

WALTHAM,

MIDDLESEX COUNTY, MASSACHUSETTS.

POPULATION

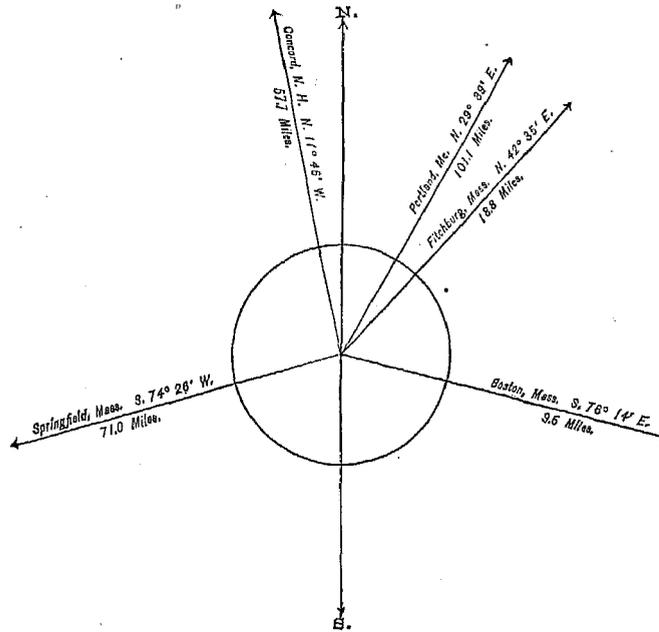
IN THE
AGGREGATE,
1860-1880.

	Inhab.
1790.....
1800.....	903
1810.....	1,014
1820.....	1,677
1830.....	1,857
1840.....	2,504
1850.....	4,464
1860.....	6,397
1870.....	9,065
1880.....	11,712

POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	5,440
Female.....	6,272
—	
Native.....	8,736
Foreign-born.....	2,976
—	
White.....	11,693
Colored.....	19



Latitude: 42° 23' North; Longitude: 71° 15' (west from Greenwich); Altitude: 25 to 470 feet.

FINANCIAL CONDITION:

Total Valuation: \$8,450,260; per capita: \$722 00. Net Indebtedness: \$477,000; per capita: \$40 73. Tax per \$100: \$1 36.

HISTORICAL SKETCH.

Watertown, Massachusetts, settled in 1630 by a band of Puritans headed by Sir Richard Saltonstall and the Rev. George Phillips, was, for the better protection against Indians in 1691 divided into three military districts. The one on the east is the Watertown of to-day, that on the west is now known as Weston, while that in the middle has since become Waltham. On January 4, 1783, the town of Waltham was incorporated with the following boundaries: North and northeast by the town line commencing at the northwest corner of Fresh pond, and running west-northwest to the Concord line; south by the Charles river, east by the line beginning at Charles river, running

very nearly northwest, and meeting the line from Fresh pond to Concord; west by Weston. This area contained nearly 9,000 acres, and at the date of incorporation had about 550 inhabitants. The area remains about the same now, the only changes being 600 acres taken from Newton in 1849, and 429 acres given to Belmont in 1859.

The origin of the name seems to be in some doubt, but it is generally conceded that it was suggested by the fact that some of the early settlers came from *Waltham Abbey*, Essex county, England. From the incorporation of Waltham for many years its inhabitants formed a strict farming community and, as a rule, occupied the lauds in the northerly section. The town shared in the early Indian, the French, and the Revolutionary wars, and the war of 1812.

About 1802 the manufacture of coarse wrapping-paper was begun, and in 1812 the Waltham Cotton and Woolen Manufacturing Company was incorporated. In 1813 Francis C. Lowell and Patrick T. Jackson, of Boston, purchased Boil's paper-mill and water-power at the upper falls, and in connection with Nathan Appleton and others, incorporated as the Boston Manufacturing Company, with a capital of \$400,000, began the erection of a cotton-mill.

Two years previously Messrs. Appleton and Lowell had met in England and discussed the feasibility of introducing the improved system of cotton manufacture in this country. Mr. Lowell, encouraged by Mr. Appleton's advice, visited Scotch and English factories, obtained all the information possible on the subject, and returned in 1813 to apply his knowledge for the benefit of himself and his associates in the development of the new industry here. The power-loom was then being introduced in England with but partial success. Mr. Lowell determined to perfect it himself, so while Mr. Jackson was erecting a new dam and the buildings for a mill at Waltham, he was experimenting in a store on Broad street, Boston, employing a man to turn a crank. After several months he achieved success, and in the fall of 1814 a power-loom was put into successful operation in Waltham. Mr. Moody, of Amesbury, had been engaged as machinist, and needed improvements were made in all the machinery, several important ones originating here still continuing in use.

Within two and a half years six entirely new machines were invented and put into operation, viz, the power-loom, warping- and dressing-machine, regulator for water-wheel, double speeder, dead-spindle, and throttle filling-frame. The first goods manufactured were made in imitation of those imported from India—a heavy sheeting of No. 14 yarn, 37 inches wide, 44 picks to the inch, and weighing something less than 3 yards to the pound—according to Mr. Appleton's statement in his pamphlet. The first entry upon the original record-book of goods manufactured, kept at the factory and still in use, stands thus: "1816, Feb. 2, 31 pieces, 912.2 yards, 4-4", or 36-inch goods. It seems hardly credible now that only sixty-four years ago there was only one shop in Boston, and that on Cornhill, where domestic goods were sold. This shop was kept by a Mrs. Bruno. Samples of the new goods were offered for sale by her. The people praised them, made no objection to the price asked, but would not buy. Mr. Appleton, however, found an auctioneer who disposed of them at once at over 30 cents per yard, and continued to sell them at that price. Mr. Appleton received a commission of 1 per cent. for attending to the sales, and this became the established rate for a long period. This factory was the first where all the processes for the manufacture of cotton into cloth were arranged within the walls of the same building.

In 1879 the Boston Manufacturing Company and the Waltham Cotton and Woolen Manufacturing Company had 40,000 spindles, 700 looms, and gave employment to over 1,200 persons. Besides the cotton cloth made, some 5,000 dozen pairs of stockings were turned out weekly.

In 1819 the manufacture of sulphuric acid was begun. It was continued until 1872, when the industry was abandoned. In 1835, Dr. F. F. Field invented a process for the manufacture of crayons for the use of schools, carpenters, tailors, etc. This business, though at first carried on in a small way, now requires a large factory.

One of the largest and most important manufactures in the town is that of the American Watch Company. It began operations in 1854, in a small building, with a capital of \$200,000, and employing only 75 hands. This industry proved so valuable that additions were made from time to time in the factory. The capital was increased to \$1,500,000 in 1879, and 450 finished watches were turned out daily, the labor of over 1,000 operatives being necessary. In addition to the watches, large numbers of watch-makers' tools, particularly lathes and lathe-fixtures, are made.

The establishment and increase of these industries, and the opening of a railroad through Waltham from Boston to the West, had their effect, and the town rapidly increased in wealth and population. There have been no extensive ravages of fire nor particular periods of depression. The original settlers were English, and, though the manufactories have attracted many Irish as operatives, their descendants still form the majority of the population.

WALTHAM IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Waltham:

LOCATION.

Waltham lies in latitude $42^{\circ} 23'$ north, longitude $71^{\circ} 15'$ west from Greenwich, on the Charles river, about 10 miles northwest from Boston. The average elevation of the town above mean sea-level is 70 feet. The lowest point is 25 feet above, and the highest a range of wooded hills in the northerly section, 470 feet above sea-level. The Charles river is not navigable here except for small boats. A small steamer in summer runs up and down the river.

RAILROAD COMMUNICATIONS.

The Fitchburg railroad from Boston on the east to Troy and connecting lines on the west, passes through this town.

TRIBUTARY COUNTRY.

Outside of its manufactories Waltham has no local trade with the surrounding country. The town is mostly surrounded by small towns that supply fruit and vegetables to the Boston market.

TOPOGRAPHY.

Waltham seems to be isolated from the granite formation, and from the pudding-stone so abundant in this region. The outcrop of the ledges seems to indicate a trap formation for underlying rock. The soil is good for this part of the country. In the northern part of the town there is a range of high wooded hills, the highest point of which is 470 feet. The natural drainage is toward the Charles river and its small tributaries. There are several ponds within the limits of the town, and the outskirts are wooded to a large extent.

CLIMATE.

No local report was furnished regarding the climate.

STREETS.

The total length of streets is 80 miles. Of these, 20 miles are paved with broken stone and the rest with gravel. The sidewalks are of concrete and gravel, and the gutters are paved with cobble-stones. Under the auspices of the "village improvement society", the setting out of trees along the streets has been very general. The trees are set on private property just within the street lines, and also in the streets on line of sidewalks. The work on the streets is all done by the day, a force of 25 men, with 12 horses, being employed the year through. A steam stone-crusher and a roller are used. The annual cost of repairs is \$12,000. There is one street-railroad, total length 3 miles, with 6 cars and 12 horses, and giving employment to 5 men. During the past year there were 117,338 passengers carried, the rate of fare being 6 cents.

WATER-WORKS.

The water-works are owned by the town, and the total cost of construction was \$315,000. The water is pumped into a reservoir and distributed from there. The average pressure in the mains is 60 pounds to the square inch. The average amount pumped per diem is 500,000 gallons—greatest 1,250,000 gallons, least 250,000 gallons—and the cost of raising 1,000,000 gallons 1 foot high is 2.65 cents. The yearly cost of maintenance, aside from the cost of pumping, is \$682, and the yearly income from water-rates is \$23,000. There are $23\frac{1}{2}$ miles of mains in the town, and the number of hydrants is 121.

GAS.

Gas is supplied by a private corporation at the rate of \$2 70 per thousand to consumers. The town pays \$1 56 per thousand for the gas used in the street-lamps, 156 in number.

PUBLIC BUILDINGS.

Waltham owns and occupies for town purposes, wholly or in part, Rumford buildings, 1 police station, 5 engine-houses, 3 hose-houses, 10 school-houses, 1 almshouse, 1 town farm, and 1 bath-house. The total value of these buildings is \$233,700.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There is one park in Waltham, the common, situated in the center of the town, with an area of 8 acres. Its total cost was \$125,000, and the yearly cost of maintenance is \$300.

PLACES OF AMUSEMENT.

Music hall, with a seating capacity of 1,000, is a new brick building with all modern improvements for theatrical exhibitions. Rumford hall, owned by the town, has a seating capacity of 600, and is used mostly for small shows. Neither of these halls pays any license to the town.

DRAINAGE.

Waltham has no system of sewerage. There are a few surface-drains for the disposal of rain-water only, and the question of the disposal of the town sewerage is now being discussed.

CEMETERIES.

There are four cemeteries in the town :

Mount Flake Cemetery, area 100 acres.

Calvary Cemetery, area 25 acres.

Grove Hill Cemetery, area 20 acres.

Church Street Cemetery, area 1 acre.

Mount Flake and Grove Hill cemeteries belong to the town and are managed by trustees. There are walks and drives through them, and the grounds are well kept. During the past year 42 interments were made in the former and 32 in the latter. Graves must be 4½ to 5 feet deep, and there is no limit of time after death for burial.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Waltham is the board of health, an independent body composed of five members, two of whom are physicians. The board is elected annually by the people and serves without compensation. The chairman is the executive officer, and the board meets once a week for the transaction of business. No assistants are employed, but the members of the police force act as inspectors. The annual appropriation in absence of any declared epidemic is \$1,000, for incidentals, collection of garbage, etc., and during an epidemic there is no limit on the expenditures. The board acts under the general authority conferred on it by the state laws. Inspections are made every two months during the spring, summer, and autumn, in the whole of the thickly-settled portions of the town, and also as nuisances are reported. When a nuisance is found to exist it is ordered abated, and if the order is not complied with the board has the work done and the expense is charged to the property where the nuisance was. The board exercises control over defective house-drainage, privy-vaults, cesspools, and sources of drinking-water, and corrects the same. The board exercises full control over the conservation and removal of garbage. The board can make such regulations for the burial of the dead as it may deem best, provided the same does not conflict with the state law. The pollution of streams and the removal of excrement are prohibited by and governed by the board.

INFECTIOUS DISEASES.

All cases of small-pox are quarantined at home, or sent to the hospital 1 mile from the thickly-settled portion of the town. Scarlet-fever patients are quarantined at home. No children are allowed to attend the public schools from a family in which there is a case of contagious disease. Vaccination is compulsory, and, in case of paupers, is done at the public expense. The registration of diseases, births, and deaths is done by the town clerk under the state laws.

REPORTS.

The board is to report once a year to the selectmen, and the report is to be published with the annual town documents. The board went into existence May 9 of this year (1880).

MUNICIPAL CLEANSING.

Street-cleaning.—As there are no paved streets in the town there is no street-cleaning proper. The regular force of the highway department for the repairs of streets does all the cleaning that is needed.

Removal of garbage and ashes.—All garbage is removed by the board of health with its own force at an annual cost of \$650. It is required to be kept in tight covered vessels, unmixed with ashes and convenient for removal. It is taken to the country and fed to swine. The final disposition of ashes is a question that is now before the town.

Dead animals.—The carcass of any animal dying within the town limits is removed by Boston parties engaged in rendering, making glue, etc., who are glad to send carts for this purpose when notified.

Liquid household wastes and human excreta.—All liquid household wastes are deposited in vaults or cesspools, and no portion of them is allowed in the street-gutters. All vaults must be built tight, and cesspools the same, if they are within 20 feet of the cellar-wall or within 75 feet of any well or spring. All cesspools must be ventilated, and the house-drains leading to them must be trapped. In the thickly-settled parts of the town but few feel it safe to drink well-water. Vaults and cesspools are emptied under permits from the board of health, between 10 p. m. and 5 a. m., and the contents are removed in water-tight carts or boxes. The final disposal of the night-soil must be to the satisfaction of the board.

POLICE.

The police force of Waltham is appointed by the selectmen and governed by the chief of police in accordance with ordinances making the usual provisions. The force consists of the chief of police and 4 patrolmen, who all receive the same pay, \$2 50 per diem. The uniform is of blue cloth with brass buttons, and a complete suit costs \$75. The men provide their own. The patrolmen are equipped with revolvers, clubs, handcuffs, and twisters. The town furnishes each man with a badge and a pair of handcuffs, and the men provide the other equipments themselves. The tours of duty are 10 hours each, and the beats are 5 miles for each man. During the past year 431 arrests were made, the principal causes being for drunkenness, disturbance of the peace, assault, larceny, common drunkards, etc. They were disposed of either by fines or by commitment. The total amount of property lost or stolen during the year and reported to the police was \$835, and of this \$650 was recovered and returned to the owners. The number of station-house lodgers during the year was 637, as against 1,689 in 1879. Free meals to the value of \$35 were provided for these lodgers. The police are required to co-operate with the board of health and to act as inspectors, for which duty they receive \$30 a year in addition to their regular pay. Special policemen are appointed by the selectmen to assist the regular force or to act in their places. The annual cost of the police force averages \$4,900.

FIRE DEPARTMENT.

The force of the fire department consists of 1 chief and 4 assistant engineers, 1 engine company of 11 men, 1 hose company of 10 men, 3 hose companies of 12 men each, 1 hook-and-ladder company of 12 men, and 1 driver. The apparatus consists of 1 steam fire-engine with hose-reel, 4 hose-carriages, 1 hook-and-ladder truck complete, 1 supply-wagon, and 1 supply-pung. There are 6,350 feet of hose in the department in good condition. Water for fire purposes is obtained from 121 hydrants and 20 reservoirs. During the year there were 19 alarms of fire. Of these, 1 was for Newton, Massachusetts, by order of the chief engineer, and 2 were false. The total loss by fire was \$4,256, and the amount of insurance recovered, \$3,246. The average annual appropriation for the department is \$5,900.

PUBLIC SCHOOLS.

The annual report of the superintendent of public schools gives the whole number of pupils enrolled during the past year as 2,306, the average number belonging as 1,789, and the average daily attendance as 1,653, or 92 per cent. There are 1 high, 23 grammar, 27 primary, and 2 ungraded schools, with 43 teachers, including 1 for music. There are 2 evening schools, with a total of 134 registered pupils, and an average attendance of 70.2 per cent. And there is 1 evening drawing-school, with 112 pupils enrolled and a nightly attendance of 55. There are 6 teachers assigned to these evening schools. The total cost of the schools for the past year was \$32,249 56.

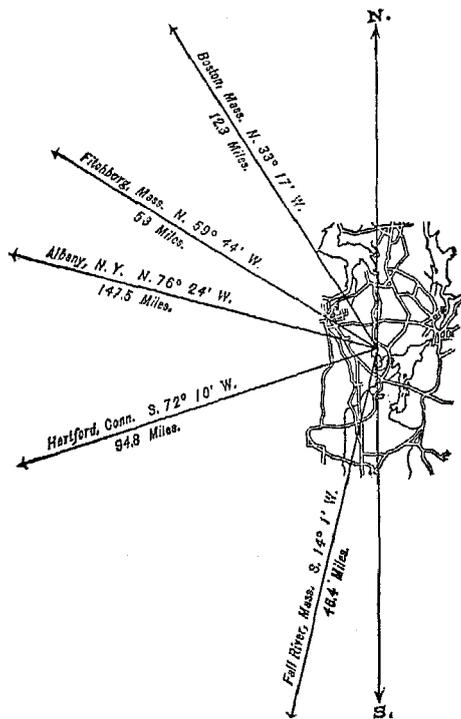
WEYMOUTH.

NORFOLK COUNTY, MASSACHUSETTS.

POPULATION

IN THE
AGGREGATE,
1800-1880.

Year	Inhab.
1790.....
1800.....	1,803
1810.....	1,889
1820.....	2,407
1830.....	2,837
1840.....	3,738
1850.....	5,369
1860.....	7,742
1870.....	9,010
1880.....	10,570



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male	5,256
Female	5,314
—	
Native	9,154
Foreign-born	1,416
—	
White	10,520
Colored	50

Latitude: 42° 12' North ; Longitude: 70° 56' (west from Greenwich) ; Altitude: 0 to 200 feet.

FINANCIAL CONDITION:

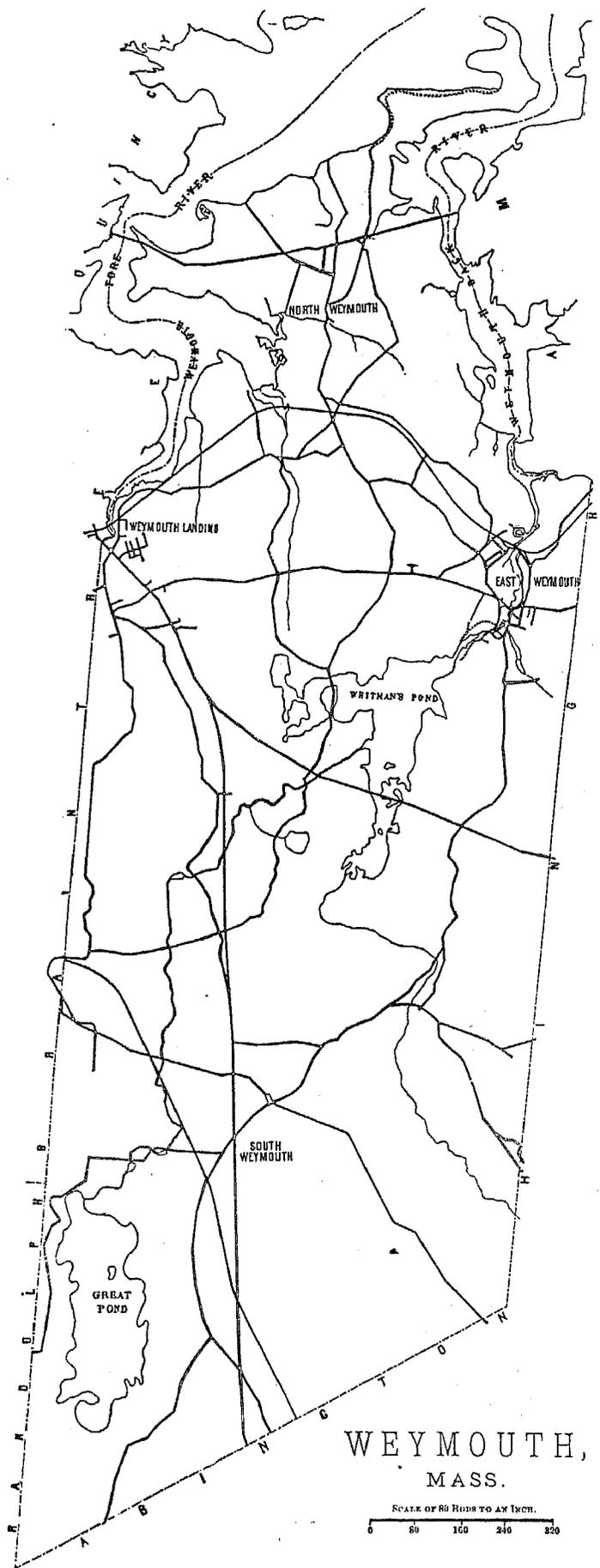
Total Valuation: \$5,298,032; per capita: \$501 00. Net Indebtedness: \$64,392; per capita: \$609 00. Tax per 100: \$1 28.

HISTORICAL SKETCH.(a)

The early history of this town is involved in some obscurity, owing to the absence of important documentary evidence; yet, from such testimony as remains in the county and municipal records, and upon the pages of contemporaneous writers, the following appears to be well established:

The earliest settlement in the town by Europeans was made in the year 1622, by a company from London under the leadership of Mr. Thomas Weston. Trouble soon arose from an uncongenial climate, lack of knowledge as to the

a Mr. Augustus J. Richards, of Weymouth, not only secured and transmitted the detailed information regarding the present condition of Weymouth, in response to schedules of interrogatories, but furnished the historical sketch of the town with which this report is introduced.



WEYMOUTH,
MASS.

SCALE OF 80 FEET TO AN INCH.
0 80 160 240 320

proper manner of settling the new territory, and perhaps their own careless and improvident habits, which, with the Indian difficulties that came upon them, brought about a dissolution of the colony before the close of the first year. The second and more successful settlement was that of Captain Robert Gorges, also with a company of London people, in September, 1623. This company soon became discouraged, the greater part leaving the following year, some going to Plymouth, some scattering along the shores of the bay, and many returning to England. A few, however, remained, and thus Weymouth claims the second permanent settlement of English people made on New England soil. This number was slowly increased by new arrivals, so that when Governor John Winthrop reached Boston, in 1630, the place was well known. After that time settlers became more numerous, and the arrival of Rev. Joseph Hull, from Weymouth, England, in the summer of 1635, with 21 families, made it one of the most considerable settlements of the bay. In consequence of this arrival and the associations brought with it, the name was changed from *Wessagusset*, as known to the Indians, to that of "Weymouth". A town organization was formed at the same time, and its first deputy was sent to the general court. Its county was Suffolk, with which it retained its connection until the formation of Norfolk county, in 1793, when, much against its inclination, it was set off to the latter.

Evidence of undoubted authority shows that as early as the year 1640 it contained not less than 175 families, indicating a population of 1,000 to 1,500 people. Troubles, probably of a religious nature, broke out soon after that time, which resulted, in 1644, in the removal of 40 or more families to Rehoboth, Massachusetts, under the pastoral care of Rev. Samuel Newman, where they remained.

The town records, which date from 1644, and are in a fair condition, reveal but little respecting its history for the next half-century. It is known, however, that an intimate connection was kept up with Boston, water communication being easy, many of its citizens owning estates in both towns, and living alternately in each.

During the war with King Philip, Weymouth suffered severely. Many of her soldiers were engaged in that campaign, several of whom were slain or died in the service. It is also reported by early historians that the town was burned by the Indians at that time, but the absence of all details and the omission of the town records to make any mention of it renders the statement somewhat doubtful. During the old French and Indian wars Weymouth sent its full quota into the field; probably few, if any, short of 100 men from the town were in some part of the service, and throughout the whole of the Revolutionary war Weymouth played an important part. Of the cluster of towns lying between Boston and Plymouth it was the leading one, the committee of correspondence, ten or more of them, meeting here, while two of her citizens held the positions of chairman and secretary, respectively. Several full companies were sent into the state and continental service, besides many volunteers in regiments from other places, and her influence was helpfully felt in the councils of the nation. During the subsequent wars of 1812-'15 and 1861-'65, the town fully sustained its well-earned reputation, and contributed in various ways to the several arms of the service.

The population for the first two centuries of its history was almost wholly of English origin, and most of the prominent families of the present time trace their ancestry among its inhabitants to the earlier half of the 17th century. Its population has been mainly an agricultural and maritime one, with a large interest, in later years, in manufactures. It is one of the largest towns in the state, and in point of intelligence, wealth, and general prosperity will compare favorably with others of its class.

WEYMOUTH IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Weymouth:

LOCATION.

Weymouth lies in latitude 42° 12' north, longitude 70° 56' west from Greenwich, in the easterly part of Norfolk county, 15 miles southeast of Boston, on Massachusetts bay. Boston harbor is on the north, with the towns of Hingham on the east, Abington on the south, and South Braintree and Holbrook on the west. The altitudes are from sea-level to 200 feet above.

HARBOR.

Two channels make in from the bay about 3 miles on either side of the north village, and intersecting the villages of Weymouth and East Weymouth. The one at Weymouth has a capacity for vessels drawing 10 to 12 feet of water. The one at East Weymouth is more shallow, used only for scows and small sloops. The tidal current, as a whole, is moderate, varying a little in places according to the width of the channel or flats.

RAILROAD COMMUNICATIONS.

The Old Colony railroad from Boston to Plymouth and Fall River, Massachusetts, and Newport, Rhode Island, has two branches through the town which touch all the villages.

TRIBUTARY COUNTRY.

The town of Weymouth is a manufacturing district, principally of boots and shoes, and all the adjoining towns are the same. The trade from the surrounding towns is very small, as Boston is the center for supplies for this section.

TOPOGRAPHY.

The underlying rock is almost entirely metamorphic granite, with some archæan slate formations in the north part, having a dip of from 75° to 90°. The surface material is mainly a coarse gravel of glacial formation, and in the north part are fine moraines, or "horsebacks". The surface is uneven, with many sharp but not high hills. The natural drainage is by brooks running into the creeks that empty into the bay. The land rises gently from the harbor. There are numerous ponds and marshes in the town. The country within a radius of 5 miles is considerably open. The soil is gravelly, light, and poor.

CLIMATE.

Highest recorded summer temperature, 94°; highest mean summer temperature in average years, 65° to 70°. Lowest recorded winter temperature, -14°; lowest mean winter temperature in average years, 15° to 20°. The influence of the adjacent waters tends to load the air with moisture which gives to the winds from the north and east a peculiar chilly feeling that tends to pulmonary diseases. In summer, a sudden change of wind from southwest to north or east may lower the thermometer from 30° to 35° in a short time.

STREETS.

There are from 75 to 90 miles of streets in Weymouth, all of which are paved with gravel. The cost per rod to build, including gravel, is \$3 50 to \$5. The streets are sprinkled in summer with salt water, which serves to prevent the wind from blowing away the surface. The sidewalks are nearly all gravel, and the gutters are in some cases paved and sometimes laid in asphalt. Trees are planted along the streets on the outer edge of the sidewalks. There is a fund for this purpose which yields about \$100 annually. The repairs of streets and sidewalks are done by the day, under vote of the town, at an annual cost of \$6,000.

There are no horse-railroads, omnibus lines, water-works, or gas-works in the town.

PUBLIC BUILDINGS.

The town owns and occupies for its uses, wholly or in part, 1 town hall, 1 lockup, 1 almshouse, and the school-houses. The total cost of these buildings is \$200,000. The town hall cost \$10,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are none in the town.

PLACES OF AMUSEMENT.

There are no theaters in Weymouth. There are three concert-halls, with an inside measurement of 30 by 60 feet each, and the town hall, with a seating capacity of 800. They are used for all traveling exhibitions, etc., and pay no license or other source of revenue to the town.

DRAINAGE.

Weymouth has no sewers.

CEMETERIES.

There are 13 cemeteries and burial-grounds in the town and several private tombs on private lands. No records have been kept of the number of interments in the several cemeteries, as some of them are old parish burial-grounds that have been in use since 1623. There are no ordinances regulating interments, the whole matter being controlled by the state laws.

MARKETS.

There are no public markets in the town.

SANITARY AUTHORITY—BOARD OF HEALTH.

Under authority granted by the state laws the selectmen of Weymouth constitute the board of health. They receive pay only when a member may specially act in some matter, and then at the rate of about \$3 per day. There are no expenses in ordinary times, and in case of an epidemic the board may expend any sum deemed necessary. In absence of an epidemic the board has authority to abate all nuisances and take any action deemed necessary for the public health, and in case of an epidemic can order such procedure as the situation may demand. The policemen are used as assistants. The board meets as a deliberative body when called. Inspections are made

only as nuisances are reported. When a nuisance is reported the board either sends a member or goes itself to investigate the same, and, if one is found to exist, the person liable is compelled to abate it. The same rule is applied to all cases of defective house-drainage, privy-vaults, cesspools, sources of drinking-water, street-cleaning, etc. The board exercises no control over the conservation and removal of garbage unless it becomes a nuisance. Under state laws the town clerk issues burial permits on the certificates of the attending physicians. If no physician is in attendance, any one satisfactory to the town clerk can certify to the cause of death.

INFECTIOUS DISEASES.

Small-pox patients are either quarantined at home or sent to the pest-house, which is in an isolated place. Scarlet-fever patients are quarantined at home. On the breaking out of a contagious disease the board can close the public schools, or, when necessary, prohibit children from attending who in its judgment may have been exposed to contagion. Vaccination is compulsory, but is not done at the public expense. The system of registration of births, diseases, and deaths is under state laws. The board makes no report.

MUNICIPAL CLEANSING.

Street-cleaning.—There is no regular street-cleaning, it all being included in the repairs of streets and sidewalks.

Removal of garbage and ashes.—This is done by the householders. The garbage must not be allowed to become a nuisance either by keeping it too long on the premises or by disposing of it in an improper way.

Dead animals.—The carcass of any animal dying within the town must be buried. The annual cost of this service is only nominal, the number removed varying between 25 and 50 a year.

Liquid household wastes and human excreta.—All household wastes are thrown into vaults and cesspools, a very small portion, if any, going into the gutters. The vaults and cesspools are porous, have no overflows, are not governed by ordinances as to construction, emptying, etc., and in a few instances receive the wastes from water-closets. There has been some trouble from the contamination of drinking-water from the escape of the contents of vaults and cesspools. The night-soil is generally used for manure.

POLICE.

The police force of Weymouth consists of 2 officers appointed and governed by the selectmen. One receives \$400 and the other \$700 per annum. They furnish their own arms and equipments. No record of arrests has been kept, but they average about 2 a week for each officer. The principal cause for arrests is drunkenness, and the final disposition is either discharge or commitment to the house of correction. There were 200 station-house lodgers during the year, as against 350 in 1879. Special policemen are appointed by the selectmen, and serve without pay from the town, except when detailed for regular duty. The annual cost of the police force is \$2,000.

FIRE DEPARTMENT.

The force of the fire department of Weymouth consists of 1 chief engineer, 9 members of the board of engineers, and 273 men. The apparatus consists of 1 steam fire-engine, 4 hand-engines, 1 chemical engine, and 3 hook-and-ladder companies. There is 4,700 feet of hose in use. Water for fire purposes is taken from reservoirs located at convenient points in the town. During the past year there were 14 fires, the total damage being \$19,050. The total cost of the department to the town for the past year was \$6,756 28.

PUBLIC SCHOOLS.

The annual report of the school committee for 1880 shows 48 schools in the town, divided as follows: 2 high, 11 grammar, 21 intermediate, and 14 primary. There were 52 teachers, and the number of scholars enrolled in all the schools was 2,191. The annual school expenses, exclusive of the repairs of buildings, etc., were \$25,066 65. The total expense of all kinds was \$33,812 20.

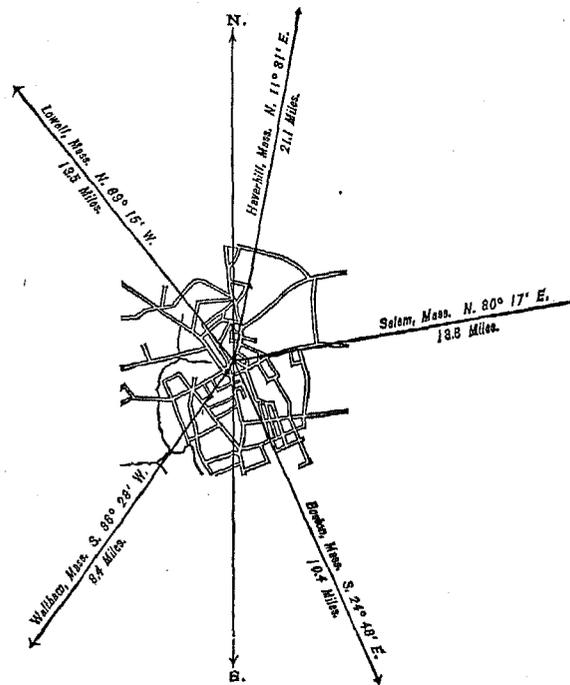
WOBURN,

MIDDLESEX COUNTY, MASSACHUSETTS

POPULATION

IN THE
AGGREGATE,
1800-1880.

	Inhab.
1790.....	
1800.....	1,228
1810.....	1,219
1820.....	1,519
1830.....	1,977
1840.....	2,993
1850.....	3,956
1860.....	6,287
1870.....	8,560
1880.....	10,931



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	5,502
Female.....	5,429
—	
Native.....	7,730
Foreign-born.....	3,201
—	
White.....	10,900
Colored.....	31

Latitude: 42° 29' North; Longitude: 71° 9' (west from Greenwich).

FINANCIAL CONDITION:

Total Valuation: \$8,071,708; per capita: \$738 00. Net Indebtedness: \$626,602; per capita: \$57 32. Tax per \$100: \$1.33.

HISTORICAL SKETCH.

In 1640, Charlestown, having firmly established her settlement, began to look around for more territory to provide for her increasing agricultural population. The land adjoining her western border seeming most convenient for the purpose, a petition was presented to the general court of Massachusetts for an addition of 2 miles square in that direction to be made to her territory. On May 13 of the same year the petition was granted, with the provisions that the addition must not encroach on the bounds of Lynn village (now Reading), and must be built on inside of 2 years. At a session of the court in October following, the grant was enlarged to 4 miles square.



WOBURN, MASS.

SCALE.
0 1000 2000

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The land thus granted to Charlestown had never been explored, had been for years a favorite resort of many of the Indian tribes of that section, and, so far, no inducements to settlers had been offered. Two days after the first grant was made by the court, an exploring party went into the new territory, and in October, after the enlargement of the grant, the idea of making "Charlestown Village" (the name of the addition) a separate town found much favor, and steps were taken to bring about such a result. A church was organized, a pastor sought, a town site laid out, a bridge built over the Abajonna river, settlers were invited to come forward and take up lands, and on October 6, 1642, the general court incorporated the settlement as a town by the following curt act: "Charlestown Village is called *Wooborne*." The name was given in honor of Richard Russell, a prominent citizen of Charlestown, originally from Woburn, England. This act made Woburn the twentieth town incorporated in Massachusetts colony, as distinct from that of Plymouth, and the twenty-ninth of the cities and towns included in the state of Massachusetts of to-day. The nearest incorporated towns were Rowley and Ipswich on the north, Salem and Lynn on the northeast, Charlestown on the east, Cambridge on the southeast and south, and Concord on the southwest, while to the west and northwest stretched a wilderness broken only in one or two places by small settlements.

On November 9, 1643, the first town officers were selected. In November, 1645, streets and highways were laid out and improved, and during the summer and fall of the following year roads were ordered and begun to Reading (now South Reading) and Mystic Bridge (now Medford). The town, at the date of its incorporation, contained but 30 families, and of these only 7 belonged to the Church. From 1642 to 1675 the settlement increased. Better houses were built, good crops gathered, and a few persons began the curing and tanning of hides, an industry that has since grown to large proportions. The population at the breaking out of King Philip's war was estimated at 500 souls.

Just after the first Indian war, small-pox was introduced into the town from Boston, and many lives were lost. In 1765 there were 1,575 inhabitants, while the census of 1820 showed but 1,519. From 1820, in spite of the creation of Winchester from Woburn in 1850, there was a steady increase in the population.

This was principally due to the leather industry. From the earliest settlement Woburn had contained tanneries, and had even paid some of its taxes in leather and shoes; but it was not until 1814 that tanning began to assume any proportion as a regular industry. From that time, however, it steadily increased, and in 1865 there were 21 establishments engaged in tanning and currying, giving employment to 558 persons, and turning out leather annually valued at over \$2,000,000. There were also 4 shops engaged in the preparation of enameled and patent leather, employing some 58 hands, and having a yearly product valued at \$300,000. This latter branch of the industry gradually died out or was superseded, and in 1879 the manufacture was chiefly confined to calfskin, belt and sole leather and imitation goat, and entirely for the shoe trade. There were some 1,288 hands employed, and the yearly product has risen to over \$4,000,000. The completion of the Woburn Branch railroad in 1844 gave the town direct communication with Boston, and at the same time gave an impetus to her industries.

There have never been any serious fires. The town was originally settled by orthodox Congregationalists, and continued under their control until 1850. Since then a more general class of inhabitants has come in and gradually supplanted the original settlers, so that now but few of their descendants remain. The manufactures in late years have drawn many immigrants to the town.

WOBURN IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Woburn:

LOCATION.

Woburn lies in latitude 42° 29' north, longitude 71° 9' west from Greenwich.

RAILROAD COMMUNICATIONS.

Woburn is on the Boston and Lowell railroad, 10 miles from Boston.

TOPOGRAPHY.

The town has an area of 7,750 acres; the face of the country is rolling, and the soil is sand, gravel, and rock. There are several ponds and small streams within its limits.

TRIBUTARY COUNTRY.

The country tributary to Woburn is agricultural.

CLIMATE.

Highest recorded summer temperature, 108°; highest summer temperature in average years, 95°. Lowest recorded winter temperature, -15°; lowest winter temperature in average years, 0°.

STREETS.

The total length of streets is 60 miles, and all are paved with gravel. Gravel being abundant, the cost is only nominal. In the business center, sidewalks are of brick and concrete, and elsewhere of gravel. The gutters in some places are of concrete, and a few are laid with cobble-stones. Trees are very general in the streets, being set out by the abutters, under direction of the committee on highways. In some sections of the town there are grassed places in the street between the roadway and the sidewalk. The average annual appropriation for highways, *i. e.*, streets, bridges, and sidewalks, is \$7,000, and all work is done by the day—only persons who live in the town being employed. A steam stone-crusher has just been purchased. There is one horse-railroad, with a total length of 2½ miles. There are 3 cars, 7 horses, and 2 men employed. During the past year 50,000 passengers were carried, the rates of fare being 5 and 10 cents.

WATER-WORKS.

The water-works are owned by the town, and the total cost is \$451,300. The sinking-fund is \$58,726 12, leaving the net debt \$392,573 88. Water is taken from Horn pond and pumped into a reservoir for distribution. The average pressure in the pipes is 86.8 pounds to the square inch. The average amount pumped per diem is 700,000 gallons, and the cost of raising 1,000,000 gallons 1 foot high is 6.7 cents. The annual cost of maintenance aside from the cost of pumping is \$3,375 32, and the yearly income from water-rates is \$23,000 to \$24,000. Water-meters are used, and are found to effect a saving in the consumption of water. There are 37 miles of street mains, 268 hydrants, and 2,000 water-takers.

GAS.

Gas is supplied by a private corporation at a cost of \$2 80 per 1,000 feet. The town pays \$18 a year for each gas street-lamp, 70 in number. There are also 120 gasoline street-lamps.

PUBLIC BUILDINGS.

The town owns and occupies for municipal purposes, wholly or in part, 1 town house, 1 almshouse, 1 town farm and hospital, 1 library, 1 engine-house, 1 hook-and-ladder house, 5 hose-houses, and 14 school-houses, the estimated value, including land, being \$224,600. The town hall, including the land, is valued at \$5,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are none in the town.

PLACES OF AMUSEMENT.

There are no theaters in Woburn. Lyceum hall, seating 550, Grand Army hall, seating 200, Saint John's institute, seating 400, and Emerald hall, seating 200, are used for lectures, concerts, traveling exhibitions, etc. None of these halls pay any license to the town.

DRAINAGE.

There is no system of sewerage in Woburn.

CEMETERIES.

There are four cemeteries in the town. *Woburn Cemetery*, on Salem street, area 28 acres, owned by the town, and *Calvary Cemetery*, in East Woburn, area 50 acres, owned by the Catholics of Woburn and the adjoining town of Winchester, are the only ones now used for interments. The others are small—one on Park street, area 1 acre, and one on Montvale street, area one-half acre—and are no longer used. All interments are made by the superintendent of the cemetery, or under his direction. Woburn cemetery is laid out in walks and drives, and lots are sold for burial purposes only. To the close of the year 1880 there were 50 avenues and paths in this cemetery, 931 lots, and a large receiving-tomb. In Calvary cemetery the nature of the soil is such that interments can be made at any time during the year, but in Woburn cemetery a receiving-tomb is used in winter.

MARKETS.

There are no public or corporation markets in the town.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Woburn is the board of selectmen, acting as a board of health under authority conferred by the state laws. The annual expense of the board when there is no declared epidemic is from \$200 to \$300—for disinfecting purposes, inspection of filthy places, maintenance of the pest-house, and printing and

distributing notices. During an epidemic the board can incur no expenses not appropriated by the town. In ordinary times the board has authority to make and enforce all regulations deemed necessary for the health of the town, and during an epidemic can vacate and close dwellings, destroy all infected clothing and furniture, remove patients to the pest-house, and do what may be needed to check and control the disease. The board has no regular times of meeting. The chief of police acts as executive officer of the board, serves notices, and with the town physician attends to all cases of contagious disease. No regular inspections are made. When a nuisance is reported, it is examined and ordered abated, and the board sees that it is done within a reasonable time. Early in each summer the board has notices regarding the proper care of house-drainage, privy-vaults, cesspools, etc., distributed, and the chief of police is charged with carrying out the instructions contained therein. The conservation and removal of garbage is also included in these notices. The board has no regulations regarding the burial of the dead, except in cases of death from a contagious disease, when the body must not be exposed, and the funeral must be private. The board regulates the time for the removal of excrement, and the state board of health takes cognizance of the pollution of streams.

INFECTIOUS DISEASES.

When possible, small-pox patients are removed to the pest-house inside the town limits, but one-quarter of a mile distant from any dwelling. When not taken to the pest-house, the patients are quarantined at home, the house is marked, and none but the immediate relatives are allowed to enter. Scarlet-fever patients are quarantined at home under charge of the town physician. The board notifies the superintendent of schools when diseases of a contagious nature exist. Vaccination is compulsory and is generally done at the public expense. The town clerk registers all diseases, births, and deaths, and reports them to the secretary of state. The board of selectmen includes a health report in its annual report to the town.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the town and with its regular force. The work is done weekly, and wholly by hand, no sweeping-machines being used. The annual cost to the town is \$500, and the sweepings are sold for manure.

Removal of garbage and ashes.—Garbage and ashes are removed by the town and by the householders. The garbage must be kept in tight covered vessels, and removed from the premises once in every forty-eight hours. It is generally carried off and buried. The ashes are put on the town lands.

Dead animals.—The carcass of any animal dying within the town limits must be buried by the owner. The cases are of very rare occurrence, and the cost is not appreciable.

Liquid household wastes and human excreta.—All liquid household wastes are run or thrown into vaults or cesspools, none being allowed to pass into the street-gutters. About 15 per cent. of the houses have water-closets that deliver into cesspools. There are no regulations as to the construction of vaults and cesspools. They are porous, and are not provided with overflows. Before the introduction of water by the town nearly all the wells had been contaminated by house-drainage, and at present many of these wells are doing duty as cesspools. The vaults and cesspools are emptied at night, under orders from the board of health, and the night-soil is used for manuring land, none of it being allowed on the gathering-ground of the public water-supply.

Manufacturing wastes.—The city of Boston has a sewer here that receives the liquid wastes from many of the tanneries. The balance flows into the streams, some being used for fertilizers. The wastes from many of these manufactures find their way to the Mystic river.

POLICE.

The police force of Woburn is appointed and governed by the selectmen. The chief of police is executive officer, has general charge of the force, and administers it in accordance with rules and regulations making the usual provisions; his salary is \$900 per annum. The rest of the force consists of 3 regular officers, at a salary of \$720 per annum each. The uniform consists of a Kossuth hat, blue sack-coat with brass buttons, and blue trousers. The uniforms cost \$15 a suit, and each man provides his own. The policemen carry a club, revolver, and pair of handcuffs. The tours of duty are twelve hours each, and the length of streets patrolled by the force is 6 miles. During the past year there were 310 arrests made, the principal causes being for assault and battery, drunkenness, disturbing the peace, larceny, liquor violations, breaking and entering, etc. Of these, 179 were fined, 31 paid costs, 14 were sent to the house of correction, 9 sent to other institutions, 12 appealed, etc. The total amount of property lost or stolen and reported to the police during the same time was \$325, and of this \$253 28 was recovered and returned to the owners. The number of station-house lodgers was 307, as against 816 in 1879. Free meals to the value of \$19 were furnished to the lodgers during the year. There are 8 special policemen for Sunday evening duty, and 17 for duty at factories, churches, etc., appointed by the selectmen. The former receive 20 cents per hour for the time employed, and have the same powers as the regular officers while on duty. The yearly cost of the police force (1880) is \$4,535 52.

FIRE DEPARTMENT.

The following from the annual report of the chief engineer indicates the present condition of the Woburn fire department. The department consists of 4 engineers, 97 men, and the following apparatus:

One second-class Amoskeag steam fire-engine and fixtures; 1 four-wheeled horse hose-carriage and equipments; 1 two-wheeled horse hose-carriage and equipments; 1 four-wheeled horse fuel-wagon; 1 horse; 5 four-wheeled hand hose-carriages and equipments; 5 two-wheeled hand hose-carriages and equipments; 1 four-wheeled hand hook-and-ladder truck and equipments; 5 hand hose-sleds; 1 double-runner horse hose-pung; 3,800 feet good fabric hose; 150 feet fair; 3,350 feet fair leather hose; 1,000 feet bad leather hose.

The fires and alarms during the year 1880 were as follows: 34 fires and 10 still and false alarms. The total loss was \$46,842 79, and the amount of insurance involved was \$53,675. The total amount of insurance paid was \$32,658 69. The average annual expenses for pay-roll, current expenses, and repairs are \$7,500.

PUBLIC SCHOOLS.

The report of the superintendent of public schools shows 46 schools in the town, divided as follows: 1 high, 21 grammar, 22 primary, and 2 mixed. There are 51 teachers, including 1 for music, 5 male and 46 female, and the pupils attending schools are as follows:

Whole number enrolled	2,280
Average attendance	1,834
Number of pupils between 5 and 6 years of age	253
Number of pupils between 6 and 7 years of age	270
Number of pupils between 7 and 8 years of age	263
Number of pupils between 8 and 9 years of age	209
Number of pupils between 9 and 10 years of age	213
Number of pupils between 10 and 11 years of age	226
Number of pupils between 11 and 12 years of age	187
Number of pupils between 12 and 13 years of age	212
Number of pupils between 13 and 14 years of age	163
Number of pupils between 14 and 15 years of age	111
Number of pupils 15 years and over	174
Average number of pupils to a teacher in all the schools	46

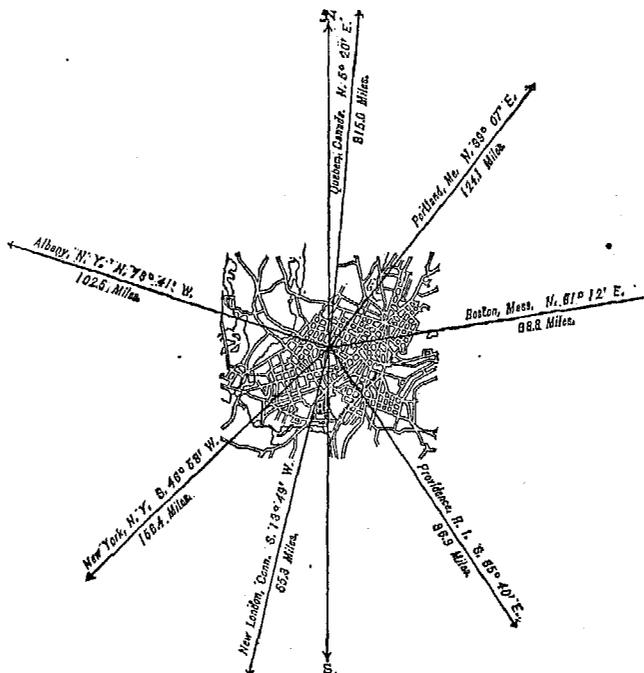
The expenditures for the public schools for the past year amounted to \$31,184 61.

WORCESTER,

WORCESTER COUNTY, MASSACHUSETTS.

POPULATION IN THE AGGREGATE, 1800-1880.

Year	Inhab.
1790.....
1800.....	2,411
1810.....	2,577
1820.....	2,962
1830.....	4,173
1840.....	7,497
1850.....	17,049
1860.....	24,960
1870.....	41,105
1880.....	58,291



POPULATION BY SEX, NATIVITY, AND RACE, AT CENSUS OF 1880.

Male	28,927
Female.....	29,364
Native	42,667
Foreign-born	15,624
White.....	57,524
Colored	*767
*Including 2 Chinese and 2 Indians.	

Latitude: 42° 16' North; Longitude: 71° 49' (west from Greenwich); Altitude: 410 to 777.6 feet.

FINANCIAL CONDITION:

Total Valuation: \$39,585,771; per capita: \$679 00. Net Indebtedness: \$2,447,543; per capita: \$41 99. Tax per \$100: \$1 56.

HISTORICAL SKETCH.

The permanent settlement of Worcester, Massachusetts, dates from 1713; but two unsuccessful attempts to found a plantation there had been made in 1673 and 1684. In 1657, 1662, and 1664, the general court of Massachusetts made grants of land to various persons in the vicinity of Boston, and these lands were subsequently designated and set off by the owners to the west of lake Quinsigamond, a beautiful sheet of water lying in what are now the city of Worcester and the town of Shrewsbury. A committee was appointed in 1667 to visit the place and report whether it was fit for making a settlement, how many families it would accommodate, and to propose a plan for the distribution of lands and the government of the plantation. This committee reported in the next year, recommending that the tract of "very good chestnut tree and meadow land located about 12 miles west of Marlborough be granted and laid out for a town, about the content of 8 miles square". The report was accepted,

and another committee appointed to carry out the plan, and the first meeting was held at Cambridge July 9, 1669. It was not, however, until 1673 that the first settler made his appearance. In the fall of that year Ephraim Curtis, of Sudbury, set out with his pack, a gun, and an ax, toward the new town. He was led principally by the hope of finding mineral deposits, for a report was common that the Indians had discovered a lead-mine there. Although no mine was found, other settlers soon came, and the plantation was fast becoming a large settlement when the outbreak of King Philip's war came in 1675, and the settlers, surrounded on all sides by the savages, were compelled to leave the houses they had just built and seek safety in towns less exposed to attack. The deserted houses were burned by the Indians December 2, and with this ended the first attempt to settle in Worcester, or, as it was then known, Quinsigamond. A new survey of the lands was made in 1683, and in the following year settlers began to come, and September 10, 1684, the plantation received the name of Worcester. But the Indians again becoming hostile, the settlers were compelled to leave a second time. In 1713 James Rice returned to the plantation and began the third, and, as it proved, permanent settlement. Rice and his family lived there alone, but in 1715 his brother came to Worcester, and in 1718 there were probably about 200 settlers and 58 dwellings. At length the plantation had entered upon a prosperous course, and May 21, 1721, the inhabitants asked to be incorporated as a town. The request was granted, and June 4, 1722, Worcester was made a town. From this time until the Revolution nothing of historical importance took place. The progress of the town was slow. From 1775 to 1778 John Adams, later the President of the United States, was the town school-master, and must have given early proof of his patriotic feelings, since the citizens asked him to stay with them to help overcome the influence of their tory leaders. Although the mass of the people were patriotic, the wealthy and influential men of the town were nearly all Tories. These Tories drew up a protest signed by 50 of the 250 voters of Worcester against the "treasonable doings" of the Whigs, and it was entered by the tory town clerk upon the records of the town-meeting in which it had been discussed. The patriotic citizens were highly enraged at this act, and, voting that the record be obliterated, stood over the clerk till, with his pen and his fingers, he made the words absolutely illegible.

The position of Worcester made it comparatively safe from the royal forces, and accordingly, a few days before the battle of Lexington, the press and types of the *Massachusetts Spy*, the leading patriotic paper, were removed from Boston, where they were no longer safe, to Worcester. In the office of this paper was done the first printing for the provincial congress, then in session at Watertown. In 1778 the town for the second time lost a portion of its territory, for in that year the southern precinct, with part of Leicester, Oxford, and Lutlow, was incorporated as the town of Ward (known since 1837 as Auburn). The first loss was of the northern precinct, which, in 1740, was incorporated as the town of Holden. From 1775 to 1790 the population of Worcester was nearly stationary, owing to the war and the incorporation of Ward. As late as 1779 the only manufacturing establishment in the town was a little paper-mill at lake Quinsigamond. The growth, however, was very slow until 1830, but with the completion of the Boston and Worcester railway, in 1835, Worcester entered upon her period of prosperity. In 1839 the Western railway was completed to Springfield, and two years later to Albany; in 1840 the Norwich and Worcester railroad was completed, and was followed, in 1847, by the Providence and Worcester railroad, and in 1848 by the Worcester and Nashua railroad. Worcester was now closely connected with all the important places in New England, and, in fact, in the whole country. The influence of these railroads is very apparent. In 1835, at the time of the completion of the railroad from Boston to Worcester, the town had a population of 6,624 and a valuation of \$3,667,250; in 1880 the population is 58,291, and the valuation \$39,585,771. In 1848 a city charter was granted to Worcester, and the city now ranks as the third in Massachusetts, Boston and Lowell alone exceeding it in population. The chief industries are the manufacture of iron and woolen goods, and of boots and shoes. Worcester has never neglected her schools, which rank high. Besides the city public schools there are within its limit the Highland Military Academy, the Worcester County Free Institute of Industrial Science, the Worcester Academy, the Oread Institute, and the Catholic College of the Holy Cross. The city free library is a large and excellent one.

WORCESTER IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Worcester:

LOCATION.

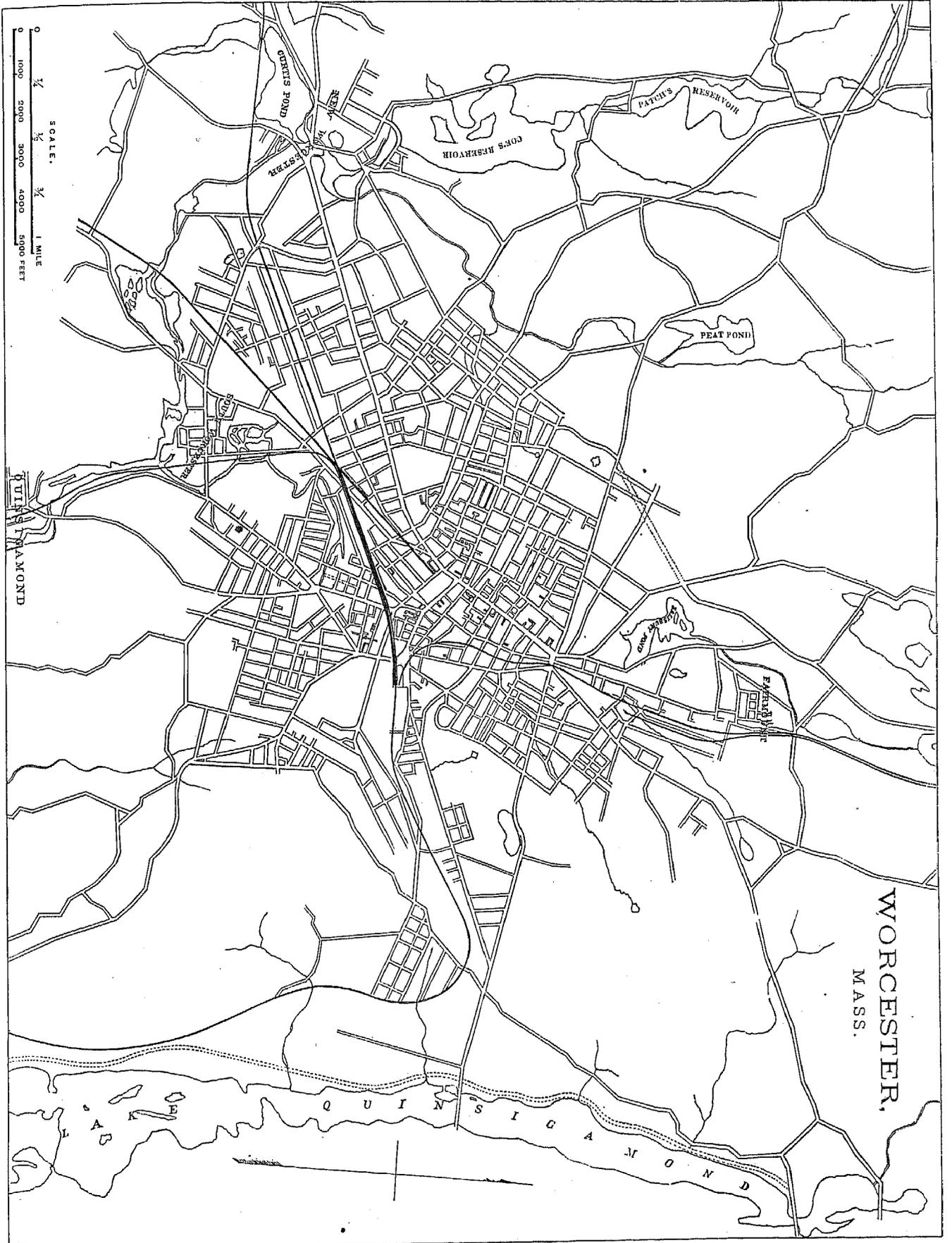
Worcester is located in latitude 42° 16' north, and longitude 71° 49' west from Greenwich, in nearly the center of Massachusetts. Its highest point is 777.6 feet and the lowest 410 feet above the sea-level, the average altitude being about 478 feet.

RAILROAD COMMUNICATIONS.

The city is the centering point of six railroads, as follows:

The Boston and Albany railroad, termini Boston and Albany.

The Norwich and Worcester railroad (leased by the New York and New England railroad), termini Worcester, and Norwich, Connecticut.



SCALE.
0 1/4 1/2 3/4 1 MILE
0 1000 2000 3000 4000 5000 FEET

QUINSIGAMOND

WORCESTER,
MASS.

QUINSIGAMOND

The Worcester and Nashua railroad, termini Worcester, and Nashua, New Hampshire; this road leases the Nashua and Rochester railroad, and so furnishes a direct line to Portland, Maine.

The Providence and Worcester railroad, termini Providence, Rhode Island, and Worcester.

The Worcester and Fitchburg railroad, termini Worcester and Fitchburg, Massachusetts.

The Boston, Barre, and Gardner railroad, termini Worcester and Winchendon, Massachusetts.

TRIBUTARY COUNTRY.

Worcester is surrounded by large agricultural and manufacturing towns, for which it acts as a distributing-point.

TOPOGRAPHY.

The Blackstone river rises in North pond near the northwestern corner of the city, and flows southeasterly across it. Parallel with this stream are two ranges of hills, the eastern the higher, with masses of ferruginous granite, containing much mica and a little hornblende. These hills were once covered with trees, but are now denuded. The ridge to the west rests upon argillaceous slate covered with a deep clay soil. The hills are broken through by broad ravines. To the east the country slopes away to the sea, while toward the west it rises until in Princeton, about 20 miles from Worcester, it reaches the height of 2,320 feet in Wachusett mountain, and from there slopes to the Connecticut river. There are many beautiful lakes and ponds shut in by these hills.

CLIMATE.

The climate of Worcester is very changeable, owing to the influence of Wachusett mountain, and the opening afforded by the Blackstone river to the northwest winds. The highest recorded summer temperature is 97° (June 29, 1874), while the average highest summer temperature is 92.5°. The lowest recorded winter temperature is -18.5° (February 8, 1861), the average lowest winter temperature being -8°. The prevailing winds are the southwest and the northwest.

STREETS.

Worcester has 197 miles of streets, of which 1.95 mile is paved with stone blocks, and all the rest are of gravel. The cost per square yard of stone blocks was \$2; of gravel, 30 cents. The total cost of keeping the streets in repair is about \$20,000 annually. The sidewalks are of brick, asphalt, and gravel; the gutters are paved with cobble-stones. Trees are very generally planted on the sides of the streets at distances of about 30 feet. The construction and repairs of the streets are done both by contract and by day work, and cost on the average \$35,000. No steam stone-crushers or rollers are used on the roads.

The horse-railroads are about 5 miles in length. There are 17 cars and 59 horses; 26 men are employed, and 733,263 passengers were carried during the past year, at cash fares of 7 cents and tickets at 5 cents. There are no regular omnibus lines.

WATER-WORKS.

The water-works are owned and controlled by the city, and were erected at a total cost of \$1,247,381 39. The system is a gravity system, the pressure being 70 pounds per square inch. The cost for maintenance in 1879 was \$11,067, and the income from the water-rates was \$73,149. There are 19 Gem water-meters in use, 710 Desper meters, 856 Union (rotary), and 1,878 Union (piston) meters, making a total of 3,463 meters in use. The use of meters has considerably diminished the consumption of water.

GAS.

The city is supplied with gas by a private corporation, at a cost to private parties of \$2 85 per 1,000 feet; the city is allowed a reduction of 10 per cent. The city pays \$20 per year for each street-lamp, although to put one in running order costs \$27. The city uses 690 gas and 756 gasoline lamps along its streets.

PUBLIC BUILDINGS.

The value of the buildings owned by the city and used in whole or in part for municipal purposes, according to the annual report of 1880, was \$1,101,177 64. These include a city hall, valued at \$20,000; a library building with its land, \$47,804; a city stable, \$10,000; almshouse and land, \$62,075; engine-house, valued at \$84,981 64; and 36 school buildings, \$876,317.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of the public parks and pleasure-grounds of Worcester is from 35 to 36 acres. *Elm Park* has an area of 28 acres, and is situated on the west side of the city, on a side-hill and level plain. The soil is of peat, gravel, and clay, and it is wet enough to permit ornamental ponds in the park. The cost of Elm park has been \$11,257 50.

The *Common*, or *Central Park*, is in the center of the city, and was a gift to the city from the original proprietors. From \$4,000 to \$5,000 have been spent upon it. The parks are controlled by a "commission of public grounds", consisting of three members elected by the city council, one of whom goes out of service each year.

PLACES OF AMUSEMENT.

Worcester has one theater, which has a seating capacity of 1,371. It pays a license to the city of from \$3 to \$5 for each entertainment. Besides its theater the city has five large halls—Mechanics' hall, seating 1,9-6; Horticultural hall, 650; Washburne hall, 552; Grand Army hall, 300; Insurance hall, 325. There are no concert- or beer-gardens.

DRAINAGE.

The principal part of the city has been completely sewered, mainly since 1867. From 1850 to 1867 there was expended only \$10,749 24. The work done since that time has cost \$1,633,933 91.

The sewers of the principal part of the city deliver into the covered channel of Mill brook, a stream running through the city from north to south. This culvert is built of stone. It has a broad and low cross-section. Its fall is not given, but it is slight. It has a constant stream, with small volume during protracted droughts, and running to the full practicable capacity of the culvert during heavy storms. Its length is 10,697.4 feet, and its total cost \$571,976 73. The remainder of the system varies in size from 9-inch pipes to 48-inch by 72-inch brick sewers, with a total length in the census year of (a) 191,307.3 feet, constructed at a cost of \$647,869 26.

The length and cost of pipe sewers were as follows :

Size of sewer.	Total number of feet.	Average cost per foot.
9 inches.....	2,717.8	\$1 70
12 inches.....	48,111.0	2 27
15 inches.....	44,199.7	2 74
18 inches.....	18,246.9	3 21
24 inches.....	253.2	2 91

The following table gives the length and the cost per foot of the different sizes of brick sewer :

Size of sewer.	Total number of feet.	Average cost per foot.
10 inches.....	594.0	\$1 16
16 by 24 inches...	8,523.3	2 28
18 by 27 inches...	11,284.0	3 51
20 by 30 inches...	10,985.4	3 87
22 by 33 inches...	884.5	2 78
24 by 36 inches...	7,940.8	3 00
25 by 26 inches...	1,525.5	1 04
26 by 32 inches...	307.0	1 00
26 by 39 inches...	10,650.1	3 54
27 by 40 inches...	3,093.0	4 95
30 by 45 inches...	7,812.1	7 99
32 by 48 inches...	1,882.5	9 06
40 by 60 inches...	4,201.0	11 83
48 by 72 inches...	684.0	8 56

The character of the excavation is not given with reference to either pipe or brick sewers.

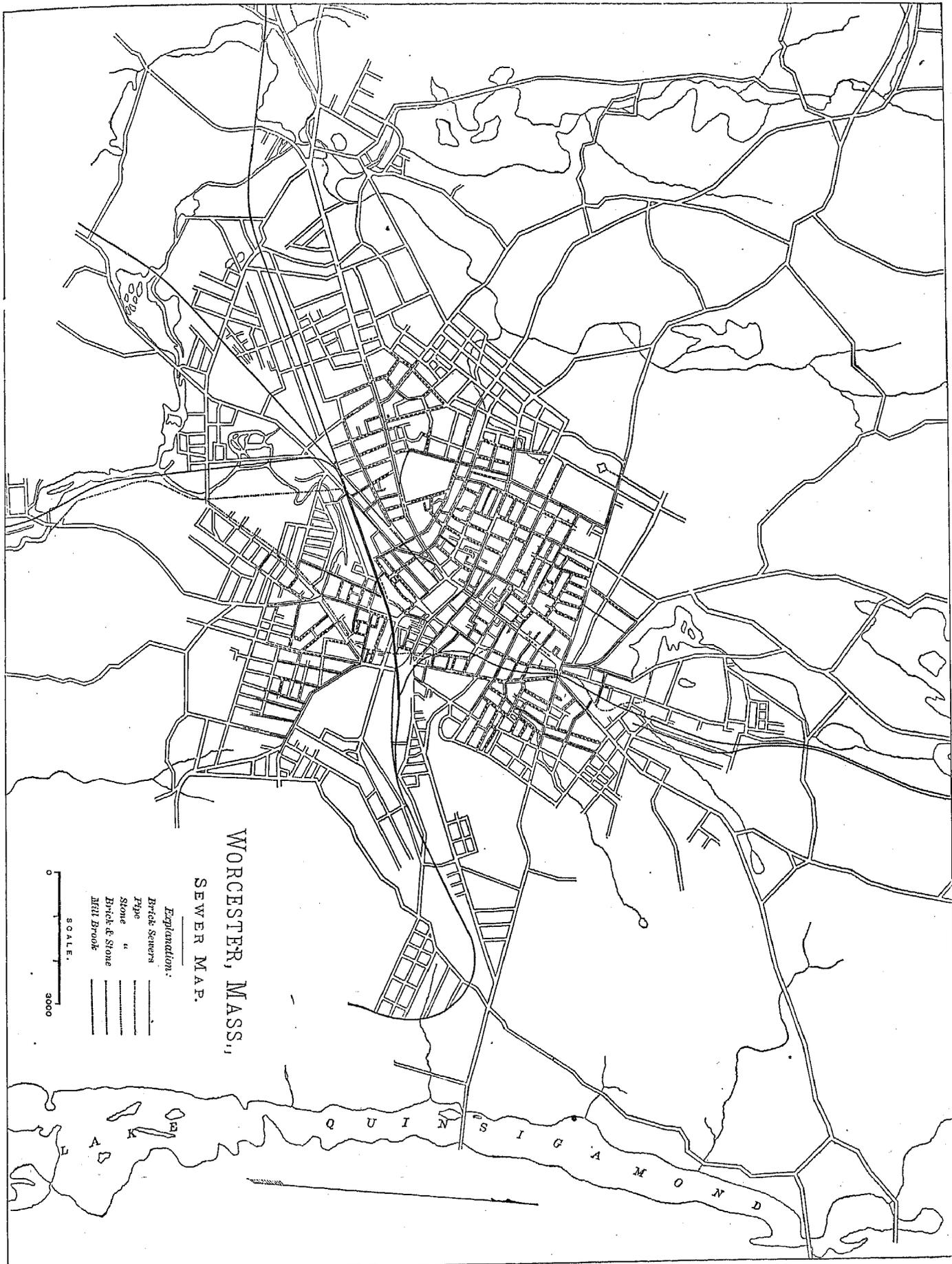
The average cost of inlet-basins has been \$100 28, and of manholes \$57 91.

Another main outlet channel, called the "Island sewer", of which the first section is 4,142 feet long, with a cross-section of 13 feet by 18 feet, cost \$50 18 per foot, and the second section, a 6-foot circular sewer, 3,190 feet long, cost \$12 80 per foot. The lateral sewers deliver mainly into the Mill Brook sewer with open mouths, except during floods, when they are submerged.

No provision is made for the ventilation of the sewers, "except in one or two instances where the manhole covers are perforated".

The final outlet of the whole sewage is into the Blackstone river a short distance below the city (at Quinsigamond). Strenuous efforts are now being made by riparian owners along this river, especially at the manufacturing town of Millbury, about 5 miles distant, to require the purification of the sewage before its discharge into the river. In this connection it is proper to call attention to the method of sewage disposal by surface irrigation, adopted and successfully carried out at the state lunatic hospital east of the city. Most of the

a Including also about 1,300 feet of square stone drains, from 18 by 24 inches to 42 by 48 inches of old construction.



WORCESTER, MASS.,
SEWER MAP.

Explanation:

Brick Sewers	—————
Iron	—————
Stone "	—————
Brick & Stone	—————
Mill Brook	—————

SCALE. 0 3000

discharge of this establishment is delivered on to the surface of low-lying ground near lake Quinsigamond, but a considerable portion of it is pumped by wind-power, and is delivered through pipes and discharged by hose on the lawn immediately in front of the hospital buildings, where its effects on the growth of grass are very marked, and where no inconvenience or annoyance has at any time resulted from its odor.

Three-quarters of the cost of each sewer of the city system is assessed upon the abutting property when the sewer does not cost more than \$4 per foot; if the sewer costs more than \$4, only three-quarters of \$4 is assessed; the remaining cost of the system is paid for by the city. The assessment upon abutting property is regulated by front foot only.

Only one sewer was built in 1880 by contract; the rest were built by the day. The contract prices were as follows: Earth excavation, 37½ cents per cubic yard; cement concrete, \$3 50 per cubic yard; brick sewer, 6-foot diameter, \$3.33 per foot; rubble masonry, \$4 50 per cubic yard. Spruce lumber, \$19 50 per 1,000 feet; spruce piles, \$2 25 each, driven.

The following requirements are included in the ordinances regulating the laying of private drains:

No one but a drain-layer duly licensed by the board of aldermen will be allowed to make connections with the public sewers, nor lay any drains in connection therewith, and no work of laying drains can be commenced or allowed to continue unless the permit so to do is on the ground in the hands of the drain-layer or his employé.

All pipes that must be kept open to drain areas, yards, or gardens must be connected with catch-basins of brick not less than 3 feet in diameter, and a depth below the outlet-pipe of at least 2½ feet. No private catch-basin can be built within the limits of the street. When meat-packing houses, slaughter-houses, or lard-rendering establishments are connected with the sewers, the catch-basins will be required to be of large size. Drain-pipes put in for the purpose of draining fountains of buildings must be connected with temporary catch-basins, and drain-layers will be held responsible that no dirt or rubbish is carried into the sewer from such basin.

The back-filling over drains, after they are laid, must be puddled, and, together with the replacing of ballast and paving, must be done within forty-eight hours after the completion of that part of the drain lying within the street, and done so as to be as good as before they were disturbed. And the drain-layer will be held responsible for any subsequent settlement of the ground.

No live, exhaust, or waste steam can be discharged into the public sewers or into any drain connecting with them, and no blow-off from any steam-boiler can be connected without permission from the superintendent of sewers.

No person licensed by the board of aldermen to make connections with sewers shall allow his name to be used by any other person either for the purpose of obtaining permits or doing any work under his license.

Violation of these ordinances may be punished by fine not exceeding \$20, and by forfeiture of license.

CEMETERIES.

There are 4 cemeteries in Worcester, as follows:

Hope Cemetery is in Hopeville, near the extreme southwestern part of the city.

Saint John's Cemetery is quite near Hope cemetery and contains 44 acres. It is owned and managed by the Catholic church.

Rural Cemetery, near Fairmount, in the northern part of Worcester, is owned by a private corporation; its area is not stated.

There is a French-Catholic cemetery in the northeast part of the city, on Lincoln street; it is quite small and is now unused.

There was once a burying-ground on Central park of about 1 acre, but the mounds are now leveled and the stones are laid horizontally under the sod. The total number of interments in Saint John's cemetery is about 10,000, in Hope cemetery 5,000, and in Rural cemetery 4,000; the average yearly number being for Saint John's 700, for Hope 300, and for Rural 350. Burial permits are obtained by undertakers under direction of the board of health, and no burial can take place unless this permit is obtained. Lots in Rural cemetery vary in price from \$200 to \$300, the purchaser becoming thereby a member of the association. Much attention is paid to landscape-gardening.

Two large cemeteries once in use have been given up to business uses, and the bodies have been removed to Hope cemetery.

MARKETS.

There are no public or corporation markets in the city.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Worcester is vested in a board of health consisting of three members—the city physician *ex officio*, and two members appointed by the mayor and confirmed by the board of aldermen. The annual expenses of the board are about \$2,000—for the salary of the chairman (\$500) and incidental expenses. The power of the board is unlimited under the statutes. The chief executive officer is the chairman. Assistant health officers and assistants are appointed only during epidemics; none of these have police powers. Inspections are made regularly and also when nuisances are reported. The board has the care of defective house-drainage, ordinary connections with the sewers when these exist, and compels the construction of sufficient cesspools where there are no sewers. In cases of defective sewerage, street-cleaning, etc., the board calls upon the proper department to make the necessary changes.

NUISANCES.

Nuisances are inspected by the chairman alone or with other members of the board, whenever reported, and if found to exist are ordered abated within a reasonable time. If this notice is disregarded, the board makes the necessary abatement and charges all reasonable expense upon the estate causing the nuisance. No slaughter-houses or manufactories emitting offensive or noxious odors can be established in the city, except in such places and under such restrictions as the board determines. No offensive material can be carted through the streets without the permission of the board.

The pollution of streams is under the control of the state board of health.

GARBAGE.

The board exercises no control over the removal or conservation of garbage unless it becomes a nuisance.

BURIAL OF THE DEAD.

Burials are allowed only after a permit has been obtained from the city clerk, who must grant such a permit to the undertaker on his presenting a certificate of death from the attending physician stating the cause of death, the age, sex, nationality, etc., of the deceased, and certified to by a member of the board of health.

Graves must be at least 3 feet deep.

INFECTIOUS DISEASES.

Small-pox patients are either quarantined at home, or removed to a pest-house $2\frac{1}{4}$ miles from the center of the city. Scarlet-fever patients are treated as the attending physician may direct. Household-ers in whose houses any case of cholera, yellow fever, small-pox, or varioloid breaks out, or any physician knowing the existence of such a case, must give notice to the board and receive its instructions. The board has never had occasion to take action in the case of an epidemic breaking out in the public or private schools. Vaccination is compulsory under the authority of the board, and may or may not be done at public expense.

REPORTS.

The board reports annually to the city council, and these reports are published with the city documents. The city clerk registers all births, deaths, and diseases.

MUNICIPAL CLEANSING.

Street-cleaning is done by the city with its own force. Both hand work and sweeping-machines are used, though sweeping-machines are used only to a slight extent and only on the paved streets. The cleaning is done whenever necessary, generally once a week. The annual cost is about \$3,300. The sweepings are sold for the cost of cartage to farmers and gardeners, to be used as fertilizers.

Removal of garbage and ashes.—Garbage is removed by the city with its own teams. Ashes and garbage must be kept in separate vessels. The garbage collected is fed to swine on the city farm. Ashes are removed as the householder determines. The cost to the city of the removal of garbage is about \$1,000 a year. The system has been found satisfactory.

Dead animals are removed by the owners. No further information on this subject could be obtained.

Liquid household wastes.—Chamber-slops and kitchen and laundry wastes are generally disposed of alike—by being run into the public sewers—although a small portion is run into cesspools, which are generally porous. No wastes are allowed to run into the street-gutters. The cesspools are cleaned under the direction of the board of health.

Human excreta.—Most of the houses are provided with water-closets, which must empty into the public sewers where these exist. When there are no sewers, water closets emptying into vaults or privies are used. No privy-vault can be nearer than 3 feet to any party line or to any street, passage-way, or public place. Every vault not water-tight must have a tight drain to carry the contents to a proper reservoir, which must be at least 20 feet from any well, water-course, or source of drinking-water. The vaults can be cleaned and the contents removed only by licensed persons, and between April and December between 10 p. m. and 4 a. m., and from December to April between 10 p. m. and 5 a. m. The contents must be removed in water-tight carts, and are used as manure by farmers, although none is allowed on the gathering ground of the public water-supply. No contamination of wells is known to have occurred.

Manufacturing wastes.—Liquid manufacturing wastes are generally run into the public sewers. Solid wastes are generally used as compost.

POLICE.

The police force is appointed by the mayor and confirmed by the board of aldermen. It is governed by the city marshal, who has the full charge of the force, the enforcement of the laws and ordinances, etc.; his salary is

\$1,600 per annum. The rest of the force consists of a first assistant marshal, salary \$1,350; a second assistant marshal, salary \$1,300; a captain, salary \$2 75 per day; and 45 patrolmen, salary \$2 50 per day each. The uniform is of dark blue cloth, with ordinary police cap, and buttons furnished by the city. The men provide their own uniforms. They are armed with a billy, and, when necessary, with a revolver, and are on duty about ten hours, patrolling the streets of 10 square miles. During 1880 the police made 2,377 arrests, the principal causes being drunkenness, assault, larceny, disturbing the peace, and violation of the liquor laws. The amount of property lost or stolen and reported to the police was \$25,737 35, of which \$25,620 35 was recovered and returned to the owners. During the past year 2,271 station-house lodgers were cared for, as against 4,374 in 1879; they are provided with crackers and water. The police must co-operate with all other departments when necessary. Special officers are appointed for churches, factories, public halls, etc., but receive no pay from the city unless employed on city duty. The cost of the department in 1880 was \$55,799 41.

FIRE DEPARTMENT.

The fire department of Worcester is appointed and governed by a board of engineers, consisting of a chief and four assistant engineers, appointed annually by the city council. The manual force consists of 123 men besides the engineers, 42 of whom are attached to engine or hose companies, 30 to hook-and-ladder companies, and 4 to an extinguisher company. There is also a superintendent of fire-alarm, and an insurance fire-patrol of 8 men. There are two volunteer companies, one at Coes square and the other at Quinsigamond, who attend all fires in their respective districts. The force is divided into a permanent and a call force. The apparatus consists of 5 steam fire-engines; 12 four-wheeled hose-carriages; 3 hook-and-ladder trucks, one of which is held in reserve; 1 Babcock extinguisher of 85 gallons capacity; 8 small portable extinguishers; and 13,700 feet of hose, of which 3,000 is carbolized rubber, 3,700 feet American jacket hose, 6,000 feet leather hose in good condition, and 1,000 feet linen hose. The department also owns 18 horses. During 1880 the department answered 104 alarms of fire; the loss by fire was \$35,831 77, and the property had insurance of \$204,465 upon it. The amount of loss uncovered by insurance is not obtainable. The fire-alarm telegraph has 52 alarm-boxes. The total expense of the department in 1880 was \$38,839 95.

PUBLIC SCHOOLS.

Worcester has 36 school-houses, which accommodate 191 schools, divided as follows: 1 high, 49 grammar (sixth, seventh, eighth, and ninth grades), 45 grammar (fourth and fifth grades), 76 primary (first, second, and third grades), 11 suburban, 4 evening, and 5 free evening drawing-schools. These schools employ 218 teachers and are attended by 11,452 pupils. The number of children in the city from 5 to 15 years of age is 10,988. The average number attending the schools was 8,809; the average daily attendance was, in the day schools, 7,697, and the percentage of daily attendance was 91.4. The total expense of the schools in 1880 was \$139,721 91. The number of school-houses is insufficient, and an increase is expected shortly.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Worcester for 1880, being taken from tables prepared for the Tenth Census by A. R. Marshall, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	644	\$11,378,604	13,085	2,480	394	\$6,910,817	\$16,582,750	\$27,292,793
Blacksmithing (see also Wheelwrighting).....	24	25,225	45			21,375	20,188	61,329
Bookbinding and blank-book making.....	5	20,260	25	0		12,904	28,382	52,750
Boot and shoe cut stock.....	9	58,450	74	203	39	52,175	87,800	158,727
Boot and shoe findings.....	4	6,800	9	8	5	6,250	6,000	19,350
Boots and shoes, including custom work and repairing.....	45	1,680,258	1,599	360	112	1,087,607	2,909,277	4,513,128
Brass castings.....	3	6,200	15			5,960	18,391	28,844
Bread and other bakery products.....	9	81,200	57	8	5	33,812	138,417	217,254
Brick and tile.....	4	22,000	54			14,450	9,011	30,600
Carpentering.....	30	101,450	269	1		125,193	381,950	519,739
Carriage and wagon materials.....	4	17,800	12			7,180	18,320	25,170
Carriages and wagons (see also Wheelwrighting).....	4	30,500	39			18,691	12,150	39,380
Clothing, men's.....	12	81,900	205	120		83,672	173,500	327,500
Confectionery.....	5	15,400	16	6		5,225	22,215	35,720
Cotton goods (see also Mixed textiles).....	3	39,500	14	35	1	10,271	24,360	42,150
Cutlery and edge tools (see also Tools).....	6	51,650	54	1	2	28,851	18,050	66,530

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Dentistry, mechanical	24	\$19,075	10			\$7,020	\$12,720	\$60,338
Dyeing and cleaning	6	13,500	36	26		17,214	10,120	45,358
Engraving, wood	3	2,100	5			1,525	475	5,975
Files (see also Saws)	3	10,800	21			9,450	3,425	19,100
Fire-arms	4	124,000	306		22	186,001	61,800	247,828
Flouring- and grist-mill products	4	72,500	11			3,100	63,721	71,080
Furniture (see also Mattresses and spring-beds; Upholstering)	7	144,500	98	5	4	58,769	193,561	311,466
Foundry and machine-shop products	68	1,871,700	2,284	25	70	1,068,834	1,525,805	3,166,193
Grease and tallow	5	15,500	21			7,750	20,820	51,700
Iron and steel	3	1,750,000	2,354	15	10	984,001	1,688,285	2,701,993
Instruments, professional and scientific	3	14,800	21	1	2	11,352	6,850	29,300
Leather, curried	5	69,000	37			10,975	301,265	340,180
Looking-glass and picture frames	6	6,100	39			9,587	22,125	41,675
Marble and stone work	13	71,200	128			66,961	65,903	171,175
Masonry, brick and stone	14	61,400	305			100,520	306,530	506,850
Mattresses and spring beds (see also Furniture)	4	5,000	8	3		3,800	4,575	15,950
Models and patterns	5	5,900	10			4,239	2,425	13,708
Mixed textiles (see also Cotton goods; Woolen goods)	7	141,500	197	139	10	131,435	333,431	630,700
Musical instruments, organs and materials	8	255,700	397	14		188,662	282,530	557,325
Needles and pins	3	3,200	11		2	3,317	1,010	9,322
Painting and paperhanging	25	20,575	94			37,990	35,037	100,530
Patent medicines and compounds	3	15,000	5	4		3,452	7,100	19,000
Photographing	12	10,450	12	9		7,431	5,848	27,685
Plumbing and gasfitting	12	16,400	31			14,435	32,445	63,030
Printing and publishing	11	121,634	128	10	8	86,352	60,334	199,497
Roofing and roofing materials	4	8,400	19			10,425	27,450	46,875
Saddlery and harness	14	30,550	30	4		17,075	23,059	64,700
Sash, doors, and blinds (see also Wood, turned and carved)	4	133,700	163			80,642	149,627	261,533
Saws	3	7,000	6			2,000	2,543	9,316
Screws	3	63,500	99		7	34,837	45,192	98,273
Slaughtering and meat-packing, not including retail butchering	5	113,000	60			30,299	1,030,485	1,124,868
Soap and candles	8	21,150	17	1		7,778	11,942	30,433
Tinware, copperware, and sheet-iron ware	20	58,500	99	17		41,750	58,481	126,874
Tobacco, cigars, and cigarettes	11	29,500	45	14	1	23,772	62,434	111,258
Tools (see also Cutlery and edge tools)	11	468,977	279		3	146,006	134,123	364,992
Upholstering (see also Furniture)	4	1,975	6	3		2,850	6,100	12,600
Watch and clock repairing	17	7,875	10			5,875	5,375	24,200
Wheelwrighting (see also Blacksmithing; Carriages and wagons)	14	28,600	46			23,073	27,357	72,690
Wirework	3	150,600	101	98		68,771	268,472	380,598
Wood, turned and carved (see also Sash, doors, and blinds)	6	19,500	18			7,295	7,960	21,430
Woolen goods (see also Mixed textiles)	6	156,500	314	203	34	193,496	629,330	982,175
All other industries (a)	86	3,040,210	3,317	1,127	51	1,659,985	5,212,128	8,004,860

a Embracing agricultural implements; awnings and tents; baking and yeast powders; bells; belting and hose, leather; blacking; bluing; boot and shoe uppers; boxes, cigar; boxes, fancy and paper; boxes, wooden packing; brooms and brushes; carpets, other than rag; cars, railroad, street, and repairs; clothing, women's; coffee and spices, roasted and ground; coffins, burial cases, and undertakers' goods; cooperage; corsets; drugs and chemicals; dyestuffs and extracts; electroplating; engraving and die-sinking; envelopes; felt goods; fruits and vegetables, canned and preserved; gas machines and meters; gloves and mittens; hardware; hairwork; hats and caps; hones and whetstones; iron bolts, nuts, washers, and rivets; iron pipe, wrought; iron railing, wrought; iron work, architectural and ornamental; japaning; jewelry; lasts; leather, tanned; lumber planed; liquors, malt; mineral and soda waters; musical instruments and materials (not specified); paints; paving materials; photographing materials; refrigerators; ship-building; shirts; shoddy; silk and silk goods; spectacles and eyeglasses; stationary goods; steam-fittings and heating apparatus; stencils and brands; stone- and earthen-ware; straw goods; surgical appliances; trunks and valises; umbrellas and canes; whips; wire; and worsted goods.

From the foregoing table it appears that the average capital of all establishments is \$17,668 64; that the average wages of all hands employed is \$417 35 per annum; that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$37,540 81.

RHODE ISLAND.

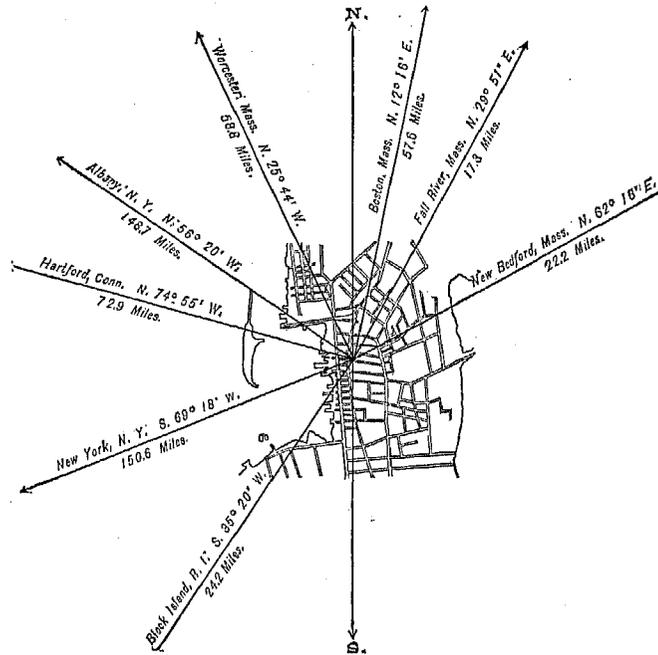
NEWPORT,

NEWPORT COUNTY, RHODE ISLAND.

POPULATION

IN THE
AGGREGATE,
1800-1880.

	Inhab.
1790.....
1800.....	6,739
1810.....	7,907
1820.....	7,319
1830.....	8,010
1840.....	8,333
1850.....	9,563
1860.....	10,508
1870.....	12,521
1880.....	15,693



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	7,271
Female.....	8,422
Native.....	12,000
Foreign-born.....	3,693
White.....	14,701
Colored.....	*992

* Including 1 Indian.

Latitude: 41° 30' North; Longitude: 71° 19' (west from Greenwich); Altitude: 0 to 100 feet.

FINANCIAL CONDITION:

Total Valuation: \$24,842,800; per capita; \$1,583 00. Net Indebtedness: \$116,408; per capita: \$7 42. Tax per \$100: \$0 93.

HISTORICAL SKETCH.

Newport was first settled in March, 1639, by English emigrants who had been driven from the Massachusetts colony on account of their so-called "Antinomian heresy". These settlers were earnest, capable men, and even before 1700 the modest settlement on the shores of Narragansett bay had grown to be a town of considerable importance, and was increasing fast in population and wealth.

This prosperity was entirely due to the commerce of the place, and even as late as 1769 Newport rivaled New York in her foreign and domestic trade. Including a regular line of London packets, there were 200 vessels in the foreign trade, and nearly double the number of coasting vessels belonging to the port, which gave employment to not less than 2,200 seamen. New York, New Haven, New London, and other places depended entirely on Newport as a market from which to supply themselves with foreign goods. Such was the amount of business done that goods were not even stored, owing to the lack of room, while the wharves were literally covered with sugar, rum, and molasses, and every kind of foreign and domestic goods. The breaking out of the Revolution checked this commercial prosperity, while the embargo, 1808 to 1812, completely destroyed the trade that was just beginning to recover from the effects of the war.

During the war of Independence, the British, recognizing the many advantages of the harbor at this point, long held possession of Newport. Before leaving they destroyed 480 buildings, burned the light-house, cut down all the trees, broke up the wharves, used the churches for riding-schools and the state-house for a hospital, and carried off the church-bells and town records to New York. These disasters reduced the population from 12,000 to less than half that number.

About 1830 several cotton manufactories were established here, but the industry did not prosper, and out of the five mills that were erected only two now survive. About the same time the advantages of Newport as a summer resort began to be appreciated, and the influx of visitors each summer has steadily increased, notably since 1855, many, indeed, of late years making the city their home. The advance in real estate and valuation has been rapid, and so far there seems to be every indication that the general prosperity will continue and increase.

Newport has never been visited by disastrous conflagrations, though several large buildings and detached villas have been burned at different times. The original population was English, but before the Revolution many Portuguese Jews settled here, and were among the most active and wealthy of the inhabitants. The first Jews came to Newport from Curaçoa during the last quarter of the seventeenth century, the deed of their cemetery being dated in 1677. After the Lisbon earthquake, in 1755, many of their Portuguese countrymen came to settle with them, and in 1763 there were over sixty families of the Hebrew faith in the town. Though the privileges of naturalization were refused to some (for what reason is not stated), many others became citizens and contributed much to the prosperity and wealth of the place. One was a large ship-owner and successful merchant, while the manufacture of spermaceti (of which Newport held the monopoly for some time) and a new method of making potash were introduced by this intelligent and progressive class of the population. In 1774 it was estimated that there were three hundred Jewish families living here, but all of them, as well as many Tories, left the place on the breaking out of the war of the Revolution, and very few ever returned. The old stock of English settlers and their descendants formed the bulk of the population until work was begun on fort Adams, in 1828, when many Irish came in, and this nationality now forms no inconsiderable part of the population.

Newport was incorporated as a city in 1784, but, owing to dissatisfaction among the people, the charter was surrendered in 1787. In May, 1853, however, it was re-incorporated by a nearly unanimous vote. The city election is held in April, the government being organized in June following.

NEWPORT IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Newport:

LOCATION.

Newport lies in latitude 41° 30' north, longitude 71° 19' west from Greenwich, on the southwestern end of the island of Rhode Island, in Narragansett bay, 30 miles below Providence. The elevations are from tide-water to 100 feet above low water.

HARBORS.

The inner harbor, formed by Goat island, opposite the city, is 5 miles from the ocean; has a depth of water of from 10 to 18 feet up to the wharves, and a channel depth of 16 feet. The south entrance has a channel depth of 14 feet, and the north entrance 20 feet. These depths are all at mean low water, and the mean rise and fall of the tide is 3½ feet. From 150 to 200 vessels have been at anchor in the inner harbor at one time. The outer harbor is practically unlimited as to depth and capacity. There are daily lines of steamers to New York, Providence, Fall River, and Wickford, and in summer to Narragansett Pier. A tri-weekly line runs to Block island, off the coast.

RAILROAD COMMUNICATIONS.

The Old Colony railroad to Boston, Fall river, and New Bedford, Massachusetts, terminates here. The Shore Line railroad, between Boston and New York, connects at Wickford, across the bay, with a boat from the city.



NEWPORT,

RHODE ISLAND.



TRIBUTARY COUNTRY.

The surrounding country is almost wholly agricultural, the products being mainly hay, vegetables, milk, and butter. Fishing furnishes the livelihood of a considerable number of the population.

TOPOGRAPHY.

The soil is very hard blue glacial clay, with more or less boulders. The underlying rocks are granite and hard schist toward the south end of the city, and elsewhere chiefly clay slates of the coal formation, containing some beds of anthracite from 1 to 3 or 4 feet thick. Newport, being situated on the top and flanks of a ridge bordered on the west by the harbor, on the south by the ocean, and on the east by the ocean and a large pond, is dominated by other neighboring country only beyond the northern limit. The slopes to the east and west are gentle, and vary from 75 to 125 feet to the mile. The surrounding country is open and almost free from marshes. There are several ponds within the city limits.

CLIMATE.

Highest recorded summer temperature, 92°; average of the highest summer temperatures in certain years, 80.6°. Lowest recorded winter temperature, 1°; average of the lowest winter temperatures in certain years, 3.9°. The record from which this was taken extends over a period of 5 years.

STREETS.

Total length, 55 miles. Of this, 1,500 feet is paved with cobble-stones, 1,900 feet with asphalt block, and 25 miles with broken stone. Asphalt costs from \$3 to \$3 50, cobble-stones \$1 62, and broken stone \$1 25 per square yard. Broken stone is the most easily kept clean and seems to give the most satisfaction.

In the business and more thickly-settled portions brick and flagstone sidewalks prevail, with occasional asphalt. In the dwelling-house and more scattered portions there are earth sidewalks supported by flagstone curbs. All sidewalks are kept in order by the abutters. With the exception of the asphalt streets, all gutters are of cobble-stones. No tree-planting along the sides of the streets is done by the city. Wherever done it is done by the abutters. The annual cost of construction and repairs varies. In 1879 it was \$50,000, and in 1880 \$35,000. Most of the work is done by the day. A steam stone-crusher and a steam roller are used with good effect. Salt water is preferred by the street commissioner for packing the broken stone.

There is one regular omnibus line, with 10 vehicles and 30 horses, and employing from 5 to 17 men. Between 90,000 and 100,000 passengers are carried annually, at rates of fare from 5 to 10 cents. During the summer season the number of omnibuses is much increased.

WATER-WORKS.

The works for water-supply belong to a private owner, and no useful information can be obtained about them. The water is pumped into a reservoir against a head of 155 feet from a low pond near the bathing-beach.

GAS.

The gas-works are owned by a private corporation. The daily average production is about 90,000 cubic feet. The charge to consumers is \$2 20 per thousand. The city pays \$20 a year for each street-lamp, 336 in number.

PUBLIC BUILDINGS.

The city owns and occupies for municipal uses, wholly or in part, 1 city hall, 1 police station, 1 poor-house, 1 hook-and-ladder house, 7 engine-houses, and 10 school-houses. The city hall is owned entirely by the city, was built in 1763, under the colonial government, and no record of its cost is in existence.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are 4 small parks and squares in the city, laid out in grass and walks and furnished with seats. The land was donated to the city, and an annual appropriation of \$500 is made for the care and maintenance of these parks, which are controlled by a committee of the city council.

PLACES OF AMUSEMENT.

There is one theatre in Newport, the Newport opera-house, with a seating capacity of 900. It pays a license to the city of \$2 50 for each performance. Odd Fellows' hall and Masonic hall are used for concerts, balls, etc. The Newport casino is owned by a stock company and is opened only in the summer. It includes a restaurant, a reading room, a tennis-court, pleasure-grounds, club-rooms, and a theater. The latter is used chiefly for amateur performances and dancing. It pays no license to the city.

DRAINAGE.

The drainage of Newport has thus far been of the haphazard sort so common in old towns into which improvements have been introduced little by little, and which have now become prosperous and ambitious. The old sewers are of the worst conceivable character. Those more recently built have been of a gradually improving sort, beginning with square stone culverts, followed by brick inverted arches covered with flat stones, and later by circular or egg-shaped sewers and by pipe-sewers.

No regular plan has ever been adopted for the work, different sewers having been laid on the petition of abutting owners. Since 1875 a large main sewer has been built, discharging near the town end of Long wharf, calculated to receive the drainage of a considerable portion of the north end of the city. Another brick sewer discharges at the foot of Narragansett avenue on the cliffs, draining a central district. The western slope of the town (the older portion of the city) is pretty generally supplied with sewers of more or less imperfect character, discharging directly into the harbor.

It is the custom in the construction of brick sewers to leave the invert imperfectly connected for the admission of ground-water, and in building pipe sewers only the upper part of the joint is cemented, the lower half being left open for soil-drainage. This arrangement, while effective in drying the ground during the wet season, allows the sewage during dry weather to escape into the soil, doubtless reaching the cellars of houses in some cases, and at the same time robbing the sewage of its liquid parts and increasing the tendency of its heavier matters to remain stranded by the way.

There is no ventilation of the sewers worthy of the name.

It is not ordinarily allowed to discharge house-drains directly into the sewers, but only to connect the overflow of cesspools with them. As the result, sewage which, if delivered immediately and on such rapid slopes as prevail here, would reach the harbor in a comparatively inoffensive condition, is now kept back to putrefy in cesspools and to discharge by overflow into the sewers in a most offensive condition.

Two projects are now under consideration by the city:

One, the plan devised by E. S. Chesbrough, esq., of Chicago, as consulting engineer, and Captain J. P. Cotton, of Newport, as resident engineer. This scheme is thus far confined only to a system of main sewerage; the outlet is located at the west side of Goat island, which point is to be reached by an iron pipe laid under the bed of the harbor and tunneled under Goat island, leading from the end of Long wharf; thence a very large brick sewer runs across Thames street and up the parade to a point near the state house, being continued thence by tunnel under the hill to a point near the eastern end of Kay street, where it would receive the sewage of the eastern slope of the city. Another main, leaving the one above described at the intersection of Thames street, runs south under Thames street to Brenton avenue near the Polo-ground. The estimated cost of this portion of the system is \$130,880.

The second project is that submitted by the Drainage Construction Company of Boston, and is an application of the system carried out in Memphis. It is based on the assumption that the existing sewers are ample for the removal of storm-water, except in a few cases which could be easily treated. The main sewer of this line begins at the corner of Spring and Perry streets, follows Spring street to Touro; thence back of the state house to Farewell street; thence along the line of the Old Colony railroad to the crossing of Malbone brook; thence across the estuary and the low part of Coaster's Harbor island to deep water in the bay beyond. The sewers between this main and the harbor are to deliver into two or three different sumps, and their discharge is to be pumped thence into the Spring Street main. The sewage of the extreme eastern portion of the city would in like manner be pumped into the sewer in Rhode Island avenue or would be connected with the main by tunnel. The extreme southern portion of the city would deliver its sewage near the boat-house.

The estimated cost of the entire system, complete, is about \$200,000.

HOUSE-DRAINAGE.

Houses in the newer and better portion and many of those in the old city are provided with water-closets and the ordinary plumbing appliances. The outlet is generally into cesspools, which overflow into sewers if there are sewers available, and otherwise deliver their liquids by infiltration into the ground or are emptied from time to time by scavengers.

The great mass of the houses have no other arrangement for the disposal of fecal matters than the ordinary privy and vault, periodically emptied and always offensive.

In view of the popularity of Newport as a place of residence in winter as well as in summer, and its prominence as a health resort, there is a growing interest in sanitary matters, and the whole question is now being actively discussed. The natural advantages of the city, including its almost constant breezes, have enabled it to withstand, better than an inland town would have done, the neglect to which it has thus far been subjected.

CEMETERIES.

There are 6 cemeteries in the city now used for burial purposes :

Jewish Cemetery (rarely used), on Touro street.

Island Cemetery and *Wilton Cemetery*, on Warner street.

Saint Mary's Cemetery, corner of Spruce and Warner streets.

City Cemetery and *Friends' Burial-ground*, between Green and White streets.

The following burial-grounds are no longer used: Clifton, on Golden Hill street; Coddington, on Farewell street; Easton's, on Annandale road; and Coggsball, on Spring street. Trinity church, corner of Church and Spring streets, has a small burying-ground attached, and interments in it can be made only by special permission of the city council. The number of interments in the several cemeteries could not be obtained. Interments can be made only on an order from the city clerk, issued upon a physician's certificate of death. There seems to be no limit of time after death for burial, and the depth of graves is not reported.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief health organization of Newport is the board of health, composed of the mayor and aldermen. In ordinary times there are no expenses, and in case of an epidemic there is no limit set to them. The authority of the board at all times is unlimited by ordinance. The board employs 1 inspector, 1 health officer (who is also harbor-master), and the city physician. None of them have police powers. When nuisances are reported the inspector orders them abated, and if his orders are not complied with he reports to the board for an order to be served under the statutes. The board exerts no control over defective house-drainage, privy-vaults, cesspools, and sources of drinking-water. Sewerage and street-cleaning are controlled by the street department. The board assumes no control over the burial of the dead or the conservation and removal of garbage. The board makes no report.

INFECTIOUS DISEASES.

Small-pox patients are usually quarantined at home, the house being closed, guarded, and a yellow flag displayed. In extreme cases patients are sent to the pest-house on Coaster's Harbor island. Scarlet-fever patients are quarantined at home and a notice is placed on the door. The board takes no official action on the breaking out of contagious diseases in public schools, although it has been requested by the superintendent to do so. The superintendent excludes from the schools children suffering with or directly exposed to diphtheria, typhus fever, small-pox, and scarlet fever, and requires a physician's certificate before they are re-admitted. Whenever the superintendent hears of a case he investigates it by telephone. Vaccination is not compulsory, but is sometimes done at public expense. Physicians are requested to report all cases of a contagious nature once a month, and blanks are furnished them for the purpose. The city clerk keeps the record of diseases, births, and deaths.

There is in Newport a sanitary protective association, an independent organization composed of property-owners in the city. The objects which form the basis upon which the association is founded are: To provide its members, at moderate cost, with such advice and supervision as shall insure the proper sanitary condition of their own dwellings; to enable members to procure practical advice, on moderate terms, as to the best means of removing defects in houses of the poorer class in which they are interested; and to aid in improving the sanitary condition, and consequent good repute, of the city, by following such courses as in the opinion of the council may seem calculated to promote this object. In July, 1880, the association numbered 26 members. For the sum of \$5 it makes for members an inspection of houses and an analysis of well and cistern water, to determine the probable causes of sources of certain diseases or contamination of the water-supply.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the city and with its regular force. The work is done wholly by hand, no sweeping-machines being used. From April to December, Thames street is cleaned every other day, and the other streets when required. Cleaning is occasionally done in winter. The cleaning is reported as thorough, and the annual cost to the city is \$1,800. The sweepings are taken to Coaster's Harbor island via City wharf.

Removal of garbage and ashes.—All garbage is removed by a contractor appointed by the city, at the cost of \$90 per month. It is kept in ordinary barrels, and is removed once a week, between the hours of 9 a. m. and 3 p. m. Ashes are not allowed to be kept in the same vessel with the garbage, but this rule is not always closely observed. The garbage is supposed to be taken outside the city. Ashes are removed by the city with its own force, and used for filling in wharves. No separate account is kept of this service. The former system, by which garbage was removed by private individuals, got rid of it more promptly, but it involved the keeping of several pig-sties within the city.

Dead animals.—The carcass of any animal dying within the limits of the city must be removed and buried by the owner, in a place satisfactory to the inspector of nuisances, at least 4 feet below ground. There are probably 30 animals of all kinds so disposed of in a year, and the system is considered satisfactory.

Liquid household wastes.—The liquid wastes from houses are generally run into the sewers where they exist, and in other parts of the city into cesspools. The cesspools were formerly porous, but are now sometimes made nominally water-tight. They frequently receive the wastes from water-closets, and must be emptied at night between November 1 and May 1, in covered and nominally tight carts. From May 1 to November 1 they can be emptied only with permission of the inspector of nuisances. Several cases of contamination of drinking-water by faulty drainage have been discovered by the sanitary protective association.

Human excreta.—About 25 per cent. of the houses in the city have water-closets, of which 10 per cent. empty into the sewers, and the balance depend on privy-vaults, which are cleaned out in the same way as cesspools. An ordinance provides that they must be cleaned at least once a year, but it is not strictly enforced. The night-soil is used on the adjacent farms for manure, and it is largely used on land within the gathering-ground of the water-supply, and near to the brooks supplying Reservoir pond.

POLICE.

The police force is appointed annually by the city council, and is governed by the city marshal with the advice and consent of the mayor. The city marshal, elected annually by the people, is the chief executive, prosecutes all offenses against the laws, and governs the police in accordance with rules and regulations making the usual provisions; his salary is \$900 per annum. The force consists of one captain, salary \$821 25 per annum; one lieutenant and one sergeant, at \$775 62 each per annum, and 19 patrolmen, at \$730 each per annum. The uniform consists of overcoat, frock-coat, vest, and trousers of navy-blue cloth, with brass buttons and blue cloth cape. From the 10th of June to the 1st of October, blue-flannel sack-coats and trousers, with straw hats, may be worn. The uniform complete, including summer suits, costs from \$85 to \$95, and each man provides his own, the city furnishing the buttons. Each patrolman carries a club, a revolver, twisters, and handcuffs, the men providing their revolvers. The hours of service are from 7 a. m. to 6 p. m.; 6 p. m. to 1 a. m., and 1 to 7 a. m., and nearly all the streets in the city are patrolled by the force. During the year ending May 31, 1880, the police arrested 679 persons, the principal offenses being as follows: Assault and battery, drunkenness, larceny, revelling, etc. During the same time there were 229 station-house lodgers. The amount of property stolen was \$430, and of this \$5 was recovered in the city and \$175 out of the city, and returned to the owners. The police force is required to co-operate with the fire department at all times. Special police are appointed in the same manner as the regular. They receive the same pay and have the same standing when on duty. The total expenditures of the department during the above time was \$17,844 45.

FIRE DEPARTMENT.

The total force of the fire department of Newport consists of 188 men, all on call. The apparatus consists of 4 steam fire-engines with hose-carriages, 3 hand-engines, 1 hook-and-ladder truck, and 9,000 feet of hose. Water is taken from 20 reservoirs and 3 hydrants. The annual expense of the department is \$15,000.

COMMERCE AND NAVIGATION.

[From the reports of the Bureau of Statistics for the fiscal years ending June 30.]

Customs district of Newport, Rhode Island.	1879.	1880.
Total value of imports.....	\$1,230	\$1,180
Total value of exports:		
Domestic.....	None.	None.
Foreign.....	None.	None.
Number of immigrants.....	None.	None.

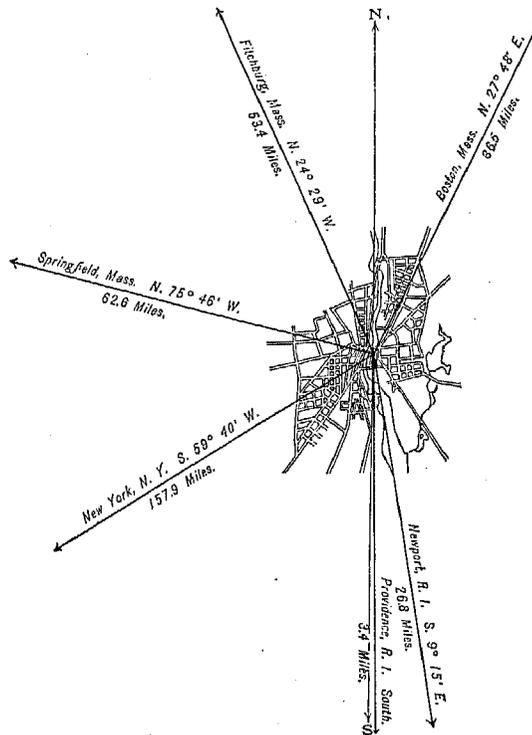
Customs district of Newport, Rhode Island.	1879.		1880.	
	Number.	Tonnage.	Number.	Tonnage.
Vessels in foreign trade:				
Entered.....	4	798	3	276
Cleared.....	2	140	3	276
Vessels in coast trade and fisheries:				
Entered.....	323	831,327	365	864,610
Cleared.....	330	868,052	470	1,151,442
Vessels registered, enrolled, and licensed in district.	152	6,028	144	5,271
Vessels built during the year.....	2	120	6	62

PAWTUCKET,

PROVIDENCE COUNTY, RHODE ISLAND.

POPULATION
IN THE
AGGREGATE,
1850-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	
1840.....	
1850.....	3,753
1860.....	4,200
1870.....	6,619
1880.....	19,030



POPULATION
BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	9,086
Female.....	9,944
—	
Native.....	13,463
Foreign-born.....	5,567
—	
White.....	18,941
Colored.....	* 89

*Including 3 Chinese.

Latitude: 41° 53' North; Longitude: 71° 24' (west from Greenwich); Altitude: 0 to 162 5 feet.

FINANCIAL CONDITION:

Total Valuation: \$13,598,294; per capita; \$715 00. Net Indebtedness: \$935,000; per capita; \$49 13. Tax per \$100: \$1 30.

HISTORICAL SKETCH.

The town of Pawtucket is of comparatively recent creation. That portion of the present town which lies on the east side of the Pawtucket river was originally a part of Rehoboth, Massachusetts, settled in 1644, and was set off and incorporated as a separate town March 1, 1828. The portion on the west side was a part of the town of North Providence, Rhode Island, and was known as the village of Pawtucket. In 1862 the boundary line between Rhode Island and Massachusetts was changed, and Pawtucket, Massachusetts, with an area of 6.9 square miles, became a part of Rhode Island. In 1874 the town of North Providence was dismembered and the village of Pawtucket was given to the town of Pawtucket. The new act of incorporation was dated May 1, and by it the arbitrary boundaries

which for some years had divided what should have been a united community were removed. The first settler at Pawtucket Falls was one Joseph Jenks, who came hither from Lynn, Massachusetts, about 1655 and built a forge on the west bank of the river a short distance below the falls. As the working of iron included the making of tools, Jenks had no trouble in disposing of his products to the inhabitants of Providence and the surrounding country, and his forge soon became the nucleus of a little settlement. The breaking out of King Philip's war was fatal to the place, as the Indians burned the settlement, and it remained deserted for some time. After peace was restored, people began to drift back, and little by little the hamlet increased.

The abundant water-power here was early used, and small manufacturing establishments of various kinds, principally of iron, sprang up along the banks of the river. A bridge was thrown across the river as early as 1713, and in 1718 a dam was built. In 1761 a trench was dug around the falls for the passage of fish up the river, but it seems to have failed to answer the purpose, as it was afterward used by the owners of the mill-privileges for their business.

In 1790 Samuel Salter, an English cotton-spinner, came to Pawtucket for the purpose of making and operating machines for spinning cotton, and by the end of the following year had 72 spindles at work in an old fulling-mill. This was the beginning of what is to-day the chief industry of Pawtucket. In 1793 a small cotton factory, known to this day as the "old factory", was built, and in 1796 there were in addition to it 3 anchor forges, 1 turning-mill, 3 snuff-mills, 1 oil-mill, 1 clothier's works, 2 machines for cutting nails, and 1 furnace for casting hollow ware, all run by water; 1 machine for cutting screws run by horse-power, and several forges on the east side of the falls. In 1819 there were 3 large cotton-mills, 6 machine-shops, and various other mechanical establishments on the west side of the falls.

From that time the manufacturing industries of Pawtucket steadily increased. Besides the making of cotton cloth quite a number of mills began making spool-cotton and cotton yarns. Woolen manufactures were begun, print-works were put into operation, and to supply these mills the making of machinery and manufacturers' supplies was begun.

The town has escaped any severe fires. In 1829 a grave business reverse took place. Manufactures were much depressed and not a few persons were financially ruined and compelled to leave the place. Gradually, however, business revived, and during the civil war and after the close of that contest, industries were extended. The original settlers were of English extraction, and, though many Irish, French-Canadians, Germans, and some English have been drawn to the town as operatives in the many mills, the native-born population are still in the ascendant.

PAWTUCKET IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Pawtucket:

LOCATION.

Pawtucket lies in latitude 41° 53' north, longitude 71° 24' west from Greenwich, on both sides of the Blackstone or Pawtucket river, and about 4 miles north of the city of Providence. The altitude is from tide-water at the foot of the falls to 162½ feet above low water. The Seekonk river, into which the Blackstone river empties, is navigable here, with an average depth in channel of about 6 feet, and an average depth outside of the channel of 18 inches at low water. There is a wharf capacity for 25 or 26 large schooners, and the tidal current is supplemented by the current of the Blackstone river.

RAILROAD COMMUNICATIONS.

Pawtucket is touched by the following railroads:

The Boston and Providence, and the Providence and Worcester railroads, which terminate as their names indicate.

The New York and New England railroad, to Boston, and to Hartford, Connecticut.

The Old Colony railroad, to Boston, Fall River and New Bedford, Massachusetts.

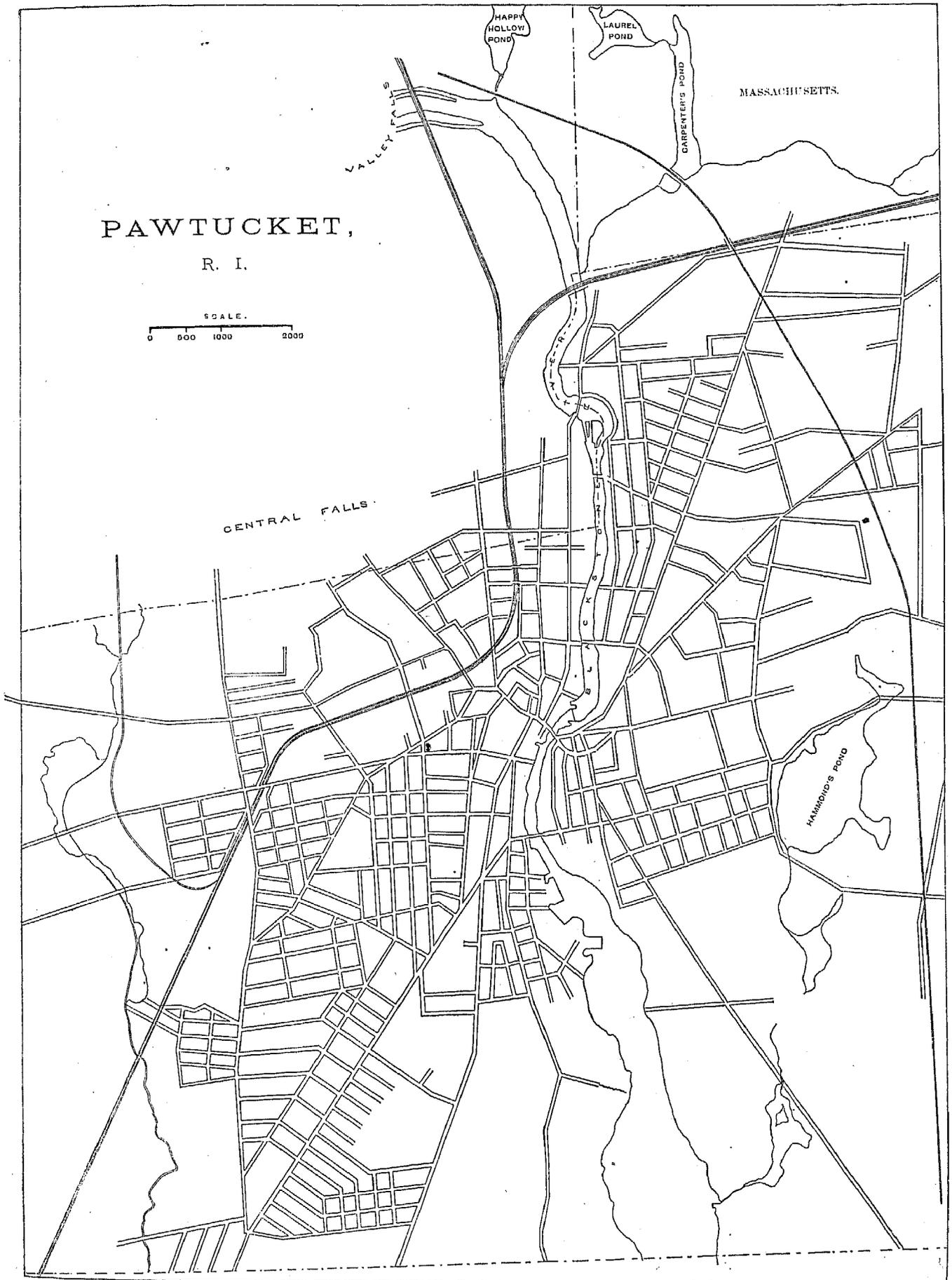
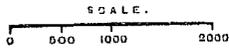
TRIBUTARY COUNTRY.

The town can not be said to have much local trade with the surrounding country. Providence lies close to the south, the manufacturing village of Central Falls is to the west, while to the east stretch extensive farming districts.

TOPOGRAPHY.

Pawtucket is situated on both sides of the Blackstone river. The river is called Blackstone above the falls in the town, and Pawtucket river below them. The east part of the town is a large plain, and the soil is very light, with a subsoil of clean water-washed sand or gravel. The central and west portions of the town are hilly.

PAWTUCKET,
R. I.



with good natural drainage, the former having an underlying stratum of slate rock tending toward the coal-bearing, and the latter a hard-pan of gravel, with rough broken granite in some parts. The surrounding country is not heavily wooded.

CLIMATE.

No record has been kept of the temperature. Pawtucket being quite near Providence, its climate is considered to be about the same as the climate of that city.

STREETS.

Total length of public streets, 62.96 miles. Of these, 3,500 feet are paved with cobble-stones, 2,800 feet with stone blocks, and nearly 50 miles with gravel; the balance are unpaved. The cost of paving with stone blocks is about \$2 per square yard; this needs the least repair and is the most easily kept clean. Nearly all the sidewalks in the central portion of the town are curbed with granite stones, a number being covered with concrete and the rest with selected gravel. The gutters are of cobble-stones, except on streets paved with granite blocks. The city does no tree-planting along the sides of the streets, and but little is done by the abutters. All repairs and construction of streets are done by the day, under charge of the highway commissioner, and the annual appropriation is \$15,000. There are no horse-railroads owned in the town, but the Union Railroad Company of Providence has a branch road 4 miles long here, and carries passengers at the rate of 6 cents each per trip. There is one omnibus line with 4 vehicles, 16 horses, and 12 men. The rate of fare is 6 cents.

WATER-WORKS.

The water-works are owned by the town, and the total cost is \$630,000. Water is taken from Abbot's run, which has a water-shed of about 26 square miles, and is pumped into a distributing reservoir of 20,000,000 gallons capacity, situated $2\frac{1}{2}$ miles from the business center and 300 feet above tide-water. The average amount pumped per diem is 891,529 gallons, and the pressure in the mains varies from 65 to 120 pounds to the square inch. The cost of raising 1,000,000 gallons 1 foot high is 5.17 cents. The yearly cost of maintenance, aside from the cost of pumping, is \$6,000, and the yearly income from water-rates (1880) is \$34,080 54. Water-meters are used, and over one-half the services have measured water. In addition to Pawtucket, a portion of Central Falls and East Providence are connected with the water-works. There are now 65 miles of street mains, 2,043 services, 1,065 meters, 471 hydrants, and 460 gates included in this system.

GAS.

Gas is supplied by a private corporation, the charge being \$2 40 per 1,000 cubic feet. The town pays \$16 a year for each street-lamp, 466 in number.

PUBLIC BUILDINGS.

The town owns and occupies for municipal uses, wholly or in part, 1 town hall, 1 town farm, 1 record building, 1 police building, 3 engine-houses, and 16 school-houses. The total valuation of these, including land, is \$298,100. The town hall is valued at \$10,000.

PUBLIC PARKS AND PLEASURE-GROUNDS.

Wilkinson's Park, situated near the center of the town, with an area of 2 acres, is laid out with shade-trees, concrete walks, lawn, and shrubbery. The total cost, including construction, is \$10,000, and an annual appropriation of \$200 is made for care and maintenance. It is controlled by the highway commissioners.

PLACES OF AMUSEMENT.

Music hall, with a seating capacity of 1,185, is the only theater. It pays an annual license of \$10 to the town. There are 6 halls, viz, Battery, Armory, Temperance, Carpenter's, Town, and Odd Fellows' halls. West Avenue grove, with an area of 8 acres, costing \$10,000 and having a capacity of 5,000 people, is patronized by all classes for concerts, entertainments, lectures, etc., but intoxicating liquors are not sold.

DRAINAGE.

Pawtucket has as yet no system of sewerage, but an appropriation has just been made for surveys, plats, etc., for the purpose.

CEMETERIES.

There are 5 cemeteries in the town, 2 of which are Catholic, and all are used for interments. Previous records being imperfect, the number of interments could not be given, nor do there appear to be any ordinances or regulations concerning them.

MARKETS.

There are no public or corporation markets in Pawtucket.

SANITARY AUTHORITY—BOARD OF HEALTH.

The chief sanitary authority of Pawtucket is the board of health, composed of 4 members—1 of whom is a physician—appointed by the town council and under its control. The members of the board all have the same power, except during an epidemic, when the physician has charge, and are paid according to the services they may perform. The annual expense of the board varies with the amount of business done, there being no fixed rule. In case of an epidemic its authority is increased to any reasonable amount necessary to control the disease and keep it within the required limits. No health officers, inspectors, or assistants are employed. Inspections are made only as nuisances are reported. When a nuisance is discovered the owner is notified to abate it within a reasonable time, and if not abated prosecution is begun by the town solicitor. The board corrects all defective house-drainage, privy-vaults, cesspools, and sources of drinking-water when found to exist. The board exercises but very little control over the conservation and removal of garbage, and makes no special rules for the burial of the dead, except in cases of small-pox.

INFECTIOUS DISEASES.

Small pox cases are either quarantined at home, with a guard on the house and a flag displayed, or sent to the pest-house situated on the town farm. Scarlet-fever cases are not noticed by the board. Scholars affected by a contagious disease are sent home from public schools. Vaccination is not compulsory, and is done at the public expense when desired. The registration of diseases, births, and deaths is under state laws.

REPORTS.

The board reports only in special cases, and then to the town council. Dr. G. H. Stanley, of Pawtucket, who furnished the information on health, writes: "The board of health is not properly organized, and its powers are too limited for a town of this size."

MUNICIPAL CLEANSING.

Street-cleaning.—The streets are cleaned at the expense of the town and with its own regular force. The work is done wholly by hand, no sweeping-machines being used. The work is done in the compact part of the town as often as needed; the annual cost is included in the regular street appropriation, and the sweepings are deposited on the town lands.

Garbage and ashes are removed both by the town and by the householders. That portion of the work performed by the town is done with its regular force. There are no special regulations as to the conservation of the garbage pending removal, and both it and the ashes are disposed of the same as street-sweepings.

Dead animals.—The carcass of any animal dying within the limits of the town is, if worth it, taken to a rendering-establishment. Those not so taken must be buried by the owners at least 3 feet below the surface of the ground.

Liquid household wastes.—Nearly all the liquid wastes from houses pass into cesspools, none being allowed to run into the street-gutters. The cesspools are generally water-tight, are not provided with overflows, receive the wastes from water-closets, and must be cleaned out when full. The water, except that supplied by the water-works, is more or less contaminated by the escape of the contents of cesspools and privy-vaults.

Human excreta.—About one-half the houses are provided with water-closets, all of which deliver into the cesspools, and the remainder depend on privy-vaults. Some 75 per cent. of the latter are water-tight, and they are emptied in water-tight tanks when full. Night-soil is taken out of town and used as manure, none of it being allowed on land within the gathering-ground of the water-supply.

Manufacturing wastes are generally removed by farmers and used for fertilizing purposes.

POLICE.

The police force of Pawtucket is appointed by the town council, and is governed by the chief of police subject to orders from the town council, and in compliance with ordinances and regulations making the usual provisions. The chief of police receives a salary of \$1,100 a year. The force consists of 1 captain, salary \$65 a month, and 1 sergeant and 12 patrolmen, with salaries of \$60 a month each. The uniform is a dark-blue single-breasted frock-coat with police buttons, a single-breasted black vest buttoned up to the top, dark-blue trousers, and a blue cloth cap. The men provide their own uniforms, at a cost of \$100 a year each. Each patrolman is equipped with a revolver, club, chain twisters, and belt. The hours of service are from 8 a. m. to 6 p. m., 6 p. m. to 2 a. m., and from 2 to 8 a. m. The length of streets patrolled by the force is 103 miles.

During the past year there were 540 arrests made, the principal causes being assaults, drunkenness, disorderly conduct, common drunkards, and larceny. Those guilty of assaults and drunkenness paid fines, while disorderly

persons and common drunkards were sent to the work-house. The total amount of property lost and stolen during the year and reported to the police is \$4,000 (for 1880), and of this, \$3,500 was recovered and returned to the owners. During the year there were 3,238 station-house lodgers, as against 3,864 in 1879. The force is required to co-operate with the fire department in protecting property at fires, and with the board of health by reporting nuisances. Special officers are appointed by the town council as janitors for churches and public buildings. The annual cost of the department (1880) is \$12,500.

FIRE DEPARTMENT.

The force of the fire department consists of 1 chief and 2 assistant engineers and 53 men—8 permanent, 45 call. The apparatus consists of 4 steam fire-engines, 4 hose-carriages, 1 hook-and-ladder truck complete, and 7,000 feet of hose. There are 8 horses in the service of the department. Of the 471 hydrants connected with the town water-works, 372 are in Pawtucket and available for fire purposes. The fire-alarm telegraph has 42 street signal-boxes and 21½ miles of wire. The department has been called out to fires and alarms during the year 13 times, and the total loss of property, as nearly as could be ascertained, was \$555. Of this amount, \$455 was insured largely in excess of the loss, while on the remaining \$100 there was no insurance. The total expenditures for the year on account of the department was \$13,872 93.

PUBLIC SCHOOLS.

There are 16 school-houses in Pawtucket, with 52 teachers and a registered attendance of pupils of 3,624. The average daily attendance is 1,954, divided as follows: High school, 60; grammar schools, 131; intermediate schools, 575; primary schools, 1,000; ungraded schools, 188. The total expenditure on account of schools for the year is \$35,717 21. The superintendent, in his annual report, gives the average cost per scholar to the town for tuition, fuel, lights, repairs, janitor service, incidental expenses, and 4½ per cent. interest on the estimated value of school property (\$174,000) as \$21 64.

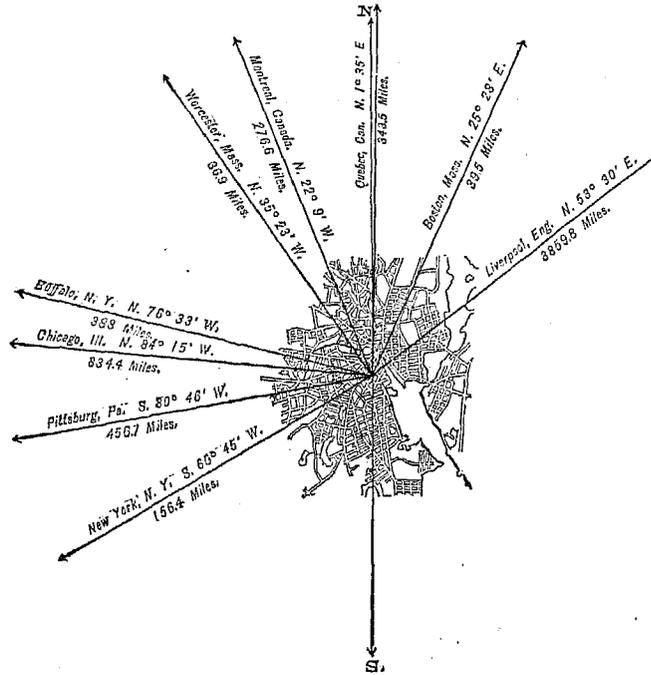
PROVIDENCE,

PROVIDENCE COUNTY, RHODE ISLAND.

POPULATION

IN THE
AGGREGATE,
1800-1880.

	Inhab.
1790.....
1800.....	7,614
1810.....	10,071
1820.....	11,767
1830.....	16,833
1840.....	23,171
1850.....	41,513
1860.....	50,666
1870.....	68,904
1880.....	104,857



POPULATION

BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	49,787
Female.....	55,070
—	
Native.....	76,782
Foreign-born.....	28,075
—	
White.....	101,211
Colored.....	* 3,646

* Including 23 Chinese and 41 Indians.

Latitude: 41° 50' North; Longitude: 71° 24' (west from Greenwich); Altitude: 3 to 202 feet.

FINANCIAL CONDITION:

Total Valuation: \$116,581,700; per capita: \$1,102 00. Net Indebtedness: \$9,373,056; per capita: \$89 39. Tax per \$100: \$1 40.

HISTORICAL SKETCH.

On the 5th of February, 1631, there arrived at Nantasket, in the colony of Massachusetts Bay, the ship "Lyon", with 20 passengers and a large store of provisions. Her arrival was most timely, for the colonists were reduced to the last exigencies of famine. Many had died of want, and many more were rescued from imminent peril by this providential occurrence. A public fast had been appointed for the day succeeding that on which the ship reached Boston; it was changed to a general thanksgiving. There was another incident connected with the arrival of this ship which made it an era, not only in the affairs of Massachusetts, but in the history of America. She brought to the shores of New England the founder of a new state, the exponent of a new philosophy, the

intellect that was to harmonize religious differences and soothe the sectarian asperities of the new world. This man was Roger Williams, then about 32 years of age, a scholar well versed in the ancient and some of the modern tongues, an earnest inquirer after truth, and an ardent friend of popular liberty.

This was an age of great religious agitation and of little religious toleration. The attempt to force a uniformity of liturgy and the supremacy of the Church of England upon the people had resulted in driving many out of that church. The Dissenters, as they were called, became the victims of a persecution so long and so bitter that many fled from it and sought refuge and religious liberty in strange lands. Among these were the Pilgrims at Plymouth, and the Puritans at the head of Massachusetts bay. So, to the latter colony in 1631, came Roger Williams. He had taken orders in the established church while in England, but had subsequently become a non-conformist and a rigid separatist from that church. This change had induced his removal to America. The colonists received him most gladly, for he was "a godly minister", and likely to become to them a tower of strength.

The church at Salem called Mr. Williams to assist their pastor, Mr. Skelton, without consulting the Boston authorities. Upon his acceptance of the invitation the church of Boston remonstrated with that of Salem for such a course, but the attempted interference met with rebuke, and on the very day the remonstrance was written the people settled Williams as their minister. Of the reasons assigned by the Massachusetts court for interfering, the most important was that Mr. Williams had declared it to be his opinion that the civil power had no authority to punish a "breach of the first table", that is, an offense purely against God—an opinion so broad in its application, so catholic in its spirit, that it seemed to the Massachusetts court the rankest heresy. It was the fearless maintenance of this doctrine that won for Roger Williams the everlasting honor of being "the great, earliest asserter of religious freedom" in America.

The boldness of Williams in denouncing the error of the times, and especially the doctrine of the magistrates' power in religion, gave rise to a system of persecution which before the close of the summer forced him to seek refuge beyond the jurisdiction of Massachusetts in the more liberal colony of the Pilgrims. At Plymouth the principal men of the colony treated him with marked attention, and "he was well accepted as an assistant in the ministry" to the pastor of their congregation. While there he improved the opportunities presented for cultivating an intimate acquaintance with the chief sachems of the neighboring Indian tribes. By kindness and attention, making them presents and visiting them, as his letters describe, "in their filthy, smoky holes to gain their tongue", he overcame the shyness of old Canonicus and won the esteem of the high-spirited Miantinomo. His friendship with these chieftains of the powerful Narragansett tribe, as well as with Massasoit, the sachem of the Wampanoags, exerted in later years an important influence over the fortunes not only of Williams himself but also of all New England.

After a stay of two years at Plymouth, Williams accepted an invitation of the people of Salem to return there, many of his Plymouth congregation either going with him or following soon after. Here the bitter controversy and persecution broke out again. In most of the points that now arose he was not alone or even foremost in the discussion, while in respect to some of the most important encroachments of the court upon the rights of the people all the inhabitants of Salem were with him. Spite of this, his many detractors have made him out the sole disturber of paternal harmony in the otherwise happy family of the Puritans, and the author of most of the erratic deeds and notions of the times. The punishment inflicted upon the people of Salem for the alleged attempt of installing Mr. Williams contrary to the repeated remonstrances of the court was characteristic, and illustrated the incongruous mingling of temporal and spiritual affairs which must exist with a church-and-state establishment. The authorities of Salem petitioned the general court for some adjacent land which they considered as belonging to their town. The petition was refused "because they had chosen Mr. Williams as their teacher". The answer on the part of the Salem people was a letter, of which Williams was the author, to the other congregations desiring them to remonstrate with their magistrates and deputies on account of this injustice. The controversy had been growing more and more bitter, and this epistle, together with an indignant letter of protestation that Williams wrote to his parishioners, capped the climax. For the fifth and last time he was summoned to appear before the general court. Although the sole charges there presented against him were these two letters, such a spirit of wrathful intolerance pervaded his judges that sentence of banishment was pronounced against him. The decree provided that he should depart "out of this jurisdiction within six weeks now next ensuing, * * * not to return any more without license from the court". Liberty to remain until spring was afterward granted him, but in January (1636) it was suddenly withdrawn, and his immediate departure for England in a ship then ready to sail was resolved upon. Upon this he refused to embark. A boat was dispatched to take him by force, but before it arrived he had left his wife and two infant children and fled into the wilderness.

Of the arduous journey that followed his escape he wrote, thirty-five years later: "I was sorely tossed for one fourteen weeks in a bitter winter season, not knowing what bed nor bread did mean." Driven from the society of civilized man and debarred the consolations of Christian sympathy, he turned his steps southward to find among heathen savages the boon of charity which was refused at home. From the venerable Massasoit he obtained a grant of land near what is now called Cove Mills, on the eastern bank of Seekonk river, where he built a house. But even this was not to be his home. The spot was within the limits of the Plymouth colony, and as they did not wish to displease the Massachusetts Bay colony by harboring the exile, he followed the advice of his friend,

Governor Winslow, to "remove to the other side of the water". In his journey he was accompanied by five others who had joined him from Salem. They landed at Slate Rock, with which tradition will always associate the Indian welcome, "What cheer, uetop." From this point they passed down the river and around the headlands into the Moshassuck—now the Providence—river. Sailing up what was then a broad and beautiful sheet of water skirted by a dense forest, their attention was attracted by a spring close on the margin of the stream, at a point a little north of the present site of Saint John's church. Here they landed and began a settlement, to which, in gratitude to his Supreme Deliverer, its pious founder gave the name of Providence—"God's Providence". Afterward, in the apportionment of "home lots", this part of the settlement became the property of Mr. Williams, and was known as "What Cheer". The precise date on which the landing was made can not be determined, but in all probability it was in June, 1636.

The fledgling colony lay in the very center of one of the most powerful Indian tribes in New England—the Narragansetts. Their lands embraced the islands in and around Narragansett bay, the eastern end of Long Island, and nearly the whole mainland as far as Pawcatuck river; that is, practically, all of the present state of Rhode Island west of Narragansett bay, including several subordinate tribes all owning the sway of the sagacious and venerable Canonicus, and his brave and generous nephew, Miantinomi, as their chief sachems. They were very powerful; but however fierce and warlike a race they might once have been, it is certain that at this time their schemes for territorial aggrandizement had ceased, and their attention had become directed in some measure to the arts of civilization. The Pequots, the ancient enemies of the Narragansetts, inhabited the country to the west of them. Being less exposed to the influences of civilization, they still retained much of their warlike character. In the previous year trouble had arisen between them and the Massachusetts colony, and an expedition from Boston had been sent against them. The Pequots were thoroughly roused, and wreaked their vengeance in the ensuing winter on the defenseless settlers in northern Connecticut. They also sent ambassadors to the Narragansetts, offering to bury the hatchet and to unite in a league with them and the Mohegans to effect the utter destruction of the English, thereby to prevent the calamity which they foresaw must soon annihilate the Indian race. Upon the decision of the Narragansetts hung the fate of the colonists. At this imminent crisis Roger Williams appeared among them. He was probably the only man in New England who could avert the impending evil. At the risk of his life, in constant danger from Pequot tomahawks and the perils of the way, he sought the wigwam of Canonicus, and, after laboring three days and nights with the sachems, succeeded not only in preventing the proposed league, but also in forming a league between the English, Narragansetts, and Mohegans against the conspiring tribe. In the next year, 1637, the Pequots rashly resolved to continue the war. As is well known, the utter extermination of the tribe and name of Pequot soon followed.

In accordance with his principles concerning the tenure of lands, Williams obtained a grant of Providence, at or before its settlement, from Canonicus and Miantinomi. The earliest deed on record is in the form of a memorandum dated March 24, 1637. It refers to this previous purchase from the Indians of the lands upon the Mooshansick and Wausquatucket rivers, confirming the same, and by its terms extending the grant on either side so as to include all the land between the Pawtucket and Pawtuxet rivers, with the grass and meadows upon the latter stream. This extended grant is made "in consideration of the many kindnesses he [Roger Williams] hath continually done for us", and the instrument is signed by the original grantors. A memorandum appended in the following year states that this was all again confirmed by Miantinomi, "up the streams of Pawtucket and Pawtuxet without limits we might have for the use of our cattle". By this document it appears that the sole title to all the lands was vested in Roger Williams. It was not true, as alleged, that the purchase was made by him as an agent of the company. Soon after the purchase he executed a deed giving an equal share with himself to twelve of his companions "and such others as the major part of us shall admit into the same fellowship of vote with us". This remained for more than twenty years the only evidence of title until, in December, 1661, Williams executed a more formal conveyance by request of the citizens.

Some of the grantees in this deed of 1638, it is known, did not leave Massachusetts until that year, but all of them, the 6 original settlers and the 13 grantees or proprietors, being 17 persons (Williams being included in both the "settlers" and the "grantees"), together with many others, 54 in all, had lots assigned them in the first division of land, which took place soon after the acceptance of the deed. The proprietors divided the land into two parts, one called "the grand purchase of Providence", the other "the Pawtuxet purchase". The first of these was divided into 54 "home lots", as they were called, beginning at the "Mile-end cove" (which lay between Fox point and what is now Wickenden street), and lying between the streets known as North and South Main streets and Hope street. The dividing lines all ran east and west, and many of them may be traced by the walls now standing. Several of these lots have never been transferred by deed. The grantees were prohibited from selling to any but an inhabitant, without the consent of the town, and a penalty was imposed on such as did not improve their grounds. The division known as the "Pawtuxet purchase", which from the beauty of its meadow-lands soon began to be settled, was the source of long and angry contention in the subsequent history of the colony.

The government established by these primitive settlers was an anomaly in the history of the world. At the outset it was a pure democracy, one which for the first time guarded jealously the rights of conscience by ignoring any power in the body politic to interfere with those matters that alone concern man and his Maker. The

inhabitants, "masters of families", incorporated themselves into a town and made an order that no man should be molested for his conscience. All the voters met and transacted the business of the commonwealth in town-meeting once a month. Principle, not precedent, formed their only standard of judgment. But the growth of the colony soon rendered a purely democratic government impracticable, and in 1640 twelve articles of agreement were adopted by the people. To the only copy of this interesting document now in existence thirty-nine signatures are attached. Although but a slight departure from the primitive democracy, it forms an era in the colonial history. For several years it was the basis of the town government. Meanwhile the report of the freedom enjoyed by the new colony had spread abroad, and many from the neighboring settlements who wished to be free from restraint entered it, bringing with them all sorts of notions upon civil and religious subjects. So turbulent did the condition of affairs become in consequence of this mixture of uncongenial elements, that some of the colonists hastened to place themselves under the protection of Massachusetts, where they continued until 1658.

Portsmouth was settled in 1638, Newport in 1639, Warwick in 1643. These three, with Providence, the only colonies then existing in Rhode Island, were quite independent of each other. They felt the necessity of union in case of an Indian war, which always threatened, and perhaps a still greater need of an authorized government which should cause their rights to be respected by their neighbors. To strengthen their position at home, to fortify themselves against encroachments from abroad, and, above all, to secure the enjoyment of liberty of conscience, they sought from the British parliament a charter which should recognize their acts of self-government as legal, and invest with the sanction of authority the novel experiment they had begun. Roger Williams was sent to England to secure such a document, and through his efforts a charter was secured uniting the colonies under the name of the "Providence Plantations in the Narragansett Bay in New England". When it was received in Rhode Island it was hailed with the most enthusiastic expressions of joy, for it conferred on the inhabitants a political existence, and was a sure pledge of the protection of the mother country. Although dated 1644, it did not really go into effect until 1647. Under it the four towns remained almost independent of each other, and the colonial government acted not so much on the individuals who composed the colony as upon the corporate towns of the confederation. In 1651, Coddington, who had been to England, returned with a charter appointing him governor of Newport for life; this appointment broke up the colonial government. The separation lasted until 1654, when, by the efforts of Roger Williams, who again went to England for the purpose, the colonies were reunited.

Dr. Holmes, in his "American Annals", states that in 1645 there were in Providence 101 men capable of bearing arms. It is probable that the colony of Shawmut was included. If Providence contained one-half that number, it was a very great increase, considering its situation, the circumstances under which it originated, and the trials through which it had to pass. In May, 1647, the colonial assembly levied a tax of £100 as a free gift to Mr. Williams for his labor in obtaining the charter. Of this, Newport was to pay £50, Portsmouth £30, and Providence £20. By this apportionment it appears that Portsmouth and Newport, though settled later, had each outstripped Providence. In May, 1655, the court-roll of freemen in the colony numbered 247 persons, of whom Providence had 42, Warwick 38, Portsmouth 71, and Newport 96. The distinction between inhabitant and freeman should be borne in mind. Not every resident was a legal inhabitant. Some time elapsed after one's arrival in the colony before he could be received as an inhabitant; such a reception gave him a share in certain rights to the common lands, and made him eligible for jury duty and some of the lesser town offices. If his conduct while thus situated gave satisfaction, he might be promoted at a town-meeting to become a freeman, and if no valid objection was brought against him at the next meeting he was admitted to all the rights of the freemen or close corporators of the colony. In the earlier years an admission as freeman sometimes brought with it a joint ownership in the land purchased; but it soon came to convey only an elective franchise, and even this was not always confined to freemen, for afterward, by a town law in Providence, passed in 1656, an inhabitant was liable to be elected to office, and finable for not serving. Two years later all who held lands in the town were declared to be freemen. This latter feature remained, with some modifications, until the adoption of the state constitution.

The year 1656 is memorable as the time of the advent of the Quakers into the Puritan colony. A stringent law was there enacted and rigidly enforced for their suppression; and in 1658, to hold Quaker tenets was punishable with death. Like others who had been driven from the Massachusetts colony for daring to differ with its founders, many Quakers fled into Rhode Island, where they led peaceable lives, cherishing their own belief without hinderance. During the years which immediately followed, great numbers made it their home.

In 1659 a tax of £50 was divided so that Newport paid £20, Providence £11, Portsmouth £10, and Warwick £9. Here Providence for the first time seems to have made a gain on the other towns. In June, 1667, the town treasurer reported that he had neither received nor paid anything for the town the year preceding. The fact is noticed simply for its singularity. Such a thing probably never occurred before; and if it has since it certainly has not recently.

After the excitement caused by the advent and persecution of the Quakers had in a measure died out, nothing of more importance than religious disputations and the like occurred until King Philip's war broke out. Massasoit, the chief of the Wampauoags, had been succeeded by his eldest son, Alexander, and he in turn a few years later by his brother Metacomb, or Philip, an able and enterprising chief. Philip doubtless saw with jealousy the rapid

progress of the English in his country, and his great and constant object seems to have been the formation of a league of all the Indian tribes against these foreign inhabitants. These tribes had been so long at enmity with each other that to produce a union among them required great skill and sagacity, and the event shows Philip to have been possessed of these qualities. He finally succeeded in obtaining a close alliance of all the neighboring Indians, and the spring of 1676 was fixed upon for beginning the struggle. The Narragansetts, it is said, had promised to join him with their whole strength, amounting to 4,000 warriors, but the Massachusetts Bay colony, fearing such a union, anticipated it by sending, in July, 1675, a troop of infantry and one of horse into the Narragansett country, who succeeded in wringing a treaty from four of the tribe in the name of the whole. Consequently the Narragansetts took no part as a tribe in the war which had meanwhile been prematurely begun, but it is said that many of them fought as individuals for Philip in his battles, and it is certain that they received and harbored many of Philip's friends who fled to them during the summer and fall. In the following winter (1675-76) Philip took up his winter quarters with them. Meantime the commissioners of the colonies had determined that matters should not remain in this middle state in regard to the Narragansetts, and on the 2d of November, 1675, ordered that 1,000 men should be raised for an expedition against them. The whole tribe had assembled at a fort in South Kingston, which they deemed impregnable, but the colonists boldly attacked it on the 19th of December, and succeeded in taking it after a bloody fight, in which a large portion of its defenders were killed. This battle, like most of those in this war, seems to have been fought with remarkable cruelty. The war was considered the final struggle, and so was throughout characterized by the utmost desperation on either side.

Providence was especially exposed to the fury of the savages from its situation on the mainland in the heart of the Indian country. Accordingly, in the spring of 1676, a large proportion of its inhabitants availed themselves of an offer made by the towns of Newport and Portsmouth, and removed with their families and effects to the island on which these towns were situated. It is well known that many of them never returned to the mainland. Providence was, in fact, nearly deserted at this time. Less than 30 men remained for its protection. Two places in the town had been fortified, chiefly through the efforts of Roger Williams, who, notwithstanding his advanced age, had accepted a commission of captain of militia. Tradition relates that upon the approach of the enemy the venerable captain went out alone to meet and reason with them, but although they declared that not a hair of his head should be touched, he was not able to save the town from partial destruction. On the 30th of March they burned 30 houses. The town records were saved from destruction by being thrown into the mill-pond of John Smith, the miller, who was town clerk at the time.

A comparison of two tax levies, each of £300—one in 1670, the other in 1678—fairly illustrates the ruin wrought by this war on the mainland towns. In the first of these, Newport was assessed £123; Providence and Portsmouth, £51 each; Warwick, £32; Kingston, £16; Block Island, £15, and Conanicut £12. In the latter, Newport was charged with £136, Portsmouth, £68; the other two islands £29 each; Providence, £10; Warwick, £8; Kingston, £16; Greenwich and Westerly, £2 each. Thus two towns on the island of Aquidneck paid over two-thirds of the whole levy, and the three islands together paid seven-eighths of it, and the five mainland towns one-eighth, while the share of Providence was one-thirtieth. In 1698, in the reviving growth of the town, Providence was charged with £128, or about one-sixth of the whole tax of £800. The number of enrolled militia in New England, about 1688, according to returns made by Sir Edmund Andros, was something over 13,000, of whom 800 were in Rhode Island, and of these, 175, or more than one-fifth, were in Providence.

Early in 1683, at the ripe age of 84, Roger Williams died, precisely how or when is not known. He will ever be remembered as the great apostle of religious freedom and the founder of the city of Providence and the state of Rhode Island. The first settlers of Providence were members of Plymouth and Massachusetts churches. These organizations possessed a congregational government, were moderately Calvinistic in doctrine, and held to infant baptism. The settlers of Providence did not cease to be members of those churches by their removal, nor did the fact of their being members constitute them a church after it. Among the first 13 were two ordained ministers, Mr. Williams and Mr. James, who conducted frequent and regular services for public worship. In March, 1639, active steps were taken to organize a church. Before this they had denied the doctrine of infant baptism, and a layman had baptized Mr. Williams by immersion, after which Mr. Williams baptized him and several others of the company in the same manner. By this act they disowned the churches of which they had been members, and for this they were soon excommunicated by them. A church was formed, and Mr. Williams was called to the pastorate of it, a position which he held for four years. This was the beginning of the First Baptist church of Providence, the oldest organization of its kind in the country. The church records state that "the church at first met for worship in a grove, unless in wet and stormy weather, when they assembled in private houses"; that afterward Pardon Tillinghast, "at his own expense, built the first meeting-house about the year 1700".

Contemporaneous with the first meeting-house was the first prison. In 1695 the general assembly ordered a prison to be built in Providence. At a town-meeting in February the town agreed to erect one 10 feet by 12. Judging from the contentious spirit manifested in their town-meetings, one can not imagine that a prison of these dimensions would afford very ample accommodations for such a community. Nothing was done on it for a time, but by January, 1700, it had been finished at a cost of £12 17s., exclusive of locks.

The first census taken in the colony of Rhode Island was made in 1708 by order of the board of trade. At that time the militia force of the colony, including all males between sixteen and sixty years of age, was 1,362. This had increased in 1730, when the next census was taken by the same authority, to 1,900 men, and the population of the colony had grown from about 7,200 to 18,000. Rev. John Callender, in "an historical discourse," published in 1739, said: "In 1729 the whole colony was divided into three counties for the ease of the inhabitants. And in 1730 the town of Providence was divided into the four towns of Providence, Smithfield, Gloucester, and Scituate, the whole land being filled with inhabitants, partly from the coming in of some few from other places, but chiefly from the natural increase of the first settlers." Before the town was divided there were in it 3,707 whites, 128 negroes, and 81 Indians, a total of 3,916. In 1748 the colony had grown to over 32,000, of whom Newport had 6,508 and Providence 3,452. Several years later (1755) the last census, under the orders of the home government, was taken, in view of the war with France, which on this continent had already begun though not formally declared. The colony had increased nearly 8,000 in that time, and the military force numbered 8,262. Providence had 3,159 inhabitants, and could equip 681 men. It had just been again reduced in territory by the incorporation of Cranston (1754). Johnston was set off in 1759, and the organization of North Providence in 1765 reduced the town to the limits which it retained till a few years ago, when the annexation of the 9th and 10th wards began the era of enlargement. A census of the town, taken at the close of 1767, showed the population to be 2,958, of whom 911, occupying 102 houses, were on the west side of the river. In February, 1770, an attempt was made still further to divide the town by incorporating the west side of the river as a separate town under the name of Westminster, but the assembly rejected the petition. The next general census was that of 1774, taken with much care, by order of the assembly. The entire population was nearly 60,000. Providence had 4,321 inhabitants—655 families, with 421 dwelling-houses. The increase in the population had been very small since the census of 1748, owing to the divisions just mentioned. A quarter of a century had added less than 900 people, an annual increase of barely 1 per cent. But the country towns that had been set off since 1730 show a greater prosperity, numbering at this census nearly 15,000, and the whole county of Providence considerably exceeded Newport county in population.

The early history of Providence has very little to boast of in regard to the subject of education. In May, 1663, the assembly agreed that 100 acres of upland and 6 acres of meadow (or 8 acres of lowland in lieu of meadow) should be laid out within the bounds of Providence, to be reserved for the maintenance of a school in the town. This is not only the earliest grant to be found in the records, but also the earliest reference to a school, or to any means of education. We do not hear of any school-master until some 20 years later. The first notice of a school-house in the town records is in 1752. In 1767 the town took up the subject of education, with the apparent design of providing schools for all the children of the inhabitants. At a town-meeting in that year they resolved to purchase or build 3 school-houses for small children and 1 for youths, to provide instruction, and to meet the expenses out of the public treasury, the whole to be under the supervision of a school committee. The text-books used in these schools were the Bible, the spelling-book, and the primer. "When one had learned to read, write, and do a sum in the rule of three, he was fit for business." There were also some "dames' schools", and private tuition was much in vogue. In May, 1767, a school for the instruction of young ladies in writing and arithmetic was advertised. The school hours were from 6 to 7.30 o'clock in the morning, and from 4.30 to 6 o'clock in the afternoon, and the price of tuition was \$2 per quarter.

In February, 1764, Rhode Island was granted a charter for a college, but the project was allowed to lie dormant for two years. In September, 1766, the Rev. James Manning, who had been elected its first president, began teaching at Warren, and soon had 6 or 8 students. On the 7th of September, 1769, the first commencement was celebrated at Warren, at which time there were 7 candidates for degrees. Up to that year the institution "was for the most part friendless and moneyless, and therefore forlorn, in so much that a college edifice was hardly thought of". Warren had been at first agreed upon as a fit location for the college; but when, in 1770, some interest sprang up, it was proposed that the county which should raise the most money should have it. Then the four counties went to work with subscriptions. In the quaint words of Rev. Morgan Edwards, written in 1771: "That of Providence bid high for it, which made the county of Newport (who is jealous of Providence on account of trade) extend itself to the utmost. However, Providence obtained it, which so touched the jealousy and piqued the pride of the islanders as to make many of them enemies to the institution itself. The same is too much the case with the other disappointed counties. Nevertheless, by the adventurous and resolute spirit of the Browns, and some other men of Providence, the edifice was begun in May, 1770, and roofed by the fall of the year. The next summer the inside was so far finished as to be fit for the reception of scholars." It was not until 1788 that the structure was finally completed. During the Revolutionary war all college exercises were suspended. From 1776 to 1782 the "college edifice", as it was called, was devoted to the use of the American troops and their French allies, first for barracks, afterward as a hospital. Under such circumstances it is not to be wondered at that the close of the war found it "in a very dilapidated condition". In 1804 the name of the college was changed from "Rhode Island College" to "Brown University", in honor of Nicholas Brown, its generous friend and benefactor, who gave in all more than \$160,000 to advance its interests. From the start this has been essentially a Baptist institution. The number of the fellows is 12, of whom 8, including the president, are required to be Baptists; the remaining 4 can be selected from any religious denomination. Of the 36 trustees, the charter requires that 22 shall be Baptists, 5

Friends, 4 Congregationalists, and 5 Episcopalians*. Notwithstanding these provisions in the charter placing the institution under the government of the Baptists, there are other provisions which exclude sectarianism from the course of academical instruction.

Together with increased interest in schools and education there came, as was natural, an increased interest in books and literature generally. Providence has the honor of being one of the first towns in America to possess a public library. Some time just previous to 1754 a company was formed, and a well-selected lot of books was bought by subscription. The state generously afforded the society the use of the council chamber in the state house for the library. Unfortunately, when the building was burned on the evening of December 24, 1758, the books were all destroyed. The company received from the general assembly the grant of a lottery, with the proceeds of which they replaced their lost library. For many years it was in very general use, but in progress of time it became neglected. New books were not added, and their want led to the formation of another library, under the name of the "Providence Athenæum", in June, 1831. In 1836 the two were combined into one. In the next year a building for its accommodation was erected at a cost (including the preparation of the lot) of nearly \$19,000.

The Providence of the eighteenth century was a vastly different place from that of the nineteenth. In its topography alone the change has been great. He who should examine a plat in the proprietors' office made in 1718 would hardly recognize the place there designated. There was once a sheet of water called the Mile-end cove between Fox point and Wickenden street; this has been filled up for many years. Within the last century the tide flowed over Westminster street and all north of it. At the head of Long wharf there was a round hill which was then an island. In October, 1761, the Great or Weybosset bridge was carried away by "the highest tide * * * that hath been known in the memory of man". It was rebuilt, and subsequently a lottery was granted to build a draw in it. From this it would seem that none of the preceding bridges had draws in them. After this, vessels with full cargoes went up as far as the foot of Bowen street. The tradition is that the first square-rigged vessel that ever sailed from this port sailed from a wharf as high up as the canal market. That great and important changes have taken place, not only in the depth but in the course of the channel of the river, is frequently demonstrated by excavations made at a great distance from the present channel.

Manners and fashions in those days were very plain and simple. Men generally wore breeches of washed leather; laborers of almost every description wore leather aprons; the most opulent wore clothes of English manufacture but made in the plainest of styles. Most of the cloth used in the settlement was made by those who used it.

Women of the same neighborhood would visit each other with a clean checked apron, a handkerchief over the shoulders, and a sun-bonnet; then pleasantly sit down and divert themselves over a dish of Bohea tea and a piece of bread and butter. * * * Young men would at times amuse themselves in the lots at ball, shooting at poultry or a mark, now and then at wrestling and jumping; at times muster in small parties with young women, then have a dance; at harvest time would go miles to a husking, as the farmers generally would at that time make merry.

In pigeon-time, shooting was a very popular amusement. There were many shooting-stands set up around the cove, by means of which thousands of the pigeons were annually destroyed. In the country the birds were mostly taken in nets and brought to market by the horse-load in panniers. Occasionally a pack of hounds would be kept, and a fox-hunt would give variety to their ordinary amusements.

The machinery used was of the simplest kind. Furniture in general was very plain; mahogany was but little known. Almost every article of wood was straight, without much paint or polish, and kept white by constant scouring. China and glass were almost unknown, and the few crockery dishes in use were of the coarsest. Most of the dishes were made of pewter or wood. Frequently two persons would be seen eating from one dish, and perhaps a dozen drinking from the same pewter quart pot or earthen mug.

As late as 1765 there were few carriages besides carts, and consequently when women wanted to go abroad it was very common for them to go on horseback, sitting on a pillion behind a man. Women would often be at market on horseback, with a pair of panniers, selling butter, cheese, eggs, etc. In July, 1767, we meet with the first advertisement of a regular stage-coach running between Providence and Boston. It made one trip each way per week. In 1783 it ran twice a week. The roads were generally in horrible condition. Mr. Samuel Thurber writes that in May, 1776, he went from Providence to Pomfret, 36 miles, in a chaise; the road was so stony and rough that he could not ride out of a slow walk, except very little of the way, and the journey occupied nearly two days. Of course the water was resorted to for traveling whenever possible. In 1763 a line of two boats was advertised to ply between Newport and Providence, twice a week, and oftener if possible, with freight and passengers.

Up to the year 1754 no measures appear to have been taken by the government of the colony or town to protect property from the ravages of fire. In that year the inhabitants of the compact part of Providence petitioned for power to purchase a "large water-engine", and a committee was appointed to rate the houses a sum sufficient to do this. A law was also passed by the colony requiring each housekeeper to be provided with two fire-buckets. In December, 1760, the purchase of a second engine was authorized. Enginemen were first appointed by the town in June, 1763. From this small beginning the fire department steadily increased, in proportion to the increase of the town. In 1842 it consisted of 3 presidents of fire-wards, 18 fire-wards, and 600 firemen, attached to 3 hydraulions, 9 suction-engines, 2 hook-and ladder carriages, 8 hose-carriages, 17 forcing stationary engines, having 8,000 feet of hose and 18 reservoirs.

The taverns were the great places of public resort in the last century. The number of tavern-keepers' licenses varied in different years, but were generally between 20 and 30. The highest amount paid by any individual was £12. The town council generally met at the house of some one of these licensed tavern-keepers, and dined there at the expense of the town. It does not appear that they received any pay for their services in their public capacity. In an account on file in the clerk's office, Luke Thurston charges the council with "dinner, etc.," "dinner and liquor," "dinner, punch, and wine". April 3, 1757, 6 dinners are charged at £5 8s.; punch, £2. May 28, 7 dinners, at £6 6s.; punch, £2.

At a town-meeting in April, 1758, permission was granted to one David Bucklin to erect a market-house on a lot belonging to the town, but he does not seem to have availed himself of it. The idea of a public market, though broached about this time, was not carried into execution until August, 1771, when the town resolved to erect a market-house near "the bridge". The grant for a lottery was obtained from the general assembly for this purpose, and in May, 1773, work was begun on a building. It was a brick structure, 80 feet by 40, and two stories high. The lower story was used as a market, and the second divided into offices and occupied partly by the officers of the town and partly by tenants. In April, 1819, the town directed a fish-market to be erected near the northeast corner of Weybosset bridge, and partly over the river. After the erection of the new bridge in 1828 this market was removed to the northward of it.

The drama was unknown in Providence until the last half of the eighteenth century. Theatrical performances of some kind had taken place in New York as early as 1733, and in 1749 a theatrical company was playing at Philadelphia. In 1752, William Hallam brought over a thoroughly organized troupe of actors from England to America, from which circumstance he has been termed "the father of the American stage". They made their *debut* before a delighted audience in Williamsburg, Virginia, and after a number of performances went to Annapolis and other towns in Maryland, and finally to New York and Philadelphia. Blake, in his *History of the Providence Stage*, says:

It may surprise some that William Hallam did not send his comedians to New York, Philadelphia, or Boston, instead of selecting a town comparatively so small as Williamsburg, for their first performance; but he was well aware that dramatic adventurers would not be welcomed with cordiality, either in New England, Pennsylvania, or New York, where a general hostility prevailed to amusements of all kinds, but especially to stage plays. New England, which had been settled by the Puritans, retained, to a late period, that bigoted spirit and hostility to amusements which had characterized many of its original settlers, while in the south the people were more inclined to liberality and more fond of recreation.

The Virginia comedians next went to Jamaica, where they remained until 1758. On their return they meditated a visit to Rhode Island, "a colony which, as was popularly believed, was in a great measure, owing to the views of its noble founder, exempt from the rule of bigotry". Newport claims the distinction of being the first place in New England in which a temple of the Muses was raised, a number of performances being there given in 1761. In the next year the same company visited Providence. The theater which they opened was little better than a barn, but it was visited by the *élite* of the town, and also by many visitors from Boston and other places, who expressed themselves highly pleased with the performances. The opponents of the drama, however, had enough influence to secure in August the passage of an act by the assembly, modeled on the one which had been passed by the Massachusetts legislature some ten years before, suppressing theatrical performances. In 1792, Mr. Joseph Harper made an attempt to run a theater in Boston, but the authorities put a stop to the performances. After this he came with his company to Providence. Although the law against theatrical entertainments had not been repealed, public opinion had changed. In a few days the comedians had assured themselves that they had the good-will of the more influential citizens, and prepared to give entertainments. On the 10th of December the town council voted that they would not prosecute the performers, or support any person who should on his own account begin such a prosecution, on condition that the proceeds of the sales of tickets on every fifth night should be collected by the town sergeant, and by him be paid into the public treasury. So far were the authorities from being opposed to the desires of the actors, that Mr. Harper obtained the court-house for a place of exhibition and turned it into a temporary theater. No regular theater was fitted up until some two years later, when Mr. Harper again returned to the town. The time for beginning the performances gives a very good example of the difference between the customs of that day and this. At first the curtain rose at 6 o'clock; but that being found too early it was changed to 6.30. A year later it was again changed, this time to 7 o'clock. We read at the bottom of the bills: "Ladies and gentlemen are requested to send their servants by half-past 5 at farthest to keep places in the boxes." Three performances per week were given. The statute against theatrical representations was not repealed until 1798.

No notice has been taken of the progress of the two wars which England waged with France and Spain between 1739 and 1763. The English colonies engaged in them with their whole soul, but neither the town of Providence nor the colony of Rhode Island was distinguished from the other towns and colonies, either by sufferings or by exertions. In March and April, 1758, nearly 2,000 of the king's troops, destined against the French possessions in America, were quartered in Providence for a short time.

One result of the Seven Years' war was a vast addition to the national debt of Great Britain. This circumstance, with others, induced the British government to attempt raising a revenue from the colonies by enforcing the navigation acts, which had always been a dead letter, and by imposing stamp and other duties. The reception

which the stamp act, as it was called, met in America is well known. The duty was felt by every individual, in the common and ordinary transactions of life, and thus it aroused the whole mass of the people at once to resistance. In some places the officers appointed to distribute the stamped paper suffered personal indignities, and in others had their houses and property destroyed by the enraged populace. No open act of violence occurred in Providence. A special town-meeting was convened on the 7th day of August, 1765, to consider what steps were necessary to be taken. A committee appointed to draft instructions to the town's representatives made a report, which was unanimously adopted at an adjourned meeting, stating the attitude of the town in regard to the act, and embodying five resolutions which the representatives were instructed to submit to the assembly. These resolutions were introduced at the following September session, and were adopted with slight additions and alterations. They fell little short of a declaration of entire independence of the British government, and went as far as any legislative proceedings of the same date in the country. The opposition to these taxes was so unanimous, both here and in England, that the government had to repeal the act in March, 1766.

In the spring of 1772 the armed schooner "Gaspee", commanded by Lieutenant William Duddington, arrived in Narragansett bay to aid in enforcing the revenue laws, which had never been much respected in this colony. Of course the visit of this vessel on such an errand was far from being acceptable to the inhabitants, especially as her commander seemed inclined strictly to discharge his duty. Difficulties soon arose, the effect of which was to make him more punctilious and energetic than ever. On the 9th of June he pursued the sloop "Hannah", which had started on her way from Newport up the river. Her captain crowded sail to escape, and knowing well the channel, crossed Namquit point, where there was water enough for the "Hannah" but not enough for the "Gaspee". The "Gaspee" followed and ran aground on the point. The "Hannah" pursued her way to Providence, and on her arrival the captain gave notice of the situation in which he left the "Gaspee". Namquit is about 6 miles below Providence on the west shore. In the evening of the same day, eight long-boats filled with ship-masters and merchants, citizens of Providence, of high respectability, boarded the "Gaspee", took out her crew and landed them at Pawtuxet, and then set the vessel on fire; it was totally destroyed. Before morning the boats returned to Providence. On the approach of the boats to the "Gaspee" the lieutenant discharged his pistol at them, and in return was wounded by a musket-ball in the groin. Here was the first open and armed opposition to the force of his majesty, and here the first bloodshed in the Revolutionary struggle. A Providence man fired the first gun, and at a company of Providence men was the first ball discharged in that contest. Heavy rewards were at once offered for the discovery of any person engaged in this affair, and subsequently a special court of commissioners was appointed to inquire into it, but neither the rewards offered nor the investigation led to any discovery as to the perpetrators. Notwithstanding the fact that so many were personally engaged in it that they were called together by beat of drum through the streets, and that they embarked in their boats early in the evening and without disguise of any kind, no person could be found to betray them.

The inhabitants of Providence were not called upon to act so decisively in relation to the importation of tea as were those of Boston. It will be remembered that this was the only article excepted by the British government when they repealed the duties in 1770. The permission given the East India Company, in 1773, to export their teas to America, with a drawback of all duties paid in England, had brought the friends of liberty in this country to the resolution of preventing the landing of any of the obnoxious article. The result was the famous "tea-party" in Boston, December 16, 1773, when 342 chests were emptied into the harbor. It happened that no teas were shipped to Providence, but the inhabitants, as they declared in resolutions passed in a town-meeting held on the 19th of January, 1774, could not "be silent on so interesting an occasion". They went on to say: "Should we in this case omit to assert and express the firmest resolutions to vindicate our rights, it might be construed as a cession of them into the hands of those who have wantonly invaded them in this instance." These resolutions made a vigorous protest against the action of the British government, and provided that no tea should be landed here or brought by land.

The colonies made common cause with Massachusetts in opposing the measures adopted by parliament against that colony in consequence of the destruction of tea in Boston harbor. They felt, too, that the crisis required a closer union between them, and a general congress was suggested. Judge Staples says that the first act of any body of men in favor of this measure may be found in the proceedings of the town-meeting of Providence holden May 17. A resolution passed at that meeting provided—

That the deputies of this town be requested to use their influence at the approaching session of the general assembly of this colony for promoting a congress, as soon as may be, of the representatives of the general assemblies of the several colonies and provinces of North America, for establishing the firmest union, and adopting such measures as to them shall appear the most effectual, * * * for the protecting and securing their invaluable rights and privileges and transmitting the same to the latest posterity.

There were two other acts passed at the same town-meeting which prove that the inhabitants were true to the principles of liberty they professed. One directed that the deputies of the town should "use their endeavors to obtain an act of the general assembly prohibiting the importation of negro slaves into this country, and that all negroes born in this country should be free after attaining to a certain age". By the other the town gave up all claim to six negroes that had been left by a man who had just died intestate, and had, it would seem, left no

heirs. This because "the inhabitants of America are engaged in the preservation of their rights and liberties, and * * * personal liberty is an essential part of the rights of mankind". At the session of the assembly in June an act was passed prohibiting the future importation of slaves into the colony.

Providence at this juncture was not behind other places in making warlike preparations. It does not appear that any companies of minute-men were organized here, their place being supplied by independent companies, so called. These consisted of volunteers from the militia, incorporated by the general assembly, and possessing certain privileges, among the most important of which was that of choosing their own officers, subject only to approval by the governor, or by the governor and assistants. They were not attached to any particular regiment of the militia, nor subject to the general or regimental officers, but took their orders immediately from the governor as captain-general. News of the battle of Lexington reached Providence on the evening of the 19th of April. On the morning of the 21st the several independent companies of this and the neighboring towns, and a body of the militia, in all about 1,000 men, had either marched, or were in readiness to march, to the assistance of their brethren in Massachusetts. The general assembly voted at once to raise an "army of observation" of 1,500 men, and took energetic steps not only to put the colony in a posture of defense, but also to assist the other colonies in carrying on offensive measures against the British troops in Boston.

As was to be expected from its position and topography, Rhode Island took a more active part in the naval than in the military events of the Revolutionary war. The general assembly, in June, 1775, directed the committee of safety to charter two vessels—one of 10 guns and 80 men, and the other of less force. Abraham Whipple was invested with the command of both, with the title of commodore, and it was made his immediate duty to clear the bay of the tenders belonging to the British frigate "Rox", then off Newport. On the very day of his appointment he discharged this duty by making prize of one of these tenders, after discharging at her the first cannon fired at any part of his majesty's navy in the American Revolution. It was then that there occurred between the two commanders that terse correspondence of Spartan brevity and directness:

You, Abraham Whipple, on the 10th of June, 1772, burned his Majesty's vessel, the "Gaspee", and I will hang you at the yard-arm.
JAMES WALLACE.

Sir JAMES WALLACE.

Sir,—Always catch a man before you hang him.

ABRAHAM WHIPPLE.

Several British vessels of war were at that time in Newport harbor and cruising in the bay. To prevent them from reaching Providence and laying it under contribution for supplies was the immediate care of its inhabitants. By the latter part of July they had thrown up a breastwork and entrenchment between Field and Sassafras points, just below the town, and had erected a battery of six 18-pounders on Fox point. In October they prepared scows filled with combustible materials, and were engaged in stretching a boom and chain across the channel when the colony assumed the direction and completion of the work. Congress, at the suggestion of Rhode Island, organized a Continental navy, and two of the frigates, the "Warren", of 35 guns, and the "Providence", of 28 guns, were built in Providence, and launched in May, 1776. The first naval expedition under Congress against the British government sailed from the capes of Delaware on February 17, 1776, and captured Nassau on March 3. Esek Hopkins, of North Providence, was the commander-in-chief of the infant navy. After the American fleet arrived in Providence on their return from this expedition they never left together, owing to the difficulty of manning the ships, and the presence for a great part of the time of a superior British force at the mouth of the bay; but occasionally a single vessel would avail itself of a fog or a dark night and escape. During the war Providence abounded in privateers. They were generally successful in eluding the British cruisers, and in making prizes of merchantmen, transports, and small vessels of war. Privateering was almost the only business in which American merchants could employ their vessels. Patriotism and private interest concurred in urging them to pursue it vigorously. Good men in those days never hesitated to engage in it on account of any supposed moral wrong that it involved.

The last colonial assembly of Rhode Island met in Providence, May 1, 1776, and on the 4th of May passed the final act abjuring allegiance to the British crown—a declaration of independence which constitutes Rhode Island, by two months, the oldest independent state in America. On the 4th of July, Congress made its famous Declaration of Independence, and two weeks later the Rhode Island assembly gave it their sanction without any hesitation. The event was celebrated in Providence on the 25th by a procession, salutes of 13 guns each, and a public dinner.

The number of the enemy's cruisers around the bay increased as the season advanced, and on the 8th of December a large body of British troops took possession of the island of Rhode Island. All the passages at the mouth of the bay were strictly guarded, and the commerce of the state for the time being was at an end. The British retained possession of the island until the 25th of October, 1779. Its climate, harbor, and ease of access and defense combined to make it a desirable post for the British and a most dangerous one for the Americans, and especially for the state of Rhode Island. The presence of the enemy kept the surrounding country in a continual state of alarm. Providence, then next in size and importance to Newport, and at the head of navigable water, was supposed to be peculiarly in danger. The town exhibited the appearance of a camp. Its ordinary business was suspended and many of its inhabitants moved to places of greater safety in the interior. In the year 1777 the occupation of so large a portion of the state by the enemy's troops so interrupted the labors of the husbandmen that in the spring

of the year following there existed a great scarcity of corn, and the town had to hire \$43,200 to be sent to Connecticut for its purchase. The price of corn was \$20 and rye \$25 per bushel. It must be remembered that paper money had suffered a great depreciation, and consequently the nominal amount of money raised on this occasion was very much larger than the real value. This depreciation of the currency, as is well known, was becoming a very serious evil. It is not so well known that on the 23d of September, 1779, the Massachusetts legislature passed an act to remedy the evil, which affected the state of Rhode Island very greatly. This act began as follows: "Whereas this state are using their utmost endeavors to appreciate the currency of the United States, and there is great danger that their laudable exertions will be entirely defeated if measures are not speedily taken to prevent the inhabitants of this and of the other United States from carrying the necessary articles of consumption out of this state: be it enacted," etc.; and it went on to forbid such exportation, and in general to impose an embargo on the traders and other inhabitants of the state. On the 2d of the following October, Governor William Greene, of Rhode Island, in behalf of the council of war, wrote to the president of the Massachusetts council a vigorous protest against this measure. Some of the statements in this letter will give a good idea of the condition of Rhode Island and Providence at that time: "When our unfortunate situation is considered, we must be justified in saying it [the embargo] is cruel in the highest degree. * * * There having been no access by sea to any port in this state for almost three years, the few vessels fitted by our merchants are always ordered in your state. The privateers owned here send their prizes into your ports. * * * The retailers of foreign articles in this place have no supplies but from your state." No Massachusetts act can be found repealing this embargo, and it probably expired by limitation on the 15th of the following June.

The effect which the war had on the population of Providence is shown by comparing the figures of a census taken in 1782 with those of one taken in 1774:

	1774.	1782.
White males over 16 years of age....	1,219	970
White males under 16 years of age ..	850	943
White females over 16 years of age ..	1,049	1,109
White females under 16 years of age ..	832	907
Indians	68	6
Negroes	303	265
Total	4,321	4,310

At the close of the Revolutionary war the situation of Providence differed but little from that of other parts of the United States. During that struggle this town contributed its full portion of men and means. Although it was not at any time the seat of war, yet its immediate proximity to the large body of British troops posted at Newport for a long time, and the facility with which they could at any time attack Providence, subjected its citizens to frequent alarms and their attendant inconveniences. The return of peace must therefore have been hailed by them with great joy. As soon as the war was over, they, in common with all the inhabitants of the new country which had sprung into being in the midst of such chaos, naturally turned their minds to the question of a government for the infant nation. While the war continued external dangers insured the union of the states, and the articles of confederation served their purpose well enough; but as soon as quiet was restored their utter inefficiency was quickly felt. The desirability of substituting a general government, however, was not so self-evident in those days as it would be now. In fact, it is believed that a large majority of the citizens of the United States were at first opposed to a general government. In Rhode Island this majority included far the greater part of the inhabitants of the country towns, besides many of the inhabitants of the sea-ports. Generally, however, the sea-port towns were in favor of a central government, and none of them more so than Providence. Thus two parties sprang up, and a bitter contest was begun which was not to reach an end for many years.

As the defects of the existing government, if it could be called such, became apparent, the idea of a Federal Union gained more and more friends throughout all the states; but in Rhode Island the growth of the Federalist party was much slower than in most of the others. At the March session, 1787, the general assembly declined by a large majority to appoint delegates to unite with those from the other states for a revision of the articles of confederation. Nevertheless the convention was organized, and performed its herculean task in the course of that summer. The result of its labors was laid before the Rhode Island assembly at its October session, with the general request that the constitution reported might be laid before a state convention. Instead of this, the assembly referred the question of its adoption to the freemen in their several town-meetings. At the one held in Providence for this purpose only one vote was cast, and that was against adoption. Having thus declined to give their opinion, the freemen instructed their representatives by a large majority to vote for a convention to consider and decide the question, showing very clearly, in a long petition sent to the assembly, the folly of submitting such a matter to town-meetings. This mode of proceeding they rightfully said was inexpedient and improper, because it afforded no town a chance of hearing the opinions of the others, thus making a full and unbiased hearing of the case impossible, and because it was indecisive, since the United States would not count the votes of individuals or take a certificate thereof from the assembly, as well as for other weighty reasons.

The legislatures of all the other states called conventions, and before the 1st of June, 1788, eight out of the thirteen had adopted the Constitution in convention, notwithstanding the acknowledged existence at first of a large majority opposed to it. The general convention had agreed that it should go into operation when adopted by nine states, and that from that time the old articles of confederation should be considered as canceled. As one state after another adopted it an intense anxiety seized the community. The convention of New Hampshire was the next to meet after the 1st of June; it met and voted for adoption. The news of this auspicious event reached Providence on Tuesday, June 24, and was received with every expression of joy, for now Providence as well as Newport was strongly in favor of the Constitution. The bells rang nearly all day, salutes of cannon were fired, the schools were dismissed, and the students in college paraded the college-grounds in procession. It was resolved to celebrate the adoption of the Constitution and the anniversary of independence together on the 4th of July. The festivities on that occasion consisted of an address, a procession, and an immense dinner, for which an ox roasted whole made part of the provision. Everything went off finely, but the pleasure of the day came very near being marred by collision between the men of the country round about and the men of the city. The former conceived that the celebration was intended as an insult to the legislative authority and to the people of the state. They were the more ready to accept this view of the case from being angered by the successful reception the Constitution had met with elsewhere; so they determined to carry off the ox and break up the celebration. On the evening before the 4th, according to one story 1,000—according to another 300—men assembled near where the ox was roasting and waited there under arms. Luckily, a compromise was effected and the country people withdrew from their belligerent attitude on condition that the adoption of the Constitution should be given a less open and distasteful place in the toasts and other proceedings.

The new government of the United States under the Constitution was organized at New York on the 4th of March, 1789. This event rendered a session of the general assembly necessary about the same time to provide for the foreign relations and commerce of Rhode Island. The delegates from Providence received instructions from their constituents enjoining upon them "to use every legal and constitutional means in their power to obtain a legislative act for the calling immediately a convention". The phalanx of the majority remained unbroken, and at the following May session a strong petition from Providence was as unavailing as had been the endeavors of their delegates. Fearing that Congress would consider them only as foreigners, and subject them to duties as such, the freemen of the town held a town-meeting in August, and appointed a committee to draft a petition to Congress, asking their mercy in this respect. This, with a similar petition from the general assembly, met with a favorable reception, and the vessels and goods of the citizens of this state were placed for a limited time on the same footing with like property of the citizens of the United States. Finally, in January, 1790, the power of the anti-Federalists in the assembly weakened, and the resolution for a convention was carried. This body met at South Kingston in March, but adjourned to meet on the last Monday in May at Newport. On that day the freemen of Providence met in town-meeting and gave their delegates instructions "to enter a solemn protest against rejection or adjournment, in case either should occur". It was further resolved that in such case "the respective towns of the state have a right to make application to the Congress of the United States for the same privileges and protection which are afforded to the towns under their jurisdiction"; and the delegates were empowered to meet with those of Newport, and such others as might wish to join them, "for the purpose of consulting and advising such mode of application as they in their wisdom may think proper, and to carry the result of their deliberation into immediate effect". Fortunately the delegates had no occasion to use these extraordinary powers, for when the vote was put it was carried in favor of the Constitution by a majority of 2. The news reached Providence early Sunday morning. Patriotism again encroached on custom, as when the vote for calling the convention passed in the preceding January, and "the stillness of the Sabbath morning was broken by the joyful roar of artillery". The following Tuesday was devoted to festivities in commemoration of the event.

"The history of a town or other municipal corporation in a time of peace and prosperity," Judge Staples well says, "is embraced in a few words. The events which go to make up that history, the facts which constitute that prosperity, are too minute for observation." After Rhode Island entered the federal union and politics had ceased to absorb the whole time and thought of its citizens, few events occurred to break the enviable monotony of the growth and prosperity of Providence. In 1797 yellow fever made its appearance for the first time, with such violence as to cause it to be noticed in the journals of the day. It began its ravages in August, and in that and the succeeding month 36 persons fell victims to it. It was confined principally to a small part of the south end of the town. In 1800 the scourge came again to the same neighborhood, but it was not equally severe. On the 21st of January, 1801, the town was visited by fire. The alarm was given about 10 o'clock in the forenoon, and it was 3 o'clock in the afternoon before it was finally stopped by blowing up and pulling down several buildings to the leeward of it. It destroyed 37 buildings, valued at \$300,000. The weather was excessively cold and the wind high. For many years this was familiarly spoken of as "the great fire".

In the great national question that divided the American people in relation to the embargo, the non-intercourse, and the subsequent war with Great Britain, the citizens of Providence generally sided against the Executive of the United States. Their opposition to these measures never extended beyond petitions, resolutions, and remonstrances. The news of the declaration of war arrived on the 24th of June, 1812. It was received

not only as a great national calamity, as war always is, but as peculiarly calculated to excite sorrow and regret. The bells were tolled and the flags floated at half-mast. But two years later, when there was reason to fear that the enemy might visit the town, they forgot their differences in opinion about the causes or justice of the war, and turned out *en masse* for the execution of works of defense. Nevertheless, they welcomed the return of peace with every demonstration of joy.

In the history of Providence, the second crushing calamity occurred one hundred and forty years after the first, in the great gale of 1815, which swept away all the warehouses on either side of the river below the bridge, and destroyed a large part of the shipping in port and many important buildings. The tide rose nearly 10 feet higher than had ever been known before. Very quickly the Weybosset bridge gave way, and "vessels, lumber, buildings, and property of every description, in one crowded mass, were hurled with great velocity up the cove. Thirty-five vessels, including 4 ships, 9 brigs, 7 schooners, and 15 sloops, have been enumerated on its shores". In many cases the inhabitants of houses near the river were compelled to take refuge on the hills. Five hundred buildings in all were said to have been destroyed. It was estimated that the loss of property amounted to considerably more than \$1,000,000. But this disaster now appears as a blessing in disguise, since from it resulted the first permanent improvement in the place, the widening of Weybosset bridge, the laying out of South Water and West Water streets, Canal street, and the Cove basin.

In 1820 the population of Providence was 11,767, viz, on the east side of the river 6,627, including 705 colored persons, and the remainder on the west side. There were then but 9 foreigners not naturalized on the east side and 30 on the west. Before 1820 it was not uncommon to meet persons in the evening wending their way through the streets over the uneven sidewalks, making sure their steps by the flickering light of hand-lanterns. This year street-lamps were erected at the expense of the city, and in 1821 the sidewalk commissioners began their labors.

The increase of inhabitants, the consequent difficulty of holding town-meetings, and injudicious expenditure of public money, led before many years to a proposal for a change in the form of the municipal government of the town. In April, 1829, a proposition to secure a city form of government was agreed to in town-meeting, and in the following January the general assembly granted a city charter, but appended the provision that it should not go into operation unless the freemen adopted it by a three-fifths vote. Only 383 voted for adoption, while 345 voted against, and the measure was lost. The town government, having withstood this attack, would probably have existed some years longer had it not been for "the riot", as it is called, which occurred in September, 1831. On the 21st of that month a number of sailors visited Olney's lane for the purpose of having a row with the blacks living there. During the confusion a negro shot a sailor, whose companions in revenge tore down two houses and broke the windows of the rest. During the next day there was great excitement, and early in the evening a turbulent mob gathered. The sheriff took some of the more violent into custody, but they were rescued by the mob. The sheriff then requested military aid of the governor, and at midnight a regiment marched to his assistance, but the mob were not in the least intimidated by their presence and assaulted them with stones. Finding they could effect nothing without firing, and being most reluctant to do this, the soldiers withdrew. The mob then returned to their work of demolition and destroyed seven more houses, not dispersing until 3 or 4 o'clock the next morning. On the evening of the 24th a great crowd assembled in Smith street and its vicinity and soon began pulling down houses. The military were again assembled, and all attempts to disperse the mob proving ineffectual, and the riot act being read, they were ordered to fire. Four persons fell mortally wounded. The mob immediately scattered and peace was soon restored. Believing the whole evil to have arisen from the inefficiency of a town government, the freemen voted unanimously, at a town-meeting held October 5, to adopt a city form of government. November 22, 459 freemen voted for and 188 against the charter submitted by the general assembly, and on the first Monday in June, 1832, it went into effect.

Up to 1828 there was no graded-school system in Providence. Children of all ages were gathered in one school-room, and received instruction in all the studies taught therein. In June, 1828, a school committee of 21 persons was chosen, which proceeded at once to establish primary schools, giving each preceptress from 60 to 80 pupils, and paying them \$175 per year each. Children 4 years of age and upward attended these schools, and received instruction in reading, spelling, and the New Testament. Masters in the grammar schools then received \$500 per year. A few colored children had attended the public schools, but more had not, and in 1828 it was decided to give the colored people a school of their own. In 1835 an unsuccessful attempt was made to establish a free high school. In 1837 the Providence Association of Mechanics and Manufacturers presented to the city council a memorial written by George Baker, president of the association, which began with the assertion that "the public schools of the city are wholly inadequate to the wants of the community, and far short of what might be expected from its present opulence". "The middling classes," continued the memorial, "while taxed for the support of the schools, did not participate in the benefit of public instruction, because they knew that the crowded state of the schools would prevent proper attention to the pupil, and also that the small wages paid would not procure competent instructors." The memorialists then proceeded to clinch their statements as follows: "In evidence, it is found that the number attending public schools in this city in 1836 was 1,456; private schools, 3,235; attending no school, 1,604. Amount paid for public schools from June, 1835, to June, 1836, by the city, \$5,936 34;

by the state, \$1,524 65; total \$7,460 99. Amount paid for private school instruction, over \$20,000." As a remedy the memorialists suggested the formation of intermediate schools, and also the teaching of higher branches in the "writing-schools"; and they promised to "meet the increased expense with hearty encouragement". Long debate on the question followed in both branches of the city council, but no conclusion was reached. In the next city election the school question played a large part, and the reformers were victorious. At last, after much discussion and in spite of much opposition, in April, 1838, an ordinance was passed providing for the establishment of a high school, 6 grammar schools, and 10 primary schools. A committee was at once appointed to examine the school-houses. It reported that "all the old school-houses were unfit for use in their present condition, and were all either too small, too dilapidated, or too badly constructed to be worth repairing". The construction of 17 new school-houses was at once determined upon, and early in 1840, 13 of them were opened. With the establishing of the new system and the opening of the new school-houses, 1,000 scholars who had heretofore been in private schools entered the public schools; within a year all the school-rooms were crowded to excess and new ones had to be opened. The high-school building was completed in March, 1843, having cost (including land, grading, etc.) \$21,484 79. The annual cost of instruction per pupil in the high school in 1843-'44 was about \$14. This rate rose gradually till in 1870 it was \$26. In 1848 the cost of maintaining the schools was 30 per cent. of the whole city expenses. In 1858 the proportion had diminished to 14 per cent., and in 1878 to about 3 per cent. In 1869 the high school began to be crowded, and the question of a new building was brought up. In 1874-'75 land was bought at an expense of \$56,974 63. Ground was broken for the building in March, 1877. It was dedicated in 1878, having cost (including land, etc.) about \$200,000.

At the beginning of the troubles with the mother country which led to the independence of the United States, the colony of Rhode Island was largely engaged in commerce. While the small extent of the colony and the comparative unproductiveness of the soil had compelled the inhabitants to other than agricultural pursuits, the long line of sea-coast, and, above all, the Narragansett bay, running up into its very center, had induced them to turn their attention to trade, ship-building, and kindred occupations. We have seen that the Revolutionary war put a stop to commerce, and indeed to business of every kind in Rhode Island; but after its close came a revival in every branch of business, and the inhabitants of Providence quickly turned their attention again to commerce. The news of the ratification of peace was received there by a vessel direct from London (December 2, 1783). For the next few years, however, the situation of the various American states as independent commonwealths formed a great hinderance to the rapid growth of commercial prosperity, for in its sovereign capacity each state immediately proceeded to levy duties upon all merchandise imported from other states. The records of the Providence custom-house from the year 1785 to the year 1789 have a value in this connection. In those years the majority of arrivals were from ports in other American states. Quite a large number came from the West Indies, and occasionally a vessel sailed into the harbor from some European port. An import duty of 2.5 per cent. was collected on all goods imported from the West Indies or from abroad, and on manufactured articles from the other states. Country produce, flour, lumber, oil, fish, and all kinds of raw material from American ports were admitted free of duty; some time in the year 1787 the rate was increased to 5 per cent. The first importation of cotton of which record has been found was a bag of 90 pounds of "cotton wool", brought by the sloop "Fox", May, 1785, from "Hyspaniola". At the beginning of the year 1790 there were owned here "110 sail of 10,590 tons, exclusive of river craft". The statement was thus made in a petition to Congress, that "there is a greater number of vessels belonging to the port than to New York", and that "it is a place of more navigation than any other of its size in the Union". In 1790 the United States Congress passed an act dividing Rhode Island into the two customs-districts of Providence and Newport. Under this new condition of affairs business increased rapidly, and the trade with the West Indies and Europe assumed greater proportions. During the year 1791, 64 vessels arrived from foreign ports, the duties on the cargoes of which amounted to nearly \$80,000. Of these vessels, 53 were from ports in the West Indies, 1 from Canton, China, 1 from Cape Verd islands, and the remainder from European ports. The trade to Canton was important. The first direct arrival from that port was the ship "General Washington", July 5, 1789. A continuous trade existed for more than half a century, the last arrival being the ship "Lion", January 30, 1841. The cargoes brought from Canton were mainly of teas, and the duties were more in amount than those paid on cargoes from any other port. In some cases, indeed, a single vessel from Canton paid more duty than all the other vessels entered during the year. The principal imports from the West Indies and South America were rum, molasses, sugar, salt, and limes. From Europe came manufactured articles and clothes. The war of 1812 seriously affected the carrying trade. During its continuance the duties paid on merchandise imported in foreign vessels largely exceeded the amount paid on goods imported in American ships. As a small compensation some of the vessels captured from the British by privateers were brought into this port. In the year 1813 three prizes were entered; the duties paid on their cargoes amounted to \$28,127 49. In 1814 three more arrived, on which the duty was \$12,495 66. The ship "Governor Tompkins" arrived at Providence in October, 1819, with a cargo of 1,981 bushels of coal from Newcastle, England, on which a duty of \$99 20 was paid. During the early years of the century, and until 1831, nearly every Liverpool ship brought coal as part of its cargo. In July, 1831, a vessel arrived from Sidney, Nova Scotia, with a cargo of coal, and from that time forth the coal received in Providence from outside the United States came from Nova Scotia, principally from the port of Pictou. Since

the development of the Pennsylvania coal mines the Nova Scotia coal has been crowded out by protective duties. In 1820 the total of the custom-house duties amounted to \$118,439. At that time forty business houses were concerned in navigation, and 130 vessels belonged to the town. The foreign commerce of Providence has not increased in proportion with the growth of the city. In fact, there has been a very marked decrease. The growth of the business of the city has been in the direction of manufactures, and this has brought a large coasting trade to the port.

The first steamboat that sailed on the waters of the Providence river was one invented by Elisha Ormsbee, of Providence, in 1792. It was run by an atmospheric engine, and attained a speed of 4 or 5 miles an hour. After a few trials the engine was taken out of the boat. The first steamer embodying the invention of Robert Fulton which was seen in Providence was the "Firefly". This vessel came from New York, and arrived at Newport May 26, 1817, and at Providence two days later. For a number of years the travel between New York and Providence had been almost wholly engrossed by a line of packets. For four months the "Firefly" attempted to run an opposition to these, but competition was too much for her, and she was obliged to discontinue her trips. The packets kept their traffic without further trouble until the erection of the New London turnpike, about 1820. Although the roads had now lost their original corduroy character, yet even at this late day on most of them an occasional stump or rock would try the strength of the carriage and the patience of the passenger, and the comfortable cabins of the packets, had afforded a delightful relief after the discomforts of stage-coach traveling. The New London turnpike, however, was a good road, and at New London a line of steamboats for New York connected with the stage-coaches. The regularity and speed of these boats made a marked contrast to the comparative slowness and uncertainty of the packets, and they quickly came into favor, forcing the splendid packet-boats to become mere freight vessels. No steamer again appeared in Narragansett bay until the "Robert Fulton" came from New York in August, 1821. She brought an excursion party, and stopped at Newport, Bristol, and Providence. In the following year the Rhode Island Steamboat Company was organized. This company had two steamers, the "Robert Fulton" and the "Connecticut", which made regular trips between Providence and New York, touching at Newport each way. These vessels continued to run for a number of years, and new boats were constantly added to the line. As the New London boats had superseded the packets, so now in turn the Providence boats superseded in a great measure those running from New London, the through travel from Boston to New York being almost all diverted from the New London turnpike to the Providence steamers.

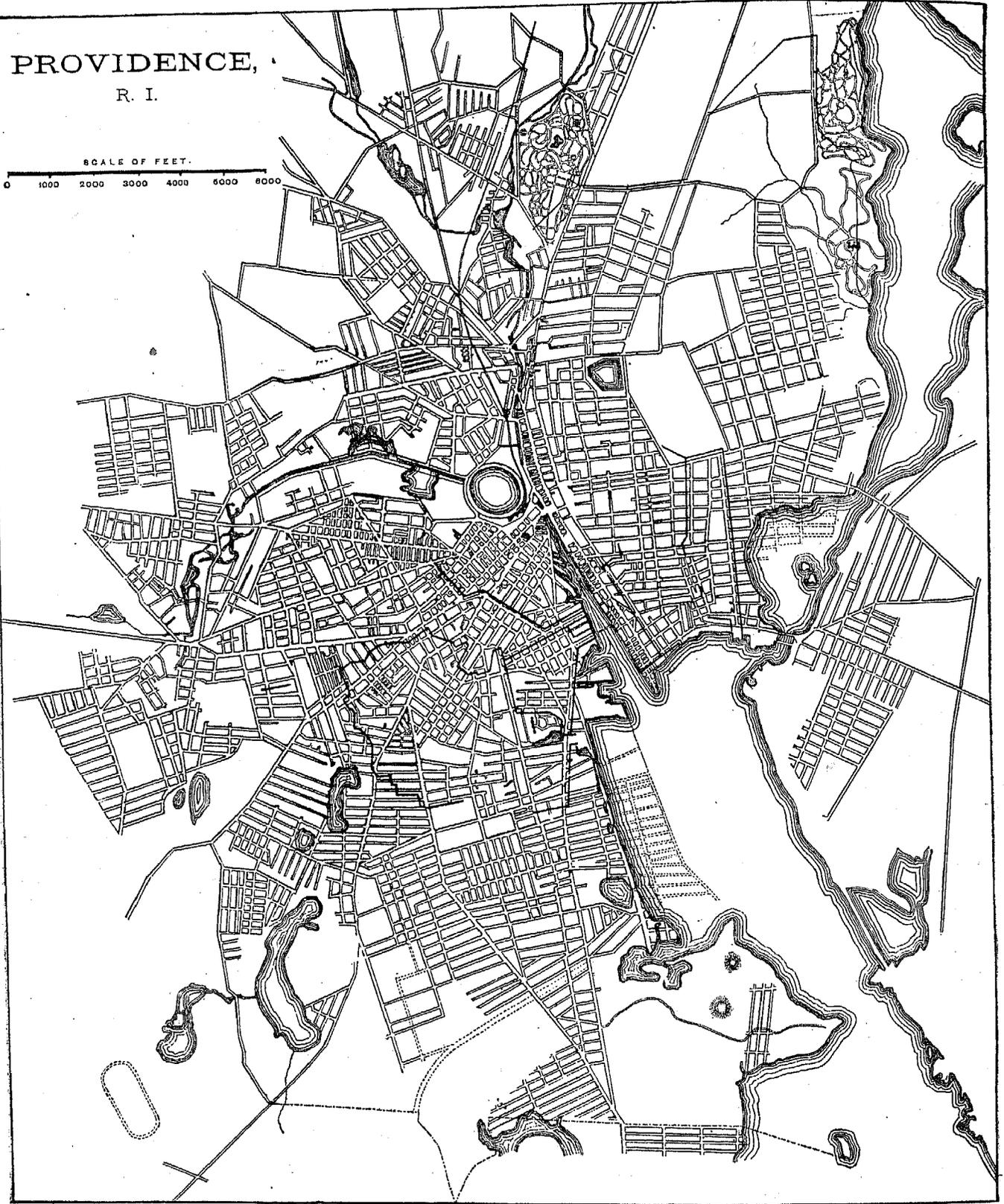
In those days, as now, a great deal of the travel and trade between Boston and New York passed through Providence. To accommodate this trade a large number of stages were run, making connections at first with the packets, and afterward with the steamers at Providence. These vehicles carried both freight and passengers, and made the journey rapidly by means of relays of horses. When the packets were succeeded by the steamers their business was largely increased. "During the summer of 1829 there were 328 stage-coaches a week to and from Providence, not counting the local stages running to points within a dozen miles of the city." The Boston and Providence railroad was completed in 1835, and the death-blow was given to the general stage-coach business between the two cities. In 1832 the Blackstone canal, tapping the business springing up along its entire length, and connecting Providence with the heart of Massachusetts, was opened. Six boats constituted a line for transporting merchandise and passengers, and were advertised to go through from Providence to Worcester in two days. The enterprise, failing to realize the expectations of the stockholders, was finally abandoned and the locks were broken up.

Previous to the Revolution, Providence was engaged in the whale-fishery to an extent almost equal to that of any other port in Rhode Island. The war interfered with the business, but did not destroy it, since after the peace, in 1785, record is found of the arrival of 6 vessels from whaling voyages. The amount of oil these vessels brought was small, but with one or two exceptions they also brought cargoes from the West Indies and other foreign ports. From that time very few vessels were fitted out until about the year 1820, when a slight revival of the business occurred. Between 1830 and 1840 a more marked revival took place, and in the year 1841 seven ships cleared from Providence on whaling voyages. For a number of years there were 9 vessels licensed to engage in the whale-fishery, belonging to Providence, but the number gradually diminished, most of the vessels being sold to New Bedford and the remainder being sold elsewhere or burned at sea, until not one remained. The last whaler was the ship "Lion", which sailed July 17, 1845, for the Pacific ocean, and was lost at sea November 30, 1856.

Soon after the peace of 1783 the inhabitants of Rhode Island turned their attention to manufactures. The first company in the state for the manufacture of cotton was formed in Providence in 1787. The object of the three men who formed the partnership was to make homespun cloth by hand. From an English model obtained in Beverly, Massachusetts, they constructed a spinning-jenny of 28 spindles, "which was first set up in a private house, and afterward removed to the market-house chamber in Providence". Soon after, they constructed a spinning-frame having 8 heads of 4 spindles each, and also a carding-machine, and had a loom built under the direction of Joseph Alexander, a Scotchman. All this machinery was crude and did not work well. The spinning-frame was removed to Pawtucket and operated by water-power, and soon after was sold to Moses Brown, of Providence. William Almy and Smith Brown, under the patronage of Moses Brown, with this machine and others they had purchased from various parties, carried on the manufacture in Pawtucket, but owing to the clumsiness of the machinery found it unprofitable. In 1790, when affairs were in this condition, Samuel Slater, "the

PROVIDENCE,
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SCALE OF FEET.
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acknowledged father of American manufactures", was engaged by Moses Brown to come to Pawtucket. He was a young Englishman who was skilled in the cotton manufacture, and had been in this country but a few months. Finding the machines of Almy and Brown too imperfect to work satisfactorily, he proceeded to construct machines after the English models. He had no plans or drawings, and so had to rely entirely on his memory; yet, after much labor and many discouragements, he finally succeeded. Before the end of the year he had started 3 cards, 1 drawing frame, and 72 spindles by water. This was the first thoroughly successful attempt to manufacture cotton in America with the machines invented by Arkwright and Hargreaves. Almy, Brown, and Slater formed a partnership, and carried on their business at Pawtucket for many years, and also built factories on other available sites in the neighborhood.

About 1788 John Fullem worked a stocking-loom in Providence, and in March, 1790, a calendering-machine moved by horse-power was put in operation. In 1794 Messrs. Schaub, Tissot, and Dubosque were engaged in printing calicoes here. They imported cotton cloth from the East Indies, and used wooden blocks with which to impart the desired figures and colors. The raw material for all these cotton manufactures was imported chiefly from Surinam (for the cotton plant had not been introduced to become the staple of the south Atlantic and gulf states). Notwithstanding that the manufacture first met with success in Pawtucket, Providence has reaped the greater benefit from it. Being the natural center of operations, it became the market where the buying and selling, the making and importing of supplies for the factories, were conducted. In 1809, 16 cotton-mills were in operation in Rhode Island, and 7 others erected but not at work. These 16 mills ran between 13,000 and 14,000 spindles, consumed about 12,000 pounds of cotton weekly, and employed upward of 1,000 looms, most of which were in private families and were operated by females during the hours unoccupied by their domestic concerns. The cotton was picked by hand by families in the neighborhood of the mills. In 1811 there were 17 cotton-mills in Providence and vicinity, and 5 in course of construction, and in adjoining towns in Rhode Island there were 8, and 5 being erected. In 1812, within a radius of 30 miles from Providence, there were 53 factories—33 in Rhode Island and 20 in Massachusetts. In 1815, in the same territory, there were 140 factories, with 130,000 spindles, producing cloth valued at \$6,000,000, and employing 26,000 persons. Since then the business has constantly increased in amount, until it has become of immense importance.

Between the close of the Revolutionary war and the close of the century, most of the business pursuits of the present day in Providence had their humble origin. Among the various manufactures carried on in the town in 1791, for instance, were those of hats, boots and shoes, leather, saddles and harness, nails, edge-tools, chocolate, silver and plated work, soap and candles, and paper. The census of Providence for 1820 returns 5 cotton-mills, 2 woolen-mills, 2 bleaching establishments, 3 dye-houses, 1 grain-mill, 1 oil-mill, 2 clothiers' works, 3 ropewalks, 1 gin distillery, and 4 rum distilleries. The Providence woolen-mill was built in 1813. In its day it was deemed the most perfect in New England, and very good fine broadcloths were made, which, during the war with Great Britain, in 1813-'14, sold as high as \$10 and \$12 per yard. The manufacture of silverware was begun soon after the Revolutionary war, and for a while grew slowly. In 1815 the value of the product amounted to \$300,000. It received a severe check in 1816-'17, but revived with new vigor in the following year, and in 1820, \$600,000 worth of jewelry was produced, employing the labor of 300 hands. Since then the growth of the business has been steady and rapid.

While a few of the industries that sprang up about the end of the last century have quite disappeared after a brief struggle for profitable existence, far more have been added. It was largely due to this great variety in its manufactures that Providence experienced less disaster during the years of financial distress from which the country has only just emerged than almost any other city in the Union. Moreover, all the periods of depression through which the city has passed have been at times of general crises, and none of them were due to local causes.

To sum up: Providence during the first century of its existence was an agricultural community; during the second, it devoted itself mainly to commerce; during the first half of the third, manufactures have absorbed all its energies. To-day Providence is eminently a manufacturing city and one of the great industrial centers of the United States.

For further information concerning the more recent history of manufactures, see tables under that head (pages 381 and 382) in the account of the present condition of Providence.

PROVIDENCE IN 1880.

LOCATION.

Providence, a port of entry, the second city in New England, the seat of justice of Providence county and one of the capitals of Rhode Island, lies at the head of Narragansett bay, about 35 miles from the Atlantic ocean, in latitude 41° 50' north, and longitude 71° 24' west from Greenwich. The highest and lowest altitudes above mean high water in Providence river are 202 and 3 feet, respectively. The altitude of the greater portion of the

southwesterly part of the city is between 50 and 80 feet, and that of the larger portion of the remainder of the city is between 50 and 150 feet, while the principal business part of the city is between 6 and 30 feet above mean high water.

HARBOR.

The northern arm of Narragansett bay, or, as it is called here, the Providence river, extends well up into the city, where it expands into a cove nearly a mile in circumference. The inner harbor below the "Cove" is 1.6 mile long and half a mile wide, with a least channel-depth from the sea to the wharves of 20 feet at mean low tide, or 24.7 feet at mean high tide. Below the inner harbor Narragansett bay stretches out for about 22 miles, with a width varying from 1 to 7 miles, and forms a safe harbor capable of floating from 4,000 to 5,000 vessels at one time.

It is the northern limit of important harbors for safe coastwise navigation south of the dangerous coast, shoals, and fogs of cape Cod. The most rapid tidal current in the harbor is from 1 to 1½ mile per hour. Lines of steamers ply between here and New York, Philadelphia, and Norfolk, while swift steamboats connect the city with Fall River and Newport.

RAILROAD COMMUNICATIONS.

The following railroad lines give Providence ample communication with the entire railroad system of the country:

The Boston and Providence railroad, between the points named.

The Providence division of the New York and New England railroad extends to Willimantic, Connecticut, there connecting with the main line from Boston to New York, while the Providence extension to Boston runs direct from Providence to that city.

The Providence and Springfield railroad, to Pascoag, Rhode Island, 23 miles distant.

The Providence and Worcester railroad, between the points named.

The New York, Providence, and Boston railroad (shore line), from Providence to New London, Connecticut, forming a link in the through route between Boston and New York.

The Providence, Warren, and Bristol railroad, down the east shore of the bay to Bristol, Rhode Island, connecting at Warren with Fall River and Newport.

The first five roads enumerated above use the Union depot, a spacious brick structure situated near the center of the city, on the south side of the Cove and fronting Exchange place.

TRIBUTARY COUNTRY.

Providence is essentially a manufacturing city, and the country immediately tributary to it is given up almost wholly to manufactures of various kinds, all water-power in the vicinity being utilized, and the mills being largely controlled by business men in the city. The products find a market here. The agriculture is almost entirely confined to market-gardening; and even this is carried on upon a smaller scale than in the vicinity of most large cities.

TOPOGRAPHY.

The following description of the geological and topographical characteristics of the site of Providence was furnished by Samuel M. Gray, esq., city engineer:

Soil and underlying rock.—In a report made during the year 1840, by the late Charles T. Jackson, M. D., to the committee having in charge the geological and agricultural survey of Rhode Island, is found the following description, which will apply at the present time: "Providence is based upon conglomerate rocks, alternating with carboniferous clay-slate or shale, the latter rocks occupying the lowest position in the series. In this formation are found occasional remains or impressions of vegetables, chiefly of the fern tribe of plants, and a few beds of anthracite of an unknown extent. The Craise conglomerate composes the upper or overlying stratum, and consists of various rounded or oval-shaped pebbles of the primary rocks, cemented together by an argillaceous paste derived from the decomposition and attrition of similar materials, the whole being compactly indurated, doubtless by heat of the subjacent rocks, and by the pressure of a formerly superincumbent ocean. This Craise conglomerate graduates into a very fine and compact rock, composed of fine particles of the same materials, which are so closely compacted as to give it sufficient firmness for the construction of buildings and stone walls of great durability. Upon this rock formation rest vast diluvial accumulations of the detritus of primary rocks, such as boulders of granite, gneiss, hornblende, and epidote rocks, and masses of iron ore, derived from certain localities to the northward." This soil in the easterly as well as the westerly part of the city is, in the main, quite fertile.

Variations of level.(a)—Providence is naturally divided into three sections by the Woonasquatucket, Mashassuck, and Providence rivers. The principal part of the eastern section is high land, which falls away very abruptly in a westerly direction toward the Mashassuck river, while its inclination northerly to the city line and southerly to

a "Elevation" signifies height above mean high water in Providence river.

the harbor is on the average quite gradual, as it is easterly to the cliffs bordering on the Seekonk river, which are from 20 to 50 feet in height. The surface is generally of a uniform character, and the elevations of its two highest points, which are located about three-quarters of a mile apart, are, respectively, 202 and 195 feet. Rather more than one-half of the southwestern section is above 60 feet in elevation, while there is a very large and nearly level tract which is above the elevation of 70 feet. The greater part of this high land recedes quite abruptly in a northerly direction toward the Woonasquatucket river, as well as easterly toward the harbor, while in a northerly direction to the Providence river and westerly to the city line the inclination is gradual. The surface, as a general thing, is slightly irregular, and the elevation of the highest point is 80 feet. The northwestern section, with the exception of a portion of its southern and southwestern border, which rises abruptly from the low lands near the Woonasquatucket river, rises as a whole in a northwesterly direction. The principal part of this section is above an elevation of 90 feet, while there is much of it that ranges from 150 to 190 feet in elevation, and its highest point is in the neighborhood of 201 feet. The surface, for the most part, is very uneven, being diversified by hills and dales.

Natural drainage.—Providence being situated at the head of a large bay, and having several rivers flowing through it, while others are adjacent to its borders, together with its great irregularities of surface, has unusual advantages in respect to drainage.

Relative elevation of the surrounding country.—The surrounding country northerly, for the most part, is very high as well as very undulating, and the elevation of quite a number of the hills, more especially those in a northerly and westerly direction, ranges from 200 to 570 feet.

Marsh, ponds, lakes, etc.—The marsh-land within the city limits, generally speaking, is between 3 and 4 per cent. of its total area, and there is more or less in the surrounding country. There are also numerous large ponds, etc., as well as quite a number of rivers within a radius of 5 miles from the center of the city, and their percentage of water-surface, including a portion of Narragansett bay, to the total area within this radius is, approximately, 9.

The surrounding country in a northwesterly direction, from north to west, is considerably wooded, though there are no dense forests; the remainder of the surrounding country is what is usually called open. The soil within this radius is, on the whole, quite fertile, and much of it may be classed among graywacke, hornblende rock, and Tertiary orders.

CLIMATE.

The following regarding climate was furnished by Mr. Gray, having been obtained from observations extending over a period of twenty-eight years, from 1832 to 1859, made by the late Professor Caswell:

Highest recorded summer temperature, 97°; average of the highest summer temperatures, 91.4°. Lowest recorded winter temperature, —15°; average of the lowest winter temperatures, —6.8°. Greatest range of temperature in any one month, 71°, and least, 24°; greatest range of temperature in any one year, 110°, and least, 87°. Average annual mean height of the barometer, 29.959", with 31.04" as the highest, and 28.61" as the lowest, recorded. The average annual rainfall is 40.7 inches. The ponds and reservoirs in and adjacent to the city, together with the waters of Narragansett bay and the ocean, undoubtedly have a modifying and beneficial effect upon the climate. The marsh-lands in and about the city probably have no very marked effect upon the climate. The adjacent hills and elevated lands have a tendency partially to protect the city from the northerly and westerly continental winds as well as the easterly winds that blow from the ocean. It may be concluded that the winds in this locality are quite variable, and that the prevailing direction is, from the 1st of November to the 30th of April, between the north and west, and during the rest of the year between the south and west. On the average the northerly winds throughout the year are the coldest and the southerly winds the warmest, the extremes of these being from the northwest and southwest. The driest winds are from the north, northwest, and west, while those that bring the most moisture are from the southwest, south, southeast, east, and northeast. The average of the observations shows the percentage of the number of days that the prevailing direction of the wind came from the four quarters of the horizon to be:

	Between N. and E.	Between E. and S.	Between S. and W.	Between W. and N.
Annually	20	8	34	38
From November 1 to April 30	20	6	28	46
From May 1 to October 31	21	10	39	30

The percentage of days in the year that were clear, variable, etc., or on which rain or snow fell, was: Clear, 37; variable or cloudy, 36; rain or snow fell, 27.

STREETS.

Providence has 135 miles of accepted and 125 miles of unaccepted streets, making a total of 260 miles. Of these, 9 miles are paved with cobble-stones, 7 miles with stone blocks, 3.08 miles with asphalt or other composition,

and 119 miles with broken stone and with gravel. Sidewalks are composed of different materials, as bluestone, flagging, brick, concrete, Portland cement, gravel, etc., and are usually made one-fifth of the width of the street, and have a rise of from one-fourth to one-half inch per foot from the curb-line to the property-line, according to the kind of material used for paving. Gutters are usually paved with cobble-stones or granite blocks, which are laid close to and 6 inches below the top of the curb, having a rise toward the center of the street varying from 0.02 to 0.03 foot per foot. A strip of bluestone 13 inches wide is sometimes used when the grade is slight. For gravel or broken-stone road the gutters are made of cobble-stones, and are from 2½ to 4 feet in width. The inside of the gutters is 7 inches and the outside 3 inches below the top of the curb. The center is depressed from 1 to 1½ inch below a line drawn from the inside to the outside of the gutter.

There being no city ordinance on the subject, the planting of shade-trees by abutting property-owners is practiced desultorily. The trees are generally placed about 1½ foot from the line of the curb inside of the sidewalks.

The construction and repair of streets are done by the day. In this work a steam stone-crusher and roller are used.

HORSE-RAILROADS.

The horse-railroads of Providence have 40 miles of track, 150 cars, 700 horses, employ 450 men, and carry during a year 7,700,000 passengers, at fares of 6 cents, or 20 for \$1. The lines radiate in all directions from Market square. December 6, 1865, all the horse-railroad companies operating lines within the city, with the exception of the Providence, Pawtucket, and Central Falls Company, were consolidated under the name of the Union Railroad Company, and in February, 1872, by purchase, the former company also came under the control of the Union Railroad Company. This company has been required to pay to the city annually the sum of \$2,700, and to pave and maintain in repair the portion of the streets between their rails and 1½ foot outside of each rail, in compensation for the use of the streets. This subject has been one of considerable contention between the city and the company, and it is now proposed to require the company in lieu of the above to pay a percentage (probably 1½ per cent.) on its gross receipts.

OMNIBUS LINES.

The omnibus lines use 20 vehicles and 86 horses, and employ 20 men, carrying annually 265,500 passengers. The rates of fare vary from 8 cents to \$1.25, according to distance.

WATER-WORKS.

The total amount charged to construction of the works on December 31, 1879, was \$4,679,355.99. Water was introduced in 1871 by the city. The supply is taken from the Pawtucket river, having a water-shed of about 192 square miles. It is first pumped into a reservoir of 51,000,000 gallons capacity, 180 feet high, and about 1 mile distant, which is connected with another reservoir located within the city limits, with a capacity of 76,000,000 gallons. From one of the mains connecting these two reservoirs the pumping-engines take their supply for the high service, and pump directly into the mains.

When the water-works were first built the water was pumped by a Worthington duplex engine of 5,000,000 gallons capacity, placed in a low wooden structure on the bank of the river; this is now known as the temporary pump-house. The permanent works consist of an engine-house of granite, iron, and brick, and other buildings. The stand-pipe rises through the center of the roof of the engine-house, is made of boiler-iron, and is in two parts; the inner shell, 5½ feet in diameter, is 184 feet high, and the outer shell, 8 feet in diameter, is 189 feet high. The pumping is done by a Cornish engine of 9,000,000 gallons capacity, having a steam-cylinder of 100 inches diameter. The pump makes from 6 to 7 strokes per minute, and displaces 695 gallons at each stroke.

The high-service works consist of a Corliss engine of peculiar pattern, built in 1873, and having a capacity of 5,000,000 gallons, and a Nagle's engine of the same capacity, built in 1876. These are run alternately for about a month at a time. The average pressure is about 70 pounds.

The low service is supplied by water from the first reservoir mentioned above, flowing by gravitation to the city, a distance of about 5 miles, and having an average head of about 140 feet.

The average daily consumption of water during 1879 was about 3,110,279 gallons; the greatest monthly average during the year was about 3,782,391 gallons, and the least monthly average was about 2,586,154 gallons. The average cost of raising 1,000,000 gallons 1 foot high, in 1878, was, considering only the cost of fuel, for high service, 6.6 cents, and for low service, 3.04 cents. The cost of maintenance of works for 1879 was \$60,925.05, and the income from water-rates was \$229,551.78. This city has probably had a larger experience with water-meters than any other in the country, and has a very accurate method of testing them. On December 31, 1879, there were in actual use 4,036 meters, classified as follows: Ball & Fitts piston, 3,258; Ball & Fitts rotary, 37; Worthington, 165; Fales, Jenks, & Sons, 576. Meters have been used from the first. During the year 1879 the average daily consumption per capita was about 31 gallons. There are 9,691 taps and 1,097 fire-plugs in use. There are 155 miles of mains, varying in size from 30 to 6 inches.

The water-works are managed by a board of water commissioners consisting of three members elected by the city council. The city furnishes service-pipe connections from the main to inside the curb-line, and all work inside the stop must be done at the expense of the taker by a plumber licensed by the commissioners, the commissioners reserving the right to decline to connect with any plumbing that has not been done, or else inspected and approved, by one of their licensed plumbers. There must be no concealment of the purpose for which water is used, and persons allowing any unnecessary waste are liable to have the water shut off from their premises. When consumers desire to pay by meter instead of a schedule rate, they can, at their own expense, have meters set that have been approved by the commissioners, the commissioners reserving the right to put in a meter, at the expense of the city, and charge by measured water instead of being governed by a schedule rate. When a meter gets out of order and fails to register, the consumer is charged at the average daily consumption shown by the meter when it was in order. The commissioners, their agents and assistants, may enter the premises of any water-taker between 8 o'clock a. m. and 6 o'clock p. m. to examine the pipes and fixtures, the quantity of water used, and the manner of its use.

GAS.

The gas-works are not owned by the city. The average daily production of gas is 713,000 cubic feet, for which the charge per 1,000 feet is \$2 20. For the gas consumed by its 2,647 street-lamps (December 31, 1879) the city pays \$1 95 per 1,000 feet. The income from meter-rates is \$483,000.

PUBLIC BUILDINGS.

The city's municipal buildings are: City hall, used only for municipal purposes, cost \$1,040,000; 54 school-houses, 24 fire and police stations, 3 pumping-houses, 6 cottages, etc., used for water and sewer departments, and 18 other buildings used for various purposes. The total cost of municipal buildings belonging to the city is \$2,834,556 63.

The post-office and custom-house are located together in a massive granite building. The county court-house is also a handsome building. The state-house, built in 1762, is a small brick building.

In addition to the above, the city of Providence contains a number of institutions for various purposes, which are worthy of note; as: Brown university (Baptist), comprising 6 handsome buildings, is located on the heights in the eastern section of the city. Butler hospital for the insane occupies large and imposing buildings on the west bank of the Seekonk river. The Dexter asylum for the poor is a large brick edifice surrounded by 39 acres of land. The Rhode Island hospital has handsome buildings erected at a cost of \$450,000. The reform-school is a large building in the southeastern part of the city, and near it is the home for aged women. The colored orphan shelter, the children's friend society, the Catholic orphan asylum, the Providence nursery, and the home for aged men are charitable organizations whose aims are indicated in their names. The state prison, workhouse, house of correction, almshouse, and state hospital for the insane are at the state farm in Cranston, 4 miles west of Providence.

In front of the new city hall is the soldiers and sailors' monument, erected by the state in memory of those of its citizens who fell in the civil war. It is composed of a base of blue granite, with 5 bronze statues. It was designed by Randolph Rogers, and cost \$60,000. On the monument are inscribed the names of the soldiers whose memory it was erected to honor, 1,741 in number.

Providence has 82 churches, and a fair proportion of literary, scientific, and educational societies and libraries.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The total area of Providence's public parks is 130 acres. The one large park is *Roger Williams Park*, situated in the southwesterly part of the city, comprising 103 acres of land of a naturally diversified character, and with land and water advantages unsurpassed. It came into possession of the city in November, 1871, by will of Miss Betsy Williams, a descendant of Roger Williams, as a public park, and as a monument to him. For the construction and improvement of this park \$75,000 have been expended, and \$6,000 are annually spent on its maintenance. It is visited annually by 400,000 persons on foot, by 60,000 in carriages, and by 3,000 on horseback. The park was designed by E. W. S. Cleveland, esq., of Chicago, from whose report, accompanying the design, and dated September 14, 1878, the following is taken:

It will be seen that my efforts to render it attractive have been confined to a tasteful development of its natural features, and such a disposition of the drives and paths as should give easy and graceful access to the different parts. The limited size of the area and the peculiar character of its topography render it impossible to secure some of the objects which are desirable in a public pleasure-ground of a large city, except at great cost of grading and the destruction of some of its most attractive natural features. The natural growth of forest trees on various parts of the tract should be regarded as of almost inestimable value, and no efforts should be spared to secure their preservation and development. * * * I have purposely avoided the introduction of elaborate artificial ornamentation, which might indeed give a much more attractive appearance to the design, because I do not deem such decorations essential to the main objects in view, and because they can not be had of a character worthy the place, except at a cost which, if it can be commanded, can for the present

be devoted to much better uses on the park itself. * * * With the growth of its attractive beauty * * * will be the increased demand and consequent value of real estate in its vicinity, and with the increased value of taxable property will come the means for improvements of a more costly nature, which at present would be inconsistent with proper economy and incongruous with the present surroundings. The time for the introduction of costly works of art can not be forced by the present use of cheap imitations.

The only other park of size is *Field's Point*, of less than 30 acres, having salt water on two sides and admirably situated for health and recreation. There are also several other small public squares.

The parks are controlled by a joint standing committee of the city council, acting through a superintendent of parks appointed by the said committee.

PLACES OF AMUSEMENT.

There are 3 theaters in the city, viz, Low's Grand opera-house, Providence opera-house, and the Theater Comique, with an aggregate seating capacity of between 3,500 and 4,000. Low's Grand opera-house was built in 1877 as a public hall, and remodeled into a theater in 1878. It is constructed of brick and iron, trimmed with olive-stone and white brick. The stage is 36 feet deep and 100 feet wide. The seating capacity is 1,300. The Providence opera-house is a cozy and well-constructed theater, 111 feet long, 83 feet wide, with a stage 45 by 75 feet. It has 2 galleries with a total seating capacity of 1,500. It is of brick with a modest exterior; it has 3 exits. The Theater Comique is a small theater, the performances in which are chiefly of the "variety" class. In addition to these there are over 20 public halls which are used for lectures, concerts, dances, etc. The Amateur Dramatic hall is a small hall with a stage and scenery adapted to private entertainments. The building was erected in 1833 for a church, and served the Power Street Methodist Episcopal society nearly forty years; it was afterward used as a riding-school, and since 1876 it has been leased by the Amateur Dramatic club. Music hall seats about 2,000. Infantry hall is situated in Infantry building, erected in 1879 by the Providence Light Infantry association. The building is a handsome brick structure, with olive-stone trimmings, and capped by a tower. On the second and third floors are business-rooms, 10 company-rooms, a supper-room, and the veterans' room; and in the rear of these is the hall, 120 by 75 feet, with a gallery on three sides, and a seating capacity of over 2,000. The Providence roller-skating rink occupies a wooden building built in 1879, 210 feet long and 101 feet wide. Excepting the suitable ante-rooms, offices, etc., at one end, all the space is taken up by a large hall, with galleries on two sides, and in the center a rink 145 by 73 feet. There are two concert-gardens: The Sans-Souci, established in 1878, has a pavilion seating 1,100 persons, and is surrounded by grounds covering half an acre. Theatrical performances are given here nightly, and the place is well patronized, but no liquors or beer are sold on the premises. The Park garden, established in 1878, has a pavilion seating 900 persons, and is provided with a stage, etc., for theatrical performances in the open air, with seats to accommodate 3,000 persons. Exhibitions are given nightly, and the garden is well patronized. Like the Sans-Souci, neither liquor nor beer is allowed to be sold here.

There are also near Providence, and along the shores of Narragansett bay, gardens, etc., that are much resorted to during the summer months.

DRAINAGE.

The present system of sewerage was begun in 1871, and built by J. H. Shedd, C. E., under direction of the board of water commissioners. At that time there existed 8.57 miles of old stone sewers and drains used to a considerable extent for house-drainage. None of these have been incorporated into the present system, but some are still used for the discharge of surface-water only. Private drains formerly discharging into them have been relaid from the curb-line to the new sewers. The sewerage system adopted and begun in 1871 was based on the supposition that 30½ cubic feet of water per minute per acre drained would need to be carried away in the sewers without entirely filling them, and sizes were fixed accordingly. This corresponds to a rainfall of half an inch per hour actually entering the sewer. In 1879, after 42 miles of sewers had been built on this plan, the water commissioners say, in their annual report, page 23:

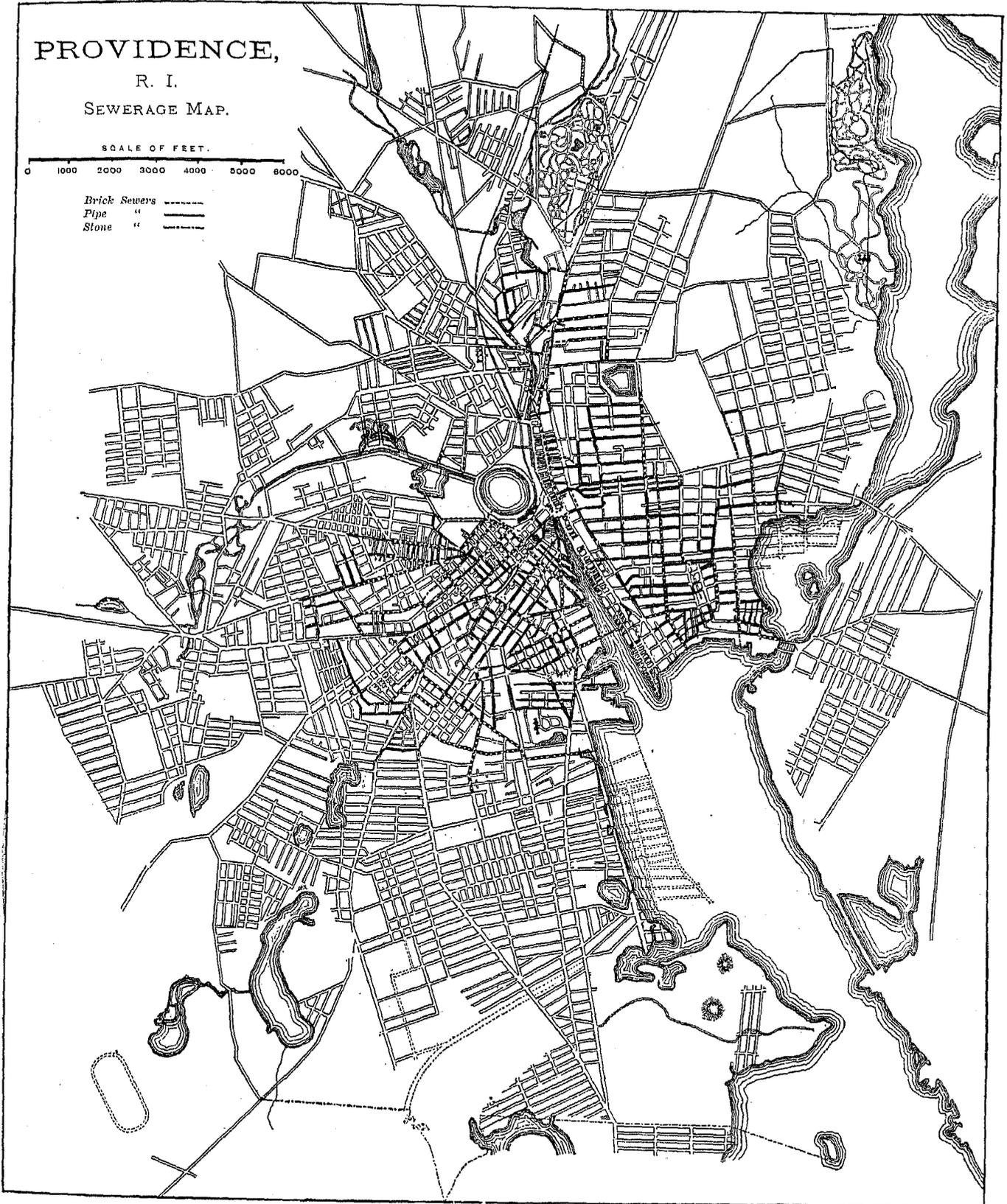
The commissioners have, during the past year, by advice of the city engineer, constructed all sewers in new districts to carry an influx of not less than 1 inch rainfall per hour in addition to sewage; and inasmuch as the cost does not increase in proportion to the capacity, the commissioners think, in view of the frequent overflow in various parts of the city, it is not prudent to build of less size. When the commissioners have constructed extensions and laterals to sewers, they have laid such sizes as would conform to the trunk-sewers already built.

By reference to the accompanying sewerage-map, it will be seen that the Providence river divides the city into two parts, and affords an outlet for the surface-water from the steep banks on each side. On the West Providence side the surface rises from the river to a height of 70 feet. The part supplied with sewers has an area of about 800 acres, and lies in compact form nearly in the shape of a circle, with a diameter of about 7,000 feet. To avoid the concentration of water in the lower lying district, an intercepting sewer is laid between the highest and lowest ground, cutting off the drainage above it and conveying it to a point farther down the river. The elevated and more distant portion of the district is drained by a brick sewer in Pearl street discharging into the harbor about half a mile below Point Street bridge. The area drained is thus divided into districts comparatively small

PROVIDENCE,
R. I.
SEWERAGE MAP.

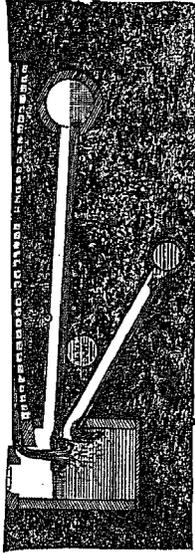
SCALE OF FEET.
0 1000 2000 3000 4000 5000 6000

Brick Sewers -----
Pipe " -----
Stone " -----

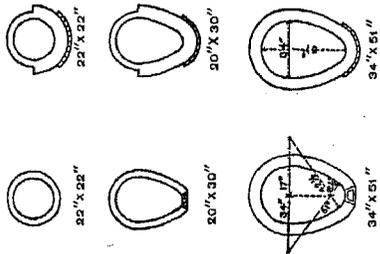


PROVIDENCE, R. I.

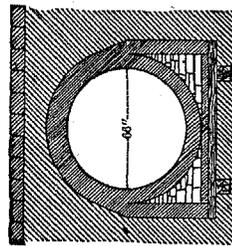
Cross-section of Washington Street, showing Storm Sewer, Regular Sewer and Catch-basin, with method of throttling and connecting.



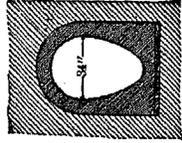
Section of Sewers.



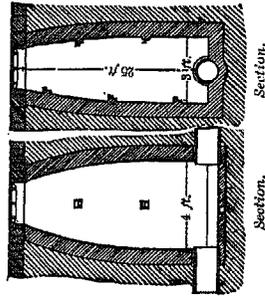
Section of Dorrance St. Sewer.



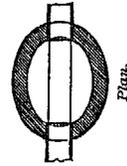
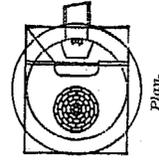
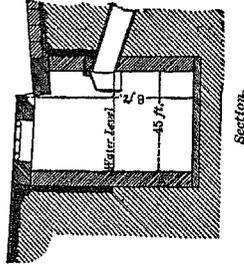
Section of Point St. Sewer.



Manhole.



Catch Basin.



and requiring sewers of not very great size. The main sewer along the uplands in Pearl and other streets is 36 by 54 inches, increasing to 66 by 72 at the outfall. The intercepting sewer already referred to in Chestnut street is about 1 mile long, and is 36 by 54 and 40 by 60 inches. The low-grade sewer along Dorrance and Cove streets is circular and 66 inches in diameter throughout its entire length of 4,000 feet. It will eventually be extended into a larger area not yet sewered. The district drained by this sewer and its branches is more flat than other parts of the city, and has already experienced considerable inconvenience from overflows. An 18-inch sewer in Washington and Acorn streets has proved inadequate, and was supplanted in 1878 by a storm-water sewer built near the surface and discharging into the Cove basin. The accompanying sketch illustrates the arrangement and the method of connecting catch-basins with both sewers in such a manner that the water from light rains passes into the ordinary sewer until its inlet capacity is reached, when the surplus from heavy storms goes into the storm-water sewer. In this part of the city, also, an old stone drain in Sabine street, which was cut off and abandoned as unnecessary when the new sewers were built, has again been brought into use; several openings to it that had been closed were re-opened and a number of catch-basins were furnished with double connections, the one leading to the common sewer being throttled so as to admit only so much water as the sewer is able to carry. The 66-inch sewer in Cove street was also relieved by an overflow into this old stone drain discharging into the Cove basin.

On the east side of the river the area drained occupies a long narrow belt rising to a height of 140 feet or more in a distance of from 1,000 to 1,500 feet from the river. Several brick and stone sewers in this district and in North Providence discharge into the river at distances of from 7,000 to 10,000 feet from its mouth. The most important sewer in this part of the city is in North Main street, discharging near the foot of College street into the river nearly a mile from its mouth. This is one of the oldest sewers in the city; it is 2,500 feet long, 22 by 33 and 28 by 42 inches in size, and has a rate of fall of 2.8 per 100. Laterals from the hill-side streets discharge into it, having an exceedingly rapid fall; for instance, the mean grade of ten of these streets is 13.35 per 100; on one sewer it is 14.47 per 100, on one 17.86, and on one 24.40 per 100. There are three other main sewers of considerable importance in East Providence. The largest is in a slight depression, beginning near the Hope reservoir and extending down Thayer and Brook streets about 6,000 feet, to tide-water in the harbor. It is 26 by 39 inches in size, and enlarges to 48 inches in diameter at the outfall, and has a rapid descent. The others are somewhat smaller, and discharge into tide-water at points more remote. Nearly all the streets sewered both on this side and in West Providence are provided with 12-inch pipes or small brick sewers, on account of the rapid rate of fall.

The depth of sewers below the surface is measured to the crown of the arch on the inside, instead of following the usual practice of measuring to the bottom of the sewer. This is done because damage from backwater of overflows is likely to occur only when sewers are full, and at such times it is of little consequence where the bottom of a sewer is, as there can be no drainage below the surface of water running in it. The depth was first established at 8.5 feet below the curbstone, and 10½ miles were laid according to this rule. This was changed in 1874 to 10 feet and in 1875 to 11 feet. The rate of fall is usually very great. That of main lines has been limited to 1 in 1,000 as the least allowable inclination. This is used in the low-grade sewers in West Providence 66 inches in diameter. The rise and fall of the tide is 5 feet, and, with outfalls 1 foot above mean low tide, this permits an ebb and flow in some sewers for a considerable distance.

The materials used for sewers are purchased by the city and kept in store for use. About 3,750,000 plain bricks were used prior to 1874 and nearly 1,000,000 wedge-bricks. These are made to order of shapes suitable for use in small sewers and in inverts where the radius of curvature is small. Wedge-brick are of two patterns: In the narrow wedge the outer edge is half an inch, and in the wide edge 1 inch wider than the inner edge. The inner and outer surfaces are curved to the proper radius. Bricks of this form make more stable work and require less cement. The additional cost is about \$1 per 1,000, which is considered to be small when compared with the advantage gained. By the use of these brick, sewers are built as small as 20 inches, and sometimes 16 inches, diameter. Pipes used are both the Scotch and American vitrified stoneware, and are usually 12 or 15 inches in diameter. Only 1,128 feet of 18-inch pipe sewers have been laid, and all of these prior to 1874, while there are 10,588 feet of 18-inch and 4,059 feet of 16-inch brick sewers. Hollow invert blocks are used in wet ground for the bottom of sewers, for convenience in construction and to avoid turning running water through the fresh-laid masonry. They are 2 feet long and of two patterns, to suit either single- or double-ring sewers. Junction pieces for house-drains or lateral sewers are laid in brick sewers. They are 2 feet long and are furnished with the ordinary shaped bell at one end, and are so beveled at the other as to form when placed an angle of 30° with the axis of the main sewer.

The cross-section of sewers less than 24 inches in diameter is circular. Those above this size are egg-shaped, the ratio of width to the height being as 20 to 30. Outfalls are placed 1 foot above mean low water, and are fully exposed at low tide. The means of ventilation provided is by holes in the manhole covers. Both flushing and cleansing by hand are required in stone sewers. In 1877, with 40.6 miles of sewers, 6.5 miles were cleaned and 154 cubic yards of sediment removed. In 1878, with 43 miles of sewers, 12¾ miles were cleaned and 328 cubic yards removed. The cost of the work is not known, no separate account having been kept.

The cost of sewers is assessed upon abutting property at the rate of 60 cents per foot front of lot and 1 cent per square foot of area to a line not exceeding 150 feet from the street nor over half way to the next street. The

city pays the balance. The total length of sewers constructed to January 1, 1880, was 28.61 miles of pipe and 14.35 miles of brick sewers, making in all 42.96 miles. Of this, 81 per cent. consists of sewers not more than 2 feet in diameter. The cost of sewers to the same date was \$1,468,224 for construction and \$56,000 for maintenance and repairs, making an average cost of \$34,176 per mile, or \$6 47 per foot.

In 1879, under the direction of the national board of health, an investigation was made by George E. Waring, jr., as to the dry-weather flow of sewers, with a view of determining the size of sewers necessary to carry house-drainage exclusive of storm-water. One of the sewers tested was the Pine Street sewer in Providence, concerning which the following report was made:

The total length of this sewer is 1,391 feet. Its grade varies from 0.86 per 100 to 4.18 per 100. The district which it drains contains 60 houses, all of which are residences, and 41 of which are connected with the sewer. The gauging in this, as in all other cases, was taken at the time of the greatest use of water of the week, *i. e.*, on Monday morning between the hours of 8 and 11 a. m. The depth of flow was measured at intervals of 15 minutes at the time of the maximum flow of the week. The population tributary to the sewer numbers 267. The result showed that the greatest flow of sewage reached a depth of 0.4375 inch in the 12-inch sewer. In the reducer, which brought the current into a channel having a radius of 3 inches, the greatest depth of flow was 0.875 inch. A pipe 1.84 inch in diameter, running full at the same velocity, would carry the greatest flow of sewage from this population of 267.

Statistics of the length, size, and cost of sewers, and other information, are given in the accompanying tables:

TABLE I.—Size, length, and date of construction of sewers.

Material.	Size in inches.	YEAR WHEN CONSTRUCTED, AND LENGTH OF SEWER.										Total.
		1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	
		Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.	Feet.
Brick	60 by 72							530.64				530.64
Do	40 by 60			2,354.46								2,354.46
Do	38 by 57			495.20			2,395.95					2,891.15
Do	36 by 54			3,095.33								3,095.33
Do	34 by 51	594.50										594.50
Do	32 by 48				410.85							410.85
Do	30 by 45				98.00		2,170.35	647.78				2,916.13
Do	28 by 42	1,599.11			2,190.67							3,789.78
Do	26 by 39		242.48	374.97	984.70							1,602.15
Do	24 by 36			1,537.66	631.20	2,181.40	368.80					4,710.15
Do	22 by 33	1,412.89			1,217.79	1,070.21	1,268.42		70.70			5,040.01
Do	20 by 30			435.17	3,187.27	993.40	1,628.02					6,244.76
Do	18 by 26								142.00			142.00
Do	16 by 24	482.00										482.00
Do	66 diameter			1,562.60			2,462.05					4,025.55
Do	54 diameter						250.00					250.00
Do	48 diameter				1,314.70		233.02	100.00				1,707.72
Do	40 diameter							568.25				568.25
Do	36 diameter							195.80				195.80
Do	30 diameter							349.17				349.17
Do	24 diameter			3.00	261.89	895.87		284.74	483.50			1,929.00
Do	22 diameter		891.13	813.11	672.62	3,196.32	255.13	1,663.30	132.83			7,034.44
Do	20 diameter		245.98	2,072.00	1,952.41	3,255.08	1,781.48		371.72			9,079.27
Do	18 diameter		255.40	1,507.18	3,507.32	4,526.74	429.38	361.90				10,587.02
Do	16 diameter		455.22	2,202.39		1,401.45						4,059.06
Vitrified pipe	18 diameter	46.00	27.00	299.55	825.71							1,128.26
Do	15 diameter	111.00	1,402.98	1,819.63	7,220.95	4,565.00	2,418.59	593.90	1,703.10	261.25	615.60	20,717.00
Do	12 diameter	1,828.75	8,253.23	17,602.68	39,199.38	33,037.28	8,680.17	11,992.26	7,787.95	1,262.77	245.40	129,799.87
Do	8 diameter			210.30								210.30
Total feet		6,074.25	11,773.42	30,324.23	63,675.55	55,123.35	24,403.16	17,142.74	10,751.80	1,524.02	861.00	227,653.52
Total miles		1.15	2.23	6.88	12.06	10.44	4.62	3.24	2.04	0.29	0.16	43.11
Catch-basins		71	83	281	508	380	144	128	108	5	5	1,713
Manholes		84	115	346	700	613	233	163	110	19	9	2,342
Lampholes					19	91	34	12	4			160
Private drains		28	39	261	522	576	449	383	308			2,566

TABLE II.—Cost of sewers.

Material.	Size in inches.	Length in feet.	MANHOLES.		CATCH-BASINS.		COST PER FOOT OF SEWER.				COST TO EACH FOOT OF SEWER.		Remarks.
			Number.	Cost of each.	Number.	Cost of each.	Labor.	Materials.	Tools and sheeting.	Total.	Of manholes.	Of catch-basins.	
1878.													
Pipe	12 diameter	419.48	5	\$14 31	1	\$36 16	\$1 26	\$0 92	\$0 11	\$2 29	\$0 17	\$0 00	Coarse gravel; wet.
Do.	12 diameter	1,012.57	10	11 83	2	16 26	80	1 06	06	1 02	12	03	Sand and gravel; dry.
Do.	12 diameter	444.10	5	11 52	3	23 04	1 40	1 35	08	2 83	13	16	Hard, and 150 cubic yards of rock.
Do.	12 diameter	461.50	5	12 54	1	16 22	80	1 07	07	1 05	14	04	Sand.
Do.	12 diameter	330.12	4	14 86			09	1 03	06	2 08	13		Gravel, macadam surface; dry.
Do.	12 diameter	501.50	4	10 49	2	21 30	83	1 10	06	1 09	08	08	Fine sand; dry.
Do.	15 diameter	800.00	8	10 49	6	21 30	93	1 32	07	2 32	10	15	Do.
Brick	18 by 26	142.00	1	10 50	2	21 30	1 73	1 57	13	3 43	07	30	Fine sand; dry. Tide-water.
Pipe	12 diameter	700.90	7	10 63	2	17 92	74	03	05	1 72	11	05	Coarse sand; dry.
Do.	12 diameter	420.00	5	30 51	4	44 40	3 61	1 73	21	5 55	36	42	Hard; 258 cubic yards rock.
Do.	12 diameter	267.20	2	18 20	2	32 69	1 56	1 08	09	2 73	14	24	Hard clay and gravel.
Do.	15 diameter	042.40	6	15 79	7	39 00	1 53	1 42	09	3 04	15	43	Do.
Brick	24 diameter	483.50	5	19 82	4	13 16	2 30	1 58	17	4 11	20	11	Very hard clay and gravel; wet.
Pipe	12 diameter	515.08	6	18 96	2	26 63	90	1 01	07	2 07	16	10	Loam and sand; dry.
Do.	15 diameter	220.05	2	10 40	2	26 48	1 09	1 40	08	2 48	09	24	Do.
Brick	20 diameter	371.72	3	10 96	2	25 21	1 18	01	08	2 17	09	13	Coarse sand; dry.
Do.	22 diameter	132.83	} 2	16 30	2	41 90	2 30	1 59	20	4 18	16	42	Coarse sand; wet on bottom.
Do.	22 by 33	70.70											
1870.													
Pipe	12 diameter	504.00	6	10 77	2	14 05	89	83	10	1 82	13	06	Sand and gravel; dry.
Do.	12 diameter	102.20	3	10 80			87	75	10	1 72	17		Sand and clay; dry.
Do.	12 diameter	103.32	2	15 86			1 46	86	11	2 43	31		Fine sand, clay, and water.
Brick	18 diameter	55.00					1 32	37	09	1 78			Fine sand and clay; dry.
Pipe	15 diameter	201.25	4	10 95	1	17 21	99	1 11	09	2 19	17	07	Do.
Do.	12 diameter	463.25	4	12 71	2	20 29	1 06	87	09	2 02	11	09	Do.
1880.													
Pipe	15 diameter	615.00	6	23 33	2	21 35	1 57	1 18	11	2 86	23	07	} 18 inches frost with very hard marl, gravel, and rock.
Do.	12 diameter	245.40	3	25 91	3	23 00	2 55	1 18	11	3 84	32	20	

CEMETERIES.

No report on this subject was received from the city authorities.

MARKETS.

There are no public or corporation markets in Providence. A portion of two or three streets is used under a few restrictions by vendors of vegetables, etc., but with no great regularity.

SANITARY AUTHORITY.

The chief sanitary authority of Providence is the board of aldermen, which is *ex officio* the board of health. The ordinary annual expenses of the board are about \$14,000, incurred mostly for the salary of the superintendent of health, the removal of swill and offal, water for drinking-fountains, collecting and recording vital statistics, clerk-hire, coroner's inquests, etc. Whether during or in the absence of epidemics, the authority of the board, both as to measures and as to the expenditure of money to secure the public health, seems to be practically unlimited. The superintendent of health is elected by the people, and is the medical and sanitary adviser of the board. Usually his powers are advisory only, but in some cases, and particularly when epidemics exist, he has much power for the removal of nuisances. No regular health officers or inspectors are employed, but the police force is freely used at all times, as are occasionally medical and other inspectors. In the spring of the year inspections are made of the city generally, with special investigations as needed, and at all times examinations of reported nuisances are made and corrected in the way deemed best under the circumstances. All nuisances arising from defective house-drainage, privy-vaults, cesspools, sources of drinking-water, etc., come especially within the scope of the board's correction. The board allows no one to remove garbage or swill without its license, issued for the purpose. It also controls the burial of the dead, forbidding interments in any other than certain-named cemeteries, and prescribing the depth of grave, hours of burial, etc.

Concerning the pollution of streams and harbors, the statement is made that "the regulations forbid throwing filth into streams and harbor; but the streams passing through the city are hopelessly polluted before they reach the city, and in the city all the sewers empty into them. State legislation is urgently demanded before city legislation will be of any use".

INFECTIOUS DISEASES.

Small-pox patients are removed, when possible, to the pest-house, which is situated on a high bluff overlooking the harbor, but well removed from every other building; but if they are not removed the "small-pox handbill" is posted on the house, at which, when necessary, a guard is placed. Scarlet-fever patients are not, by public authority, isolated or quarantined in any way. The board takes cognizance of the breaking out of contagious diseases in public and private schools. It has no general rules, but makes special ones for the government of each outbreak. Vaccination is not compulsory, but a certificate of vaccination is required before one can enter the public schools. Every Saturday, vaccination is performed at the public expense. The superintendent of health, who is also city registrar, has reported to him zymotic diseases by physicians, marriages by clergymen, and deaths by undertakers; births he ascertains by semi-annual census from house to house. Of all the foregoing an accurate record is kept, as has been done for the past twenty-five years.

REPORTS.

The board of health, as such, makes no report; the superintendent of health reports, from time to time, as occasion requires, upon special and general subjects, and, as city registrar, makes full annual reports upon births, marriages, and deaths.

To the foregoing information Mayor Doyle adds the following note:

The need of a board of health elected with reference to its duties, and able to give the necessary time to them, is felt in the city of Providence; and by request of the present superintendent of health, and on recommendation of his honor the mayor, the subject of the organization of such a board has been formally and officially brought to the attention of the city council.

MUNICIPAL CLEANSING.

Street-cleaning.—The streets of Providence are cleaned by the city with its own force. On three or four of the principal streets a sweeping-machine is used, but the rest of the cleaning is done by hand. A portion of the paved streets are cleaned daily, "the remainder when necessity compels". The cleaning is reported, when done, to be done thoroughly. The ordinary annual cost of this work is about \$13,000. The cost of removing snow and ice is in addition to this, and varies greatly with different seasons; in any case, in streets traversed by horse-cars, the expense of this removal is chiefly borne by the horse-railroad company. Street-sweepings are used for fertilizers; other cleanings are used for filling waste lands. "Providence has the reputation of having clean streets. Being built on hills, the rainfall is an efficient agent in cleaning the streets of the city."

Removal of garbage and ashes.—Garbage is removed by the city, the work being done by contract, although a very few private licenses to remove swill from hotels, saloons, etc., are granted by the board of aldermen. There are stated to be no regulations as to the conservancy of garbage while awaiting removal, "except what the interest of the contractors and the citizens mutually enforce"; but garbage and ashes may not be kept in the same vessel. Garbage is carried away 15 miles by cars and fed to swine. Ashes are used mostly for filling low places in the city. The city annually pays to the contractors above referred to \$5,500. It is thought that the garbage of the city is not allowed at any time to become a nuisance to health. Occasional complaints of neglect are promptly remedied by the contractors. The following statement is made by his honor Mayor Doyle: "The system, with present contractors, is quite satisfactory, because all complaints are promptly attended to. It is probable that the removal by the city would be better, but the expense would be greatly increased." The following are the first two of the "rules and regulations" of the ordinance on the subject adopted May 24, 1877:

All swill and house-offal shall be removed from each house in the city at least three times each week during the months of May, June, July, August, September, and October, and twice each week during the months of November, December, January, February, March, and April of each and every year, and as much oftener as may be necessary to prevent nuisance and decomposition of such swill and house-offal.

All swill and house-offal shall be removed from the city in water-tight, closely-covered vehicles drawn by one or more horses or mules; or in water-tight tubs or casks, with covers securely fastened so as to make the tubs or casks air-tight; and all such vehicles, tubs, or casks so used shall be kept clean, and well painted on the outside. No vehicle, tub, or cask shall be used or continued in use for the removal of swill and house-offal from the city unless first examined and approved by the superintendent of health; and the covers of all vehicles, tubs, and casks containing swill or house-offal shall be kept tightly closed when they are driven through the streets of the city.

Dead animals.—The carcasses of animals dying in the city are removed entirely by private enterprise and without regulations by the city, whose only requirement appears to be that animals buried within the city limits shall have all their parts at least 3 feet below the natural surface of the ground. The work is done at no cost to the city, and "the present arrangement is satisfactory, but all depends upon the ability and interest of one person. Of course it must be regarded as temporary".

Liquid household wastes.—Where there are sewers all liquid slops are allowed to go into them; but it is stated as probable that half the city still depends on cesspools for the disposal of these wastes, no filthy liquid of any kind being allowed to run into street-gutters. These cesspools are almost universally porous, being "open dry wells", and very few have overflows. They do not usually receive the waste of water-closets, as these generally connect with the sewers. A large part of the wells of the city have been found to have impure water from cesspool or privy contamination, and but few wells are now used for drinking-water, the city supply extending frequently indeed to portions of the city where there are no adequate means of disposing of it. There are no regulations concerning the cleaning out of cesspools, except the general law of nuisances. They are frequently ordered to be cleaned, and are frequently cleaned voluntarily only after and because they have become nuisances. The following is from the ordinance regulating "privy-vaults, cesspools, drains, etc.":

No cesspool shall be allowed under any occupied building or sidewalk. Wherever a cesspool is used the opening thereof shall be covered with stone or iron, and the drain leading thereto shall be properly trapped and ventilated.

No well shall be used as a cesspool, and no cesspool or privy-vault shall be located within 10 feet of a well. Vaults or cesspools the use of which is discontinued shall be filled with earth, sand, or gravel, or coal ashes; and wells, when abandoned, shall be so filled, or be covered with a suitable stone cover cemented down.

Human excreta.—On sewered streets a large proportion of the houses have water-closets. Of the privy-vaults in use perhaps one-quarter are nominally water-tight. The following regulations are in force, but do not apply to privies built before the regulations were passed (April 12, 1878), consequently nearly all the vaults in existence were built according to the will of the owner:

Every dwelling-house, manufactory, or business building shall have a sufficient underground drain and a suitable privy.

Vaults of privies shall be sunk under ground, contain at least 60 cubic feet, and be built of brick or stone laid in cement, as follows: The inside not less than 3 feet from the line of every adjoining lot (except by consent of the owner of said lot), and not less than 2 feet from the line of every private or public passage-way. Every such vault shall have convenient approaches for opening and cleaning, and be water-tight if required by the board of health.

The dry-earth system is used only to a very small extent, though dry earth is sometimes thrown into vaults. Night-soil is carried out of the city mostly by farmers, who compost and use it for fertilizer, for which purpose, however, it is not used on land within the gathering-ground of the public water-supply.

POLICE.

The police force of the city is appointed by the chief of police and confirmed and governed by the board of aldermen. The head executive officer is the chief of police, who has entire control of the department, its officers and members; his salary is \$2,250 per annum. The rest of the force and their respective salaries are as follows: 1 deputy chief of police, \$1,500; 6 captains, \$3 25 per day; 6 lieutenants, \$3 per day; 7 sergeants, \$2 87½ per day; 1 clerk, \$3 25 per day; 2 detectives, \$3 50 per day; 1 superintendent of hacks, \$3 per day; 144 patrolmen (of whom 12 are mounted), of less than six months' service, \$2 25 per day; of more than six months' service, \$2 50 per day; old members (who were members of the force when the pay was fixed at \$2 75 per day), \$2 75 per day. For dereliction of duty officers may be reduced to \$2 per day, and for faithfulness may be advanced to \$2 50 per day. Officers incapacitated for full duty receive \$2 per day, and superannuated officers, of whom there are 3, receive \$400 per year.

The uniform is a blue double-breasted frock coat, blue single-breasted vest, and blue trousers, for officers above the rank of sergeant; for sergeants, patrolmen, etc., a single-breasted frock coat, and like trousers and vest; the hats are of stiff felt. The uniform costs about \$80, and is furnished by the men themselves, they purchasing the cloth therefor at headquarters. For full uniform patrolmen are equipped with short black-walnut club and belt; for night service, with long locust club and pistol; and for day service, with short club and pistol. The patrolmen's hours of service are: day men, ten hours; night men, seven hours; 298 miles of streets are patrolled.

During 1880 there were 6,506 arrests, the chief causes for which were: Drunkenness, 4,230; vagrancy, 280; reveling, 227; petty larceny, 227; assault and battery, 171; common drunkards, 156; suspicion of larceny, 132; suspicious persons, 126; stubborn children, 111. During 1880 property to the value of \$34,332 94 was reported to the police as lost or stolen; of this, \$21,091 72 was recovered and restored to the owners.

"The tramp nuisance", through the excellent system of compulsory labor devised and carried into effect by George W. Wightman, esq., overseer of the poor, aided by the recent state law, has become nearly extinguished. The lodgers at the central station, the only place in the city where a lodging-room is established for this department, numbered during the past year (1880) 840 persons, against 1,873 persons in 1879, and 11,022 persons in 1877. This showing illustrates a fact in relation to the average tramp, that whatever may be his views concerning the decalogue, he certainly has no respect for the injunction to earn his bread by the sweat of his brow.

In this large army of vagrants are doubtless many worthy persons whom the force of circumstances has cast adrift in the community; but the system adopted has a tendency to select this class from the others, and bring the aggregate to nearly its lowest number. (a)

The police force is required to co-operate with the fire department by keeping the streets clear at fires; with the health department by reporting nuisances that come to their attention and removing the same by notice, and, if necessary, by prosecution; and with the building department by reporting all violations of the building law.

Special policemen, or watchmen, may be appointed by the mayor for 3 days' service in case of an emergency. These are not required to give any bond, nor can they serve any civil process, "but in all other matters they shall have the same power and authority as other constables".

The cost of the police force for the year ending September 30, 1880, was \$187,235 25.

In his annual report for 1880 the chief of police says:

The members of the police force of this city occupy a high rank among the departments of the large cities in this country. This is due in a great measure to the moral worth and intelligence of its membership, as many of the men who compose the present force have previously occupied responsible positions of trust and respect in this community, and I believe have the full confidence of all law-abiding citizens.

THE PROVIDENCE POLICE ASSOCIATION.

This association was organized in 1870. All members of the department are members of the organization. The object is to render assistance to members who have been disabled in the line of their duty, or who by reason of sickness shall be in need of such assistance. The association has in some instances received assistance by generous contributions from citizens who are in sympathy with its objects.

The report of the association for 1880 shows the amount on hand January 1, 1880, to be	\$11,059 24
Received from various sources during the year.....	1,985 31
	13,044 55
Expenditures were:	
Paid 18 drafts for sick officers	\$367 50
Paid to nurse for sick officer.....	22 50
Paid on death of one officer's wife	200 00
Paid for printing and miscellaneous expenses.....	187 00
Paid for fitting a burial lot in North burying-ground.....	324 10
	1,101 10
Amount in treasury January 1, 1881.....	11,943 45

The association has also the "Peleg W. Gardiner fund", consisting of 16 shares of the capital stock of the National Bank of North America, and held in trust, the income from said fund to be used for the benefit of the widows and orphans of deceased police officers. The expenditures during the year were \$80, paid to the wife of a deceased officer, which left in the treasury January 1, 1881, \$11 24.

POPULATION AND OCCUPATION.

From the state census taken January 1, 1875, it is seen that the population of Providence was 100,675 at that date, being 48,701 males, including 1,611 colored; and 51,974 females, including 1,876 colored. The civil condition of these was as follows: Married, 38,647—males, 19,494; females, 19,153. Single, 55,774—males, 27,940; females, 27,834. Widowed, 5,826—males, 1,140; females, 4,686; and divorced, 428—males, 127; females, 301. There were 13,275 dwelling-houses in the city, 12,924 being built of wood, 305 of brick, and 46 of stone. The whole number of families was 21,621, being a proportion of 1.62 families, or 7.58 persons, to a dwelling, and 4.65 persons to a family. The total number of voters was 16,631, of whom 2,673 were born in foreign countries. The total number of persons engaged in occupation was 44,217, divided as follows: Agriculture, 535; professional and personal services, 14,118; trade and transportation, 6,662; and manufactures and mechanical and mining industries, 22,902. In 1880 the population of Providence was 104,857, being 49,787 males and 55,070 females. These are divided into 23,178 families, or 4.52 persons to a family, living in 14,153 dwellings, being an average of 7.41 persons to a dwelling.

FIRE DEPARTMENT.

The manual force of the fire department consists of 1 chief engineer, 4 assistant engineers, 19 foremen, 64 hosemen, 6 engineers of steamers, 4 stokers, 28 ladder-men, 2 tiller-men, 10 hydrant-men, 23 drivers, and 3 substitutes—a total of 199 men. The apparatus consists of 5 steam fire-engines, 10 hose-carriages, and 4 hook-and-ladder trucks fully equipped, with 3 steam fire-engines, 5 hose-reels, 4 hose-sleds, and one hook-and-ladder truck held in reserve. There are 35 horses and 23,500 feet of hose in the department. There are 1,097 places throughout the city where water can be obtained for fire purposes. In addition to the above there is one protective company, consisting of 1 foreman, 1 driver, and 5 men, that renders great assistance in saving property from damage by water at times of fires.

There were 157 fires and alarms during the past year, of which 40 were still and 3 false. The losses were, on buildings, \$12,896; on contents, \$44,160; making a total of \$57,056; covered by insurance amounting to \$338,000. The expenditures on account of the fire department for the year have been as follows: For salaries, \$65,174 68; new apparatus, \$7,457 40; horses, \$950; miscellaneous, \$10,075 68; making a total of \$83,657 76.

COMMERCE AND NAVIGATION.

[From the reports of the Bureau of Statistics for the years ending June 30.]

Customs district of Providence, Rhode Island.	1870.	1880.
Total value of imports.....	\$108,452	\$200,943
Total value of exports:		
Domestic.....	\$14,283	\$15,373
Foreign.....	\$70	\$81
Number of immigrants.....	1	4

Customs district of Providence, Rhode Island.	1879.		1880.	
	Number.	Tons.	Number.	Tons.
Vessels in foreign trade:				
Entered.....	100	15,018	137	21,223
Cleared.....	66	7,030	92	9,600
Vessels in coast trade and fisheries:				
Entered.....	630	802,775	692	878,073
Cleared.....	110	81,868	120	82,779
Vessels registered, enrolled, and licensed in district..	126	32,122	125	34,386
Vessels built during year.....	7	76	5	173

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Providence for 1880, being taken from tables prepared for the Tenth Census, by J. Albert Monroe, special agent:

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
All industries.....	1,205	\$27,177,006	16,030	5,125	1,716	\$0,464,110	\$22,704,227	\$42,597,512
Blacksmithing.....	62	70,425	104		1	54,428	54,423	176,463
Bookbinding and blank-book making.....	5	50,300	41	25	1	26,835	28,100	83,000
Boots and shoes, including custom work and repairing.....	81	27,290	38	6	1	18,403	38,321	103,298
Boxes, wooden packing.....	4	19,300	36			14,434	30,306	64,000
Brass castings.....	9	103,900	60			32,269	115,000	172,921
Bread and other bakery products.....	19	115,700	124	24		62,577	305,022	445,586
Brooms and brushes.....	6	12,700	14	1	2	7,245	14,085	28,225
Carpentering.....	81	254,750	688		2	341,125	692,060	1,250,164
Carrriages and wagons.....	47	149,505	164		1	85,371	114,910	271,659
Clothing, men's.....	42	833,877	417	535	35	393,939	1,000,506	1,869,819
Clothing, women's.....	7	21,400	6	59		18,555	94,825	137,830
Coffee and spices, roasted and ground.....	5	42,000	19			10,076	121,536	150,194
Coffins, burial cases, and undertakers' goods.....	10	40,000	32	2		18,958	45,923	91,293
Confectionery.....	5	14,800	13	9	4	10,501	30,188	68,550
Cooperage.....	3	20,732	27		2	14,884	27,150	60,560
Cotton goods.....	17	2,453,854	600	1,129	274	487,893	1,323,024	2,250,273
Cutlery and edge tools (see also Hardware).....	4	25,550	45			15,830	16,660	45,360
Dentistry, mechanical.....	20	20,025	9	3		8,046	9,892	52,750
Drugs and chemicals (see also Patent medicines and compounds)....	5	52,500	22			10,924	78,800	103,000
Dyeing and cleaning.....	3	6,000	6	8		6,708	1,788	15,250
Dyeing and finishing textiles.....	7	2,925,000	353	143	130	412,608	834,807	2,273,254
Dyestuffs and extracts.....	4	144,000	40			10,135	162,500	221,705
Electroplating.....	10	65,600	58	1	2	36,162	130,372	208,164
Enameling.....	9	123,000	93	45	9	44,816	59,293	136,175
Engraving and die-sinking.....	24	17,900	52	5	10	34,941	6,423	76,764
Engraving, wood.....	6	1,750	2			2,146	2,600	13,130
Fancy articles.....	4	21,500	25	6	2	11,367	35,034	70,382
Files.....	7	437,600	321	9	25	120,944	140,095	460,950
Flouring- and grist-mill products.....	4	217,600	36			21,106	392,875	458,896
Foundry and machine-shop products.....	55	3,563,975	3,237	77	42	1,552,842	1,912,559	4,522,179

Mechanical and manufacturing industries.	No. of establishments.	Capital.	AVERAGE NUMBER OF HANDS EMPLOYED.			Total amount paid in wages during the year.	Value of materials.	Value of products.
			Males above 16 years.	Females above 15 years.	Children and youths.			
Furniture (see also Mattresses and spring beds).....	15	\$218,750	310	7	2	\$162,150	\$415,584	\$686,705
Gas and lamp fixtures.....	3	91,000	46	9		26,500	34,600	86,600
Gold and silver, reduced and refined.....		138,000	25			18,627	1,306,471	1,421,100
Hairwork.....	7	21,050		18	2	5,800	18,980	34,945
Hardware (see also Cutlery and edge tools).....	5	109,300	142		1	63,743	37,484	154,543
Ivory and bone work.....	4	36,000	60	6	2	35,280	17,375	72,667
Jewelry.....	142	2,755,070	2,411	675	178	1,614,236	2,405,824	5,444,092
Lapidary work.....	7	22,000	39	2	2	16,682	11,200	42,333
Leather goods.....	3	45,600	38		3	19,420	63,950	96,815
Liquors, malt.....	3	160,000	88			38,785	233,052	392,163
Lock- and gun-smithing.....	5	4,050	5			3,702	2,762	10,515
Looking-glass and picture frames.....	7	30,200	17	1	2	10,103	31,860	57,745
Lumber, planed (see also Wood, turned and carved).....	6	84,600	63			28,309	69,910	69,912
Marble and stone work.....	23	320,800	276		5	130,823	82,740	299,826
Masonry, brick and stone.....	29	60,300	221	1		94,004	129,296	280,096
Mattresses and spring beds (see also Furniture).....	4	29,700	21	6		9,356	80,260	113,656
Mineral and soda waters.....	3	20,500	14			6,149	15,240	41,075
Models and patterns.....	3	5,000	7		1	4,369	1,480	12,432
Painting and paperhanging.....	65	69,365	279		6	133,185	111,178	343,205
Patent medicines and compounds (see also Drugs and chemicals).....	22	378,500	92	21	6	63,209	285,864	706,442
Photographing.....	19	40,750	30	28	1	26,156	15,101	80,110
Plumbing and gasfitting.....	21	39,550	76			42,641	87,796	181,216
Printing and publishing.....	17	222,050	289	11	60	219,429	173,200	536,598
Pumps, not including steam pumps.....	3	11,000	6			2,663	7,962	15,000
Saddlery and harness.....	26	45,700	75	2	2	36,024	46,274	112,477
Shipbuilding.....	8	152,500	83			51,077	57,883	133,331
Shoddy.....	3	33,000	35	26	4	14,290	131,154	179,795
Slaughtering and meat-packing, not including retail butchering.....	6	273,000	85		4	44,362	1,313,110	1,458,740
Soap and candles.....	6	8,900	10			2,598	22,925	37,260
Stationery goods.....	4	24,300	21	6		16,898	23,910	56,425
Stencils and brands.....	3	9,000	7		2	2,665	8,730	18,580
Straw goods.....	3	2,300	5	11		5,563	547	10,100
Tinware, copperware, and sheet-iron ware.....	40	121,500	197	2	3	106,811	106,292	407,332
Tobacco, cigars, and cigarettes.....	32	24,350	52	53		28,774	56,261	105,844
Trunks and valises.....	3	21,200	11		1	6,958	14,805	35,530
Umbrellas and canes.....	3	1,700	2	1		660	1,050	5,850
Wood, turned and carved (see also Lumber, planed).....	4	12,500	10			5,413	12,500	23,900
Woolen goods (see also Worsted goods).....	5	1,929,700	815	508	381	641,991	1,973,001	3,602,947
Worsted goods (see also Woolen goods).....	4	1,250,000	851	912	203	661,588	2,062,630	3,587,000
All other industries (a).....	68	6,506,388	2,045	667	296	1,159,250	3,203,693	5,804,716

a Embracing agricultural implements; belting and hose, leather; boots and shoes, rubber; boxes, cigar; boxes, fancy and paper; bridges; buttons; collars and cuffs, paper; corsets; cotton-ties; drain and sewer pipe; fire-arms; foundry supplies; furniture, chairs; furs, dressed; glass, cut, stained, and ornamented; hand-stamps; hats and caps; hooks and eyes; iron and steel; iron forgings; iron pipe, wrought; lead, bar, pipe, sheet, and shot; leather, dressed skins; lime; lithographing; musical instruments, organs and materials; oil, cottonseed and cake; paints; paving materials; pickles, preserves, and sauces; plated and britannia ware; rubber and elastic goods; safes, doors, and vaults, fire-proof; sash, doors, and blinds; saws; screws; sewing-machines and attachments; shirts; silk and silk goods; silverware; sporting goods; starch; stone- and earthen-ware; taxidermy; toys and games; upholstering; watch cases; window blinds and shades; wire; and wirework.

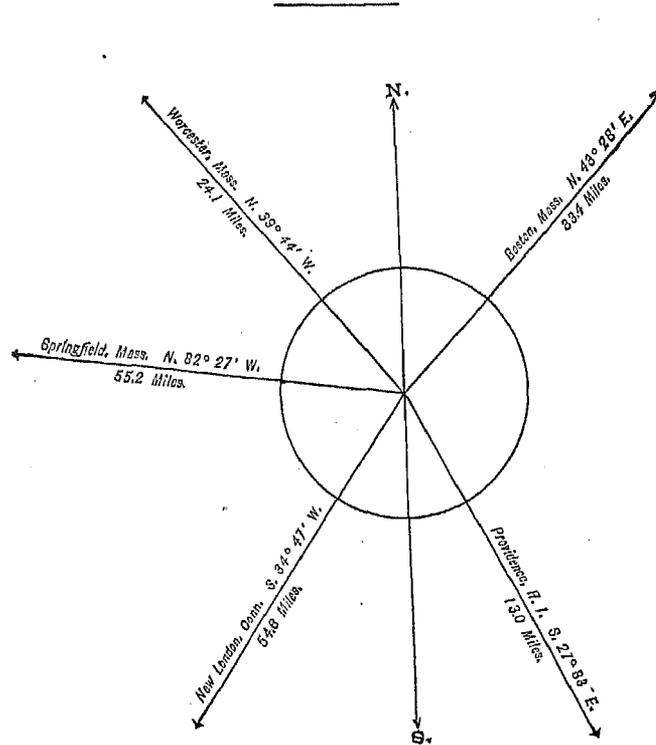
From the foregoing table it appears that the average capital of all establishments is \$22,553 53; that the average wages of all hands employed is \$413 44 per annum; that the average outlay in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$28,123 61.

WOONSOCKET,

PROVIDENCE COUNTY, RHODE ISLAND.

POPULATION
IN THE
AGGREGATE,
1870-1880.

Inhab.
1790.....
1800.....
1810.....
1820.....
1830.....
1840.....
1850.....
1860.....
1870..... 11,527
1880..... 16,050



POPULATION
BY
SEX, NATIVITY, AND RACE,
AT
CENSUS OF 1880.

Male.....	7,416
Female.....	8,634
—	
Native.....	8,720
Foreign-born.....	7,330
—	
White.....	16,038
Colored.....	*12
* Including 1 Chinese.	

Latitude: 42° North; Longitude: 71° 31' (west from Greenwich); Altitude: 100 to 240 feet.

FINANCIAL CONDITION:

Total Valuation: \$8,827,565; per capita: \$550 00. Net Indebtedness: \$230,000; per capita: \$14 33. Tax per \$100: \$1 22.

HISTORICAL SKETCH.

The first settlers in the territory now known as Woonsocket were Richard Arnold and Samuel Comstock, who, somewhere about 1666, came to Woonsocket falls and built there a saw-mill. To these falls, and the Blackstone, Mill, and Peter's rivers the town owes its prosperity, and probably its name, for the pleasantest of the varied explanations of the meaning derives it from two Indian words—*woone*, thunder, and *sockete*, mist—referring to the thunder of the falls and the misty clouds rising from their foot.

The early history of Woonsocket village is of little interest or importance. That portion of the present town on the east bank of the Blackstone was then a part of Cumberland, while that on the west bank formed part of Smithfield. Mr. Erastus Richardson, the historian of the town, states that the first meeting-house was built in

1718, and until 1832 the Quakers, its builders, were the only society in the town possessing such a building. It was not until between 1820 and 1830 that the first public schools were opened, although the Thornton, Smithfield, and Cumberland academies, in their time, furnished excellent instruction to those able to pay for it. The town records of Smithfield show that the community refused, by a vote of 159 to 2, to ratify the Constitution of the United States.

The falls which supply the mills of Woonsocket with part of their motive power are situated in each of the three rivers; that in the Blackstone falls 31 feet and yields 2,000 horse-power; that in the Mill river falls 60 feet and gives 450 horse-power; while that in the Peter's river falls 52 feet and furnishes 110 horse-power. Although mills had been built upon the river previous to the present century, they were either abandoned, or washed away by the great freshet of 1807, so that the prosperity of Woonsocket may be said to date from about 1810. During the war of 1812, mills were built with great rapidity at Woonsocket, and the peace of 1815 found manufactures started there which could have begun only in the absence of all competition, and which needed only the renewed influx of foreign goods following the peace to ruin them. Some, however, managed to live, and in 1817 manufacturing in the town received new energy from Dexter Ballou, who came in that year to the town, and is known as the pioneer of cotton-spinning at Woonsocket. From this time manufacturing enterprises were pushed beyond the demand, which brought on a business crisis in 1829. The failure of Abraham and Isaac Wilkinson brought after it that of nearly all the other leading manufacturers.

A recovery soon followed, and in 1831 Edward Harris, who became the greatest woolen manufacturer in the United States, began the manufacture of satinets in Woonsocket, and from him the place received an impetus it never wholly lost. To Mr. Harris the town owes the Harris institute and the library. The year 1837, bringing both financial and agricultural failure, was another period of depression for the town; for although few of the manufacturers failed, the laborers, pressed by want and hard treatment, were aroused, and the ill-feeling was not allayed until the end of the "Dorr rebellion", 1842. These misfortunes failed to check permanently the prosperity of Woonsocket, and in 1844 it had about 5,000 inhabitants and 21 cotton-mills, with 21,288 spindles, 1,220 looms, producing 209,539 yards per week; 3 woolen-mills, producing 4,700 yards of woolen cloth per week; 6 machine-shops; an iron foundery, and 6 other large business concerns. In 1847 the Providence and Worcester railroad was opened, and Woonsocket was thus given ready communication with Boston. In 1867 the portion of Smithfield and Cumberland known as Woonsocket was incorporated as a town by itself, and in 1871 the part of Smithfield known as West Woonsocket was annexed. Although territorially one of the smallest towns of a small state, its population in 1880 is 16,050, and Woonsocket to-day ranks as the first town of the whole country in the manufacture of woolen goods.

WOONSOCKET IN 1880.

The following statistical accounts, collected by the Census Office, indicate the present condition of Woonsocket:

LOCATION.

Woonsocket is situated in latitude 42° north, longitude 71° 31' west from Greenwich, in the extreme northern part of Rhode Island. It is on the Blackstone river, about 16 miles northwest by north from Providence, and 37 miles from Boston by railroad. Its average altitude above sea-level is 170 feet, the lowest point being 100 feet, the highest about 240 feet. Neither the Blackstone, Mill, nor Peter's river is navigable at this point, each of them having falls within the town's limits.

RAILROAD COMMUNICATIONS.

The town is connected by the Providence and Worcester railroad with Providence, Rhode Island, and Worcester, Massachusetts, and, by the Woonsocket branch of the New York and New England railroad, with Boston.

TRIBUTARY COUNTRY.

The country immediately surrounding the town is entirely agricultural, devoted mainly to market-gardening and dairy produce.

TOPOGRAPHY.

The underlying rock is a mica slate, and the soil is generally loose and sandy. The natural drainage is excellent, as the town slopes naturally to the Blackstone river. The country around the town is high, and there is very little marsh, while the ponds are artificial and are used for storing water to be used for the mills. The land within a radius of 5 miles is wooded and its soil is sandy.

CLIMATE.

No record of the temperature has been kept. The water from Narragansett bay tends to keep the climate warm in winter and cool in summer. The prevailing wind in summer is from the west, while in winter that from the northeast is perhaps the most common, although in that season the wind is very variable.

STREETS.

The streets are about 64 miles in length; about half a mile is paved with cobble-stones, half a mile with stone blocks, while the rest are of gravel. The cost per square yard of the stone blocks is about \$3 50; of the cobble-stones, \$2; and of the gravel, 30 cents. No detailed cost of repairs upon the streets could be obtained. The sidewalks are chiefly of gravel supported by 7-inch granite curbstones, although there are some brick flagstone and asphalt walks. The gutters are all of cobble-stones. The annual cost of the labor on the streets is from \$35 00 to \$40 00. Neither steam stone-crushers nor rollers are used. There are no horse-railroads or omnibus lines.

WATER-WORKS.

There are no public water-works.

GAS.

There are no gas-works.

PUBLIC BUILDINGS.

The only public building concerning which any thing could be learned is the town hall, which was an old armory purchased from the state; it is valued at about \$2,500.

PUBLIC PARKS AND PLEASURE-GROUNDS.

There are no public parks or pleasure-grounds.

PLACES OF AMUSEMENT.

There is one large hall—Music hall—seating 1,236, which is hired by traveling shows. The only other hall is Harris hall. There are no concert- or beer-gardens. No further information could be obtained.

CEMETERIES.

The cemeteries within the bounds of Woonsocket are the following:

Capron Cemetery, near the town cemetery, is used to a small extent.

Oak Hill Cemetery, owned by a private corporation, situated in Jenksville; area, about 7 acres.

Bernon Cemetery, owned by Saint James church, situated in Bernon; area, about 3 acres.

Edgehill Cemetery, owned by the town, on the Cumberland Hill road; area, about 6½ acres.

Besides the foregoing the town uses the—

Old Bolton Cemetery, in Cumberland, near the town line of Woonsocket; used only slightly.

Catholic Cemetery, just beyond the town line in Massachusetts.

Quaker Cemetery, also just beyond the town limits in North Smithfield.

The *Old Baptist Cemetery*, near the center of the town, close to the New York and New England Railroad depot, is not used now.

A permit must be obtained from the town clerk before a burial will be allowed, and this permit will not be granted unless a certificate is presented signed by the attending physician certifying to the death, its cause, etc. If no physician has attended, the clerk investigates the case, and on receiving sufficient information must grant the permit.

MARKETS.

There are no public or corporation markets in Woonsocket. A space in the public street is used as a standing-ground for farmers' and hucksters' wagons.

SANITARY AUTHORITY—BOARD OF HEALTH.

The town council of Woonsocket acts as the board of health. The expense in 1879 was \$81 70 for burying dead animals, services of health officers, abating nuisances, etc. The powers of the board, both in the absence of and during an epidemic, are unlimited under the Rhode Island statutes. The presiding officer is the president of the council, who receives no extra salary for performing this duty. Three assistant health officers are employed, one of whom is a physician; they have some police powers. The meetings are held once a month. The correction of defective house-drainage, street-cleaning, etc., is under the control of the town council.

NUISANCES.

Nuisances are inspected when reported, although occasional inspections are made during the hot weather. If one is found to exist the health officer orders it abated, and, if this order is neglected, makes the abatement himself and enters the complaint in the court against the owner or occupant of the premises. No copy of the regulations of the board of health could be obtained.

GARBAGE.

Garbage must not be deposited in the public streets; otherwise it is unregulated.

BURIAL OF THE DEAD.

No limit of the time of burial after death or of the depth of graves has been set. Interments are made as stated under "Cemeteries".

INFECTIOUS DISEASES.

Small-pox patients are quarantined at home, although patients are sometimes removed to an isolated place, for there is no pest-house. The treatment of scarlet-fever patients is unregulated. Vaccination is not compulsory except in the public schools, and is only occasionally done at public expense.

The town clerk keeps a register of births, deaths, and diseases. No reports are made by the board.

MUNICIPAL CLEANSING.

Street-cleaning is done by the town by its own force and entirely by hand labor. It is done as occasion requires, generally once in two weeks. The annual cost to the town is from \$300 to \$400, being diminished by the sums received from farmers for the sweepings.

Removal of garbage and ashes.—Garbage and ashes are removed by the householders, and no regulations govern the method. The cost is not known.

Dead animals must be removed beyond the town limits.

Liquid household wastes.—Chamber-slops and laundry and kitchen wastes are all run into cesspools, as there are no public sewers. These cesspools are porous, without overflows in most cases, and when water-closets are used receive the wastes from them. No wastes are allowed to run into the gutters. The cesspools must be cleaned between April and November, between 10 p. m. and sunrise; during the rest of the year they can be cleaned at any time; the contents must be removed in water-tight carts. Probably wells have been contaminated by the soakage from cesspools, but no record has been kept of it.

Human excreta.—Not more than 75 houses in Woonsocket are provided with water-closets, the rest all depending upon privy-vaults, less than half of which are even nominally water-tight. The same regulations govern these that regulate cesspools; the construction is unregulated. The night-soil is used by farmers as manure.

Manufacturing wastes all run into the Blackstone river. No regulations govern the matter.

POLICE DEPARTMENT.

The police force is appointed and governed by the town council. The chief executive officer is the chief of police, who receives a salary of \$1,000 per year; the rest of the force consists of 1 sergeant, salary \$2 25 a day, and 8 patrolmen, salary \$2 a day. The uniform is dark-blue coat and trousers, black vest, black felt hat or blue cloth cap with a glazed cover, and police buttons. The men provide their own uniform except the police buttons, and are equipped with a club and a Colt's revolver. They are on duty from 7 p. m. to one hour before sunrise. The police co-operate with the fire department, although not required by ordinance. Special policemen are appointed for occasions where the regular force is inadequate. The cost of the force during 1880 was \$7,586.

PUBLIC SCHOOLS.

During the year ending April 30, 1880, the schools of Woonsocket employed 34 teachers and gave instruction to 3,279 scholars. The schools are divided into high, grammar, second-grade grammar, intermediate, ungraded, and primary. There are 13 school-houses, valued at \$124,650. Two evening schools are carried on in the town. Woonsocket furnishes gratuitously all the books and stationery used by the scholars in its schools. The total cost of schools was \$24,573 62.