009
Mfg. Salaries	7,011	.009	7,242	.009	6,652	.008	4,357	.005
Purification Labor	3,185	.003	3,358	.004	3,108	.004	4,264	.004
Purification Exp..	2,098	.002	2,046	.002			1,425	.001
Expense Works ..	6,662	.008	7,015	.008	7,118	.009	6,659	.007
Repairs Works ..	16,976	.020	15,371	.018	13,638	.017	12,648	.013
Water Tax	2,438	.003	2,913	.003	2,442	.003	2,381	.003
Cost of Water Gas	337,409	.401	384,828	.452	246,447	.305	290,413	.305
Cost of Coal Gas	165,854	.198	169,371	.193	173,434	.180	202,134	.211
Cost of Mixed Gas	\$503,263	\$.299	\$554,199	\$.321	\$419,882	\$.236	\$492,548	\$.258
Decrease in gas on hand.....			512				351	
Increase in gas on hand.....	310				562			
Cost of gas in holder, exclusive of Depreciation.	\$502,952	\$.299	\$554,711	\$.321	\$419,319	\$.236	\$492,999	\$.258

TABLE C.
PROVIDENCE GAS COMPANY
 COMPARATIVE COST—1913 TO 1916 INCLUSIVE.

	Year 1913.	Year 1914.	Year 1915.	Year 1916.
Gas sent out	1,676,893,000	1,729,807,000	1,774,913,000	1,912,736,000
Gas sold	1,626,253,000	1,674,195,500	1,708,095,400	1,864,630,100
Unaccounted for	50,640,000	55,611,500	66,817,600	48,105,900
	Amount. Per M.	Amount. Per M.	Amount. Per M.	Amount. Per M.
<i>Distribution Expenses.</i>				
Repairs to mains, services, meters and gas holders, setting, removing and testing meters, attending to complaints, etc.	\$124,875 \$.077	\$133,987 \$.080	\$139,183 \$.081	\$134,411 \$.072
<i>Commercial Expense.</i>				
Bookkeeping for 6200 customers (average bill about \$2), reading meters, collecting bills and general office expenses	102,021 .063	122,514 .073	129,808 .076	133,817 .072
<i>General Expense.</i>				
Officers' salaries, accidents and damages, litigation etc.....	63,831 .038	77,333 .046	52,599 .031	49,026 .026
<i>New Business.</i>				
Advertising, demonstrating, soliciting and other expenses incident to getting new business	22,632 .014	21,032 .013	41,757 .025	33,047 .018
	\$313,359 \$.192	\$354,868 \$.212	\$363,349 \$.213	\$350,303 \$.188

TABLE D.

PROVIDENCE GAS COMPANY
COMPARATIVE INCOME AND COSTS—1913 TO 1916 INCLUSIVE.

	1913.		1914.		1915.		1916.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
GAS INCOME.								
Private Consumers:								
In Providence	\$1,248,306		\$1,266,695		\$1,278,369		\$1,388,455	
Outside Providence	150,771		176,143		195,374		220,074	
Works and Office	10,094		10,429		11,583		11,805	
Minimum Charge	4,324		4,180		4,431		4,443	
Total	\$1,413,496		\$1,457,448		\$1,489,759		\$1,624,280	
Less Discounts	6,199	\$.004	6,359	\$.004	6,659	\$.004	8,812	\$.004
Total for Gas	\$1,407,297		\$1,451,089		\$1,483,120		\$1,615,468	
From other sources	5,354		5,473		5,230		4,991	
Total Income	\$1,412,651	\$.868	\$1,456,562	\$.87	\$1,488,350	\$.871	\$1,620,459	\$.87
Expenses.								
Manufacturing	\$502,953	\$.299	\$554,712	\$.321	\$419,320	\$.236	\$492,900	\$.258
Distribution	124,875	.077	133,988	.080	139,184	.081	134,412	.072
Commercial	102,021	.063	122,514	.073	129,808	.076	133,818	.072
General	63,831	.038	77,333	.046	52,600	.031	49,027	.026
New Business	22,633	.014	21,032	.013	41,257	.023	33,047	.018
Taxes	77,421	.047	80,893	.048	87,778	.051	100,650	.054
Gas unaccounted for .....		.010		.011		.009		.007
Total cost of manufacturing less residuals sold	\$893,734	\$.548	\$990,472	\$.592	\$870,447	\$.509	\$943,854	\$.507
Net Earnings and Their Application.								
Balance from year's operation	\$518,917	\$.32	\$456,090	\$.278	\$617,903	\$.362	\$676,605	\$.363
Interest	37,743	.018	37,331	.022	46,738	.027	65,736	.035
Dividends	392,000	.241	393,000	.234	392,000	.23	392,000	.21
Depreciation	125,000	.077	130,000	.072	120,000	.07	132,000	.071
Bad debts charged off	6,174	.004					6,000	.003
Balance left	32,000	.02	83,241	.05	59,165	.035	80,869	.044
Deficit								

TABLE E.

PROVIDENCE GAS COMPANY

COMPARATIVE COSTS—7 mos. 1917, Aug., Sept., Oct., Nov., Dec., 1917.

COAL GAS.	7 mos. 1917.		Aug. 1917.		Sept. 1917.		Oct. 1917.		Nov. 1917.		Dec. 1917.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Gas Coal @ long ton.....	\$178,432 (4.05)	\$.367	\$24,391 (4.55)	\$.432	\$30,485 (5.52)	\$.485	\$24,140 (3.88- 6.75)	\$.443	\$27,332.41 (4.95)	\$29,776 (3.91)	\$.555	
Fuel under Retorts.....	84,658 (6.60)	.174	11,833 (7.50)	.210	11,143 (7.50)	.177	9,894 (7.50)	.182	9,289.69 (7.50)	9,480 (7.50)	.177	
Boiler Fuel @.....	12,886 (4.92)	.026	1,784 (6.84)	.032	2,165 (5.61)	.034	2,350 (6.25)	.043	1,718.68 (6.38)	2,201 (5.46)	.042	
Manufacturing Labor.....	15,622	.032	1,675	.030	2,245	.036	2,221	.041	3,301.21	2,784	.052	
Retort House Labor.....	33,798	.070	5,891	.105	6,053	.096	7,283	.134	7,478.71	6,957	.129	
Manufacturing Salaries.....	5,380	.011	768	.014	850	.014	984	.018	1,436.53	1,523	.028	
Purification Labor.....	1,226	.003	271	.005	.27	.002			224.79	45	.001	
Purification Expense.....	1,033	.002	140	.002	157	.002	136	.002	123.90	134	.002	
Expense Works.....	9,868	.020	2,058	.036	1,837	.029	1,936	.036	1,776.13	2,179	.041	
Repairs Works.....	23,993	.049	2,743	.048	5,466	.087	5,176	.095	6,688.02	6,016	.112	
Repairs Benches.....	3,404	.007	1,061	.019	1,215	.019	5,642	.104	4,936.85	6,554	.121	
Water Tax.....	111											
Power.....	2,060	.004	409	.007	357	.006	356	.006	276.15	352	.007	
Totals.....	\$372,274	\$.765	\$53,030	\$.940	\$61,979	\$.985	\$60,120	\$1.104	\$64,602.97	\$68,008	\$1.267	
Residuals.												
Coke.....	\$210,601 (6.18)	\$.433	\$27,630 (6.57)	\$.490	\$28,951 (6.68)	\$.460	\$27,018 (6.61)	.496	28,564.71	27,681	.516	
Coal Tar @ .03 1/4.....	16,426	.034	1,583	.028	2,166	.034	2,070	.038	2,533.04	2,115	.039	
Ammonia @ .07.....	17,714	.036	2,147	.038	2,213	.036	2,096	.039	2,370.49	2,534	.047	
Total Residual Credit	\$244,742	\$.503	\$31,361	\$.556	\$33,330	\$.530	\$31,185	\$.573	\$33,468.24	\$32,331	\$.602	
Steam Sold—												
Net Cost of Coal Gas	127,532	.262	21,669	.384	28,648	.455	28,934	.531	31,134.73	35,677	.628	
Lump Coke @.....	(6.53)		(3.00)		(7.09)		(7.01)					
Breeze @.....	(2.00)		(3.00)		(3.00)		(3.00)					

TABLE F.

PROVIDENCE GAS COMPANY

COMPARATIVE COSTS—7 mos. 1917, Aug., Sept., Oct., Nov., Dec., 1917.

WATER GAS.	7 mos. 1917.		Aug., 1917.		Sept., 1917.		Oct., 1917.		Nov., 1917.		Dec., 1917.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Generator Fuel @ long ton.....	\$74,196 (6.64)	\$.108	\$12,392 (8.54)	\$.127	\$12,625 (7.30)	\$.108	\$14,420 (5.78)	\$.106	\$14,096 (6.95)	\$.105	\$23,904 (6.82)	\$.158
Gas Oil	70,265 (.93)	.103	20,481 (.965)	.210	24,826 (.865)	.213	28,649 (.9638)	.209	29,130 (.9653)	.218	35,424 (.96)	.235
Boiler Fuel	32,823 (6.30)	.048	6,181 (7.52)	.063	8,025 (5.61)	.069	11,729 (6.25)	.086	9,279 (5.71)	.069	12,428 (5.46)	.082
Manufacturing Labor.....	9,369	.014	1,147	.012	1,308	.011	1,489	.011	2,154	.016	2,192	.015
Generator House Labor.....	7,628	.011	983	.010	655	.006	769	.006	956	.007	958	.006
Manufacturing Salaries.....	3,385	.005	533	.006	592	.005	612	.004	884	.007	879	.006
Purification Labor.....	110	.001	146	.001	174	.002	204	.002	200	.002	411	.003
Purification Expense.....	918	.001	146	.001	174	.002	204	.002	200	.002	226	.001
Expense Works	4,894	.007	517	.005	492	.004	571	.004	650	.005	1,059	.007
Repairs Works	7,169	.011	634	.006	1,478	.013	881	.007	894	.007	191	.001
Water Tax	275	.001	236	.002	220	.002	297	.002	248	.002	330	.002
Power	1,033	.001	236	.002	220	.002	297	.002	248	.002	330	.002
Totals	\$212,071	\$.309	\$43,254	\$.442	\$50,399	\$.433	\$59,676	\$.437	\$58,530	\$.438	\$78,007	\$.516
Tar Residuals	4,008	.006	1,299	.013	1,573	.014	1,857	.014	1,897	.014	2,282	.015
Cost of Water Gas.....	\$208,063	\$.303	\$41,955	\$.429	\$48,826	\$.419	\$57,818	\$.423	\$56,632	\$.424	\$75,725	\$.501
Cost of Coal Gas.....	127,532	.262	21,669	.384	28,648	.455	28,934	.531	31,134	.628	35,677	.665
Cost of Mixed Gas.....	\$335,595	\$.286	\$63,624	\$.413	\$77,475	\$.432	\$86,753	\$.454	\$87,767	\$.479	\$111,403	\$.544
Decrease in gas on hand			80		161		119		32		864	
Increase in gas on hand	643											
Cost of gas in holder												
Cost of Depreciation	\$334,951	\$.286	\$63,704	\$.413	\$77,314	\$.432	\$86,872	\$.454	\$87,800	\$.479	\$112,267	\$.539

TABLE G.

PROVIDENCE GAS COMPANY
COMPARATIVE COSTS—7 mos. 1917, Aug., Sept., Oct., Nov., Dec. 1917.

	7 Mos. 1917.		Aug., 1917.		Sept., 1917.		Oct., 1917.		Nov., 1917.		Dec., 1917.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Cu. Ft.												
Gas sent out	1,169,430,000		154,396,000		178,860,000		191,423,000		183,364,000		208,121,000	
Gas sold	1,136,360,400		143,652,800		170,420,700		182,987,200		182,069,200		179,772,400	
Unaccounted for ...	30,849,600		8,743,200		8,439,300		8,435,800		1,294,800		28,348,600	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
<i>Distribution Expenses.</i>												
Repairs to mains, services, meters, and gas holders, setting, removing, and testing meters, attending to complaints, etc.	\$99,312	.087	\$12,918	\$.089	\$10,890	\$.064	\$10,194	\$.056	\$9,576	\$.053	\$13,036	\$.073
<i>Commercial Expense.</i>												
Bookkeeping for 62000 customers (average bill about \$2), reading meters, collecting bills, and general office expenses	80,075	.071	11,702	.080	11,058	.065	11,851	.065	11,617	.064	12,218	.068
<i>General Expenses.</i>												
Officers' salaries, accidents and damages, litigation, etc.	38,404	.034	5,383	.037	5,150	.030	4,226	.023	4,439	.024	5,926	.033
<i>New Business.</i>												
Advertising, demonstrating, soliciting and other expenses incident to getting new business	13,191	.011	1,776	.012	1,776	.010	2,048	.011	2,083	.011	990	.005
	\$230,984	\$.203	\$11,781	\$.218	\$28,875	\$.169	\$28,320	\$.155	\$27,715	\$.152	\$32,172	\$.179

TABLE H.
PROVIDENCE GAS COMPANY

COMPARATIVE INCOME AND COSTS—7 mos. 1917, Aug., Sept., Oct., Nov., and Dec. 1917.

GAS INCOME.	7 mos. 1917.		Aug., 1917.		Sept., 1917.		Oct., 1917.		Nov., 1917.		Dec., 1917.	
	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.	Amount.	Per M.
Private Consumers:												
In Providence	\$844,210		\$105,449		\$123,207		\$149,782		\$142,618.50		\$177,534	
Outside Providence.	137,075		20,640		23,581		27,552		33,027.26		115	
Works and Office.....	7,332		764		759		892		1,167.50		988	
Other Gas Companies.....					364		2,081		2,030.86		2,381	
Minimum Charge	2,566		366		366		430		511.19		567	
Totals	\$991,183		\$127,320		\$148,277		\$180,739		\$179,355.31		\$177,419	
Less Discounts	4,900		700		700		\$.004		10.10		115	
Total for Gas	\$986,283		\$126,520		\$147,577		\$180,739		\$179,345.21		\$177,419	
From other sources.....	2,916		416		416		416		416.00		416	
Total Income	\$989,199	\$.868	\$126,936		\$147,993	\$.867	\$181,155		\$179,761.21		\$177,835	
Expenses.												
Manufacturing	\$334,951	\$.286	\$63,704		\$77,314	\$.432	\$86,872		\$87,900.12	\$.479	\$112,267	\$.539
Distribution	99,312	.087	12,918		10,890	.064	10,194		9,576.27	.053	13,036	.073
Commercial	80,075	.071	11,702		11,058	.065	11,851		11,617.32	.064	12,218	.068
General	38,404	.034	5,383		5,150	.030	4,226		4,439.13	.024	5,926	.033
New Business	13,191	.011	1,776		1,776	.010	2,048		2,083.39	.011	990	.005
Taxes	70,000	.061	10,000		10,000	.059	11,400		11,400.00	.063	11,363	.063
Gas unaccounted for.		.008				.022				.003		.086
Total Cost of Manufacturing and Distributing less residuals sold	\$635,936	\$.558	\$105,485		\$116,190	\$.682	\$126,592		\$126,916.23	\$.697	\$155,804	\$.867
Net Earnings and Their Application.												
Balance from operation for period	\$353,263	\$.310	\$21,451		\$31,803	\$.185	\$54,562		\$52,844.98	\$.288	\$22,031	\$.120
Interest	13,961	.012	2,338		2,227	.013	3,383		3,590.14	.020	3,647	.020
Dividends, Depreciation, bad debts charged off	77,000	.068	11,000		11,000	.064	11,000		11,000.00	.060	11,000	.061
Balance left	\$262,302	\$.230	\$8,113		\$18,576	\$.108	\$40,179		\$38,254.84	.208	7,384	.039
Actual yearly rate of income on capital stock issued.....			1.6		3.4		6.9		6.6		1.2	
Actual yearly rate of income on capital invested			1.1		2.3		4.6		4.4		.8	

The Company presented the following estimate (Exhibit 1) of the probable increase in the manufacturing costs of gas with which it would be confronted for the following year over the costs for the year 1916 on the basis of the market prices of September, 1917.

(Exhibit 1.) Table A.

PROVIDENCE GAS COMPANY.

Yearly Increase in Cost of Illuminating Gas Increased Costs Over 1916, on Basis of Present Market Prices (September 19, 1917).

"Labor,—Operating accounts only, increase	\$55,000.00	
(Not including new construction, new services or extension of mains)		
Oil,—60 per cent. of 2 billion ft.=1,200,000 000 ft. yearly output in water gas		
1,200,000,000 ft. x 3 1-2 gallons per M = 4,200,000 gallons at 3 1-2c = increase		147,000.00
Gas Coal,—97,500 long tons used in 1916.		
Present cost under contract	\$4.50	
Cost 1916—average	3.58	
	ii	
97,500 tons x	increase \$0.92	89,700.00
But we are not getting full deliveries of this cheap-contract-Westmoreland coal and have been robbing our emergency reserve and charging it at the old price.		
Now, we are buying other coal (not so good) at \$8.32 per ton, an increase of \$8.32 — \$3.50 = \$4.82 per ton.		
To replace the 15,000 tons depletion of reserves, will thus add 15,000 x \$4.82 =		
		72,300.00
Taxes,— Increase in City of Providence, U. S.		
Corporation and Capital Stock tax		29,853.00
Lehigh Coal (for Water Gas),—		
1916 price	\$5.79	
Present price	8.14	
	iii	
Will use 19,000 long tons at	\$2.35	
	increase =	44,650.00
Boiler Fuel,— In 1916 used 15,000 tons at average of \$3.86, for breeze, buckwheat and coke.		
Present average, \$4.21.		
Increase at present average		7,950.00

Present cost (No. 1 Buckwheat \$6.59) per 2240 lbs.	
Will henceforth use half Breeze at	\$4.00
and half Buckwheat at	6.59
	<hr/>
Average henceforth	\$5.30
Increase in cost of materials for engine room supplies, meter settings, stable feed, repairs, oils, gasoline, etc., estimated at	50,000.00
	<hr/>
TOTAL ON ABOVE ITEMS	\$496,453.00
This does not include loss by withholding from sale our surplus coke which last year netted the Company over \$150,000. We now expect to hold most of it for emergency water gas fuel.	
This increase distributed over the estimated yearly output of 2,100,000 M of gas adds to its cost per thousand cubic feet:	
\$496,453 =	23.7c per M ft."
<hr/>	
2,100,000 M	

"The New Providence schedule is estimated to yield an increase of about 12 1-2c per thousand feet. After allowing for the effect of the increased prices, and of the sliding scale, this leaves about half the burden of increased cost upon the Company."

The recent increases in the manufacturing costs of gas may be seen from the following table made up from the figures contained in the company's statement:

PROVIDENCE GAS COMPANY.

Manufacturing Costs, Cents per 1,000 Cubic Feet of Gas.

		Net Cost.				
		Gas Coal.	Gas Oil.	Coal Gas.	Water Gas.	Mixed Gas.
1913-1916.	Average	31.9	18.7	19.5	36.6	27.8
1917.	Jan.-July, inc.	36.7	10.3	26.2	30.3	28.6
1917.	August	43.2	21.0	38.4	42.9	41.3
1917.	September.	48.5	21.3	45.5	41.9	43.2
1917.	October.	44.3	20.9	53.1	42.3	45.4
1917.	November.	55.2	21.8	62.8	42.4	47.9
1917.	December.	55.5	23.5	66.5	50.1	54.4

The average cost of the gas coal necessary to the production of a thousand cubic feet of coal gas has increased from 31.9 cents,

the average for the four years 1913 to 1916 inclusive, to 55.5 cents, for the month of December, 1917, an increase of 23.6 cents per thousand cubic feet. The average cost of gas oil necessary to the production of 1,000 cubic feet of water gas during the same period has increased from 18.7 cents to 23.5 cents, an increase of 4.8 cents per thousand cubic feet. The net cost of coal gas during the same period increased from 19.5 cents to 66.5 cents, an increase of 47 cents per thousand cubic feet. The net cost of water gas from 36.6 cents to 50.1 cents, an increase of 13.5 cents, while the manufacturing costs of the mixed coal and water gas in the company's gas holders ready for distribution has increased from 27.8 cents to 54.4 cents, an increase of 26.6 cents per thousand cubic feet.

A study of the above manufacturing costs can lead but to one conclusion, that the additional income resulting from the application of the increased schedule of rates is not excessive and will reimburse the Company only about one-half of the increased manufacturing costs due to the emergency conditions incident to the world war.

While the additional income sought by the company does not appear to be unreasonable in amount in view of the existing emergency conditions, the Commission believes that the arrangement of the rate plan or schedule should be modified in the public interest in the light of the facts brought out by the classification of gas sold in 1916, information not available to the Company at the time it filed its new schedule of rates. This classification of consumers for the year 1916 made at the request of the Commission, is as follows:

The Company and the representatives of the City of Providence after a conference have indicated their assent to an amendment of the schedule of rates as filed by the Company so that the same shall read as follows and the Commission believes that said schedule of rates thus amended is just and reasonable in the light of existing conditions.

“PROVIDENCE GAS COMPANY

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Cities of Providence and Cranston, and the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence, except the Riverside district, to all consumers at the following rates:

RATES.

For the first 5,000 cubic feet used in any one month, \$1.10 per thousand cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 5,000 cubic feet used in any one month, \$1.05 per thousand cubic feet gross; 95c per thousand cubic feet net.

For the next 40,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

For the next 75,000 cubic feet used in any one month, 95c per thousand cubic feet gross; 85c per thousand cubic feet net.

For the next 125,000 cubic feet used in any one month, 90c per thousand cubic feet gross; 80c per thousand cubic feet net.

For all in excess of 250,000 cubic feet used in any one month, 85c per thousand cubic feet gross; 75c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on March 1st, 1918, and will apply to all bills rendered on and after that date.

“PROVIDENCE GAS COMPANY

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Riverside district of the Town of East Providence to all consumers at the following rates:

RATES.

For the first 5,000 cubic feet used in any one month, \$1.25 per thousand cubic feet gross; \$1.15 per thousand cubic feet net.

For the next 5,000 cubic feet used in any one month, \$1.20 per thousand cubic feet gross; \$1.10 per thousand cubic feet net.

For the next 40,000 cubic feet used in any one month, \$1.15 per thousand cubic feet gross; \$1.05 per thousand cubic feet net.

For the next 75,000 cubic feet used in any one month, \$1.10 per thousand cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 125,000 cubic feet used in any one month, \$1.05 per thousand cubic feet gross; 95c per thousand cubic feet net.

For all in excess of 250,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on March 1st, 1918, and will apply to all bills rendered on and after that date.

The assent of the Company and the representatives of the City of Providence to the foregoing schedule of rates is conditioned upon the understanding that until more normal conditions obtain, the rates herein specified are based upon the average quality of gas supplied in the City of Providence during the last year, excepting in so far as the maintenance of such quality of gas becomes physically impossible, said average being recognized as approximately 580 B. T. U. per cubic foot of gas, and with the further understanding that the agreement by the Company to maintain whenever possible a standard of approximately 580 B. T. U. per cubic foot of gas is not an admission on the part of the Company that it can make a fair return on said schedule at said standard. At such time as the Company shall commence the extraction of toluol, the matter of the establishment of a suitable standard will be considered by the Commission.

We firmly believe that the public interest requires that the credit of this utility locally owned, controlled and financed, shall be maintained in order that capital may be readily available for additions and extensions and that such credit can be best maintained by a continuance of the annual dividend rate of eight per cent upon its

capital stock, each dollar of which has been actually paid in in cash. The Company contends that a physical valuation of its properties made by impartial and experienced engineers shows a valuation of fifty per cent in excess of its capitalization.

After full hearing and mature consideration of the evidence in the above entitled case, it is ordered, adjudged and decreed:

First: That the schedule of rates filed by the Providence Gas Company under date of August 20, 1917, effective October 1, 1917, in so far as the same differs from the schedule of rates herein ordered to be placed in effect, is unreasonable, unjust and unjustly discriminatory.

Second: That said Providence Gas Company establish and maintain for all gas billed on and after March 1, 1918, the following schedule of rates:

"PROVIDENCE GAS COMPANY

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Cities of Providence and Cranston, and the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence, except the Riverside district, to all consumers at the following rates:

RATES.

For the first 5,000 cubic feet used in any one month, \$1.10 per thousand cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 5,000 cubic feet used in any one month, \$1.05 per thousand cubic feet gross; 95c per thousand cubic feet net.

For the next 40,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

For the next 75,000 cubic feet used in any one month, 95c per thousand cubic feet gross; 85c per thousand cubic feet net.

For the next 125,000 cubic feet used in any one month, 90c per thousand cubic feet gross; 80c per thousand feet net.

For all in excess of 250,000 cubic feet used in any one month, 85c per thousand cubic feet gross; 75c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on March 1st, 1918, and will apply to all bills rendered on and after that date."

"PROVIDENCE GAS COMPANY

CHARACTER OF SERVICE.

Gas will be sold and delivered in the Riverside district of the Town of East Providence to all consumers at the following rates:

RATES.

For the first 5,000 cubic feet used in any one month, \$1.25 per thousand cubic feet gross; \$1.15 per thousand cubic feet net.

For the next 5,000 cubic feet used in any one month, \$1.20 per thousand cubic feet gross; \$1.10 per thousand cubic feet net.

For the next 40,000 cubic feet used in any one month, \$1.15 per thousand cubic feet gross; \$1.05 per thousand cubic feet net.

For the next 75,000 cubic feet used in any one month, \$1.10 per thousand cubic feet gross; \$1.00 per thousand cubic feet net.

For the next 125,000 cubic feet used in any one month, \$1.05 per thousand cubic feet gross; 95c per thousand cubic feet net.

For all in excess of 250,000 cubic feet used in any one month, \$1.00 per thousand cubic feet gross; 90c per thousand cubic feet net.

The discount of 10c per thousand cubic feet will be allowed on gross amounts of monthly bills rendered under this schedule, if such bills are paid within 15 days from the date of the bills.

A minimum rate of 50c per month will be charged subject to a refund if the consumers's bill exceeds \$6.00 per year.

The above rates are to become effective on March 1st, 1918, and will apply to all bills rendered on and after that date."

Third: That the Providence Gas Company file with the Public Utilities Commission on or before March 1, 1918 a cancellation of its schedule of rates filed with the Commission under date of August 20, 1917, together with a schedule of rates to conform with the requirements of this order.

Dated this twenty-seventh day of February, A. D. 1918.

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,
Commissioners.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

COMMISSION ON IT'S OWN MOTION	} No. 41
<i>vs.</i>	
PROVIDENCE GAS COMPANY.	

This was an investigation by the Commission on its own motion into the reasonableness of a schedule of rates for gas contained in certain schedules of rates filed by the Providence Gas Company with the Public Utilities Commission on July 12, 1918, which rates were to become effective on September 1, 1918. These schedules of rates were effective for gas furnished in the Cities of Providence and Cranston and in the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence. The City Councils of Providence and Cranston and the Town Councils of North Providence, Johnston, Smithfield, Warwick and East Providence were duly notified of the investigation.

Hearings were held on the 30th day of July and the 7th, 8th, 9th, 12th, 13th, 15th, 19th, 21st, 23rd and 28th days of August, A. D. 1918. The following appearances were made: For the Providence Gas Company, Frank H. Swan, Esq., for the City of Providence, Elmer S. Chace, Esq., City Solicitor and Hon. Joseph H. Gainer, Mayor, for the Town of East Providence, A. Truman Patterson, Esq., for the Town of Johnston, James E. Dooley, Esq., for the Town of Warwick, Harold R. Curtis, Esq., for the Town of North Providence, Arthur Cushing, Esq. and for the City of Cranston, Frank H. Wildes, Esq.,

The schedule of rates of the Providence Gas Company in effect except in the Riverside District of the Town of East Providence at the time of the filing of the schedule under investigation and the new schedule are as follows:

	Old Rate		New Rate	
	Gross.	Net.	Gross.	Net.
First 5,000 Cu. Ft. used in any one month	\$1.10	\$1.00	\$1.45	\$1.35
Next 5,000 Cu. Ft. used in any one month	1.05	.95	1.38	1.28
Next 40,000 Cu. Ft. used in any one month,	1.00	.90	1.32	1.22
Next 75,000 Cu. Ft. used in any one month.	.95	.85	1.25	1.15
Next 125,000 Cu. Ft. used in any one month,	.90	.80	1.18	1.08
Excess 250,000 Cu. Ft. used in any one month,	.85	.75	1.11	1.01

The old and new schedules for the Riverside District of the Town of East Providence are as follows:

	Old Rate		New Rate	
	Gross.	Net.	Gross.	Net.
First 5,000 Cu. Ft. used in any one month,	\$1.25	\$1.15	\$1.60	\$1.50
Next 5,000 Cu. Ft. used in any one month,	1.20	1.10	1.53	1.43
Next 40,000 Cu. Ft. used in any one month,	1.15	1.05	1.47	1.37
Next 75,000 Cu. Ft. used in any one month,	1.10	1.00	1.40	1.30
Next 125,000 Cu. Ft. used in any one month,	1.05	.95	1.33	1.23
Excess 250,000 Cu. Ft. used in any one month,	1.00	.90	1.26	1.16

The Company filed an exhibit, number one, containing a detailed statement of the costs per thousand cubic feet of gas for the first seven months of the calendar year 1917, for the month of August, 1917, and for each of the first five months of the calendar year 1918. This exhibit is hereto attached and marked Appendix A, and taken in connection with the exhibits set forth in Commission vs. Providence Gas Company, Number 39, furnished a complete statement of the costs of the Company for the years 1913, 1914, 1915, 1916, the first seven months of 1917, and for each month thereafter to and including May, 1918.

The Company justifies the proposed increase in rates on the ground of the greatly increased costs of gas materials which it is now bearing and with which it is confronted for the future.

These costs are indicated upon page eight of Exhibit Five :

"Prices of Coal and Oil per Exhibits Providence Gas Co.

Month Year		\$ L. Ton G. Coal	\$ S. Ton Ret. Fuel	\$ L. T. C. G. B. Fuel	\$ L. T. W. G. B. Fuel	\$ L. T. Generator Fuel	Cents Oil Per Gal.
Year	1913	3.57	4.36	2.12	3.27	5.12	5.3
Year	1914	3.55	4.24	2.55	3.62	5.29	6.9
Year	1915	3.55	4.25	2.42	3.28	5.30	3.4
Year	1916	3.59	5.70	3.20	4.34	6.15	3.1
7 Mo.	1917	4.05	6.60	4.92	6.30	6.64	3.0
Aug.	1917	4.55	7.50	6.84	7.52	8.54	6.5
Sept.	1917	5.52	7.50	5.61	5.61	7.30	6.5
Nov.	1917	4.95	7.50	6.38	5.71	6.95	6.33
Jan.	1918	4.39	7.50	6.23	6.23	8.47	6.5
Feb.	1918	4.25	9.00	6.23-A	6.23	9.90	6.5
Mar.	1918	4.39	9.00	6.08	6.08	9.90	6.5
April	1918	7.47	9.00	8.85	8.85	9.34	8.4
May	1918	8.17	9.00	6.72	6.72	9.62	8.5

A-6.33 given in Co. Exhibit,

It will be noted that the price of gas coal which for the period from 1913 to 1916 had ranged about \$3.55 per long ton, had increased to \$4.55 in August, 1917, and in April, 1918 was \$7.47, and had reached \$8.17 in May, 1918.

Retort fuel since January, 1918 has cost \$9.00 per short ton compared with \$7.50 paid since August, 1917, an increase of \$1.50 per ton.

Gas oil which from 1915 to August, 1917, had been secured at about three cents per gallon increased to about 6.5 cents until April, 1918, and for the months of April and May, 1918 cost 8.5 cents per gallon.

These costs are beyond the control of the Company and it does not appear that any relief in the form of lower prices can be anticipated.

Freight rates have been an important factor in the increased costs of coal. Rail freight rates have twice been substantially increased during the present year, and demurrage time has been limited by the Shipping Board

Under existing conditions the all rail freight rate upon coal is \$4.07 per ton, and the rail and water freight rate is \$5.61 per ton, while it appears that the average cost of gas coal unloaded in the

reserve pile at the works of the Company did not exceed \$3.59 per ton during the four years 1913 to 1916.

The increases in the manufacturing costs of gas may be seen from the following table made up from the figures contained in the Exhibits of this and the previous case:

"PROVIDENCE GAS COMPANY

Manufacturing Costs, Cents per 1,000 Cubic Feet of Gas.

		Net Cost.				
		Gas Coal.	Gas Oil.	Coal Gas.	Water Gas.	Mixed Gas.
1913-1916.	Average	31.9	18.7	19.5	36.6	27.8
1917.	Jan.-July, inc.	36.7	10.3	26.2	30.3	28.6
1917.	August.	43.2	21.0	38.4	42.9	41.3
1917.	September.	48.5	21.3	45.5	41.9	43.2
1917.	October.	44.3	20.9	53.1	42.3	45.4
1917.	November.	55.2	21.8	62.8	42.4	47.9
1917.	December.	55.5	23.5	66.5	50.1	54.4
1918.	January	39.8	23.2	33.1	48.0	42.8
1918.	February.	35.8	23.4	28.3	54.8	47.0
1918.	March.	38.6	25.3	*154.2	56.5	59.1
1918.	April.	82.7	28.4	114.6	69.0	76.9
1918.	May.	79.4	28.0	105.3	62.9	71.5

*Only 2% of output of month was coal gas, the supply of gas coal having been entirely exhausted.

Manufacturing Salaries and Labor.

Aside from the marked increase in the cost of materials, the increase in the amounts paid for manufacturing salaries and manufacturing labor has been very large.

Mr. Russell, Superintendent of Manufacture, has testified that these increased expenditures were absolutely necessary in order to maintain the output of the plant, and showed in detail the reasons therefor. We are convinced that the Company would not willingly pay excessive amounts in salaries and wages and it is fair to assume that such increases were almost compelled by the exigencies of the situation.

Mr. Alton D. Adams appeared as a witness presented by the City of Providence, and introduced as Exhibit five an analysis of the figures presented by the Company in Exhibit one. His summarized

conclusions based upon the costs as reported by the Company and upon the Company's capacity for coal gas production amounting to 20% of the output as appearing upon page C of Exhibit five are as follows:

"Cost of 20% Coal and 80% Water Gas Based On Prices of Materials and Charges For Labor In May, 1918, Per Ex. 1, Providence Gas Co.

Items	Ft. Gas Made	Cents Cost	Cts. per M. Sold
200 Lbs. Gas Coal at \$8.17 per L. T.	1,000	72.94	
60 Lbs. Coke for Retorts and Boilers.			
80 Lbs. Coke for W. G. Generator	2,000		
70 Lbs. Generator Fuel at \$9.62 per L. T.	2,000	30.03	
80 Lbs. Steam Coal at \$6.72 per L. T.		24.00	
3.5 x 4, or 14 gallons oil at 8.5 cts.		119.00	
Purification, Etc., at 0.5 ct. per M. for 5 M. Ft...		2.50	
Total Gas Materials	5,000	248.47	
Gas Sold, 5,000 x 0.95 equals 4,750 ft.			52.30
Tar and Ammonia Credit per Co.			2.20
Net Gas Materials			50.10
Manufacturing Labor per Co.			7.70
Net Gas Materials and Labor			57.80
Net Gas Materials and Labor, 42.8% C. G.			55.11
Excess Cost of 80% W. G. at Prices per Co. Ex. 1			2.69

The Superintendent of Manufacture and Chemical Engineer of the Company, Mr. Walter M. Russell, at the request of the Commission, prepared and presented Exhibit 18 in which he made a comparison of the actual costs of the Company based upon prices of materials and charges for labor in May, 1918, upon the same basis as Mr. Adams, and the comparison is indicated below:

	Adams.	Russell.	Difference.
Net cost gas materials	50.10 cts.	53.67 cts	3.57 cts.
Manufacturing Labor,	7.70	7.70	0
Total plant repairs and all depreciation,	16.00	25.62	9.62
Taxes,	5.39	6.67	1.28
Other Expenses,	10.00	13.08	3.08
Total cost and depreciation,	89.19	106.74	17.55
Interest and Dividends,	16.40	27.50	11.10
Total,	105.59 cts.	134.24 cts.	28.65 cts.

The conflicting contentions of Mr. Adams are indicated above and they may be briefly considered.

The classification of accounts as maintained by the Company appears to be excellent and in accord with the best practice of gas accounting.

Inasmuch as Mr. Adams has deemed it valuable and necessary to rearrange the expenses shown in the Exhibits of the Company in accordance with the practice which he states he has found convenient and has long followed, it has become necessary to depart from the Company's arrangement of expenses and to take the matter up on the basis of the suggested rearrangement.

Net Cost of Gas Materials.

Considering first the net cost of gas materials which Mr. Adams has fixed at 50.10 cents per M feet of gas sold as compared with 53.67 cents by Mr. Russell. Mr. Russell's figures are based upon the actual costs as are those of Mr. Adams. Mr. Russell has presented his calculations in detail and has shown himself to be well qualified as a practical and experienced superintendent of manufacture of gas, while Mr. Adams, although of long experience in matters concerning the valuation of gas plants and rate proceedings, has never been charged with the responsibility for the actual operation of such plants.

Under such circumstances we believe that Mr. Russell's figure is substantially correct.

Manufacturing Labor.

Manufacturing Labor costs are the same in both estimates.

Total Plant Repairs and all Depreciation.

The most radical difference is found in the item which Mr. Adams has seen fit to classify as "Total Plant Repairs and all Depreciation."

It was his contention that the Company had included under the item of repairs, expenditures for repairs that fully took care of any reasonable allowance that might be necessary for depreciation, and that therefore when the Company made book-keeping charge for 6.4 cents per M cu. ft. of gas sold for depreciation, it was really

charging a double amount for depreciation. He states that his estimate of a proper cost to cover plant repairs and all depreciation is 16 cents per M sold, based upon the examination of a large number of plants and upon his general experience.

An examination of the item which Mr. Adams has seen fit to classify as repairs for month of May, 1918, as appears on page four of Exhibit five shows it to be as follows, viz.:

"Expense Works Coal gas,	\$4,135
Repairs Works Coal Gas,	8,379
Repairs Benches,	15
Expense Works Water Gas,	2,324
Repairs Works Water Gas,	5,036
Repairs Mains, Meters, etc.	13,124
Total Repairs,	\$33,013'

The following which he has included are in no sense to be classified as repairs:

		Cents per M sold.
Expense Works Coal Gas	\$4,135	2.40
Expense Works Water Gas	2,324	1.35
Repairs, Mains, Meters, etc. under which have been included all distribution expense, the following items of which are in no sense to be classified as repairs:		
Complaint Expenses	\$1,503	.875
Books, Stationery, etc.	195	.113
Distribution salaries	978	.569
Gratuitous works	835	.486
Setting and removing meters	1,931	1.124
Expense outlying holders	505	.294
Expense high pressure distribution	458	.26
Total	\$6,405	
Total	\$12,864	7.496

Deducting this amount for the purpose of determining the actual expense of repairs:

		Cents per M sold.
Total Repairs per Adams	\$33,013	19.22
Less above items not repairs	12,864	7.49
Balance, Repairs	\$20,149	11.73

Mr. Adams although at first testifying that in his opinion five cents per M sold was an adequate depreciation allowance, later admitted that in view of the increased cost of materials and labor now prevailing he would not say that the company's estimate of 6.4 cents per M sold was excessive. If his estimate of 16 cents per M sold is correct it is clear that he has estimated 6.4 cents for depreciation and 9.6 cents for repairs other than depreciation.

The Company's costs for repairs when corrected as above show 11.73 cents actually expended for what Mr. Adams chooses to style "total plant repairs and all depreciation."

Deducting from 11.73 cents actually expended for repairs the 6.4 cents for depreciation would leave but 5.33 cents for repairs other than depreciation which is 4.27 cents less than the 9.6 cents which Mr. Adams must have used as the basis for his original estimate for repairs other than depreciation.

Mr. Adams presented on page two of Exhibit five, a statement covering the month of May, 1918, by which he undertook to show that for that month alone \$8,141 was expended for construction materials of all kinds, and added to such amount an equal amount as the estimated labor to place such construction material, making a total of what he is pleased to call "Construction in Repairs" of \$16,282.20 or 9.48 cents per M sold. It can only be said that it is based upon Mr. Adams assertion that it is a well known rule that a dollar of material costs a dollar to place, and upon the theory of the witness that the total cost of all construction material going into the plant in the form of repairs plus an equal amount for the cost of placing such material, gives the actual amount of "construction in repairs" which has gone into the plant to offset depreciation.

We are unable to find any authority for the application of such a rule which seems to utterly ignore the depreciation due to obsolescence.

The repair items of the Company do not appear excessive and when Mr. Adams made his original estimate (Page A, Exhibit Five) he must have based his estimate of depreciation on five cents per M sold, leaving 11 cents for repairs other than depreciation.

Mr. James T. Swan, a certified public accountant, of long experience in public utility accounting, and employed by the Commis-

sion to make a complete examination of the books, records and vouchers of the Company presented the following repair items for the six months period, January to June, 1918:

"PROVIDENCE GAS COMPANY
REPAIRS JANUARY—JUNE, 1918

Compiled from James T. Swan's Report.

REPAIR ITEMS

Repairs, Coal Gas	43,256.04	Sheet 2 of Schedules
Repairs, Water Gas	22,406.03	Sheet 3 of Schedules
Repairs, Mains	28,369.03	Sheet 4 of Schedules
Repairs, Services	5,712.89	Sheet 4 of Schedules
Repairs, Meters	10,635.33	Sheet 4 of Schedules
Repairs, Holders	1,021.83	Sheet 4 of Schedules

\$111,401 15

Gas Sold, Page 2 — Mr. Swan's Report — 1,089,475,000 Ft.
\$111,401.15 :- 1,089,475 M Fr. = .102 per M Cu. ft."

The repair expense per M sold may then be compared:

	<u>Per M Sold.</u>	<u>Depreciation.</u>	<u>Total.</u>
<i>James T. Swan.</i>			
January to June, 1918	10.2 cts.	6.4	16.6
<i>Exhibit One Company.</i>			
May, 1918.	11.7	6.4	18.1
<i>Alton D. Adams estimate.</i>			
May, 1918.	11.	6.4	17.4

The testimony does not show that the Company has improperly included items for repairs and we believe that it has not been shown that the Company's expense for repairs is unusual under the existing conditions. The exceptionally severe conditions of the last winter have an important bearing upon this matter, and would account for some increases out of the ordinary as to the item of repairs.

We therefore conclude that the Company is entitled to and should make a proper allowance for depreciation in addition to the item of repairs, and that this item has not been shown by Mr. Adams to be sufficient to offset depreciation as he has alleged.

Taxes.

The Company's actual expenditures plus assessments made show that the total of these items for the year will require 6.67 cents per M sold and this figure is of course to be taken rather than the estimate of Mr. Adams based on the year 1916, or 5.39 cents per M sold.

Other Expenses.

It is, of course, clear, in order to make a proper comparison with the figures of Mr. Adams for this item, that the amounts improperly included under his item "Total Plant Repairs and all Depreciation," should be now added to the figures of the Company for "Other Expenses," and if this is done, the sum of \$12,864 or 7.49 cents per M sold must be added to the total of \$22,480 or 13.08 cents, appearing on page 4 of Exhibit Five, making a total \$35,344 or 20.57 cents per M sold as the total of "Other Expenses," according to the Adams classification.

Mr. Adams has testified that his opinion based upon the examination of similar expenses of many companies, particularly in the neighboring State of Massachusetts, leads him to state as his estimate that 10 cents per M sold is a proper and fairly liberal allowance for such items. In other words, that the expenditure of the Company for such items 20.57 cents per M sold is extravagant and more than double the amount that is necessary.

We are unfortunately unable to make any proper comparison of these items with other cities, owing to the fact that Mr. Adams has included all of the distribution expenses under the item of plant repairs, and, as has been shown and will clearly appear by an examination of Exhibit 12 of the Company, a large part of such expenditures for May, 1918, in fact, \$6,405, out of a total of \$13,124, charged as distribution expenses, are not to be classified under any reasonable interpretation as repairs.

We are therefore compelled to make comparison of the accounts of the Company other than for manufacture with those of the companies supplying gas in the Massachusetts cities of Fall River, Springfield and Worcester, for the purpose of throwing light upon this question. The accountant of the Commission has made this

comparison as appears by the last sheet of Exhibit 24, and the total in cents per M manufactured, for the items Distribution Expense, Commercial Expense, General Expense and New Business for the year 1917, the figures representing for Providence the calendar year 1917, and those for the Massachusetts cities being for the year ending June 30, 1917, the latest figures at present available, is as follows:

	Providence.	Fall River.	Springfield.	Worcester.
Dist. Expenses,	7.481 cts.	6.492 cts.	12.009 cts.	6.874 cts.
Commercial Exp.				
General Exp.	10.743	8.258	5.429	5.892
New Business				
Total	18.224 cts.	15.200 cts.	17.438 cts.	12.766 cts.

The figures for Providence are the highest although it would seem that for the items other than that of distribution expense they should be considerably lower because of the much larger output of gas to which these overhead expenses would apply, being nearly double that of the largest cities with which the comparison is made.

A careful examination has been made into the above items, and from such examination it is apparent that no recent substantial increase has been made in the expenditures under these items. The general salaries do not appear excessive for a company of this size. The President and Engineer receives a salary of \$13,500, charged to manufacture, and an additional allowance of \$11,500, is paid him for engineering services in connection with the installation of the new coke oven plant, which is charged to the construction account for the new plant, and therefore does not affect the manufacturing and other costs with which we are concerned in the proceeding. The general office salaries certainly cannot be called excessive.

We have been unable to examine into the detail of the other items under these headings, but it is apparent that the total of such expenditures is considerably larger by comparison than that of the companies in the other cities with which comparison is made. While it is true that under these items are included all of those activities of the Company whereby it comes in contact with its consumers, and that a radical curtailment of such activities would result in de-

prising the consumer of certain elements of service to which he has long been accustomed, it is here and here only that economies to suit the emergency conditions can possibly be effected.

While we believe that the estimate of Mr. Adams of 10 cents for such "other expenses" is much too low to cover the items which must be therein included, we are not prepared to say that the Company has clearly justified its estimate of the amount necessary for these items, as a basis for its reasonable requirements for the future.

Interest and Dividends.

Mr. Adams sees no distinction between interest and dividends and it is apparent that his estimate of 16.4 cents per M sold as a sufficient allowance for interest and dividends must be based upon the amount remaining available for that purpose after providing for the manufacturing and other costs, and securing the estimated income from a rate of 1.05 cents per M net as appears by Page A of Exhibit Five.

The interest charges of the Company for the month of May, 1918, are 3.5 cents per M sold, which deducted from the 16.4 cents allowed by Adams, leaves 12.9 cents per M sold available for dividends.

Since it requires 3 cents per M sold to cover each one per centum of dividends paid upon the outstanding capital stock of the Company, it is apparent that Adams would leave but 4.3% for a dividend upon the capital stock outstanding.

The Commission is asked by Mr. Adams to ignore the sworn testimony of the fact that every share of the capital stock of the Company, totalling \$6,300,000, has been paid for in cash at par, and to substitute therefor as a basis for dividends a value of \$5,250,000, being \$1,050,000 less than the amount of the capital stock. Mr. Adams arrives at his figure by the very simple method of multiplying each M cu. ft. of gas sold annually by the Company, being 2,100,000,000 cu. ft., by the mystic figure of \$2.50, and without further ado, we are asked to shrink the value of the capital stock of the Company by the sum of \$1,050,000, and to use his reduced figure as a basis for the fair value upon which the Company is entitled to a return.

No evidence has been produced in this investigation to show that the fair value of the property of the Company does not equal its capital stock outstanding.

Its book value has been testified to as of December 31, 1917, as being \$7,906,801, and deducting therefrom the item carried as depreciation of \$1,011,042, the balance is \$6,895,759.

As we said in the case of Commission vs. Providence Gas Company, No. 39:

"We firmly believe that the public interest requires that the credit of this utility locally owned, controlled and financed, shall be maintained in order that capital may be readily available for additions and extensions and that such credit can be best maintained by a continuance of the annual dividend rate of eight per cent. upon its capital stock, each dollar of which has been actually paid in cash."

The item for interest has increased somewhat for the month of May over that of previous months, but the treasurer shows that this has been due to an increase in the prevailing rates of interest.

An allowance of 3.5 cents per M sold for interest and of 24 cents per M sold for the requirements of an eight per cent dividend, or a total of 27.5 cents per M sold for interest and dividends does not appear unreasonable.

We have been compelled to use the Adams arrangement in order to make comparisons between his estimates and those of the Company's, and as has been shown, the results are somewhat unsatisfactory because of the inclusion by Adams as plant repairs of improper items.

The Company's estimates are on the basis of the May costs and cannot be said to be unreasonably large in view of the conditions which the future seems to indicate.

It would appear certain that a base rate of at least \$1.30 per M sold is necessary to reasonably compensate the Company for the services rendered.

The accountant of the Commission made a careful examination of the books, vouchers and records of the Company and has presented his report which was numbered as Exhibit 24, and is hereto attached as Appendix B.

Sheet one of this Exhibit shows a comparative statement of the Company for the several years 1914 to 1917, and for the first six months of 1918.

The following comparison of the year 1917 with 1918, (first six months) clearly illustrates the necessities of the Company.

TABLE J.

PROVIDENCE GAS COMPANY
COMPARATIVE STATEMENT COST PER 1,000 FEET.

	1917.		1918.	
	Per 1,000 Manuf'd. Amount.	Cents.	Per 1,000 Manuf'd. Amount.	Cents.
<i>Gross Income.</i>				
Minimum Charge	\$ 4,582.04		\$ 3,482.69	
Metered Charge	1,799,507.75		1,066,353.64	
<hr/>				
Gross Sales	\$1,804,089.79	86.550	\$1,069,836.33	96.396
Less Discount	6,743.76			
<hr/>				
Net Sales	\$1,797,346.03	86.227	\$1,069,836.33	96.396
<i>Expenses.</i>				
Mfg. Coal Gas	\$ 274,107.63	35.915	\$ 162,751.72	67.419
Mfg. Water Gas	488,802.64	36.996	514,930.51	59.296
<hr/>				
Total Mfg. Cost	\$ 762,910.27	36.600	\$ 677,682.23	
Less Gas in Holders			1,643.85	
<hr/>				
Net Mfg. Cost	\$ 762,910.27	36.600	\$ 676,038.38	60.914
Distribution	155,928.44		\$ 95,499.40	
Commercial	138,524.11		76,332.35	
General	63,531.07	24.181	36,465.00	25.747
New Business	21,867.23		11,450.18	
Taxes	124,163.82		66,000.00*	
<hr/>				
Total Expense	\$1,266,924.94	60.781	\$ 961,785.31	86.661
Net Income	\$ 530,421.09	25.446	\$ 108,051.02	9.735
Interest	29,147.64	1.398	32,764.80	2.952
<hr/>				
Balance to Profit and Loss.....	\$ 501,273.45	24.048	\$ 75,286.22	6.783
<hr/>				
Coal Gas Manufactured	763,215M		241,418M	
Water Gas Manufactured	1,321,214M		868,399M	
Total Output	2,084,429M		1,109,817M	

*Accrued.

The net income of the Company per 1,000 cu. ft. manufactured has fallen from 25.446 cents to 9.735 cents and when interest charges have been deducted, the balance remaining to profit and loss from which both dividends and depreciation must be cared for has fallen from 24.048 cents to 6.783 cents. When it is considered that a de-

preciation allowance of 6.4 cents has been generally agreed to as not excessive, it will be seen that the Company has remaining practically nothing for dividend requirements, which upon an eight per cent basis would require 24 cents per M sold.

The Commission finds that the Company has sustained the burden of proof and has shown that an increase of 30% in its rates is necessary in order to obtain a reasonable compensation for the services it renders, but that it has not sustained such burden as to the increase of 35% contained in its proposed schedules.

The existing differential of fifteen cents per M cu. ft. for gas supplied to the Riverside District of East Providence will be maintained.

Such a rate schedule upon the basis of the figures shown by the accountant of the Commission for the sales of the first six months of 1918, should produce additional revenue for a six month period of \$305,604.80, or \$50,934.13 for an average month, as shown by the following table:

TABLE K.

M. Cu. Ft. Sold.	Old Rate.	Amount.	New Rate.	Amount.	Increase.
25,663.2	\$.55	\$ 14,114.77	\$.55	\$ 14,114.77	.....
39,469.3	.75	29,601.72	1.04	41,048.07	11,446.35
22,119.3	.80	17,695.42	1.04	23,004.07	5,308.65
32,828.9	.85	27,904.60	1.10	36,111.79	8,207.19
66,302.3	.90	59,672.11	1.17	77,573.69	17,901.58
68,964.7	.95	65,516.40	1.23	84,826.58	19,310.18
632,421.1	1.00	632,421.19	1.30	822,147.43	189,726.24
11,527.3	1.05	12,103.67	1.32	15,216.03	3,112.36
175,494.1	1.10	193,043.58	1.38	242,181.85	49,138.27
4,846.7	1.15	5,573.72	1.45	7,027.71	1,453.98
86.8	1.20	104.16	1.20	104.16	.....
2,179.	1.25	2,723.73	1.25	2,723.73	.....
115.8	{ 1.35 1.45	158.48	{ 1.35 1.45	158.48	.....
		1,060,633.56		1,366,238.36	305,604.80

Increase for average month, \$50,934.13.

The last step of the proposed schedule of the Company should be eliminated, as an increase of 30% in the existing net rate of 75 cents per M for amounts in excess of 250,000 cu. ft. in any one month would make a rate of 97.5 cents which would not in the opinion of the Commission adequately compensate the Company. The rate for all amounts in excess of 125,000 cu. ft. in any one month should be 30% increase over the existing rate of 80 cents or 1.04 cents net.

The rates herein specified are based upon the maintenance by the Company of an average standard of 580 B. T. U. per cubic foot of gas, excepting in so far as the maintenance of such quality of gas becomes physically impossible through inability of the Company to secure proper materials or through the intervention of Federal Authority, of either of which facts the Company shall at once give notice to the Commission.

The application of the Company for a rate increase is frankly stated to be an emergency proceeding.

A new coke oven plant will be placed in operation early next year which should enable the Company if it is permitted by the Fuel Administration to secure the necessary gas coal, to materially reduce its manufacturing costs, and at such time as the new plant has been placed in operation and its manufacturing costs can reasonably be determined, the Commission will take up the matter of a re-adjustment of rates to meet the new conditions.

The present situation as to public utilities has been well stated in a recent decision of the California Railroad Commission, in a proceeding wherein substantial increases in gas and electric rates were granted to the utilities operating in and about the City of San Francisco.

" The war has produced abnormal business conditions which affect the business of producing and distributing gas as it has affected all other business and where the utility service is under regulation and the price at which the service is sold to the public is dictated by public authority the companies are helpless, unless public authority will extend prompt relief."

"Entirely aside from the question of justice and fairness to the owners of these utility properties, it is seriously to be considered that, unless the public utility companies are maintained in a reasonably sound financial condition, they will no longer be able to serve the public efficiently, as it is a demon-

strated fact that a weak and struggling company is incapable of producing good service."

"Furthermore, it is not only a sound public policy for regulatory bodies. but it is the emphatically declared policy of the Federal Administration that as far as possible business institutions be not allowed to go into bankruptcy, thus seriously disturbing the financial fabric of the country."

"The President of the United States, the Secretary of the Treasury and the Comptroller of the Currency has each spoken clearly and definitely on this subject, and we believe that this commission, having ample information, should without hesitation place utility rates on such a basis as to properly safeguard the financial stability of public companies that they may not fail in their service to the public and become a menace to the finances of the country, having in mind, of course, the reasonable capitalization of companies."

* * * * *

After full hearing and mature consideration of the evidence in the above entitled case, it is

ORDERED, ADJUDGED AND DECREED:

First: That the schedule of rates filed by the Providence Gas Company under date of July 12, 1918, effective September 1, 1918, in so far as the same differs from the schedule of rates herein ordered to be placed in effect, is unreasonable, unjust and unjustly discriminatory.

Second: That said Providence Gas Company establish and maintain for all gas billed after the first day of September, A. D. 1918, the following schedule of rates:

For gas sold in the Cities of Providence and Cranston and the Towns of North Providence, Johnston, Smithfield, Warwick and East Providence, except in the Riverside District of said Town of East Providence:

	Gross.	Net.
For the first 5,000 cu. ft. used in any one month,	\$1.40	\$1.30
For the next 5,000 cu. ft. used in any one month,	1.33	1.23
For the next 40,000 cu. ft. used in any one month,	1.27	1.17
For the next 75,000 cu. ft. used in any one month,	1.20	1.10
For all in excess of 125,000 cu. ft. used in any one month,	1.14	1.04

For gas sold in the Riverside District of East Providence:

	Gross.	Net.
For the first 5,000 cu. ft. used in any one month,	\$1.55	\$1.45
For the next 5,000 cu. ft. used in any one month,	1.48	1.38
For the next 40,000 cu. ft. used in any one month,	1.42	1.32
For the next 75,000 cu. ft. used in any one month,	1.35	1.25
For all in excess of 125,000 cu. ft. used in any one month,	1.29	1.19

Third: That said Providence Gas Company shall allow the discount of ten cents on each one thousand cubic feet of gas consumed in any one month whenever the bill for such gas is paid within fifteen days from the date of the bill.

Fourth: That said Providence Gas Company be permitted to charge a minimum rate of fifty cents per month, subject to a refund if the consumer's bill exceeds the sum of Six Dollars per year.

Fifth: That said Providence Gas Company file with the Public Utilities Commission on or before September 1st, 1918 a cancellation of its schedule of rates filed with the Commission under date of July 12, 1918, together with a schedule of rates to conform with the requirements of this order.

Dated this thirty-first day of August, A. D. 1918.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

By

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,
Commissioners.

(SEAL)

Upon consideration of the matter of the proposed schedule of rates filed by the Rhode Island Company, August 15, 1918 to become effective September 15, 1918, the following notice is issued to said The Rhode Island Company, the City of Providence, the Town of East Providence and Conimicut Volunteer Fire Company Number One:

“PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

COMMISSION ON IT'S OWN MOTION	}	No. 43.
<i>vs.</i>		
THE RHODE ISLAND COMPANY.		

Whereas, The Public Utilities Commission did on the fifteenth day of August, A. D. 1918, receive from The Rhode Island Company in accordance with the provisions of Section 48 of Chapter 795 of the Public Laws, passed at the January Session, A. D. 1912, as amended by Section 1 of Chapter 1651 of the Public Laws, passed at the January Session, A. D. 1918, notice of certain changes proposed to be made in certain schedules heretofore filed with said Commission, effecting substantial changes in its existing system of zone fares, and largely increasing the existing rates of fare, now maintained by said The Rhode Island Company, and

Whereas, The Public Utilities Commission, did on the fifteenth day of August, A. D. 1918, commence an investigation as to the propriety of such proposed changes, and as to the reasonableness of the rates therein contained, and did on the sixteenth day of August, A. D. 1918, give notice thereof to said The Rhode Island Company in accordance with the provisions of Section 20 of Chapter 795 of the Public Laws, passed at the January Session, A. D. 1918:

NOW THEREFORE,

(433) It is hereby ORDERED:

First: That pending the decision of the Commission upon the propriety of the proposed changes and as to the reasonableness of the rates therein contained, the taking effect of the changes proposed

in said schedules R. I. P. U. C. Numbers 61 to 68 inclusive, is hereby suspended until November 15, A. D. 1918.

Second: That notice of said order be forthwith served upon said The Rhode Island Company.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

By
WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,
Commissioners.

September 4, 1918."

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

COMMISSION ON IT'S OWN MOTION }
vs. } No. 43.
 THE RHODE ISLAND COMPANY. }

The Rhode Island Company filed with the Commission on August 15, 1918 a schedule of passenger rates of fare involving an estimated increase of \$2,162,000 in annual revenue. It was proposed to secure \$1,990,000 of this additional revenue through the medium of fare increases and the remaining \$172,000 by the fixing of a one cent charge for transfers, provided for by supplements to the tariffs providing for the fare increases and filed with the Commission after the decision of the War Labor Board had been made increasing the wages of the employees of the Company.

The proposed schedule was to become effective on September 15, 1918 and on September 4, 1918 the Commission suspended the effective date until November 15, 1918.

The gross estimated revenues for 1919 at the present rates of fare are estimated at \$6,464,000. This amounted to an increase of 33.45 per cent in operating revenues, which increase from the standpoint of the public was substantial and almost revolutionary.

The Commission proceeded to investigate the proposed increases with all the expedition possible.

Under the provisions of the Public Utilities Act at least twenty days must elapse after the Commission has issued notice of investigation before hearings may be held and the first hearing was held on the 16th day of September. The Company completed its presentation on the eighth day of October.

Nearly all of the cities and towns wherein the company operated entered their appearances, and adopted resolutions opposing the increase in rates, and were given an opportunity to present their views and such testimony as seemed to them to be material.

Counsel for the union of street car men presented the situation that confronted the members of that organization and urged that prompt action be taken in order not only that the men might receive the added compensation fixed by the award of the War Labor

Board, but also in order that the men might not leave their work to seek other employment.

A voluntary committee of men most prominent in the financial, manufacturing, commercial and economic affairs of the community also sought an opportunity to be heard before the Commission and very strongly urged that in the emergency which plainly confronted the community, the Commission should grant immediate emergency relief to The Rhode Island Company in order that the trolley service might be continued.

Hearings were closed on October 16th.

It appears that for the calendar year of 1919, the Company will be faced by the following financial showing:

Operating Revenues at present rates of fare		\$6,464,000
Operating Expenses at present prices	\$5,152,000	
Taxes	711,000	
Wage Increase Award by War Labor Board	1,046,670	
Total Operating Expenses and Taxes		6,909,670
Deficiency		\$445,670

To properly provide for the wear and tear caused by this year's use, an estimated sum from \$275,000 to \$400,000 should be added to the Operating Expenses as above and consequently to the Deficiency, making the Deficiency at least \$720,670, and by some estimates as great as \$845,670.

It is of course apparent that in the above figures, no allowance whatever is included for interest, rentals or return in any form on the capital investment.

(See Substitute Exhibit No. 17).

The fixed charges of the company are as follows:

Annual Rentals (See Exhibit 26)		\$1,161,544
Interest on Funded debt, Industrial Trust Co. (See Exhibit 1, page 27)		83,100
Interest on Unfunded debt, N. Y. N. H. & H. R. R. (See Exhibit 1, page 27)		223,624
Miscellaneous		12,640
Total fixed charges		\$1,480,908

Summarized, then, for the calendar year 1919, the Company will fall short of paying operating expenses and fixed charges as above stated, as follows:

Deficiency after operating expenses and taxes	\$445,670
Accrued depreciation not cared for out of current maintenance, between \$275,000 and \$400,000, say	300,000
Fixed charges as above	1,480,908
<hr/>	
Total	\$2,226,578
Less other income, dividends on stock of United Traction and Electric Co.	\$115,000
<hr/>	

Total Deficit before any return to The Rhode Island Company \$2,111,578

These conditions have been created in a considerable degree by the direct and necessary intervention of the Federal Government.

Note Estimated Increased Annual Cost of Coal Due to Regulations of the Federal Government based upon Tonnage (91,869 tons) used year to June 30, 1918. (See Exhibit No. 36)	\$468,989
Increase in Annual Federal Taxes paid by The Rhode Island Company due to War Conditions (Assumes the Passage of Revenue Bill now pending before the Senate). (See Exhibit 38)	90,300
Estimated Annual Increase in Pay Rolls Due to Increase in Rates of Wages by Award of War Labor Board. (See Exh. 34, based upon expected award, which War Labor Board exceeded.)	1,046,670
<hr/>	

Total Increases due to Necessities of Federal Government, as indicated by their duly constituted authorities. \$1,605,959

The financial situation confronting The Rhode Island Company is indicated in the following tabulation which summarizes the results of operation for the calendar year of 1917, and compares the same with the calendar year of 1918, the first seven months showing actual results and the remaining five months estimated together with the estimated results for operation for the calendar year of 1919. These figures are based so far as the estimates are concerned upon the revenues that can be derived from the present system of fares, and upon the expenses that will be incurred by the Company by reason of the wage award of the War Labor Board which dates back to July 19th, A. D. 1918.

TABLE L.
THE RHODE ISLAND COMPANY.

Calendar Year.	1917. Actual.		
	Amount.	Per cent. Operating Revenue.	Part of Each Nickel.
Total Operating Revenue	\$6,000,602	100.	5.
Less Total Operating Expenses	4,519,003	75.3	3.765
Net Operating Revenue	\$1,481,599	24.7	1.235
Less Taxes	655,250	10.9	.545
Net Operating Revenue Less Taxes	\$826,349	13.8	.690
Other Revenue	115,482	1.9	.095
Total Income	941,821	15.7	.785
Fixed Charges:			
Rentals	1,161,544	19.3	.965
Interest on Funded Debt	83,100	1.4	.070
Interest on Unfunded Debt	197,428	3.3	.165
Total Rent and Interest	\$1,442,072	24.0	1.200
Discount Amortization	\$10,441	0.2	.....
Miscellaneous Debits	2,168	....	.....
TOTAL FIXED CHARGES	\$1,454,681	24.2	1.210
NET INCOME	*\$512,850	*8.5	*.425

*Deficit.

TABLE M.

THE RHODE ISLAND COMPANY.

Calendar Year.	1918. Actual for first Seven Months and Estimated for Remaining Five Months. (Includes Wage Award from July 19, 1918.)		
	Amount.	Per cent. Operating Revenue.	Part of Each Nickel.
Total Operating Revenue	\$6,222,815	100.	5.
Less Total Operating Expenses	5,463,020	87.8	4.390
Net Operating Revenue	\$759,795	12.2	.610
Less Taxes	684,500	11.0	.550
Net Operating Revenue Less Taxes	\$75,295	1.2	.060
Other Revenue	115,000	1.8	.090
Total Income	\$190,295	3.0	.150
Fixed Charges:			
Rentals	\$1,161,544	18.7	.935
Interest on Funded Debt	83,100	1.3	.065
Interest on Unfunded Debt	223,624	3.6	.180
Total Rent and Interest	\$1,468,268	23.6	1.180
Discount Amortization	\$10,440	0.2	.....
Miscellaneous Debits	2,200	.....	.....
TOTAL FIXED CHARGES	\$1,480,908	23.8	1.190
NET INCOME	*\$1,290,613	*20.8	*1.040

*Deficit.

TABLE N.
THE RHODE ISLAND COMPANY.

Calendar Year.	1919. Estimated. Includes Wage Award.		
	Amount.	Per cent. Operating Revenue.	Part of Each Nickel.
Total Operating Revenue	\$6,464,000	100.	5.
Less Total Operating Expenses	6,198,670	95.9	4.795
Net Operating Revenue	\$265,330	4.1	.205
Less Taxes	711,000	11.0	.55
Net Operating Revenue Less Taxes	*\$445,670	*6.9	*.345
Other Revenue	115,000	1.8	.090
Total Income	*\$330,670	*5.1	*.255
Fixed Charges:			
Rentals	\$1,161,544	18.0	.900
Interest on Funded Debt	83,100	1.3	.065
Interest on Unfunded Debt	223,624	3.4	.170
Total Rent and Interest	\$1,468,268	22.7	1.135
Discount Amortization	\$10,440	0.2	.....
Miscellaneous Debits	2,200	.....	.....
TOTAL FIXED CHARGES	\$1,480,908	22.9	1.145
NET INCOME	*\$1,811,578	*28.0	*1.400

*Deficit.

It will be seen from an examination of the above table that as result of the operation of the company for the calendar year of 1917 there was a deficit of \$512,850 or 8 1-2% of the total revenue, and that to each five cents taken in the company was obliged to add .425 of a cent in order to maintain the operation of the system. For the calendar year of 1918 the company is faced with a deficit of \$1,290,613, or 20.8% as much as its total estimated revenue under the present fares, and it will be necessary for the company to place 1.04 cents alongside of each five cents taken in in revenue in order to maintain its operation.

Should it be permitted only the present rates of fare for the calendar year of 1919, it will be faced with a deficit of \$1,811,578, or 28% as much as its total estimated revenue, and 1.4 cents will have to be added to each five cent fare received by the company in order to maintain operation.

For the year 1918 the company will have remaining after the payment of operating expenses and taxes but \$190,295, with which to meet fixed charges of \$1,480,908. For the year 1919 the company will fall short of paying its operating expenses and taxes by \$330,670, with nothing at all available for the payment of fixed charges of \$1,480,908.

A further analysis of the figures disclosed in the above table shows that the Company is faced, since the application of the wage award by the War Labor Board which dates back to July 19, 1918, with a situation similar to that presented in the estimates for the year 1919. These estimates indicate a deficit for the twelve months of that year of \$1,811,578. To this should properly be added the sum of \$300,000 to adequately cover the actual depreciation for the twelve months that has not been cared for by renewals and replacements out of current maintenance, making a total annual deficit of \$2,111,578. Translated, this means an actual loss to the Company on the former basis of \$159,166 a month or \$4,961 per day, and on the latter basis a loss of \$175,997 a month or \$5,785 a day. The above facts show the need of immediate and substantial relief to meet the emergency.

The proposed rate schedules have been prepared for the Company by Mr. James A. Emery, Street Railway Expert of the en-

gineering firm of Ford, Bacon and Davis, which was retained by the Federal Trustees in charge of the properties to prepare and present a schedule of rates sufficiently increased to produce the additional revenue required in order to continue the operation of the Company.

Mr. Emery is thoroughly familiar with the conditions surrounding the Company having made a valuation of the property in 1916, and having appeared before the Special Commission for the Investigation of the Affairs of The Rhode Island Company when the problem was before that Commission. He is an acknowledged expert upon such matters and his advice, judgment and opinion is extremely valuable.

The new system is based upon a contraction of the central five cent fare zone about the Providence traffic centre from 2.5 miles air line, to two miles, with an average track mileage of 2.4 miles, thereafter a series of five cent fare zones, the first extending air line for 1.75 miles, with an average track mileage of two miles, the second and succeeding zones extending 1.5 track miles theoretically but averaging about 1.7 track miles when placed in practical operation.

About the traffic centres of Pawtucket, Woonsocket and River Point the two mile air line radius is maintained.

Difficulties of collection and difficulties in the application of the large increase of fares required by the present emergency, have led Mr. Emery to the belief that the present more equitable two-cent zone system cannot be modified to meet the situation. He frankly presents his plan as one designed to best meet the needs of the present emergency.

Without going into the details of his computation it may be stated that he estimates that it will produce the following amounts of additional revenue annually:

Fare Increases (See Exhibit 20)	\$1,990,000
One Cent charge for transfers (Testimony Emery, p. 767 of Transcript of Evidence)	172,000
	\$2,162,000

The Commission has made as careful an analysis of the new rate schedules as has been possible in the limited time at its disposal.

The Commission believe that the principle of the proposed rate

schedule is sound, and that in its application to the present emergency it is not unreasonable or unjustly discriminatory.

The application of a one cent charge for transfers carries with it all the objections stated in the report of the Special Commission, but it appears to be necessary in the present emergency.

All of the revenue from this additional charge within the City of Providence will no more than pay the \$120,000 of annual franchise tax which the Company must pay to that city.

Whether the proposed schedule will produce the anticipated revenue, the Commission is not prepared to say. It believes that it should be given a fair trial as an emergency schedule and we will permit it to become effective for a period of four months, requiring a detailed monthly report of its operation to be made to the Commission and the public. It is believed that certain minor modifications of the schedules which are in no sense inconsistent with the theory of the system upon which the rate schedules are based, will be of advantage to both the Company and the public, and such modifications are hereinbelow stated.

Branch Avenue Line. The five cent fare limit should be placed at Veazie Street.

Hughesdale. The village of Hughesdale should be included in the ten cent fare limit as it is almost as close to Providence in an air line as Thornton, and to place it within the fifteen cent fare zone would require a ten cent fare to Olneyville Square.

Taunton Avenue, Taunton Connection, Fall River Connection. In order that the track mileage distance should reasonably compare with that of other lines, the five cent fare limit should be placed at Broadway Six Corners for these lines.

Rumford. For similar reason the central five cent fare limit should be placed at Broadway Six Corners.

Riverside. For a similar reason the central five cent fare limit should be placed at Ingraham's Corner.

Pawtucket-Cumberland Hill. Establish an over lap for South bound passengers making zone from Barrett Street to Town Hall, Valley Falls. The first intermediate zone north bound should extend from Railroad Crossing to Barrett Street, and the second from Barrett Street to Pole No. 487.

Buttonwoods and Rocky Point Lines. Third intermediate zone should extend from Palace Garden to Conimicut, which has a permanent population. Fourth intermediate zone should extend from Conimicut to Longmeadow. Fifth intermediate zone should extend from Longmeadow to Meadow View or Rocky Point. These modifications will relieve to some extent the residents of Conimicut and Longmeadow, while in no way violating the theory of the rate system.

Providence-East Greenwich. Fourth intermediate zone should extend from Hills Grove to Town Hall at Apponaug, and the fifth intermediate zone should extend from the Town Hall, Apponaug to the Cowesett Post Office.

Sea View Railroad. Fifth intermediate zone should extend from Babbitt Cottage to Wickford, and the sixth intermediate zone should extend from Wickford to Green Farm.

It must be remembered that the Commission has before it an application of The Rhode Island Company only, that it must pass upon the reasonableness of that application, and in the light of the conditions surrounding that Company alone.

We apprehend that it is the duty of the Commission to the public to see that the trolley service does not cease in this community, that that duty extends beyond the mere interest of the community or State as such, that the duty reaches outside the State and to the Nation, in order that no obstacle may be placed in the way of the production of the essential munitions that this State is producing to meet the needs of the Nation in the present war.

The President of the United States and the Secretary of the Treasury have addressed themselves to the public rate regulating bodies of the several states urging prompt and adequate relief to enable the continuous operation of the trolley service.

The National War Labor Board in making its award, *In re Employees vs The Rhode Island Company* has presented the situation in the following words:

'This increase in wages will add substantially to the operating cost of the company and will require a reconsideration by the proper authorities of the fare which the company is allowed by law to collect from its passengers.

We make part of this award the words we have used in the award in the Cleveland case:'

"We have recommended to the President that special congressional legislation be enacted to enable some executive agency of the Federal Government to consider the very perilous financial condition of this and other electric street railways of the country, and raise fares in each case in which the circumstances require it. We believe it to be a war necessity justifying Federal interference. Should this be deemed unwise, however, we urge upon the local authorities and the people of the locality the pressing need for such an increase adequate to meet the added cost of operation.

This is not a question turning on the history of the relations between the local street railways and the municipalities in which they operate. The just claim for an increase in fares does not rest upon any right to a dividend upon capital long invested in the enterprise. The increase in fare must be given because of the immediate pressure for money receipts now to keep the street railways running so that they may meet the local and national demand for their service. Overcapitalization, corrupt methods, exorbitant dividends in the past are not relevant to the question of policy in the present exigency. In justice the public should pay an adequate war compensation for a service which cannot be rendered except for war prices. The credit of these companies in floating bonds is gone. Their ability to borrow on short notes is most limited. In the face of added expenses which this and other awards of needed and fair compensation to their employees will involve, such credit will completely disappear. Bankruptcy, receiverships and demoralization, with failure of service, must be the result. Hence our urgent recommendation on this head."

The wish of the Federal Government as thus expressed through its duly constituted agencies should be a command in the present emergency, and these substantially increased rates of fare, to a large extent made necessary by Federal Action as hereinbefore indicated, should be accepted by the public in such a spirit.

The situation is extremely serious and particularly because it appears that a continuance of the operation of the trolley service can not be assured in the event of receivership of The Rhode Island Company, since it is extremely probable that the United Traction & Electric Company would be unable to finance the operation of the companies which it controls since it would be confronted with substantially the same conditions of increased costs that confront The Rhode Island Company.

The operation of the Providence and Burrillville Line to Woonsocket, the Woonsocket Street Railway, the Columbian Street Railway to Pascoag, the Providence and Danielson Railway which includes the line to Chepachet, and the Sea View Railroad, would in all probability be immediately suspended, and it would appear

doubtful whether the operation of the two latter lines would ever be resumed.

The public welfare requires a continuance of operation of service by The Rhode Island Company until some definite method of maintaining a continuance of trolley service can be devised.

The Commission has been compelled by the exigencies of the situation to present its findings and report and to make its order within three days of the close of the hearings, but it will as soon as possible present a supplementary and detailed analysis of the matters involved in order that the facts surrounding this important problem may be more fully set forth and understood.

It appearing that on September 4, 1918, an order was entered suspending until November 15, 1918, the rates and charges stated in said order; and

It further appearing that a full investigation of the matters and things involved has been had, and that the Commission on the date hereof has made and filed a report containing its findings of fact and conclusions thereon, which said report is herein referred to and made a part hereof, it is

ORDERED:

First: That The Rhode Island Company file with the Public Utilities Commission on Monday, October 21st, A. D. 1918, supplements in modification of its Tariffs Numbers 61 to 68 inclusive filed with the Commission on August 15th, A. D. 1918, in accordance with the findings hereinbefore set forth.

Second: That The Rhode Island Company be permitted to make said tariffs, together with the supplements thus modifying the same, effective upon Wednesday, October 23rd, A. D. 1918.

Third: That The Rhode Island Company be permitted to make effective upon Wednesday, October 23rd, A. D. 1918, its Supplement No. 2 to its tariffs Numbers 61 to 68 inclusive, filed with the Commission on October 7th, A. D. 1918, said supplement providing for all transfers issued on its system a charge of one cent.

Fourth: That said tariffs and supplements so made effective

shall be and remain effective until the first day of March, A. D. 1919.

Fifth: That The Rhode Island Company be required to file with the Public Utilities Commission a detailed financial statement showing the monthly results of the operation of the tariffs hereby authorized.

Dated this nineteenth day of October, A. D. 1918.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

By

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,
Commissioners.

"PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

CITY OF NEWPORT	}	No. 4.
<i>vs.</i>		
NEWPORT WATER WORKS		
EDWARD L. SPENCER ET AL	}	No. 15.
<i>vs.</i>		
NEWPORT WATER WORKS		

These complaints, one filed by the City of Newport and the other by twenty-five qualified electors of said City, both allege, in substance, that the rates charged by said respondent are inequitable and unjust and that its practices are detrimental and dangerous to the health of the inhabitants of said city.

The complainants petition for the establishment of a more fair and equitable table of rates, or that the meter system of measurement be substituted for the flat rate system in effect and that a rule be established by the Commission prohibiting the respondent from shutting off water because of failure to pay the rates established.

The allegations in each case being substantially the same, the cases were heard jointly, hearings being held on the 18th and 28th days of August, A. D. 1913, the 24th and 27th days of November, the 28th and 29th days of December, A. D. 1914 and the 7th, 8th and 14th days of January, A. D. 1915.

The following appearances were made: For the complainants, John C. Burke, Esq., and Jeremiah A. Sullivan, Esq. and for the respondent, Nathan Matthews, Esq., and William P. Sheffield, Esq.

On June 1, 1876, the General Assembly of the State of Rhode Island passed an act authorizing "the Town Council of any Town or the City Council of any City to grant to any individual or corporation the exclusive right to lay water pipes in any of the public highways of such town or city for supplying the inhabitants of such town or city with water, for such term of time and upon such terms and conditions as they may deem proper, including therein the power and authority to exempt such pipes and the works connected therewith from taxation."

On June 28, 1876, Mr. George H. Norman made a proposition to

"construct a complete water works for the supply of the City of Newport upon the condition that the City Council will grant me, and my heirs and assigns, the exclusive right and privilege of laying pipes in all the streets and roads of Newport, for the purpose of selling water therefrom, for the term of fifty years, and exempt all of said water works from taxation; and will also grant me all rights the City has in Easton's Pond and the marsh lands around it, and north of a line running parallel and fifty feet north of the center of the road crossing the beach."

On July 6, 1876 the above proposition of Mr. Norman was accepted by the City Council of Newport by the passage of the following vote:

Copy of Ex. 46 Respondents.

Whereas the City Council of the City of Newport, a municipal corporation in the County of Newport, in the State of Rhode Island, did on the sixth day of July A. D. 1876, pass a Resolution, hereby made part hereof, in the following words, to wit: "Upon the proposition of George H. Norman to construct Water Works to introduce a supply of Water for domestic, manufacturing and other uses into the City of Newport:

Voted and Resolved, That the said proposition be and hereby is accepted; and that the exclusive right to use the public streets, lanes and squares of the City for the purpose of laying water pipes and continuing the same therein, and of using said streets, lanes and squares for the purpose of making the necessary alterations and repairs in the said pipes, for the period of fifty years is hereby granted; and that the said Water pipes and franchise and works of said Norman connected therewith be and hereby are declared to be exempted from taxation for any purpose whatever so long as inhabitants of this city shall be supplied with water thereby; and that all the right, title and interest of said City of Newport in and to Easton's Pond and the land covered thereby and the Marsh around the same north of a line parallel with and fifty feet distant north from the centre of the travelled path or highway extending along the back of Easton's Beach to the Bridge constructed over the Creek at the Easterly end of the said Beach, at the Middletown line be conveyed to the said Norman.

This Vote and Grant is however upon condition that the Water Works of said Norman for supplying said City with water as aforesaid shall be commenced within six months; that said Norman shall lay down Water Pipes in the premises to the extent of fifteen miles within the limits of said City within one year from this date; that he, his heirs or assigns, shall always without unnecessary delay after excavating for the laying, relaying or repairing of pipes, restore the said streets and public places to as good order and condition as they were in before such excavating; that said Grant of the right to use the streets and public places for laying continuing repairing and altering pipes shall cease to be exclusive whenever said Grantee, his heirs or assigns, shall cease, neglect or fail to supply water in reasonably sufficient quantity through all the pipes which he or they may see fit to lay down; and that said city may at its option purchase said Water Works and all the pipes, reservoirs, pumps and other property rights and appurtenances connected used or belonging therewith, at any time within five years herefrom for a fair and reasonable price, to be agreed on by said City and said Norman his heirs or assigns, or fixed by a majority of arbitrators appointed for the purpose, one by said City, one by said Norman or his representatives, and a third by the two so chosen by said parties hereto respectively."

Now Therefore Know All Men That said City of Newport, in consideration of the premises, doth hereby remise release and forever quitclaim and convey unto said George H. Norman, and his heirs and assigns forever, pursuant to said Resolution and in conformity with the terms thereof and upon the conditions therein contained pertaining or applicable to this conveyance, all the right title and interest of said City of Newport in and to Easton's Pond, so called, and the land covered thereby and the marsh around the same lying north of a line parallel with and distant fifty feet north from the center line of the travelled path road or highway which extends along the back or in the rear of Easton's Beach to the Bridge over the Creek at the Easterly end of the Beach at the boundary line between said City of Newport and the adjoining town of Middletown.

In Witness Whereof said City of Newport has caused its corporate seal to be hereto affixed and these presents to be signed

acknowledged and delivered in its name and behalf by David M. Coggeshall, City Treasurer of said City on this twelfth day of August A. D. 1879.

Executed and Delivered in
presence of
J. Truman Burdick
Francis B. Peckham Jr.

City of Newport
by (Seal)
David M. Coggeshall,
City Treas.

State of Rhode Island Etc.,

Newport, ss.

Newport August 13th, 1879.

Then personally appeared the above named David M. Coggeshall and acknowledged the foregoing instrument to be the free act and deed of the above named City of Newport and his own free act and deed. Before me,

Francis B. Peckham, Jr.,
Justice of the Peace.

Received in Newport, R. I., for record, August 16, 1879, at 2 H. 45 M. P. M., and recorded August 25, 1879, by,

William G Stevens,
City Clerk.

City of Newport, R. I.

City Clerk's Office, December 28, 1914.

I certify the foregoing to be a true copy from the records of Land Evidence of said Newport, Volume 50 at pages 45 and 46.

Attest:

(Signed) F. N. Fullerton,
City Clerk.

On July 11, 1879 the proposition as outlined in the above action by the City Council was accepted by Mr. Norman.

On February 8, 1877 the General Assembly passed an act giving Mr. Norman, his heirs and assigns, the right to take certain lands

and water rights at Lawton's Valley in the Town of Portsmouth, the said act being as follows:

It is enacted by the General Assembly as follows:

SECTION 1. George H. Norman, of the City of Newport, his heirs and assigns, are hereby authorized, for the purpose of supplying said city and the inhabitants thereof with pure water, as hereinafter provided, to take and convey into and throughout the city of Newport the waters of those two certain streams or brooks which unite at Lawton's Valley, in the Town of Portsmouth, and to acquire, as hereinafter indicated, and to hold the said waters, the water rights therewith connected so far as may be necessary for the purposes hereof, and any real estate, hereinafter designated, requisite for the location, establishment, erection, building and maintaining of dams and reservoirs to collect, retain and store said waters, and of water works for pumping and transporting the same; and are further authorized to enter upon and excavate the highway in Portsmouth and Middletown known as the Main Road, from said valley and streams to the north line of the city of Newport, for the purpose of laying water pipes beneath the surface of said road, and for the purpose of repairing such pipes thereafter; but said highway shall always be restored immediately after such excavating to as good order as it was in just before the excavating was commenced, and during the laying down of said pipes, said highway shall be kept passable at all times for the public.

SEC. 2. If any owner of lands, water or water rights required to carry out the objects of this act shall refuse to sell the same to said Norman, his heirs and assigns, or if any such owners shall not agree with said Norman, his heirs or assigns, upon the price to be paid for such property, or privileges, then said Norman, his heirs or assigns, are authorized to take and condemn so much land, water and water rights, as may be necessary for the purposes of this act, under the provisions hereof, and to proceed with the use and improvement thereof in the premises, and with the construction of dams, reservoirs and other works therein as aforesaid; but the lands so condemned shall not exceed the quantity and limits hereinafter specified, to wit: of lands adjoining and adjacent to said streams, and lying next to and south of said Main Road, between said road

and Union Street, so called, about twenty-three acres belonging to Susan B. Thurston, Peleg L. Thurston, Lewis Thurston, Roland Thurston and Parker H. Thurston, about twelve and a half acres belonging to John Croucher, about thirteen and three-quarters acres, belonging to Jacob Chase, and about sixteen and a half acres belonging to Peleg A. Coggeshall; and of lands lying near and south of said Union Street, about four acres belonging to Edward Almy, and about twenty-two acres belonging to Edward Sisson. And upon taking any property or privilege, as aforesaid, said Norman, his heirs or assigns, shall tender to the owner or owners thereof, if in this state, a sum of money as and for the damages sustained, or to be sustained, by such owner or owners, by the said taking and condemnation, and if said tender shall be refused, or lawfully omitted, shall on demand give bond to such owner or owners for the prompt payment of all damages and costs adjudged under this act, in a form and a sum, and with sureties satisfactory to any justice of the supreme court.

SEC. 3. Any owner of lands, water or water rights so taken as aforesaid, may at any time within, but not after one year from the time of such taking (unless the owner be a minor or out of the state, in which case such owner may make his claim hereunder one year after his majority or after his return to the state) apply by petition for damages to the supreme court, holden within and for the county of Newport, at any regular term of said Court, and, upon such petition being filed, at least twenty days notice thereof shall be given said Norman, his heirs, or assigns, by serving him, them or any of them with a copy of such petition; and said court shall, after such notice, proceed to the hearing of the petition, and shall appoint three disinterested persons, being freeholders and residents of the state, appraisers to determine, after reasonable notice to the parties, what damage, if any, the petitioner has sustained; and the award of such appraisers, or of the major part of them shall be returned to the court as soon as may be; and upon acceptance thereof by the court, unless a jury trial be applied for as hereinafter provided, judgment shall be thereupon rendered by said court, for the party prevailing with costs, and execution may issue accordingly; and provided further that if either party shall be dissatisfied

with such award, such party may, immediately upon the return thereof to the court, apply for a trial by Jury, which shall determine all questions of fact relating to such damages and the amount thereof; and such trial shall thereupon be ordered by the said court and had as soon as conveniently may be, and judgment shall be entered upon the verdict of said jury, and costs shall be allowed to the party prevailing, and execution may be issued therefor; but no petition or complaint shall be made, as aforesaid, for the taking of any land, water or water rights, until the same shall have been actually taken by virtue of the terms of this act.

SEC. 4. Said Norman, his heirs or assigns, shall have the exclusive right of the waters aforesaid, taken, damned, collected and stored, as aforesaid, for the purposes aforesaid, and may maintain an action against any person using the same without his or their consent. And if any person shall maliciously or wantonly divert the water of either of said streams or sources from which water shall be taken and conveyed to the City of Newport, as aforesaid, or shall corrupt or render impure the same or any water connected therewith, or shall destroy or injure any pipe, dam, reservoir, machinery or other property used in or relating to the premises, such person or persons, and his or their aiders or abettors shall forfeit to said Norman, his heirs or assigns, to be recovered in an action of trespass on the case or trespass, treble the amount of damage sustained thereby, and shall also be liable to indictment therefor, and upon conviction shall be fined not exceeding three thousand dollars, or be imprisoned not exceeding two years.

SEC. 5. The lands, waters and rights taken and acquired for the purposes of this act, and all the property and improvements of every kind used in connection therewith for supplying said City of Newport with water, and all the rights and powers granted by this act, may be at any time sold and transferred to and vested in said city of Newport by said Norman, or his heirs, or by any person or corporation to whom he may assign the same, and thereupon shall thenceforth be freely and absolutely held, used, possessed and enjoyed by said city forever, and shall be conducted, operated, managed and maintained by said city in manner and form as the city council of said city by ordinance shall from time to time provide:

and said city is hereby empowered to purchase the same and pay for the same, and for the subsequent maintenance and support thereof, as hereinafter further authorized, by the bonds, script or finances of said city, as said city council may deem best, provided such purchase shall be first voted and approved by a majority of the electors of said city qualified to vote on any proposition to impose a tax or for the expenditure of money, voting in ward meetings, legally called for the purpose. After such purchase, said city may distribute said water throughout said city, and by ordinance regulate the use thereof and the price to be paid therefor by the inhabitants of said city and other persons using the same, and all the terms upon which the same may be used within or without the limits of said city, and may enlarge, repair, replace or strengthen dams, reservoirs, works, pipes, and other structures or improvements in the premises and generally may do whatever shall be necessary, desirable or appropriate for the purposes of this act.

SEC. 6. This act shall take effect on its passage, but no property or privilege shall be condemned hereunder after three years from the passage hereof.

On May 31, 1877, the General Assembly amended the above act of Feb. 8, so that it should apply to Easton's Pond in Newport and Middletown and certain adjacent lands. The act referred to, follows:

It is enacted by the General Assembly as follows:

SECTION 1. The first and second sections of said chapter 582 of the Public Laws, are hereby amended, so that said act shall apply to Easton's Pond, in Newport and Middletown, and to the lands adjoining and adjacent to said pond, in addition to the property and premises to which it already relates, and so that said first and second sections shall read as follows:

"SECTION 1. George H. Norman, of said Newport, his heirs and assigns, are hereby authorized, for the purpose of supplying said city and the inhabitants thereof with pure water as hereinafter provided, to take and convey into and throughout the city of Newport, the waters of those two certain streams or brooks which unite at Lawton's Valley, in the Town of Portsmouth, and of Easton's Pond, in Newport and Middletown, and to acquire, as hereinafter indicated,

and to hold the said waters, the water rights therewith connected, so far as may be necessary for the purpose hereof, and any real estate hereinafter designated requisite for the raising or enlarging the capacity of the said pond by flowing with water or otherwise, using for such purpose the adjoining and adjacent lands, and for the location, establishment, erection, building and maintaining of dams and reservoirs, to collect, retain and store said waters, and of water works for transporting and pumping the same; and are further authorized to enter upon and excavate the highway in Portsmouth and Middletown, known as the Main Road, from said valley and streams, to the north line of the city of Newport, for the purpose of laying water pipes beneath the surface of said road, and for the purpose of repairing such pipes thereafter; but said highway shall always be restored immediately after such excavating to as good order as it was in just before the excavating was commenced, and during the laying down of said pipes said highway shall be kept passable at all times for the public; and are further authorized to raise the highway called Bliss road, where it crosses the brook running into said pond, at the north end thereof, and to enlarge the bridge over said brook, in said highway, provided every change in said last named highway and bridge shall be made under the direction of the town council of Middletown.

SEC. 2. If any owner of lands, water or water rights, or others having rights, required to carry out the objects of this act shall refuse to sell the same to said Norman, his heirs and assigns, or if any such owners shall not agree with said Norman, his heirs and assigns upon the price to be paid for such property or privilege, then said Norman, his heirs and assigns, are authorized to take and condemn so much land, water and water rights, as may be necessary for the purposes of this act, under the provisions hereof, and to proceed with the use and improvement thereof in the premises, and with the construction of dams, reservoirs, and other works therein as aforesaid; but the lands so condemned shall not exceed the quantity and limits hereinafter specified, to wit; of lands adjoining and adjacent to said streams, and lying next to and south of, said Main Road, and between said road and Union Street, so called, about twenty-three acres belonging to Susan B. Thurston, Peleg L. Thurs-

ton, Lewis Thurston, Roland Thurston and Parker H. Thurston, about twelve and a half acres belonging to John Croucher, about thirteen and three quarters acres belonging to Jacob Chase, and about sixteen and a half acres belonging to Peleg A. Coggeshall; and of lands lying near and south of said Union Street, about four acres belonging to Edward Almy, and about twenty-two acres belonging to Edward Sisson; and of lands adjoining and adjacent to said Easton's Pond, for raising or increasing the capacity of said pond by flowing or otherwise, about forty acres of such lands which lie to the northward of said Norman's present dam on said pond; provided always that no person shall be deprived under this act of any right of boating, fishing or cutting ice on said pond. And upon taking any property or privilege, as aforesaid, said Norman, his heirs or assigns, shall tender to the owner or owners thereof, if in this state, a sum of money as or for the damages sustained, or to be sustained, by such owner or owners, by the said taking and condemnation, and if said tender shall be refused or lawfully omitted, shall on demand give bond to such owner or owners for the prompt payment of all damages and costs adjudged under this act, in a form and a sum and with sureties satisfactory to any justice of the supreme court."

The original works, according to the Respondent's Brief P. 1, consisted of the dam between Easton's North and Easton's South Pond, a low dyke running south from the dam to the beach and thence west to the upland, pumping station No. 1, the distributing reservoir, a force main to the same and about twenty miles of mains. Water was turned on Nov. 7, 1878.

On May 30, 1879 the General Assembly of the State passed the act incorporating the Newport Water Works, the capital to be issued to be not more than \$500,000.00. The Corporation was authorized to acquire all the lands, easements and water rights then owned by Mr. George H. Norman in the Town of Newport, Middletown and Portsmouth together with the franchise to supply water in the City of Newport. The directors were authorized to "make such dividends of the profits, at least once in every year as to them shall appear proper." This act was accepted by the incorporators on May 9, 1881, stock was issued to the amount of \$500,000.00 to Mr. Norman and on Aug. 8, 1881 a general conveyance was made by Mr. Nor-

man to the corporation of the water works property, the recitals in the deed being as follows:

August 8, 1881

Know All Men by these Presents: That I George H. Norman of the City and County of Newport in the State of Rhode Island for and in consideration of the sum of Five Hundred Thousand dollars to me paid by the Newport Water Works a Corporation created by law and located in the City of Newport aforesaid, the receipt whereof is hereby acknowledged do hereby give, grant, bargain, sell and convey to the said Newport Water Works, its Successors and assigns all of the property and estate held by me the grantor acquired for the purpose of supplying the City of Newport and the inhabitants with pure water situate in Newport, Portsmouth and Middletown embracing all of the lands and easements in land held by me situate in said Middletown and all rights of water appertaining thereto; all franchises rights, properties and estates granted to me at any time heretofore by the City of Newport and the State of Rhode Island including Easton's Pond and Easton's Beach, and the right to supply the said City and the inhabitants thereof with water and all mains and water-pipes laid down in the streets way, lanes, and to the houses, places, and Reservoirs whether in said Newport or Middletown, and the right to extend and to lay down other pipes for the water supply of the inhabitants of Newport and Middletown, with all dams erected, and the right to erect other, or to enlarge existing dams.

Intending hereby to grant to the said Newport Water Works all rights, privileges and franchises granted to me by the City of Newport and by the legislature of the State of Rhode Island, and all rights of property I have acquired from the City of Newport, and under the authority of the said legislation grants to supply the said City of Newport and inhabitants thereof with pure water, and all lands, and personal property I have acquired by purchase to be used in connection with the said supply whether the said personal property be machinery, working tools, Hydrants, water pipes or other articles together with all contracts which I may have entered into to supply water to corporations or individuals, they assuming the burdens and benefits of the same transferring hereby to the

said Newport Water Works its Successors and assigns in as full and ample manner as I could transfer the same by any instrument in writing whatsoever, however executed, all of the property estate and franchises however acquired which I have and have obtained for use in supplying the City of Newport and its inhabitants and the inhabitants of Middletown with water:

To Have and to Hold the same to the said Newport Water Works its Successors and assigns forever with the privileges and appurtenances thereof:

And I the said George H. Norman for myself, my heirs executors and administrators do hereby covenant with the said Newport Water Works its successors and assigns that it shall forever quietly hold and enjoy all of the before described rights, properties and franchises and estates in as full and ample manner as I hold the same, or of right should hold the same up to the time of the execution hereof.

On January 19, 1881 the electors of the City of Newport voted that the City Council might enter into a contract with Mr. George H. Norman, the terms of the contract being as follows:

CONTRACT

The electors of the City of Newport in the State of Rhode Island qualified to vote upon any proposition to impose a tax or for the expenditure of money, having on the 19th day of January, A. D., 1881, adopted and approved by a majority of affirmative votes, a proposition submitted to them in the words here following, namely:

“Shall the City Council contract with George H. Norman to supply a full and ample quantity of water for the public use of the city, viz: for all public buildings, hydrants, reservoirs and foundations and for sprinkling streets and flushing sewers, subject to all proper and reasonable restrictions against unnecessary waste, said Norman to furnish, set up and keep in repair, without expense to the city, but to be located by the City Council, as many hydrants, not to exceed the number of two hundred, as shall be required by said City Council, upon the following terms, namely: at an annual compensation not to exceed the sum of ten thousand dollars, for a term of five years, said contract to carry the right to the city at the option

of the City Council at the end of said term of five years, to continue or renew said contract for the remainder of the time of said Norman's exclusive right to lay down and maintain water pipes in the streets of Newport, the annual compensation to remain unchanged, unless the permanent population of the city shall grow to exceed twenty-five thousand inhabitants, when the city and said Norman shall each appoint one person to determine by arbitration what increased annual compensation shall be paid him; should said two persons fail to agree thereon, they two to appoint a third, and the decision of the three to be final and binding. Said city to be guaranteed and secured in said contract the right at any time without paying any further compensation, to place, connect and use as many hydrants in excess of said two hundred as the City Council may deem necessary."

Now, pursuant to the terms of said proposition and by virtue of the said acceptance thereof by said electors, it is hereby agreed between George H. Norman of said Newport, and the said City of Newport, a municipal corporation in the state aforesaid, acting herein by its city council, as follows: Said Norman shall, for the next five years from and after the first day of June, A. D. eighteen hundred and eighty-one, continuously supply said city of Newport with a full and ample quantity of fresh water, to the reasonable satisfaction of said city (from his Water Works and the pipes therewith connected laid in said Newport) for all the public uses of said city, from time to time and at all times, including and comprehending water for use in all the public buildings of said city, comprising the City Hall, the Police Station, the Fire Engine Houses, the Public Schoolhouses and all other buildings, for the use of the Fire Department of said city in extinguishing, preventing and guarding against fire, operating steam fire engines and filling public reservoirs, for sprinkling streets and public places to lay the dust, for flushing sewers and for drinking fountains and for all other public purposes, at an annual compensation which shall never exceed the sum of ten thousand dollars, to be paid by said City in equal quarterly installments, the first whereof shall be made on the first day of September A. D. eighteen hundred and eighty-one.

And the said Norman shall begin to furnish and supply said water

on the said first day of June next, at the rate or price of Seven thousand eight hundred and ten dollars per annum, payable quarterly as aforesaid in the buildings and through the Hydrants and fountains and at the price or upon the apportionment here presently set forth to wit:

Water for Fourteen Spring Drinking Fountains of ordinary capacity, and one constantly running or flowing fountain on Washington Square, and for sprinkling streets and flushing sewers, say	\$1,800.00
For 158 Three-nozzle port hydrants in the streets and public places of said city, say \$35 for each Hydrant	5,530.00
For all uses and purposes whatever in the City Hall of said city, established in the present, or in any other or future building or location	25.00
For all purposes and uses whatever in four steam Fire Engine Houses and three hand Fire Engine Houses, one Hose house and one Hook and Ladder house, say \$50 for each steam engine house and \$10 for each hand engine house, hose house and hook and ladder house	250.00
For all uses and purposes whatever in the Police Station of said city located in the present or in any other or future building or location	25.00
For all uses and purposes whatever in nine public school houses of said city, wherever located, say \$20 for each house	180.00
Total	\$7,810.00

Water, and the right to have hydrants, fountains, faucets, water-closets, and other means, conveniences and facilities for using water, for public purposes as aforesaid, in addition to what are designated or enumerated in the statement or schedule aforesaid, shall be granted and allowed to said city from time to time by said Norman, whenever and wheresoever said city may ask for the same, at these rates, that is to say:

- Spring fountains of the kind above mentioned at \$25 a year each.
- Hydrants also of the kind above mentioned at \$35 a year each.
- Steam Fire Engine houses, as above mentioned, at \$50 a year each.
- Hand Fire Engine houses as above said at \$10 a year each.
- School houses, as above mentioned, at \$20 a year each.

And whenever the price to be paid by said city for such water and the privilege and means of using the same at the rates aforesaid shall equal or exceed the rate \$10,000 a year in all, then said

city shall pay only at that rate of ten thousand dollars a year, and all additional or greater use and privilege and means of using said water by the city under this contract shall be free of charge; it being the intent hereof and of the parties hereto that said city may always have as much water as it may need or desire and never pay more than ten thousand dollars therefore in any year, unless upon and after the increase of population hereinafter mentioned.

Although this contract shall begin to take effect on the first day of next June, as aforesaid, yet the City of Newport on the first day of next September and on every other quarter day afterward shall pay only pro rata as aforesaid for such water, or hydrants, fountains and other means of taking water, as it shall have actually previously enjoyed or been enabled to enjoy: so that in case of any delays in setting hydrants or in making ready other means of taking water a full allowance of said annual sum or price shall always be made for such delay every quarter, but all means of taking water shall be prepared and finished as soon as reasonably may be.

Said fountain on Washington Square shall be of a capacity of at least equal to that of the fountain now in operation there. The other fountains shall be located by said city at its pleasure, and the water furnished hereunder for fountains and buildings shall be good, wholesome, drinking water.

The hydrants of this agreement shall be furnished, set, maintained and kept in good repair by said Norman, at all times and at his own cost up to the number of two hundred. All hydrants above the number of two hundred, located and set up after the first two hundred shall have been furnished by said Norman hereunder, together with all the fountains and other means of taking and using said water shall be furnished, set and kept in repair by said city at its cost; provided however that as to the mode and costs of laying service pipe for public buildings from the main water pipes the same rules shall obtain as may be in force between said Norman and his other customers taking his water in said Newport; and provided further that every hydrant used by or for the said City from time to time for drawing water for sprinkling streets or flushing sewers shall be kept in repair by the city, it being intended that said Norman shall keep in repair

those hydrants only which shall from time to time be used exclusively for purposes in some way connected with the said Fire Department and the duties means and apparatus thereof.

Said Norman hereby engages that said City of Newport may locate every hydrant wherever and whenever it may see fit (subject only to the other provisions hereof) and that he will always furnish and supply enough water through every hydrant to fully supply and feed every steam fire engine or other fire engine that may ever be attached to and operated in or upon or by through or from the same, so that there shall never be any scarcity of water at or through any hydrant in case of fire or otherwise; and that in every case of failure to fulfill this engagement (or of any other failure in supplying the water hereby contracted for) a just abatement of and from the then future installment or installments of moneys accruing to him hereunder shall be made and shall be kept and retained by said city for its own use, without prejudice to said City's other rights and remedies hereunder; and that in fixing the amount of said abatement in every case regard shall be had to the fact that said City has been induced to enter into this agreement, by his said Norman's positive and express representations and assurances that no such failure or deficiency of water ever would or could occur, and account shall be taken of every injury sustained by said city in the premises whether in the loss of taxable property or of public confidence or esteem or in its reputation as a safe well governed municipality or by the increase of municipal expenses or the payment of claims or damages occasioned or increased by such failure or deficiency of water and lawfully collectible from the municipal finances or for which the municipal corporation may ever be or become liable; the object of this clause being to afford the city full indemnity for every claim demand payment suit action cost damages charge or loss of whatsoever nature created, caused or increased by such failure or inefficiency of water and in any way cast upon or suffered by said city, as well also as to tend to secure a prompt remedy from said Norman for every such failure or deficiency of water; it being understood however that the foregoing clause shall never be construed so as to create any claim (which might not legally be

made without it) on the city by any person and that no amount shall ever be claimed of said Norman under said Clause beyond the said abatement.

It is agreed furthermore that said Norman shall never willfully or intentionally cut off or with-hold any water from the city for any cause, complaint or object whatever, and that whenever any dispute or difference of opinion shall arise between the parties to this agreement as to the measure or amount of said abatement the same shall be determined by suit against the city if needful and always without any interference with or cutting off of the full public water supply according to the terms of this contract, it being understood, however, that nothing herein contained shall prevent or affect the rights of the proprietor of said water works to shut off main pipes for repairs or other necessary acts in and about the management of said Works.

The City shall not be entitled hereby to require water to be by said Norman conveyed by service pipe (for hydrant or fountain) more than one hundred feet distant from some main pipe now or hereafter laid of his said Water Works, but the rest of the service pipe shall always be provided, laid, repaired and paid for by the City.

Said City shall always adopt and employ every reasonable means which said Norman may suggest and request for preventing or guarding against the unnecessary waste of said water, and shall never take water hereunder for any private purpose.

This contract may be by said city at its option renewed and continued to run in precisely the same terms in all respects from the first day of June A. D. 1886, until the expiration or other determination of the exclusive right to lay water pipes to said city granted to said Norman and his heirs and assigns by the City Council of said city in July 1876; and in order so to renew and continue the same it shall only be necessary for said city council to vote to do so at any time between December 1, 1885 and June 1, 1886; provided however that if the permanent and constant population of said city shall ever exceed twenty-five thousand inhabitants and said Norman shall thereafter ask for an increased price or rate of compensation hereunder, then arbitrators shall determine

what, if any increase in such price or rate shall be paid thereafter; such arbitrators being appointed one by said Norman and another by said City, and a third shall be appointed by those other two if they cannot agree. And it is furthermore stipulated that the contract may be by said city, by vote of its city council, wholly rescinded, if it shall see fit, either before or after the renewal thereof, if said Norman, or other of the proprietor or proprietors of said Water Works, shall fail, neglect or refuse to supply enough water at fires, or for other public purposes, to reasonably fulfill the requirements and engagements hereinbefore written.

This agreement shall in every particular apply to and bind not only the immediate parties, but also said Norman's heirs, executors, administrators and assigns, who shall observe, perform and conform to every thing herein required of or promised by said Norman, and said Norman hereby agrees that he will never grant, devise, encumber, or in any way alien or dispose of his said Water Works or any part thereof, as now or hereafter constituted, except subject to this agreement, or without expressly binding every person claiming by, through or under him to the observance and performance of this contract and every part of it.

In 1882 the Easton's North Pond dam was increased in height, and the Nelson Pond Reservoir and Pumping Station No. 2 were constructed.

On March 14, 1884 the General Assembly passed an act authorizing an increase of the Company's capital stock to \$750,000.00 and on July 7, 1884 the stock was increased by \$200,000.00, it being issued for \$130,000.00 in cash and \$70,000.00 as a stock dividend, this making the capital stock outstanding \$700,000.00.

On May 26, 1886 the contract of March 1, 1881 between the city and Mr. George H. Norman for a public supply was renewed to June 1, 1926.

The respondent's brief page 3 states, "In 1889, under date of March 25, we have a report by Mr. George W. Piper, the accountant, on the financial operations of the company from June 1, 1881 to March 16, 1889. Ex. 11. This account shows expenditures for construction between 1881 and 1889 of \$257,156.00 — see Ex. 193."

The report of the auditor, Mr. Piper, as a matter of fact, shows disbursements for construction of \$252,334.69.

In this year (1891) a new Blake-Corliss pump was installed in Pumping Station No. 1.

Respondents Brief, Page 3 states: "On February 24, 1893, the legislature passed an act authorizing the company to increase its capital stock to \$1,000,000.00 and to issue \$1,000,000 in bonds, and on September 1 of that year the company issued \$300,000 more stock, making \$1,000,000 in all, half of the new issue being for cash, and the other half "for construction paid for out of earnings." See Ex. 194. There is no available data at this time to prove the correctness or incorrectness of this statement. It is analyzed more fully under the heading "Stored Water."

Under an act of the legislature passed March 30, 1893, (Ch. 1248 of the Public Laws) the city council was authorized to contract with the Newport Water Works for a supply of water for the domestic and business uses of the inhabitants, for such time and on such terms as the parties might agree; and on May 9, 1893, a contract was entered into between the company and the city respecting rates for general service. Rep. 1908, pp. 27 to 36. These are the rates now in force.

CONTRACT

*The City Council of the City of Newport
with
The Newport Water Works
Dated May 9, 1893.*

This Agreement made and executed this Ninth day of May A. D. 1893, by and between the City Council of the City of Newport, located in the County of Newport and State of Rhode Island, of the one part, and the Newport Water Works, a corporation created by law, and located in the said County of Newport and State of Rhode Island, of the other part.

Witnesseth, That whereas differences of opinion have arisen between the inhabitants of the City of Newport, on the one part, and of the said Newport Water Works, on the other part, as to the terms and conditions upon which the said Newport Water Works shall supply water to the said inhabitants for domestic and business uses,

and whereas the City Council of said City acting on behalf of the said inhabitants, has endeavored to obtain from said corporation a reduction of the said rates; Now, for the purpose of settling the said differences and of procuring the said reduction in the rates of water furnished for domestic and business purposes to the inhabitants of said City; The City Council of the said City of Newport (acting herein under authority of an Act of the General Assembly of Rhode Island passed at its January session A. D. 1893 and of every other power hereto enabling) and the said Newport Water Works have agreed and do hereby agree and covenant mutually with the other as aforesaid, That the rates, terms, conditions, prices and regulations under which the said Newport Water Works shall furnish water to the inhabitants of the said City of Newport for domestic and business uses from and after the first day of June, A. D. 1893, up to and until the first day of June, 1903, shall be as set forth in the schedule hereto annexed and hereby made a part of the agreement. And the said Newport Water Works in consideration of the said settlement of said differences and of the said agreements by the said City Council of said City of Newport hereby agrees to accept the said reduction in prices and rates at which it will furnish water for domestic purposes and uses to the inhabitants of the said City of Newport, and not to charge exceeding said rates during said term from the 1st day of June A. D. 1893 up to the first day of June A. D. 1903.

In Witness Whereof the said City Council of the City of Newport by Jere W. Horton, Mayor, and Fred M. Hammett, President of the common council hereunto lawfully authorized and the Newport Water Works. by George H. Norman, its President hereunto lawfully authorized have hereunto set their hands and seal this ninth day of May A. D. 1893.

Signed, Sealed and Delivered
in the presence of Wm. G.
Stevens as to Mayor and Presi-
dent of the Common Council.

The City Council of the City
of Newport, Rhode Island by
Jere W. Horton, Mayor.
Fred M. Hammett, President of
the Common Council.

(Seal)

Schedule Annexed to Contract

The following regulations will be considered a part of the contract with every person who uses the water :

All applications for the use of water must be made in writing at the office, and the various uses to which the water is to be applied must be stated fully and truly ; and should use for any other purpose be required, notice must be given, before it will be allowed.

Persons taking water must keep their water pipes and fixtures in good repair and protected from frost at their own expense, and will be held liable for any damage resulting from their failure to do so.

They will prevent any unnecessary waste, and the water must not be left running to prevent freezing.

Free access to the premises supplied shall be permitted to examine the apparatus and to ascertain the quantity of water used, the manner of its use, and whether there is any unnecessary waste.

There shall be no concealment of the purpose for which it is used.

Service pipes will be laid to the line of the street and through the cellar, provided the same is on the line of the street, without charge ; and all applicants for whom the pipe is laid will be charged for the use of one faucet, whether the water is used or not.

The regular rent for the use of water shall be payable in advance, on the first day of June in each year. In all cases of non-payment of the water rent in thirty days after the rent is due, or of violation of the foregoing rules, the supply shall be cut off, and the water shall not be again let on, except on payment of the rent due and the sum of two dollars.

Owners of property will be held responsible for the payment of water rates, unless the Office is notified in advance that the Rates are to be paid by the tenant.

Persons who allow the water to be used by neighbors, or by co-tenants, or for the filling of cisterns or for building purposes, without a special permit from the office will be held responsible for the payment of such use of the water.

No plumber is authorized or allowed to put the water on for either temporary or permanent use.

Water takers must supply their plumbing with a private shut-off, the shut-off at the curb is owned by, and is for the exclusive use of the Water Company.

The following rates shall be charged annually for the use of water :

The said Water Works shall supply water free of charge for fire purposes only to water takers, who shall enter into proper stipulations with said Water Works not to use the Water furnished hereunder for other than fire purposes and whose estates abutt on streets where water mains are laid whose buildings are one hundred feet or more from the Water Mains, and who shall under the direction of the Committee on the Fire Department lay down suitable pipes and set proper hydrants for use in extinguishing fires and shall maintain and keep said pipes and hydrants in a proper state of repair for use.

Dwelling Houses.

<i>Dwelling</i> houses occupied by one family for one faucet	\$7 00
<i>For</i> each additional faucet to be used in same family	3 00
<i>When</i> a house is occupied by more than one family, one faucet only being used by all, for each family	6 00
<i>When</i> a house is occupied by more than one family, the highest rates will be charged for each family having the water carried into their part of the house	7 00
<i>For</i> the first bath-tub	5 00
<i>For</i> the first additional water-closet	5 00
<i>For</i> each additional bath-tub	4 00
<i>For</i> each additional water-closet	4 00
<i>For</i> Hopper water-closets, special rates will be made.	
<i>Where</i> bath-tubs or water-closets are used by more than one family, for each family	5 00
<i>Where</i> two faucets are used, one for hot and one for cold water, and bath emptying into one basin, but one charge will be made for both, Provided that in no case shall the charge for the use of water by a private family, exclusive of hose and stable, be more than	75 00

Boarding Houses

<i>For</i> the first faucet	13 00
<i>For</i> each additional faucet	4 00
<i>Water-closet</i> or bath tub, when used by boarders, each	12 00
<i>Each</i> additional bath-tub or water-closet	4 00

Stores, Offices, etc.

First Faucet	6 00
Where two or more tenants are supplied from the same, each	5 00
Water-closets used by occupants of one tenement only	6 00
When used by occupants of more than one tenement, for each tenement	4 00
For each additional faucet or water-closet, half of the above rates will be charged.	

Markets, Saloons, Restaurants and Workshops.

For markets, saloons, restaurants, workshops, or for purposes not included in any other classification, and not requiring more than an ordinary supply of water from 6 00-25 00

Public Baths.

For each tub in a public bath house or hotel	12 00
For each water closet in a public bath house	12 00

Stables without Hose.

Private Stables.

For first horse	6 00
For each additional horse	4 00
For each cow	2 00

Livery, Club and Boarding Stables.

For the first horse	8 00
For each additional horse not exceeding four	4 00
For each additional horse exceeding five	3 00

Trucks and Cart Stables.

For each horse, if more than three	3 00
Provided that in no case, shall any stable be charged less than	8 00

The rates for stable include water for washing carriages without hose.

Hose.

For hose not over three-eighths inch orifice, used for washing windows, sprinkling streets or watering gardens (and the use of the same shall be limited to one hour a

day) not less than

10 00

When hose is used at any stable an addition to the above stable charge will be made of eight dollars for the first horse and three dollars for each additional horse.

Hose rates do not permit the use of water for Fountain or Revolving Sprinkler, nor for the hose left to run unattended.

Building Purposes.

For each cask of lime or cement used 08

Water will be furnished by meter for power, manufacturing and commercial purposes, the charge for the same shall be as follows:

For the first 5,000 gallons and less daily used, at the rate of four cents for 100 gallons.

For the quantity in excess of 5,000 gallons and up to 10,000 gallons at the rate of 3 cents per 100 gallons.

For the quantity in excess of 10,000 gallons at the rate of 2 1-2 cents per 100 gallons.

For other uses special rates may be made.

J. W. HORTON,
Mayor.

FRED M. HAMMETT,
President of Common Council.

NEWPORT WATER WORKS,
by George H. Norman, Pres.

(Seal of Water Works)

Wm. G. Stevens

as to G. H. N. Prest. also J. W. H., Mayor and F. M. H. Prest.

The great embankments around the east, south and west sides of what is now Easton's South Pond were built to form that reservoir out of the original pond and a large tract of marsh, between 1893 and 1896.

On May 13, 1896, the legislature passed an act repealing the privilege of issuing \$1,000,000 of bonds granted by the act of 1893, but authorizing the company to issue an additional million of stock, mak-

ing two millions in all, and on July 1, 1896, the company availed itself of this privilege by increasing its capital stock to \$1,800,000; the entire new issue being distributed among the stockholders.

The St. Mary's Reservoir, which was started in 1877 was completed in 1896-97 and shortly afterwards Sisson's Reservoir was built — see Kent p. 273.

In the year 1899 Gardner's Reservoir was begun.—Kent p. 273 and Ex. 190.

Mr. Geo. H. Norman died February 4, 1900.

The respondent's Brief, Page 4, states, "On April 2, 1900, a new set of books was opened which continued in use until June 1, 1911. The accounts with which these books were opened show that between 1889 and 1900 the company expended \$415,633 for construction. See Ex. 10, 12, 158 and 194."

The Respondent's Exhibit 193 states the cost of the additions to the plant for this period to be \$415,633.14, while Res. Ex. 207 states the disbursements for construction from May 31, 1889 to June 1, 1900 as \$421,408.29. It will be noted that there is a lapse of over two months in the two exhibits, one ending March 16, 1899 and the other beginning May 31, 1889. There is no data available to show the detailed transactions during the "Lapsed time." Exhibit 10 referred to does not state "Additions to Plant during the period," but merely states the condition at June 1, 1900 and this figure presumably contains the construction cost for all time to the close of the period.

In 1902, Gardner's Reservoir was completed.

In 1907, the question of quality of the water arose and a report by Professor Sedgwick, dated November 1, was submitted criticising the company's filter beds and recommending a modern filtration plant.

During this year the Allis-Chalmers pump was installed and Mr. Kent was engaged as manager and resident engineer.

On February 28, 1908, the city council passed a vote authorizing the mayor to "Make such arrangements" as he deemed best with the company respecting "additional filtration beds;" and in accordance with this vote the company and the mayor entered into a contract, dated March 27, 1908, which provided for the construction of

a modern filtration plant, and for the continuation for twenty-five years of the existing rates for general service.

This agreement made and executed this 29th day of March A. D. 1908 by and between the Representative Council of the City of Newport, a municipal corporation, located in the County of Newport and State of Rhode Island of the first part and the Newport Water Works, a corporation created by law and located in said City and County of Newport and the State of Rhode Island, of the second part.

Witnesseth:

Whereas the City of Newport is desirous and has requested that the said Newport Water Works in addition to furnishing a pure water of a safe and suitable quality as called for by its existing contract and franchise should provide an adequate and suitable filtration plant or system so that all water furnished by said Water Works to said City and its inhabitants shall be not only pure and wholesome but also attractive and free from disagreeable and injurious odor, taste or smell at all seasons of the year and fit for potable and domestic purposes, and the said Newport Water Works has consented to construct such a system of filtration as will be adequate to accomplish said purpose upon the terms and conditions hereinafter contained.

Now, therefore, it is hereby mutually agreed by and between the parties hereto as follows: That the said Newport Water Works will forthwith commence and proceed with all reasonable dispatch and diligence to plan, arrange for, erect and construct a suitable filtration plant sufficient to adequately filter all the water supplied by said Newport Water Works to said City and its inhabitants so that at all seasons of the year the said City shall have pure and wholesome filtered water fit for potable and domestic purposes, and when the said filtration system is completed, the said Newport Water Works, will supply both to said City and its inhabitants only water properly filtered as aforesaid, and in consideration thereof and of the increased expense of construction and operation of said Works caused by the installation of said filtration system it is hereby agreed by the parties hereto that the rates, terms and conditions, prices and regulations under which the said Newport Water Works shall fur-

nish water to the inhabitants of said City of Newport for domestic and business uses from and after the date hereof for the period of twenty-five years next succeeding shall be the same as at present in force and as set forth in the schedule hereto annexed and hereby made a part of this agreement.

NEWPORT WATER RATES.

The following rates shall be charged annually for the use of water:

For the first faucet in a dwelling house occupied by one family	7 00
For each additional faucet, to be used in same family	3 00
For the first water-closet, self closing	5 00
For each additional water-closet	4 00
Slop-hoppers and urinals, with self-operating shut-off, rated as water closets.	
For the first bath-tub	5 00
For each additional bath-tub	4 00
When a house is occupied by more than one family, one faucet only being used by all, for each family	6 00
Where a water-closet or a bath-tub is used by more than one family, for each family	5 00
When a house is occupied by more than one family, full rates will be charged for each family having the water carried into its part of the house.	

Where two faucets, one for hot and one for cold water, emptying into one basin, but one charge will be made for both. Provided that in no case shall the charge under this classification for the use by a private family, exclusive of hose and stable, be more than seventy-five dollars.

Boarding Houses.

For the first faucet	13 00
For each additional faucet	4 00
Water-closet or bath-tub when used by boarders, each	12 00
For each additional water-closet or bath-tub	4 00

Public Baths.

For each water-closet in a public bath-house	12 00
For each tub in a public bath-house or hotel	12 00

Stores, Offices, etc.

For the first faucet	6 00
For each additional faucet	3 00
Where two or more tenants are supplied from the same faucet, each	5 00
For a water-closet used by the occupants of one store etc. only,	5 00
When used by occupants of more than one store, etc., for each tenant	4 00

Markets, Saloons, etc.

For markets, saloons, restaurants, workshops, laundries or for purposes not included in any other classification and not requiring more than an ordinary supply of water from	6 00 to 25 00
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Hose.

For hose not more than three-eighths inch orifice at nozzle, for washing windows, sprinkling streets, or watering gardens, (and the use of the same shall be limited to one place or occupancy an hour a day) not less than	10 00
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Hose rates do not permit the use of water for a Fountain or a fixed or moving sprinkler, nor for hose left running unattended.

Stables.

Private Stables.

For the first horse, without hose	6 00
For each additional horse, without hose	4 00
For the first horse, with hose	14 00
For each additional horse, with hose	7 00
For each cow	2 00

Livery and Boarding Stables.

For the first horse, without hose	6 00
For each additional horse not exceeding four, without hose	4 00
For each additional horse exceeding five, without hose	3 00
For the first horse, with hose	14 00
For each additional horse, exceeding four, with hose	7 00
For each additional horse, exceeding five with hose	6 00

Motor Vehicles.

For the first motor vehicle without hose	7 00
For each additional motor vehicle without hose	5 00
For the first motor vehicle with hose	14 00
For each additional motor vehicle with hose	10 00

When a motor vehicle and horse are kept in one establishment a "first motor vehicle" will be rated as an "additional motor vehicle."

Truck and Cart Stables without Hose.

For each horse if more than three	3 00
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Provided that in no case shall any stable be charged less than six dollars.

The rates for a stable without hose, include water for its own vehicle-washing with bucket and sponge.

Fountains, Elevators, etc.

To a taker of water under the foregoing classifications additional water will be supplied at measured rates through a meter to independent service pipes, for use exclusively in fountains and lawn sprinklers, (fixed or movable) elevators, motors, refrigerators, etc. with minimum charge per annum of \$12.00; such taker to supply and maintain a proper meter.

For fire protection only, water will be supplied, free of charge, to all water takers who shall enter into proper stipulations to use the water so furnished for fire protection only, whose estates abutt on streets where water mains are laid, whose buildings are one hundred feet or more from the water mains and who shall lay down suitable pipes, set proper hydrants for use in extinguishing fires and maintain and keep said pipes and hydrants in a proper state of repair.

Sundry Uses.

Bakeries will be charged an annual rate based on the average daily use of flour, for each barrel per day	5 00
For Greenhouses the charges will be based on area, per square foot	2 cents
Provided, that in no case shall any bakery or greenhouse be charged less than ten dollars.	
For each cask of lime or cement used for building purposes	8 cents

Charges for Measured Water.

Water will be furnished by meter for Power, Manufacturing, and Commercial Purposes. The charge for the same shall be as follows:

For the first 5,000 gallons and less, daily used, at the rate of 4 cents for 100 gallons.

For the quantity in excess of 5,000 gallons and up to 10,000 gallons, daily used, at the rate of 3 cents for 100 gallons.

For the quantity in excess of 10,000 gallons, daily used, at the rate of 2 1-2 cents for 100 gallons.

Regulations.

The following regulations will be considered a part of the contract with every person who uses the water.

All applications for the use of water must be made in writing at the Office, and the various uses to which the water is to be applied must be stated fully and truly; and should use for any other purpose be required, notice must be given before it will be allowed.

Service pipes will be laid to the line of the street and through the cellar wall, provided such wall is on the line of the street, without charge; and all applicants for whom such pipe is laid will be charged for the use of one faucet whether water is used or not.

Owners of property will be held responsible for payment of the Water Rates unless the Office is notified in advance that the rates are to be paid by the tenant.

Water takers must keep their water pipes and fixtures in good repair and protected from frost; they shall prevent waste, and the

water must not be left running to prevent freezing.

Water takers shall not allow the water to be used by neighbors or co-tenants, or for the filling of cisterns, or for building purposes, or for any purpose not stated or paid for, without a special written permit from the office.

Water takers must supply their plumbing with a private shut-off. The shut-off at the curb is owned by, and is for the exclusive use of the Water Works. No plumber or other person is authorized or allowed to put the water on for either temporary or permanent use.

Free access to the premises supplied shall be permitted, to examine the apparatus and to ascertain the quantity of water used, the manner of its use, and whether there is any waste. There shall be no concealment of the method or purpose of the use of the water.

Water takers are assumed to receive their supply of water in tanks of adequate size; those who depend upon the direct pressure from the street mains for their supply are cautioned against the damage or inconvenience that may result when pressure in the mains is temporarily cut off without notice for extensions or repairs.

When two or more takers are supplied with water through the same service pipe, all of them are liable to be cut off from supply, should any one of such takers violate the foregoing Regulations or neglect to pay a Water Rate due.

The regular rent for the use of water shall be payable in advance, annually on the first day of June. In all cases of non-payment of the Water Rates in thirty days after the rent is due, or violation of the foregoing Regulations, the supply shall be cut off and the water shall not be again let on, except on payment of any rent due, and the sum of two dollars.

That the said City will during the continuance of this contract from time to time and at all times when requested by said Newport Water Works pass all necessary and reasonable orders, decrees and ordinances for the adequate and reasonable protection of the ponds and reservoirs and the water works system of said party of the second part from any contamination, pollution, or other injury either actual or threatened so that said party of the second part may be enabled to exercise its franchise and carry out its said contract. And the said party of the first part also hereby further covenants

and agrees from time to time and at all times to make and pass all necessary and proper orders, votes, resolutions and ordinances necessary and proper to protect the water of said party of the second part from unnecessary waste, whether by the inhabitants of the City or by the said City itself or its employees.

In Witness Whereof, the said Representative Council by William P. Clarke, Mayor of said City hereunto lawfully authorized and the said Newport Water Works by Bradford Norman, its president, hereunto lawfully authorized have hereunto set their hands and seals the day and year above written.

Executed in the
presence of
Guy Norman

{ The Representative Council of the
City of Newport by
William P. Clarke, Mayor.
The Newport Water Works by
Bradford Norman, President.

(Seal)

The City has sought to repudiate this contract on the ground that the mayor had no authority to make it, and the matter is now in litigation.

On September 1, 1908, the committee on water supply of the city government, recommended that the company should install a new filtration plant, and that the city should acquire certain water rights in Stafford Pond in Tiverton. The company built the filtration plant which was put in operation during 1910.

In the year 1910, a physical re-valuation of the plant was made by Mr. Kent and these figures were used when new accounts were opened June 1, 1911. The Respondents Brief Page 5, states that the accounts from 1900 to 1911 show that the expenditures for construction were \$527,767. From this amount there should be deducted \$18,751.51 for sales of land and other construction items. Included in the amount \$527,767 there is \$144,944.98 for Pipe Shop account. This item is not necessarily construction. Some was sold to private parties and some used in general maintenance but a conservative estimate shows the amount to be \$2,176.00 per year or \$23,936 for the eleven years as a further deduction from construction expenditures.

Between the time of incorporation of the company and the beginning of these proceedings, the company acquired title to nearly 100 parcels of real estate in addition to those acquired under the deed of August 8, 1881.

History of the Proceedings.

The Attorney General rendered an opinion that the commission was empowered to revise rates, rules and regulations of the company notwithstanding the contracts with the city, and to pass upon the validity of any contract pending the determination of a suit in equity commenced before the passage of the act creating the commission.

On December 3, 1913 the commission passed a preliminary order for the respondent to furnish certain information. The respondent complied by filing certain papers, referred to as the schedule accompanied by financial tables, in February, 1914. Permission to amend the schedule was allowed November 24, 1914 and on November 27, 1914 the amendment was made.

THE RESPONDENT'S BRIEF FAIRLY PRESENTS A DESCRIPTION OF THE PROPERTY OF THE COMPANY.

"The following description of the company's property is based on the schedule; it being understood that the items of property in that document represent the plant as it stood January 1, 1914, and that since that date about \$20,000 has been expended for mains and services and at Pumping Station No. 1. See Ex. 3 and 192.

1. *The supply system.*

a. *Land.*

The company owns about 690 acres in Newport, Middletown and Portsmouth, acquired at various times, as per the company's schedule, group 1, and the deeds and takings in Ex. 36 to 145. All of this land is now in use in connection with the supply system, except the small lot on Harrison Avenue listed in group 1, but which belongs properly in group 13. These 690 acres are exclusive of the 170 acres acquired in Lawton's Valley.

b. *Impounding basins:*

TABLE O.

There are six of these:

NAME.	Area of water shed in square miles. Kent p. 268.	Area of water surface in acres. Ex. 20.	Capacity in million gallons. Kent p. 268.	Elevation of flow line above mean low water. Ex. 20 and Kent p. 517.	Volume of embankments in cu. yards. Ex. 29.	Date of construction. Kent p. 273.
Easton's No. Pond	3.75	110.40†	336. †	12.45	13.108	1876 & 1882
Easton's So. Pond .....	.....	147.00†	398. †	11.45	111.956	1893
Nelson Res.	2.87	29.70*	99.	17.30	29.250	1882
Gardner Res.	1....	90.85	241.9	11.66	65.710	1899-1902
St. Mary's Res.	1.25	116.00	336.	180.00	25.986	1878 & 1896
Sisson Res. ....	.....	90.00	167.	162.61	20.449	1896
Totals	7.87	583.95	1,577.9	.....	266.459	
c. Distributing res. ....	.....	.....	8.	152.57*	46.407	1877
Total .....	.....	.....	1,585.9	.....	312.866	

*Pressure at tide water about 64 lbs. Kent p. 446.

†These are the areas and capacities of the Easton ponds as now developed. Originally the areas must have been much less, and the capacity extremely small. On p. 508 of the Record, the chairman asked what proportion of the pond was included in the deed from the city to G. H. Norman, Ex. 73. As near as we can ascertain from the maps and other evidence the area of pond conveyed by this deed was about 90 acres, and its capacity, assuming an average depth of 3 feet, was about 30 m. g. This is about 7 per cent. of the capacity of the south pond as now developed, and about 2 per cent. of the total capacity of the impounding reservoirs now owned by the company.

d. *Pumping plant:*

Station No. 1: Building	1876 & 1891
Blake-Corliss pump	1891
2 B. & W. Boilers	1901-1906
Alis-Chalmers pump	1907
2 B. & W. Boilers	1914
Station No. 2: Building	1883
Curtis pumping engine	1883
1 B. & W. Boiler	1910

e. *Filtration plant:*

This consists of a modern mechanical filter plant of 6 million gallons daily capacity1908-1910

f. Water rights.

Meaning rights of diversion, as against the lower riparian owners, of the waters of Bailey's brook, Paradise brook and Lawton's Valley stream, and their respective tributaries and watersheds, and the owners of the land bordering on Easton's Ponds in their natural condition, as set forth in the amendment to the company's schedule allowed November 24 and filed November 27, 1914. Rec., pp. 51, 140.

	Where and how diverted.	Area of tributary water-shed.	Date of diversion.	Mode of acquisition.
Easton North pond, Easton South pond and Bailey's brook	At the ponds by pumping to the distribution reservoir	3.75 sq. m.	1877.	By deeds and takings from the owners of the land in or on the original ponds and between the point of diversion and the sea, and by prescription.
St. Mary's reservoir.....	At the dam and thence by pipes to the filter pumps	1.25 sq. m.	1878 or 1896.	By deeds, and takings from the owners of the land; and possibly by prescription.
Sisson's reservoir	At the dam, thence by an open conduit to Bailey's brook.			
Nelson and Gardiner reservoirs and Paradise brook.	At a dam just above Nelson's reservoir, thence by pipes to Nelson and Gardiner reservoirs, and thence by pumping to Easton North Pond ..	2.87 sq. m.	1883.	By deeds and takings from the owners on the brook between the point of diversion and the sea, and by prescription.
Total		7.87 sq. m.		

g. *Other easements.*

... the right to convey water by an open conduit from Sisson's reservoir to Bailey's brook.

... the right of way for pipe line from St. Mary's reservoir to West main road.

... the right of way for pipe line from Paradise brook to Nelson and Gardner reservoirs.

h. *The supply mains.*

... There are about 45,000 feet of mains connected with the supply system as distinguished from the distribution plant. See the tables below and App. B. Also about 18 gates and boxes.

1. *Property held in reserve.*

Besides the 690 acres referred to above in (a), the company has acquired and owns 170 acres in Lawton's Valley to enable it to impound more water when the demand for an additional supply becomes urgent. See schedule, group 1, third and fourth items from the bottom of the list, and Rec., pp. 509-511.

2. *The distribution system.*

a. *Mains.*

The company's mains as enumerated in the schedule, group 4, are here divided between those used in connection with the supply system and the distribution mains proper. Ex. 20-25 enable us to make the division with substantial accuracy, as follows:

TABLE Q.

SIZE. Less than	Distribution System.			Supply System.			Total
	C. I.	Cement.	Total.	C. I.	Cem.	Total.	
4 in.		49,540.	49,540.				49,540.
4 "	51,391.64	36,633.	88,024.64				88,024.64
6 "	63,340.28	62,810.20	126,150.48				126,150.48
8 "	19,366.10	19,123.70	38,489.80				38,489.80
10 "		6,591.	6,591.				6,591.
11 "		11,809.30	11,809.30				11,809.30
12 "	17,027.60	29,133.70	46,161.30				46,161.30
14 "		6,020.	6,020.				6,020.
15 "		9,291.60	9,291.60				9,291.60
16 "		472.	472.	7,673	2,873	10,546	11,018.
17 "					21,228	21,228	21,228.
18 "	1,290.	1,525.	2,815.		10,075	10,075	12,890.
20 "	11,146.90	5,465.	16,611.90				16,611.90
24 "				1,300	1,600	2,900	2,900.
	163,562.52	238,414.50	401,977.02	8,973	35,776	44,749	446,726.02

The amount of ledge encountered in laying the mains is estimated in the company's schedule, group 4, at 7970 running feet, or 5,313 cubic yards.

b. Gates, boxes, etc.

There are 902 gates as per company's schedule, group 4-A, viz.:

Number.	Sizes, inches.
1	1
15	1½
117	1¾
94	2
242	4
258	6
47	8
8	10
63	12
8	14
18	16
13	18
12	20
6	24

Total 902

Of these, 18 are on the supply mains; the rest belong to the distribution plant.

There are also 896 gate boxes, of which 18 belong to the supply.

c. *Services, hydrants, etc.*

There are 6,350 service pipes and fittings, 68 watercart standpipes and 314 fire hydrants. One hundred and fourteen of the hydrants have been paid for by the city, but they are apparently the property of the company.

d. *Rights of way.*

The company owns 24 rights of way in private land, referred to in Ex. 154 and Rec., p. 366

3. *Loose personal property and working capital.*

On January 1, 1914, the company owned office furniture, tools, instruments and other miscellaneous and fluctuating personal property set down, but not itemized, in groups 7 and 8 of the company's schedule.

There is also a considerable amount of pipe and fittings carried in stock, but not mentioned in the schedule. See Ex. 17.

The company also has a cash or invested fund, a part of which it desires to have considered as working capital and to be regarded as a part of the property or plant used by the company in its business. See *infra*, p. 62.

4. *Non-operating or abandoned property.*

This consists of the three sets of box filters installed at various dates at Pumping Station No. 1, St. Mary's reservoirs and Paradise brook, and discontinued when the new plant was erected in 1910; the Harrison Avenue lot; some pumping machinery and miscellaneous property at the auxiliary pumping station on Harrison Avenue, abandoned in 1912; and a brick cottage. See the company's schedule, group 13, and Kent, pp. 267, 391, 445-446.

5. *Franchises, etc.*

In addition to the property, tangible and intangible, enumerated

in the foregoing four sections, the company has an exclusive right or franchise to occupy the streets of the city of Newport for water supply purposes until 1926. Ex. 146 and Rep. 1908, p. 6.

No claim is made that the value of this franchise should be included in the rating value of the company's property; and it is mentioned here only to distinguish it from the ordinary incorporated rights of property owned by the company; that is, its water rights, pipe-line rights and other easements.

The company also has a franchise of eminent domain, given by the acts of 1877. So far as these rights have been exercised, they have been transformed into vested rights of property. To the extent that they are still unexercised but likely to be needed, they are also to be regarded as property.

ORIGINAL COST OF THE WORKS AND COSTS SINCE
THE PURCHASE

The original cost of the works to the corporation was \$500,000.00, this being the price paid by the corporation to Mr. Norman (Res. Brief P. 3 and Ex. 13, 56 and 194 (and it is claimed that the property could not have cost Mr. Norman much less (Res. Brief P. 32).

On P. 92 of Res. Brief is given an estimate of the cost of the works up to the time of the sale to the Newport Water Works. This estimate was prepared by Mr. Kent who has had charge of the works since 1911 or thereabouts. His estimate above referred to gives the cost at \$406,824.06 and includes a land value of \$82,326.36 which is computed from data in deeds of property purchased as shown in Res. Exhibits 36 to 56 inclusive. These Exhibits, upon examination, show that the total amount stated as being paid for land was \$25,410.30. This amount includes a "Right of Way" on Commercial Wharf with a nominal consideration of \$1.00, a conveyance of the Easton Pond property by the City of Newport and a "Right of Way given by Abraham T. Peckham in Portsmouth for \$1.00. Besides the amount of \$25,410.30, there were two leases from John Clark of Middletown (Ex. 39 and Ex. 40) one bearing a rental of \$30.00 a year, as well as a rental of \$20.00 a year during the lifetime etc. These rentals, computed for the period ending with the sale by Mr. Norman to the Newport Water Works Company, amounted in the case of the \$30.00 annual rental for five years to \$150.00, in the case of the \$12.00 annual rental for four years to \$48.00 and in the case of the life rent to \$40.00, or a total rental of \$238.00. This rental of \$238.00 is a proper charge to maintenance and operation account, but as Mr. Kent has included it in his estimate, it is here included. Add to this \$238.00 the amount \$25,172.30 (the amount recited in the deeds referred to as being paid for the real estate) makes the total land valuation at the time of the sale to the Newport Water Works \$25,410.30 instead of \$82,326.36 as estimated by Mr. Kent (P. 92 Appendix A of Res. Brief) or a lesser amount by \$56,916.06. There is no data available to test the accuracy of the other items in the estimate (P. 92 Res. Brief) of Mr. Kent. The revised original cost of the physical plant would therefore be as follows:

Land	\$82,326.36	
<i>Less the Difference between this amount and that recited in the deeds (Ex. 36-56)</i>	<i>56,916.06</i>	
		<hr/> \$25,410.30
Distribution and Storage Reservoirs		\$109,352.00
Buildings		14,000.00
Power Plant Equipment		23,600.00
Distribution System		160,065.70
Services		15,580.00
Office Furniture		500.00
Tools and Equipment		900.00
		<hr/>
<i>Original Cost (Revised) of Physical Plant</i>		<i>\$349,908.00</i>

*Additions to Plant.**June 1, 1881 to March 16, 1889.*

The only available data to show the cost of construction in this period is that contained in a report made to the company by George W. Piper, auditor, for that period and contained in Res. Ex. 11. On page 2 of said exhibit, it states the disbursements for construction as \$250,933.32; while on P. 4 of the same exhibit, it states the construction assets at March 16, 1889 as \$757,156.69 with no liabilities of a construction character. Assuming for deduction purposes that the construction data previously furnished by the Respondent to be correct, this shows a difference of \$6,223.37. In other words, adding the Disbursements for construction as stated in Ex. 11 to the previous construction cost (Res. Ex. 193) of \$500,000.00, makes the total construction cost at this date \$6,223.37 less than as stated in Res. Ex. 193 for this period. As no liabilities of a construction character appear in this Balance Sheet (P. 4 Res. Ex. 11) it is assumed that the disbursements for construction as appears on p. 2. Res. Ex. 11, as being the total construction cost for the period, and therefore the amount used is \$250,933.32.

*Additions to Plant.**March 16, 1889 to June 1, 1900.*

Respondents Exhibit 193 states the cost of the additions to the Plant for this period to be \$415,633.14, while the Res. Ex. 207

states the disbursements for construction from May 31, 1889 to June 1, 1900 as \$421,408.29. It will be noted that there is a lapse of nearly two months in the two exhibits, one beginning March 16, 1889 and the other May 31, 1889. There is no data available to show the detailed transactions for this "lapsed time" and as a computation was made in the "original cost" data on a Disbursement basis, the computation in this period is made on the same basis and the amount for this period used is \$421,408.29. In Res. Ex. 193 it states "the additions to the plant from March 16, 1889 to June 1, 1900, according to Mr. Piper's report (Exhibit 10) amounted to \$415,633.14." Exhibit 10 referred to does not state the "additions to the Plant" in this period, but makes a statement of condition at the close of the period which should contain the construction cost for all time to the close of the period. P. 209 and 210 testimony of Mr. Buckhout who made up the total of \$1,172,789.83 which includes the \$415,633.14 shows that a portion of it was made from Inventory of stock on hand and not from actual purchases in the period.

Additions to the plant.

June 1, 1900 to May 31, 1911.

The Res. Ex. 193 places the cost of the additions to the plant for the period June 1, 1900 to May 31, 1911 at \$527,767.79. The additions to the Plant for construction during this period as shown in Res. Ex. 14 is \$374,095.89. To this has been added what is stated to be the "Pipe Shop Account" of \$144,944.98 and the "Tools and Fixtures Account" of \$1,856.02 and in the testimony of Mr. Buckhout, pp. 209-210, he says, "I included in that amount of money expended in construction account plus an amount of money expended for tools, fixtures, *plus an amount of money which is represented in our pipe shop — it is in our store room, that is stock in trade we carry.*" If this statement is correct these last two amounts could not be added to the construction account for the reason that they are of an Inventory character and represent stock on hand and not purchased during the year, but Res. Ex. 14 shows them to be actual expenditures during the period being considered. In addition to these amounts Res. Ex. 14 shows also an expenditure for land not

classified in the Construction Account of \$6,873.70. These items summarized show the following:

Construction Account	374,095.89
Pipe Shop Account	144,944.98
Tools and Fixtures	1,856.02
Land	6,873.70
	<u>527,770.59</u>

The same Res. Ex. 14 shows that during this same period there were received on the

Pipe Shop Account	726.96
Pumping Station	8.00
Reservoir Construction	108.70
Filtration Plant from Mfgs.	1,622.01
Land sold to Bay State St. Ry.	451.94
Gardner Farm \$20,462.53, but as Res. Ex. 190 states that a portion was sold to Mr. Norman, only that amount is used and the amount received is placed at	15,833.90
	<u>18,751.51</u>

which makes the total deductions

and the cost of the additions to the plant for this period are placed at

Additions to plant.

June 1, 1911 to June 1, 1914.

Res. Ex. 193 places the cost of construction in this period at \$1,120,028.13.

The Res. Ex. 3, p. 123, which is the current ledger, shows the cost of the construction during this period:

as	86,685.80
with credits to it of	51.20
leaving	86,634.60
to which should be added the cost of the land purchased in that period less credits	25,734.38
or a total of	112,368.98
making a total cost of Construction to May 31, 1914, of	1,643,637.67

Additions to plant.

June 1, 1914 to May 31, 1915.

Res. Ex. 3, P. 123, which is the current Ledger, shows the cost of the Construction during that period to be

Less Credits of	9,626.57
	1,208.06
	8,418.51
a total cost of Construction to May 1, 1915, of.....	<u>1,652,056.18</u>

The Res. Ex. 14 shows Pipe Shop expenditures from June 1, 1900 to May 31, 1911 of \$144,944.98 which also appear in "Table of annual additions to plant June 1, 1900 to June 1, 1913." The Res. Ex. 14 shows Tools and Fixtures expenditures from June 1, 1900 to May 31, 1911 of \$1,856.02 which also appear in the said "Table of annual additions to plant June 1, 1900 to June 1, 1913.

Res. Ex. 4 appears in the index of the Res. Brief as the "Company's Journal, series 1900-1911." Res. Ex. 8 appears in the index of the Res. Brief as "Company's Ledger, series of 1900-1911." The testimony showed these books were used but for two years.

The examination of the data appearing in Res. Ex. 14 shows the amount charged to construction from the Pipe Shop account was \$29,305.05 and the amount charged from the Tools and Fixtures account for the two years period ending May 31, 1902 was \$846.81, or a total of \$30,156.86. During this same period 1900-1901 and 1901-1902, the sales to individuals and firms and others

from the Pipe Shop amounted to	6,389.03
and the amount charged from the Pipe Shop to the maintenance accounts was, for the same period	3,243.66
During the same period 1900-01 and 1901-02, there was sold from the Service Construction account to private parties	7,235.34
Meter Construction account to private parties	901.08
Hydrant Construction account to private parties	609.84
During the years 1896-7-8-9-1900, the charges from the "Material," "Pipe Shop," "Meter," "Fire Hydrant" and "Service" Construction accounts to private parties was	16,547.15
and for the same accounts for the same period, there was charged to the maintenance accounts.....	4,254.13
or a total for the four years as shown in Res. Ex. 4	
and 155 of	39,180.23

Just what proportion of this amount is represented by Profit on materials sold and just what proportion of it is represented by Labor, it is impossible to state, for the reason that there is no exhibit nor evidence to indicate them. The amount transferred in these six years, \$39,180.23, is an average per year of \$6,530.00 in round numbers. Assuming that one-

third of this amount was for raw material charged originally to construction, it would make \$2,176.00 and for the thirty years from May 31, 1881 to June 1911 (the time when the new system of bookkeeping was inaugurated), it would make the amount originally charged to construction but diverted from it 30 x \$2,176.00, or

65,280.00

taken from the cost above would leave the amount put into construction to June 1, 1915.....

 \$1,586 76.18

It is fair to assume that the consideration as stated in the deeds of the early land purchases are considerably less than the actual amounts paid, but definite evidence upon this question is lacking.

The value of the engineering services of Mr. George H. Norman in the construction and development of the property is not included in the above computation, nor is the value of the land acquired by gift.

Table 1.

STATEMENT
OF
MATERIALS CHARGED TO CONSTRUCTION
AND
DIVERTED TO OTHER USES
FROM
JUNE 1, 1896 TO MAY 31, 1900

Sold to Private Parties

Material	4,501.20		
Pipe Shop	2,410.99		
Hydrant	570.94		
Meter	1,342.04		
Service	6,964.76		
Main Pipe	662.22		
Water Cart	95.00	16,547.15	

Used for Maintenance

From Material Account

For Main Pipe Maintenance	718.02		
For Gate Maintenance	234.74		
For Hydrant Maintenance	1,055.91		
For Service Maintenance	1,288.97		
For Meter Maintenance	91.00		
For Pumping Station Maintenance	264.48		
For Water Cart Maintenance	37.25		
		3,690.37	

From Pipe Shop

For Main Pipe Maintenance	10.79		
For Hydrant Maintenance .....	.50		
For Service Maintenance	358.38		
For Meter Maintenance	33.75		
For Pumping Station Maintenance	121.34		
For Water Cart Maintenance	39.00	563.76	4,254.13

Total	20,801.28
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Table 2.

STATEMENT
OF
MATERIALS CHARGED TO CONSTRUCTION
AND
DIVERTED TO OTHER USES
FROM
JUNE 1, 1900 TO MAY 31, 1902

<i>Pipe Shop</i> —Sold to Private Parties	6,389.03	
<i>Used for Maintenance</i>		
Main Pipe	423.05	
Gates	218.58	
Hydrant	559.88	
Service	1,785.49	
Reservoir	8.77	
Meter	30.94	
Pumping Station	159.14	
Filter	3.50	
Water Cart	54.31	
	3,243.66	9,632.69
<i>Service Construction</i> —Sold to Private Parties		7,235.34
<i>Meter Construction</i> —Sold to Private Parties...		901.08
<i>Hydrant Construction</i> —Sold to Private Parties		609.84
Total		18,378.95

Table 3.

COMPARATIVE STATEMENT
OF
CONSTRUCTION COST
TO
MAY 31, 1915

Value of Physical Plant at time of Purchase. Mr. Kent Res. Brief P. 92	406,824.06	
Value as computed by the Commission on account of incorrect value of land		349,908.00
<i>Additions to Plant June 1, 1881 to Mar. 16, 1889.</i>		
Res. Exhibit 11	250,933.32	
Commission's Computation		250,933.32
<i>Additions to Plant Mar. 16, 1889 to June 1, 1900.</i>		
Res. Ex. 10	415,633.14	
Commission's Computation		421,408.29
<i>Additions to Plant June 1, 1900 to May 31, 1911.</i>		
Res. Ex. 14	527,770.59	
Commission's Computation as per detail		509,019.08
<i>Additions to Plant June 1, 1911 to June 1, 1914.</i>		
Res. Ex. 3 (Current Ledger)	112,368.98	
Commission's Computation		112,368.98
<i>Additions to Plant June 1, 1914 to May 31, 1915.</i>		
Res. Ex. 3 (Current Ledger)	8,418.51	
Commission's Computation		8,418.51
	1,721,948.60	1,652,056.18
<i>Deduction.</i>		
By Commission-Sale of Material		65,280.00
Commission		1,586,776.18
Respondent	1,721,948.60	
Commission less than Respondent		135,172.42
	1,721,948.60	1,721,948.60

COST OF REPRODUCTION.

The cost of reproduction of the property of the company will be considered under the following groups, viz.: (1) Land; (2) Storage; Reservoirs; (3) Pumping Plant; (4) Filter Plant; (5) Distributing Reservoirs; (6) Supply Mains and (7) Distribution Mains.

1. *Land.*

The respondent produced as a witness, Mr. Herbert L. Dyer who is a resident of Newport, and has been in the real estate business for many years and is familiar with real estate values there, who gave his opinion as to the value of the several tracts of land involved, placing a total value of \$267,734 upon all of the company's land.

Mr. Edmund W. Kent, superintendent of the company for many years, testified as to such values, basing his estimates to a considerable extent, upon the actual amounts paid for such tracts where such amounts could be ascertained from the records of the company, and giving his opinion as to the value of the remaining tracts.

Mr. Kent has placed values upon the company's land in 1910 (Res. Brief P. 35) before any prospect of this proceeding, showing a total value of \$142,293, but later on (Company's Schedule, Group 1) he placed it at \$224,198., testifying that additional acreage had been discovered and that he had further revised his unit prices. He accounts for this difference (1) through additional acreage discovered as appears by the table, \$12,425 and (2) through revision of unit prices, \$43,709 and (3) through purchases of additional land in Lawton's Valley since 1910, \$25,771, the total increase over his 1910 estimate being \$81,905.

TABLE 4.
VALUATION OF PHYSICAL PLANT LAND.

		Company's Schedule.					
		Unit Cost.	Acreage.	Total.	Total.	Acreage.	Unit Cost.
Exhibit No. 29.		\$454 52	4.56	\$2,072 60	\$2,072 61	4.56	\$454 52
Pumping Station No. 1.		200 00	1.04	208 00	208 00	1.04	200 00
Pumping Station No. 2		150 00	6,750 sq. ft.	1,012 50	1,012 50	6,750 sq. ft.	150 00
(Paradise)		01	23,283 sq. ft.	232 83	232 83	23,283 sq. ft.	01
Harrison Ave.		150 00	110.4	16,560 00	22,080 00	110.4	200 00
St. Mary		150 00	147	22,050 00	29,400 00	147	200 00
Reservoir—Easton North		200 00	29.7	3,940 00	5,940 00	29.7	200 00
Nelson Pond							
Gardner's Pond:							
(Exhibit 190 Shows Cost \$11,758)		150 00	72.9	10,935 00	23,691 80	*118.459	200 00
Distributing and Adjacent Land.		637 50	5.5	1,375 00	2,817 50	8.05	350 00
St. Mary		200 00	116.	23,200 00	34,703 00	*138.812	250 00
Sisson		200 00	90.	18,000 00	31,535 00	*126.14	250 00
Land between St. Mary's and Sisson's Pond		388 00	34.18	6,836 00			
				\$10,921 75			
<i>Detached Land—Borrow</i>							
Pit Lot		200 00	2.7	540 00	540 00	2.7	200 00
Quarry Lot		15	63,600 sq. ft.	9,540 00	10,623 75	70,825 sq. ft.	15
Bath Road							
Lot Aquidneck		25	7,225 sq. ft.	1,806 25			
Ave. Lot					371 22	18,561 sq. ft.	02
<i>Detached Land.</i>							
Lawton Valley Land Purchased.		150 00	110.57	16,585 00	35,180 00	140.72	250 00
Lawton Valley Land Condemned 1910.					21,790 00	30.56	
<i>Water Ways—</i>							
Through William Spooner et als. Land.				5,000 00			
Through Matthew Coggeshall and Albert Chase.				400 00			
Pipe Line Rights					1,500 00		
Water Way—From Sisson's Pond.					500 00		
				\$142,292 18	224,198 21		

*Error in Computation Corrected.
*Includes "Marginal Land."

TABLE 5.

	Kents' Values.		Difference.
	1910 Estimate Modified.	Company's Schedule 1.	
To Estimate of 1910.....	\$142,293	\$224,198	\$81,905
<i>(1) Corrections for Additional Acreage.</i>			
Gardiners' Pond			
.....45.559 @ \$150.....			\$6,834
Dist. Res. and Adj. Land.....			637
.....2.55 @ \$250.....			
St. Mary's Res.....			4,562
.....22.812 @ \$200.....			
Sisson's Res. and Adj. Land.....			392
.....1.96 @ \$200.....			
Total	12,425		
<i>(2) Lawton's Valley Land.</i>			
Purchases since 1911-15.....	25,771		
<i>(3) Increased Unit Prices.....</i>			
	43,709		
Total	\$224,198	\$224,198	

The complainants presented as a witness Mr. Fred W. Greene, a real estate agent, resident of Newport for many years and familiar with real estate values in and about Newport, who gave his opinion that \$112,975 was the value of all of the land of the company.

Such of the testimony of these witnesses as was based upon the sales of similar land in the vicinity of the tracts in question had reference to the sale of complete farm parcels with the exception of certain lots upon a plat easterly of Easton's Reservoirs.

The Commission personally visited all of the several tracts of land, and believe it would be difficult, if not impossible to make a quick sale of these tracts for anything like the prices named in the two higher estimates.

We find the present value of the land of the company to be not more than \$185,000. The Harrison Avenue Lot, not used, is wholly disregarded.

The Lawton Valley Land which has been acquired for the purpose of building an additional reservoir has been included as reasonably necessary for the future expansion of the limited water supply of the company.

The following table shows the comparative estimates of land value:

TABLE 6.

	LAND.		
	Total Land Value.	Abandoned.	Land used and useful.
Kent, (original unit prices)	\$180,491	\$1,013	\$179,478
Kent, (revised unit prices)	224,198	1,013	223,185
Dyer	267,734	1,013	266,721
Greene	112,975	1,013	111,962
Gray	177,974	1,013	176,961
Commission .....	.....	.....	185,000

STORAGE RESERVOIRS.

The testimony of the engineers showed that all agreed the cubic contents of the reservoir embankment contained 266,459 cubic yards, but they differ in their estimates of the cost of constructing the embankments. The respondent submitted the cost per cubic yard \$1.46, incurred in the building of Gardner's Reservoir. This amount did not contain any allowance for overhead charges. The reservoir cited was constructed on salt marsh under difficult conditions and for this reason is not a fair example of cost. If a unit price of \$1.35 per cubic yard is adopted it will approximate more nearly what appears to be the cost of reproduction.

TABLE 7.

EMBANKMENTS
STORAGE RESERVOIR
REPRODUCTION
DATA.

Reservoirs.	Cubic Yds.	Commiss'n.	A	A	A
			Smith.	Gray.	Respondent.
		1.35	1.20	1.25	1.50
1878 Easton No.	13,108.00	17,695.80	15,729.60	16,386.00	19,662.00
1893 Easton So.	111,956.00	151,140.60	134,347.20	139,945.00	167,934.00
1882 Nelson	29,250.00	39,487.50	35,100.00	36,562.50	43,875.00
1877- 1896 St. Mary's	25,986.00	35,081.10	31,183.20	32,482.50	38,979.00
1896 Sisson's	20,449.00	27,606.15	24,538.80	25,561.25	30,673.50
1899- 1902 Gardner's Pond ...	65,710.00	88,708.50	78,852.00	82,137.50	98,565.00
	266,459.00	359,719.65	319,750.80*	333,074.75*	399,688.50

A—Res. Brief P. 36.

*Includes Overhead.

Note—Gardner's Reservoir, which was built on salt marsh, was constructed under difficult conditions. All other reservoirs were built under more favorable conditions.

PUMPING PLANT.

The property called Pumping Plant is the property contained in the Company's Schedule under Groups 5 and 6. Mr. Kent's valuation in 1910 placed these groups at \$115,346; but in 1914, he revised his figure to \$127,146.00. Mr. Sherman's report shown as Exhibit 164 makes the figure \$110,359 and Mr. Gray fixes the value of Group 5 at \$108,246 and Group 6 at \$22,500, making a total of \$130,746. The respondent's brief suggests \$115,000, as the fair cost of reproduction.

FILTER PLANT.

The respondent's Exhibit 29, valuation by Mr. Kent made in 1910, fixes the value of the Filter Plant at \$83,417.28. The contract price of the filter plant seems to be generally accepted as a proper cost of reproduction.

DISTRIBUTING RESERVOIR.

As was the case with the Storage Reservoirs, the engineers agree as to the content of the embankments for the Distribution Reservoir, but have the same difference of value per cubic yard. The unit price of \$1.35 per cubic yard should be applied.

TABLE 8.

DISTRIBUTING RESERVOIR
REPRODUCTION
DATA.

	Cubic Yards.	Unit Price.	Reproduction Value.
Commission	46,407	1.35	62,649.65
Smith	46,407	1.20	55,688.40
Gray	46,407	1.25	58,008.75
Respondent	46,407	1.50	69,610.50*

*In respondent's brief p. 38, this item is stated as \$79,610.50, a difference of \$10,000.00.

SUPPLY AND DISTRIBUTION MAINS.

The company's schedule classifies the supply system and the distribution system separately, but the engineers have grouped the two.

The estimates of the several witnesses of the reproduction cost of the entire pipe system, not including overhead charges is indicated below :

TABLE 9.

	Gray.	Smith.	Kent. Ex. 29.	Sherman. Ex. 164, p. 5.	E. W. Shedd. Ex. 202.
Mains	\$534,714	\$534,529	.....	\$535,000	\$572,157
Gates, etc.	165,224	133,381	.....	166,000	167,919
Ledge	18,595	18,595	.....	21,000	15,942
Total	\$718,533	\$695,506	\$730,879	\$722,000	\$756,018

There is no substantial difference in the estimates of Messrs. Gray and Sherman, the former fixing \$718,533, and the latter \$722,000 as the reasonable cost of reproduction of the entire pipe system.

It is probable that Mr. Sherman's estimate of \$125,000 for the supply system and \$597,000 for the distribution system approximately represents the reproduction costs.

OVERHEAD CHARGES.

An allowance of 15% for all overhead charges, and applicable to the cost of reproduction of all of the physical property of the company, excluding materials, tools, and supplies, and including land, will be applied.

Mr. Gray has estimated \$12,000 as a lump sum in his opinion sufficient to cover all engineering.

DEPRECIATION.

The sinking fund curve method of computing depreciation has been commonly followed by the Wisconsin Commission. It is described by Mr. Whitten, in his work upon Valuation of Public Service Corporations, at page 334, as follows :

"The sinking fund method assumes that an amount is set aside each year which invested at compound interest will equal the total wearing value at the end of the assumed life. The depreciation at any time is said to exactly equal the amount that is or should be in a sinking fund accumulated in this way. Under the sinking fund method the existing depreciation found is always less than it would be under the straight line method. The degree to which it varies will depend largely on the rate of interest at which the fund is assumed to accumulate. The higher the rate of interest assumed, the smaller will be the existing depreciation under the sinking fund method as compared with what it would be under the straight line method. The difference between the two methods is not great for a unit with a short life but for a unit having a fifty year life the excess of the existing depreciation as shown by the straight line method over that shown by the sinking fund method may be enormous."

The straight line method of depreciation is described in the same work, on page 332, as follows:

"Under the straight line theory it is assumed that the wearing value decreases uniformly each year during the assumed life. If the assumed life is ten years and six years of such life have elapsed, the existing depreciation amounts to six-tenths of the total wearing value. This method is the one most largely used in appraisals for all purposes."

It would appear that the former method will produce more accurate results in the case of the property of the respondent, where such property cannot be readily inspected, hence the straightline method is not considered.

ACCRUED DEPRECIATION.

The items of property to which accrued depreciation might be applicable are the storage reservoirs, the pumping plant, the filter plant, the distributing reservoir, the supply mains, and the distribution mains. Such of this property as could be observed has been casually inspected by the commission and the record contains the judgment of the engineers upon this question.

Reservoirs.

It was clear from inspection and from the testimony that the several reservoir embankments and dams of the storage reservoirs had sustained no depreciation from physical deterioration, and required only ordinary maintenance to retain a condition equal or superior to that when new.

Mr. Sherman estimates the depreciation of the distributing reser-

voir at \$8,500 upon a cost of reproduction of \$40,000, exclusive of overheads. (Res. Ex. 168.)

Filter Plant.

The filter plant did not appear to have suffered any accrued depreciation, and the contract cost seems to have been generally accepted by the engineers as a fair statement of its present value.

Pumping Plant.

Mr. Gray estimated the accrued depreciation upon the pumping plant at \$60,103 as based upon a four per cent sinking fund compounded semi-annually. His estimate of reproduction cost was \$130,746.

Mr. Sherman estimated accrued depreciation at \$30,000, his computation being based partly on life tables, and a four per cent sinking fund compounded annually, and partly on inspection. His estimate of reproduction cost was \$132,000.

This is an engineering question and taking into consideration the different method employed by Messrs. Gray and Sherman in making their estimates, it would appear that the actual accrued depreciation would be somewhere between the two estimates. If the reproduction value of the pumping plant is taken as \$115,000, it would seem that an estimate of \$30,000 would cover the accrued depreciation.

Supply and Distribution Main.

The estimate of the amount of the accrued depreciation of the combined mains is fixed by Mr. Gray at \$164,729 and by Mr. Sherman at \$193,400, both using the same methods of computation as in the case of the pumping plant.

The computation and method employed by Mr. Sherman is indicated in the following table:

TABLE 10.
MR. SHERMAN'S ESTIMATES OF REPRODUCTION COST AND DEPRECIATION* OF PIPES. REFIGURES AS BETWEEN THE SUPPLY AND THE DEPRECIATION SYSTEM.

Location.	Kind.	Size.	Reproduction Cost.		Useful life, years.	Present age, years.	Accrued Depreciation %	Accrued Depreciation Amt.	Remaining Value.	Remaining Life.	Annual Depreciation %	Annual Depreciation Amt.
			Excluding 18% overhead.	Including 18% overhead.								
St. Mary Res. to Town Line...	Cement-lined.	17 & 18	\$58,000	\$68,500	40	20	31	\$21,200	\$47,300	20	3 1/2	\$1,580
Pump Sta. No. 2 to Easton's Pond	Cast-iron.	16	17,000	20,100	80	3	0.6	130	19,970	77	0.2	40
Conduit— From Paradise Brook to Nelson Res.	Cement-lined.	24	3,000	3,500	40	33	70	2,450	1,050	7	12 2-3	130
From Nelson Res. to Gardner Pond	Cast-iron.	24	5,000	5,000	80	15	3.6	200	5,700	65	1.3	20
Around Nelson Dam	Cement-lined.	24	3,000	3,500	40	13	17	600	2,900	27	2.1	60
Force Main Pump, Sta. No. 1 to District b. Res.	Cement-lined.	16 & 18	18,000	21,200	40	38	91	19,200	2,000	2	2	980
Force Main Pump Sta. No. 1 to District b. Res.	Cement-lined.	17 & 18	19,000	22,400	40	21	34	7,630	14,770	19	3.6	530
2 16 in. gates. ....	.....	.....	130	150	.....	.....	.....	.....	.....	.....	.....	.....
10 18 in. gates. ....	.....	.....	770	900	.....	.....	.....	.....	.....	.....	.....	.....
6 24 in. gates. ....	.....	.....	900	1,050	.....	.....	.....	.....	.....	.....	.....	.....
18 valve boxes and chambers. ....	.....	.....	200	250	.....	.....	.....	.....	.....	.....	.....	.....
Totals for supply pipe system. ....	.....	.....	\$125,000	\$147,450	.....	.....	.....	\$51,600	\$95,850	.....	.....	\$3,360
Totals for distributing pipe system by subtraction. ....	.....	.....	.....	\$703,550	.....	.....	.....	.....	.....	.....	.....	.....
Totals for entire piping system, Ex. 168 .....	.....	.....	.....	\$851,000	.....	.....	.....	.....	.....	.....	.....	\$15,430

*Computed by Sinking Fund method, with interest at 4%, compounded annually.

The total accrued depreciation of the supply system is thus fixed at \$51,600, and of the distribution system at \$14,800.

A summary statement showing a comparison of the estimated reproduction cost, and the reproduction cost less estimated accrued depreciation of all of the property of the respondent company follows:

TABLE 11.
COST OF PRODUCTION.

	A—Commissioner's Estimate.		B—Gray (With Commission's Land Estimate.)		C—Sherman.		D—Kent.		E—Respondent's Brief.	
	Reproduction Cost.	Less Depreciation.	Reproduction Cost.	Less Depreciation.	Reproduction Cost.	Less Depreciation.	Reproduction Cost.	Less Depreciation.	Reproduction Cost.	Less Depreciation.
1. Land	\$185,000	\$185,000	\$185,000	\$224,198	\$224,198	\$200,000	\$200,000	\$224,198	\$200,000	
2. Storage Reservoir	359,720	359,720	373,755	429,299	429,299	399,688	399,688	399,688	399,688	
3. Pumping Plant	115,000	85,000	130,746	70,643	112,759	115,346	115,000	115,346	85,000	
4. Filter Plant	83,417	83,417	83,417	84,000	84,000	85,000	85,000	83,417	85,000	
5. Distribution Reservoir	62,650	62,650	*	40,000	40,000	69,610	69,610	69,610	69,610	
6. Supply Main	125,000	73,400	718,533	544,978	722,915	125,000	125,000	730,879	73,400	
7. Distribution Mains	597,000	455,200				597,000	597,000		455,200	
	\$1,527,787	\$1,304,387	\$1,508,778	\$1,257,793	\$1,613,171	\$1,381,271	\$1,623,138	\$1,591,298	\$1,367,898	
Overhead allowances	229,166	210,658	12,000	12,000	290,370	248,628	243,471	238,695	203,584	
Total estimated cost of reproduction	\$1,756,953	\$1,515,045	\$1,520,778	\$1,269,793	\$1,903,541	\$1,629,899	\$1,866,609	\$1,829,993	\$1,571,582	

A, D and E—Apply 15% as overhead allowance to the costs of all physical property including land.

C—Applies 18%.

Note—B—Gray makes overhead allowance for engineering only. His estimated depreciation by the sinking fund method is here presented.

*He has grouped the storage and distribution reservoirs in his valuation.

C—Sherman uses Company schedule value of land.

D—Kent uses Company schedule value of land. He has not estimated depreciation.

OTHER ELEMENTS OF VALUE.

It was claimed by the respondent company that certain elements of value should be added to the valuations of the physical property as determined by the engineers.

A claim is made for "water rights," and is expressed in dollars by counsel at \$400,000.

The character of these "water rights" is hereinbefore described in the statement of the property of the company. We have considered the elaborate argument of counsel for the respondent, together with the rough estimate of engineers as to the costs of alternative plants.

We have also considered the fact that such water rights as the company possesses were secured in connection with the purchase or gift of the lands of the company, and also the fact that the rights of diversion claimed rest upon a questionable claim of a right by prescription from the lower riparian proprietors, of which, in the case of the Easton's reservoir outlet the City of Newport is one.

The alternative claim is made for "water in storage." We have considered this element in arriving at the fair value hereinafter determined.

A claim is made for "going value." "Going value" is sometimes determined by ascertaining actual losses and expenses incurred in establishing the business. When this is impossible various methods of calculating or estimating the outlay and losses are resorted to.

The cases are reviewed in Pillsbury et als vs. Peoples Gas Light Company, 4 N. H., P. S. C. and the New Hampshire Commission reached the following conclusion. (p. 390.)

"Upon full consideration of the principle involved, and upon careful study of all the cases where that principle has been applied, we hold that in every valuation case consideration must be given to the amount of business being done and the earnings therefrom at reasonable rates, as well as to physical properties; and that the plant must be valued, not as a collection of dead units, but as a going concern, doing the business which in the particular case it appears that it does. But for the purpose of determining what weight should justly be given to the business being done, we hold that regard may be had to the expense at which the same was built up, and to the source from which such expense was paid."

It would appear that in this case the cost of establishing the respondent company's present business has been defrayed from time to time as the business has grown in size, from the operating ex-

penses of the respondent company, and the public of the city of Newport, in past rates which it has paid for water service, has recompensed the respondent company for all operating expenditures, and in addition has from 1893 to 1914 netted the respondent company an average of 7.31 per cent on its cash investment of \$780,000, plus the cost of all additions and betterments constructed from earnings as revealed from the evidence in this case.

In the finding of value of the respondent company's properties hereinafter, due weight will be given by the Commission to the opinion evidence presented herein as to the value of the established business of the company.

SECURITIES OUTSTANDING.

The following memoranda taken from Respondent's Exhibit 194, shows the history of the issue of the capital stock of the company. There are no bonds.

HISTORY.

- "1876—July 6. Franchise for the water sources and for the exclusive right of laying water pipe in the City of Newport granted to George H. Norman by the Board of Alderman and City Council of Newport. The condition of this grant being that George H. Norman should within the period of six months from date, commence the construction of the water works; which condition is complied with.
- 1877—Feb. 8. Grant by the R. I. Legislature to George H. Norman to construct a Water Works system in the City of Newport.
- 1879—May 30. Act of Legislature of R. I. incorporating the Newport Water Works, capital stock not to exceed \$500,000.00 to be divided into shares of \$100.00 each. George H. Norman, William P. Sheffield and G. Norman Weaver named as incorporators.
- 1881—March 1. Contract between George H. Norman and the City of Newport for water supply approved by the Board of Alderman and the City Council of Newport, R. I.
- 1881—May 9. Act of Legislature of R. I. of May 30, 1879 incorporating the Newport Water Works accepted by George H. Norman and William P. Sheffield. Board of Directors chosen from the subscribers to the capital stock. Said board vote to purchase Water Works from George H. Norman. Capital stock issued \$500,000.00.

- 1884—March 14. Act passed in Legislature authorizing the increase of the capital stock to an amount not exceeding \$750,000.00.
- 1884—July 7. Directors vote to increase capital stock in order to pay for proposed extensions. \$200,000 distributed among the stockholders, in proportion to their holdings. They to pay \$65.00 for each share, and the balance to represent their share of the earnings which has been expended on new construction work.
- 1893—Feb. 24. Act passed in Legislature authorizing the increase of capital stock to an amount not exceeding \$1,000,000.00. Also right to issue mortgage bonds in any sum not exceeding the capital stock.
- 1893—Sept. 1. Directors increase capital stock to \$1,000,000.00 stock distributed in proportion to holdings; \$150,000.00 to be paid in cash and the balance \$150,000.00 representing a stock dividend in view of the fact that that amount has been expended from current earnings for construction work.
- 1893—Sept. 1. Capital outstanding after 3rd issue, \$1,000,000.00.
- 1896—May 13. Act passed in Legislature authorizing an increase of the capital stock by the amount of bond authorization. Authority to issue bonds revoked and authorized capital now stands \$2,000,000.00.
- 1896—July 6. Directors vote to increase capital stock to \$1,800,000.00 in order that par value might better represent actual value of property. \$800,000.00 in shares are issued pro rata to stockholders of record.
- 1896—July 27. Capital outstanding after 4th issue, \$1,800,000.00."

TABLE 12.

CAPITAL ISSUED.

The issues of capital may be summarized as follows:

May 9, 1881	500,000.00	Purchase Price from Mr. Norman.			
July 7, 1884	200,000.00	Stock Bonus	70,000	Cash Payment	130,000.00
Sept. 1, 1893	300,000.00	Stock Bonus	150,000	Cash Payment	150,000.00
July 6, 1896	800,000.00	Stock Bonus	800,000	Cash Payment	.....
	<u>1,800,000.00</u>	<u>Stock Bonus</u>	<u>1,020,000</u>	<u>Cash Payment</u>	<u>280,000.00</u>

The actual amount of cash paid in for stock, allowing that the plant was worth \$500,000.00 at time of Incorporation is as follows:

Original Cost	500,000.00
July 7, 1884	130,000.00
Sept. 1, 1893	150,000.00
	<u>780,000.00</u>

PROFIT AND LOSS AND BALANCE SHEET.

1881-1889.

The Statement of Profit and Loss submitted for the period June 1, 1881 to March 16, 1889 is compiled from information given in Res. Ex. 11. This exhibit contains statements of Receipts and Disbursements, one from June 1, 1881 to January 1, 1889, the other from January 1, 1889 to March 16, 1889 and a Balance Sheet as of March 16, 1889. The two statements of Receipts and Disbursements were first combined to show the financial operations of the whole period. A trial balance of accounts was then set up from the data furnished in the combined cash statement. This trial balance showed a net profit for the period of \$385,853.86. A Profit and Loss statement made from a statement of cash receipts and disbursements is necessarily incomplete, because as in this case, it does not state the inventory of Tools and Fixtures, and Material, the amounts due from Water Takers, the loss on accounts receivable, or any transfer of accounts between maintenance and construction.

The detail of these non-cash transactions was obtained in the following manner. After getting the statement of Profit and Loss from the Cash statement, a Balance Sheet was set up from the details of the Cash statement as shown by column 1 of the Reconciliation Table. In the next column is shown the Balance Sheet contained in Res. Ex. 11. From a comparison of the two Balance Sheets, the amount of transfers from maintenance to construction was obtained, as well as Inventories of Tools and Fixtures, and Materials, amounts due from Water Takers and Losses on Accounts Receivable. The additional income obtained from an analysis of the Balance Sheets is \$9,377.32, or a net profit of \$395,231.18 for the period June 1, 1881 to March 16, 1889. From this profit, Cash Dividends of \$256,000.00 and a Stock Dividend of \$70,000.00 were paid, leaving the surplus on March 16, 1889 the sum shown in Res. Ex. 11, or \$69,231.18. It will be noted that in finding the net profit \$395,231.18, no provision has been made for depreciation on construction.

TABLE 13.

RECONCILIATION CASH STATEMENT WITH BALANCE SHEET SUBMITTED.

ASSETS.	From Cash Data.	From Rea. Ex. 11.		
<i>Construction</i>				
<i>Accounts.</i>				
Construction	\$739,253.37	\$739,321.05		
Pipe Shop	680.66	1,325.40		
Filter	12,389.22	12,389.22		
Portsmouth	657.09	657.09		
Main Pipe		731.07		
Service Const. ..		347.96		
Gate Const.		13.50		
	\$752,980.34	\$753,875.29		
Tools and Fix....	62.97			
Materials		536.42		
Water Takers....		4,160.38		
Geo. P. Leonard				
Note	175.00	4,436.05		
Cash	6,213.18	175.00		
		6,213.18		
Accounts Receiv'le	1,420.90	923.79		
	\$760,852.39	\$770,230.11		
LIABILITIES.				
Capital Stock ..	\$700,000.00	\$700,000.00		
Surplus	59,853.86	69,231.58		
G. H. Norman...	998.53	998.53		
	\$760,852.39	\$770,230.11		
			Loss ...	\$9,874.83
				497.11
			Net	
			Profit ..	\$9,377.72
			Increase	
			in	
			Surplus.	\$9,377.72

TABLE 14.

PROFIT AND LOSS
JUNE 1, 1881 TO MARCH 16, 1889

*Income Account as shown by statement of
Receipts and Disbursements Res. Ex. 11.*

<i>Income.</i>		
Water Rates	308,693.87	
Measured Water	52,426.64	
Miscellaneous	2,585.08	
City of Newport	75,105.10	
	438,810.69	
<i>Expense.</i>		
Maintenance	52,104.79	
Material	173.32	
General Expense	470.23	
Profit and Loss	208.49	
	52,956.83	
<i>Net Profit as shown by Receipts and Disbursements</i>		385,853.86
<i>Income Account as reconciled with Balance Sheet submitted in Res. Ex. 11.</i>		
Inventory of Tools and Fixtures	473.45	
Material	4,160.38	
Increase of value of construction	804.95	
Due from Water Takers	4,436.05	
	9,874.83	
<i>Less—Loss on Accounts Receivable</i>		497.11
<i>Net Profit additional shown by Balance Sheet</i>		9,377.72
		395,231.58
<i>Less—Cash Dividend</i>	256,000.00	
<i>Stock Dividend</i>	70,000.00	
	326,000.00	
<i>Surplus March 16, 1889, as shown by Res. Ex. 11</i>		69,231.58

NOTES ON FINANCIAL DATA.

The following table (Table 16) shows the percentage of profit by years, excluding depreciation, on total capitalization and capital paid in, and was made from the following sources:

From 1881-1889 the source of information was the respondent's exhibit number 11, the report of George W. Piper.

The average amount of capital stock issued during this first period was \$625,000.

The average amount of capital stock paid in for the same period was \$581,250.

It was impossible to get the net earnings by years during this period because there are no books existent of this period and the report of George W. Piper gives receipts and disbursements as a total for the period. There is an interval between March 16, 1889 to May 31, 1889 in which there is absolutely no financial data.

From 1890-1900 the figures as shown were taken from the respondent's exhibit No. 207 showing receipts and disbursements by years.

From 1901-1911 the figures as shown were taken from the company's schedule which were made from loose sheets made by Mr. Slocum.

From 1912-1915 the figures as shown were taken from the reports of the auditors, M. & L. W. Scudder.

The figures of the entire table show no depreciation because no data on depreciation was available for the first two periods.

From 1890-1911 the figures submitted in this table were taken from statements of cash receipts and disbursements and consequently are not exact income statements, but covering a long period as they do, they are approximately correct statements of income.

TABLE 15.

DIVIDENDS PAID.

Dividends have been paid on the capital stock as follows:

(Ex. 194)

1881—	Dividends on first issue of \$500,000.00 at 2%	\$10,000.00
1882—	Dividends on first issue of \$500,000.00 at 2%	10,000.00
1883—	Dividends on first issue of \$500,000.00 at 4%	20,000.00
1884—	Jan. and July Dividends on first issue of \$500,000.00 at 4%	20,000.00
1884—	July. Capital stock outstanding 2nd issue	\$700,000.00
1884—	Oct. 15, Dividends on \$700,000 at 2%	14,000.00
1885—	Dividends on \$700,000 at 5%	35,000.00
1886—	Dividends on \$700,000 at 6%	42,000.00
1887—	Dividends on \$700,000 at 6%	42,000.00
1888—	Dividends on \$700,000 at 6%	42,000.00
1889—	Dividends on \$700,000 at 6%	42,000.00
1890—	Dividends on \$700,000 at 7½%	52,500.00
1891—	Dividends on \$700,000 at 6%	42,000.00
1892—	Dividends on \$700,000 at 6%	42,000.00
1893—	Jan. and July Dividends on \$700,000 at 4½%	31,500.00
1893—	Oct. 1, Dividends on \$1,000,000 at 1%	15,000.00
1894—	Dividends on \$1,000,000 at 6%	60,000.00
1895—	Dividends on \$1,000,000 at 6%	60,000.00
1896—	Jan., Apr. and July Dividends on \$1,000,000. at 4½%	45,000.00
1896—	Oct. 1, Dividends on \$1,800,000 at 1%	18,000.00
1897—	Dividends on \$1,800,000 at 4%	72,000.00
1898—	Dividends on \$1,800,000 at 4%	72,000.00
1899—	Dividends on \$1,800,000 at 4%	72,000.00
1900—	Dividends on \$1,800,000 at 4%	72,000.00
1901—	Dividends on \$1,800,000 at 4%	72,000.00
1902—	Dividends on \$1,800,000 at 4%	72,000.00
1903—	Dividends on \$1,800,000 at 4%	72,000.00
1904—	Dividends on \$1,800,000 at 4%	72,000.00
1905—	Dividends on \$1,800,000 at 4%	72,000.00
1906—	Dividends on \$1,800,000 at 4%	72,000.00
1907—	Dividends on \$1,800,000 at 4%	72,000.00
1908—	Dividends on \$1,800,000 at 4%	72,000.00
1909—	Dividends on \$1,800,000 at 4%	72,000.00
1910—	Dividends on \$1,800,000 at 4%	72,000.00
1911—	Dividends on \$1,800,000 at 4%	72,000.00
1912—	Dividends on \$1,800,000 at 4%	72,000.00
1913—	Dividends on \$1,800,000 at 4%	72,000.00
1914—	Dividends on \$1,800,000 at 4%	72,000.00
Total cash dividends paid Dec. 1881 to Dec. 1914,		\$1,959,000.00

There is a discrepancy between the statement of dividends paid as appearing by Ex. 194, and Ex. 11, being the report of Mr. Piper.

Exhibit 194 shows dividends paid from 1881 to 1889 as totalling \$277,000 while Mr. Piper (Ex. 11), shows only \$256,000 to have been paid during that period.

There is a variance between the statement of dividends paid contained in Exhibit 194 and the loose sheets of Mr. Slocum (Exhibit 207) for the years as follows:

Year	Exh. 194	Exh. 207
1893	\$46,500	\$42,000
1894	60,000	66,000
1896	63,000	60,000
1897	72,000	69,000
	<hr/>	<hr/>
	\$241,500	\$237,000

This accounts for the difference between the total of dividends paid as stated in Exhibit 194, \$1,939,000 and the total of \$1,913,500 as stated in the following table, which is based upon respondent's Exhibit 11 for the years 1881 to 1889, upon respondent's Exhibit 207 for the years 1890 to 1900, and upon the company's schedule from 1901 to 1914.

TABLE 16.

TABLE SHOWING BY YEARS CAPITAL STOCK, GROSS RECEIPTS FROM ALL SOURCES, TOTAL EXPENSES, NET EARNINGS, CASH DIVIDENDS PAID, TRANSFER TO SURPLUS, PERCENTAGE OF PROFIT ON CAPITALIZATION (EXCLUDING DEPRECIATION), CAPITAL PAID IN, PERCENTAGE OF PROFIT ON CAPITAL PAID IN (EXCLUDING DEPRECIATION), AND BOOK ADDITIONS TO PROPERTY SINCE 1901, FROM 1881 TO 1889.

Year.	Capital Stock.	Gross Receipts.	Total Expen's.	Net Earnings	Cash Dividends Paid.	Additions to Surplus.	% on Capital Stock.	Capital Paid In.	% on Capital Paid in	Book Additions to Property since 1901.
1881-1889	\$625,000	...	\$18,193	\$395,232	\$256,000	\$139,232	.079	\$630,000	.083	.....
1890	700,000	\$76,504	\$18,193	58,311	52,500	5,811	.083	630,000	.093	.....
1891	700,000	83,153	10,163	72,990	42,000	30,990	.104	630,000	.115	.....
1892	700,000	90,380	13,721	76,659	42,000	34,659	.109	630,000	.122	.....
1893	1,000,000	95,193	11,733	83,460	42,000	41,460	.083	780,000	.107	.....
1894	1,000,000	90,634	13,418	77,216	66,000	11,216	.077	780,000	.099	.....
1895	1,800,000	90,004	11,767	78,237	60,000	18,237	.078	780,000	.10	.....
1896	1,800,000	96,498	14,052	82,446	60,000	22,446	.046	780,000	.106	.....
1897	1,800,000	103,248	15,543	87,705	69,000	18,705	.049	780,000	.113	.....
1898	1,800,000	108,040	20,288	87,752	72,000	15,752	.045	780,000	.113	.....
1899	1,800,000	107,439	25,513	81,926	72,000	9,926	.045	780,000	.105	.....
1900	1,800,000	114,797	20,649	94,148	72,000	22,148	.052	780,000	.121	.....
1901	1,800,000	141,984	43,476	100,508	72,000	28,508	.056	780,000	.129	\$82,667
1902	1,800,000	138,009	26,926	111,083	72,000	39,083	.062	780,000	.143	82,719
1903	1,800,000	146,634	27,965	118,669	72,000	46,669	.077	780,000	.178	26,873
1904	1,800,000	154,421	27,723	126,696	72,000	54,696	.07	780,000	.162	26,520
1905	1,800,000	135,595	28,749	126,846	72,000	54,846	.07	780,000	.162	28,292
1906	1,800,000	166,984	31,530	135,054	72,000	63,054	.075	780,000	.173	32,158
1907	1,800,000	165,947	25,796	140,151	72,000	68,151	.078	780,000	.179	46,144
1908	1,800,000	206,931	59,043	147,888	72,000	75,888	.082	780,000	.189	24,661
1909	1,800,000	186,656	50,725	135,931	72,000	63,931	.076	780,000	.174	48,948
1910	1,800,000	216,417	57,078	159,339	72,000	87,339	.088	780,000	.204	87,825
1911	1,800,000	195,351	46,644	148,707	72,000	76,707	.073	780,000	.191	60,956
1912	1,800,000	203,291	61,324	141,967	72,000	69,967	.079	780,000	.182	65,701
1913	1,800,000	201,677	58,258	143,419	72,000	71,419	.08	780,000	.184	26,854
1914	1,800,000	210,189	60,800	149,389	72,000	77,389	.08	780,000	.192	19,471
Total	.....	\$3,569,076	\$781,479	\$3,182,829	\$1,913,500	\$1,269,320	.....	.....	.....	\$639,789

FAIR VALUE.

After considering all the evidence in the case bearing upon the value of the properties owned and operated by the respondent company, and devoted to the public use in supplying water service in and about the city of Newport, the costs to reproduce the present values, the original costs, the investments, all overheads, such as preliminary costs, engineering, supervision, interest during construction, insurance, organization and legal expenses, contingencies, and including all other elements of tangible and intangible value, and taking into consideration that the plant is now in successful operation and is a going concern, the Commission finds that the fair value of the respondent company's utility property is \$1,700,000, exclusive of working capital.

Working capital is here used to mean necessary cash, coal, materials, supplies, furniture, tools, etc., essential to the successful operation of the utility property of the respondent company. For total working capital, thus defined, the Commission sets forth \$75,000 to be reasonable and proper.

The total fair value of the respondent's property for rate making purposes is \$1,775,000.

INCOME UNDER PRESENT RATES.

The gross income of the company from the sale of water for the year 1913-1914 was \$189,420.

The average for the three years, 1912, 1913 and 1914 was \$89,189. This is indicated in the following table, as shown by the company's books. (Ex. 1, 2, 3.):

TABLE 17.

Items.	1911-1912.	1912-1913.	1913-1914.	Average.
From fixture rates	\$123,340.66	\$126,433.62	\$128,966.78	\$126,247.02
From meter rates	49,035.95	43,696.43	50,104.00	47,612.11
From City of Newport	10,300.00	10,341.67	10,350.00	10,330.56
Totals	\$182,676.61	\$180,471.72	\$189,420.78	\$184,189.69

The expenditures for maintenance and operation for the year 1913-1914 were \$55,789.

The average for the three years 1912, 1913 and 1914 was \$52,093. This is indicated in the following table, as shown by the company's books (Ex. 1, 2, 3), the schedule and Ex. 18:

Items.	1911-1912 Co.'s schedule.	1912-1913 Co.'s schedule.	1913-1914 Ex. 18	Average.
Station expenses	\$26,362.78	\$21,817.01	\$27,352.72	\$25,177.51
Distribution expenses	6,492.80	6,952.90	5,884.45	6,443.38
Salaries	6,221.75	5,200.00	5,375.00	
Rent	1,621.57	1,545.95	1,582.77	
Inspection	2,745.35	1,758.88	1,794.54	
Automobile	1,531.35	2,702.21	1,950.57	17,144.31
Legal expenses			1,395.46	
Miscellaneous	4,459.74	5,146.93	6,400.87	
Taxes	2,036.66	3,895.41	4,052.74	3,328.27
Total operating expenses ...	\$51,472.00	\$49,019.29	\$55,789.12	\$52,093.47

If the allowance of \$3,600 annually as a suitable compensation for the president and treasurer, who have rendered their services free of charge to the company, is made, which does not appear to the Commission to be unreasonable, the charge for maintenance for the year 1913-1914 would be increased to \$59,389 and the average for the three years would be increased to \$55,693.

Deducting from \$189,420 the gross receipts from the sale of water for the year 1913-1914, the sum of \$59,389, the total expense of maintenance and operation for the same year, there remains a balance of \$130,031.

If the averages of the years 1912, 1913, 1914, are taken as a basis, from the average gross receipts of \$184,189, must be deducted the average expenditures of \$55,693 leaving a balance of \$128,496.

From the remaining income must be deducted a sum adequate to meet maturing depreciation. It is desirable and proper to protect the respondent's property by making regular and adequate provision for depreciation as it matures. A sufficient sum should be set aside

from the gross earnings of the respondent to provide reasonable depreciation funds, and in order to cover future accruing depreciation of its property, both physical and functional.

The respondent has set forth in Appendix C of its brief the computations which lead to the depreciation allowances of Mr. Gray and Mr. Sherman, the former arriving at \$18,902, using the four per cent sinking fund method with semi-annual accretions, and the latter at \$18,380 using the four per cent sinking fund method with annual accretions.

The tables follow :

TABLE 18.
COMPUTATIONS OF ANNUAL DEPRECIATION.
II. Based upon figures in testimony of Samuel M. Gray (4% Sinking Fund Method, Semi-annual accretions).

Item of Plant.	Reproduction cost (not including overhead charges.)	Accrued Depreciation.	Remaining Value.	Re-main-ing Life Years.	Corresponding Semi-Annual De-preciation.		Annual Depreciation.*
					%	Amount.	
Reservoirs	\$391,083	\$17,327	\$373,756	70	0.13	\$498	\$996
Piping System	2,718,533	158,556	559,977	26	1.11	6,200	12,440
Pumps and Boilers	108,246	50,547	57,699	10	4.12	2,580	5,160
Buildings	22,500	4,038	18,462	31	0.83	153	306
Total Depreciable Plant	\$1,240,362	\$230,468	\$1,000,894				\$18,902

II. From testimony of Charles W. Sherman (Ex. 168).							
Item of Plant.	Reproduction cost including 18% overhead charges.	Accrued Depreciation.	Remaining Value.	Remaining Life, Years.	Corresponding Annual Depreciation.		
					%	Amount.	%
Pumping Station No. 1	\$98,000	\$15,700	\$82,300	31	1.7	•	\$1,400
Pumping Station No. 2	27,000	10,600	16,400	19	3.6		590
Brick House	4,000	3,400	600	••	10.		60
Wooden House	3,000	300	2,700	••	5.		130
Filters	100,000	4,000	96,000	45	0.8		770
C. I. Pipe	213,000	6,400	206,600	67	0.3		620
Cement-lined Pipe	418,000	150,500	267,500	18	3.9		10,400
Rock Excavation	25,000	•••••	25,000	•••••	•••••		•••••
Valves, Boxes and Hydrants	46,000	5,100	40,900	42	1.		410
Services	149,000	31,400	117,600	20	3.4		4,000
Total Depreciable Plant	\$1,083,000	\$227,400	\$855,600				\$18,380

*Taken as twice the semi-annual depreciation.

It is desirable and proper to protect the property of the respondent company by making regular and adequate provision for depreciation as it matures. A sufficient sum should be set aside from the gross earnings of the respondent company from the sale of water to provide reasonable depreciation funds, and in order to cover future accruing depreciation of its property, both physical and functional, the Commission finds the respondent company is entitled to set aside annually an allowance of \$18,000, which should annually be increased by an amount which is equivalent to said \$18,000 plus one and one-quarter per cent (1 1/4%) of the cost of all additions and betterments (exclusive of replacements) made hereafter, together with the earnings of the said fund.

If the sum of \$18,000, which the Commission has found to be a proper allowance for maturing depreciation is deducted from \$130,031, heretofore shown as the balance remaining from gross receipts from the sale of water after operation and maintenance for the year 1913-1914, there remained available for dividends or surplus the sum of \$112,031. If similar deduction is made from \$128,496, the average of the three years 1912, 1913 and 1914, there remained available for dividends or surplus the sum of \$110,496.

Based upon the results of the year 1913-1914 this provided for a net return of 6.31 per cent upon \$1,775,000 the fair value of the respondent company's property as hereinbefore determined, and for a return of 6.22 per cent upon the \$1,800,000 of the capital stock.

Based upon the average results of the three years 1912, 1913, 1914, this provides for a net return of 6.22 per cent upon the fair value, and 6.13 per cent upon the capital stock.

Upon either basis the Commission finds that the net income of the Company did not yield more than a reasonable return upon the fair value of the property of the Company.

FINDINGS.

After full hearing and consideration of the evidence in the above entitled case, the Commission finds:

1. That the gross income of the respondent company from the present rates is not unreasonable.
2. That the net income of the company from the present rates after paying the reasonable expense of maintenance and operation,

and setting aside a reasonable amount for depreciation does not yield more than a reasonable return upon the fair value of its property owned and used in supplying the city of Newport and its inhabitants with water.

3. That there can be no change in the rates which will reduce the gross income derived by the company from the sale of water under the present rates.

READJUSTMENT OF SCHEDULE OF RATES.

There remains the question as to whether a readjustment of the present rate schedules should be made.

Population and Consumption.

The population of the city of Newport and the annual consumption of water is indicated in the following table as set forth in the respondent's brief:

TABLE 19.

(Compiled from Mr. Kent's evidence, pp. 281-286 and Ex. 27*).

Year	Permanent population as per census returns, pro rated for the intermediate years.	Average Daily Consumption in Gallons.		
		Total consumption for the year in gallons.	For the whole city.	Per capita of the permanent population.
1880	15,693	.....	.....	.....
1885	19,566	.....	.....	.....
1890	19,457	.....	.....	.....
1895	21,537	.....	.....	.....
1900	22,034	.....	.....	.....
Year ending—				
May 31, 1905.....	25,039	1,293,000,000	3,540,000	141
May 31, 1906.....	25,461	1,325,840,000	3,630,000	142
May 31, 1907.....	25,883	1,437,940,000	3,930,000	152
May 31, 1908.....	26,305	1,423,320,000	3,900,000	148
May 31, 1909.....	26,727	1,440,200,000	3,940,000	143
May 31, 1910.....	27,149	1,572,000,000	4,190,000	155
May 31, 1911.....	27,571	1,241,930,000	3,400,000	123
May 31, 1912.....	27,993	1,371,620,000	3,750,000	131
May 31, 1913.....	28,415	1,345,970,000	3,700,000	130
May 31, 1914.....	28,837	1,374,200,000	3,760,000	130
		Increase.	Increase.	Increase.
1885-1895.....	1977—10%			
1895-1905.....	3492—16%			
1905-1914.....	3798—15%	61,200,000—4.7%	220,000—6%	11—8%

*The consumption for 1913-1914 is based upon the readings of the Venturi meter; that for the period back of 1913 is based on the pumpage records, without allowance for slip. Kent, pp. 455-457.

Average annual consumption during the past three years—1,363,900,000 gallons.

TABLE 20.
The table for the calendar year 1913 is as follows:
(Compiled from Kent, pp. 287-290 and Ex. 27 and 28.)

Period.	Total in gallons.	Daily per capita of permanent population of 28,415.	Per capita of summer population of 36,415 per Kent, 32,415 per Gray.
4 winter months: Jan., Feb., Mar. and Dec.	383,573,960— 95,893,490 per mo. ..	111 gallons.	
4 summer months: June, July, Aug. and Sept.	541,562,704— 135,390,676 per mo. ..	162 gallons.	123 on Kents assump- tion.
Entire year	1,329,794,947— 110,816,412 per mo. ..	128 gallons.	139 on Gray's assump- tion.
8 mos., except June, July, Aug. and Sept.	788,220,987— 98,525,123 per mo. ..	115 gallons.	

The maximum daily draft in winter was 4.2 m. g.; and in summer 6.4 m. g., a difference of 52 per cent.

The excess consumption in the four summer months over what it would have been at the average of the other eight months was 147,452,211 gallons, or 13 1-2 per cent of what the total annual consumption would have been if not for this excess.

The consumers in 1913-1914 are classified as follows:

TABLE 21.

(Compiled from Exhibits 33, 34, and 160.)

a. Fixture rate customers:

Number of families paying \$5.00 per annum.....	83
Number of families paying 7.00 per annum.....	693
Number of families paying 12.00 per annum.....	2,649
Number of families paying 17.00 per annum.....	849
Number of families paying 20.00 per annum.....	708
Number of families paying 23.00 per annum.....	508
Number of families paying 27.00 per annum.....	224
	5,714
Number of families paying 28.00 to 75.00 per annum.....	558
	6,272
Total	6,272
Stores	643
Hose	561
Stables	572

b. *Meter Rate Customers :*

TABLE 22.

Name.	Number of meters.	Amount of water used.
United States Government.....	10	107,243,120 gallons
N. Y., N. H. & H. R. R.....	6	29,838,000 gallons
Bay State St. Ry. Co.....	2	3,195,800 gallons
Total	18	140,276,920 gallons —7,793,162 per meter.
Summer customers	28	4,171,700 gallons —148,989 per meter.
Commercial customers	80	32,161,475 gallons —402,018 per meter.
Total	126	176,610,095 gallons

The company has about 8,000 customers (Ex. 34) on 6,349 services. Ex. 33.

The receipts from the city of Newport under the contract for the year 1913-1914 were \$10,350, for which the company maintained 316 fire hydrants, and supplied water for all the city buildings, street sprinkling, sewer flushing and other public uses through 70 distinct services. (Ex. 159.)

There should be a readjustment of the rate schedule which would make available a meter rate for any customer who desires to take advantage of such a rate. Meter rate customers are now confined to the United States Government, The New York, New Haven and Hartford Railroad Company, the Bay State Street Railway Company, twenty-eight summer customers and eighty commercial customers. Meter rates are not offered to the ordinary domestic consumer. A more extended use of meters would, in our opinion, have a tendency to check waste and reduce the per capita consumption of water.

It is contended by the respondent, and apparently with reason, that the present contract with the city is a most disadvantageous one, both to the company and the public, and that, if this contract were adjusted upon a more equitable basis, it would enable the company to adjust its schedules of fixture and meter rates for general customers.

As a basis for the preparation of such new schedule of fixture and meter rates it will be necessary for the respondent to meter all service pipes supplying the city of Newport, in order to estimate the approximate normal annual consumption of water by such city uses. The respondent should be able to submit such new schedule within four months.

Any such schedule should provide that meters may be installed at the request of either the customer or the company, and at the expense of the company.

There are 1,352 services (Kent, pp. 498-499 and Ex. 33) to which more than one customer is attached, and as under the present schedules the company looks to the separate customers, not to the owner of the premises, difficulties are certain to be encountered should the company cut off the entire service for the failure of one of such customers to pay his water bill. Such new schedule may provide that the company shall be required to recognize as a customer only the owner of the land, or the lessee of the entire premises, and that all fixture rates shall be payable annually in advance.

A minimum charge for metered service should be similarly payable in advance.

THE COMPANY'S BOOKKEEPING.

Counsel for the respondent company have set forth in their brief the following suggestions as to bookkeeping methods, as follows:

"The books of the company have since 1911 been kept in regular double entry style; but from the standpoint of public regulation there are, we think, certain changes which, if made with the sanction or at the order of the commission, will decrease the work of that body as well as of the company upon the occasion of any future consideration of the question of rates.

1. The company should pay out of the annual receipts the reasonable, proper and actual cost of operation, maintenance and repair, including such sum, not exceeding \$3,600 per annum, for the salaries of the president and treasurer of the company as the stockholders may approve; and the amount, not exceeding say \$1,500 per annum; actually paid for counsel fees, legal services and court expenses. In case the last named item exceeds for any year the sum of \$1,500, the excess should be charged to the annual expense of that in the next three following years in equal parts.

2. The company should, as argued, set aside annually, out of its receipts from the sale of water, and charge to annual expense, the sum of \$18,000

to provide for depreciation, renewals, etc., and the money should be paid into a special reserve fund.

3. If the company should place in this fund the sum of, say \$100,000, taken in cash or securities out of the invested surplus now carried by the company, the annual depreciation charge should not be reduced; and such action by the company should not be used as a reason for a reduction of rates. It is better for both parties that this special payment—which the company is willing to make if the main findings and rulings requested by it are made by the commission—should be regarded as an addition to the depreciation or construction fund, not as a substitute.

4. This fund, with its annual accretions from interest on investments and the depreciation allowances from income, should be kept as a reserve construction or renewal fund and used only for the payment of such renewals (not including but in addition to proper annual repairs) as may from time to time be necessary, and for such additions to or improvements in the company's plant as may from time to time be made and are properly chargeable to capital. In case of the renewal of a displaced item of the company's property with a new item of greater capacity or operative value, the entire cost should be taken out of this fund but only the difference, if any, between the cost of the new item and the cost (that is, the actual cost, if that is known, if not, then the reproduction cost) of the displaced item, that is, the excess cost, if any, of the new item, should be charged to construction.

5. A further sum should be taken from the company's present reserves for working capital and put in a separate fund with that title which is to be kept in cash except as used in the current business of the company. This fund, with its accumulations, if any, should be used only in anticipation of annual rates or for such other purposes as working capital is commonly used. The amount of cash put into this fund from the company's present reserves should be such a sum as, with the value of the tools, office furniture, pipe, fittings, and other loose personal property now on hand, will equal the sum of \$75,000; assuming that that is the amount of working capital which the commission thinks the company ought to have.

6. So much of the company's present cash or invested reserves as is in excess of the amount if any, paid by the company into the reserve fund under item 3, and the \$60,000 more or less required for item 5, should be at the disposition of the company as divisible profits.

7. The company should make such entries in its journal and keep such accounts in its ledger as may be necessary to effectuate the foregoing changes."

The sum of \$18,000 as set forth in paragraph 2 may be increased in the manner previously set forth.

It is assumed that in paragraph 4 the use of said fund is to be limited to renewals "and for such additions and improvements in the company's plant as may from time to time be made and are

(otherwise) properly chargeable to capital.”

There should be a proper supervision and limitation upon the amount of this fund when consisting of cash or securities and it is believed that when the cash and securities in the special reserve fund shall have reached the sum of \$150,000, the company, without the approval of the Commission upon cause shown, should no longer set aside and charge to annual expense any sum against accruing depreciation, until the amount of cash and securities in said fund shall have been reduced below \$150,000, and in that case only a sum sufficient to cause the cash and securities in said fund to total the amount of \$150,000.

The Commission can see no present reason to interfere with the adoption of the suggestions modified as above.

After full hearing and consideration of the evidence in the case.

IT IS ORDERED:

1. That the Newport Water Works proceed as soon as possible to meter all service pipes supplying the city service of the city of Newport.

2. That within four months after the installation of meters upon the city service pipes the Newport Water Works shall submit to the Commission for approval a new schedule of hydrant, fixture and meter rates, and special rates, so adjusted as to produce a net revenue substantially equal to that received by the Company under the present schedule of rates. Such new schedule shall provide that meters may be installed at the request of either the customer or the Company, and that the Company shall bear the expense of the meters.

[Such new schedule may provide that the Company shall be required to recognize as a customer only the owner of the land, or the lessee of the entire premises, also that all fixture rates and a minimum charge for metered service shall be payable annually in advance.

3. The Commission will hold the case open for the entry of a proper order upon the presentation of the adjusted schedule of rates by the Newport Water Works.

Dated this twenty-fifth day of November, A. D. 1918.

PUBLIC UTILITIES COMMISSION OF RHODE ISLAND.

By

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,

Commissioners.

(SEAL)

ORDERS.

Application of The New York, New Haven and Hartford Railroad Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company be and it hereby is authorized to supplement without the statutory publication and notice to the Commission, its freight tariff R. I. P. U. C. Number X6, for the purpose of changing the car demurrage rules and charges to conform with Order Number 3, issued by the Director General of Railroads.

January 16, 1918.

No. 396.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to supplement without the statutory publication and notice to the Commission, Official Classification Number 44, for the purpose of further postponing until July 29, 1918, the effective date of Item 7, Page 49, Supplement 15, to said Official Classification Number 44—Bodies of Passenger Automobiles, said supplement to become effective on one day's notice to the public and the Commission.

January 28, 1918.

No. 397.

Application of The New York, New Haven and Hartford Railroad Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company for itself and for and on behalf of the Moshassuck Valley Railroad Company, Wood River Branch Railroad Company and The Rhode Island Company, be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, a freight tariff cancelling said

The New York, New Haven and Hartford Railroad Company's tariff R. I. P. U. C. Number X8 and the corresponding tariffs of said other carriers in accordance with the provisions set forth in said application and to provide for changes in car demurrage rules and charges to conform with Order Number 7 of the Director General of Railroads, said tariff to become effective February 10, 1918, upon one day's notice to the public and the Commission.

February 6, 1918.

No. 398.

Application of The New York, New Haven and Hartford Railroad Company for approval to an increase in its capital stock by the issue of 450,000 shares of the preferred stock of the par value of \$100 each, after a hearing and full investigation upon said application is ordered and decreed as follows:

Upon consideration, it is

Ordered: That the approval of the Commission be and it hereby is given to the issue by The New York, New Haven and Hartford Railroad Company, at the price not less than one hundred dollars (\$100) per share, of not exceeding four hundred forty-two thousand, two hundred (442,200) preferred shares of capital stock, to be known as the preferred stock, amounting at par value to forty-four million, two hundred twenty thousand dollars (\$44,220,000), having the preferences, rights, restrictions and limitations and being entitled to the rate of preferred dividends which has been determined by a vote of stockholders holding not less than two-thirds of the stock of such company at a meeting held October 24, 1917, with and subject to the following proviso: any cash proceeds from the sale or conversion of assets, used in calling or purchasing such stock, shall be applicable only to the extent of one hundred dollars (\$100) for each share so retired, and any new stock or other securities issued for such purpose shall not exceed in par value the stock so retired, any amount in excess necessary for such retirement to be provided in either case by the company from earnings or the surplus account; and which preferences, rights, restrictions, limitations and rate of dividends are hereby approved, as set out in a copy of said vote on file in this office and in said proviso, as an issue of stock reasonably necessary and of the amount required for the purpose of

paying the floating indebtedness of the company outstanding on October 31, 1917.

We hereby determine and direct that notice of the foregoing finding and decree be given to the petitioner by John W. Rowe, Secretary of this Commission, by forwarding by registered mail, a true and attested copy hereof addressed to Arthur E. Clark, Secretary, The New York, New Haven and Hartford Railroad Company, New Haven, Connecticut, on or before the second day of March, 1918, and due return make hereon.

February 25, 1918.

No. 399.

Application of Narragansett Pier Electric Light and Power Company for authority to grant special rate.

Upon consideration, it is

Ordered: That, for good cause shown, said Narragansett Pier Electric Light and Power Company be and it hereby is authorized to grant a special rate for supplying current to the United States Government at Fort Kearney, said rate to be as shown in the tariff of said Narragansett Pier Electric Light and Power Company's R. I. P. U. C. Number 15, filed with and made a part of said application, said rate to become effective March 1, 1918.

February 27, 1918.

No. 401.

Application of The New York, New Haven and Hartford Railroad Company for authority to reissue or supplement tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company be and it hereby is authorized to reissue or supplement its various commodity tariffs for the purpose of advancing commodity rates on cement, lumber and forest products one cent per hundred pounds and for the purpose of advancing commodity rates fifteen per cent in all other cases, excepting commodity rates applicable on bituminous coal, coke, iron ore and ice, said supplements or reissued tariffs to become effective upon five days' notice to the public and the Commission.

March 21, 1918.

No. 403.

Application of The New York, New Haven and Hartford Railroad Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company for itself and for and on behalf of the Moshassuck Valley Railroad Company and The Rhode Island Company, be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its freight tariff R. I. P. U. C. Number 398 for the purpose of revising the rules governing diversion and reconsignment, said tariff to become effective not later than May 1, 1918 upon five days' notice to the public and the Commission.

April 25, 1918.

No. 404.

Application of The Rhode Island Company for extension of the date upon which new schedules of rates of fare and transfer regulations shall become effective in accordance with the provisions of Chapter 1624 of the Public Laws of Rhode Island.

Upon consideration, it appearing that said Company will be unable to obtain the materials necessary for a proper and effective collection of fares under said new schedule of rates and transfer regulations prior to the first day of May, A. D. 1918, it is

Ordered, Adjudged and Decreed: That, for good cause shown, the date upon which said new rates of fare and transfer regulations shall become effective be and the same hereby is extended to May 5, 1918, upon five days' notice to the public and the Commission.

April 29, 1918.

No. 407.

Application of the Narragansett Electric Lighting Company for authority to grant special rates.

Upon consideration, it is

Ordered: That, for good cause shown, said Narragansett Electric Lighting Company be and it hereby is authorized to grant special rates to the Atlantic Power Company, Field's Point Manufacturing Company and the Swansea & Seekonk Street Railway Company for

electricity to be furnished to said companies, said rate for said Atlantic Power Company to be as shown in tariff R. I. P. U. C. Number 81, said rate for said Field's Point Manufacturing Company to be as shown in tariff R. I. P. U. C. Number 82 and said rate for said Swansea & Seekonk Street Railway Company to be as shown in tariff R. I. P. U. C. Number 83, said rates being in accordance with the terms in the proposed contracts between said Narragansett Electric Lighting Company and said Atlantic Power Company, Field's Point Manufacturing Company and Swansea & Seekonk Street Railway Company respectively, a copy of each of which proposed contracts is filed with and made a part of said application.

April 30, 1918.

No. 408.

Application of the Rhode Island Power Transmission Company for authority to grant special rate.

Upon consideration, it is

Ordered: That, for good cause shown, said Rhode Island Power Transmission Company be and it hereby is authorized to grant a special rate to Narragansett Electric Lighting Company for electricity for power purposes, said rate to be as shown in tariff R. I. P. U. C. Number 1 of said Rhode Island Power Transmission Company, and in accordance with the terms of the proposed contract between said Rhode Island Power Transmission Company and said Narragansett Electric Lighting Company, a copy of which is filed with and made a part of said application.

April 30, 1918.

No. 409.

Application of The Rhode Island Company for authority to grant special rate.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company, be and it hereby is authorized to grant a special rate for a chartered car from Saunderstown to Providence on May 5, 1918.

May 3, 1918.

No. 410.

Application of The Rhode Island Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Numbers 53, 57 and 58, for the purpose of establishing a transfer point at the intersection of the Mineral Spring-Prairie Avenue Line of the Pawtucket Division with the Hartford Ave.-Charles Street Line of the Providence Division and the Providence-Woonsocket Line, said supplements to become effective May 10, 1918.

May 9, 1918.

No. 411.

Application of The Rhode Island Company, (Union Railroad Company, lessor) for consent to laying and maintaining track in Manton Avenue in the City of Providence.

Upon consideration, it is

Ordered: That the consent of the Commission, expressed in writing be and the same hereby is given to said The Rhode Island Company, (Union Railroad Company, lessor) to lay and maintain track in Manton Avenue in said City of Providence, across those certain streets, highways, turnpikes or travelled ways at grade as shown on that certain plan Number 10,596-A-4, dated April 22, 1918, entitled, "Proposed location of track in Manton Av. from Atwells Ave. to a point west of Glenbridge Ave., Providence," permission for the laying and maintaining of said track having been granted by the City Council of said City of Providence by its Ordinance, Chapter 190, No. 178, approved May 7, 1918.

May 15, 1918.

No. 412.

Application of The Rhode Island Company for authority to amend passenger tariff Number 54 for the purpose of altering the five-cent fare and transfer zone on the Providence-River Point Line in the City of Cranston.

Upon consideration, it appearing from the testimony of Superintendent of Transportation Anderson that said limits as now in effect

permit passengers by a change of cars to obtain a lower rate than the regular through rate on said line, it is

Ordered: That said The Rhode Island Company be and it hereby is authorized to supplement without the statutory publication and notice to the Commission, its passenger tariff Number 54 for the purpose of making the five-cent fare and transfer limit in said City of Cranston, the Providence City Line and the State Hospital, said tariff to become effective on ten days' notice to the public and the Commission, said notice to the public to be posted in the cars operating on said line.

May 29, 1918.

No. 413.

Application of The Rhode Island Company for authority to supplement its passenger tariffs Numbers 53 and 57.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplement Number 2 to its passenger tariff R. I. P. U. C. Number 53 for the purpose of establishing a transfer point at Centredale between the Smith Street and Manton Avenue Lines and Supplement Number 2 to its passenger tariff R. I. P. U. C. Number 57 for the purpose of establishing a transfer point at John and Broad Streets in the Town of Cumberland, said supplements to become effective upon one day's notice to the public and the Commission.

June 6, 1918.

No. 414.

Application of Providence, Fall River and Newport Steamboat Company for authority to supplement passenger tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Providence, Fall River and Newport Steamboat Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplement Number 1 to its passenger tariff R. I. P. U. C. Number 4 for the purpose of cancelling excursion rates

between Providence and Block Island, and Newport and Block Island and increasing the rate between Providence and Newport, said tariff to become effective on July 1, 1918, upon one day's notice to the public and the Commission.

June 26, 1918.

No. 415.

Application of the Stoneleigh Water Company for authority to file tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said Stoneleigh Water Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its tariffs R. I. P. U. C. Numbers 5 and 6, cancelling respectively tariffs R. I. P. U. C. Numbers 3 and 4 filed with the Commission to become effective July 1, 1918, said tariffs Numbers 5 and 6 to become effective on July 1, 1918, on one day's notice to the public and the Commission.

June 29, 1918.

No. 416.

Application of American Railway Express Company for authority to file tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said American Railway express Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, tariffs for the purpose of increasing all existing express rates and charges applicable to intrastate traffic in Rhode Island, ten per cent. to conform with the increases granted by the Interstate Commerce Commission in Fifteenth Section Order Number 746, said tariffs to become effective on five days' notice to the public and the Commission.

June 29, 1918.

No. 417.

Application of The Rhode Island Company for authority to supplement tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplements Numbers 3 and 4 to its passenger tariff R. I. P. U. C. Number 53 and Supplement Number 1 to its passenger tariff R. I. P. U. C. Number 55, for the purpose of extending the five cent zone limits on Plainfield Street, Hartford Avenue and Smith Street, said supplements to become effective on July 21, 1918.

July 17, 1918.

No. 418.

Application of The Rhode Island Company, (Rhode Island Suburban Railway Company, lessor) for consent to laying and maintaining track in High Street in the Town of Bristol.

Upon consideration, it is

Ordered: That the consent of the Commission, expressed in writing, be and the same hereby is given to The Rhode Island Company, (Rhode Island Suburban Railway Company, lessor) to lay and maintain a track in High Street in said Town of Bristol, across those certain streets, highways, turnpikes or travelled ways at grade as shown on that certain plan Number 10,638-A-4, dated June 10, 1918, entitled, "Spur Track at Proposed Bristol Freight House," permission for the laying and maintaining of said track having been granted by the Town Council of said Town of Bristol, June 18, 1918.

July 17, 1918.

No. 419.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplement Number 25 to Official Classification Number 44, for the purpose of cancelling

Supplement Number 21 to said Official Classification Number 44 and for the purpose of establishing ratings on vehicle parts as shown in said application, said Supplement Number 25 to become effective upon five days' notice to the public and the Commission.

July 23, 1918.

No. 420.

Application of the Freight Traffic Committee, Eastern Territory for authority for publication of tariffs by railroads.

Upon consideration, it is

Ordered: That, for good cause shown, railroads under Federal control, be and they hereby are authorized to put into effect without the statutory publication and notice to the Commission, intrastate rates on petroleum and petroleum products to conform with rates authorized by the Interstate Commerce Commission in interstate traffic, said rates to become effective on one day's notice to the public and the Commission.

July 27, 1918.

No. 421.

Application of The Rhode Island Company, (Union Railroad Company, lessor) for consent to a continuance of the operation of cars over and across the tracks of the Pascoag Branch of The New York, New Haven and Hartford Railroad Company in Smith Street or Powder Mill Turnpike in the Town of Johnston.

Upon consideration, it is

Ordered: That the consent of the Public Utilities Commission, expressed in writing, be and the same hereby is given to The Rhode Island Company, (Union Railroad Company, lessor) to continue to operate cars over and across the tracks of the Pascoag Branch of The New York, New Haven and Hartford Railroad Company in Smith Street or Powder Mill Turnpike in the Town of Johnston for the duration of the war with the Imperial German Government and for a further period of one year after the signing of a treaty of peace by the warring nations, said crossing to be protected in the manner provided in Order Number 294 of the Public Utilities Commission

entered on the ninth day of August, A. D. 1916, provided however, that said system of signals may be changed from electrical to mechanical control.

August 7, 1918.

No. 422.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission, a supplement to Official Classification Number 44 for the purpose of amending Rule 29 as shown in said application, said supplement to become effective on one day's notice to the public and the Commission.

August 9, 1918.

No. 423.

Application of Trunk Line District Coal and Coke Committee for authority for publication of tariffs by The New York, New Haven and Hartford Railroad Company.

Upon consideration, it is

Ordered: That, for good cause shown, said Trunk Line District Coal and Coke Committee be and it hereby is authorized to put into effect on behalf of said The New York, New Haven and Hartford Railroad Company rates on anthracite and bituminous coal from East Providence Wharf, Fox Point, Harbor Junction Wharf and South Providence, R. I. to destinations on The Rhode Island Company and the Moshassuck Valley Railroad, as shown in said application, said tariff to become effective upon one day's notice to the public and the Commission.

August 9, 1918.

No. 424.

Application of Blackstone Valley Gas and Electric Company for authority to file tariffs.

Upon consideration, it appearing that an emergency exists due to an accident at its generating plant whereby its largest machine was burned out, it is

Ordered: That, for good cause shown, said Blackstone Valley Gas and Electric Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its Pawtucket Division tariff R. I. P. U. C. Number 37 and Woonsocket Division tariff R. I. P. U. C. Number 39, for the purpose of establishing a temporary emergency rate amending Demand Power Rate "E," said tariffs to become effective August 20, 1918.

August 19, 1918.

No. 425.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission a supplement to Official Classification Number 44 for the purpose of revising the specification for Military Impedimenta as shown in said application, said supplement to become effective upon five days' notice to the public and the Commission.

August 28, 1918.

No. 426.

Application of Narragansett Electric Lighting Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Narragansett Electric Lighting Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 49 for the purpose of modifying Paragraph 16 of the terms and conditions to require the customer to reimburse the Company its cost and expense in installing underground service connected to its underground mains beyond two feet

inside the property line and modifying Paragraph 17 of the terms and conditions to require the customer to reimburse the Company its cost and expense in installing underground service and riser connected to its aerial lines, said supplement to become effective September 1, 1918 upon one day's notice to the public and the Commission.

August 28, 1918.

No. 427.

Application of Bristol County Gas and Electric Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Bristol County Gas and Electric Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 30 for the purpose of modifying Paragraph 16 of the terms and conditions to require the customer to reimburse the Company its cost and expense in installing underground service connected to its underground mains beyond two feet inside the property line and modifying Paragraph 17 of the terms and conditions to require the customer to reimburse the Company its cost and expense in installing underground service and riser connected to its aerial lines, said supplement to become effective September 1, 1918 upon one day's notice to the public and the Commission.

August 28, 1918.

No. 428.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission, a supplement to Official Classification Number 44, for the purpose of adding a specification for Army Field Kitchens or Army Field Kitchen Timbers, wheeled, horse drawn as shown in said application, said supplement to become effective on five days' notice to the public and the Commission.

September 4, 1918.

No. 430.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission, a supplement to Official Classification Number 44, for the purpose of revising specifications for Rule 15-B, Rule 15-C and railroad or railway cars N. O. S. on own wheels, as shown in said application, said supplement to become effective on one day's notice to the public and the Commission.

September 4, 1918.

No. 431.

Application of The Rhode Island Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, a supplement to its passenger tariff R. I. P. U. C. Number 53, for the purpose of changing the fare limit on the Riverside-Warren-Bristol Line, from the Willett Avenue Turnout to Peck's Corner, said supplement to become effective September 15, 1918 upon one day's notice to the public and the Commission.

September 11, 1918.

No. 432.

Application of Providence Telephone Company for authority to file tariff.

Upon consideration, it appearing that the Postmaster General of the United States having on August 28, 1918 prescribed installation and moving charges for all telephone companies, and it further appearing that there is great necessity for conserving material and labor to meet unavoidable and paramount war needs of the country, and that as an emergency and war measure it is desired that said

rates become effective on less than statutory notice, it is

Ordered: That said Providence Telephone Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its tariff R. I. P. U. C. Number 29, for the purposes of putting into effect the installation and moving charges prescribed by said Postmaster General of the United States, said tariff to become effective as of September 1, 1918.

September 11, 1918.

No. 434.

Application of New England Telephone and Telegraph Company for authority to file tariff.

Upon consideration, it appearing that the Postmaster General of the United States having on August 28, 1918 prescribed installation and moving charges for all telephone companies, and it further appearing that there is great necessity for conserving material and labor to meet unavoidable and paramount war needs of the country, and that as an emergency and war measure it is desired that said rates become effective on less than statutory notice, it is

Ordered: That said New England Telephone and Telegraph Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its tariff R. I. P. U. C. Number 3, Section 3, Sheet A, for the purpose of putting into effect the installation and moving charges prescribed by said Postmaster General of the United States, said tariff to become effective as of September 1, 1918.

September 11, 1918.

No. 435.

Application of Westerly Automatic Telephone Company for authority to file tariff.

Upon consideration, it appearing that the Postmaster General of the United States having on August 28, 1918 prescribed installation and moving charges for all telephone companies, and it further appearing that there is great necessity for conserving material and labor to meet unavoidable and paramount war needs of the country, and that as an emergency and war measure it is desired that said rates become effective on less than statutory notice, it is

Ordered: That said Westerly Automatic Telephone Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, a tariff for the purpose of putting into effect the installation and moving charges prescribed by said Postmaster General of the United States, said tariff to become effective as of September 1, 1918.

September 18, 1918.

No. 436.

Application of New England Telephone and Telegraph Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That said New England Telephone and Telegraph Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 7 for the purpose of establishing rates for changing the location of equipment where the change is to a location on the same premises, said rate to be as shown in Section 2, Sheet A (First Revision), and said rate to become effective September 25, 1918.

September 25, 1918.

No. 437.

Application of The New York, New Haven and Hartford Railroad Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company for itself and for Moshassuck Valley Railroad Company and The Rhode Island Company, be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, tariffs to conform with the order of the Interstate Commerce Commission in Case Number 4,906, under Freight Rate Authority Number 1,156 of the Director, division of Traffic, United States Railroad Administration, dated September 13, 1918 in relation to increase in mileage rates to be paid for the use of freight cars of private ownership, said tariff to become effective on five days' notice to the public and the Commission.

October 3, 1918.

No. 438.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to supplement without the statutory publication and notice to the Commission, Official Classification Number 44 for the purpose of revising Section 1 of Rule 29 as published in Item 1, Page 39, Supplement Number 26 to said Official Classification, as shown in said application, said supplement to become effective upon five days' notice to the public and the Commission.

October 3, 1918.

No. 439.

Application of R. N. Collyer, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to supplement without the statutory publication and notice to the Commission, Official Classification Number 44 for the purpose of revising note to Rule 5-A, published in Item 3, Page 22 and Paragraph 1,825 of the I. C. C. Regulations for the Transportation of Dangerous Articles, other than Explosives by Freight, published on page 385 of said classification, said supplement to become effective upon five days' notice to the public and the Commission.

October 16, 1918.

No. 440.

Application of The Rhode Island Company for authority to supplement tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to supplement without the statutory publication and notice to the Commission, its passenger tariffs R. I. P. U. C. Numbers 61 and 65 for the purpose of designating certain reroutings as shown in said supplements, said supplements, to become effective on October 23, 1918.

October 21, 1918.

No. 442.

Application of The New York, New Haven and Hartford Railroad Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The New York, New Haven and Hartford Railroad Company for itself and on behalf of the Moshassuck Valley Railroad Company, The Rhode Island Company, Narragansett Pier Railroad Company and Wood River Branch Railroad Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, a tariff changing car demurrage rules and charges to conform with order issued by the Interstate Commerce Commission, July 31, 1918 upon request of the Director-General of Railroads, said tariffs to become effective November 1, 1918 on five days' notice to the public and the Commission.

October 23, 1918.

No. 443.

Application of The Rhode Island Company for authority to supplement tariffs.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplements 5 and 6 to its passenger tariff R. I. P. U. C. Number 61, Supplement 5 to R. I. P. U. C. Number 65 and Supplement 4 to R. I. P. U. C. Number 66, for the purpose of modifying fare zones and transfer limits as shown in said supplements.

October 30, 1918.

No. 444.

Application of The Rhode Island Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to supplement without the statutory publication and notice to the Commissioners, its passenger tariff R. I. P. U. C. Number 61 for the purpose of putting into effect

a rate of ten cents between Crescent Park and Broadway Six Corners, East Providence on special car operating between said points for school children, said tariff to become effective as of November 4, 1918.

November 8, 1918.

No. 445.

Application of R. N. Colver, Agent, for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said R. N. Collyer, Agent, be and he hereby is authorized to put into effect without the statutory publication and notice to the Commission, Official Classification Number 44 for the purpose of revising the classification specification for finished passenger automobile bodies as shown in said application, said supplement to become effective upon five days' notice to the public and the Commission and said applicant is further authorized to make changes or eliminations from the list of participating carriers on five days' notice to the public and the Commission.

November 20, 1918.

No. 446.

Application of New England Telephone and Telegraph Company for authority to supplement tariff.

Upon consideration, it appearing that the Postmaster General of the United States having on November 18, 1918 prescribed service connection and moving charges for all telephone companies, it is

Ordered: That said New England Telephone and Telegraph Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, such supplements as may be necessary to make its tariffs conform to the charges and regulations contained in Bulletin Number 15 of said November 18, 1918, said supplements to become effective as of December 1, 1918.

December 11, 1918.

No. 448.

Application of Providence Telephone Company for authority to supplement tariff.

Upon consideration, it appearing that the Postmaster General of the United States having on November 18, 1918 prescribed service connection and moving charges for all telephone companies, it is

Ordered: That said Providence Telephone Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, such supplements as may be necessary to make its tariffs conform to the charges and regulations contained in Bulletin Number 15 of said November 18, 1918, said supplements to become effective as of December 1, 1918.

December 11, 1918.

No. 449.

Application of The Rhode Island Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island Company be and it hereby is authorized to supplement its passenger tariff R. I. P. U. C. Number 61 for the purpose of changing fare limits on Promenade Street-Phillipsdale Line as shown in Supplement Number 8 to said tariff filed with said application, said supplement to become effective December 9, 1918.

December 11, 1918.

No. 450.

Application of Bay State Street Railway Company for approval to granting free service.

Upon consideration, it is

Ordered: That the approval of the Commission be and the same hereby is granted to said Bay State Street Railway Company for furnishing free service for a municipal Christmas Tree in the City of Newport for Christmas, 1918.

December 18, 1918.

No. 451.

Application of Bristol County Gas and Electric Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Bristol County Gas and Electric Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 43 for the purpose of changing the effective date of Standard Contract Rider Number 10, effecting a postponement to July 1, 1919 of the effective date of the increase in rate provided for in said Standard Contract Rider, said supplement to become effective January 1, 1919.

December 30, 1918.

No. 452.

Application of Narragansett Pier Electric Light and Power Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Narragansett Pier Electric Light and Power Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 17 for the purpose of changing the effective date of Standard Contract Riders Numbers 8 and 9, effecting a postponement to July 1, 1919 of the effective date of the increase in rate provided for in said Standard Contract Riders, said supplement to become effective January 1, 1919.

December 30, 1918.

No. 453.

Application of Westerly Light and Power Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Westerly Light and Power Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 17 for the purpose of changing the effective date of Standard Contract Riders Numbers 8, 9 and 10, effecting a postponement to July 1, 1919 of the effective date of the increase in rate provided for in said Standard Contract Riders, said supplement to become effective January 1, 1919.

December 30, 1918.

No. 454.

Application of Wickford Light and Water Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Wickford Light and Water Company be and it hereby is authorized to supplement its tariff R. I. P. U. C. Number 14 for the purpose of changing the effective date of Standard Contract Riders Numbers 8 and 9, effecting a postponement to July 1, 1919 of the effective date of the increase in rate provided for in said Standard Contract Riders, said supplement to become effective January 1, 1919.

December 30, 1918.

No. 455.

Application of Blackstone Valley Gas and Electric Company for authority to file tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said Blackstone Valley Gas and Electric Company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, its tariff R. I. P. U. C. Number 39 for the purpose of putting into effect as of November 1, 1918 a revised rate covering municipal street lighting for the City of Central Falls.

December 30, 1918.

No. 456.

Application of The Rhode Island Company for authority to supplement tariff.

Upon consideration, it is

Ordered: That, for good cause shown, said The Rhode Island company be and it hereby is authorized to put into effect without the statutory publication and notice to the Commission, Supplement Number 6 to its passenger tariff R. I. P. U. C. Number 65 for the purpose of putting into effect a special rate as shown in said supplement, said supplement to become effective December 30, 1918 upon two days' notice to the public and the Commission.

December 30, 1918.

No. 457.

Respectfully submitted,

WILLIAM C. BLISS,
SAMUEL E. HUDSON,
ROBERT F. RODMAN,

Commissioners.

January 15, 1919.

RAILROAD STATISTICS.

NAME OF CORPORATION.	CAPITAL STOCK.			
	Total Par Value Authorized.	Total Par Value Outstanding	Outstanding Last Report	Dividends
Boston and Providence Railroad Corporation.....	\$4,000,000.00	\$3,996,000.00	\$3,996,000.00	\$399,600.00
Moshassuck Valley Railroad Company.....	500,000.00	250,000.00	250,000.00	.....
Narragansett Pier Railroad Company.....	133,800.00	133,800.00	133,800.00	5,352.00
The New York, New Haven and Hartford Railroad Company.....	180,017,000.00	157,117,900.00	157,117,900.00	.....
Old Colony Railroad Company.....	22,294,000.00	22,294,000.00	22,294,000.00	.....
Providence, Warren and Bristol Railroad Company.....	874,600.00	874,600.00	874,600.00	1,560,580.00
Providence & Worcester Railroad Company.....	3,500,000.00	3,500,000.00	3,500,000.00	52,476.00
Wood River Branch Railroad Company.....	60,000.00	60,000.00	60,000.00	350,000.00
Total	\$211,379,400.00	\$188,226,300.00	\$188,226,300.00	\$2,368,008.00

*Paid by The Rhode Island Company.

RAILROAD STATISTICS—Continued.
ASSETS.

NAME OF CORPORATION.	INVESTMENTS.		Current Assets.	Deferred Assets.	Unadjusted Debits.	Total.
	Road and Equipment.	I. II Other.				
Boston and Providence Railroad Corporation	\$5,673,198.59	\$419,703.36	\$211,343.75	\$	\$	\$6,304,245.70
Mohassuck Valley Railroad Company	117,417.61	135,214.12	94,231.48	. . . . .	1,227.30	348,090.50
Narragansett Pier Railroad Company	203,800.00	. . . . .	. . . . .	. . . . .	. . . . .	203,800.00
The New York, New Haven and Hartford Railroad Company	204,780,322.87	242,105,905.01	29,267,875.41	130,810.47	5,443,492.53	481,728,406.29
Old Colony Railroad Company	42,845,826.03	4,025,352.29	589,441.34	. . . . .	. . . . .	47,460,619.66
Providence, Warren and Bristol Railroad Company	1,467,140.09	. . . . .	31,346.28	. . . . .	. . . . .	1,498,486.37
Providence & Worcester Railroad Company	5,105,137.40	38,825.00	34,065.00	80,747.97	. . . . .	5,258,775.37
Wood River Branch Railroad Company	111,830.29	. . . . .	11,648.86	30.00	. . . . .	123,509.15
Total	\$260,304,672.88	\$246,724,999.78	\$30,239,952.12	\$211,588.44	\$5,444,719.83	\$542,925,933.05

RAILROAD STATISTICS—Continued.
LIABILITIES.

NAME OF CORPORATION.	Total Stock.	Long-Term Debt.	Current Liabilities.	Deferred Liabilities.	Unadjusted Credits.	Corporate Surplus.	Total.
Boston and Providence Railroad Corporation	\$3,996,000.00	\$2,170,000.00	\$47,289.50	\$.....	\$.....	\$90,956.20.	\$6,304,245.70
Mohasuck Valley Railroad Company	250,000.00	.....	59,154.31	.....	22,851.67	16,084.53	348,090.51
Narragansett Pier Railroad Company	133,800.00	70,000.00	.....	.....	.....	.....	203,800.00
The New York, New Haven and Hartford Railroad Co..	176,400,787.50	*217,516,888.25	60,017,714.38	249,592.52	14,471,436.95	†13,071,986.69	481,728,406.29
Old Colony Railroad Company	29,131,298.84	13,598,000.00	1,613,294.91	.....	61,891.48	3,056,134.43	47,460,619.66
Providence, Warren and Bristol Railroad Company	1,093,250.00	38,617.77	342,435.03	.....	.....	24,183.57	1,498,486.37
Providence & Worcester Railroad Company	3,500,000.00	1,500,000.00	15,140.40	.....	.....	243,634.97	5,258,775.37
Wood River Branch Railroad Company	60,000.00	56,500.00	66,587.07	.....	75.00	†59,652.92	123,509.15
Total	\$21,565,136.34	\$234,950,006.02	\$62,161,615.60	‡249,592.52	\$14,556,255.10	\$16,443,327.47	\$542,925,933.05

*Includes Governmental Grant of \$50,455.03.

†Includes \$9,517,069.23 Equipment and Personal Property Leased.

‡Debit.

RAILROAD STATISTICS—Continued.
INCOME ACCOUNT.

NAME OF CORPORATION.	OPERATING INCOME.				
	Railway Operating Revenues.	Railway Operating Expenses.	Net Revenue from Railway Operations.	Railway Operating Income.	Miscellaneous Operating Income.
Boston and Providence Railroad Corporation.....	\$ 118,952.27	\$ 59,708.78	\$ 59,243.49	\$ 57,161.83	.....
Moshasuck Valley Railroad Company.....	.....	.....	.....	.....	.....
Narragansett Pier Railroad Company.....	85,784,892.86	61,970,059.84	23,814,833.02	20,471,857.27	9,070.02
The New York, New Haven and Hartford Railroad Company.....	.....	.....	.....	.....	.....
Old Colony Railroad Company.....	.....	.....	.....	.....	.....
Providence, Warren and Bristol Railroad Company.....	.....	.....	.....	.....	.....
Providence & Worcester Railroad Company.....	.....	.....	.....	.....	.....
Wood River Branch Railroad Company.....	17,161.72	34,768.61	*17,606.89	*18,526.75	.....
Total	\$85,921,006.85	\$62,064,537.23	\$23,856,469.62	\$20,510,492.35	\$9,070.02

*Deficit.

RAILROAD STATISTICS—Continued.
INCOME ACCOUNT—Concluded.

NAME OF CORPORATION.	Total Operating Income.	Non- Operating Income.	Gross Income.	Deductions from Gross Income.	Net Income.
Boston and Providence Railroad Corporation.....	\$.....	\$495,032.81	\$495,032.81	\$90,110.93	\$404,921.88
Moshassuck Valley Railroad Company.....	57,161.83	4,316.12	61,477.95	61,192.52	285.43
Narragansett Pier Railroad Company.....	20,480,927.29	7,260,789.66	27,741,716.95	25,337,621.51	2,404,095.44
The New York, New Haven and Hartford Railroad Company.....	.....	2,122,982.37	2,122,982.37	546,946.73	1,576,035.64
Old Colony Railroad Company.....	.....	73,713.21	73,713.21	21,143.83	52,569.38
Providence, Warren and Bristol Railroad Company.....	.....	418,366.47	418,366.47	66,293.67	352,072.80
Providence & Worcester Railroad Company.....	.....	106.57	*18,420.18	8,133.33	*26,553.51
Wood River Branch Railroad Company.....	*18,526.75	.....	.....	.....	.....
Total	\$20,519,562.37	\$10,375,307.21	\$30,894,869.58	\$26,131,442.52	\$4,763,427.06

*Deficit.

RAILROAD STATISTICS—Continued.
RAILWAY OPERATING REVENUES.

NAME OF CORPORATION.	RAIL LINE TRANSPORTATION.			Incidental Operating Revenue.	Joint Facilities.	Total.
	Freight.	Passenger.	All Other.			
Mohassuck Valley Railroad Company	\$70,761.10	\$903.72	\$2,893.49	\$44,303.96	\$.....	\$118,952.27
The New York, New Haven and Hartford Railroad Company	40,395,998.57	34,427,801.28	6,918,046.38	81,741,846.23	752,501.18	85,784,892.86
Wood River Branch Railroad Company	10,304.35	3,808.26	2,819.61	229.50	.....	17,161.72
Total	\$40,477,064.02	\$34,432,513.26	\$6,923,849.48	\$3,335,078.91	\$752,501.18	\$85,921,006.85

RAILWAY OPERATING EXPENSES.

NAME OF CORPORATION.	RAILWAY OPERATING EXPENSES.				Miscellaneous Operations.	General.
	Maintenance of Ways and Structures.	Maintenance of Equipment.	Traffic Expenses.	Transportation Expenses.		
Mohassuck Valley Railroad Company	\$8,516.61	\$8,772.39	\$789.50	\$29,645.85	\$.....	\$11,984.43
The New York, New Haven and Hartford Railroad Company	9,019,344.22	12,191,351.62	522,287.13	36,380,373.33	1,404,428.39	2,470,694.93
Wood River Branch Railroad Company	7,131.27	276.52	.....	24,946.32	.....	2,414.50
Total	\$9,034,992.10	\$12,200,400.53	\$523,076.63	\$36,434,965.50	\$1,404,428.39	\$2,485,093.86

RAILROAD STATISTICS—Continued.
RAILWAY OPERATING EXPENSES—Concluded.

NAME OF CORPORATION.	Transportation for Investment.	Total Railway Operating Expenses.
Massachusetts Valley Railroad Company.....	\$18,419.78	\$59,708.78
The New York, New Haven and Hartford Railroad Company.....	.....	61,970,059.84
Wood River Branch Railroad Company.....	.....	34,768.61
Total	*\$18,419.78	\$62,064,537.23

*Credit.

RAILROAD STATISTICS—Continued.
RAIL LINE OPERATIONS.

NAME OF CORPORATION.	TRAIN MILES.				
	Total Freight.	Passenger.	Mixed.	Special.	Work Transportation Service.
Mohassuck Valley Railroad Company.....	3,399	4,944	.....	.....	8,343
The New York, New Haven and Hartford Railroad Company.....	6,840,382	14,883,979	145,331	7,711	21,877,403
Wood River Branch Railroad Company.....	.....	5,304	5,366	.....	.....
Total	6,843,781	14,894,227	150,697	7,711	21,896,416

RAIL LINE OPERATIONS—Continued.

NAME OF CORPORATION.	LOCOMOTIVE MILES.				
	Total Freight.	Total Passenger.	Total Mixed.	Total Special.	Total Train Yard Switching.
Mohassuck Valley Railroad Company.....	3,399	4,944	.....	.....	1,854
The New York, New Haven and Hartford Railroad Company.....	7,895,804	15,742,494	143,810	8,149	1,252,145
Wood River Branch Railroad Company.....	.....	5,304	5,366	.....	628
Total	7,899,203	15,752,742	149,176	8,149	1,254,627

RAILROAD STATISTICS—Continued.
RAIL LINE OPERATIONS—Continued.

NAME OF CORPORATION.	CAR MILES.					
	Total Freight Train.	Total Passenger Train.	Total Mixed Train.	Total Special Train.	Total Transportation Service.	Work Service.
Moshassuck Valley Railroad Company.....	33,162	9,888	.....	.....	43,050	.....
The New York, New Haven and Hartford Railroad Company	204,398,312	81,860,664	934,146	102,960	287,296,082	4,637,532
Wood River Branch Railroad Company.....	.....	5,366	104,660	.....	110,026	.....
Total	204,431,474	81,875,918	1,038,806	102,960	287,449,158	4,637,532

RAIL LINE OPERATIONS—Continued.

	TONS.			TON MILES.		
	Revenue Freight.	Non-Revenue Freight.	Total Freight.	Revenue Freight.	Non-Revenue Freight.	Total.
Moshassuck Valley Railroad Company.....	255,426	.....	255,426	510,852	.....	510,852
The New York, New Haven and Hartford Railroad Company	30,220,809	3,362,691	33,583,500	2,776,143,607	179,177,606	2,955,321,213
Wood River Branch Railroad Company.....	11,554	552	12,106	66,857	3,086	69,943
Total	30,487,789	3,365,243	33,851,032	2,776,721,316	179,180,692	2,955,902,008

RAILROAD STATISTICS—Continued.

RAIL LINE OPERATIONS—Concluded.

NAME OF CORPORATION.	PASSENGERS CARRIED.		Revenue Passenger Miles.
	Revenue.	Revenue Previous Year.	
Moshassuck Valley Railroad Company.....	38,792	25,369	77,584
The New York, New Haven and Hartford Railroad Company.....	92,607,506	86,183,575	1,814,460,722
Wood River Branch Railroad Company.....	16,217	15,183	92,436
Total	92,662,515	86,224,127	1,814,630,742

RAILROAD STATISTICS—Continued
EQUIPMENT AT CLOSE OF YEAR.

NAME OF CORPORATION.	LOCOMOTIVES.				CARS IN SERVICE.								TOTAL CARS.	
	Owned.	Leased.	Total in Service.		Owned.	Leased.	Freight.		Passenger.		Owned.	Leased.	Owned.	Leased.
			Steam.	Other.			Owned.	Leased.	Owned.	Leased.				
	Steam.	Other.	Steam.	Other.	Owned.	Leased.	Owned.	Leased.	Owned.	Leased.	Owned.	Leased.	Owned.	Leased.
Moshassuck Valley Railroad Co.	3	...	...	3	25	...	2	...	...	...	27	....	...	...
The New York, New Haven and Hartford Railroad Company...	991	102	164	1,257	34,091	555	1,817	709	1,204	117	37,112	1,381	...	...
Wood River Branch Railroad Co.	...	...	1	1	.....	...	....	1	....	...	.....	1	...	...
Total.....	994	102	165	1,261	34,116	555	1,819	710	1,204	117	37,139	1,382	...	...

RAILROAD STATISTICS—Continued.
ROAD MILEAGE.

NAME OF CORPORATION.	TOTAL.			Operated and not Owned All Tracks.	Total Operated All Tracks.	IN RHODE ISLAND.	
	Owned.					Miles of Road.	
	Miles of Road.	Miles of Second Track.	Miles of All Tracks.			Owned Single Track.	Operated Single Track.
*Boston and Providence Railroad Corporation.....	63.34	55.19	254.62	.....	.....	7.65	.....
Moshassuck Valley Railroad Company.....	2.00	.....	4.90	.....	4.90	2.00	2.00
**Narragansett Pier Railroad Company.....	8.50	.....	8.50	.....	.....	8.50	.....
The New York, New Haven and Hartford Railroad Company	1,196.78	449.14	2,642.95	1,951.98	4,594.93	133.07	195.39
Old Colony Railroad Company.....	534.08	214.23	1,046.18	.....	.....	18.71	.....
Providence, Warren and Bristol Railroad Company	14.44	7.77	31.34	.....	.....	14.42	.....
*Providence & Worcester Railroad Company.....	50.60	49.54	185.37	.....	.....	24.34	.....
Wood River Branch Railroad Company.....	5.70	.....	6.63	.....	6.63	5.70	5.70
Total.....	1,875.44	775.87	4,180.49	1,951.98	4,606.46	*209.49	203.09

*4.90 miles between Providence and Boston Switch owned jointly by Boston and Providence Railroad Corporation and Providence & Worcester Railroad Company.
**Operated by The Rhode Island Company.

STREET RAILWAY STATISTICS.
CAPITAL STOCK.

NAME OF CORPORATION.	Total Par Value Authorized.	Total Par Value Outstanding.	Outstanding Last Report	Dividends.
Bay State Street Railway Company.....	\$24,607,700.00	\$24,531,500.00	\$24,001,500.00	\$104,529.00
Newport & Providence Railway Company.....	450,000.00	450,000.00	450,000.00	7,500.00
Newport and Fall River Street Railway Company.....	1,200,000.00	1,191,000.00	1,050,000.00	**67,230.00
Pawtucket Street Railway Company.....	500,000.00	500,000.00	500,000.00	*30,000.00
Providence Cable Tramway Company.....	300,000.00	300,000.00	300,000.00	.....
Providence and Danielson Railway Company.....	1,000,000.00	1,000,000.00	1,000,000.00	.....
The Rhode Island Company.....	9,685,000.00	9,685,000.00	9,685,500.00	*10,000.00
Rhode Island Suburban Railway Company.....	5,000,000.00	5,000,000.00	5,000,000.00	*100,000.00
Sea View Railroad Company.....	700,000.00	700,000.00	700,000.00	*21,000.00
The Shore Line Electric Railway Company.....	1,000,000.00	1,000,000.00	1,000,000.00	.....
Union Railroad Company.....	9,000,000.00	9,000,000.00	9,000,000.00	*720,000.00
Total.....	\$53,442,700.00	\$53,358,000.00	\$52,687,000.00	\$1,060,259.00

*Guaranteed by The Rhode Island Company.
**Paid by Bay State Street Railway Company.

STREET RAILWAY STATISTICS—Continued.
ASSETS.

NAME OF CORPORATION.	INVESTMENTS.		Current Assets.	Deferred Assets.	Unadjusted Debits.	Total.
	Road and Equipment.	All Other.				
Bay State Street Railway Company.....	\$46,387,394.24	\$2,171,233.28	\$2,089,319.33	\$50,455.52	\$6,185,143.96	\$50,883,546.33
Newport & Providence Railway Company.....	761,693.20	.....	49,257.91	.....	950.50	811,901.61
Newport and Fall River Street Railway Company.....	2,255,909.17	.....	.....	.....	.....	2,255,909.17
Pawtucket Street Railway Company.....	586,201.51	.....	871.77	.....	.....	587,073.28
Providence Cable Tramway Company.....	447,989.51	.....	.....	.....	.....	447,989.51
Providence and Danielson Railway Company.....	1,625,023.86	.....	.....	.....	.....	1,625,023.86
The Rhode Island Company.....	14,671,889.81	2,296,556.30	937,620.20	.....	110,090.98	18,016,157.35
Rhode Island Suburban Railway Company.....	10,401,766.15	175,029.28	448.75	.....	.....	10,577,244.18
Sea View Railroad Company.....	1,554,893.24	.....	.....	.....	.....	1,554,893.24
The Shore Line Electric Railway Company.....	7,506,853.62	299,723.69	234,808.75	.....	113,160.61	8,154,546.67
Union Railroad Company.....	9,254,639.60	398,394.00	838.63	.....	.....	9,653,872.23
Total.....	\$95,454,253.91	\$5,340,936.55	\$3,313,165.40	\$50,455.52	\$6,409,346.05	\$110,568,157.43

REPORT OF PUBLIC UTILITIES COMMISSION.

STREET RAILWAY STATISTICS—Continued.
LIABILITIES.

NAME OF CORPORATION.	Total Stock.	Long Term Debt.	Current Liabilities.	Deferred Liabilities.	Unadjusted Credits.	Corporate Surplus.	Total.
Bay State Street Railway Company	\$24,888,980.00	\$24,345,500.00	\$3,661,569.59	4,978.73	\$3,377,568.24	\$604,949.77	\$56,883,546.33
Newport & Providence Railway Company	450,000.00	300,000.00	4,206.96	.....	18,546.21	39,148.44	811,901.61
Newport and Fall River Street Railway Company	1,200,095.75	999,500.00	.....	45,578.61	.....	10,734.81	2,255,909.17
Pawtucket Street Railway Co.	500,000.00	.....	.....	.....	.....	87,073.28	587,073.28
Providence Cable Tramway Co.	300,000.00	.....	.....	.....	.....	147,989.51	447,989.51
Providence and Danielson Railway Company	1,000,000.00	600,000.00	.....	.....	.....	25,023.86	1,625,023.86
The Rhode Island Company	9,685,500.00	1,662,000.00	4,156,447.48	.....	854,473.21	**1,637,736.66	18,016,157.35
Rhode Island Suburban Railway Co.	5,000,000.00	4,998,200.00	.....	.....	.....	579,044.18	10,577,244.18
Sea View Railroad Company	700,000.00	600,000.00	.....	.....	.....	254,893.24	1,554,893.24
The Shore Line Electric Railway Company	1,000,000.00	6,700,000.00	540,061.69	.....	*6,977.42	*78,537.59	8,154,546.67
Union Railroad Company	9,000,000.00	25,000.00	.....	.....	.....	628,872.23	9,653,872.23
Total	\$53,724,575.75	\$40,230,200.00	\$8,362,285.71	\$50,557.34	\$4,243,610.24	\$3,956,928.39	\$110,568,157.43

*Debit.

**Includes \$1,121,305.32 for leased equipment.

STREET RAILWAY STATISTICS—Continued.
INCOME STATEMENT.

NAME OF CORPORATION.	OPERATING INCOME.			Net Revenue Auxiliary Operation.	Net Operating Revenue.
	Railway Operating Revenues.	Railway Operating Expenses.	Net Revenue Railway Operation.		
Bay State Street Railway Company.....	\$10,651,453.92	\$8,543,383.21	\$2,108,070.71	\$123,229.58	\$2,231,300.29
Newport & Providence Railway Company.....	*131,669.24	100,363.90	31,305.34	.....	31,305.34
Newport and Fall River Street Railway Company.....	.....	.....	.....	.....	.....
Pawtucket Street Railway Company.....	.....	.....	.....	.....	.....
Providence Cable Tramway Company.....	.....	.....	.....	.....	.....
Providence and Danielson Railway Company.....	.....	.....	.....	.....	.....
The Rhode Island Company.....	6,000,602.48	4,519,003.13	1,481,599.35	.....	1,481,599.35
Rhode Island Suburban Railway Company.....	.....	.....	.....	.....	.....
Sea View Railroad Company.....	.....	.....	.....	.....	.....
The Shore Line Electric Railway Company.....	1,453,684.09	1,230,159.91	223,524.18	15,885.78	239,409.96
Union Railroad Company.....	.....	.....	.....	.....	.....
Total.....	\$18,237,409.73	\$14,392,910.15	\$3,844,499.58	\$139,115.36	\$3,983,614.94

*Includes revenue from boats.

STREET RAILWAY STATISTICS—Continued.
INCOME STATEMENT—Concluded.

NAME OF CORPORATION.	Operating Income.	Non- Operating Income.	Gross Income.	Deductions from Gross Income.	Income Balance.
Bay State Street Railway Company.....	\$1,709,508.67	\$54,421.90	\$1,763,930.57	\$1,419,249.37	\$344,681.20
Newport & Providence Railway Company.....	31,305.34	861.23	32,166.57	25,967.08	6,199.49
Newport and Fall River Street Railway Company.....	.....	115,360.00	115,360.00	48,130.00	67,230.00
Pawtucket Street Railway Company.....	.....	30,115.94	30,115.94	50.00	30,065.94
Providence Cable Tramway Company.....	.....	.....	.....	.....	.....
Providence and Danielson Railway Company.....	.....	.....	.....	.....	.....
The Rhode Island Company.....	*826,349.82	115,482.00	941,831.82	1,454,681.41	**512,849.59
Rhode Island Suburban Railway Company.....	.....	100,107.03	100,107.03	50.00	100,057.03
Sea View Railroad Company.....	.....	.....	.....	.....	.....
The Shore Line Electric Railway Company.....	*210,415.20	5,509.06	215,924.26	425,557.28	**209,633.02
Union Railroad Company.....	.....	720,127.22	720,127.22	50.00	720,077.22
Total.....	\$2,777,579.03	\$1,141,984.38	\$3,919,563.41	\$3,373,735.14	\$545,828.27

*Net operating revenue less taxes.

**Deficit.

STREET RAILWAY STATISTICS—Continued.

NAME OF CORPORATION.	Total Car Mileage.	Total Car Hours.	Total Revenue. Passengers Carried.	Total Passengers Carried.	Passenger Revenue	Average Fare	Average Fare
						Revenue All Passengers.	Revenue All Passengers.
Bay State Street Railway Company.....	32,154,882	3,856,348	188,220,257	212,365,731	\$9,952,970.19	\$.05287	\$.04686
Newport & Providence Railway Company..	206,491	21,950	1,861,254	1,876,890	93,062.70	.05	.04958
The Rhode Island Company.....	16,997,668	2,400,116	111,330,937	126,332,767	5,518,365.24	.04957	.04368
The Shore Line Electric Railway Company	4,732,908	398,279	15,508,355	16,127,118	1,348,563.63	.08696	.08362
Total.....	54,091,949	6,676,693	316,920,803	356,702,496	\$16,912,961.76		

NAME OF CORPORATION.	Total Revenue from Transportation.	REVENUE FROM TRANSPORTATION.		Total Revenue from Other Railway Operations.	OPERATING REVENUE.	
		Per Car Mile.	Per Car Hour.		Per Car Mile.	Per Car Hour.
Bay State Street Railway Company.....	\$10,467,084.43	\$.32552	\$2.71424	\$184,369.49	\$.33123	\$2.76205
Newport & Providence Railway Company.....	93,147.00	.45109	4.24359	529.00	.45365	4.26769
The Rhode Island Company.....	5,900,030.74	.34711	2.45823	100,571.74	.35303	2.50013
The Shore Line Electric Railway Company....	1,438,689.79	.30397	3.61226	14,994.30	.30714	3.64991
Total.....	\$17,898,951.96			\$300,464.53		

STREET RAILWAY STATISTICS—Continued.

NAME OF CORPORATION.	OPERATING EXPENSES.		CARS.			LOCOMOTIVES.	
	Per Car Mile.	Per Car Hour.	Passenger.	Freight and Express.	All Other	Electric.	Steam.
Bay State Street Railway Company.....	\$.26579	\$2.21540	1,890	44	378	.....	.....
Newport & Providence Railway Company.....	.31424	2.95624	13	.....	2	.....	.....
The Rhode Island Company.....	.26586	1.88283	1,049	103	172	4	4
The Shore Line Electric Railway Company.....	.25991	3.08868	175	11	48	.....	.....
Total.....			3,127	158	600	4	4

**STREET RAILWAY STATISTICS—Continued.
MILEAGE—OPERATING COMPANIES.**

NAME OF CORPORATION.	MILES OF ROAD.		TOTAL ALL TRACKS.		SINGLE TRACK IN RHODE ISLAND	
	Owned.	Operated.	Owned.	Operated.	Owned.	Operated. (Not Owned.)
Bay State Street Railway Company.....	691.75	760.34	872.78	961.60	.....	19.98
Newport & Providence Railway Company.....	15.303	15.303	15.733	15.733	15.303	.....
*The Rhode Island Company.....	37.91	301.85	42.29	391.85	37.91	261.99
The Shore Line Electric Railway Company.....	131.77	229.32	138.83	250.69	16.70	.....
Total.....	876.733	1,306.813	1,069.633	1,619.873	69.913	281.97
						352.313

*Narragansett Pier Railroad Company not included. See Railroad Returns.

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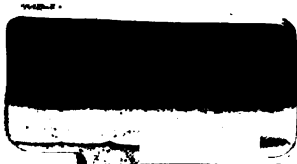
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