

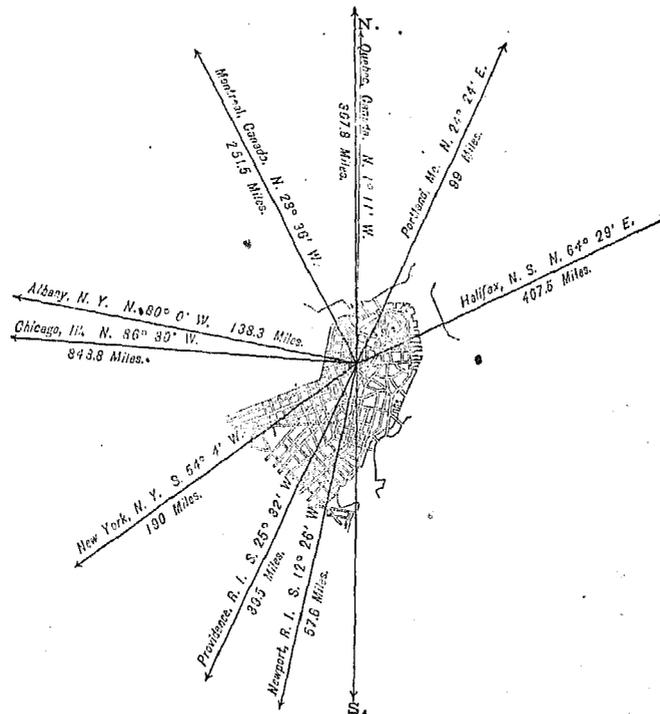
MASSACHUSETTS.

BOSTON, SUFFOLK COUNTY, MASSACHUSETTS.

POPULATION

IN THE
AGGREGATE,
1790-1880.

Year	Inhab.
1790	18,038
1800	24,937
1810	33,250
1820	43,298
1830	61,392
1840	93,383
1850	136,881
1860	177,840
1870	250,526
1880	362,830



POPULATION

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

Male	172,268
Female	190,571
Native	248,043
Foreign-born	114,796
White	356,826
Colored	* 6,013

* Including 121 Chinese and Japanese and 19 Indians.

Latitude: 42° 21' North ; Longitude : 71° 4' (west from Greenwich) ; Altitude: 0 to 100 feet.

FINANCIAL CONDITION:

Total Valuation: \$613,322,691; per capita: \$1,690 00. Net Indebtedness: \$28,244,018; per capita: \$77 84. Tax per \$100: \$1 25.

HISTORICAL SKETCH.

The coast of New England was probably sighted if not touched by John and Sebastian Cabot in 1497. In 1602 Bartholomew Gosnold landed upon it, visited the islands in Buzzard's bay, and the mainland within the limits of the present town of Dartmouth. At that time the whole country from Florida to Newfoundland was known as Virginia, the part still bearing that name having been settled by the English in 1585. In 1603 Martin Pring and William Brown made the coasts of North Virginia, in latitude 43°. In 1605 Captain George Weymouth discovered

the coast in latitude 41° 30'. Captain John Smith, the Virginia adventurer, in 1614 made the first considerable exploration of the islands and harbors of the Massachusetts shore. At his suggestion the name of this region was changed from North Virginia to New England. In 1618 the New England coast was visited by Thomas Dermer, but his visits to the harbors of Boston and Plymouth were probably not made until the following year, in his second voyage. The country at this time was very thinly inhabited, owing to the recent prevalence of a very fatal epidemic among the natives. Aside from the speculative motive of these voyages, they were greatly influenced by the desire to find a fit place for the establishment of an English colony which should lead to the propagation of the gospel among the Indians. This benevolent project originated in the Episcopal Church, but the first permanent settlements of New England were projected and carried out by the Puritans—dissenters from episcopacy, whose objections to it related “chiefly to the different orders of ministers and officers in the church with greater or less powers; to the luxury of the higher grades of the clergy; to the claims set up to impose any rites and forms that they should use and prescribe, whether required by Christ and his apostles or not; and to the alliance of the church with the civil power of the state”. “For their non-conformity with what they considered unscriptural regulations and ceremonies the Puritans were grievously oppressed and persecuted, fined, and imprisoned.” These men, at great sacrifice of property, and enduring much suffering and persecution, moved from England to Holland in 1607 and the following years. They gathered first at Amsterdam, and removed afterwards to Leyden. The first company of them left Holland in 1620, landing on cape Cod in November. Soon after (December 22) they established themselves permanently at Plymouth. Their associates in great part removed to Plymouth in 1624 and 1628. Their privations and sufferings here were much greater than they had endured in Holland or even in their native land. In 1628 and 1629 a much larger company of English Puritans settled at Salem and Charlestown. The above were the first permanent settlements in New England.

An agreement had been made at Cambridge, England, in 1629, by John Winthrop and his associates, not to go to America as adventurers, but to inhabit and continue there, carrying their own government with them, not looking to the government of the company in England. Winthrop was elected governor in October, 1629, and the colony arrived at Salem in June, 1630. The pilgrims of Plymouth, under John Endicott, had been for nearly ten years in quiet possession of a portion of the territory now included in Massachusetts. Winthrop and his colonists, not satisfied with Salem, where they had landed, removed to Charlestown, where a large house (Walford's) had been erected the previous year. In this house the governor and several of the patentees dwelt, while the multitude built for themselves cottages, booths, and tents about the town hill. Six weeks after their landing at Salem, Governor Winthrop, Deputy Governor Dudley, Isaac Johnson, and John Wilson, after appropriate religious exercises, adopted and signed the following church covenant:

In the name of our Lord Jesus Christ, and in obedience to His Holy Will, and Divine Ordinances:

We, whose names are here underwritten, being by His most wise and good Providence brought together into this part of America, in the Bay of Massachusetts; and desirous to unite into one congregation or church, under the Lord Jesus Christ, our head, in such sort as becometh all those whom He hath redeemed, and sanctified to Himself, do hereby solemnly and religiously, as in His most Holy Presence, promise and bind ourselves to walk in all our ways according to the rule of the Gospel, and in all sincere conformity to His Holy Ordinances, and in mutual love and respect to each other, so near as God shall give us grace.

Thus was established the first church of Boston.

The scarcity of good water, and the sickness prevailing among his people, determined Winthrop and others to abandon their location and establish themselves on the neighboring peninsula. Edward Johnson, in his *Wonder-Working Providence*, says:

The griefe of this people was further increased by the sore sickness which befell among them, so that in almost every family, lamentation, mourning, and woe was heard, and no fresh food to be had to cherish them. It would assuredly have moved the most lockt-up affections to teares, no doubt, had they past from one hut to another, and beheld the piteous case these people were in. And that which added to their present distresse was the want of fresh water; for although the place did afford plenty, yet for present they could finde but one spring, and that not to be come at but when the tide was downe.

The following is taken from early records of Charlestown:

In the meantime, Mr. Blackstone, dwelling on the other side Charles River alone, at a place by the Indians called Shawmutt, where he only had a cottage, at or not far off the place called Blackstone's Point, he came and acquainted the Governor of an excellent Spring there; withal inviting him and soliciting him thither. Whereupon, after the death of Mr. Johnson and divers others, the Governor, with Mr. Wilson, and the greatest part of the church removed thither: whither also the frame of the Governor's house, in preparation at this town, was also (to the discontent of some) carried; where people began to build their houses against winter; and this place was called BOSTON.

Mr. Charles Francis Adams, jr., writes in the *Memorial History of Boston*:

In what is now Boston, William Blackstone, a solitary, bookish recluse, in his thirty-fifth year, had a dwelling somewhere on the west slope of Beacon hill, not far from what are now Beacon and Spruce streets, from which he commanded the mouth of the Charles. Here he had lived ever since his removal from Wessagusset in 1625 or 1626, trading with the savages, cultivating his garden, and watching the growth of some apple-trees. Thomas Walford, the blacksmith, with his wife, was his nearest neighbor, living at Mishauwum, or Charlestown, in an “English palisaded and thatched house”, while a little farther off, at East Boston, Samuel Maverick, a man of twenty-eight, dwelt in a sort of stronghold or fort, which probably also served as the settlers' trading-post. This he had built, with the aid of Thompson, some three years previously, and it was armed with four large guns, or “murtherers”, as a protection against the Indians. It was, in fact, the first of the many forts erected for the protection of those dwelling about Boston harbor, and it is not unnatural to

suppose that it was constructed at the common cost of the old planters, with the exception of Morton, and was regarded as the general place of refuge in case of danger. It only remains to be said that all of these settlers belonged to the Church of England, and either had been or afterwards became associates and adherents of Sir Ferdinando Gorges. They were all that was left of what had been intended as the mere forerunner of a great system of colonization, emanating from the royalist and church party in England. The scheme had come to nothing, and it now only remained for the next wave of emigration, which was to originate with the other party in church and state, to so completely submerge it as to obliterate through more than two centuries every historical tradition even of its continuity with what followed.

In 1634 Blackstone, reserving only 6 acres for himself, sold to the colonists under Governor Winthrop the remainder of the peninsula. The 6 acres reserved by Blackstone lay along the Charles river, north of Beacon street, and included Louisburg square. The original name of the peninsula was Tri-Mountain, but it was ordered, at a court held at Charlestown, September 7, 1630, that it be called Boston, after the town in England from the neighborhood of which many of the prominent men of the colony had come.

The first general court was held in Boston on the 29th of October, on which day Winthrop wrote to his wife, dating his letter "Boston, in Massachusetts":

MY DEAR WIFE: We are here in a paradise. Though we have not beef and mutton, yet, God be praised, we want them not. Our Indian corn answers for all; yet here is fowl and fish in great plenty.

The ensuing winter was one of great severity, and the suffering of the colonists was intense, the people being reduced to a diet of "clams and muscles, ground-nuts and acorns". Governor Winthrop "had the last batch of bread in the oven", and gave the last handful of meal in the barrel to a poor man at the door. No tidings had been received of a ship sent to England for provisions six months before, and a day had been appointed for fasting, humiliation, and prayer. At the last moment, when at the very culmination of their despair, the vessel was seen entering the harbor. By order of the governor and council, directed to all the plantations, a day of thanksgiving for this relief was appointed. A second thanksgiving was appointed on the next arrival of the same ship in November of the following year, bringing Governor Winthrop's wife, his eldest son John, afterward governor of Connecticut, and the Rev. John Eliot.

In 1631, May 18, at the second general court, there was passed the following memorable order:

And to the end that the body of the commons may be preserved of honest and good men, it was ordered and agreed that for time to come no man shall be admitted to the freedom of this body politic but such as are members of some of the churches within the limits of the same.

This covenant was sworn to by all the freemen of the commons. It continued substantially in force until 1692, being repealed in appearance only (in 1662) after the restoration of Charles II. "It was," says Barry, "more a political regulation than a sectarian scruple. Not to bestow honors or privileges on piety was it passed, but to guard liberty, to prevent encroachments on their infant commonwealth."

During the early years of the colony a controversy concerning personal and public affairs arose between Governor Winthrop and Deputy Governor Dudley, a controversy which attained some notoriety and was the subject of caricature. Their reconciliation is thus recorded in Winthrop's journal, April 24, 1638:

The governour and deputy went to Concord to view some land for farms, and, going down the river about four miles, they made choice of a place for one thousand acres for each of them. They offered each other the first choice, but because the deputy's was first granted, and himself had store of land already, the governour yielded him the choice. So, at the place where the deputy's land was to begin, there were two great stones, which they called the Two Brothers, in remembrance that they were brothers by their children's marriage, and did so brotherly agree, and for that a little creek near those stones was to part their lands.

In December, 1634, Governor Winthrop and seven selectmen of Boston were commissioned "to divide and dispose of all such lands belonging to the town (as are not yet in the lawful possession of any particular person) to the inhabitants of the town, leaving such portions in common for new comers, and the further benefitte of the town, as in their best discretion they shall think fitt". It is mainly to the influence of Winthrop as a member of this commission that in the distribution of the public lands the area now known as Boston Common was reserved for the perpetual use of the community. About this time the first movement for the establishment of free public schools was recorded:

Likewise it was then generally agreed upon, yt^r or brother Philemon Pormont shalbe entreated to become schoolmaster for the teaching and nourtering of children wth us.

The records of 1636 include a list of subscriptions "towards the maintenance of free-schoolmaster for Mr. Daniel Maude, being now also chosen thereunto".

The following sumptuary laws or orders of the general court were enacted at about this period:

The court, taking into consideration the great, superfluous, and unnecessary expenses occasioned by reason of some new and modest fashions, as also the ordinary wearing of silver, gold, and silk laces, girdles, hatbands, &c., hath therefore ordered that no person, either man or woman, shall hereafter make or buy any apparel, either woollen, silk, or linen, with any lace on it, silver, gold, silk, or thread, under the penalty of forfeiture of such clothes.

It is ordered that no person shall take tobacco publicly, under the penalty of 2 shillings and sixpence, nor privately in his own house or in the house of another, before strangers, and that two or more shall not take it together anywhere, under the aforesaid penalty, for every offence.

There is leave granted to the Deputy Governor, John Winthrop, Esq., and John Winthrop, junior, each of them to entertain an Indian a-piece as a household servant.

The tax assessed on the twelve plantations of Massachusetts during the year 1636 amounted to £600; the share of the proportion of this assessed upon Boston, Dorchester, and Newtown was £80.

The following is quoted from Hon. Robert C. Winthrop's sketch in the *Memorial History of Boston*:

At the election of May, 1635, Thomas Dudley, after a single year of service, was left out of the chief magistracy of Massachusetts, and John Haynes was chosen governor in his place. And now we come to the arrival in Boston of two most notable persons, who are to play no small part in the history of the colony for the next few years, and who, alas! were doomed to a common and sad end at a later day in England—Hugh Peters (or Peter, as he always signed his name) and Henry Vane. Peters had been the pastor of the English church in Rotterdam, and had been persecuted by the English ambassador, who desired to bring his church under the English discipline. He had long before taken an interest in the colonization of New England, was one of the first members of the Massachusetts Company, and one of the signers of the company's instructions to Endicott in 1629. Vane was son and heir to Sir Henry Vane, comptroller of the king's household, and had already, though not twenty-five years old, been employed by his father, while an ambassador, in foreign affairs. These gentlemen exhibited the most active concern for the condition of the colony, both ecclesiastical and civil, at the earliest possible moment. Vane was admitted a member of the church of Boston within a month after his arrival, and before three months had expired he and Peters had procured a meeting in Boston of all the leading magistrates and ministers of the colony, with a view to healing some distractions in the commonwealth and effecting "a more firm and friendly uniting of minds". At this meeting Vane and Peters, with Governor Haynes, and the ministers Cotton, Wilson, and Hooker, declared themselves in favor of a more rigorous administration of government than had thus far been pursued. Winthrop was charged with having displayed "overmuch lenity". The ministers delivered a formal opinion, "that strict discipline, both in criminal offences and in martial affairs, was more needful in plantations than in settled states, as tending to the honor and safety of the Gospel". Within seven days after this decision Governor Haynes and the assistants, being informed that Roger Williams, who in the previous October had been sentenced by the general court of Massachusetts to depart out of their jurisdiction in six weeks, and to whom liberty had been granted "to stay till spring", was using this liberty for preaching and propagating the doctrines for which he had been censured, despatched Captain Underhill to apprehend him, with a view to his being shipped off at once to England. But Williams escaped to Narragansett bay, and became the founder of Rhode Island. He said of this escape, in a letter long afterwards: "It pleased the Most High to direct my steps into this bay, by the loving private advice of the ever-honored soul, Mr. John Winthrop."

Roger Williams was never a member of the Massachusetts Company nor a freeman of the commons. He arrived in Boston with his wife in 1631, and remained only on sufferance; the "teacher" of the first church was absent in England at the time, and Williams was invited to take his place.

On the 7th of April, 1636, at the instigation of John Cotton, the general court ordered that a certain number of magistrates should be chosen for life. At the election in May, John Winthrop and Thomas Dudley were chosen counselors for life, and young Vane was elected governor. During Vane's administration there sprang up a violent religious and civil controversy, known as the Antinomian controversy, in consequence of which Mrs. Anne Hutchinson was excommunicated and banished, concerning which the following is quoted from Dr. Ellis' paper on the "Puritan Commonwealth":

More serious still, and, for a short period of embittered and alienating discord between parties in Boston almost equally matched in earnestness and influence, threatening the complete and disastrous overthrow of the colonial enterprise, was what is known in our history as the "Antinomian controversy". There are some articles on the long list of discovered and branded "heresies" of which we may say that the worst thing about them is their names, with the ill associations which they have acquired. Among these is "Antinomianism". Some of our readers must be saved the trouble of turning to the dictionary to learn what the word means, by being told that it signifies a denial of, or opposition to, legalism, or a subjection to the law of works as the duty of a Christian. "Antinomians" were understood to hold that one who believed himself to be under a "covenant of faith" need not concern himself to regard "the covenant of works". In other words, those who internally and spiritually had the assurance that they were in a state of "justification" might relieve themselves of all anxiety as to their "sanctification". It is easy to see what possible mischief of dangerous self-delusion and utter recklessness about the demands of strict virtue and even common morality was wrapt up in this beguiling heresy. Some private mystical experience, real or imagined, that one was in a "state of grace", might secure a discharge from scrupulous fidelity of conduct. Thus, that sad reprobate, Captain Underhill—a member of the Boston church, and very serviceable in his military capacity—when detected in gross immorality, had the assurance to tell the pure-hearted Governor Winthrop, "that the Spirit had sent into him the witness of Free Grace, while he was in the moderate enjoyment of the creature called tobacco"—that is, while he was smoking his pipe.

This dreaded heresy came to the stern Puritans of Boston associated with grossly licentious professions and indulgences among fanatics in Germany and Holland, and was by no means unknown by such tokens in old England. But, allowing for very exceptional cases like that of Underhill, no such scandals attach to the names and conduct of the Antinomians who were so ruthlessly dealt with in Boston in 1636. The most prominent among the Antinomians here—the one who "brought the heresy", and whose name is the synonym of it—was Mrs. Anne Hutchinson, a pure and excellent woman, to whose person and conduct there attaches no stain. She first became known for her kind and helpful services, friendly and medical, to her own sex in their needs. She is described as a woman of "nimble wit" and a high spirit, gifted in argument and ready speech. She was inquisitive and critical—perhaps censorious. But her most alarming quality was that she "vented her revelations"; i. e., in a form of prophecy sometimes threatening and denunciatory gave utterance to forebodings of judgment and disaster to come upon the colony, as revealed to her by special divine communications. While no claim to such privileged illumination could for a moment stand with the Puritans as even possible of proof, the assertion of it was of the very essence of fanaticism. Yet the weak and credulous might be ensnared by it, and then there was no setting limit or restraint to the ruin and woe which might come upon them.

Having made herself trusted and esteemed by many of the principal women of the town, Mrs. Hutchinson drew groups of them around her to discuss the sermons by the elders. It soon appeared that by her judgment most of these preached a "covenant of works". The theme of earnest debate, and the vehicle which it found in tongues not always discreet or charitable, soon made itself a power outside of the women's meetings. The spark was set to inflammable materials. The whole community was in a fever of mutual distrust, jealousy, and dread of impending catastrophe. * * * As the dealings of the court and church with Mrs. Hutchinson and her party became more and more embittered and stern, it was found that she had a very strong following. The two associate elders, Cotton and Wilson, and the two governors, Winthrop and Vane, each respectively took different sides in the contest. Many of the principal inhabitants of Boston warmly espoused the views of Mrs. Hutchinson. As the dispute came to the knowledge of the "common sort of people", it gained

new elements of fear and passion, partly because there were real elements of lawlessness involved in it, and for the rest because so many who were heated by the strife had really no intelligent idea of the terms and significance of the controversy so that they could distinguish between its practical and its panic qualities.

The sentence against Mrs. Hutchinson stands thus in the court record: that "being convented for traducing the ministers and their ministry in this country, she declared voluntarily her revelations for her ground, and that she would be delivered and the court ruined with their posterity; and therefore was banished", etc. The church excommunicated her for "having impudently persisted in untruth". * * * Though Mrs. Hutchinson's ultimate fate in another colony—falling with all her family, save one child, in an Indian massacre—was most deplorable, it is pleasant to know that most of those who suffered with her expressed their regret and penitence and were restored.

Another difficulty arose with reference to the "Anabaptists", of whom Dr. Ellis says:

"Anabaptists" is the word used in our records to define this class of victims. The prefix *ana* to the name with which only we are familiar, designates those who had been baptized anew, or a second time. The first who bore the name having been baptized as infants, and having come to regard the rite at that time as unscriptural, followed the rule of their conscience in seeking its benefit at the time of their "conversion" in mature years, as a token of their Christian profession. Of course this repetition of the rite was a reflection upon the way of those who practiced infant baptism. The proceedings against the innovators here were instituted just about the time when our rulers were most perplexed and dismayed by the experience already referred to, namely, the alarming increase of persons growing up in the colony as unbaptized, because their parents were not members of a church. One might have supposed that the principles of the new heretics would have furnished in some sort a welcome relief under the sad perplexity presented by the growth of a heathen element in the community. But "Anabaptism" was a word which brought with it portentous associations of fanaticism, licentiousness, and utter lawlessness and anarchy to the Puritans. Among the masses of pamphlets and tractates dealing with the wild sectaries with which the times were so rife, mentioned on a previous page, was one little volume, copies of which we may be sure had found their way here. Of one of these now before me I transcribe the title: *The Dippers dipt, or, The Anabaptists Duck'd and Plung'd over Head and Eares, &c.: The famous History of the frantick Anabaptists, their wild Preachings and Practices in Germany, &c.* By Daniel Featley, D. D. London: 1651. With special and minute detail in its repulsive narration it tells of the frantic and delirious excitement wrought among them by Thomas Muneer, the "Prophet John", of Leyden, and other fanatics—"an illiterate, sottish, lying, and blasphemous sect, falsely pretending to divine Visions and Revelations: * * * also an impure and carnall Sect, a cruell and bloody Sect, a prophane and a sacrilegious Sect", &c. Nor does the fiery tractate fail to give illustrations of each of these epithets.

Another sect consisted of those who "in contempt were call'd Quakers". They began to arrive in the colony a few years later. The contention with the Quakers constituted a most important episode in the history of the Puritan commonwealth, the religious aspects of which have been fully described by Dr. Ellis.

Following the election of Winthrop to be governor for the fifth time, in 1637, there arose a violent controversy between him and Vane, who returned in August of the same year to England, where, as Winthrop afterward records, "he showed himself in later years a true friend to New England, and a man of noble and generous mind". After his departure the contentions increased, and the general court adopted extreme measures of repression, including "punishment, disfranchisement, and, finally, disarming".

In 1638, Winthrop being again elected governor, a demand came from England for the surrender of the Massachusetts charter, with a threat of sending a new governor-general from England.

Happily diplomatic delays were interposed; a humble petition was sent back and the direct issue was "avoided and protracted", by the express advice of Governor Winthrop, until the king and his ministers became too much engrossed with their own condition at home to think more about their colonies. The charter was saved for another half century, to the great relief and delight of those who had brought it over.

In 1639 Winthrop was elected for the seventh time, but, owing to financial difficulties, he relinquished the office in 1640. In 1641 a code of one hundred laws was adopted, known as "The Body of Liberties". This code is far from sustaining the impression that the rule of New England puritanism was a severe one, inasmuch as it punishes but twelve offenses with death, while about one hundred and fifty offenses were then so punished in England. The general court decreed "that it should be audibly read and deliberately weighed in every general court that shall be held in three years next ensuing; and such of them as shall not be altered or repealed, they shall stand so ratified that no man shall infringe them without due punishment". The following is the opening of the code:

No man's life shall be taken away; no man's honor or good name shall be stained; no man's person shall be arrested, restrained, banished, dismembered, nor anyways punished; no man shall be deprived of his wife or children; no man's goods or estate shall be taken away nor any way endangered under color of law or countenance of authority,—unless it be by virtue of equity of some express law of the country warranting the same, established by the general court and sufficiently published, or, in case of the defect of the law in any particular case, by the word of God; and in capital cases, or in cases concerning dismembering or banishment, according to that Word to be judged by the general court.

For all the previous years of the colony's existence there had been no statutes for the administration of justice, and no express recognition of the common law of England. The first printed edition of the laws was in 1649; but the Body of Liberties was not printed until two centuries later.

In 1642, Winthrop being again elected governor, there arose a controversy "which happily terminated in an organic change for the better in the mode of colonial legislation".

"There fell out," says Winthrop, "a great business upon a very small occasion. Anno 1636, there was a stray sow in Boston, which was brought to Captain Keayne; he had it cried divers times, and divers came to see it, but none made claim to it for near a year. He kept it in his yard with a sow of his own. Afterwards, one Sherman's wife, having lost such a sow, laid claim to it," and so the story is pursued for many pages. This stray sow in the streets of Boston (and it was a white sow) is hardly less historical than the white sow which guided Æneas to the future site of Rome. It led to the great dispute between the magistrates and the deputies in regard

to the "negative voice", and to the final separation, by solemn order, of the legislature of Massachusetts into two co-ordinate branches—magistrates and deputies, or, as we now style them, senators and representatives. This order, as contained in the colonial records of March 7, 1644, is too notable to be omitted in any account of the gradual progress of the colony towards constitutional government. It is as follows:

"Forasmuch as, after long experience, we find divers inconveniences in the manner of our proceedings in courts by magistrates and deputies sitting together, and accounting it wisdom to follow the laudable practice of other states who have laid groundworks for government and order in the issuing of greatest and highest consequence,—

"It is therefore ordered, first, that the magistrates may sit and act business by themselves, by drawing up bills and orders which they shall see good in their wisdom, which having agreed upon, they may present them to the deputies to be considered of, how good and wholesome such orders are for the country, and accordingly to give their assent or dissent; the deputies in like manner sitting apart by themselves, and consulting about such orders and laws as they in their discretion and experience shall find meet for common good, which, agreed upon by them, they may present to the magistrates, who, according to their wisdom, having seriously considered of them, may consent unto them or disallow them; and when any orders have passed the approbation of both magistrates and deputies, then such orders to be engrossed, and in the last day of the court to be read deliberately, and full assent to be given; provided, also, that all matters of judicature which this court shall take cognizance of shall be issued in like manner."

In this year (1642) took place the first commencement of Harvard college, "endowed by the infant colony in 1636. The college assumed a practical existence in 1638, taking the name of the Rev. John Harvard, of whom, alas! so little is known except his immortal bequest." Concerning this event the following entry was made in Winthrop's journal:

Nine batchelors commenced at Cambridge; they were young men of good hope, and performed their acts so as gave good proof of their proficiency in the tongues and arts.

5. The general court had settled a government or superintendency over the college, viz, all the magistrates and elders over the six nearest churches and the president, or the greatest part of these. Most of them were now present at this first commencement, and dined at the college with the scholar's ordinary commons, which was done of purpose for the students' encouragement, &c., and it gave good content to all.

In 1643 (Winthrop again elected governor) the plantation of Massachusetts was divided into the four counties of Suffolk, Norfolk, Essex, and Middlesex. At the session of the court of that year a number of neighboring Indian chiefs making voluntary submission, several questions or propositions were submitted to them. Mr. Winthrop quotes the following to illustrate their character:

3. Not to do any unnecessary worke on y^e Sabbath day, especially wthin y^e gates of Christian townes.

Answer. It is easy to y^m; they have not much to do on any day, and they can well take their ease on y^t day.

This year will be forever memorable in the history of America as that of the formation of the "New England confederation or union, by written articles of agreement which is the original example and pattern of whatever unions or federations have since been proposed or established on the American continent". The compact was between the four colonies, Massachusetts, Plymouth, Connecticut, and New Haven. This compact was largely the result of the unceasing efforts of Governor Winthrop from the time of its first proposal in 1637.

The little congress of commissioners was held and organized in Boston on the 7th (17th) of September, 1643, the birthday of the town, and Winthrop was elected its first president. The same day of the same month, nearly a hundred and fifty years later (1787), was to mark the adoption of the Constitution of the United States, in which it is not difficult to discern some provisions which may have owed their origin to the articles of this old New England Confederation.

Mr. Winthrop's paper gives an account of "the impeachment of Winthrop", which became permanently notable chiefly for the "little speech" of Winthrop after his complete acquittal. Winthrop was re-elected in 1646, 1647, and 1648. He died before the election of 1649. The notable event of this period is the enactment of an order (1647) in the following words:

It being one chief project of that old deluder, Satan, to keep men from the knowledge of the Scriptures, as in former times by keeping them in an unknown tongue; so in these latter times by persuading from the use of tongues, that so at least the true sense and meaning of the original might be clouded by false glasses of saint-seeming deceivers,—that learning may not be buried in the grave of our fathers in the church and commonwealth, the Lord assisting our endeavors,—

It is therefore ordered, that every township in this jurisdiction, after the Lord hath increased them to the number of fifty householders, shall then forthwith appoint one within their town to teach all such children as shall resort to him to write and read, whose wages shall be paid either by the parents or masters of such children, or by the inhabitants in general, by way of supply, as the major part of those that order the prudentials of the town shall appoint, provided those that send their children be not oppressed by paying much more than they can have them taught for in other towns.

And it is further ordered, that when any town shall increase to the number of one hundred families or householders, they shall set up a grammar school, the master thereof being able to instruct youth so far as they may be fitted for the university; provided, that if any town neglect the performance hereof above one year, that every such town shall pay five pounds to the next school till they shall perform this order.

In the May session of 1648 there is a record of a resolution concerning the discovery of witches, the discussion of which more properly belongs to the history of Salem.

The foundation period of Boston may properly be considered to have terminated in 1649 with the death of Governor Winthrop, who was first made governor of Massachusetts by the company in London; was twelve times re-elected to the office; thrice chosen deputy governor; and in the remaining years served at the head of the board of assistants. Dr. Palfrey, in his sketch referring to this period, says:

The vital system of New England, as it had now been created, was complete. It had only thenceforward to grow, as the human body grows, from childhood to graceful and robust maturity.

The following is his estimate of the character and services of the wise founder of the city :

The importance which history should ascribe to his life must be proportionate to the importance attributed to the subsequent agency of that commonwealth of which he was the most eminent founder. It would be erroneous to pretend that the principles upon which it was established were an original conception of his mind ; but undoubtedly it was his policy, more than any other man's, that organized into shape, animated into practical vigor, and prepared for permanency those primeval sentiments and institutions that have directed the course of thought and action in New England in later times ; and equally certain it is that among the millions of living men descended from those whom he ruled, there is not one who does not—through efficient influences, transmitted in society and thought along the intervening generations—owe much of what is best within him, and in the circumstances about him, to the benevolent and courageous wisdom of *John Winthrop*.

For twenty years after its foundation a single church had accommodated the whole population. A second one, the North church, at North square, was opened for services in 1650. The third church, "the Old South", was the outgrowth of a bitter dispute "among those who are bound by their profession, as well as by the precept of Heaven, to maintain the unity of the spirit in the bond of peace". The dispute grew out of the limitation of the political franchise to church-members, freemen being required to be of "orthodox principles". As the children of those who were not church-members could not be baptized, a large part of the population in time became excluded, not only from religious but also from civil privileges. In 1646 the general court was petitioned to grant civil rights to all "truly English", and admitting to the privileges of the churches of New England all members of the Church of England or Scotland who were "not scandalous". The petition was denied, the papers of the petitioners were seized, and they themselves were confined. Political troubles in England rendered appeal to the mother country useless. Finally, in 1657, a general council of Massachusetts, delegates from Connecticut taking part in the discussion, determined that those who had been baptized in infancy were to be regarded as church-members. This innovation aroused bitter opposition ; but the decision was substantially re-affirmed in a synod held in 1662. Strenuous protest was made by eminent pastors, among them Rev. John Davenport, of New Haven. The churches were divided among themselves, and in 1667, on the death of Wilson, Mr. Davenport being chosen pastor of the First church, his advocacy of the straiter policy led to earnest opposition to his settlement. Twenty-eight members of the church, with one member from the Charlestown church, formed a new congregation which settled in Charlestown to avoid the restriction of the Boston law. The First church refused to dismiss them for this purpose, but members of other churches supported their separation and recognized them as "the Third church in Boston". The governor (Bellingham) "summoned his council to prohibit the erection of the new meeting-house". This extreme ground the council would not take, and, the selectmen of Boston having consented, the Old South was built on the corner of Washington and Milk streets. In 1670 the house of deputies condemned this transaction "as irregular, illegal, and disorderly". The question became prominent at the next election, and the general court then chosen favored the movement by a decisive majority. The breach was finally healed only because of the beginning of Episcopal invasion from the mother country. The Baptists built a place of worship in 1680, but its occupancy was for a time prevented by order of the general court. The Quakers had a regular meeting-place as early as 1677. In 1697 they erected a meeting-house in Brattle street.

A new sorrow was in store for the Puritans of Boston. In 1679 a number of residents petitioned the king for the right to worship according to the forms of the Church of England. Before this there were laws forbidding the observance of Christmas day and "the solemnization of marriage by any person but a minister". In 1681 the law forbidding the keeping of Christmas was repealed. In 1685 Sewall's diary records :

X. 25, Friday. Carts come to Town, and Shops open as is usual: some somehow observe y^e day; but are vex'd I believe that y^e Body of y^e People profane it, and blessed be God no authority yet to compell them to keep it.

The active mover in favor of episcopacy was Edward Randolph, who passed frequently to and fro between England and America—"his shuttle of mischief * * * still working in its loom of hate and revenge". During one of his absences Governor Cranfield wrote :

* * * Tis my humble opinion, that it will be absolutely necessary to admit no person into any place of Trust, but such as take y^e Sacrament and are conformable to the Rites of the Church of England, for others will be so influenced by their Ministers as well obstruct the good Settlement of this place ; and I utterly despair (as I writt in my former letter to yo^r Lordps) of any true duty and obedience paid to his Maj^{ty} untill their Colledge be suppress and their Ministers silenced, for they are not only Enimies to his Maj^{ty} and Government, but Christ himself, for of all the Inhabitants of this Province, being about four Thousand in number, not above Three Hundred Christned by reason of their Parents not being Members of their Church. I have been this 16 Months persuading the Ministers to admitt all to the Sacrament and Baptisme, that were not vitious in their lives, but could not prevaile upon them, therefore with advise the Councill made this inclosed Order. Notwithstanding they were left in the intire possession of their Churches and only required to administer both Sacraments, according to the Liturgie of y^e Church of England, to such as desired them, which they refuse to doe, and will understand Liberty of Conscience given in his Maj^{ty}s Commission, not only to exempt them from giving the Sacrament according to the Book of Comon Prayer but make all the Inhabitants contribute to their Maintenance, although they refuse to give them the Sacrament and Christen their Children, if it be not absolutely enjoyned here, and in other colonies, that both Sacraments be administered to all persons that are duly qualified, according to the form of the Comon Prayer, there will be perpetual dissensions, and a total decay of the Christian Religion.

In 1683 Randolph brought an act of *quo warranto* against the charter of the colony, and it was abrogated in 1684. Massachusetts became a royal province, to be ruled by a governor from England, a representative of the

king who must worship after the forms of the established church. Charles II, just before his death, in February, 1685, manifested his disposition toward New England by commissioning the brutal Colonel Percy Kirk as governor, with unlimited powers.

He was to have a council of his own appointment, and all lands granted here were to pay a royal quit-rent. One of the three Boston churches was to be seized for the service of the Church of England, a point on which Randolph's persistency with the royal council and the prelates had succeeded. But though James II confirmed Kirk's appointment, he soon found that he should need him for a tool of oppression in England.

By 1640 the town had grown rapidly in population. It was estimated that, up to the civil war of England, 20,000 persons had emigrated to New England. More of these had settled in Boston than in any other place, but there is no definite record of the population at that time. With the meeting of the Long Parliament, emigration nearly ceased.

The first wind-mill was built in 1632, having been removed from Cambridge, "where it would not grind but with a westerly wind".

A wharf had been built at an early day, and the town, in 1639, granted lands toward the repairing of this wharf and of the crane upon it. An effort to protect a portion of the harbor front with a sea-wall was made in 1673. This work was never entirely completed, and ultimately fell into decay.

The East Boston ferry was leased in 1637 for a term of three years, at £40 per annum. After the expiration of the lease it was granted to the college. The ferries seem to have assumed considerable importance at an early day, and in 1646 an order was passed regulating the management of the ferries to prevent overcrowding, etc.

Orders were early passed regulating highways, and in June, 1639, "Boston was fined 20 shillings for defective highways, and enjoined to repair them upon the penalty of £5". In 1649 the selectmen passed an order against the leaving of fire-wood, timber, or other material on the public streets. In 1658 an order was passed by the selectmen prohibiting the playing of foot-ball in the town under a penalty of 20 shillings for each offense.

Early precautions were taken against the harboring of strangers who might become a charge on the public, no townsman being allowed to entertain a stranger more than fourteen days without leave from the selectmen (1636). Persons coming into the town "from any other town or country" with intent to reside, must give notice to the selectmen within eight days after arrival. Houses could not be sold or let without notice to the selectmen. In 1659 there was passed an order relating especially to persons who came to the town "for help in physic or chirurgery"; inhabitants were prohibited from receiving such persons into their houses or employment without permission of the selectmen under penalty of 20 shillings per week and any charge that might accrue therefrom. If, however, the persons received were not "of notorious evil life and manners", and if a satisfactory bond were given to secure the town from all charges, if the bondsmen gave notice "that the town may be fully cleared of such person or persons so received", the bond should be given up. It was also ordered that no shops or manufactures should be kept or set up by persons not first admitted as inhabitants into the town.

In 1659 there occurred a conflagration which destroyed 150 dwellings and warehouses—"the most woful desolation that Boston ever saw". Immediately thereafter the general court passed a building law prohibiting the erection of dwelling-houses unless built of stone or brick and covered with slate or tile without special permission from the authorities. At the same session ten persons who were suspected of incendiarism were banished from the colony. The operation of the building law was soon after suspended for three years, as many persons were unable to build their houses with the prescribed material. In 1683 a law was enacted allowing a party-wall to be set one-half on the adjoining estate, one-half its cost to be paid for by the adjoining owner when he used it.

The first provision for a market was enacted in 1634, and the first post-office was set up in 1639.

In 1648 a guild of shoemakers was incorporated for the protection of the interests of the trade. At the same session the general court incorporated the association of coopers, providing, among other things, "that no unlawful combination be made at any time by the said company of coopers for enhancing the prices of casks or wages, whereby either our own people or strangers may suffer"; and that "the priority of their grant shall not give them precedence of other companies that may hereafter be granted". In 1652 a water company was incorporated.

For protection against fire it was ordered, in 1670—

That after the first day of March next, and so forward to the first of November in every year, every inhabitant in this town shall at all times during the said term have a pipe or a hoghead of water ready filled, with the head open, at or near the door of their dwelling-houses and warehouses, upon the penalty of five shillings for every defect.

From time to time persons were fined for having defective chimneys, and were required to have them put in order and swept; and in December, 1676, the colony council recommended to the town the appointment of certain persons, who were named, or other persons instead of them, to see that the chimneys in the town were kept properly swept. The suggestion proved agreeable to the town, and the appointments were accordingly made.

In 1658 the first town-house was erected, and in return for aid received from the colony treasury the town was required to provide suitable accommodation for the courts; also to provide "that the place underneath shall be free for all inhabitants in this jurisdiction to make use of as a market forever, without paying of any toll or tribute whatever". This house was to be "a very substantial and comely building", 66 feet by 36 feet, supported on pillars 10 feet high. The principal story 10 feet high, and the roof or half-story to have three gables at each side;

on the roof was to be a wide walk protected by rails, and with two turrets. The contract was for £400, the town furnishing "the masons' work and materials, all the iron work, lead, glass, and glazing". It is not stated that the construction of this building inaugurated a custom which has come down to our own time, but we are informed that the contractors made large claims in the final settlement and were voted an allowance of £80 in full.

In 1660 the general court granted 1,000 acres of land to Boston as an aid to the support of the free school. Even before this date the town and its individual citizens had contributed nobly to the support of Harvard college.

The important bearing of the Indian question on the early history of Boston is fully treated by George E. Ellis in the *Memorial History*. No adequate *résumé* of this subject can be given here, further than to say that the history of the relations between early settlers of the frontier and their Indian neighbors, down to our own day, is substantially all anticipated in the relations between the people of Boston and the Indians of eastern Massachusetts; anticipated and somewhat intensified by the religious element introduced by the stern puritanism of that period. The admirable devotion of Eliot and of other ministers to the cause of the religious and worldly improvement of the savages was always conspicuous. On the other hand, much wrong to the Indian—which in our own time is done in the interest of "a higher civilization"—was in this case inflicted in the service of religion.

In all candor, the admission must be made that Christian white men—Puritans—with all the humanity which they practiced toward their own brethren, and all the piety which they professed toward God, allowed themselves to be trained by the experience of Indian warfare into a savage cruelty and a desperate vengefulness, hardly distinguishing themselves at any point from the victims of their rage.

It was one of the profoundest and most vital sources of their courage, heroism, and constancy in their enterprise, their refuge and solace in all their straits and hazards, that God was leading them and using them for his own purposes to reclaim a blasted region of the earth and to set up his kingdom there. The Indians, on their side, showed in their "revolting and torturous ingenuities of malice, rage, and fiendish cruelty an extreme of savagery which the worst instances of more recent times cannot equal".

The friends of Eliot and of his associate, Major Daniel Gookin, seconded by those of the English society for converting and civilizing the Indians, led to the employment of missionaries and teachers, and the supply of the implements of civilization.

The first brick edifice in the college yard at Cambridge was built by the funds of this society, and was called "the Indian college", being designed to accommodate twenty native pupils. There the Indian Bible was afterward printed, with primers, tracts, etc.

In 1644, after the great Indian massacre, many persons emigrated from Virginia to Massachusetts. Boston had early relations with North Carolina also, which began with contributions for the relief of emigrants who had settled at the mouth of Cape Fear river thirty years after the establishment of Boston. They established also limited commercial relations with the province of Maryland, with the Swedes on the banks of the Delaware, and with the Dutch of New York; in the latter case commercial relations soon changed to relations of hostility.

Boston was the chief English settlement with which the French colonies had commercial and other intercourse. Indeed, for a time the people of the colonies were designated by the Canadians as "Bostonnais". The history of this period, including the relations between Boston and the district of Acadia, is of interest and importance.

During the rule of Cromwell in England the condition of Massachusetts, as of other American colonies, remained peaceful and thriving. The appearance of the town at this period is thus described by Johnson in his *Wonder-Working Providence*:

The chief Edifice of this City-like Towne is crowded on the Sea-bankes, and wharfed out with great industry and cost, the buildings beautiful and large, some fairely set forth with Brick, Tile, Stone, and Slate, and orderly placed with comly streets, whose continuall inlargment presages some sumptuous City. * * * But now behold the admirable Acts of *Christ*: at this his peoples landing, the hideous Thickets in this place were such that Wolfes and Beares nurst up their young from the eyes of all beholders, in those very places where the streets are full of Girles and Boys sporting up and downe, with a continued concourse of people. Good store of Shipping is here yearly built, and some very faire ones: both Tar and Mastes the Countrey affords from its own soile; also store of Vitnall both for their owne and Forreiners ships, who resort hither for that end: this Town is the very Mart of the Land; *French, Portugalls, and Dutch* come hither for Traffique.

Shortly after the Restoration (1660), at a time when the industries and prosperity of the colonies were active, and when Dutch and Spanish ships were carrying on a profitable commerce with Boston, the "act of navigation" was passed which prohibited the importation of merchandise into the plantations in any other than English ships navigated by Englishmen. Soon after, exportation to America was confined to English vessels and English ports. All staples which were not also produced in England must be shipped to England. Duties were imposed on traffic between the different American colonies. So far as the American people were concerned, all of these enactments were a dead letter. They were followed by a more direct invasion of the liberties of the people, for although the colonial charter was confirmed, it was newly interpreted, and it was asserted that, the principle of the charter being liberty of conscience, this liberty must extend to those who wished to worship according to the forms of the Episcopal Church; that the elective franchise must be given "to all male freeholders of competent estate"; that justice should be administered in the name of the king, all laws to the contrary being repealed. These requirements would seem reasonable enough, "but men did not wish to have even toleration forced upon them", and an antagonism was aroused which gave rise to increased suspicion in England.

In 1664 there arrived with an English fleet intended for operations against the Dutch settlements of New

York "the members of a royal commission against whose power and purpose the colony at once protested". The colonial authorities prohibited the making of complaints to these commissioners, and, in the spirit which was manifested more than a century later by the whole country, they issued the following dignified remonstrance:

DREAD SOVEREIGN: The first undertakers of this plantation did obtain a patent, wherein is granted full and absolute power of governing all the people of this place, by men chosen from among themselves, and according to such laws as they should see meet to establish. A royal donation under the great seal is the greatest security that may be had in human affairs. To be governed by rulers of our choosing and laws of our own is the fundamental privilege of our patent.

A commission under the great seal, wherein four persons (one of them our professed enemy) are impowered to receive and determine all complaints and appeals according to their discretion, subjects us to the arbitrary power of strangers, and will end in the subversion of our all. * * *

God knows, our greatest ambition is to live a quiet life in a corner of the world. We came not into this wilderness to seek great things to ourselves; and, if any come after us to seek them here, they will be disappointed. We keep ourselves within our line; a just dependence upon and subjection to your majesty, according to our Charter, it is from our hearts to disacknowledge. We would gladly do anything within our power to purchase the continuance of your favorable aspect. But it is a great unhappiness to have no testimony of our loyalty offered but this, to yield up our liberties, which are far dearer to us than our lives, and which we have willingly ventured our lives and passed through many deaths to obtain.

Public meetings and public protests followed. Friends in England could not understand why the colonists should object to the commissioners. These went to other colonies with a similar purpose of conciliation. On their return they "desired that the whole male population of Massachusetts should assemble in Boston to hear the message from the king". This being refused, they announced the holding of a court and cited the colony to appear. The court responded through a messenger, accompanied by a trumpeter, who proclaimed in the king's name, and by authority of the royal charter, that this act of the commissioners was usurpation. When the commissioners opened their court they found no defendant present. Their enterprise came to naught, and the offending colony as a peace-offering "sent provisions to the English fleet in the West Indies and sent a ship-load of masts to the navy in England". It was not until after the Indian wars and after the death of King Philip that the English ministry succeeded for a time in assuming control of the colony.

In June, 1675, an express from Governor Winslow galloped into Boston with the news that the Old Colony had been attacked by Indians under King Philip, and asking that Massachusetts should, if possible, prevent the Narragansetts from allying themselves with him. To this end special messengers were sent to the Narragansetts, with instructions to confer with Roger Williams on the way. There was great excitement in Boston; men were mustered, and the regular train-bands were notified to be ready for a draft. Henchman and Prentiss were sent out with their force, including 100 men and a party of cavalry. The next day they were overtaken by Samuel Mosely and his company—110 men, called "privateers". They rendezvoused at Swansea. In addition to this force there were eight companies formed which were ready to take the field in the autumn. This force was drafted three times during the war, once for an attack on the Narragansetts. Of the whole number—850—the largest part saw service at one time or another. The first expedition drove back the Indians from Swansea to Mount Hope. Afterward, joining the commissioners to the Narragansetts, they probably added to their efficiency, and an engagement was secured that this tribe would enter the war, not with Philip, but against him.

Meantime the force from the Old Colony brought Philip to bay on Taunton river, where Henchman undertook to besiege him with his own company, sending the others home to Boston. Philip made his escape by wading the river at low-tide with his warriors, leaving his women and children behind. The excitement in Boston was intense. Boston was removed from the actual dangers of the war, but was within easy reach of its rumors. The friendly Indians of the colony became objects of suspicion. They were, save one, rescued from the popular fury chiefly by the efforts of Eliot and Gookin. The one whose innocence they could not establish "was sold for a slave". The general court issued stringent orders concerning the Indians, who were not to be permitted in the town, except under guard. Eliot's colony of converts—200 in number—were removed to Deer island. The women and children captured at the escape of Philip were most of them brought to Boston with the prisoners of war. "At first they were assigned to such families as would receive them, but before the war ended they were sent into West Indian slavery." Everett, in his Bloody Brook address, says of Philip's wife and child:

They were sold into slavery—West Indian slavery! An Indian princess and her child sold from the cool breezes of Mount Hope, from the wild freedom of a New England forest, to gasp under the lash beneath the blazing sun of the tropics! Bitter as death! Ay, bitter as hell!

The Narragansetts had failed to carry out their engagement, and were probably covert allies of Philip. An army of 1,000 men was called out, of which Massachusetts was to furnish 527. The quota of Boston was 108, of Charlestown, 15. This army attacked the Narragansetts' stronghold in a swamp near Kingston hill. The engagement was a severe one, 31 of the Indians being killed and 67 wounded. The place was taken and destroyed, and the power of the tribe was broken. The frontier, however, was still beset with danger, and further levies became necessary, and the colony, indeed, was in a constant state of excitement. The further incidents of the King Philip war, however, relate rather to the outlying settlements as far away as Connecticut river and along the borders of Connecticut, than to Boston itself. The town, however, shared in the loss of life of the Massachusetts army, amounting in all to between 500 and 600. "The estimate frequently made that she lost one-tenth of her fighting men is probably beneath the truth."

The royal charter of the governor and company of the Massachusetts Bay in New England was sealed March 4, 1628. It confirmed to the New England company the land extending from 3 miles south of the Charles river to 3 miles north of the Merrimack river, and reaching from the Atlantic coast to the South sea. Full powers of local government were conferred by it. Many of the powers exercised during the next fifty years under the authority of the charter had not been specially granted by it, and they were later held to have been assumptions. These powers were necessary for the proper government of a colony so remote from its mother country, and warrant for their exercise was claimed to exist in the provision which authorized them "to retain and establish all manner of wholesome and reasonable orders, laws, statutes, and ordinances, directions and instructions not contrary to the laws of this our realm of England, as well as for the settling of the forms and ceremonies of government and magistracy fit and necessary for the inhabitants there".

We have already seen the beginning of an effort on the part of the same government to weaken or to undermine the government based on this charter. Active measures were suspended by troubles and calamities at home. The London fire and the great plague were among the causes which led to an almost entire suspension of political intercourse with the colonies. The projects, however, had never been wholly abandoned. In the summer of 1676, Edward Randolph, "the evil genius of New England", whose action with reference to the Church has been referred to above under a commission of the king, instituted proceedings under the petition of those who had complained of the assumptions of the colonial government under the charter. These proceedings were continued from time to time; but at last a judgment was obtained against the charter. Randolph then submitted a letter of the king apprising the magistrates of the representations of the complainant, allowing one month for a reply. He endeavored to stimulate disaffections, complained of violations of the navigation act, and represented that in New Hampshire and in Maine "the whole country complained of the oppression and usurpation of the magistrates of Boston". Agents were appointed to bear the answer to these complaints in an address to the king. They found the court prejudiced against them. The committee to which the matter had been submitted informed them that the colony must adhere to the boundaries named in the patent; must solicit pardon for the coining of money; must in future observe the navigation act, and that objectionable laws must be modified. They were later told "that his majesty would not destroy their charter, but rather, by a supplementary one, set things right that were now amiss". Several addresses from the general court were received in England while the agents were still there, and several laws were enacted to remove exceptions which had been taken, such as an act punishing treason by death, and requiring an oath of allegiance to the king. It was ordered that the king's arms should be put in the court-house. Concerning the navigation acts they confessed in a letter to the agents that it had not been conformed to, saying that they—

* * * apprehended them to be an invasion of the rights, liberties, and properties of the subjects of his majesty in the colony, they not being represented in parliament; however, as his majesty had signified his pleasure that this act should be observed, they had made provision by the law of the colony that they should be strictly attended from time to time, although it greatly discouraged trade and was a great damage to his majesty's plantation.

"Thus we hear for the first time," says Chalmers, "that the colonists, though in the same breath swearing allegiance to the crown of England, were not bound by the acts of parliament, because they were not represented in it."

The agents returned to Boston in December, 1679, bearing a letter from the king, which contained the following requisitions:

- (1) That agents should be sent over in six months, fully instructed to answer and transact what was undetermined at that time.
- (2) That freedom and liberty of conscience should be given to such as desired to worship God according to the ways of the Church of England.
- (3) That all men of competent estates ratable at 10 shillings be eligible to be made freemen and magistrates.
- (4) That the number of assistants hereafter be 18, according to the charter.
- (5) That the oath of allegiance be administered to all persons in trust or in office.
- (6) That all military commissions and proceedings run in his majesty's name.
- (7) That all laws repugnant to trade be abolished.
- (8) That an assignment of the province of Maine be made to the king on the repayment of the sum for which they purchased it.
- (9) That Massachusetts recall all commissions granted for governing the province of New Hampshire.

Some of these requisitions were complied with; others were taken into consideration; and concerning others excuses for delay were offered. In the mean time Randolph had been commissioned "collector, surveyor, and searcher" for all of the New England colonies, and he entered early upon the discharge of his duties. He seized vessels, but the court's juries refused to condemn them, for he reports: "I was cast in all these causes and damages given against his majesty," and that it was now "in every man's mouth that they were not subject to the laws of England, neither were those of any force until confirmed by their authority". He urged proceedings under the writ of *quo warranto* against the charter, and insisted that the "Bostoneers" were usurpers without right. He then withdrew to New Hampshire. Complaints now came from the king that his requisitions had not been fully complied with, and he commanded that the agents to treat with him be sent within three months after the receipt of his letter. In his letter he speaks of the "difficulties and mistakes" which had grown out of the execution so far from home of the powers of a charter which had been intended to be administered in England. Ministers were elected, but difficulties were raised by the opposition, and they did not sail. Randolph, however, did sail, and urged again the *quo warranto* proceeding. On his next return he bore a commission as deputy collector of all the colonies in New England except New Hampshire. This was regarded as a further encroachment upon the charter. A letter which he bore from the king reiterated and emphasized his complaints against the colony, and he once more charges and

requires that agents be sent to him "fully empowered and instructed to attend the regulation of that our government, and to answer the irregularity of your proceedings therein". In default of this he announces his resolution to bring the *quo warranto* action at the next Trinity term of the court of king's bench, "whereby our charter granted unto you with all the powers thereof may be legally evicted and made void. And so we bid you farewell". Agents were now elected, and they were instructed to consent to anything which should not "violate or infringe the liberties and privileges granted by charter or the government established by it". The general court asked for forbearance and made several further modifications of the laws. The agents arriving in England made full response to the king's requisitions and allegations, but this had little influence. The agents were informed that unless their powers were extended without delay the colony would be proceeded against "the first day of Hilary term next". In the mean time they were compelled to continue their attendance. Randolph was ordered to return to England to prosecute a *quo warranto*. The agents represented the colony's case as desperate, and left it to the court to decide whether to submit to the king's pleasure or to suffer the writ to issue. The court, in March, 1683, resolved to address the king and authorize the agents to consent to whatever might be consistent with the main end of the removal of the company to Massachusetts; at the same time they were not to consent to an infringement of their privileges, religion, or worship. They might deliver up the deeds of the provinces of Maine if this would help their case. Randolph succeeded in carrying out his purposes, and the writ was issued summoning the colony to defend its existence before a court in London. The writ was returnable in October. The agents returned to Boston and were immediately followed by Randolph. The king sent also a declaration promising that "if the colony before prosecution would make full submission and entire resignation to his pleasure he would regulate their charter for his service and their good, and with no further alterations than should be necessary for the support of the government there". He also required that all who maintained suit against the king in the *quo warranto* proceedings should do so at their own expense, not at that of the colony, and that all who submitted to the pleasure of the king should be discharged of all contributions toward the suit.

The governor and a majority of the assistants, despairing of any success from a defence, voted on the 15th November that a humble address be sent to his majesty by this ship, saying that they would not contend with his majesty in a course of law, as they relied on his gracious intimations that his purpose was only to regulate their charter, without any other alteration than what was necessary for the support of his government here. After a delay of fifteen days the deputies dissented, and the town of Boston, under the lead of Increase Mather, sustained them.

The court employed an attorney in London to appear and make answer for the colony as they instructed him, to prevent a default and outlawry until they could find means "by an humble application to satisfy his majesty". In May, 1684, they sent another letter to their attorney expressing the hope that he would "spin out the case to the utmost", and calling his attention to the case of the island of Man, the Channel islands, etc., where the judges decided that these, "being *extra regnum*, could not be adjudged at the king's bench". Before these letters arrived the proceedings had been dropped and a new suit by *scire facias* begun on the 18th of June, 1684. The court of chancery ordered "that judgment be entered up for his majesty as of this term; but if the defendants appear first day of next term and plead to issue so as to take notice of a trial to be had the same term, then the said judgment by Mr. Attorney's consent to be set aside; otherwise the same to stand recorded". No definite action was taken in the colony until October 15, when an address was ordered to the king asking for "clemency and justice", and acknowledging "some unwilling errors or mistakes, for which we prostrate ourselves at your majesty's feet, humbly begging and exploring your majesty's pardon and forgiveness with the continuance of our charter and priveleges contained therein". The counsel for the colony on the first day of the term moved for a stay of proceedings, as the time allowed had not sufficed "for procuring a letter of attorney from New England". Reply was made that all corporations ought at all times to have an attorney in court, and final judgment was entered vacating the charter.

Information of this action was slow in reaching the colony. When it did arrive, the first serious action taken was to appoint a "fast day", and when the court met in July, Mr. John Higginson was asked "to seek the face of God for his special guidance and direction". Charles II having died and King James having been proclaimed, another petition in the matter was addressed to him. Interest in the government waned, and several towns neglected to send deputies to the general court. Randolph arrived with a final copy of the judgment against the charter on the 14th of May, 1686. This was read before the general court on the 17th, and a reply complaining of its arbitrary character and of the abridgment of popular rights was made on the 20th. The court on that day adjourned to the second Wednesday in October following. It never met again.

On May 15, 1686, there entered Boston harbor a vessel "freighted heavily with wo" to "the Bostoners", as Randolph called them. For this "Rose" frigate brought a commission to Joseph Dudley as president of Massachusetts, Maine, Nova Scotia, and the lands between; she also brought the Rev. Robert Ratcliffe, the first minister of the English church who had ever come so commissioned to officiate on this soil.

The liturgy was read for the first time and the Church of England was established by law in 1686.

1686. Tuesday, May 18. A great Wedding from Milton, and are married by Mr. Randolph's Chaplain at Mr. Shrimpton's, according to y^e Service-Book, a little after Noon, when Prayer was had at ye Town House: Was another married at ye same time; The former was Vosse's son. Borroowd a ring. Tis s^d they having asked Mr. Cook and Addington, and yy declining it, went after to ye President and he sent y^m to y^e Parson.

Randolph's designs included the seizure of one of the Boston meeting-houses for the use of the Church of England. Dudley was succeeded as governor September 20, 1686, by Sir Edmund Andros. "It is not in the scope of this narrative to give in detail the history of the high-handed ways in which Governor Andros faithfully carried out his master's policy." Governor Andros' demand for one of the Boston churches was met by the five ministers "with a will as resolute as his own".

The strength of the opposition which the ministers headed was really the same which made the strength of the Revolution, and again of our own war for the nation. It was the tough persistence of the common people. The yeomen of New England knew perfectly what they wanted; and they wanted no bishops nor tithes, nor forced loans of their churches. They might bend a little for a moment, but they would only spring back the harder, and they would never break!

After strenuous opposition during the last two years of Governor Andros' administration the Episcopalians had a joint occupancy of the South church, a partnership often marked by exasperating incidents.

It was something, indeed, for which the Puritan congregation had reason to be grateful that they were allowed to worship at all in their own meeting-house by the representative of a government which at home had set so many marks of scorn on dissenters from the Church of England. Nevertheless, on the special days of the Church the Puritan congregation was subjected to grave inconveniences. On Easter Sunday, 1687, the governor and his suite met there again at eleven, sending word to the proprietors that they might come at half-past one; "but it was not until after two that the church service was over," owing, says Sewall, to "the sacrament and Mr. Clarke's long sermon; so 'twas a sad sight to see how full the street was with people gazing and moving to and fro, because they had not entrance into the house". * * *

The governor on one occasion requested the South Church minister to begin his service at 8 a. m. for the convenience of the Episcopalians, and promised that it should be the last time. But still the church was occupied in this way till just before the popular uprising, which overthrew Andros' government, on the news of William of Orange's landing in England.

The difficulties were finally ended by the completion of the First Episcopal church in June, 1689. "It stood on the corner of the old burying-ground covering the space now occupied by the tower and front part of the present King's chapel." Its cost was \$1,425. The building seems to have been at times in danger of mob violence:

The storm of that time had well-nigh driven the little ark of the Church from its anchorage. Even now, after the lapse of nearly two centuries, it is impossible to read the Andros tracts without feeling the ground-swell of those waves of passion which tossed so fiercely in the little town of Boston. In July, 1689, the Rev. Robert Ratcliffe returned to England. It is very unlikely, in the angry state of public feeling, that there was any public dedication, or perhaps any consecration at all, of the wooden church. The very building itself seems to have been in some danger, for in these days there was such a power as the "Boston mob". A pamphlet published in Sweden in 1690, entitled *New England's Faction Discovered*, by C. D., states that "the church itself had great difficulty to withstand their fury, receiving the mark of their indignation and scorn by having the windows broke to pieces and the doors and walls daubed and defiled with dung and other filth in the rudest and basest manner imaginable, and the minister for his safety was forced to leave the country and his congregation and go for England."

The church, however, survived to be fostered by the care and honored with the gifts of the successive monarchs of England from William and Mary to George the Third. Under the long ministry of Rev. Samuel Myles it won the respect, if not the love, of its neighbors. The plain building was the only place in New England where the forms of the court church could be witnessed. The prayers and anthems which sounded forth in the cathedrals of the mother country were here no longer dumb. The equipages and uniforms which made gay the little court of Boston brightened its portals. Within, the escutcheons of royal governors hung against the pillars; at Christmas it was wreathed with green. The music of the first organ heard in New England here broke the stillness of the sabbath air.

The religious struggle of twenty-five years was over. If it be asked which party won in it, the answer must be: Neither, and both. The despotism of Andros was overthrown; the charter never was restored in its first fullness, but its work was wrought; a people had been trained to great traditions of freedom, and these survived eighty-six years more and then burst into blossom and fruit. On the other hand, the religious despotism of puritanism was broken forever. Baptists, Episcopalians, Quakers, might henceforth worship as they would; to-day everything, anything, or nothing may be believed where for nearly sixty years the calvinism of New England was all in all.

In 1650, in answer to a petition the court declared its willingness "to grant the petitioners a corporation [as a town], if the articles or terms, privileges, and immunities thereof were so presented as rationally should appear, respecting the mean condition of the country, fit for the court to grant". Another effort to obtain an act of incorporation for the town was made in 1659, and again in 1662 and in 1663. Again in 1667 a petition for incorporation was presented.

In the *Memorial History* there is a chapter by Horace E. Scudder, called "Life in Boston in the Colonial Period", which sets forth very clearly the manners and customs of the period. There are copious quotations from the sumptuary laws of the middle of the seventeenth century. At this time if a man "was not worth 200 pounds he should not wear gold or silver lace, or buttons, or points at their knees". Women of less wealth were forbidden to wear "silks, or tiffany hoods or scarfs".

Now and then a baronet made for a time his home in Boston, but otherwise the highest title was Mr. or Mrs., and this title was applied only to a few persons of unquestioned eminence. All ministers and their wives took the title, and the higher magistrates; but it was not given to deputies to the general court as such. The great body of respectable citizens were dubbed Goodman and Goodwife, but

officers of the church and of the militia were almost invariably called by the title of their rank or office. Below the grade of Goodman and Goodwife were still the servants, who had no prefix to their plain names. A loss of reputation was attended by a loss of the distinctive title, and a Mr. was degraded to the rank of Goodman.

Toward the end of the century a French refugee, writing home to his countrymen, says:

You may also own negroes and negresses. There is not a house in Boston, however small may be its means, that has not one or two. There are those that have five or six, and all make a good living. You employ savages to work your fields in consideration of one shilling and a half a day and board, which is eighteen pence, it being always understood that you must provide them with beasts or utensils for labor. It is better to have hired men to till your land. Negroes cost from twenty to forty pistoles [the pistole was then worth about ten francs] according as they are skillful or robust; there is no danger that they will leave you, nor hired help likewise, for the moment one is missing from the town you have only to notify the savages, who, provided you promise them something, and describe the man to them, he is right soon found. But it happens rarely that they quit you, for they would know not where to go, there being few trodden roads, and those which are trodden lead to English towns or villages, which, on your writing, will immediately send back your men. There are ship captains who might take them off; but that is open larceny and would be rigorously punished.

The same writer speaks thus of the markets:

Beef costs twopence the pound; mutton, twopence; pork, from two to three pence, according to the season; flour, fourteen shillings the one hundred and twelve pounds, all bolted; fish is very cheap, and vegetables also; cabbage, turnips, onions, and carrots abound here. Moreover, there are quantities of nuts, chestnuts and hazelnuts, wild. These nuts are small, but of wonderful flavor. I have been told that there are other sorts which we shall see in the season. I am assured that the woods are full of strawberries in their season. The rivers are full of fish, and we have so great a quantity of sea and river fish that no account is made of them. * * * I have been here in season to have seen a prodigious quantity of apples, from which they make a marvelously good cider. One hundred and twenty pots cost only eight shillings, and at the inn it is sold twopence the pot; twopence the pot for beer.

The legislature took the care of the souls of the people into its own very strong hand by the enactment of laws intended to secure absolute rectitude in the daily walk of the people. Due attendance at church on Sundays, fasts, and Thanksgiving was commanded under penalty of fine, and "blasphemy, whether by Indian or white man, was punishable by death". It was boasted that none of the holidays of England had crossed the Atlantic, and everything savoring of public amusements was systematically suppressed. Penalties were imposed for playing "unlawful games, as cards, dice, etc.". Bowling and dancing were prohibited.

Filial obedience, says the same author, was sought to be secured in this fashion:

"If any child or children above sixteen years old, and of sufficient understanding, shall curse or smite their natural father or mother, he or she shall be put to death, unless the parents have been unchristianly negligent or provoking by extreme and cruel correction." An incorrigible son could be presented by his parents and put to death, but the law remained, so far as evidence appears, a mere *brutum fulmen*. A more genial treatment of such cases is suggested by the order of August 22, 1654: "Magistrates have authority to whip divers children and servants who behave themselves disrespectfully, disobediently, and disorderly toward their parents, masters, and governors." The selectmen, again, in 1668, are "required to see that all children and youth under family government be taught to read perfectly the English tongue, have knowledge in the capital laws, and be taught some orthodox catechism, and that they be brought up to some honest employment".

Marriages were performed by magistrates, and there seems to be no "record of a marriage performed by a clergyman prior to 1686, except in Gorges' province by a clergyman of the Church of England. The minister, if he were present, was sometimes called upon to 'improve the occasion'".

At burials nothing is read, nor any funeral sermon made, but all the neighborhood, or a good company of them, come together by the tolling of the bell and carry the dead solemnly to his grave, and there stand by him while he is buried. The ministers are most commonly present.

Josselyn, describing the town as it was between 1660 and 1670, says:

Their streets are many and large, paved with pebble stone, and the south side adorned with gardens and orchards. The town is rich and very populous, much frequented by strangers; here is the dwelling of their governor. On the northwest and northeast two constant fairs [ferries] are kept for daily traffic thereunto. On the south side there is a small but pleasant common, where the gallants, a little before sunset, walk with their *marmal* madams, as we do in Morefields, &c., till the nine o'clock bell rings, then home to their respective habitations, when presently the constables walk their rounds to see good order kept and to take up loose people.

THE INTER-CHARTER PERIOD.

What is known as the inter-charter period in the history of Boston extended from the cessation of the authority of the first charter, May 20, 1686, to October 7, 1691, when the second charter was signed by King William. About one-half of this interval was covered by the administration of Governor Andros, who is the central figure of the period, events during the remaining years being unimportant. Prior to his advent, Massachusetts, New Hampshire, and Maine were united under a provincial government, with Joseph Dudley as president. He was assisted by sixteen counsellors. Randolph considered himself the true manager of the temporary government, and its course was by no means harmonious.

The disturbance created in the religious quiet of the Puritan settlement by the efforts of Andros and his adherents to establish worship according to the Church of England have already been recounted. In the matter of the assessment of taxes, and, in a more marked degree, in an effort to assert the king's title to all lands, there existed much cause for irritation. In April, 1688, Increase Mather was sent to England as an informal envoy of the people. Although an unofficial representative, he exerted a strong influence on the subsequent course of the English government relating to the New England colonies. After the accession of William and Mary, John

Winslow was sent out with a royal proclamation which gave great satisfaction to the colony. This was followed by a bloodless insurrection, which led to the capture of Andros, Randolph, and the leaders of their party. Subsequently, the former governor, Bradstreet, and the council of 1686, on the request of the town, returned to office. Charges were brought against Andros, Dudley, Randolph, and others, and bail was refused them. In December, Bradstreet received orders from England authorizing persons in office to continue until otherwise instructed. This was construed to indicate a temporary restoration of the old charter, and elections were held under it. Orders were also received to send Andros and his friends to England, whither they went in February, 1689. The colony also sent Elisha Cooke and Thomas Oakes to aid Mather in maintaining the cause of the people. Mather succeeded in preventing the sending to New England of a circular letter prepared for all the plantations. This practically separated New England from the other colonies, and thenceforth the question of its charter became an independent one. But for Mather's dexterous intervention, Andros would doubtless have been confirmed, and would have been enabled to carry out his scheme for the consolidation of the dominion of New England. Subsequently he procured a royal letter ratifying, for the time being, the assumption of power then in force in Massachusetts.

THE PROVINCIAL PERIOD.

In the preparation of the new charter it was questioned whether the colonies should be allowed to make their own laws without a governor appointed by the crown, having the power of veto. The king decided for a royal governor, but left the question of veto unsettled. In the final approval of the council's charter Mather succeeded in having the territories of Nova Scotia, Maine, and Plymouth, but not New Hampshire, annexed to Massachusetts. He also obtained the addition of the most important provision, that all grants made by the general court should be confirmed. Massachusetts no longer retained its individual colonial existence, but became a part of a province, including the old Plymouth colony and all territory to the east, except New Hampshire. This province was to have a governor and lieutenant-governor commissioned by the king, a legislature of two houses, the popular branch being elected representatives of the towns, and the council of twenty-eight members to be nominated by the representatives, but subject to rejection by the governor, to whom the veto power was finally accorded. Judicial officers were to be chosen by the governor and council; the general court held the control of financial matters; there was a right of appeal to the court of England in cases of considerable amount. The first governor, Phips, arrived with the charter May 14, 1692. From this time until the outbreak of the Revolution the province remained under the government of the general court thus constituted, headed by a succession of royal governors. The vice-regal element thus introduced led to a serious modification of the sterner Puritan characteristics of the community, and to the great scandalizing of the more rigid adherents of the ancient faith. Not only was the service of the Church of England formally established and performed with much circumstance in a church edifice of its own, but the development of elegance and extravagance of life in connection with the court circles, with a constantly-increasing influence over the dress and customs of certain other sections of the community, led to a serious and permanent modification of the social aspect of the town.

The more important events of the provincial period, including the French and Indian wars, the collateral influence of the wars of the Spanish succession, etc., are too generally known and had too indirect an influence on the molding of the Boston community to warrant their recital at length in this connection.

THE RELIGIOUS ELEMENT.

The religious history of Boston during the earlier periods is, to a certain extent, the history of Boston itself, the paramount importance of spiritual affairs having been strictly maintained even far into our own century. The Puritan establishment never lost its supremacy, and during colonial and provincial times the Roman Catholic Church hardly secured a foothold. The legislature of 1700, in accordance with a law of England, passed an act requiring Jesuits and "popish" priests to leave the province, for the reason that "priests lately come here have endeavored to seduce Indians from obedience to the king, and to excite hostilities".

On the accession of Queen Anne, in 1702, more strenuous efforts were made to establish episcopacy, but, in spite of all effort and with much acrimonious struggle, the Puritan faith remained in the ascendant.

HUGUENOTS.

After the revocation of the edict of Nantes, and, to a less extent, before that time, there was a considerable emigration to Boston of French Protestants. Many of these moved on to the country and some to other towns, so that the Huguenot element was never large. They had for a considerable time a church of their own and their own pastor. They would, however, have left little trace in Boston but for Andrew Faneuil, one of their number, a merchant of wealth and a public-spirited citizen. At his death, in 1737, he left nearly the whole of his large property to his nephew, Peter Faneuil, of New Rochelle, New York. Peter moved to Boston and continued the successful management of his uncle's business, and fully sustained his reputation as a man of parts and of liberality. Shortly before his death he built and presented to the town a public market, with a hall over it large enough to

accommodate one thousand persons, the finest building in the town. "The first town-meeting held within its walls, March 14, 1742-43, was the occasion of the delivery of a eulogy on him." In 1761 a conflagration, which broke out in Dock square, destroyed "that stately edifice, Faneuil Hall market, the whole of which was soon consumed excepting the brick walls, which are left standing". The hall was rebuilt from the proceeds of a lottery, and was occupied for the town-meeting of 1764. It was greatly enlarged in 1855 by adding a third story and doubling its original width.

LATER INFLUENCES.

The history of Boston since the beginning of those events which led to the declaration of the independence of the United States, including its activity during the earlier years of the Revolutionary war, are too well known to all Americans to claim attention here, where it has seemed important to pass in somewhat careful review the less-familiar incidents of the settlement and earlier growth of the town. Aside from those more conspicuous events which are matters of common historical knowledge, Boston has not only been subject to the stimulating and retarding influences which have marked the alternating growth and depression of other towns, but she has always been a foremost leader in American thought, activity, and enterprise; and she remains to this day in some respects the most characteristic American town.

CONFLAGRATIONS.

In one aspect its greatest calamity has been its greatest blessing. The conflagration of 1872, which swept over a large part of the business portion of the city, led to an entire transformation of the characteristic architecture of this important quarter of the town. The old and inferior buildings of the early part of the century and the hastily-erected structures which had been built only to meet pressing business demands, were swept away, and the whole burnt area has now been rebuilt in a most substantial manner and even with much magnificence.

This fire broke out at about a quarter past seven in the evening of November 9, 1872, in a large wholesale dry-goods establishment on the southeast corner of Summer and Kingston streets. Its origin is not certainly known; but it began in the lower story, where there was an engine. Favored by the tinder-like contents of the building, the flames spread with phenomenal rapidity, and by the time the first firemen had arrived they had climbed to the fourth story. The efforts of the firemen seemed almost entirely without effect, although there was at the time a nearly perfect calm. Repeated alarms soon called out the entire force of the fire department. The heat soon became so great as to drive all succor from the immediate vicinity of the fire, which, fanned by a wind of its own creation, presently became general and irresistible, being most rapid toward the north and northeast—determined by a wind which had now become almost a gale.

Thus was inaugurated a scene which words cannot describe; a scene not for a human but for an immortal painter; a tragedy worthy an infernal playwright; a sight where the rioting element more than realized the lurid lines of Poe:

Leaping higher, higher, higher,
In a desperate desire.

The little that men were able to do might almost as well have been left undone so far as efforts to extinguish the fire were concerned. It leaped the narrow streets with ease, finding ready means of communication in the mansard roofs with which a large proportion of the buildings in its course were covered. Those earlier destroyed were mostly large, tall buildings—stores devoted to the wholesale trades. Within twenty-five minutes after the alarm all the cities and towns within 50 miles of Boston had been telegraphed to for aid, and many of them quickly responded with engines and men.

Before 10 o'clock the fire had gained complete control of Winthrop square, the very center of the wholesale trade of Boston. The flank of the destruction reached down Summer street to Broad street, while the main body moved through Arch into Franklin, and thence up Otis and Devonshire streets to Summer street again. From this point of meeting it seemed to spread like a fan. In most cases, owing to the great height of the buildings, it was impossible to play a stream upon the fire where it made its first attack upon a building, the water being turned to spray or steam, or even being resolved into its elementary gases, before reaching the burning roof. The department did all that it was possible to do, but the flames were beyond human control.

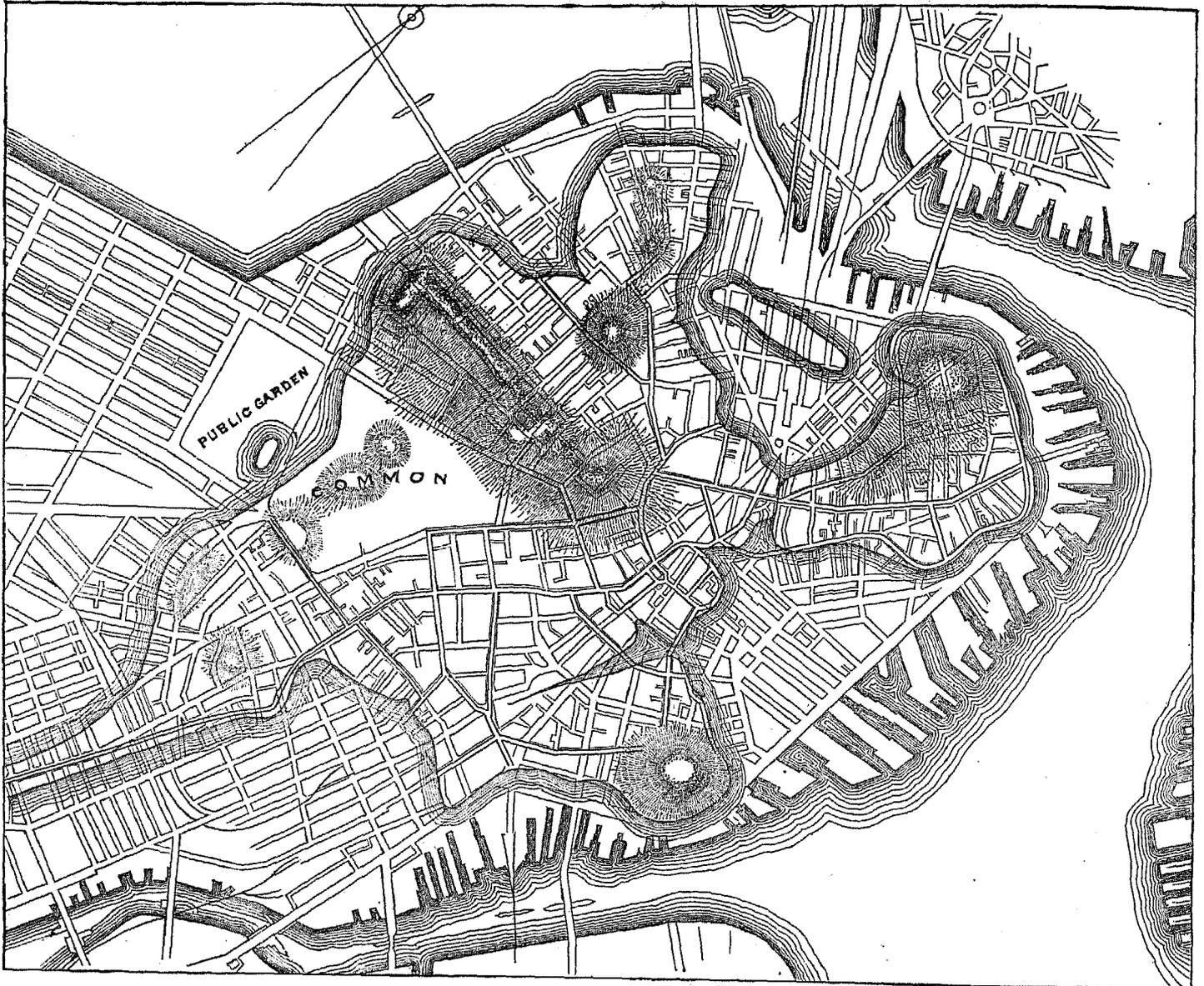
The scenes made measurably familiar by the Chicago fire were here re-enacted. Wild terror and calm despair met on every hand. The different shades of human nature were all developed under a common calamity. Efforts to save property and goods were crippled by the epizootic disease prevailing among the horses, and many shifts were made to supply their places. The Common became a general place of storage for goods whose owners could not find covered shelter.

In the mean time the fire had swept a path to the water, and a few vessels were burned. About 2 o'clock in the morning Chief Engineer Damrell began with gunpowder to blow up buildings in the probable course of the fire. The fire was thus checked at various points, enabling the firemen to concentrate their efforts at other points of great importance. In this manner the post-office and sub-treasury were saved (the former being injured only on its rear or Lindell Street side), and with them State street and all it contained.

BOSTON, 1630 TO 1675.

The Original Topography and Early Settlement together with the present Shore Line.

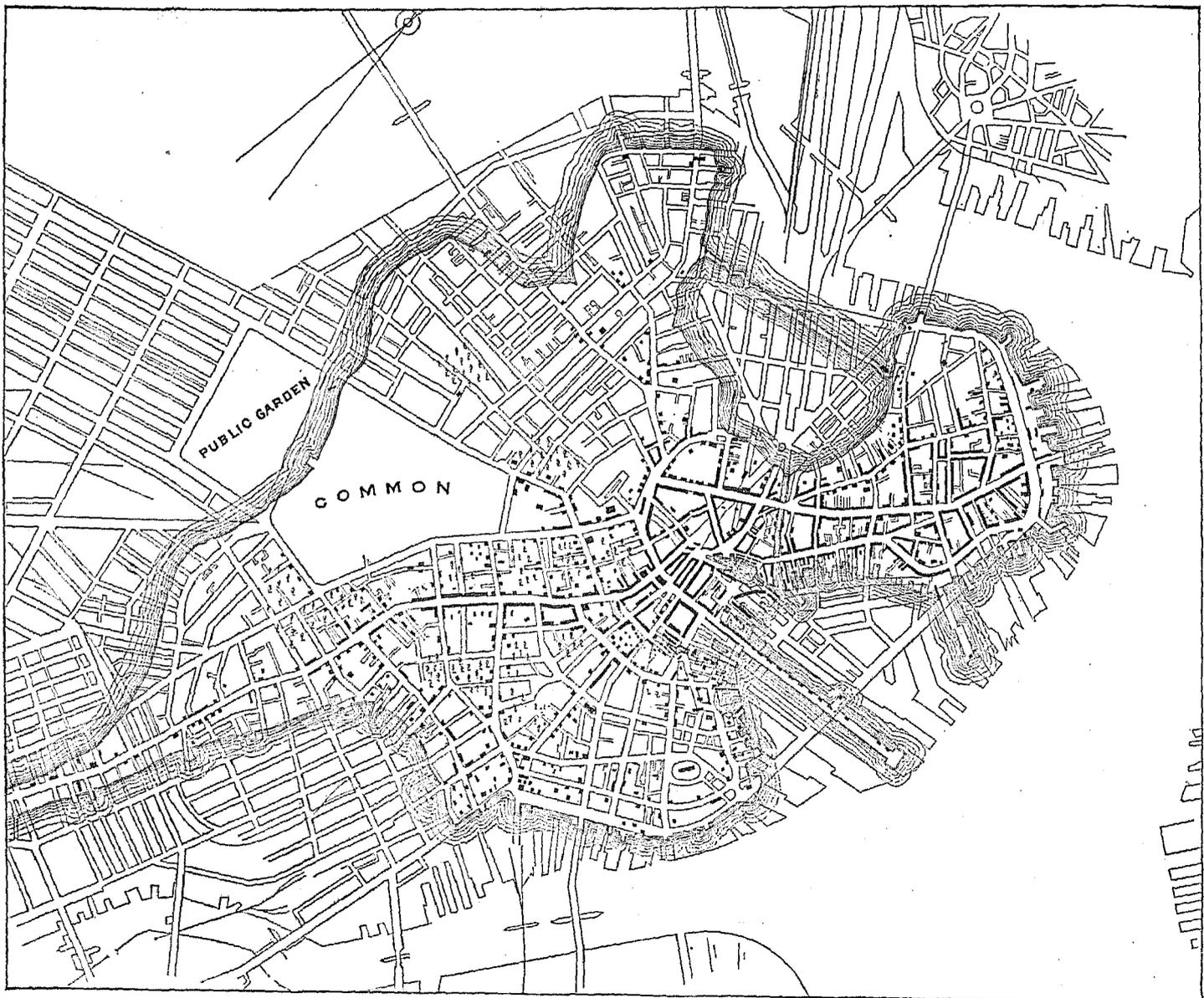
THE FAINTER LINES SHOW STREETS OF 1880.



BOSTON IN 1772.

From a map of The Town of Boston, in New England, by Capt. John Bonner.

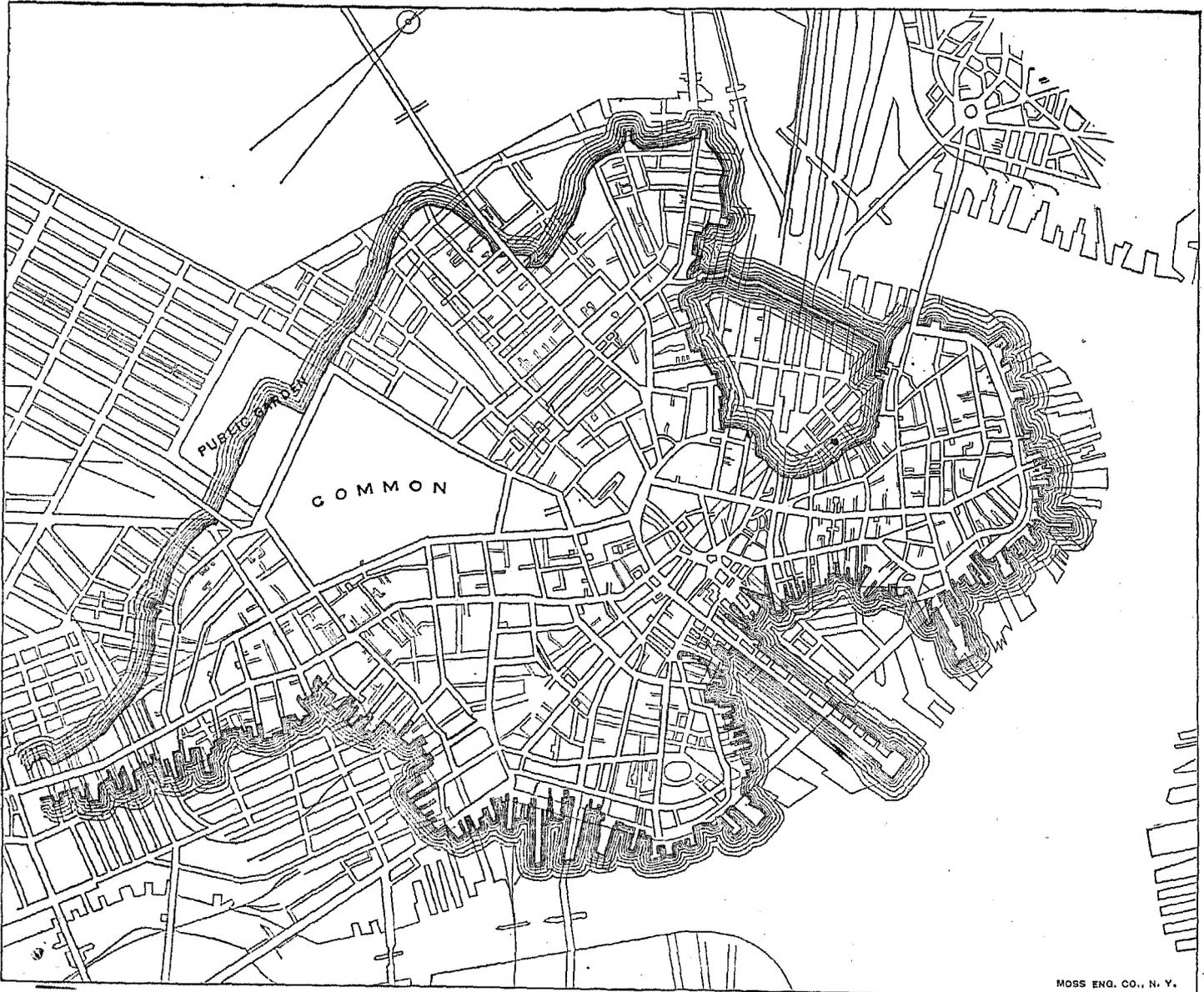
THE FAINTER LINES SHOW STREETS OF 1880.



BOSTON IN 1800,

From a new Plan of Boston from Actual Surveys by Osgood Carleton.

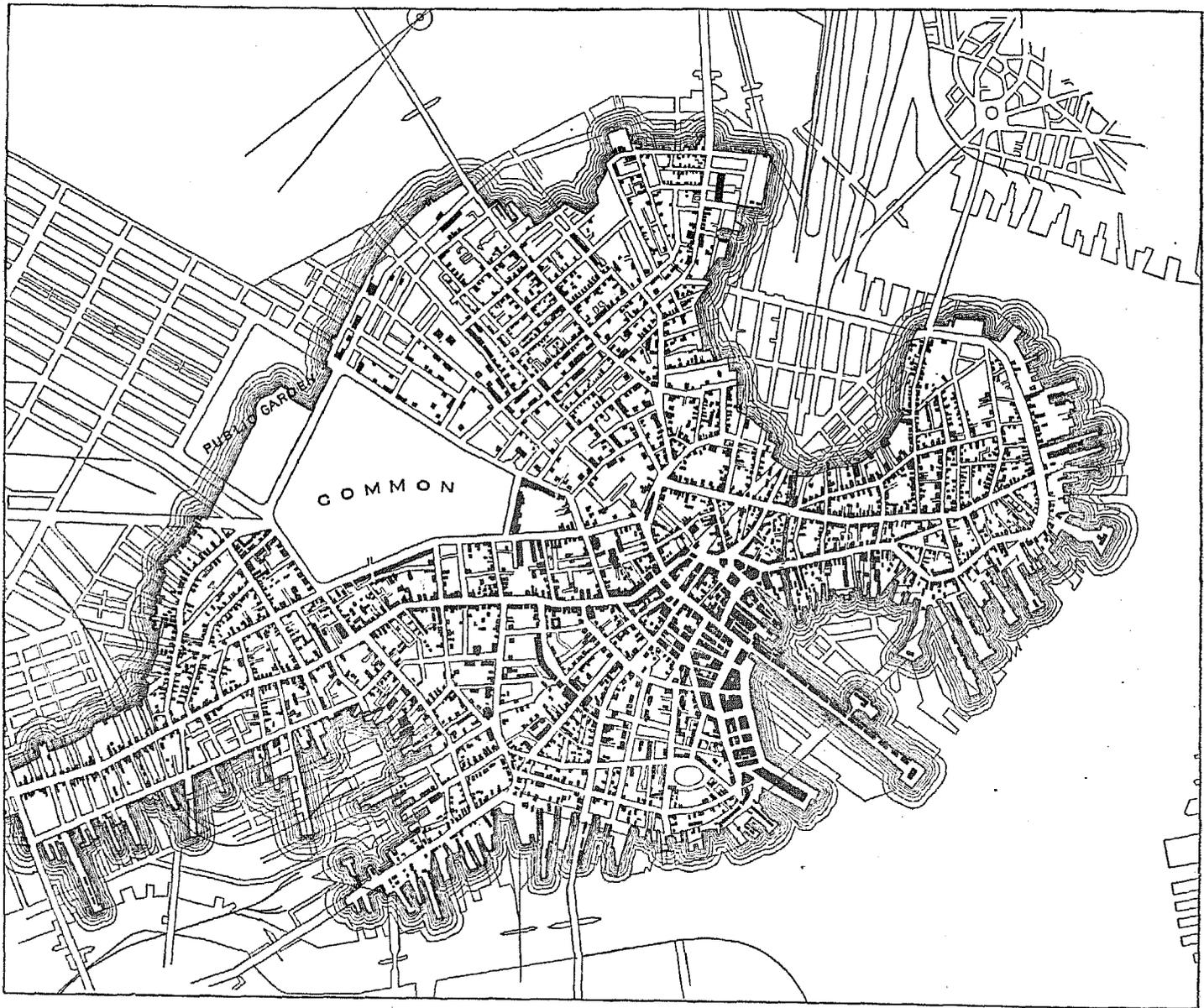
THE FAINTER LINES SHOW STREETS OF 1880.



BOSTON IN 1814.

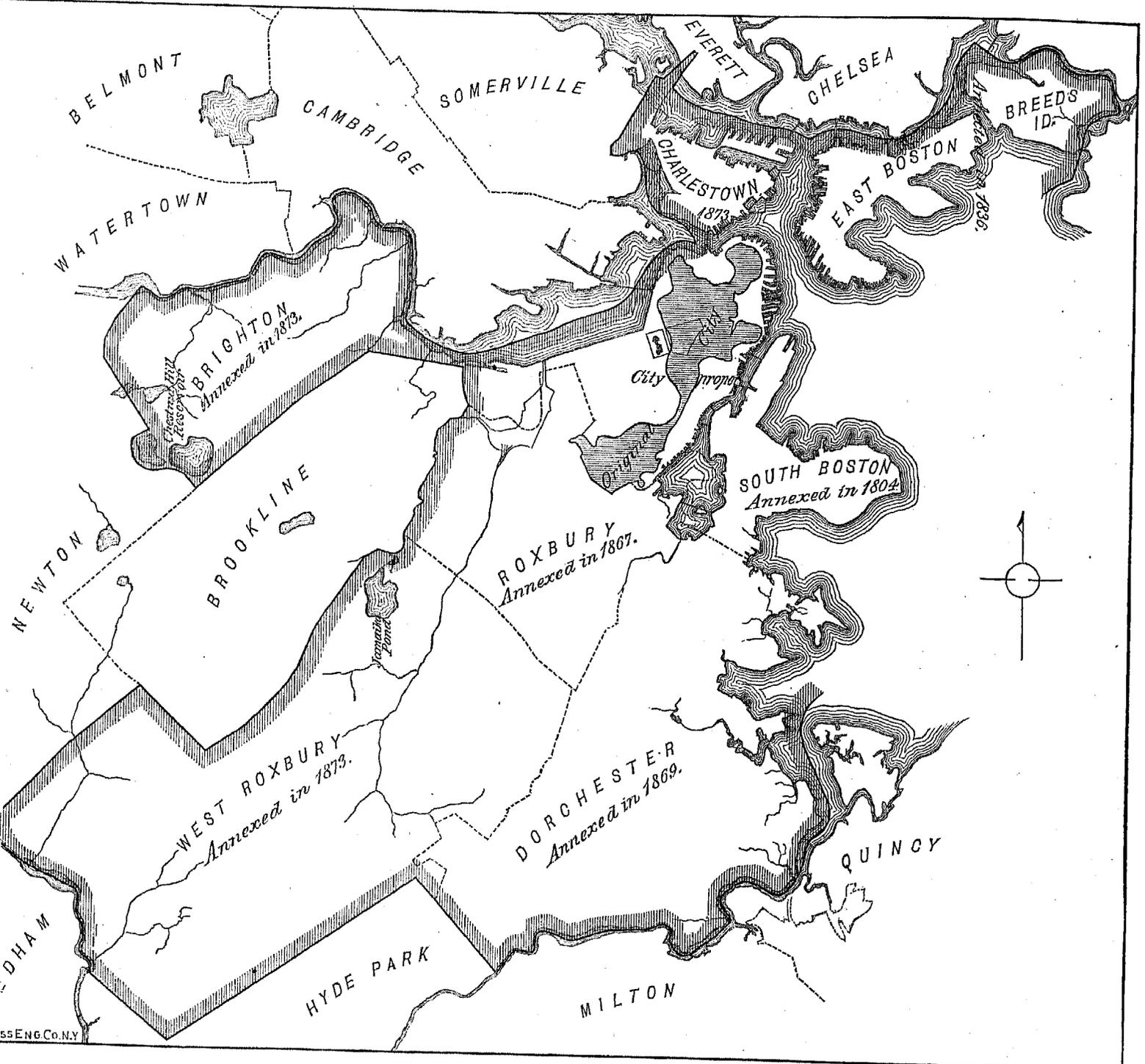
From a Map of Boston, in the State of Massachusetts, surveyed by I. G. Hales

THE FAINTER LINES SHOW STREETS OF 1880.



BOSTON IN 1880.

SHOWING AREAS AND DATES OF ANNEXATIONS OF TERRITORY.



Not until 3 o'clock of the following day could the fire be said to be under control.

So complete was the work of the flames that street lines were completely effaced in some localities, and, standing at one limit of the burned district, nothing obstructed the view to the other but tottering walls and the cloud of smoke which for days hung over the ruins. Within the limits of the fire the wholesale trade in hides, leather, boots and shoes, dry-goods, wool, clothing, hardware, and in part earthenware, was concentrated, and, with the exception of a few streets near the water, the area traversed by the flames was devoted entirely to business occupations.

The vicinity of the fire was beset by thieves eager for plunder. The best possible precautions were taken to guard property, but of course much was lost by the lack of adequate protection.

The distress occasioned by the fire was comparatively slight, but the pecuniary loss was very heavy, being at first estimated as high as \$85,000,000, but more careful estimates reduced the loss to \$75,000,000, of which \$13,500,000 was on buildings. About \$11,000,000 worth of boots, shoes, and leather, \$11,000,000 of woolen goods, and \$5,500,000 of wool were among the articles whose destruction went to make up the total of the loss. One hundred and forty-seven insurance companies doing business under the laws of Massachusetts reported losses which, after deducting salvage, aggregated \$56,500,000—over \$35,000,000 falling on Massachusetts offices alone. As a consequence, more than thirty companies were compelled either to settle up their business or to reduce their capital. Offers of aid flowed in from all quarters, but were not taken advantage of, as the work of relief was entirely organized and carried on from the resources of the citizens. The substantial character of the mercantile and manufacturing interests affected by the fire is shown in the fact that immediate business operations received but little interruption. The manufacturing establishments being located outside the city, orders were readily duplicated, and the work of distribution was not seriously delayed. Rebuilding was at once begun, and prosecuted with so much activity that within a year from the date of the calamity nearly the whole area was covered with business blocks of much greater value and beauty than those which had been destroyed.

During the year 1873 permits were issued for the construction of 646 brick, stone, and iron buildings, of which 334 were for mercantile purposes. Up to the 1st of January, 1874, 273 buildings had been officially reported as completed, and most of them were occupied either wholly or in part. A great improvement was made in the manner of construction during the year following the fire. The use of wood as an exterior finish was discarded, and non-combustible materials were largely substituted. These improvements were attributable to the enforcement of the building law, which had been put into operation for the first time in 1871. It provided, substantially in accordance with laws then in operation in New York and London, for the survey and inspection of all buildings thereafter erected in Boston. After the great fire the law was made more comprehensive and stringent in its provisions.

This was by no means the first serious fire in Boston. One had occurred in 1653 and another in 1679. In 1679 88 dwellings and 70 warehouses, together with property estimated by a contemporary chronicler at £200,000, were destroyed. In 1711 a fire burned down 100 houses, and was finally checked only by blowing up buildings. The memory of these fires, each great relatively to the size of the town, was effaced by what was known locally for more than a century as "the great fire", which broke out March 20, 1760. Three hundred and forty-nine houses, stores, and shops were burned, together with a number of vessels lying at the wharves. The loss is estimated at £100,000, an estimate which throws discredit on the reported losses of the fire in 1679. On this occasion much distress was experienced, to alleviate which contributions were liberally forwarded from the other colonies.

Although there had been many fires of considerable magnitude since that time, none of them were attended with serious consequences to the commercial interests of the town until the "great fire" just described.

BOSTON IN 1880. (a)

By reference to the map of the original site of Boston, overlaid with the street lines of 1880, it will be seen that a large portion of the town is on made land. The region between the old "Neck" and the Charles river, known as the "Back bay", beyond the Common and the public garden, is the fashionable part of the city. Commonwealth avenue, 200 feet wide, with a planted and grassed space in the center and leading from the public garden to the beginning of the outer park system, is lined on both sides mainly with dwelling-houses of the best order. The extension of Beacon street over the old mill-dam is equally striking in its architecture. The general

^a The following account of the condition of Boston in 1880 was mainly prepared under the direction of James M. Bugbee, esq., assisted by Edward W. Hazewell, esq.

aspect of this portion of the town as seen from the front of the state house on Beacon hill, with the towers and domes of its churches rising above the trees of the Common, makes it difficult to realize that it has so lately been reclaimed from the bay.

SITE AND ELEVATION.

A large part of the present city was originally salt-marsh at about the level of high-tide. This has been filled to a height of 6 or 8 feet, or to the elevation of the shore-line of the old peninsula. The city originally occupied three hills and their intervening undulations and valleys. The highest of these, that on which the state house stands, is 100 feet above the established datum plane.^(a) The remaining irregularities of the surface have been much modified by grading.

The city lies on Boston harbor, which covers an area of about 75 square miles, including several bays and inlets, and containing some forty islands. These islands separate the harbor from Massachusetts bay. It receives three considerable rivers, the Charles, the Mystic, and the Neponset. More than half of the circumference of the whole city is bounded by navigable water—the east front, and the shore of East Boston opposite, affording a good draught for vessels of the larger class. The Charles River shore affords accommodation for colliers and other coasting vessels. The rise and fall of ordinary tides is about 10 feet, and the tidal current is the only one worthy of consideration even in the rivers, which are here chiefly estuaries. The practicable water communication is only with the sea.

RAILROADS.

Boston is the terminus of the following railroads:

The New York and New England railroad, to Fishkill.

The Old Colony railroad, to Newport and points on Cape Cod.

The Boston and Albany railroad, to Albany.

The Boston and Providence railroad, to Providence.

The Eastern railroad, to Portland.

The Boston and Maine railroad, to Portland.

The Fitchburg railroad, to Fitchburg.

The Boston and Lowell railroad, to Lowell.

The Boston, Revere Beach, and Lynn railroad, to Lynn.

The number of passengers transported by all these roads during the year ending September 30, 1880, was	34,556,189
The tonnage of freight during the year 1880 was	10,767,306 tons.
The total receipts from passenger traffic during the year 1880 were	\$11,186,747
The total receipts from freight traffic during the year 1880 were	\$12,174,270

The capital stock, indebtedness, etc., of the various railroads are as follows:

Capital stock	\$71,152,675
Indebtedness	\$49,202,981
Total number of locomotives	806
Total number of passenger cars	1,094
Total number of freight and other cars	16,896
Total number of men employed	15,731

TRIBUTARY COUNTRY.

The country immediately tributary to Boston is almost invariably of very low agricultural value, nor has it great commercial importance; but the city is the trade-center of many interior manufacturing towns and villages of all classes, and devoted to a great variety of industries. Indeed, it may be considered the trade-center for nearly all of the manufactures east of the Connecticut river and north of the southern line of Massachusetts.

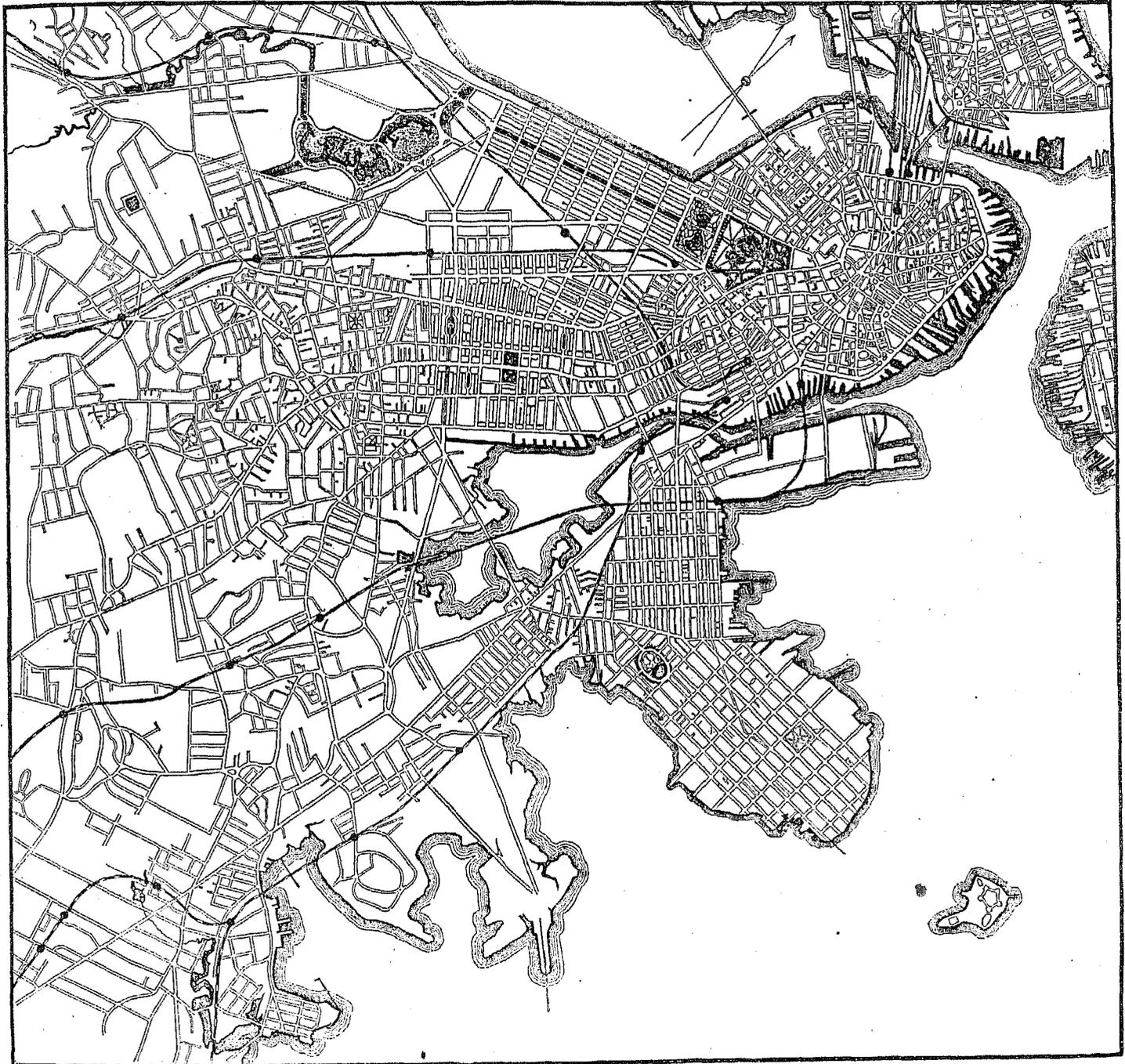
The country for 10 miles or more on either side is thickly peopled, and is largely occupied by the residences of those whose regular avocations are in the city.

TOPOGRAPHY.

The natural soil of the city proper is principally clay or clayey gravel, called "hard-pan". It is underlaid, usually at a considerable depth, by slate rock. The same character of soil prevails in East and South Boston and in Roxbury, where it is underlaid by conglomerate rock, frequently appearing near the surface. In Dorchester, West Roxbury, and Brighton, interspersed with ledges of conglomerate rock, the soil is generally gravel and sand, with occasional areas of clay.

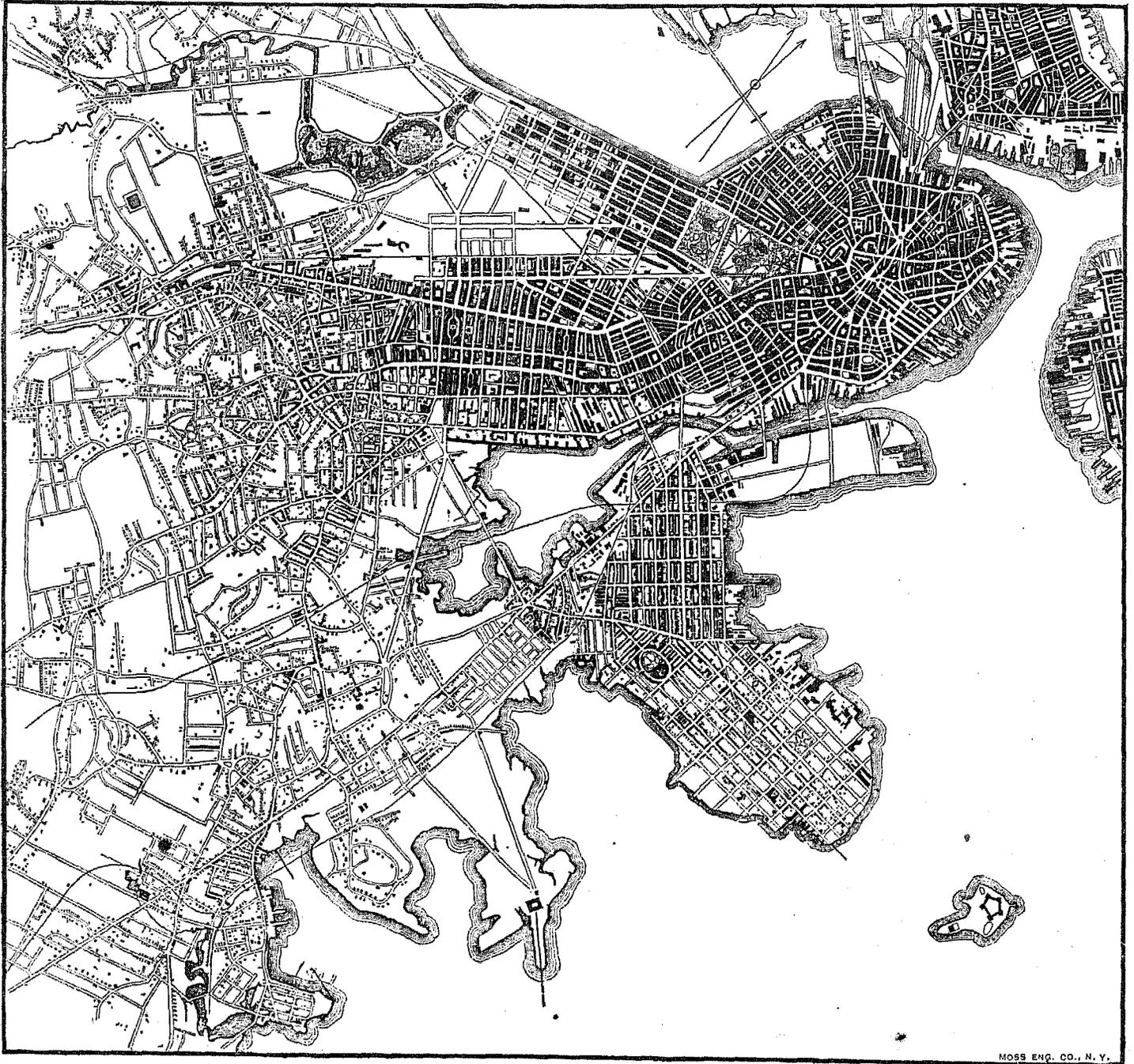
^a The level of ordinary low water.

BOSTON IN 1880,
SHOWING STEAM RAILROADS AND STATIONS.



BOSTON IN 1880.

SHOWING ALL GROUND OCCUPIED BY BUILDINGS.



A large area of the city proper has been filled, to a depth varying from 10 to 100 feet, with gravel, ashes, and the usual refuse of a large city, over mud flats. By reference to the map of the original city of Boston, showing the streets of 1880, the extent of this filling may be seen. It should be borne in mind, however, that the extension of the shore-line of the older portion of the city has been made by cutting down some of the higher natural elevations.

At an average distance of about 6 miles, encircling about two-thirds of the city, from southeast to north-east, there is a range of considerable hills. The country at the foot of these hills is salubrious, and this has led to its close occupation by a large suburban population.

There is no considerable area of wooded country within a radius of 10 miles.

CLIMATE.

The highest recorded summer temperature is 101.5° (September, 1881).

The highest recorded summer temperature in average years is 96.9°.

The lowest recorded winter temperature is -11.0° (December, 1875).

The lowest recorded winter temperature in average years is -4.7°.

During the prevalence of east winds the cold waters of Massachusetts bay have a marked influence on the temperature, and, even in summer, often give an uncomfortable rawness to the atmosphere. With this exception, the climate is healthful and invigorating, though often severely cold and boisterous.

The adjacent marshes are almost invariably salt-marshes, well covered with grass.

STREETS.

The total length of streets, public and private, is 616 miles.

The length paved of each of the following materials is:

	Miles.
Cobble-stones.....	24.6
Trap-block.....	36.8
Asphalt.....	1.5
Broken stone.....	60.0
Wood.....	5.0
Gravel.....	488.1

The disbursements of the paving department from 1860 to 1880 have been as follows:

1860-'61.....	\$206,333 82
1861-'62.....	199,364 16
1862-'63.....	160,203 14
1863-'64.....	154,522 31
1864-'65.....	148,560 61
1865-'66.....	162,801 77
1866-'67.....	264,783 28
1867-'68.....	270,361 11
1868-'69.....	409,814 75
1869-'70.....	708,086 07
1870-'71.....	874,046 59
1871-'72.....	940,036 27
1872-'73.....	956,815 20
1873-'74.....	965,474 60
1874-'75.....	1,254,463 18
1875-'76.....	1,024,624 66
1876-'77.....	989,816 15
1877-'78.....	850,191 39
1878-'79.....	694,936 61
1879-'80.....	650,031 28
Total.....	11,885,269 95

No part of the cost of street-paving is assessed upon abutters; these, however, pay one-half the cost of constructing sidewalks. When streets are laid out, widened, or regraded, one-half of the benefit accruing to adjoining estates is assessed upon their owners.

The paving, grading, and repairing of streets are placed under the charge of a superintendent of streets, elected annually in February by concurrent vote of the city council, his duties being prescribed by ordinances. With the approval of the aldermen he may appoint such assistants as he may deem necessary. The city is not responsible for his acts unless ordered by the city council or the board of aldermen.

PUBLIC PARKS AND PLEASURE-GROUNDS.

The public parks and pleasure-grounds of Boston consist of the *Common*, the *Public Garden*, one large park in course of construction, and forty squares and open spaces. The total area of the completed parks and squares is about 127 acres, and the park on the Back bay, now being laid out as part of a system of public parks, and has area of 106 acres.

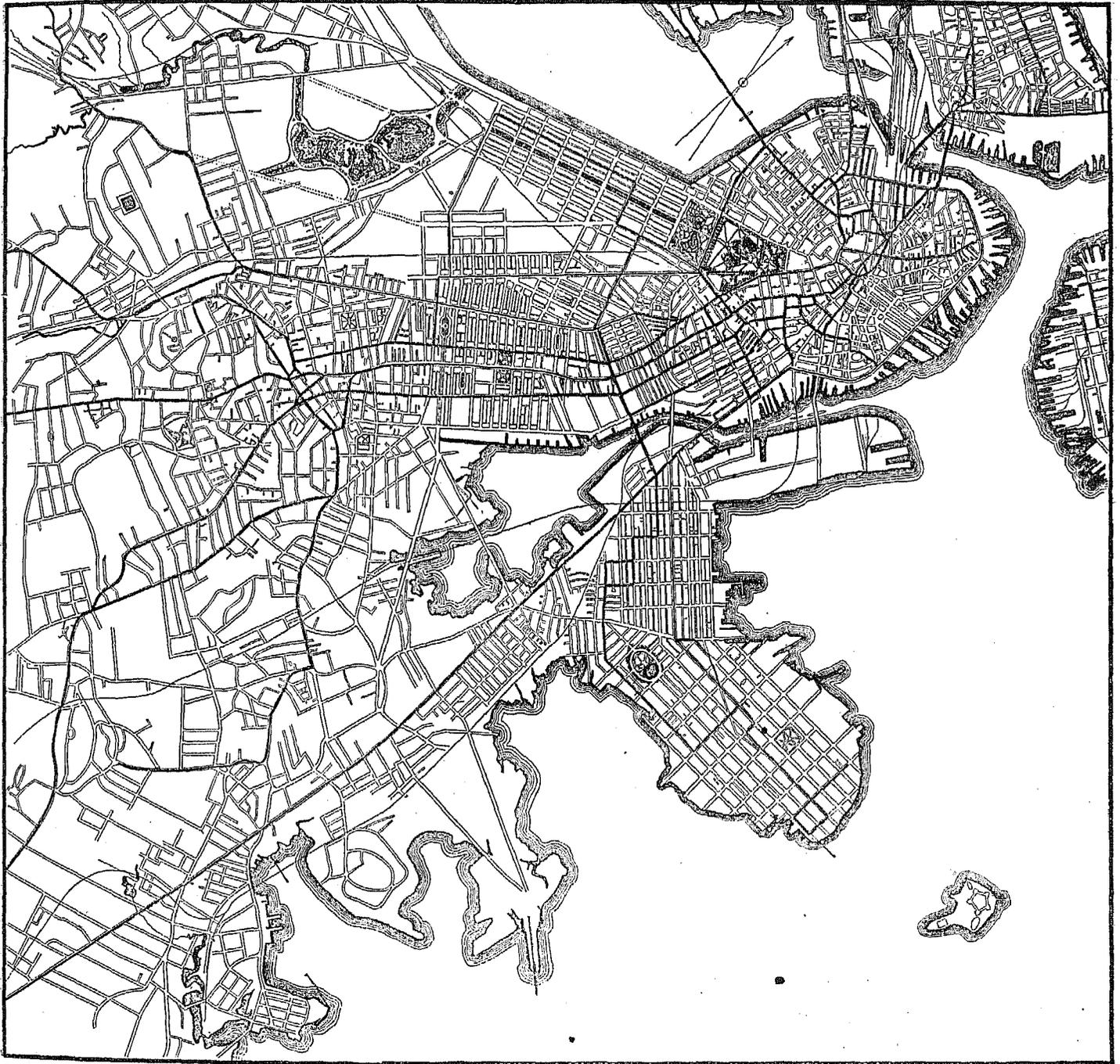
Of the existing parks the most celebrated is the Common, having an area of $48\frac{1}{2}$ acres. It has been the property of the citizens of Boston for two hundred and forty-six years, having been purchased of William Blaxton (commonly written Blackstone) for the sum of £30 in the year 1634. It was originally intended for a "training-field" and for a common pasture, and regulations were early made governing the pasturing of cattle upon it. For a time it appears to have been the design of the first settlers to reserve this tract of land for division among the new-comers as an inducement to immigration, but this purpose was abandoned. The town, at one of its meetings, resolved that the property should be the inalienable possession of the original inhabitants at the time of its action and their heirs, excluding new-comers from these benefits the better to guarantee the preservation of the Common for the purposes for which it was acquired. In order to emphasize this action, the town voted, in May, 1646—

That noe comon marish and pasture ground shall hereafter byo gifte or sayle, exchange or otherwise, be counted into property without consent of y^e major part of y^e inhabitants of y^e town.

The citizens have jealously guarded the integrity of the Common, and a provision of the city charter especially prohibits its lease or sale. For the greater part of the century following the acquisition of the Common its character as a training-field and public pasture was maintained under restrictions preservative of the herbage in certain localities. In 1733-'34 fences were built and shade-trees were set out. Improvements were gradually made until the outbreak of the Revolution, when much that had been done was undone by the vandalism of the British troops. After the close of the Revolution public-spirited citizens contributed to repair the damages occasioned by the war, and from 1784 dates the systematic development of the Common as a public park and pleasure-ground. Many new walks and cross-pathways were laid out, shade-trees were planted, waste portions were drained and graded, and new fences were erected. With the adoption of the city government (1822) increased attention was paid to the improvement of the Common, and it was placed under the care of a special committee of the council. The cows were finally expelled from it in 1830, and from that date its use for pasturing ceased. Succeeding city governments followed the vigorous precedents inaugurated by their first predecessors, so that by 1871 there were 1,300 trees on the Common, including several rare species. Among these was the celebrated "great elm", which, when prostrated by a great gale in 1873, had been for nearly two centuries and a half one of the prominent landmarks of the Common. In the olden time capital punishments were executed in the vicinity of the elm, but this practice was terminated early in the present century. The purposes to which the Common was devoted have been gradually restricted, until at the present time it has become simply a park and pleasure-ground. A considerable part of its western face is devoted to the parade-ground, used by the city military. Its most conspicuous work of art is the soldiers' monument, commemorative of those who fell in the civil war. It was dedicated September 17, 1877. The Brewer fountain is a handsome allegorical group erected by the munificence of a private citizen. In a small sheet of water known as the "Frog Pond" there is a fountain which plays on public occasions; but the ornamentation of the Common is generally confined to the improvement of its sylvan aspect. Within its limits is a deer-park, established several years ago as the nucleus of a zoölogical garden, a purpose not yet carried out. Driving and equestrian travel are not permitted on the Common. Its paths afford communication between Tremont street and certain thoroughfares in the west and southwest sections of the city by foot-passengers. No distinct statistics showing its patronage are attainable. During the summer, open-air concerts are given at regular intervals. The total amount paid out by the city treasurer on account of the Common for the financial year 1879-'80 was \$14,283 47.

The Public Garden, area $24\frac{1}{2}$ acres, is separated from the Common by the width of Charles street only, so that it is virtually but a smaller division of one park of 72 acres. Indeed, it was originally a part of the Common, but was alienated in 1794, to be regained only at a considerable expense thirty years later. At the first-mentioned date it is described as "the marsh at the foot of the Common", a title which sufficiently illustrates the character of the tract and its condition at that time. Hereon, in 1837, was established, with the consent of the city, a botanic garden supported by private liberality, but it was not until 1859 that the land was formally devoted to its present use and that steps were taken to make it a public pleasure-ground, sanitary considerations arising from the filling of the Back bay stimulating the enterprise. As its name implies, it partakes more of the character of a garden than of a park, being less sylvan in its aspect than the Common, and the many winding paths that intersect its surface being bordered by parterres of flowers and blooming shrubs. The garden contains a sheet of water covering an area of about 3 acres, which is spanned by an ornamental bridge. A number of statues and memorials have places in the garden, including Ball's equestrian statue of Washington and a monument commemorative of the discovery of ether. Like the Common, the garden is used only by persons on foot, there being no accommodations for carriages or equestrians.

BOSTON IN 1880,
SHOWING HORSE RAILROADS.



The forty minor parks are generally open spaces of more or less limited area, turfed and planted with trees and shrubs. They are intersected by paths and contain ornamental seats, and form a pleasing feature of the city. These various squares are not connected, and are designed to afford open-air spaces as well as to adorn their localities. Their average area is but little over an acre, although in some instances they considerably exceed this measurement. Eleven of these squares and parks are in the city proper, three in South Boston, five in East Boston, ten in Roxbury, three in Dorchester, four in Charlestown, two in West Roxbury, and two in Brighton. The largest is the parkway in Commonwealth avenue, with an area of nearly 10 acres. The public pleasure-grounds and squares are under the supervision of a superintendent subordinate to a joint committee of the city council. Use of the grounds and squares is regulated by ordinances of the city, which forbid the introduction of horses except upon military service, the presence of dogs, and the delivery of any discourse, sermon, or address without the approval of the committee above mentioned. All persons are prohibited from walking or standing on the turf or flower-beds, and the enforcement of these ordinances is secured by a system of fines and penalties. The total cost of maintaining the public squares and grounds during the financial year 1879-'80 was \$45,126 19.

In addition to the existing completed pleasure-grounds, the city is constructing a system of parks, undertaken with a view to sanitary improvement as well as for public recreation. Agitation for an enlargement of the public-park system was begun in 1869, and in December of that year the mayor was authorized to petition the legislature for an act enabling the city to make the desired improvement. The legislature of 1870 passed the enabling act requested, but at a special election held November 8 it failed of public acceptance, not receiving the necessary two-thirds vote. Another act, passed in 1875, was accepted by the citizens at a special election held June 9, by a vote of 3,706 to 2,311. Under the provisions of this act the mayor appointed a board of three commissioners, to serve without pay, invested with power to take lands and lay out parks subject to the approval of the city council. The commissioners, after numerous surveys, reported in April, 1876, a system of public parks beginning on the Charles river at a point near the easternmost bridge connecting Boston with Cambridge, thence sweeping around the city, following the general boundary of the old city and Roxbury, through the northern portion of Dorchester to Dorchester bay. This plan involved an embankment along the course of the Charles river with an area of 69 acres—very similar in design to that at Geneva—and three large suburban parks connected by parkways and drives. The large urban parks were to be located at the Back bay, at Jamaica pond, in the northern part of the Roxbury district, and in Dorchester, to be generally within a radius of 5 miles from the state house. In addition to this general system a park was to be laid out at the Chestnut Hill reservoir, in Brighton, and detached parks in South and East Boston. Of this comprehensive plan the only part thus far undertaken has been the park at the Back bay, which will be brought into connection with the Public Garden and the Common by the system of streets and thoroughfares west of the first-mentioned. The city council authorized the purchase on the Back bay of 4,303,922 square feet of land, for which the sum of \$430,392 20 was paid. The commissioners estimate the cost of this park complete at about \$1,000,000, and the total expense of the acquisition of the 1,133 acres involved in the general system at about \$5,000,000.

By the plan adopted for laying out the Back Bay park—designed by Fred. Law Olmsted, esq.—it will have an area of 106 acres, and will be irregular in shape. The scheme involves, for sanitary purposes, the maintaining of a salt-water pond nearly 30 acres in extent. The Charles River embankment has not yet been undertaken. By a recent act of the legislature the city is authorized to make an arrangement with Harvard university by which the Arnold arboretum, at Bussey farm, West Roxbury, may be brought under municipal management.

PUBLIC GARDENS (FOR ENTERTAINMENTS).

There are three public gardens in Boston—and another in course of erection—in which dancing, music, concert, dramatic, and variety performances are given. They each give two performances daily, one admitting persons free and the others charging 20 cents for each person. They each furnish refreshments, but not intoxicating liquors. The value of the buildings is estimated at \$75,000.

THEATERS.

There are twelve theaters in Boston, eleven of which are used regularly for theatrical performances, and one is so used occasionally. They have an estimated seating capacity of about 13,500, and the prices charged for admission vary from 10 cents to \$1 50 for each person. Most of them are in buildings constructed either mainly or entirely for the purpose for which they are used, while others occupy parts of buildings which have been altered for this purpose since their erection. The estimated value of these buildings is upward of \$1,500,000.

THE CHURCHES OF BOSTON IN 1880.

Denomination.	Number of organizations.	Estimated value of church property.	Estimated seating capacity.	Estimated annual expenditures.
Baptist	25	\$1,200,000	21,500	\$100,000
Christian	1	30,000	500	2,000
Congregational, Trinitarian	30	2,000,000	23,200	157,300
Congregational, Unitarian	23	2,200,000	20,500	174,000
Episcopal, Protestant	23	1,400,000	12,000	104,150
Episcopal, Reformed	1			3,000
Free-Will Baptist	2	10,000	500	500
Friends	1			
German Reformed	1	56,000	600	4,200
Jewish	6	38,000	1,800	6,000
Lutheran, Evangelical	2	10,000	400	2,300
Lutheran, German	2	14,500	600	2,200
Lutheran, Swedish	1	4,400	500	1,500
Methodist Episcopal	27	785,000	15,325	67,000
Methodist, Colored	3	67,000	2,075	6,850
Methodist, Independent	1	50,000	600	2,000
Presbyterian	4	148,000	1,725	11,100
Presbyterian, Reformed	2	83,000	1,200	4,500
Presbyterian, United	1	15,000	500	1,500
Roman Catholic	28	3,000,000	34,500	123,000
Second Advent	5	33,000	975	1,500
Swedenborgian	2	80,000	1,300	12,500
Universalist	11	320,000	5,500	36,100

In addition to the above there are several chapels and halls in various portions of the city, in which religious services and mission Sunday schools are conducted.

CEMETERIES.

There are, in and about Boston, 35 public and private cemeteries. Their location and area are as follows:

Copp's Hill Cemetery.—Charter, Snowhill, and Hull streets, at north end of city proper; 88,800 square feet.

King's Chapel Cemetery.—Tremont street, near the city hall; 19,200 square feet.

Granary Cemetery.—West side of Tremont, between Beacon and Park streets; 81,900 square feet.

Central (Common) Cemetery.—In Common, on Boylston street; 60,200 square feet.

South Cemetery.—Washington, James, East Newton, and East Concord streets; 75,500 square feet.

Eustis Street Cemetery (Roxbury).—South side of Washington street, corner of Eustis street; 34,700 square feet.

Kearsarge Street Cemetery (Roxbury).—Corner of Kearsarge avenue and Kearsarge place; 54,500 square feet.

Hawes Cemetery (South Boston).—Southeast corner Emerson and L streets; 16,800 square feet.

Bennington Street Cemetery (East Boston).—South side Bennington street, between Harmony and Swift streets; 157,500 square feet.

Bunker Hill Street Cemetery (Charlestown).—North side of Bunker Hill street, between North Mead and Belmont streets; 48,000 square feet.

Phipps Street Cemetery (Charlestown).—Foot of Phipps street; 76,740 square feet.

South Cemetery (Dorchester).—West side of Dorchester avenue, near Codman street; 87,120 square feet.

North Cemetery (Dorchester).—Corner Stoughton and Boston streets; 135,036 square feet.

Center Street Cemetery (West Roxbury).—North side of Center street, near Lagrange street; 39,450 square feet.

Walter Street Cemetery (West Roxbury).—Southeast side of Walter street, between Weld and South streets; 39,216 square feet.

Evergreen Cemetery (Brighton).—South side of South street, near Foster street, adjoining the north side of Chestnut Hill reservoir; 602,230 square feet.

Market Street Cemetery (Brighton).—East side of Market street, near Hathaway street; 18,000 square feet.

Mount Hope Cemetery (West Roxbury).—Walk Hill, Ashland, Back, and Canterbury streets; 105 acres.

Cedar Grove Cemetery (Dorchester).—Adams, Milton, and Granite streets, and Neponset river; 38 acres (about).

Union Ground (City Point).—Fifth street, corner of L street; 16,800 square feet.

Codman Cemetery (Dorchester).—Norfolk street, between Mann avenue and Washington street; 164,000 square feet.

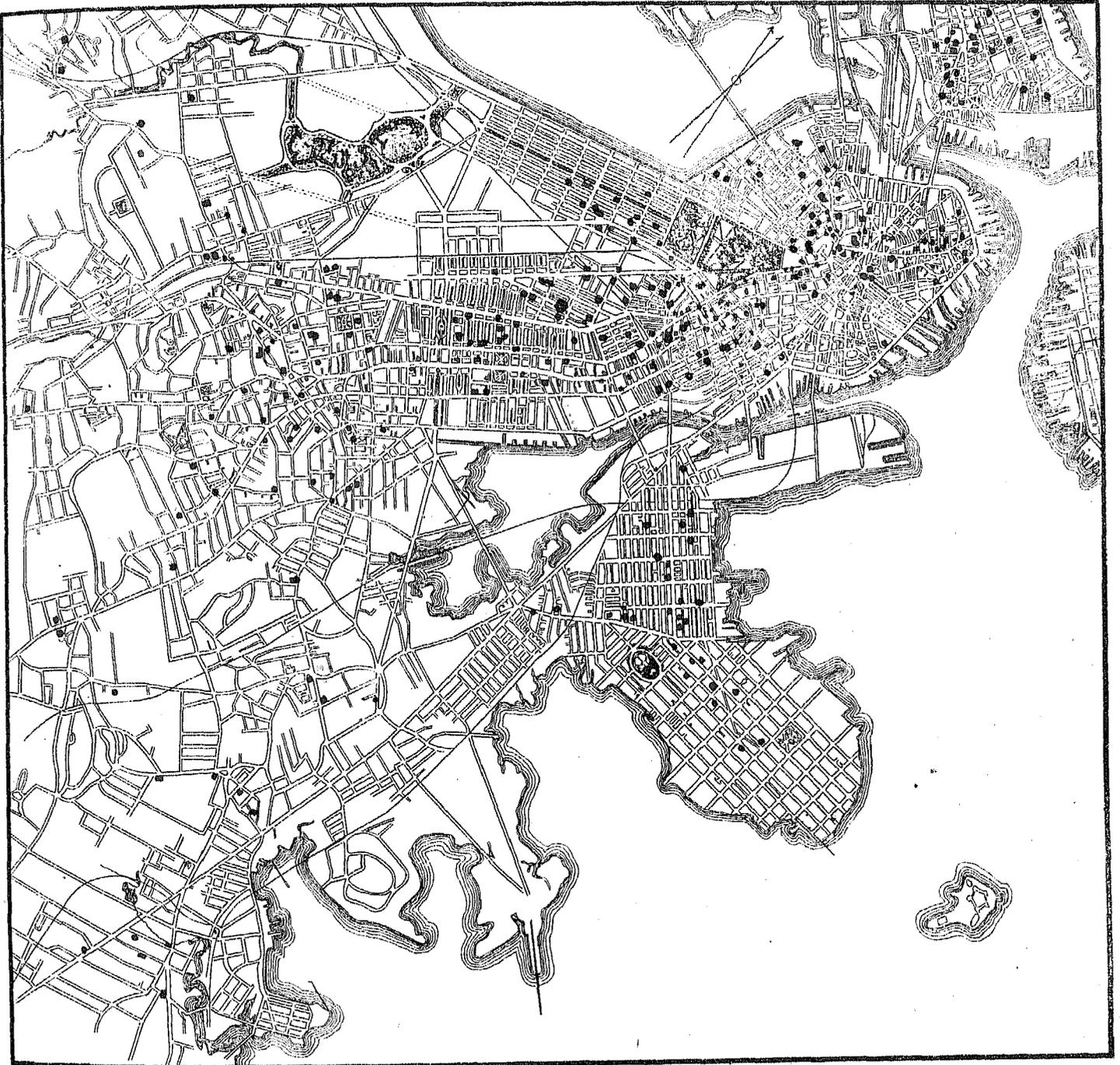
Ohabei Shalom (Jewish) (East Boston).—Corner of Byron and Homer streets; 60,000 square feet.

BOSTON IN 1880.

Showing: Hotels ■ . Apartment Hotels ■ . Libraries ■ . School Houses ■ . Churches ■

DEPARTMENT OF THE INTERIOR.

TENTH CENSUS OF THE UNITED STATES.



Saint Augustine's Cemetery (South Boston).—Southwest side of Dorchester street, between West Sixth and West Seventh streets; 43,355 square feet.

Eliot Street Ground (Jamaica Plain).—Eliot street, near corner of Center street; 39,000 square feet.

Catholic Cemetery (Dorchester).—Southwest side of Warren avenue and Norfolk street; 522,720 square feet.

Christ Church Cemetery.—Salem street, near Hull street, north end of city proper; 6,700 square feet.

Saint Paul's Church (Tombs) Cemetery.—Tremont street, near Winter street; 20,000 square feet.

Calvary Cemetery (Dorchester).—Mount Hope street, near Canterbury street; 1,829,520 square feet.

Saint Joseph's Cemetery (Roxbury).—South side of Circuit street, near Washington street; 24,868 square feet (about).

Saint Benedict's Cemetery (West Roxbury).—Arnold street, between Weld and Lagrange streets; 3,746,160 square feet.

Hand-in-Hand (West Roxbury).—Grove street, near Dedham; 65,300 square feet.

Forest Hills Cemetery (West Roxbury).—Morton, Canterbury, and Walk Hill streets; 227 acres.

Mount Auburn Cemetery.—In Cambridge and Watertown; 136 acres.

Woodlawn Cemetery.—In Everett and Revere; 176 acres (about).

Gethsemane Cemetery (Brook Farm).—In Newton, just beyond the line of West Roxbury; 54,450 square feet.

The first seventeen named are under the charge of the board of health.

Mount Hope cemetery and Cedar Grove cemetery are owned by the city, and are under the control, the first of a board of trustees, and the latter of commissioners, both elected by the city council.

The fifteen following these are private burial places within the limits of the city.

The three last-named—Mount Auburn cemetery, Woodlawn cemetery, and Gethsemane cemetery—are private, and are situated outside of the limits of the city, but are largely used by the citizens of Boston.

Saint Joseph's cemetery and the tombs under Saint Paul's church are now closed to interments.

With three exceptions, no records exist by which the number of interments in each cemetery could be ascertained:

Total number of interments in Forest Hills cemetery from opening, in 1848.....	17,441
Total number of interments in Mount Auburn cemetery for past twenty-six years	22,623
Total number of interments in Woodlawn cemetery from opening, in 1851	12,622

These figures are to December 31, 1880, inclusive.

The question of closing the tombs of King's chapel and the Granary burying-grounds has been much discussed, and in 1879 the board of health recommended that they be closed on sanitary grounds, but the move was strongly and successfully opposed by the owners of tombs, mainly on sentimental grounds, and because but few more interments were contemplated.

The practice concerning interments is the usual one and is governed by the usual rules and restrictions, a copy of ordinances concerning the same being given herein under "Health".

The following table shows the number of interments from opening of Forest Hills cemetery, 1848; from opening of Woodlawn cemetery, 1851; and from 1855 in Mount Auburn cemetery:

Year.	Forest Hills cemetery.	Wood-lawn cemetery.	Mount Auburn cemetery.	Year.	Forest Hills cemetery.	Wood-lawn cemetery.	Mount Auburn cemetery.
1848.....	97	.....	.....	1865.....	677	420	557
1849.....	159	.....	.....	1866.....	626	477	646
1850.....	222	.....	.....	1867.....	693	442	579
1851.....	226	58	.....	1868.....	607	496	551
1852.....	288	186	.....	1869.....	700	571	610
1853.....	357	198	.....	1870.....	746	585	606
1854.....	359	154	.....	1871.....	666	489	612
1855.....	450	203	573	1872.....	783	675	839
1856.....	484	266	506	1873.....	714	592	607
1857.....	422	255	551	1874.....	656	573	602
1858.....	429	317	548	1875.....	723	620	652
1859.....	458	297	612	1876.....	690	604	579
1860.....	546	352	560	1877.....	594	466	559
1861.....	469	371	567	1878.....	566	550	546
1862.....	566	333	743	1879.....	583	502	498
1863.....	503	383	698	1880.....	677	601	541
1864.....	705	436	575				

POPULATION.

In 1765 the general court ordered a census to be taken, which, notwithstanding some inaccuracies, is probably the most reliable census of the colonial period. According to this enumeration, Boston had a population of 15,520.

During the Revolutionary struggle there is reason to believe that at times it fell considerably below this number. The table given on page 91 of this report shows the population, according to each national census, from 1790 to 1880, inclusive. A census taken in 1840, under the authority of the state, gave the population as 83,979, or nearly 10,000 less than that of the United States census of that year. Local statisticians regard the state census as furnishing most nearly the true result. At this time the influence of immigration began to be felt in the increase of population. The state census of 1845 gave the population of the city as 114,366, of whom 37,289 were foreigners and their children, or 32.61 per cent. of the whole population. This indicated a great change from 1820, when the foreign-born inhabitants were so few as scarcely to be noticeable as a social force. About 33 per cent. of the native population were immigrants from other states. A state census was also taken in 1850, which showed a population of 138,788 for the city, or nearly 2,000 more than the United States census of that year. According to that first named, the foreign-born and their minor children numbered 63,466, or 45.72 per cent. of the entire population. More than five-sixths of these were of Irish parentage. The state census of 1855 showed a total population of 160,490, a majority of whom were foreigners and their minor children. A comparison with the state census of 1850 showed that the native population contributed only about 600 to the increase of nearly 22,000 during the five years that intervened. This was mainly owing to the removal of a considerable portion of the native population from Boston to the suburban towns. The Irish element not only outnumbered those of other nationalities, but had also increased far more than all the others combined.

The population of Boston, according to the state census of 1865, was 192,318; of whom 65,821 were of foreign birth, 46,225 being natives of Ireland. The British and British-provincial born now began to be noticeable as an element of the foreign-born population, the natives of England being returned as 4,191, those of British America 8,060, and of Scotland 1,244.

Annexation added largely to the population of Boston during the next eight years. In 1875 the state census gave the city a population of 341,919; of whom 162,262 were males and 179,657 were females. Of these, 55,988 males and 58,176 females were born in Boston, and 52,667 males and 64,338 females were foreign-born. The number returned as born in Ireland was 69,816; in England, 9,849; in Wales, 143; in Scotland, 2,841; in Canada, 19,459; in other British possessions, 465; in Germany, 7,839; in Sweden and Norway, 1,573, and in Italy, 1,280.

At the census of 1870 the total foreign-born element was 87,986, 56,900 being of Irish birth, 13,818 of British-American, 5,977 of English, 5,606 of German, and all others 5,685. With the exception of the German-born population, the percentage of increase had been less since 1865 among the Irish than among the others foreign-born, it being only 5.5 per cent. against 55.16 per cent. in the case of the natives of British North America, and 15.8 per cent. in the case of the English. Under the head of "all other" nationalities, the increase in the five years was 1,562, or 37.93 per cent. The Irish increase since 1865 had been but about 2,800, a diminution of percentage of the whole population from 23.40 to 22.71 per cent. The German percentage had in the same period shrunk from 2.34 per cent. to 2.24 per cent. The extent of the foreign parentage was shown by the fact that 150,779 persons had foreign fathers, 150,645 persons had foreign mothers, and 142,249 persons had foreign fathers and mothers.

It appears from the state report on registration of births, deaths, and marriages, that in 1875, when the city contained 341,919 inhabitants, there were 189 births of foreign parentage and 57 of mixed parentage to 100 of American parentage. By foreign parentage is to be understood parents born abroad, all persons born here of whatever extraction being classified as natives. In the same year the rate of marriages to every 1,000 persons living in Boston was 9.68. The number of births that year was 10,984, 3,066 being of American parents, 5,809 of foreign parents, 710 of American fathers and foreign mothers, and 1,031 of foreign fathers and American mothers; 368 were classed as unknown. Of 10,160 births in Boston in 1878, 2,874 were of American parents and 4,874 of foreign; 778 of American fathers and foreign mothers; 1,078 of foreign fathers and American mothers; 556 unknown. In 1879 the whole number of births was 10,165; of American parentage, 2,949; foreign, 4,695; of American fathers and foreign mothers, 826; of foreign fathers and American mothers, 1,084; unknown, 611.

The occupation of the inhabitants of Boston, so far as could be ascertained, was given as follows in the state census of 1875:

	Males.	Females.	Total.
Government and professional	5,947	1,894	7,841
Domestic and personal offices	4,398	85,245	89,643
Trade and transportation	34,735	1,672	36,407
Agriculture and fisheries	2,433	2	2,435
Manufacturing and mechanic industries	38,031	11,833	49,864
Indefinite, non-productive, and propertied	16,833	146	16,979
Occupation not given	31,022	50,173	81,195

The occupation of the inhabitants of Boston, as shown by the United States census of 1880, is as follows :

Occupations.	Total.	AGE AND SEX.								NATIVITY.						
		All ages.		10 to 15.		16 to 50.		60 and over.		United States.	Ireland.	Germany.	Great Britain.	Sweden and Norway.	British America.	Other countries.
		Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.							
All occupations	140, 194	110, 313	38, 881	1, 420	808	104, 421	37, 410	4, 463	603	88, 244	34, 745	3, 900	6, 650	1, 121	11, 237	3, 207
Agriculture.....	1, 042	1, 023	19	11	.....	886	18	126	1	518	358	38	52	4	56	21
Professional and personal services	53, 465	30, 851	22, 614	512	426	28, 649	21, 691	1, 600	497	24, 438	20, 505	1, 081	2, 030	415	3, 947	1, 009
Trade and transportation	40, 787	37, 745	3, 042	550	110	36, 104	2, 896	1, 061	36	30, 608	5, 024	851	1, 860	183	1, 896	865
Manufacturing, mechanical, and mining	53, 900	40, 604	13, 206	350	272	38, 752	12, 805	1, 586	129	32, 680	8, 858	2, 075	3, 208	510	5, 388	1, 222

The early Irish immigrants were mainly laborers, and found employment on the railroads and public works. The proportion of skilled labor among the Irish is probably smaller than among the other nationalities composing our foreign-born population, though the same does not hold true to as great a degree with their children. The English and German immigrants have been largely of the artisan class, and the last-named have contributed to some extent to professional occupations. The Canadians generally have occupations, and many enter into trade and mercantile employments. A very considerable portion of their number can, however, be classed upon their arrival in Boston only as "unskilled labor". A large proportion of the females find employment in domestic service.

Most of the immigrants, being persons of very limited means, naturally gravitate toward those sections of the city where the cost of living is least, and as population is stretching toward the southern and southwestern sections of the city, causing a corresponding advance in the rent in those localities, the bulk of the foreign-born residents, notably in the case of the Irish, are found on the northern water-front, and such portions of the eastern as are not devoted exclusively to the purposes of commerce. Many Germans are residents of the annexed districts of Roxbury and Dorchester, and many are employed in the extensive breweries in those localities.

The following table exhibits the immigration movement at the port of Boston for the past decade :

From—	Years ending June 30—										Eleven months ending May 30.
	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	
England	7, 073	7, 425	8, 893	9, 087	4, 637	2, 150	1, 506	1, 104	1, 591	3, 529	
Ireland	9, 693	9, 378	11, 081	9, 395	6, 615	3, 072	2, 021	2, 212	2, 610	9, 099	
Scotland	732	936	1, 140	784	541	351	177	135	203	704	
Germany	2, 783	2, 304	2, 709	1, 392	576	581	378	151	233	804	
Sweden	398	1, 030	1, 094	708	476	543	363	401	1, 091	3, 539	
British America	4, 461	4, 184	3, 958	3, 507	2, 907	1, 672	2, 380	3, 685	3, 748	8, 641	
Azores.....	512	708	876	1, 372	823	643	507	489	138	274	
All other countries.....	1, 372	944	1, 020	800	1, 310	740	465	410	750	2, 167	
Totals	27, 024	26, 900	31, 676	24, 225	17, 645	9, 711	7, 887	8, 756	10, 364	28, 817	

FINANCE.

At the time the local government of Boston was changed from the town to the city system (A. D. 1822) a small debt, amounting to about \$100,000, had recently been incurred for the erection of buildings for municipal purposes. That was the only debt transferred from the town to the city, and it was more than covered by the available assets consisting of lands and market privileges. The growth of the debt since the organization of the city as compared with the growth of population is shown in the following table :

Year.	Popula- tion.	Debt.	Per capita.
1825	58, 277	\$905, 873	\$5 25
1830	61, 392	891, 930	14 53
1835	78, 603	1, 147, 388	14 60
1840	93, 383	1, 698, 232	18 19
1845	114, 316	1, 163, 266	10 17
1850	136, 881	a 6, 195, 144	45 26
1860	177, 840	8, 491, 599	47 75
1865	192, 318	b 11, 371, 942	59 13
1870	250, 526	18, 687, 350	74 59
1875	341, 919	43, 414, 829	126 97
1880	362, 839	42, 030, 125	115 84

a Cost of introducing water included. b Increase caused by war expenses.

The great increase of the debt between the years 1870 and 1875 was on account of street improvements, the enlargement of the water and sewerage works, and the improvement of the sanitary condition of the city by raising the grade of certain districts. The debts assumed in the annexation to Boston of the surrounding municipalities (1868-74) amounted to \$1,802,640.

The total funded debt of the city on the 30th of April, 1880, amounted to \$42,030,125 36, of which \$12,850,273 98 was on account of the water-works. The interest on the water debt is covered by the water-rates, and at any time, if the water-rates should fail to pay the running expenses and interest on the debt, one hundred legal voters can apply to the supreme judicial court and have commissioners appointed to revise the rates. The average annual rate of interest on the water debt is at the present time about 5.33 per cent.

The city debt, exclusive of that portion incurred for water-works, amounts to \$29,179,851 38, the average annual interest on which is about 5.34 per cent.

In 1875 an act was passed by the legislature providing that cities and towns should not become indebted to an amount, exclusive of loans for water-supply, exceeding in the aggregate 3 per centum on the valuation of the taxable property therein, to be ascertained by the last preceding assessors' valuation. But the act also provided that when it took effect any city or town indebted to an amount not less than 2 per centum on its valuation might increase its indebtedness to the extent of an additional 1 per centum. As the city of Boston was indebted more than 2 per centum when the law took effect, it has availed itself of the right to increase its indebtedness to the extent of 1 per cent. on its valuation. On the 30th of April, 1880, the power of the city to contract additional loans was, under the valuation of 1879, for an amount not exceeding \$914,618.

The inhabitants of Boston are individually liable for the debts of the corporation, and their property may be attached to satisfy the demands of creditors. But the city council cannot involve the corporation for anything outside of the legitimate expenses for carrying on the government.

The total ordinary expenditures—exclusive of interest, etc., on the city debt—on account of the municipal government for the year ending April 30, 1880, amounted to \$7,371,680 62. The principal items of the expenditures were as follows:

Health department (including street-cleaning, quarantine, and public baths).....	\$411,365 30
Water-works	1,018,996 90
Fire department.....	567,444 76
Overseers of the poor.....	102,195 51
Paving department.....	650,031 28
Police department.....	310,154 19
Public institutions.....	515,747 39
Public schools and school-houses.....	1,515,366 84
Sewer department.....	102,717 92
Widening and extending streets.....	130,300 90

Population, valuation, and rate.

Year.	Popu- lation.	Real estate.	Personal estate.	Total.	Rate of taxa- tion per \$1,000.
1860.....	177,840	\$163,891,300	\$112,063,700	\$276,801,000	\$9 30
1865.....	192,324	201,628,900	170,263,875	371,802,775	15 80
1870.....	250,526	365,593,100	218,496,300	584,089,400	15 30
1875.....	341,010	558,041,000	235,620,895	793,661,895	13 70
1879.....	350,000	428,777,000	184,545,692	613,322,691	12 50

Adding to these figures the value of exempt property, including the city's assets, it brings the gross valuation up to \$718,500,433.

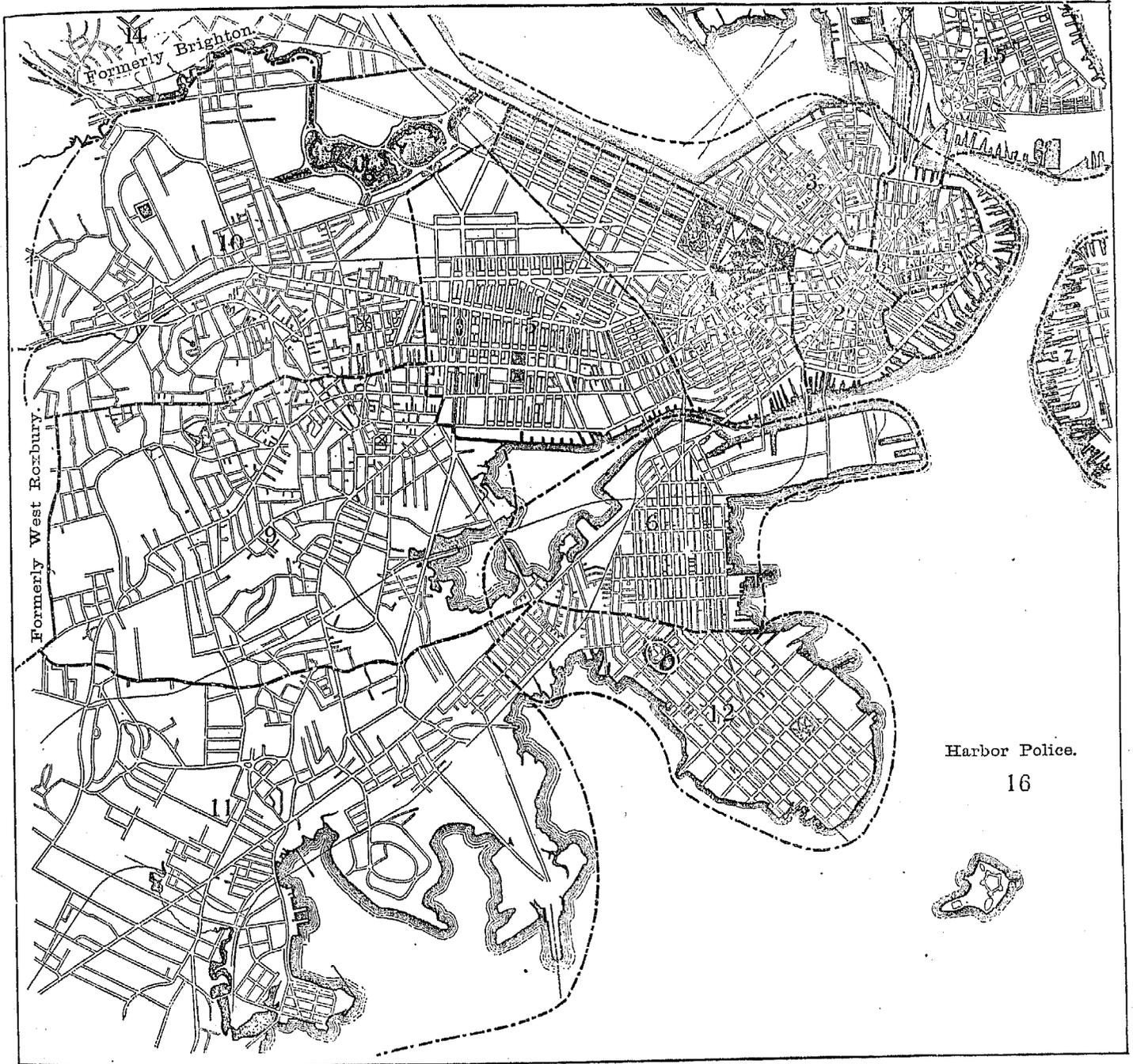
Amount and rate of taxation.

Year.	State tax.	City and county.	Total.	RATE PER \$1,000.	
				State.	City and county.
1860.....	\$82,245	\$2,447,755	\$2,530,000	\$0 31	\$8 09
1865.....	1,502,501	4,078,209	5,670,809	4 41	(?)11 39
1870.....	933,775	7,703,087	8,636,862	1 65	13 05
1875.....	802,120	9,721,010	10,523,136	1 04	12 06

POLICE.

The police of Boston had its origin in the town watch established in the early days of the colony. The watch did duty by night only. The force was commanded by a captain, and was posted in detachments at the several

BOSTON IN 1850,
SHOWING POLICE DISTRICTS.



Harbor Police.

station-houses. In 1800 the police force consisted of 4 watch constables, 12 constables, and 20 watchmen. The police duty of the city was under the direction of an inspector of police. In 1838 the legislature passed an act giving the mayor and board of aldermen of Boston power to appoint "police officers with any or all the powers of constables, except the power of executing civil process". Under this act six officers were appointed, commanded by the city marshal, the new department having no connection with the watch, which then consisted of 120 men. The latter body was disbanded in 1854, after an existence of nearly two centuries and a quarter, and its duties were merged with those of the police. As re-organized at that time the police consisted of about 250 men, divided into eight companies or commands, each under a captain and two lieutenants. The force was commanded by a chief of police.

Upon the petition of the city council the legislature in 1878 passed an act creating the board of police commissioners.

The act provided for the appointment by the mayor, subject to the approval of the city council, of three commissioners, whose terms of office should be so arranged that the term of one should expire on the first Monday of May in each year, vacancies to be filled by the mayor, subject to the approval of the city council. By the provisions of the act all powers theretofore vested in the board of aldermen in relation to the administration of the police, and all the powers exercised by the commissioners who had charge of granting licenses to sell intoxicating liquors, were transferred to the newly-created commission. It was further provided that the commissioners should appoint a superintendent of police, a deputy superintendent, and such number of captains, inspectors, sergeants, patrolmen, clerks, and other officers as the city council should from time to time by ordinance prescribe. The appointment of the superintendent, the deputy superintendent, and captains was to be subject to the approval of the mayor. Full powers were given to the commissioners to make all rules and regulations for the government and discipline of the force. The retirement and pensioning of officers was provided for, the mayor to have the power of veto. It was further provided that the mayor should have power at all times, in any emergency, of which he himself should be the judge, to assume command of the whole or any part of the police force. By an ordinance of the city council, the maximum number of captains, inspectors, lieutenants, sergeants, patrolmen, clerks, and other members of the police department was established as follows:

One captain for each police division; one chief inspector and six inspectors for duty at the superintendent's office; one inspector of carriage licenses; one inspector of wagon licenses; one assistant to inspectors of carriage and wagon licenses, with the grade and pay of patrolmen; one inspector of pawnbrokers; one assistant inspector of pawnbrokers, with grade and pay of patrolmen; one inspector of intelligence offices; two lieutenants at each police station; two patrol sergeants for each police division; seven special sergeants for duty at police headquarters, city hall corridors, and superintendent's office, including two for clerical service in superintendent's office; one clerk to superintendent of police; six hundred and eleven patrolmen; ten house watchmen for public buildings; one officer to attend courts and report on cases where it is thought advisable to put the prisoner on probation; one keeper of city prison; one assistant keeper of city prison; one steward of city prison; one first officer of police steamboat; one engineer of police steamboat; one fireman of police steamboat; two deck-hands of police steamboat.

The commissioners were empowered to exercise all the powers conferred by the statutes of the commonwealth and the ordinances of the city upon the board of aldermen, or the mayor and aldermen, in relation to licensing, regulating, and restraining theatrical exhibitions, public shows and public amusements, billiard tables, bowling alleys, auctioneers, hawkers and peddlers, carriages, wagons, and other vehicles, intelligence offices, itinerant musicians, pawnbrokers, and dealers in second-hand articles and old junk. Subsequently the legislature gave the commissioners power to regulate the running of horse-cars by licensing drivers and conductors, and to regulate hotels and restaurants by licensing keepers.

Under the provisions of these enactments the police commissioners re-organized the force under their command in the latter part of 1878. The jurisdiction of the Boston police extends over the entire city, and the water and islands of the harbor within certain specified limits, the area in which they exercise authority covering 33,200 acres, or 52 square miles. The land and water thus coming within its jurisdiction has been divided for police purposes into sixteen districts, in each of which, except the 16th, is a station-house and a company of police commanded by a captain. The 16th district "covers all the waters in the inner harbor and docks, and all the waters of the outer harbor and the islands within the same". It is under the supervision of the harbor-master, who is also a captain of police, and has under his orders the officers and crew of a small but powerful steamboat, which is fitted with steam-pumps to be used in the extinguishment of fires.

The officers of the police force take rank in the following order: Superintendent, deputy superintendent, chief inspector, captains, inspectors, lieutenants, sergeants. Officers of the same grade take precedence according to the date of their warrants. The force is divided into as many companies as there are general divisions, and such other squads or companies as the commissioners may order. All appointments, assignments to duty, transfers, and details of members of the force are made by the commissioners.

The chief executive officer of the commissioners is the superintendent, who carries out their orders and is responsible for the discipline and efficiency of the entire force, making frequent inspections of the station-houses

and the men of the several companies. He instructs the captains in all branches of their duty, and sees that they give similar instruction to their men. It is required that he shall make daily report to the commissioners of the operations of the force for the preceding twenty-four hours. Furthermore, he may at his discretion suspend from duty and report to the commissioners any member of the department against whom a written complaint has been made, and the pay of such officer shall not be allowed during the period between his suspension and his re-instatement or discharge, unless by special order of the commissioners.

The duties of the deputy superintendent are, in a general way, indicated by his title. In addition to performing the functions of the superintendent in the latter's absence, he has under his immediate supervision the inspectors of carriages, wagons, pawnbrokers, and intelligence offices. When not required for the performance of his office duties he notes the condition, efficiency, and performance of their duty by patrolmen on the streets, and reports any violation of the city ordinances in relation to the obstruction of travel, the general condition of the thoroughfares, etc.

The chief inspector has, under the control of the superintendent, charge of the inspectors detailed for detective service at the headquarters. Inspectors for secret service are appointed directly by the commissioners. They are liable to have their appointment revoked at any time and to be ordered to duty either as lieutenants, sergeants, or patrolmen.

The captains of police have general charge of their respective districts, visiting every part of them as often as once each week, noting the condition of the streets, sidewalks, street-lights, obstructions, non-compliance with city ordinances, etc., reporting to the proper officials having charge of these matters. Captains have immediate control of the officers and patrolmen detailed for duty at their respective stations, and are required to note carefully their condition, conduct, faithfulness, and efficiency. Daily inspections and roll-calls are imperative, as are records and reports of all robberies, larcenies, property stolen or lost, assaults, disturbances, lost children, fires, dangerous places, and accidents, with causes and proofs, and all other matters appertaining to the business of the department in their districts. Station-houses must be kept open at all times, and in the absence of the captain a lieutenant or sergeant is in charge to receive prisoners and to attend to all business belonging to the department.

The lieutenants, two of whom are assigned to every district, in the absence of the captain have charge of the division and exercise all his powers and duties, and are held to the like responsibility.

Sergeants have general charge of the men on their routes, and instruct and assist them in their duties, patrolling their routes, and ascertaining the presence of each man in his proper place. Failure to report breaches of discipline or neglect of duty subjects them to suspension or discharge.

Patrolmen must, according to the rules and regulations made by the commissioners, hold themselves in readiness at all times to answer the calls and obey the orders of their superior officers. They must conform to the rules and regulations of the department, observe the laws and ordinances, and render their services to the city with zeal, courage, discretion, and fidelity. Any violation of the rules of the department will be punished by reprimand, suspension, deduction from pay, or discharge.

Patrolmen must be present at daily roll-calls and attend at the station-house at the time appointed. They may not walk together or talk with each other or with any other person on their routes while on duty, unless it be to communicate information pertaining to the department or in the line of their duty, and such communication must be as brief as possible. They must not stand still while on duty, but constantly patrol their routes.

Besides the above rules and regulations it is required that all persons connected with the department shall reside in Boston. It is furthermore provided that no member of the department shall, in the station-house or elsewhere while on duty, drink any kind of intoxicating liquor, or, except in the immediate performance of his duty, enter any place in which intoxicating drinks are sold or furnished.

Promotions are made from the force, and every member is eligible. Patrolmen may be promoted only after two years' active service, dating from the time of their appointment. No person can be appointed unless (1st) he is able to read and write the English language understandingly; (2d) he is a citizen of the United States; (3d) he has been a resident of Boston and a taxpayer during a term of one year next prior to his application for appointment; (4th) he has never been convicted of crime; (5th) he is at least 5 feet 8 inches in height and weighs not less than 140 pounds avoirdupois; (6th) he is less than thirty-five years of age; (7th) he is of good health and sound in body and mind; and (8th) he is of good moral character and habits. All applicants must undergo an examination by the city physician.

Candidates for promotion are examined upon their general knowledge of their duties, such laws of the state as apply to the operation of the Boston police, the city ordinances of which they are required to take cognizance, the rules and regulations for the government of the department, and the duties of captains, lieutenants, and sergeants; the number of records and reports required, and the United States infantry tactics.

The following are the salaries of the officers and members of the police department:

Superintendent.....	per annum..	\$3,000 00
Deputy superintendent.....	do.....	2,300 00
Captains of police, at the rate of.....	per diem..	4 00
Chief inspector, at the rate of.....	do.....	4 00
Inspectors and lieutenants, at the rate of.....	do.....	3 50
Assistant inspectors, at the rate of.....	do.....	3 00
Sergeants of police, at the rate of.....	do.....	3 25
House watchmen, at the rate of.....	do.....	3 50
Patrolmen, first year, at the rate of.....	do.....	2 50
Patrolmen, second year, at the rate of.....	do.....	2 75
Patrolmen, third and subsequent years, at the rate of.....	do.....	3 00
Clerk of commissioners.....	per annum..	1,500 00
Superintendent's clerk.....	do.....	1,500 00
Probation officer.....	do.....	1,500 00
The commissioners each receive.....	do.....	3,000 00

The act creating the board of police commissioners gives authority to retire from office any captain, inspector, sergeant, or patrolman who has become disabled while in the actual performance of duty, or has done faithful service in the department for a period of not less than fifteen consecutive years, and is pronounced by the city physician to be incapacitated for further duty, and to place him on the pension-roll on an allowance of one-third of his annual salary at the time of his retirement. For the payment of these pensions the commissioners are authorized to draw from time to time upon the trustees of the police charitable fund, composed of witness fees earned by members of the force. It applies to the relief of discharged officers in necessitous circumstances, and to their widows and orphans. The fund amounts to somewhat over \$80,000. At the present time there are thirty-five pensioners enjoying an average allowance of \$365 per annum.

The expenditures on account of the police department for the year ending April 30, 1879, were \$812,637 02, including repairs on station-houses. The income was \$10,186 52. The expenditures of the department for the year ending April 30, 1880, were \$812,344 40, of which \$754,697 45 was for the pay of members. The receipts of the department credited to it were \$13,169 58. Twelve thousand three hundred and thirty-seven dollars was collected from dog licenses and turned in to the school-fund.

The police force consists of 697, rank and file, the maximum of the department as established by city ordinance being 715. Of the present force 562 were born in the United States, 100 in Ireland, 5 in England, 2 in Scotland, 7 in Germany, 5 in Canada, 5 in New Brunswick, and 11 in Nova Scotia.

The following table (a) illustrates the comparative statistics of crime for ten years, 1870-1879, inclusive:

Year.	Estimated population.	ARRESTS.					CRIMES AND MISDEMEANORS.										Property stolen.	Property recovered.	Fines imposed.	Years imprisonment.	
		Total.	Males.	Females.	Minors.	Non-residents.	Assaults.	Larcenies.	Drunk and disorderly.		Night-walking.	Violation of city ordinances.	House-break-ing.	Robbery.	Burglary.	Arson.					Murder.
									Arrested.	Helped home.											
1870...	250,000	31,540	25,905	5,035	4,504	4,004	1,804	1,402	18,678	2,384	320	360	8	55	4	4	11	\$94,901	\$75,163	\$49,998	1,247
1871...	265,000	25,201	19,528	5,073	4,501	5,508	1,800	1,372	18,089	1,918	105	461	18	68	14	1	8	60,018	71,151	60,370	1,181
1872...	285,000	27,902	22,169	5,733	5,230	6,774	2,019	1,032	16,612	1,778	173	371	40	45	12	5	10	63,801	70,014	69,740	1,402
1873...	300,000	27,845	22,168	5,077	5,225	6,149	2,256	1,914	16,810	1,022	128	490	27	59	11	6	12	78,225	68,229	70,042	1,733
1874...	337,000	29,799	23,768	6,036	5,961	5,422	2,512	2,007	18,090	1,234	127	540	71	64	23	10	10	78,485	86,150	73,559	2,136
1875...	342,000	36,445	24,358	6,087	5,392	5,532	2,657	2,129	16,645	792	317	651	47	71	13	6	15	68,389	100,824	102,509	2,118
1876...	346,000	30,041	24,222	5,819	5,417	6,118	2,557	2,250	15,067	681	322	544	107	66	23	2	14	57,063	57,904	153,801	2,698
1877...	350,000	26,683	21,057	5,026	4,915	5,100	2,481	2,347	14,373	726	269	294	90	50	16	9	6	76,940	58,398	80,057	2,001
1878...	355,000	25,817	20,531	5,286	4,572	4,700	2,320	2,078	13,976	887	295	434	82	48	14	7	8	65,672	88,505	86,669	1,829
1879...	359,000	24,507	19,539	4,968	3,783	5,880	2,012	1,782	14,267	1,264	184	640	63	49	10	2	6	63,902	67,639	63,787	1,000

Officers may carry pocket revolvers when on duty, with the permission of their captains; they must be used with great caution and only in self-defense. The police uniform shall be worn by all members of the force (except inspectors) when on duty before the public and when at court, unless otherwise ordered; but the superintendent, deputy superintendent, or captain may detail subordinates of their command for special duty in citizen's dress. Inspectors shall provide themselves with uniforms, but shall not be required to wear them except on special occasions when directed so to do by the superintendent.

The cost of the complete uniform averages from \$80 to \$85 per man.

The day service of patrolmen is 10 hours; night service, 7 hours. Extra duty will average about 2 hours. The length of streets patrolled is 500 miles.

The following statistics are for the year 1880: Total number of arrests, 28,521. Amount of lost property reported to the police as stolen in the city, \$74,653. Amount of property recovered which was stolen in and out of the city,

a This table and the preceding data are from the *Annual Report of the Police Commissioners*, dated May 1, 1880.

\$75,727 94. Number of station-house lodgers, 21,628; of this number, 1,827 were lodged at station-houses; the remainder after applying at station-houses were sent to the Hawkins Street lodge, where they were taken care of for the night, the able-bodied males doing one or two hours' labor. The number of lodgers during the year 1879 was 26,856.

Free meals given to station-house lodgers cost the department \$2,231 96.

The co-operation of the police department with the health department consists in reporting nuisances, accumulations of filth, contagious diseases, etc.

Its co-operation with the building department consists in seeing that parties building have proper permits, and that streets are not obstructed with building material.

Regulations authorize the appointment of special policemen for private parties and for unusual occasions, subject also to calls for regular service.

The appointments of railroad police in the city of Boston, as authorized under the provisions of chapter 372 of the acts of the year 1874, are made by the said police commissioners, and said commissioners may, if they deem it expedient, upon the written application of any responsible corporation or person, appoint, for a term not exceeding one year, suitable persons to be special police officers, to serve without pay from the city, under such rules and regulations as the commissioners deem expedient, with the power of police officers to preserve order and enforce the laws and ordinances of the city in and about any place of amusement, place of public worship, wharf, manufactory, or other locality specified in the application: provided, that such corporations or persons shall give bond to the city treasurer, satisfactory to the city solicitor, to be liable to parties aggrieved by any official misconduct of such police officer to the same extent as for the torts of agents and servants in their employment; and proceedings may be had upon said bonds in the same manner as upon the bonds of constables. A record of such appointments shall be kept in the office of the commissioners, and any appointments so made may be revoked by the said commissioners at any time.

The board of police commissioners may, upon an emergency, or apprehension of riot, tumult, mob, insurrection, pestilence, or invasion, appoint as many special patrolmen without pay, from among the citizens, as they may deem desirable. During the service of any special patrolman authorized as aforesaid, he shall possess all the powers and privileges and perform all the duties that may be, by orders, rules, and regulations, from time to time prescribed.

No person will be appointed a special police officer who is under twenty-five or over fifty years of age, or who is not a citizen of Boston, or who is not able to read and write the English language understandingly, or who is not of good moral character, or who has ever been convicted of crime.

Special officers are required to wear badges of a pattern approved by the police commissioners, and to surrender their badges when their term of service expires or when they resign or are discharged. They may be dismissed from their offices by resolution of the board of police commissioners, without charges or trial. They are required to respond at any time when called upon by any regular officer of the police department to aid him in preserving the public peace or in taking a prisoner to the station-house.

During the year 1880, 80 policemen were appointed, 13 were discharged, 6 resigned, 7 died, and 3 were retired on pensions.

The cost of the police force for the year ending December 31, 1880, was \$857,048 39.

The principal causes of arrest and the respective number of arrests for the year ending April 30, 1879, is as follows:

Complaints.	Arrests.	Complaints.	Arrests.
Assault and battery	1,974	Malicious mischief	296
Assault, felonious	203	Night-walking	245
Common drunkards	229	Shop-breaking	216
Default warrants	142	Suspicion of larceny	337
Disorderly	3,907	Suspicious persons	1,273
Disturbing the peace	357	Truancy	139
Drunkenness	9,945	Vagrancy	236
Idle and disorderly	296	Violation of city ordinances	417
Insane	194	Violation of license law	733
Larceny, simple	1,618	Witnesses	198
Larceny, felonious	272		

FIRE DEPARTMENT.

The organization of the Boston fire department dates back to the year 1711, when an act was passed providing for a board of ten fire-wardens, who were given full power to superintend the extinguishing of fires and to command all citizens and organizations engaged therein. The city charter granted in 1822 provided for the election of not less than three fire-wardens in each ward of the city, with powers to command and require assistance for extinguishing fires and suppressing all tumults and disorders incident thereto. The department is described by Mayor Quincy, about this time, as chiefly depending "upon the aid of the inhabitants, applied under the authority of the fire-wards; they formed lanes of bystanders, who, by their direction, passed buckets of water from pumps or wells in the

vicinity to engines playing on the fire, and returned to them for further supply". The means at the command of the fire-wardens were extremely primitive, and the engine-companies were composed entirely of volunteers, making up, however, by their *esprit de corps* in many instances for the absence of disciplinary regulations.

The compensation for the services of firemen was merely nominal, and as a result the widest latitude was allowed them as to methods of organization and discipline. The engines were owned by the city, and it may be mentioned, as illustrating the condition of the department, that in 1823 the petition of several companies for an increase of compensation having been disallowed, every engine was surrendered to the city, and on the same day voluntary associations supplied the place of the self-disbanded companies. The need of a more perfect organization having been experienced, further legislation was secured, and in 1823 a new organization was effected. Fourteen years later the ordinance establishing the department was revised, and the first annual report of the chief engineer, in 1838, showed the force to consist of 13 engines, 595 members, with 15 engines, 8,242 feet of hose, 18 hose-carriages, and 1 hook-and-ladder truck. The form of organization then existing was maintained, with little alteration, up to the formation of the board of fire-commissioners, in 1873. On the 17th of September, 1860, hand-engines, with hose-tenders attached, were supplanted by steam-engines and separate horse hose-carriages. After the great fire of 1872 attention was called to the need of greater efficiency in the department, and a commission appointed to thoroughly investigate the management of the fire department recommended its general re-organization. The city council, on October 24, 1873, approved an ordinance giving entire control of the department to a board of three commissioners, appointed by the mayor, subject to the confirmation of the council. These commissioners are required to devote their whole time to the performance of their duties, being forbidden to be actively engaged in any other business. Any member of the commission may be removed by the mayor for cause, and no member of either branch of the city council is eligible to appointment. The board organizes the first Monday in May, annually, by the choice of a chairman. The duty of extinguishing fires and protecting life and property within the city is intrusted to the board, which is authorized to appoint and discharge all other officers and members of the fire department, and those of the fire-alarm telegraph service, and to fix their compensation. The board likewise has power to divide the city into fire-districts, to establish a fire-patrol by detail from the permanent force, to purchase all needed horses, apparatus, and supplies: in a word, to manage to the minutest detail the entire force, and to make all such rules and regulations, not inconsistent with the ordinances of the city council, as they may deem necessary for that purpose. The accounts and records of the board are examined once a month by a joint committee of the city council. For further public protection against fire the commissioners are empowered to make rules and regulations governing the sale, storage, safe-keeping, and transportation of gunpowder and fire-works within the city.

In addition to the commissioners the fire department consists of a chief engineer, a superintendent of fire-alarms, thirteen assistant engineers, and other officers, enginemen, telegraph-operators, and members, to the number of 700. The city is divided into ten fire-districts, each under the charge of an assistant engineer. The executive officer of the department is the chief engineer, who at all fires exercises supreme command over the engineers, officers, and members; he is responsible for the discipline and efficiency of the force; inspects all apparatus, supplies, houses, and equipment, and reports daily to the commissioners the general condition of the force. The assistant engineers exercise direct personal supervision within the limits of the fire-districts to which they are assigned, and are answerable only to the chief engineer; they are responsible for the discipline and efficiency of all companies under their command, visiting their houses daily, acquainting themselves with the buildings in their district, noting carefully their arrangement, keeping a record of such as they deem dangerous, and acquiring all knowledge that may be of value for the prevention or prompt extinguishment of fires; they report daily to the chief. Call-engineers exercise similar functions. The duties of the inspector, who ranks as assistant engineer, are sufficiently indicated by his title. The fire-alarm system is under the charge of a superintendent, who also has care of the public clocks.

All officers and members of the department or force must be able to read and write the English language understandingly, and they must be citizens of the United States, and residents and tax-payers of Boston during a term of one year prior to application for appointment; they must be of good health, sound in body and mind, of good moral habits and character, and not more than thirty-five years of age at the time of appointment. Previous conviction of crime disqualifies one for appointment.

The members of the force are classified as "permanent" and "call". Each engine company of the permanent force consists of a captain, an engineman, an assistant engineman, and not exceeding eight hosemen. Hook-and-ladder companies of the permanent force are made up of a captain and not exceeding twelve laddermen. Captains are in all cases responsible for the discipline and efficiency of their men. Enginemen and drivers of the call-force are also permanently employed. Call-members respond to alarms answered by the companies to which they belong, but are not at other times on duty. From the permanent force details are made for house- and street-patrols, the duty of the latter being to note the condition of hydrants, reservoirs, fire-alarm boxes, etc., and to keep a lookout for indications of fire and of neglect or carelessness that may occasion it.

Members who distinguish themselves by saving life at the risk of their own, are entered on a roll of merit. Members who serve seven years are granted a "veteran" certificate, which entitles them to immunity from jury

service. All members are eligible to promotion. They are required to be civil and decent in language and deportment, to be neat in dress, and to obey implicitly the commands of their superior officers. Members may be reprimanded, fined, suspended, or dismissed the service for the following offenses, according to their gravity: Intoxication, neglect of duty, violation of the rules, disrespect toward a superior officer, absence without leave, conduct prejudicial to discipline, cowardice and shirking duty at fires, neglecting or refusing to pay a debt for uniform, clothing, or rent, or for the necessaries of life.

At the last general court provision was made for the pensioning of firemen.

Dormitories are provided in the engine-houses for those members that are on permanent duty there. The fire-boat is officered and manned by the department and is under its orders:

The protective department, organized in 1847 by certain insurance companies and maintained by them, is under the command, and subject to the rules and regulations, of the Boston fire department.

The force of the department now consists of 14 engineers, including the chief and two "call" assistants; 247 permanent officers and men; 343 callmen and 9 officers and employés of the fire-alarm service, making a total of 613. The commissioners are paid salaries of \$3,000 each per annum; the chief engineer, \$3,000; superintendent of fire-alarm, \$2,300; assistant engineers, \$1,600; permanent foremen, \$1,250; assistant foremen, \$1,000; enginemen, \$1,200; assistant enginemen, \$1,100; hosemen, \$1,000; ladder-men, \$1,000; chemical enginemen, \$1,000; hostlers, \$720; captain of fire-boat, \$1,250; enginemen, \$1,200; assistant enginemen, \$1,100; deck-hands, \$1,000; call force: permanent foreman, \$1,000; call-foremen, \$300 and \$225; permanent drivers, \$1,000; hosemen, \$225 and \$175; hosemen, chemical engines, \$100; ladder-men, \$225 and \$175. This schedule of salaries is modified in some respects in the companies stationed in the West Roxbury and Brighton districts. The total expenditures of the department ending May 1, 1880, were \$548,485 43, of which \$359,439 51 was for salaries, \$18,071 46 being expended on account of the fire-alarm telegraph.

The apparatus and equipment of the force consists of 33 steam-engines, 8 chemical engines, and 1 hand-engine; 1 fire-boat, 35 hose-carriages, 27 tenders, 12 hook-and-ladder trucks, 1 aerial ladder, 1 Skinner ladder, together with accessory wagons and carriages; 16,911 feet of leather hose, 31,820 feet of cotton hose, 15,923 feet of rubber hose, 2,890 feet of chemical hose, 1,883 feet of hand hose, and 832 feet of suction hose. One hundred and thirty-nine horses belong to the department, with which are connected a repair-shop and veterinary hospital. There are 4,238 hydrants, of which 1,293 are in the city proper, and 238 fire-reservoirs. Fifty-six houses or rooms accommodate the apparatus of the department and the men attached thereto. (For statement in regard to the engine-houses, see "Public Buildings".)

The electric fire-alarm telegraph is used to summon companies to the localities where their services are needed. There are in the city 277 fire-alarm boxes, 85 of which are in Boston proper, and the telegraph is connected with 52 bells on which the alarm may be sounded. Keys to the boxes are kept in designated places in their immediate vicinity, and on the occurrence of a fire the person discovering it procures the key of the nearest box and sounds the alarm, which is struck on bells answering to it by repeating the number of the box from which it is given. The fire-companies within the district where the box is situated immediately proceed to the locality from which the alarm is given. By a system of repeated signals the force at the fire can be increased until the entire apparatus is on the ground. The whole cost of the signal apparatus is about \$100,000, and includes 250 miles of working-wire and the accessory striking-machines, switch-boards, etc.

PUBLIC HEALTH, AND HEALTH REGULATIONS.

The health department of the town of Boston previous to 1799 consisted of a health committee, chosen annually by the citizens, with full powers for the enforcement of all sanitary regulations made and established. In the year mentioned, however, a special act of the general court was adopted, providing for a board of health to consist of twelve members, one elected by each ward. This board had full authority "to abate nuisances and remove all causes of sickness, inspect provisions, regulate quarantine, appoint a visiting physician and persons designated as 'scavengers', and 'such other officers to assist them in the execution of the duties of their office as they might judge proper or necessary'". This organization underwent no material change until the adoption of the city charter in 1822, when the authority vested in the board of health was conferred upon the city council. An ordinance adopted in 1824 conferred these powers on two departments—one designated the "internal police", under the superintendence of the city marshal; the other the "department of external police", charged with the enforcement of the health regulations on all vessels, cars, or vehicles entering the city by land or water. Nine years later the departments of internal and external police were, so far as the public health was concerned, placed under the city marshal, subject to the direction of the mayor and aldermen, provisions being made for the annual election of five consulting physicians. In 1849 all the powers of a board of health were conferred directly upon the mayor and aldermen. A superintendent of health was first elected in 1853, and the duty of cleaning the streets and taking care of the city carts and stables was transferred from the superintendent of streets to him. The organization adopted in 1849 continued until 1873, when the present board of health was appointed. It had been found that the mayor and aldermen could not give the attention to the subject that its importance demanded, as had been illustrated by the prevalence of small-pox in 1872, and it was decided to create a special commission, with full powers and more direct responsibility.

An ordinance was passed December 2, 1872, and amended January 10, 1873, providing for the appointment of a board of health by the mayor, subject to the approval of the city council, to consist of three persons. The tenure of the members of the board was to be so arranged that one should go out of office each year. The ordinance gave the board "all the powers vested in, and all the duties prescribed to, the city council or the aldermen, as a board of health, under the statutes and ordinances now in force", with authority to appoint such subordinate officers, agents, and assistants, in addition to those prescribed, as they might deem necessary. They were also authorized "to make such rules and regulations for their own government, and for the government of all subordinates in their department", as they should consider expedient. The annual report is presented in May or June, covering the year ending April 30.

The board of health has the power, subject to the approval of the mayor, of appointing the superintendent of health. This official has the care and superintendence of the city teams and stables; makes all the necessary arrangements for cleaning streets, disposing of manure, and removing house-dirt and offal.

The board is also required to appoint annually, subject to the approval of the mayor, a city physician. He is required to examine into all nuisances, sources of filth, and causes of sickness which may exist on board any vessel at any wharf within the city of Boston, or which may have been landed therefrom, and under the direction of the board shall cause the same to be removed or destroyed. He vaccinates and revaccinates without charge any inhabitant of Boston who may apply, and gives certificates of vaccination to such children as have been vaccinated in order to secure their admission to the public schools. All causes of disease within the city are examined by him, and he investigates all sources of danger to the public health. He is required to attend all cases of disease and perform all the professional services required in the jail, city prison, temporary home, and the several police stations, excepting those in East and South Boston. His duties comprehend the examination as well of all candidates for appointment on the police and in the fire departments. The harbor police are required to notify the city physician of the arrival, between April 1 and November 15, of all vessels containing hides, hide cuttings, skins, rags, or fruit, and the same requirement is obligatory on captains and consignees.

For the enforcement of quarantine regulations the board appoints annually a port physician, who resides at Deer island, and professionally attends the public institutions thereon.

The annual expense of the board when there is no declared epidemic is between \$50,000 and \$60,000. Its disbursements may be increased to an unlimited extent during epidemics.

During an epidemic in houses in which there are two or more families living, the board can forcibly remove occupants infected with a contagious disease. If there are less than two families residing in the house it can only be quarantined.

The executive officer of the board is its clerk, whose salary is \$2,500 per year.

The board holds daily sessions, and its members give personal attention to the matters within their jurisdiction. In addition to its clerk the board appoints a superintendent of health at a salary of \$3,300, the city physician with a salary of \$3,000, and a port physician, who resides at Deer island in the harbor. It also employs eight inspectors, one of whom is a physician and is known as "medical inspector". Five of these inspectors have police powers, the same as the powers of ordinary police officers. This power is exercised only for the purpose of making complaints in court.

During nine months of the year a systematic inspection is made of each alley and yard in the city; also of each apartment or tenement house, of which there are about 2,700. At other times—the three summer months—these officers have time only to investigate complaints made at the office.

In response to the question, "What is the custom concerning the inspection and correction of defective house-drainage, privy-vaults, cesspools, and sources of drinking-water?" the following answer is made:

House drains are tested with oil of peppermint, and, if found defective, notice is sent to the owner. When privy-vaults and cesspools are found full, defective, or offensive to the neighborhood, the owner is notified to clean out or to remove the same, according to circumstances.

Defective sewers are in charge of the superintendent of sewers. Street-cleaning is in charge of the superintendent of health, as is also the removal of ashes and garbage. He is immediately responsible for his department. Although he is appointed by the board of health, it has little to do with him or his work so long as it is satisfactorily performed.

The following are the ordinances relating to vaults and drains:

The owner, agent, occupant, or other person having the care of any tenement used as a dwelling-house, or of any other building with which there is a privy connected and used, shall furnish the same with a sufficient drain under ground to carry off the waste water, and also with a suitable privy, the vault of which shall be sunk under ground and built in the manner hereinafter prescribed, and of a capacity proportionate to the number of inhabitants of such tenement, or of those having occasion to use such privy. Any such owner, agent, occupant, or other person who shall neglect to comply with the provisions of this section shall be liable to a penalty of not less than \$5 nor more than \$20 for each and every week during which such offense shall continue.

All vaults and privies shall be made of brick and cement, and contain at least 80 cubic feet, and the inside of the same shall be at least 2 feet distant from the line of every adjoining lot, unless the owner of said adjoining lot may otherwise agree and consent, and at the same distance from every street, lane, alley, court, square, or public place, or public or private passage-way; and they shall be so constructed as to be conveniently approached, opened, and cleaned. Every vault shall be made tight so that the contents thereof can not escape therefrom, except as is provided in section forty-four. All preparations for cleaning a vault or privy shall be made by the person emptying the same: and, in case of neglect to make such preparations, it shall be made by the city, and the expense thereof be charged to such person.

The superintendent of sewers, under the direction of the board of health, is authorized to permit, under such restrictions, and on the payment of such sum, not exceeding \$30, as they may deem expedient, the construction of sufficient passage-ways or conduits under ground for the purpose of conveying the contents of any vault into any common sewer or drain.

Whenever any vault, privy, or drain becomes offensive or obstructed, the same shall be cleansed and made free, and the owner, agent, occupant, or other person having charge of the land in which any vault, privy, or drain is situated, the state or condition of which is in violation of the provisions of this ordinance, shall remove, cleanse, alter, amend, or repair the same within such reasonable time, after notice in writing to that effect given by the board of health or the superintendent of health, as shall be expressed in such notice.

No cesspool, vault, or privy shall be emptied without a permit from the superintendent of health; nor in any other mode, or at any other time, than he may direct and appoint, subject to such regulations as the board of health from time to time shall make on the subject, and always at the expense of the owner, agent, occupant, or other person having charge of the tenement in which such vault is situated.

No vault shall be opened between the 1st day of June and the 15th day of September, in each year, unless the board of health shall be satisfied of the necessity of the same for the health or comfort of the inhabitants. In such case no more of the contents shall be taken away than said board shall deem to be absolutely necessary for present safety and relief, and such precautions shall be used relative to the prevention of any offensive effluvia as said board may direct, at the expense of the owner, agent, occupant, or other person having charge of the premises.

All waste water shall be conveyed through sufficient drains, under ground, to a common sewer, or to such reservoir, sunk underground, as may be approved by the superintendent of sewers. And no person shall suffer any waste or stagnant water to remain in any cellar, or upon any lot or vacant ground, by him owned or occupied.

Whenever, upon due examination, it appears to the board of health that the number of persons occupying any tenement or building in the city is so great as to be the cause of nuisance and sickness and the source of filth, or that any tenements or buildings are not furnished with vaults constructed according to the provisions of this ordinance, and sufficient privies and drains under ground for waste water, they may thereupon issue their notice in writing to such persons, or any of them, requiring them to remove from and quit such tenement or building within such time as the said board shall deem reasonable.

There are no regulations concerning the pollution of streams or harbors.

Small-pox patients are isolated by guarding the house in such manner as to prevent the occupants from leaving it and communicating the disease, or by the removal of patients to the small-pox hospital.

Scarlet-fever patients are not isolated, but the school committee is notified of the location of each case, and all the children of the house in which a case of scarlet fever exists are excluded from school. The same rule as to exclusion from school applies to the children of families where other contagious diseases exist.

There is a public pest-house remotely situated on Canterbury street, to which small-pox patients are removed.

Vaccination is compulsory and is done at the public expense.

The registration of births and deaths is performed by the registrar, who is elected annually by the city council. Parents are required by statute to give notice to the registrar of the births and deaths of their children. Physicians are required to certify as to the duration of the last sickness, and as to the disease of which any person whom they have attended has died. Sextons and undertakers are required to make a return to the registrar and to obtain a certificate before making any interment. Certain fees are allowed for information in regard to births and deaths.

The board of health annually submits to the city council a printed report for the year ending April 30. The board of health is empowered by statute to establish the quarantine to be performed by vessels arriving within the harbor, and to make such regulations as it judges necessary for the health and safety of the inhabitants.

The following are regulations concerning the burial of the dead:

The interment of the dead shall be under the superintendence of the board of health, who shall carry into execution all laws, ordinances, regulations, and orders relating to the interment of the dead.

The board of health shall have the care and custody of all the burying-grounds in the city.

The board of health may give licenses for burials and for the removal of dead bodies from the city, and point out the place, depth, width, and range of all the graves in the several burying-grounds, and shall forbid graves to be dug within those limits in such grounds in which, in its judgment, it would be dangerous to the public health to allow graves.

No person shall bury or inter, or cause to be buried or interred, any dead body in violation of any direction or order of the said board, given in accordance with the preceding section, or without having first obtained a license so to do.

No person shall inter, or cause to be interred, any dead body in a grave less than three feet deep from the surface of the ground surrounding the grave to the top of the coffin.

On the first Monday of February, annually, or within sixty days thereafter, the mayor, by and with the advice and consent of the aldermen, shall appoint, for a period of one year from the first Monday of April in the year in which they may be appointed, such a number of funeral undertakers as he may deem expedient, and they shall be responsible for the decent, orderly, and faithful management of the funerals undertaken by them, and for a strict compliance with the ordinances of the city in this behalf. Each undertaker may employ porters, of a discreet and sober character, to assist him, and he shall be accountable for their conduct; said undertakers and porters may be removed at the pleasure of the mayor. No person not appointed as aforesaid shall open any tomb or grave for the purpose of depositing or removing a dead body, without the permission of the board of health.

No person shall bury or inter, or cause to be buried or interred, any dead body at any other time of the day than between sunrise and sunset, except when otherwise permitted by the board of health. No bell shall be tolled in the city of Boston at any funeral without a special permit therefor from the mayor or board of health, who are hereby authorized to suspend the usual ringing of any bell when the illness of any person in the neighborhood thereof may require such suspension. The corpse of every person of ten years of age and upward shall be conveyed to the grave or tomb in a funeral car drawn by not more than two horses unless permission for a different mode of conveyance is given by the board of health.

No grave shall be opened or dug in any of the burying-grounds of the city unless by permission of the board of health.

No conductor on any railroad, no master of any steamboat or other vessel, no hack-driver, or other person shall remove or cause to be removed from the city any dead body without the written license of the board of health.

No person shall remove any dead body, or the remains of any such body, from any of the graves or tombs in this city, or shall disturb any dead body in any tomb or grave without the license of the board of health.

No grave or tomb shall be opened from the first day of June to the first day of October, except for the purpose of interring the dead, without the special permission of the board of health.

The board of health are authorized to make and adopt any regulations in relation to the interment of the dead which they may deem expedient, not inconsistent with the foregoing provisions, and subject to the approval of the mayor.

PUBLIC BATHS.

The public baths of the city of Boston are under the general supervision of the board of health. There are 19 bathing-houses, mostly situated near the bridges and docks, 12 for men and boys, 6 for women and girls, and 1 for both males and females. They are open daily from June 1 to September 30, each under charge of a superintendent, who has authority to withhold the facilities from all not conforming to the rules and regulations. A general superintendent has direction of the entire system of public baths. Bathers are required to provide their own towels and soap, and females must be provided with suitable bathing apparel. Those desiring towels can hire them of the superintendent at a nominal price. Order is maintained among the bathers by police officers who co-operate with the superintendent. The expense of maintaining the public baths during the year 1879 was \$21,423 30. They were patronized by 1,020,316 bathers, of which 198,509 were men, 609,021 boys, 69,274 women, and 143,512 girls. These figures show a decrease of 126,329 as compared with 1878, the diminution being largely due, in the opinion of the authorities, to the constantly-increasing facilities for reaching the seaside resorts in the harbor and on the immediate coast. The fouling of the waters of the harbor by sewers is also believed to exert an unfavorable influence on the patronage of the public baths.

The expense of maintaining the baths during the ten years ending December 31, 1879, amounted to \$279,462 38—an average of about \$28,000 per annum.

CITY SCAVENGERING AT BOSTON.(a)

The scavengering of Boston devolves upon a committee of five members of the city council, chosen annually. This committee, in January, makes an estimate of the appropriation required for scavengering during the year, and controls its expenditure, all work and the employment of all labor being in its hands. It is provided, however, by city ordinance that scavengering shall be done to the satisfaction of the city board of health, and that the superintendent in actual charge of the work shall be appointed annually by said board and approved by the mayor. The board of health referred to consists of three members, appointed by the mayor for three years and approved by the city council, one member going out of office each year. This board takes cognizance of all matters affecting public health, regulates noxious trades, abates nuisances, appoints the city physician, quarantine officers, and superintendent of health, and, as has been stated, can require that the scavengering shall be done to its satisfaction.

At first sight this division of responsibility would not seem to promise the best results. The work is in charge of a committee that does not remain in office long enough to know anything about it; it must be done to the satisfaction of a board continually changing, which can not master its details, and does not control the appropriation, expenditures, or workmen; and is superintended by a man, appointed by one body and responsible to another, who himself holds office for a single year.

And yet the system has worked well. The committee, unable to become familiar with the work during their brief term of office, of necessity content themselves with auditing accounts and with such investigations and suggestions as they are qualified to make, and leave its management entirely to the superintendent. The board of health, for somewhat similar reasons, appoints each year the same person to that office, and the superintendent, being supported by both bodies, is relieved from many petty attacks and annoyances incidental to a more autocratic position. Practically, therefore, the charge of city scavengering is in the hands of one man—the superintendent of health.

It is obvious that no operation of magnitude, and scavengering less than many others, can be efficiently carried on except by those accustomed to it; and that it is well done at Boston is due almost entirely to the fact that it is in charge of men fitted by long training for its performance. The superintendent succeeded his father, who had filled the place for about twenty years; he himself was promoted after thirteen years' service in a subordinate position on the force, and has held this office for twelve years. All of the foremen, twelve in number, have risen by promotion; few of the laborers have been less than five years connected with the department, many have served for twenty, a few for thirty or even forty years. Although the rate of wages paid is not especially high, ranging from \$45 to \$52 a month, the permanency of the employment causes places upon the force to be eagerly sought for, and when a vacancy occurs there are many applicants to choose from. A young able-bodied married man of good character is usually selected. His first instructions are, "Mind your own business; do your work to the best of your ability; don't talk politics; don't talk religion." The men know that a faithful discharge of their duties will insure continued employment and may lead to promotion. Rarely is one found to neglect his duties.

a By Eliot C. Clarke, esq., C. E.

The following table gives the yearly expenditures for scavenging and receipts for offal, etc., since 1870, the total number of men employed, also the population of the city in 1870, 1875, and 1880:

Year.	Population.	No. of em- ployés.	Expendi- tures.	Receipts.
1870.....	250,526	357	\$298,892 87	.....
1871.....		415	338,798 06	\$47,358 15
1872.....		445	369,227 70	40,679 25
1873.....		475	378,549 66	20,303 12
1874.....		525	406,052 52	36,286 77
1875.....	341,919	475	387,134 72	43,581 21
1876.....		475	365,928 39	55,136 33
1877.....		485	356,506 11	45,035 03
1878.....		475	321,117 60	37,690 57
1879.....		475	322,973 25	32,583 85
1880.....	362,839	500	335,471 37	39,881 77

By averaging similar figures for twenty years, it appears that the scavenging of the city has required the services of about one person in each 750 of the population, and that the annual cost has been about \$1 per head.

The estimated value of all the plant used by the department in carrying on its work is \$95,000. This includes buildings, horses, wagons, carts, tools, and implements, but not the value of the land occupied. The principal items are as follows:

Kind.	Number.	Kind.	Number.
Stables.....	4	Street-carts.....	29
Sheds.....	3	Cesspool-wagons.....	14
Horses.....	209	Watering-carts.....	6
Offal-wagons.....	43	Sleds.....	175
Ash-carts.....	63	Sweeping-machines.....	9

The horses belonging to the department are very handsome, well-groomed beasts, weighing from 1,400 to 1,600 pounds, and come, generally, from Pennsylvania. Young horses, about seven years old, are bought, at prices ranging up to \$400 each. The average length of their service is eight years. The wagons and carts are all built by the city, and are overhauled once a year and put in good condition. The department also does its own repairing, blacksmithing, painting, etc., and employs for these purposes 13 mechanics, to whom it pays from \$2 to \$3 a day.

The work of scavenging may be subdivided as follows:

- Removal of house-offal.
- Removal of ashes and dry house-dirt.
- Cleaning of streets and street catch-basins.
- Cleaning of privy-vaults and cesspools.

These several classes of work will be described in order.

REMOVAL OF OFFAL.—Offal, which includes refuse food and other fragments of moist organic matter known otherwise as swill, is taken every day from hotels, restaurants, boarding-houses, markets, and other places furnishing large quantities of it, and three times a week in summer and twice a week in winter from dwelling-houses. At about 4 o'clock a. m., men leave the department yards, of which there are four in different sections of the city. Each gang consists of a horse, wagon, driver, and helper. The wagons are perfectly water-tight, hold from three to four cord-feet, and have a wooden cover or lid, which is kept closed, except when raised to receive the offal. They cost to build about \$250 each. Hanging below them are two large wooden buckets to be used by the men. Hotels and markets are first visited, so that the offal may be removed before early travelers and customers begin to arrive. Shortly after 7 o'clock dwelling-houses are visited. Midway between the streets, in most parts of the city, are narrow alleys upon which the rear of house-lots abut, and through these the wagons drive. The driver or his helper rings the bell at the yard gate, or at the basement door if there be no yard, and on being admitted, quietly goes to the swill-tub, empties its contents into the bucket, replaces the tub, and leaving the house passes to the next one, and so on until his bucket is filled, when it is emptied into the cart. Should no offal be found at any house, it is assumed that it has been improperly disposed of, and the case is reported to the board of health for investigation.

There is nothing offensive in these operations, which proceed till 11 a. m. and from 1 to 5 p. m. When the wagon is filled it is driven to one of three department depots in the city and its contents dumped upon a raised platform. The wagon is then thoroughly washed with water and scrubbed clean before going upon another trip. It is required that all the offal collected in a day shall be disposed of before night. There is no lack of regular customers for it, who drive in from the suburbs and neighboring towns. These men back their wagons under a shoot in the platform and a full load is shoveled into them. The cubic contents of each wagon is known, so that proper charges can be made. These range from \$3 to \$6 a cord, varying according to the accessibility of the depots to the neighboring farms. The wagons are required to be water-tight, and each has a number in plain figures two-

inches long, so that it can be reported by the police in case of leakage or any other offense while passing through the streets. During the year ending with April, 1881, there were collected by city teams about 26,000 loads of offal, at a cost for labor of \$57,091 17. Ninety-one men and 42 wagons were employed upon this branch of the work. Also for removing the offal from East Boston, which, from its somewhat isolated location, is difficult to reach from the central depots, there was paid to a contractor the sum of \$2,866 68. While the city claims the right to remove all offal, or, what amounts to the same thing, refuses to license any private individuals to carry it through the streets, a wise discretion is used in exercising the right. Farmers and others living in sparsely-settled districts on the outskirts of the city limits occasionally wish to use their own swill for feeding swine, and when this can be done without creating any nuisance it is considered proper and economical to permit it. This discretion is left with the superintendent.

The wages paid for this service are as follows:

	Per month.
Foreman	\$85 00
Foreman	83 33
Drivers	48 00
Helpers	45 50

The receipts from the sale of offal for the last ten years are given below:

	Receipts.		Receipts.
1871	\$17,155 00	1876	\$30,255 58
1872	14,278 75	1877	29,999 57
1873	5,372 30	1878	27,821 22
1874	7,233 75	1879	22,747 47
1875	19,006 12	1880	25,169 74

It will be noticed that the amount recovered by selling the offal is a considerable percentage of the cost of removal. The receipts, however, have diminished of late years, and will probably do so still more, notwithstanding the greater amount collected. This is due to the decrease in the price which farmers are willing to pay for it. As the city extends and suburban land becomes too valuable to be used for farming and stock-raising, the distance which the offal must be hauled becomes greater, and the profit in using it less. Moreover, the chief use made of it is for feeding swine, and the price of pork has fallen of late. So that while \$8 a cord could once be obtained for it, from \$3 to \$5 is now thought to be its full value. This loss of a market is scarcely to be regretted, notwithstanding the pecuniary advantage of such disposal of it. It may be doubted if it forms a fit food for animals, especially for such as are raised for the market. Although it is dealt with promptly, so far as the city is concerned, much of it is already several days old and is in a state of ferment. The board of health has considered this subject, and has recommended an investigation of methods of incineration as likely to prove more satisfactory.

REMOVAL OF ASHES.—One hundred and twenty-seven men and sixty carts are employed in removing ashes and house dirt. The carts are for a single horse, and are built by the city at a cost of about \$125 each. Hotels, stores, and tenement-houses are visited twice a week, and dwelling-houses once. The driver and his helper enter the house, yard, or shed, carry out the ash-receiver, and after emptying the ashes into the cart, which has a canvas cover, return the receiver to its proper place. The men are not required to go up-stairs, and the ashes from tenements and up-stairs offices and warerooms must be brought to the ground-floor by the tenants. In dwelling-houses, however, the inmates have no trouble whatever. Indeed, many householders furnish the scavengers with keys to their yard-gates or back doors, so that the servants shall be spared even the slightest trouble of answering the bell. In most if not all other cities ashes, and often offal as well, have to be placed on the sidewalk to await the arrival of the scavengers, and after being emptied the receptacles are left where found. The Boston method is evidently a great convenience to householders; by it also is avoided the nuisance to foot-passengers of having to pass upon the sidewalk unsightly and offensive vessels or heaps of refuse awaiting removal.

It might be supposed that, notwithstanding its convenience, citizens would object to having strange men enter their houses. But it must be remembered that the men employed by the health department are rarely strangers. They keep their places for many years. The same men go over certain routes day after day, sometimes for twenty years together. They pass a cheerful "Good-morning" at the basement door, and are generally cordially greeted by the servants. It is a custom in most families to present them with a dollar at Christmas, a practice which helps to establish kindly relations. It is worth stating that in the last twenty years there has been but a single complaint made of anything having been stolen by the scavengers. It may be doubted if any class of citizens, with a cleaner occupation, can show a cleaner record.

When the cart is filled the canvas is fastened securely over its contents, and the driver takes it to the nearest dumping-ground. In the mean time the helper, in order to expedite the work, continues to bring out ash-barrels so that they may be in readiness when the cart returns.

It is somewhat difficult to find accessible places for dumping the ashes; it may be doubted if it is possible to find unobjectionable places. A large part of Boston being very low land, there is a great temptation to use this refuse in the place of earth-filling, and such is its usual disposition. If the ashes were perfectly free from admixture with other substances it would form suitable filling for most purposes; but it is not so. Although it is intended by the

health department that only ashes shall be put in the ash-barrels, no rule to that effect can be enforced. By requiring that there shall always be at each dwelling a receptacle for offal, and by refusing to remove ashes with which offal has been mixed, that species of filth is in a measure kept out of the ash-barrel; an attempt is also made to keep out such substances as go under the general name of rubbish, by providing other ways of removing them.

Every spring, at ordinary house-cleaning time, it is advertised in the newspapers that during a certain week the carts of the health department will carry away from dwellings any rubbish or house-dirt that the inmates desire to be rid of. A printed notice is also left at every house specifying the day on which it will be visited. This is good so far as it goes; but the trouble is that such rubbish is constantly accumulating, and can not be kept till the next spring. When a bottle is broken, an oyster or preserve can emptied, a piece of matting worn out, or a pair of boots discarded, it is desired to be rid of them at once; and in the heart of a city there is no way to get rid of anything except by the ash-barrel. On an average fully one-third of each cart-load of so-called ashes consists of other refuse.

Portions of this refuse are harmless enough, as, for instance, broken glass and crockery, plaster, old iron and tinware; but other portions entirely destroy its suitability for filling, such as bones, hair, leather, rubber, paper, pieces of cloth or carpeting, old baskets, and, in short, any vegetable or animal matter liable to decompose. Nearly all small animals that die in the city find a grave in the ash-barrel. How else can they be disposed of? There are not enough of them to deal with separately, and if they are thrown into the streets at night they must be picked up by the first ash-cart and buried at the dump.

The ashes and house-dirt are used to grade streets and parks belonging to the city, and private lands when desired or permitted by the owner. Many poor people use this material for raising the grade of cellars and yards in low places. A certain proportion of the amount collected can be sold for such purposes. Below is given the amount of receipts from the sale of ashes for the last ten years:

	Receipts.
1871	\$21,761 05
1872	16,362 30
1873	12,370 35
1874	19,962 65
1875	a 16,291 56
1876	15,379 87
1877	8,115 68
1878	2,996 42
1879	1,708 83
1880	5,350 62

It is evident that the presence of the refuse house-dirt renders the ashes undesirable for street-building, for the mass as a whole compacts very slowly and continues to settle for years. If the surface be paved or covered with gravel there will probably be no unpleasant odor; but digging trenches for laying gas- and water-pipes, sewers, and drains will be an offensive operation for a number of years, since organic matters kept from a free supply of oxygen decompose slowly. The use of such filling for grading open squares and pleasure-grounds is not especially objectionable, except as it may cause offense while being deposited. To support vegetation it must be covered several feet deep with earth and loam, and the trees and plants quickly assimilate and destroy the products of decay. Frequent nuisances have been created by attempts to fill park lands on the borders of the sea. Salt water attacks the refuse matters and liberates foul-smelling gases. Enough sulphureted hydrogen has been generated from half an acre of dumping-ground to discolor in a few hours the white paint on all the neighboring houses. It is probably a serious mistake to dump house-dirt on land which is to be built upon. It is true that the organic matters mixed with the ashes must in time disappear, but how soon it is impossible to say. Excavations made in Boston in land filled from city carts ten years previously have disclosed remnants of organic matter, and the process of decomposition still going on. The present methods of disposing of ashes are not therefore wholly satisfactory, and the board of health inclines to the belief that it would be better to burn them in kilns, thus rendering them innocuous and suitable for filling, and that the added value might offset the cost of treatment.

It may be mentioned in this connection, that fully two hundred people find a livelihood by spending the day at the different dumping-grounds, raking over the loads of dirt as they are dumped from the carts, and collecting in bags and baskets such portions as can be sold to junk-dealers; it is a very dirty and probably unhealthful occupation.

It has been said that small animals are carried in the ash-carts and buried at the dumping-grounds. Larger ones, such as horses and cows, are disposed of by a contractor who removes them for the privilege of possessing the carcass. When such an animal dies the police send word to the health department, and the contractor at once dispatches a cart for the body; it is taken to an island in the harbor, where every portion, it is said, is utilized,

a Approximate.

and the operation is very remunerative. It should be so, for it is also very offensive, and, proper precautions not being used, the stench arising from it is carried by certain winds three miles to the city.

One hundred and forty-seven thousand nine hundred and eighty loads of ashes, averaging about 40 cubic feet each, were removed by the city teams during the year ending April 30, 1881. There was paid for labor in doing this work, \$96,954 32. To this amount should be added \$5,941 50 paid to a contractor for removing ashes in East Boston.

STREET-CLEANING.—One hundred and eighty-five miles of streets are swept and cleaned each week. Only paved streets, those which are much frequented, are swept daily; others twice a week. Macadamized streets have their gutters cleaned as required, paper and other rubbish being picked up. They are not swept, because the process is found to carry off the top sand and detritus to such an extent as to much lessen their durability. Street-cleaning is done by daylight, as, indeed, are all operations of the health department. Night work has been found to be neither efficient nor economical, chiefly because the workmen at night can neither see nor be seen.

Streets are watered before sweeping, the city using six watering-carts for this purpose. Men with birch brooms sweep the dirt to the gutters, and others following shovel it into carts, of which there are thirty in all devoted to this purpose; it is then taken to a dumping-ground. Nine one-horse sweeping-machines with revolving brush are also used. Each of them does the work of eight men, and much more cheaply, but they can not clean corners and depressions as a broom can. Different kinds of pavements vary as to the ease with which they can be cleaned. Asphalt, either continuous or block, is most easily cleaned; next the Belgian or granite block. New wooden pavements can be made tolerably clean, but dirt sticks to them when old. It is impossible to clean cobble-stone pavement more than superficially.

Forty-eight thousand and fifty-nine cart-loads of dirt of 40 cubic feet each were collected during the past year, and were disposed of in the same manner as ashes and house-dirt, by being used to fill land for streets, parks, and building-lots. The street-dirt is of a rather uniform character, consisting of earth, road-detritus, fragments of wood, leaves, paper, soot, hair, etc. From well-paved streets in the heart of the city, loads are sometimes obtained of sufficient manurial value to fetch a small price for use as top-dressing on land. The average annual receipts from this source for the last ten years have been about \$1,734. When taken from the department yards 25 cents a load is charged for it; when delivered on cars at the depot, about \$3 a cord can be obtained. This dirt is a manifestly unfit substance for filling, both from an engineering and from a sanitary point of view; but what else to do with it is a problem yet unsolved. One hundred and seventy men in all are employed in cleaning the streets, and of these eighty-two are sweepers. During the winter months, when the streets are covered with snow and ice, these men are kept busy sweeping crossings and removing snow from city sidewalks and grounds, while the teams assist in carting away ashes, of which there are more loads to be disposed of at that season. At any season when the streets are very muddy, much-frequented crossings, as those near railroad depots, public buildings, and shops, are kept clean by the street-sweepers, which is a great convenience to the public. During last year the expense of street-cleaning amounted to \$74,833 61.

CLEANING STREET CATCH-BASINS.—The street catch-basins, connecting with the sewers, are built by the sewer department, which naturally, it would seem, should have the care of them afterward; but in Boston they are cleaned by the health department. Thirty-five men and fourteen wagons are employed upon this work. Each catch-basin is cleaned when necessary. Those near the foot of hills generally need attention after every heavy rain; for those on level ground, once a year suffices. The sludge is hoisted by buckets and deposited in a close-covered wagon which carries it to the dumping-ground, where it is covered with ashes; it has absolutely no value, and is not especially offensive. Eight thousand seven hundred and sixty-six loads were collected last year at a cost for labor of \$10,631 33.

CLEANING VAULTS AND CESSPOOLS.—Vaults and private cesspools, of which there are from five to six thousand in the city, are cleaned by a contractor, at the expense of householders. The board of health, however, exercises supervision over the matter. The contractor is licensed, is allowed to charge a fixed rate of from \$6 to \$8 per load of 80 cubic feet or less removed, and is required to use patent odorless excavators. These machines, which are air-tight, have the air pumped out of them and suck the contents of the vault for any distance up to 125 feet through strong hose. A small charcoal furnace, connected with the air-pump, destroys any gases as they are pumped out. The work can be done in the day-time without any offense to sight or smell. The matters excavated are, for the most part, either taken by scows outside the harbor and dumped, or hauled into the country and buried in pits. Not more than one load in ten can be sold for manure. It is worthy of notice that, although it is sometimes asserted that sewage, or the settlings from sewage, diluted and washed with the whole water-supply of the city have great value as manures, these concentrated manurial elements of sewage when undiluted are so valueless that the owner has to pay \$6 a load to have them carried away.

To recapitulate the preceding information, it may be said that the scavenging of Boston is on the whole good—

Because sufficient money (\$340,000 last year) is appropriated for the purpose;

Because the money is wisely and efficiently expended by officials outside of politics, trained by long experience to the work ;

Because the laborers do their work well, being used to it, and knowing that faithful work insures continued employment; also,

That the removal of offal, ashes, house-dirt, street-sweepings, and catch-basin sludge is well done, but that the disposal of these matters is not satisfactory.

SEWERAGE. (a)

When the first sewer was built in Boston can not now be determined, but it was earlier than the year 1700, for already in 1701 a nuisance had been created by frequent digging up of streets to lay new sewers and to repair those previously built, and in town-meeting, September 22, 1701, it was ordered, "That no person shall henceforth dig up the ground in any of the streets, lanes, or high-ways in this town, for the laying or repairing any drain, without the leave or approbation of two or more of the selectmen."

The way in which sewers were built at this time was apparently this: When some energetic householder on any street decided that a sewer was needed there, he persuaded such of his neighbors as he could to join him in building a street-drain. Having obtained permission to open the street, or perhaps neglected this preliminary, they built such a structure as they thought necessary, on the shortest line to tide-water. The expense was divided between them, and they owned the drain absolutely. Should any new-comer, or any neighbor who had at first declined to assist in the undertaking, desire subsequently to make use of the drain, he was made to pay for the privilege what the proprietors saw fit to charge. When a drain needed repairing all persons using it were expected to pay their share of the cost.

As might have been expected, with such a system great difficulty was experienced in distributing fairly the expenses and in collecting the sums due, so that it became of sufficient importance to engage the attention of the legislature, and in 1709 an act was passed regulating these matters. As this act forms the foundation of the present system of sewer assessments in Boston, and indeed in the greater part of New England, and is in itself rather curious, it is cited at some length. It is entitled:

An act, passed by the great and general court or assembly of her majesty's (b) province of the Massachusetts Bay, for regulating of drains and common shores,(c) for preventing of inconveniencies and damages by frequent breaking up of highways * * * and of differences arising among partners in such drains or common shores about their proportion of the charge for making and repairing the same.

The act recites that no person may presume to break up the ground in any highway within any town for laying, repairing, or amending any common shore without the approbation of the selectmen, on pain of forfeiting 20 shillings to the use of the poor of said town; that all such structures for the draining of cellars shall be substantially done with brick or stock (stone); that it shall be lawful for any inhabitants of any town to lay common shore or main drains for the benefit of themselves and others who shall think fit to join therein, and every person who shall afterward enter his or her particular drain into such main drain, or by any more remote means receives benefit thereby for the draining of their cellars or lands, shall be obliged to pay unto the owner or owners a proportionate part of the charge of making or repairing the same, or of that part of it below where their particular drain enters. In case of dispute the selectmen decided how much each person should pay, and there was an appeal from their decision to the court.

For one hundred and fifteen years the sewers in Boston were built, repaired, and owned under authority of this act. It may be doubted if most of them were "substantially done with brick or stock", and there certainly was much difficulty about payments, so that in 1763 the act of 1709 was amended, the amendment reciting that "Whereas it frequently happens that the main drains and common shores decay or fill up * * * and no particular provision is made by said act to compel such persons as dwell below that part where said common shores are repaired, and have not sustained damage, to pay their proportionable share thereof, as shall be adjudged by the selectmen, which has already occasioned many disputes and controversies", it was decreed that in future *all* persons benefited should pay for repairs.

No further change was made till 1796, and then only to provide that persons who did not pay within ten days of notification should pay double, and that the sewers, besides being of brick or stone, might be built of such other material (probably wood) as should be approved by the selectmen. Such was the sewerage act of Massachusetts, and such substantially it remains to-day. Under its provisions, until 1823, the greater part of Boston was sewerred by private enterprise. The object for which the sewers were built was, as indicated, "for the draining of cellars and lands". The contents of privy-vaults, of which every house had one, and even the leakage from them, were excluded, but they received the waste from pumps and kitchen-sinks and also rain-water from roofs and yards. That much refuse got into them is proved by their frequently being filled up, and as they had a very insufficient supply of water they were evidently sewers of deposit. That they served their purpose at all is due to the fact that the old town drained by them consisted of hills with good slopes on all sides to the water. Of this early method of building sewers Josiah Quincy, then mayor, said, in 1824:

a By Eliot C. Clarke, esq., C. E.

b Queen Anne.

c Sewers.

No system could be more inconvenient to the public or embarrassing to private persons. The streets were opened with little care, the drains built according to the opinion of private interest or economy, and constant and interminable vexatious occasions of dispute occurred between the owners of the drain and those who entered it, as to the degree of benefit and proportion of contribution.

In 1823 Boston obtained a city charter, and one of the first acts of the city government was to assume control of all existing sewers and of the building and care of new ones. The new sewers were built under the old legislative acts, and the whole expense as before was charged to the estates benefited, being divided with reference to their assessed valuation. A small variable portion of the cost was, however, generally assumed by the city in consideration of its use of the sewers for removing surplus rain-water from the public streets. Where a sewer was built in front of a vacant lot, it was customary to defer the charges against the owner until he had built upon the land, when the assessment was made upon the enhanced value of the property. The city ordinances regulating sewers required that, where practicable, they should be of sufficient size to be entered for cleaning. Some supervision was exercised over connecting house-drains, and, if thought necessary, a strainer could be placed on each. Fæcal matters were rigidly excluded until 1833, when it was ordered that, while there must be no such connection between privy-vaults and drains as would pass solids, the mayor and aldermen, at their discretion, might permit such a passage or connection as would admit fluids to the drain. This action was perhaps due to the advent of cholera during the previous year. To assist in flushing out deposits, it was provided in 1834 that any person might discharge rain-water from his roof into the sewers, without any charge for a permit. The same year control of the sewers and sewer assessments was given to the city marshal. He was especially to devote himself to the collection of assessments, new and old, which were largely unpaid. The other duties of the marshal probably prevented him from devoting sufficient energy to the accomplishment of this task, for it appears that, while there had been expended by the city for building sewers, from 1823 to 1837, the sum of \$121,109 52, there had been collected of this sum but \$26,431 31.

That there might be some one to give his whole time to the engineering and clerical duties connected with the sewerage system, a "superintendent of sewers and drains" was appointed in July, 1837. He was empowered to assess the whole cost of any new sewer upon the real estate, including buildings, benefited by it. In 1838 the city decided to assume one-quarter of the gross cost, and in 1840, in obedience to a decision by the supreme court, it was ordered that the three-quarters of the cost of sewers which was to be paid by abutters should be assessed with reference to the value of the land only, without taking into consideration the value of buildings or other improvements, and such has been the practice up to the present time. The whole city is divided into a number of sewerage districts, an estimate is made of the total cost of all the sewers in each, and three-quarters of this amount is assessed against the district, having reference to the value of the different estates. The assessment against any piece of land is not collected until the branch sewer into which that piece can drain has been built.

It is estimated that there are at the present time (1881) about 190 miles of sewers in Boston. In 1873 there were about 125 miles, and in 1869 about 100 miles. There are at present supposed to be about 75,000 water-closets in use in this city; in 1857 there were 6,500.

Such changes have taken place in the contours of the city, through operations for reclaiming and filling areas of foreshore bordering the old limits, that, from being a site easy to sewer, Boston has become one presenting many obstacles to the construction of an efficient sewerage system.

This will be understood from an examination of the accompanying plan of the *city proper*. On this plan the shaded portion represents the original area of the city, and very nearly its limits in 1823. The unshaded portion of the plan, indicating present limits, consists entirely of reclaimed land filled to level planes a little above mean high water, the streets traversing such districts being never more than 8 feet above that elevation. A large proportion of the house basements and cellars in these regions are lower than high water, and many of them are but from 5 to 8 feet above low-water mark, the mean rise and fall of the tide being 10 feet. This lowness of land-surface and of house-cellars necessitates the placing of house-drains and sewers at still lower elevations. Most house-drains are under the cellar floors; they fall in reaching the street sewers; the latter must be still lower, and in their turn fall toward their outlets, which are rarely much, if any, above low water. Moreover, as filling progressed on the borders of the city, it became necessary to extend through it the old sewers, whose outlets would have been cut off. The old outlets being generally at a low elevation, even when the sewers themselves were sufficiently high, the extensions had to be built still lower, and when of considerable length could have but little fall toward the new mouths.

As a consequence, the contents of the sewers are dammed back by the tide during the greater part of each twelve hours. To prevent the salt water from flowing into them many of them are provided with tide-gates which close as the sea rises and exclude it. The tide-gates also shut in the sewage which accumulates behind them along the whole length of the sewer as in a cesspool, and, there being no current, deposits occur. The sewers are, in general, inadequately ventilated, and the rise of sewage in them compresses the foul air which they contain, and tends to force it into the house-connections. To afford storage-room for the accumulated sewage, many of the sewers are very large; and as there would be little advantage in curved invert where there is to be no current, flat-bottomed and rectangular shapes have frequently been adopted.

Although about the time of low water the tide-gates open and the sewage escapes, the latter almost immediately meets the incoming tide, and is brought back by it to form deposits upon the flats and shores about the city. Of the large amount of sewage which flows into Stony brook and the Back bay, and especially that which goes into South bay, between Boston proper and South Boston, hardly any gets away from the vicinity of dense population.

The positions of the principal sewer outlets, and of the areas on which the sewage which causes most offense accumulates, are indicated on the plan of the city proper. The Back bay, into which the waters of Stony brook, and with them most of the sewage from Roxbury and Jamaica Plain, have heretofore emptied, is at present (1881) being partially filled with gravel, to form the Back Bay park, inclosing a large salt-water pond. The brook itself is to be extended so that it will empty into the Charles river, which, were no other remedy to be adopted, would tend to lessen and transfer to another locality the present nuisance caused by it. Charles river itself, however, already receives a dangerous amount of sewage from the city proper, Brookline, Cambridge, and Charlestown, and its flats have been for some time past the sources of offensive odors. The same is true of the South bay. Owing to complaints from neighboring residents, the physicians of the city hospital, and others, the upper portion of old Roxbury canal, connecting with South bay, has recently been purchased by the city, the sewers emptying into it extended, and the canal filled with gravel. This has had the effect of transferring for a few hundred feet the nuisance in that locality, but there seems to be no effectual remedy for the evils in this region, except entirely removing the sewage from the bay. Minor nuisances are caused at very many other localities by sewers which empty at the heads of docks or upon flats; and, speaking generally, it may be said that none of the Boston sewers have their outlets at satisfactory points.

There are no plans in detail of the sewers of Boston. Many of the older ones have no manholes, and of some of them neither the position nor the elevation is known. In some streets several sewers exist side by side. Probably one-half of the larger main sewers are wholly or partially built of wood and have flat bottoms. Many of the older ones are of stone. For the small branches clay and cement pipes have been largely used. The newer sewers generally have a sufficiency of manholes with perforated iron covers. Below most of the manholes are sump-holes ranging from one foot to three and sometimes more feet in depth. The street catch-basins are of many different patterns, and are about 400 feet apart.

Probably the most frequent source of the evils due to bad drainage which have been observed at Boston has been defective house-drains. Of late years vitrified clay pipe has been principally used for house-drainage, but drains of brick and wood still constitute the larger proportion of such structures.

These drains vary greatly in size; of 113 observed while constructing sewers in 1878—

11 were about	4 inches in diameter.
4 were about	5 inches in diameter.
21 were about	6 inches in diameter.
5 were about	7 inches in diameter.
27 were about	8 inches in diameter.
8 were about	9 inches in diameter.
11 were about	10 inches in diameter.
26 were about	12 inches or over in diameter.

113

Of these 113 drains, 9 were level and 14 pitched the wrong way; 45 had flat bottoms and 68 curved ones; 38 were wholly or partially choked with sludge and 65 were reasonably clean. At about the same time examinations were made with oil of peppermint by the city board of health of 351 house-drains in different sections of the city, which showed that 193 of them, or 55 per cent., were defective in regard to tightness. The place where a leak frequently occurs is where the drain passes through the cellar wall, especially in houses built on made land and supported on piles. The connection between the old drains and sewers is generally badly made, and indeed, with the shapes of drains built, a good connection was impossible. It was always at right angles with the current in the sewer, and seldom tight. The modern connections with brick sewers are made with curves and slants.

The house plumbing in Boston is probably neither better nor worse than the average of such work in other cities. A good idea of its condition can be obtained from the report of investigations made by the city board of health in 1878. The examination covered nine distinct blocks of dwelling-houses in different districts of the city, ranging from the most expensive and fashionable to the most squalid. The average of all these was intended to represent the average for the whole city, as it undoubtedly does.

Three hundred and fifty-one dwellings in all, with an aggregate population of 3,500 persons, were examined, with the following results:

Number of houses with water-closets.....	226
Number of houses with vaults.....	125
	<hr/>
	351
	<hr/>
Number of houses with ventilated soil-pipe	21
Number of houses with unventilated soil-pipe.....	205
	<hr/>
	226
	<hr/>
Number of houses with plumbing of some kind.....	349
	<hr/>
Number of houses with effective traps.....	74
Number of houses with ineffective traps or none	275
	<hr/>
	349
	<hr/>

There are already signs of improvement. These consist not so much in alterations for the better actually made, as in a growing sense of the importance of good plumbing. The mere fact that many plumbers now call themselves sanitary engineers, and advertise "sanitary drainage a specialty", proves that even if their work is still imperfect they know that there is such a thing as scientific drainage. In plumbing new houses, iron drains are frequently used, the soil-pipe is ventilated, and in addition to this a superfluity of traps is often put in, which also are sometimes ventilated. It is true that the arrangements and appliances are sometimes defective, ventilators for instance being occasionally placed on the wrong side of traps, and through lack of knowledge evils may be aggravated by attempts to cure them; but at least there seems to be a desire for improvement.

It remains to speak of the attempted improvement, now in progress, in the general system of sewerage for the city.

For the ten years from 1864 to 1874 the average annual death rate in Boston was about 25 in 1,000. On April 14, 1870, the consulting physicians to the city addressed to the authorities a remonstrance as to the then existing sanitary condition of the city, in which they declared the urgent necessity of a better system of sewerage, stating that it would be a work of time, of great cost, and requiring the highest engineering skill. The state board of health, in each of its annual reports from 1868 to 1874, referred to the matter, saying that this question of drainage for Boston was of an importance which there was no danger of overstating. During its session of 1872 the state legislature passed an act authorizing the appointment, by the city, of a commission to investigate and report upon a comprehensive plan for a thorough system of drainage for the metropolitan district. In a communication to the city council (December 28, 1874), the city board of health pointed out the evils of the present sewer system, and urged that a radical change should be made. March 1, 1875, an order passed the city council authorizing the mayor to appoint a commission, consisting of two civil engineers of experience and one competent person skilled in the subject of sanitary science, to report upon the present sewerage of the city, and to present a plan for outlets and main lines of sewers for the future wants of the city.

The mayor thereupon appointed E. S. Chesbrough, C. E., Moses Lane, C. E., and Charles F. Folsom, M. D. In December, 1875, these gentlemen made a report, stating what were the evils of the existing system of sewerage which required a remedy, and recommending the construction of intercepting sewers on both sides of the Charles river, whose contents should be pumped and conveyed to outlets at Moon island and Point Shirley.

A committee of the city council, to whom this report was referred, recommended (June 12, 1876) that the plan of the commissioners, in so far as it referred to the region south of the Charles river, be adopted; and an appropriation of \$40,000 was made for preliminary surveys and investigations by the city engineer, and the preparation of detailed plans and estimates. The preliminary survey occupied one year, until July, 1877. August 9 of the same year, an order of the city council was adopted authorizing the construction of an improved system of sewerage, and providing an appropriation of \$3,713,000 to pay for the same. A short time thereafter work began, and has been prosecuted continually since, under the direction of Mr. Joseph P. Davis, city engineer, and his successor, Mr. Henry M. Wightman.

The general features of the plan adopted are: A system of intercepting sewers along the margin of the city to receive the flow from the already existing sewers; a main sewer, into which the former empty, and which, crossing the city, leads to a pumping station at the sea-coast; pumping machinery to raise the sewage about 35 feet; an outfall sewer, partly in tunnel, leading from the pumping station to a reservoir at Moon island, from which reservoir the sewage accumulated during the latter part of ebb-tide and the whole of flood-tide is to be let out into the harbor during the first two hours of ebb-tide.

The extent of territory which it is proposed to treat according to this comprehensive system is that bounded by Boston harbor and the Charles and Neponset rivers—in all an area of about 58 square miles. Of this territory,

however, about 46 square miles is high land 40 or more feet above low water. It is expected that the drainage from areas above grade 40 will ultimately be intercepted by a "high-level" intercepting sewer, and can flow by gravity to the reservoir at Moon island, and the outfall sewer from Squantum to the reservoir is built of sufficient capacity to receive it. There remain 12 square miles below grade 40 which must forever drain into the low-level system and whose sewage must be perpetually pumped. As, however, it may be long before the high-level sewer is built, and in the mean time sewers from areas above grade 40 must connect with the low-level system, for purposes of calculation it has been assumed that 15 square miles, or 9,600 acres, will be tributary to the proposed sewer.

The proposed intercepting system, then, is designed to receive the sewage proper from 9,600 acres, and also a slight rainfall from the same area. The prospective population is estimated at an average of 62.5 individuals to each acre, or 600,000 in all. By the time this limit is reached the total population, including regions north of the Charles river and above grade 40, not tributary to the system, will be considerably over a million. While the estimate of 62.5 persons to an acre has been used in calculations affecting the main sewer, for the branch intercepting sewers a much greater density, varying to meet expected movements of population, has been provided for. The amount of sewage contributed per individual has been estimated at 75 gallons, or 10 cubic feet, for each 24 hours. The maximum flow of sewage per second is taken as double the average flow due to 10 cubic feet per day.

A rainfall of 0.24 of an inch in 24 hours is to be received by the intercepting sewers, any excess beyond this amount being wasted; 0.24 is used instead of the usual 0.25, or one-fourth of an inch, simply for convenience in calculating, because it gives 0.001 inch in one hour and $\frac{\text{No. of acres}}{100} = \text{number of cubic feet of water per second, nearly.}$

The rain-water which it is proposed to carry, therefore, is $\frac{9600}{100} = 96$ cubic feet per second, and the maximum

amount of sewage per second is $\frac{600000 \times 10}{24 \times 60 \times 60} \times 2 = 138.89$ cubic feet. The combined sewage and rain-water to

be carried by the main sewer at the time of maximum discharge is 234.89 cubic feet per second. All sewers are designed to flow about half full at the time of maximum discharge. In calculating velocities Mr. Kutter's formula has been used. The inclination in the main sewer is 1 in 2,500; that of the branch intercepting sewers varies from 1 in 700 to 1 in 2,000. These inclinations will give velocities of from 2 to 5 feet per second, the less rate occurring in the smaller sewers during their minimum flow of sewage. Iron flushing-gates are provided at intervals of a mile or less in the smaller sewers. The bottoms of nearly all of the sewers are below mean low water; that of the main sewer, at the pumping station, is 13 feet below low water. The average depth of cutting for the whole work is about 22 feet. Where two sewers join, the smaller enters at such height and the larger is so lowered that the required slope is maintained on the maximum flow-line of each. These junctions are always made by a bell-mouthed connection, or intersection chamber. Iron pen-stocks are placed in each intercepting sewer just before it joins the main sewer, to control the flow from each drainage district.

It has been said that only a very small amount of rain is to be received and pumped. This is to be accomplished by placing automatic-regulating gates at the connections with existing sewers. When the water in the intercepting sewers rises higher than is desired, these gates will tend to close until only the proper amount is admitted by them. During storms the excess of rain-water, or of sewage largely diluted with rain-water, will overflow through the old outlets, which are to be retained and protected with double tide-gates.

The main intercepting sewers, from their beginning at the existing sewers to their end at the pumping station, vary in size from 3 feet to 10 feet 6 inches in diameter. The larger ones are circular, but the smaller ones are generally egg-shaped with the smaller end down, where great variations in the flow are anticipated, and with the large circle as an invert where headroom is desirable and there is need of keeping the flow-line as low as possible. In firm ground the earth was trimmed to fit the invert; in loose material a cradle of ribs and inch boards was used, and in bad ground, which is more commonly met in the made land on the margins of the city where the sewers are chiefly located, a support consisting of a timber platform and rubble masonry side walls was necessary. For over a mile already built, and for much of the remainder of the work contemplated, beds of mud are encountered, and a foundation supported on piles is required.

Manholes 300 feet apart are built into all the sewers. Generally they are placed on one side, a cut-stone skewback being built into the masonry for them to rest upon. Occasionally they are placed over the center of the sewer to facilitate the hoisting of materials when cleaning. Very large sewers have the manholes somewhat farther apart, and cast-iron ventilator pipes are placed immediately between them. Both manholes and ventilators are arranged so as to have catch-pits at their tops for intercepting road detritus. Side entrances, reached by large openings in the sidewalks, and stone steps are occasionally constructed. Facilities are also afforded in the large sewers for putting in and taking out boats. About 14 miles of sewers, in all, are required to complete the system as adopted. Of these, about 9 miles are at present (1881) completed, and work is progressing on the remainder.

The pumping station is situated at Old Harbor point, on Dorchester bay. The main sewer in reaching it passes, first, through the filth-hoist, which is an under-ground structure consisting of five chambers, in four of

which are hung cages or screens through which the sewage flows and which retain floating objects that might injure the pumps. The complete design for the pumping station comprises an engine-house, two boiler-houses, and a coal-house arranged on the sides of a square inclosing a court-yard. They are to be of dimensions for containing eight engines with their boilers and appurtenances. Work is progressing on these buildings, and only a portion of them will be built at first, but they are so designed as readily to admit of extension. Four engines, each of a capacity to raise 25,000,000 gallons in 24 hours to a maximum height of 43 feet, are first to be erected. Each engine is to be connected with the outfall sewer by a 48-inch cast-iron force-main.

The outfall sewer may be divided into three sections: First, an elevated tank or deposit sewer upon an embankment extending from near the pumping station 1,300 feet into the bay, to include the shaft of the tunnel; second, the tunnel, 7,160 feet long under Dorchester bay; and third, another elevated sewer, 5,335 feet long, partly upon the main land at Squantum, but principally upon an embankment built across flats and channels separating Squantum from Moon island.

The tank sewer is to be built of concrete, and consists of two separate conduits each 8 feet wide and 16 feet high. The sewage can be made to flow through either, and as there will be a sluggish current, matters likely to form deposits in the tunnel will settle to the bottom, and, being held by low dams, can be removed. Pen-stocks at the farther end of this sewer will allow either or both compartments to be filled and the accumulated sewage to be used for flushing the tunnel.

The tunnel is reached by a vertical shaft at the end of the tank-sewer, and is nearly horizontal, about 142 feet below low water until near the Squantum shore, where it begins to rise on a grade of 1 in 6, and appears above ground on Squantum neck. Nearly 4,000 feet of it have already (July, 1881) been excavated, through beds of argillaceous slate-rock and Roxbury conglomerate. The sewer is 7.5 feet internal diameter, with a carefully-laid brick shell, 12 inches thick, with brick masonry backing to the sides of the excavation. The four engines running at full capacity can maintain a velocity in the tunnel of $3\frac{1}{2}$ feet per second, which can be temporarily much increased by using the deposit sewer as a flushing-tank.

The future high-level sewer will, it is supposed, join the outfall sewer at the farther end of the tunnel at Squantum. From this point, therefore, the outfall sewer is built of enlarged capacity, being 11 feet high by 12 feet wide, and is about 13 feet above low water, and its inclination is 1 in 2,500. Its length up to the reservoir is somewhat over a mile; and four-fifths of this distance it is supported and covered by an earth embankment, ballasted and riprapped on its slopes. This sewer is tied through its arch and under its invert with iron bars, to guard against slight movements before the bank under and around it shall have been compacted. For a length of about 4,000 feet the embankment carrying this sewer is underlaid by beds of deep mud. To allow time for settlement, the sewer will be omitted, for the present, from this portion, and a tight wooden flume, supported on piles outside of the embankment, will be substituted for it.

The reservoir covers about 5 acres of Moon island, and is so situated that it can conveniently be enlarged if desired. It is constructed almost entirely in excavation, is bounded by retaining-walls of rubble masonry, and is divided into four parts by three division walls. It has a concrete floor, with paved gutters, at about the elevation of mean high water. It has no roof, but as a precaution, foundation blocks are set in the floor to support columns in case it should at any time be found necessary to cover it.

The sewage enters the reservoir from the outfall sewer, which is carried along one side of it, and leaves it through two discharge sewers on the same side, beneath the outfall sewer. These discharge sewers extend 500 feet out from the island, being protected by a pier, and discharging under water through a cut-stone pier-head. Suitable iron gates, worked by hydraulic pressure, allow the sewage to enter and leave the reservoir, the discharge taking place during the first two hours after high water. At this time a strong current sets seaward by the end of the pier, and the sewage will be carried by it well outside the inner harbor.

It will probably be so diluted as to be entirely inoffensive; but, such as it is, it will return with the flood-tide about half way toward the city, and with the next ebb will be carried entirely outside, not again to enter the harbor. This belief is founded upon a great number of experiments conducted during the survey preliminary to undertaking the work. Pole floats, 14 feet long, were put into the water at various points in the harbor and at different stages of the tide, and were followed by boats for from 6 to 48 hours. The movement of these floats is thought fairly to indicate the probable movement of the sewage; but the latter will doubtless be rapidly oxidized, or will be assimilated by the myriad animal organisms which pervade the sea.

The intercepting system now building will cost about \$5,253,000; a similar system for regions north of the Charles river will cost a nearly equal amount. When both shall be in operation, the whole sewage of the city will discharge freely at all times, and will be deposited where it can do no harm. There will then remain to reconstruct such sewers, house-drains, and house-plumbing as are defective, and until all this is done, Boston can not have safe and effective sewerage. The present work is, however, a first and most important step in that direction.

NOTE.—As this volume has been delayed until now, it is of interest to say that the Boston intercepting system has been completed substantially as described above. It has been in operation since January, 1884, and has abated the nuisances formerly caused by the discharge of sewage on the borders of the city. Beyond slight deposits in the immediate vicinity of the present outlet, no trace of sewage can be detected in the harbor one hour after emptying the storage reservoir.

PUBLIC SCHOOLS.

The public schools of the city of Boston are supported by appropriations made directly from the city treasury. No municipal aid is extended to sectarian or private schools. The school committee is elected by the qualified voters of the city, has sole charge and direction of the public-school system, and is the only board of municipal officers which is by law allowed to exceed the appropriations placed at its disposal by the city council. Its powers in the general management of the schools are the same as those possessed by the school committees in other cities and towns in the state.

As at present constituted by statute, this school committee consists of twenty-four persons, exclusive of the mayor, who is *ex officio* its chairman. The committee possesses the power to elect or discharge teachers and to fix their compensation. A majority of the votes of the whole number of members of the committee is required to elect the superintendent of schools, the supervisors, the head masters of the Latin, normal, and high schools, the masters of the grammar schools, or the director of a special study or exercise. The rules of the committee require that there shall be appointed annually, from among its members, committees on accounts, drawing and music, examinations, evening schools, nominations, rules and regulations, salaries, supplies, school-houses and district lines, sewing, text-books, truant officers, elections, kindergartens, schools for deaf-mutes, and licensed minors. For the purposes of supervision by members of the board, the public schools are grouped into nine divisions, each division being in turn divided into districts, each of which comprises a grammar and a certain number of primary schools, as the committee shall designate. At the organization of the board annually a committee for each division is appointed, consisting of three or five members. A committee on the normal school and another on high schools are appointed at the same time. The board meets regularly twice a month except during the summer vacation of the schools.

Annually in the month of June the board elects the instructors of the public schools and fixes their salaries for the ensuing school year, it being provided that the salaries established at the beginning of a school-year shall not be changed during its continuance.

A superintendent of the public schools is elected by the board biennially by ballot. He is required to devote himself to the study of the public-school system, and to keep himself acquainted with the progress of instruction and discipline in other places, in order to suggest appropriate means for the improvement of the public schools of Boston. Frequent visits to each school are required, that he may learn by personal inspection its condition and efficiency, and advise teachers as to the best methods of discipline and instruction. He reports to the school committee semi-annually on the condition of the schools, and performs such other duties as are from time to time directed. He is a member of the board of supervisors of schools, and, when present at its meetings, is the presiding officer.

The supervisors constitute the executive board of the school committee, and as such may be called upon to perform any of its duties, under the statutes of Massachusetts, except such as are legislative in their nature. Neither superintendent nor supervisors, however, have any authority over, or any direction of, principals or other instructors, except as provided by the committee. The supervisors, six in number, are elected biennially, in the month of January, the votes of a majority of the school committee being requisite to election. The committee fills all vacancies occurring in the board of supervisors.

The supervisors, one or more as their board shall determine, shall visit all the schools as often as practicable, and shall, once a year, examine carefully each teacher's method of conducting a school, and of teaching classes in various branches of study; and shall, before May 10, record the results of the examinations in suitable books kept in the supervisors' office, and open only to the inspection of the board and of the superintendent.

In addition to the examinations in detail, it is the duty of the supervisors to inspect all the schools, in order to ascertain the sanitary condition of the schools, houses, and premises, including the working of the heating and ventilating apparatus; the mode of government, including motives to study; the principles and methods of classifying and promoting pupils; and the merits, defects, and needs of the various schools and classes, and, in general, the physical, mental, and moral condition of the scholars.

Candidates for teaching are required to make written application, in their own handwriting, stating their age, place of birth, where they were educated, what experience, if any, they have had in teaching, and in what grade of schools they desire to be employed. The board of supervisors can not admit to an examination any person who is not a graduate of the Boston normal school or of one of the state normal schools, or who has not had at least one year's experience in teaching.

The supervisors may attend the meetings of the school committee, and must do so when requested by the board, or by any committee thereof. Supervisors, if called upon, are expected to express an opinion or communicate information on any subject connected with the schools. They have special charge of the primary schools, which, for the purposes of supervision, are divided into districts.

The morning exercises of all the schools begin with the reading in each class-room, by the teacher, of a portion of scripture without note or comment; and no other religious exercises are allowed in the public schools.

All instructors are required to maintain such discipline in their schools as is exercised by a kind and judicious parent in his family, avoiding corporal punishment in all cases where good order can be preserved by milder measures.

In compliance with the school laws of Massachusetts, all children between the ages of eight and fourteen are required to attend some school, which may be public or private at the option of the parents or guardians. The children of non-residents are required to pay to the city a sum equivalent to the cost per capita of the pupils of the public schools. Children must have been vaccinated before they are eligible to admission to the public schools, and must, during their attendance, be cleanly in person and dress.

The public schools are divided into three grades—primary, grammar, and high and normal.

In the primary schools are taught the rudiments of an English education.

The grammar schools form the second grade in the system of public instruction, and their curriculum embraces the common branches of an English education. Pupils are not admitted into the grammar schools except by special permit of the division committee, unless, on examination, they are able to read, at first sight, easy prose; to spell common words of one, two, or three syllables; to distinguish and name the marks of punctuation; to perform mentally simple questions in addition, subtraction, and division; to answer readily any proposed combination of the multiplication table in which neither factor exceeds 10; to read and write Arabic numbers expressed by three figures, and the Roman numerals as far as the sign of one hundred; and to enunciate, clearly and accurately, the elementary sounds of the English language. Lessons to be studied out of school are required to be such as a scholar of good capacity can learn in an hour's study.

The high schools form the third grade of the system of public instruction, and in them a course of advanced study is pursued by those who have graduated from the grammar schools.

The course of study is for three years, and is arranged by the committee on high schools and approved by the board. A fourth year's course for such pupils as have completed the three years' course in any of the high schools of the city is open to boys in the English high school, and to girls in the girls' high school.

Instruction in military drill is given in all the high schools for boys and in the public Latin school, by a special instructor.

The public Latin school may be classed with the high schools, though differing from them somewhat in scope, being intended to give a thorough general culture to boys who intend to pursue the higher branches of learning or to prepare for professional life. The school is organized into eight classes, and the full course of study covers a corresponding number of years, but no applicant is admitted into any class below the sixth, unless the parent or guardian certifies that the boy is to be given a collegiate education. All applicants for admission must be at least nine years of age, and need not be graduates of grammar schools. The supervisors examine the graduating class each year, and the standard of examination is that of admission to colleges of the highest grade.

The girls' Latin school is established for the purpose of giving girls a thorough preparation for college. The course of study is for six years, and candidates for admission must be at least twelve years of age, the requisites for admission being equivalent to those to the third class of the grammar schools. The board of supervisors conducts the examination of the graduating class each year, the standard being the same as in the public Latin school. The principal of the school is required to be a college graduate.

The Boston normal school is designed to give professional instruction to young women who intend to become teachers in the public schools of the city. The head master must be a graduate of a college in good standing. He has a first assistant and as many second assistants as are necessary, the whole number of teachers exclusive of the head master not exceeding one for every thirty pupils. An additional instructor may be elected for an excess of twenty pupils, and one removed for a deficiency of the same number. Candidates for admission must be at least eighteen years of age, and must be recommended by the master or committee of the last school they attended. No candidate who is less than eighteen years of age is admitted to this school, except by special vote of the committee in charge. Those who have completed the fourth year in the girls' high school are admitted without examination. Other candidates must be examined in the ordinary high-school studies by the board of supervisors, under the direction of the committee on examinations, and must present evidence of good character. All pupils are put on probation, and as soon as they prove unsuitable for this school are discharged by the committee on the school, the probation to cease at the end of the half-year.

The normal school is supplemented by the Rice training-school, designed to give the graduates of the former school practical knowledge of methods of instruction and discipline followed in the public schools.

In addition to the public schools above enumerated, instruction for the deaf is given in the Horace Mann school, established in co-operation with the state board of education.

Kindergarten schools are established for the admission of children from three to six years of age. In these schools are taught habits of neatness, observation, and attention. Simple lessons are given in singing, counting, and drawing, and, by means of object lessons, a course of instruction, partly oral and partly industrial, to quicken the minds and occupy the hands of the children, who are thereby prepared for their work in the primary schools. The membership is limited to twenty-four pupils per school, and attendance upon them is not obligatory, five years being the legal minimum of school age.

Schools are established for the instruction of licensed minors, newsboys, boot-blacks, and peddlers. They are under the direction of the principals of the districts in which they are situated. One teacher is allowed for every thirty-five pupils, and the sessions are four hours a day—two in the forenoon and two in the afternoon. Attendance is obligatory on all licensed minors.

Free evening schools are established for adults, and such children as the committee may admit. No such school is established for less than forty pupils. The course of study corresponds to that of the primary and grammar schools, and instruction in the higher branches may be given at the discretion of the committee.

Free evening schools for industrial drawing are open to persons above seventeen years of age four evenings a week, during a term beginning the third Monday in October and closing on the Friday preceding the third Monday in March.

School attendance is enforced by a body of truant officers appointed by the school committee, who act under a chief. Their duty is to endeavor to procure the attendance at school of all the children of the districts assigned to them, who are required by law to attend school; and, by persuasion and argument, both with the children and with their parents or guardians, and by other means than legal compulsion, to strive to secure such attendance. The truant officers prosecute violations of the law, and inquire into the presence of contagious diseases among children liable to school attendance.

Statistics of school attendance.

Wards.	Total	Male.	Female.	Native.			Foreign.			White.			Colored.		
				Total	Male.	Female.	Total	Male.	Female.	Total	Male.	Female.	Total	Male.	Female.
Total.....	61,286	30,567	30,719	56,906	28,404	28,502	4,380	2,163	2,217	60,662	30,276	30,386	624	291	333
Ward 1.....	2,797	1,412	1,385	2,544	1,303	1,241	253	109	144	2,791	1,409	1,382	6	3	3
Ward 2.....	2,683	1,449	1,234	2,380	1,280	1,100	303	169	134	2,666	1,439	1,227	17	10	7
Ward 3.....	1,994	983	1,011	1,905	940	905	80	43	46	1,991	981	1,010	2	2	1
Ward 4.....	1,919	950	969	1,850	921	929	69	29	40	1,910	944	966	9	6	3
Ward 5.....	1,713	823	890	1,613	779	834	100	44	56	1,712	823	889	1	.....	1
Ward 6.....	3,062	1,498	1,564	2,810	1,376	1,434	232	122	130	3,058	1,497	1,561	4	1	3
Ward 7.....	2,064	1,087	977	1,866	993	873	198	94	104	2,056	1,082	974	8	5	3
Ward 8.....	1,892	950	942	1,770	890	880	122	60	62	1,820	917	903	72	33	39
Ward 9.....	1,481	709	772	1,399	672	727	82	37	45	1,262	608	654	219	101	113
Ward 10.....	900	455	445	831	423	408	69	32	37	883	447	436	17	8	9
Ward 11.....	1,955	951	1,004	1,861	904	957	94	47	47	1,919	932	987	36	19	17
Ward 12.....	2,146	1,037	1,109	1,954	942	1,012	192	95	97	2,139	1,035	1,104	7	2	5
Ward 13.....	4,396	2,176	2,220	3,983	1,959	2,024	418	217	196	4,394	2,174	2,220	2	2	.....
Ward 14.....	3,962	2,031	1,931	3,683	1,894	1,789	279	137	142	3,959	2,030	1,929	3	1	2
Ward 15.....	2,831	1,432	1,399	2,630	1,334	1,296	201	98	103	2,831	1,432	1,399	.....	.....	.....
Ward 16.....	2,168	1,025	1,143	2,005	954	1,051	163	71	92	2,139	1,015	1,124	29	10	19
Ward 17.....	1,921	923	998	1,800	861	939	121	62	59	1,879	904	966	51	19	32
Ward 18.....	1,926	921	1,005	1,851	878	973	75	43	32	1,912	915	997	14	6	8
Ward 19.....	3,912	1,922	1,990	3,580	1,758	1,831	323	164	159	3,839	1,888	1,951	73	34	39
Ward 20.....	3,073	1,581	1,492	2,904	1,496	1,408	169	85	84	3,064	1,578	1,486	9	3	6
Ward 21.....	2,684	1,410	1,274	2,577	1,356	1,221	107	54	53	2,677	1,403	1,274	7	7	.....
Ward 22.....	2,543	1,259	1,284	2,286	1,130	1,156	257	129	128	2,543	1,259	1,284	.....	.....	.....
Ward 23.....	2,769	1,362	1,407	2,573	1,271	1,302	196	91	105	2,755	1,354	1,401	14	8	6
Ward 24.....	3,166	1,565	1,601	3,008	1,476	1,532	158	89	69	3,162	1,564	1,598	4	1	3
Ward 25.....	1,329	656	673	1,234	614	620	95	42	53	1,310	640	664	19	10	9

NOTE.—Included in above, ward 12 contains 1 Japanese.

Comparative table, showing the percentage of school attendance to total population, census of 1870 and census of 1880.

	1870.	1880.
Per cent. to total population.....	18.28	16.89
Per cent. of native to total population.....	16.79	15.68
Per cent. of foreign to total population.....	1.49	1.21
Per cent. of white to total population.....	18.15	16.72
Per cent. of colored to total population.....	0.13	0.17
Per cent. of native to total native population.....	25.88	22.94
Per cent. of foreign to total foreign population.....	4.25	3.81
Per cent. of white to total white population.....	18.40	17.00
Per cent. of colored to total colored population.....	9.78	10.62

PRIVATE SCHOOLS.

The private schools in the city are practically independent of all official supervision, and their curricula vary according to their aims and the judgment of their principals. The parochial schools of the Roman Catholic Church in the city have increased largely in number and attendance of recent years. Their curricula vary according to the wishes of their pastors and the societies under whose auspices they are conducted. Religious teaching is an important part of their course of instruction, which, apart from this, does not differ widely in general plan from that of the public schools of the primary and grammar grades. Boston college, under the auspices of the Society of Jesus, occupies the position of university toward the lower schools. While without a medical, legal, or theological department, its academic department is full, corresponding in the classics to those of other colleges. It has also an adjunct English department. It is open to pupils of all denominations, Protestants not being obliged to comply with the Catholic formulæ or to attend its worship. It confers the degrees usually conferred by institutions of a corresponding grade.

Parochial schools.—These come under the head of private schools, and are not subject to the supervision or examination of the school committee.

STATISTICS OF ILLITERACY.

Wards.	Can not read—10 years and over.	Aggregate white and colored.	CAN NOT WRITE.																					
			White.									Colored.												
			Total.	Native.	Foreign.	10 to 14.			15 to 20.			21 and over.			Total, including Chinese and Indians.	10 to 14.			15 to 20.			21 and over.		
						Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.		Total.	Male.	Female.	Total.	Male.	Female.			
Total	15,455	10,422	18,403	616	17,877	108	49	50	416	104	312	17,969	5,640	12,329	929	4	1	3	13	6	7	912	368	544
Ward 1	402	515	513	24	489	1	1	1	7	3	4	505	141	364	2							2	1	1
Ward 2	551	707	702	36	666	14	6	8	12	4	8	676	257	419	5							5	5	
Ward 3	240	423	416	22	394	2	2					414	90	324	7							7	1	6
Ward 4	283	362	354	18	336	4	2	2	5	1	4	345	112	233	8							8	3	5
Ward 5	885	470	473	10	454	2	2		1		1	470	129	341	6							6	2	4
Ward 6	1,851	2,240	2,213	33	2,180	10	3	7	72	28	44	2,131	818	1,313	27							27	21	6
Ward 7	892	1,023	1,024	31	993	8	5	3	28	13	15	988	357	631	4							4	3	1
Ward 8	609	875	798	29	769	2	2		10	1	9	786	205	581	77	1	1	1	1	1		75	34	41
Ward 9	618	766	393	28	365	9	5	4	11	5	6	373	84	289	373	1	1	2	2	2		370	135	235
Ward 10	334	417	382	8	374	1	1		26		26	335	69	266	35	1	1	1	1	1		33	14	19
Ward 11	290	394	349	13	336				6		6	343	38	305	45							45	18	27
Ward 12	1,000	1,281	1,276	27	1,249	1	1	1	21	4	17	1,254	356	898	5							5	3	2
Ward 13	1,447	1,709	1,707	33	1,674	10	4	6	23	11	12	1,674	618	1,056	2			1	1			1	1	
Ward 14	910	1,164	1,156	43	1,113	3	1	2	24	7	17	1,129	371	758	8							8	7	1
Ward 15	375	473	471	17	454	3	1	2	9		9	459	140	319	2							2	2	
Ward 16	547	611	571	15	556	4	1	3	10	1	9	567	163	394	40			3	1	2		27	18	19
Ward 17	433	628	505	12	493	4	1	3	4		4	497	134	363	123	1	1	1	1	1		121	46	75
Ward 18	282	333	355	18	337	2		2	14	1	13	339	59	280	28			1	1	1		27	6	21
Ward 19	767	1,097	1,037	28	1,069	4	2	2	15	4	11	1,018	332	686	60							60	20	40
Ward 20	1,101	1,276	1,264	46	1,218	8	5	3	18	4	14	1,233	425	813	12							12	4	8
Ward 21	266	350	344	13	331	4	2	2	21	3	18	319	77	242	6							6	1	5
Ward 22	388	470	478	40	438	6	1	5	20		20	443	141	302	1			1	1					
Ward 23	494	637	625	25	600	3	3		19	5	14	603	155	448	12			1	1			11	6	5
Ward 24	510	653	647	17	630	2		2	21	6	15	624	197	427	6							6	2	4
Ward 25	415	475	440	21	419	1		1	10	3	7	429	172	257	35				1	1		34	15	19

NOTE.—Included in the above are 31 Chinese and 3 Indians, as follows: Ward 2, 2 Chinese, 1 Indian; ward 3, 1 Chinese; ward 5, 2 Chinese; ward 6, 4 Chinese; ward 8, 1 Chinese; ward 9, 1 Chinese; ward 10, 4 Chinese; ward 13, 2 Chinese; ward 16, 8 Chinese; ward 17, 1 Chinese; ward 18, 2 Chinese; ward 19, 2 Chinese, 1 Indian; ward 20, 1 Chinese; ward 25, 1 Indian.

THE PUBLIC LIBRARY.

The public library is regarded as supplementing the work of the public schools, and it is with that view that the city council has been led to make liberal appropriations from year to year for its maintenance. It was established in 1852, and in the following year Joshua Bates, of London, who had passed his early life in Boston, offered the sum of \$50,000 toward the purchase of books for the library, provided the city would erect a suitable building. The gift was accepted, and a building was erected on Boylston street, and opened to the public in 1853. Numerous gifts of books and money, and the liberal appropriations annually made by the city council, soon placed the library among the foremost institutions of the kind in the world. Mr. Bates, in addition to his original gift, expended \$50,000 in the purchase of books. Mr. George Ticknor gave his unique collection of Spanish and

Portuguese works; and the library has been enriched in special departments by the absorption of the Bowditch library (mathematical), the library of Theodore Parker (historical and theological), the Prince library (theological), the medical and surgical collection of the Massachusetts Medical Society, and the Barton library (Shakesperian). The gifts of money the income of which is to be expended in the purchase of books, now amount to \$116,100. Among the works of art, and the famous memorials which have been given by public-spirited citizens to adorn the library building and increase its attractions, may be mentioned the great picture, by John Singleton Copley, representing King Charles I demanding from the house of commons the five recusant members; original portraits of Benjamin Franklin, by Duplessis and Greuze; Toschis' group in marble of the Holy Family; Cardinal Tosti's collection of rare engravings; the gold medal voted by Congress to Washington in commemoration of the evacuation of Boston by the British in 1776; the paroles of General Burgoyne, General Riedesel, and officers of their army, signed after the surrender at Saratoga; and the great silver vase given by the citizens of Boston to Daniel Webster in 1835.

In order to place the management of the library upon a more permanent basis, and thereby encourage further contributions of books and money, the legislature in 1878 incorporated the board of trustees, and provided that it should consist of seven persons—one member of the board of aldermen and one member of the common council, elected annually by concurrent vote of the two branches, and five citizens at large appointed by the mayor and confirmed by the city council, one of the number being appointed each year to serve for a period of five years.

For the convenience of the citizens, branch libraries have been established at the South end and at Charlestown, South Boston, Brighton, Roxbury, Dorchester, West Roxbury, and Jamaica Plain. The popular branch of the central library is open every secular day, except the five legal holidays, for the delivery of books from 9 a. m. to 9 p. m. The upper portion of the building, known as Bates hall, is open from 9 a. m. to 6 p. m. in the winter, and to 7 p. m. in the summer. The reading-room for periodicals is open on Sundays from 2 p. m. to 10 p. m. The branch libraries are open during such hours of the day as will best suit the convenience of the people who make use of them. The rules of the library provide that any person over fourteen years old may use books and periodicals in the building without previous registration; but to draw books for home use application for a card must be made, and time given for an examination of references furnished by the applicant. Non-residents can use books and periodicals in the buildings, and clergymen and teachers having regular professional occupation in the city, and members of certain institutions whose governments have guaranteed the library against damage from such members, can also draw books for home use. Cards entitling the holder to draw more volumes and retain them longer than usual are granted to professional authors, teachers, etc. Such cards are not given for general reading, but only for special studies. Books in the central library may be applied for at the several branches.

The extent of the collections in the central library and the several branches on the 1st of May, 1880, was as follows:

	Volumes April 30, 1880.	Circulated year ending April 30, 1880.
Central library	274,263	486,659
East Boston branch.....	10,605	108,291
South Boston branch.....	9,633	143,570
Roxbury branch.....	17,232	124,930
Charlestown branch.....	22,059	74,748
Brighton branch.....	12,970	27,980
Dorchester branch.....	10,985	56,716
Jamaica Plain branch.....	7,811	54,626
South End branch.....	9,408	79,291
West Roxbury branch.....	3,068	
Total number volumes.....	377,225	1,150,721
Pamphlets.....	150,000	.....

The library has grown so rapidly that, notwithstanding the enlargement of the building erected in 1858, and the relief afforded by the establishment of nine branches in as many different sections of the city, the accommodations for the works of reference and the collections on special subjects are reported to be inadequate, and the preliminary steps have been taken for the erection of a new central library building on land granted by the commonwealth for the purpose. The conditions of the grant are that the city shall begin the erection of a building within three years (from April 22, 1880), and that, upon the opening of the library, all the citizens of Massachusetts shall have the perpetual right of access thereto, free of charge, under such reasonable regulations as the trustees may establish.

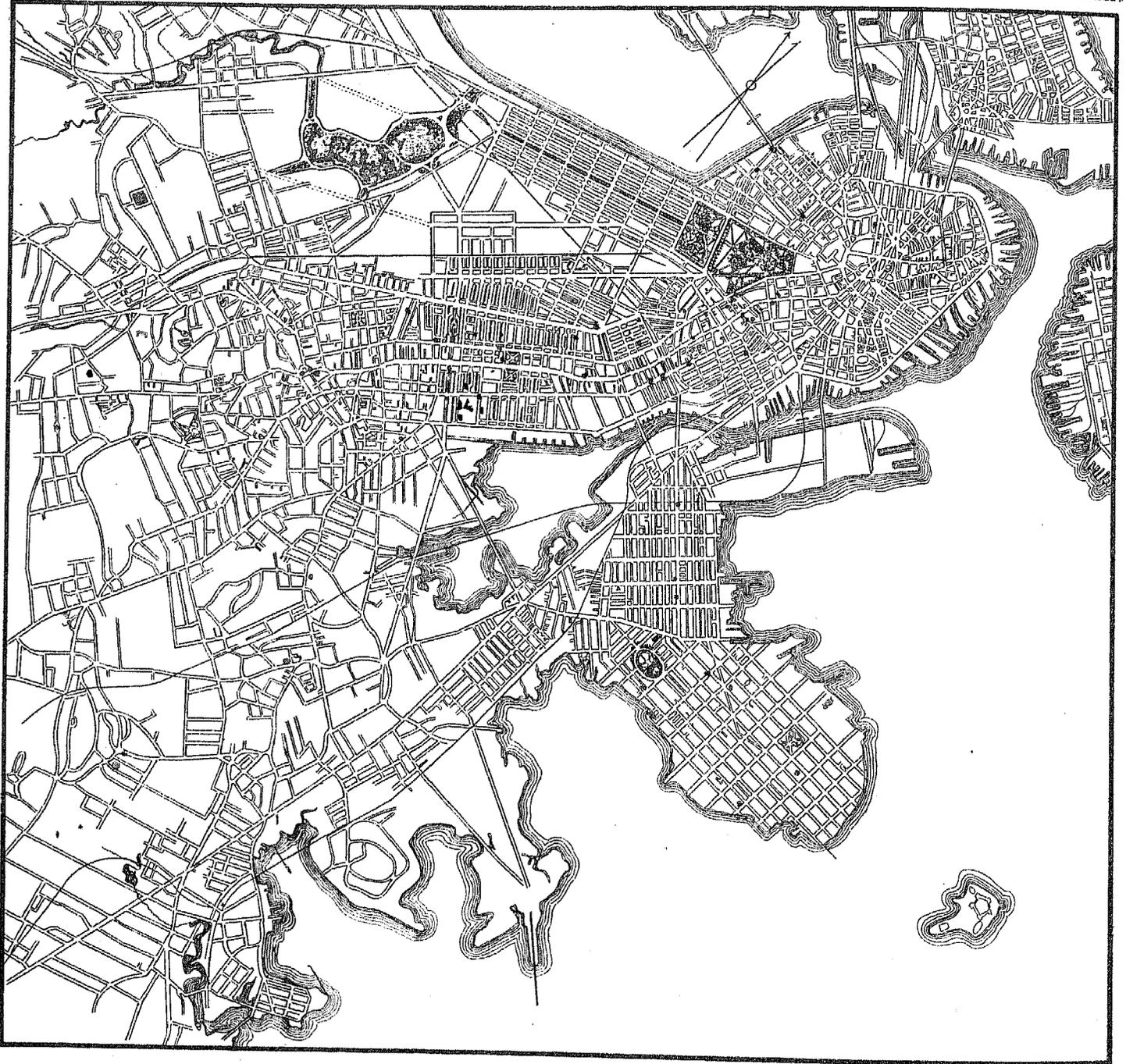
The total expense to the city for maintaining the central library and its several branches during the year ending April 30, 1880, amounted to \$121,978 69.

BOSTON IN 1880.

Showing: Societies - Secret and Benefit ■ . Hospitals ■ . Asylums and Homes ■

DEPARTMENT OF THE INTERIOR.

TENTH CENSUS OF THE UNITED STATES.



HOSPITALS, DISPENSARIES, ETC.

The City Hospital was built in 1861-'64, at a cost of about \$300,000. It consists of a central pavilion, flanked by large buildings in which are situated the different wards. Its government is vested in a board of seven trustees, one a member of the board of aldermen, one a common councilman chosen annually by the concurrent vote of the two branches, and five citizens at large appointed by the mayor, with the approval of the city council, for a term of five years. To enable them to receive donations, bequests, etc., the general court of 1880 created the trustees a corporation with power to take and hold real and personal estate to an amount not exceeding \$1,000,000. While primarily intended to be a charitable institution, a limited number of paying patients are received for treatment, the revenue from this source being, however, inconsiderable. The hospital has a full medical and surgical staff, with all necessary appliances for the treatment of disease and the performance of surgical operations.

During the year ending April 30, 1880, 3,995 patients were admitted to the hospital, of whom 2,444 were medical, 1,463 surgical, and 88 ophthalmic; 303 were under treatment April 30, 1879, making the total number treated during the time specified 4,298. Of these, 3,608 were discharged and 401 died, leaving in the hospital April 30, 1880, 289. The largest number in the institution at any one time during the year was 328, and the daily average 272 $\frac{3}{4}$. In the out-patient department 10,309 persons were treated, 2,583 for medical diseases, 4,092 surgical, and 1,860 for eye diseases.

The number of visits made by out-patients to the hospital, classified according to diseases, for the year ending April 30, 1880, was as follows:

Medical diseases	4,722
Surgical cases	11,308
Diseases of the eye	10,864
Diseases of the ear	2,089
Diseases of the skin	1,447
Diseases of women	764
Diseases of the nervous system	862
Diseases of the throat	1,008
Surgical out-patients treated at accident room, and not elsewhere included	946
Total	<u>34,010</u>

The entire cost of maintaining the hospital for the year ending April 30, 1880, was \$117,588 37, against which may be set the sum of \$8,366 11 received from 297 paying patients, leaving the net expense \$109,222 26 as the cost to the city of treating 4,001 non-paying patients. In connection with the institution are a dispensary, and a training-school for nurses under the direction of members of the hospital staff. The City Hospital trust funds aggregate \$29,500.

The Massachusetts General Hospital is a richly-endowed corporation managed by trustees and established in the early part of the century, having been in active operation sixty-six years. In its early career it was materially assisted by the state, and has since been largely endowed by private munificence. It has two departments, the hospital, and the asylum for the insane, the latter being located at Somerville. The appointments are in all respects complete, the leading local surgeons and physicians being connected with its professional staff, and in most cases giving their services gratuitously. Under certain restrictions its benefits are open to any citizen of Massachusetts. During the year 1879, 1,429 free patients were treated for 7,384 weeks, at a cost to the general fund of the institution of \$77,216 88, and 384 paying patients at an expense of \$11,564 44, the total expense of the hospital department being \$89,295 57. In the asylum department the average number of patients was rather more than 157. The total expenditures were \$117,250 02, of which \$47,954 16 were on account of patients paying costs and more, and \$69,295 86 on account of patients paying less than cost. The total amount received from the board of patients of this class was \$36,130 03, the deficiency in this, as in all other cases, being made up out of the general fund. The professional salaries paid at the hospital were but \$4,848, and at the asylum \$6,910 76. The total investments of the hospital at the last report, for the two departments, were \$2,300,015 63, of which \$1,334,211 55 produced income and \$965,804 08 did not, being mainly the value of the buildings, grounds, and appliances. The total expense of the two departments was \$207,122 98, and the receipts \$219,505 15, principally from funds.

Of the patients in the hospital admitted during the year, 335 paid board, 42 paid part of the time, and 1,436 were entirely free; 1,123 were males and 690 females; 658 were medical and 1,155 surgical. The entire number of patients treated was 1,971. Of these, 143 deceased, 1,040 were discharged well, 204 much relieved, and 218 relieved, the proportion of deaths to the whole number of cases being 7.93 per cent. Two hundred and twenty-two patients were received on account of accidents; 17 per cent. of the free patients were female domestics, 26.75 laborers, 10 mechanics, and 9 miners.

In the out-patient department 18,960 persons were treated: 3,737 in the medical department for women, 3,286 in that for men and children, 4,501 were surgical, 404 ophthalmic, 4,324 dental, 1,212 for skin diseases, 591 for

nervous diseases, and 905 for throat diseases. The average daily attendance of out-patients was 119. Of the 230 patients under treatment in the asylum, 79 were discharged, 19 as recovered, 14 much improved, 13 improved, 20 not improved, 12 died, 1 insufficient trial.

The total number of admissions to the hospital from September 3, 1821, to December 31, 1879, was 62,297, of whom 17,616 were discharged well.

A sub-department for convalescents is shortly to be established in buildings now in process of construction at Belmont.

The Massachusetts Homeopathic Hospital was incorporated in 1855, but was not opened for patients till 1871. It was at first supported by donations and subscriptions, but in April, 1872, a public fair was held which produced a fund of \$80,000 for its foundation. A new hospital building was then erected, containing accommodations for 40 patients, and costing, with the land, \$76,716 37. It was opened for the reception of patients in 1876.

The hospital received, previous to January 1, 1880, 836 patients. Of these, 368 were discharged cured, 255 improved, 64 not improved, 21 not treated, 39 died; leaving under treatment at the date named 27. The average mortality in nine years has been less than 3.5 per cent. The average annual expenses have been about \$6,000. During the year 1879 there were treated 156 patients, at an expense of \$7,934 25. The average cost per week for each patient was \$6 79. About half the patients pay nothing. The hospital has an invested fund of \$41,000. The income from this investment, from paying patients, and from donations, supports the hospital, which is free from debt.

The Homeopathic Medical Dispensary was incorporated in 1856, with power to hold property for its charitable purposes to the extent of \$50,000. It began operations in a single room in 1857. It now occupies a building in the central portion of the city, and has branches at the South end and at the West end. Its funded property amounts to about \$20,000. Since its establishment it has treated 60,115 patients and furnished 170,711 prescriptions, at a cost of \$28,600. There have been 24,758 domiciliary visits made. During the past year it has cared for 11,826 patients and furnished 30,096 prescriptions, at a cost of \$812 25. There are 30 physicians officially connected with the dispensary, who give their services gratuitously.

The New England Hospital for Women and Children is under the management of a corporation, and receives patients in needy circumstances on the endowment for free beds. The regular charges to paying patients are \$10 per week and upward. In connection with the hospital is the New England dispensary. The following tables illustrate the work of the institution in its several departments during the year ending September 30, 1879:

	In hospital.	In dispensary.	Total.
Medical cases	109	2,372	2,481
Surgical cases and skin diseases.....	49	563	612
Diseases of women		1,056	1,056
Midwifery cases.....	105	130	241
Pulmonary diseases.....		460	460
Heart diseases.....		25	25
Total.....	263	5,212	5,475

Number discharged from hospital.....	253
Number discharged from hospital well.....	184
Number of prescriptions given at dispensary.....	22,680
Number of patients paying for medicine.....	3,883
Number of patients receiving medicine free.....	1,329
Number of out-patients	854
Number of births in hospital	105

The institution is still dependent largely upon contributions. Its current expenses for the year were \$23,551 01, and receipts \$19,091 70. Contributions from various sources left a balance on hand of \$97 77 due to new account. The trust funds of the hospital aggregate \$66,382 31. A peculiarity of the staff of the institution is that its resident and attendant physicians and surgeons are all women.

The Massachusetts Infant Asylum, opened in 1867, located at Jamaica Plain, is supported by charitable contributions, and is designed to illustrate the proper methods of caring for infant life. No child over nine months of age is admitted, and all are subject to medical examination before admission. Children are transferred by the commonwealth from the state almshouse at Tewksbury to the hospital, the state paying \$4 per week for their board. The inmates of the asylum are largely of the class known as destitute or deserted, although special effort is made to preserve the relations between children and those parents who, being without means properly to care for their health, place them in the institution. Parents are allowed to contribute according to their means to the support of children inmates of the asylum. Two hundred and twenty-six children were cared for during the year ending April 30, 1880, and of these but 22 died. The total current receipts were \$19,661 76, \$13,326 48 coming from the commonwealth and \$871 27 from mothers for board; expenditures, \$20,143 20.

The Boston Dispensary, founded in 1796, is designed to afford medicine and medical treatment for the needy. With the exception of a nominal charge for compounding prescriptions, its benefits are free. Connected

with it is an efficient staff of physicians, surgeons, and apothecaries, who are salaried by the corporation from subscriptions received and the income of invested funds. The following table illustrates the operation of the dispensary during the year ending September 30, 1879, at that time no charge whatever being rendered for prescriptions:

Total number of patients treated.....	34,624
Number of cases of midwifery attended during the year	64
Number of cases of midwifery attended since July, 1858.....	3,251
Whole number of patients since October, 1796	730,116
Average daily attendance at the central office during year	130
Number of recipes put up at the central office during year	78,330
Daily average	255

The Perkins Institution and Massachusetts School for the Blind, which has been in operation forty-eight years, is designed at once to give its pupils a liberal education, and to prepare them to be self-supporting by instructing them in avocations consistent with their infirmity. To this end instruction in music and tuning is made a specialty, while a number of useful handicrafts are taught in the workshops of the institution. The products of the workshops are sold for the benefit of the establishment. Paying pupils are charged \$300 per annum for board and tuition, but the needy blind are instructed at the cost of the state of Massachusetts, which makes an annual appropriation in aid of the institution and is represented in its board of management. Similar privileges are enjoyed by the indigent blind of the other New England states, which likewise contribute to the support of the institution. The total number of inmates at the close of the last official year, September 30, 1879, was 162—142 in the school proper and 20 in the workshop for adults. The receipts were \$100,009 24; expenditures, \$99,430 03, the commonwealth's appropriation in behalf of the institution being \$30,000, and \$11,559 77 being received from the beneficiaries of other states and individuals. The institution is established in spacious buildings at South Boston.

The Home for Aged Women is under the direction of a corporation, and had, January 1, 1880, 84 inmates. An admission fee of \$150 entitles every inmate to the benefits of the institution, which is amply endowed.

The Home for Aged Men is conducted on a plan generally similar to that for aged women. At the close of its last year there were 36 inmates and 31 out beneficiaries.

Saint Vincent's Orphan Asylum is an institution under the management of a corporation, the details of the supervision being committed to a Catholic sisterhood. The benefits of the institution are not restricted, however, to representatives of any creed or to any color. During the year ending September 30, 1879, 94 children were admitted; 102 were placed in families and taken by relatives. Of the inmates at the date of the last report, 83 were supported by funds, 65 wholly or in part by contributions; 2 died.

PENAL AND REFORMATORY INSTITUTIONS.

The penal and reformatory institutions of Boston are administered by a board of twelve directors elected by the city council, six members being chosen each year. The board derives its powers in part from the laws of the state and in part from the ordinances of the city. The several institutions of which they have charge are as follows:

The House of Correction, at South Boston, established under the general laws of the state as a county institution "for the safe-keeping, correcting, governing, and employing of offenders legally committed thereto by authority of the courts and magistrates of Massachusetts or of the United States". The house is under the charge of a master appointed by the directors. The prisoners are employed partly on work contracted for by outside parties (manufacturing slippers and clothing in 1880) and partly on work connected with the administration of the establishment.

The House of Industry, on Deer island, in Boston harbor, was established under a special law of the state in 1822, and is intended for the safe-keeping of persons committed for petty offenses, and for rogues, vagabonds, drunkards, prostitutes, and idle and disorderly persons. A portion of the prisoners are employed in cutting stone for catch-basins and edge-stones for the street and sewer departments of the city of Boston, and others in farm work and the labor connected with the operation of the institution.

The House of Reformation, which is connected with the house of industry, was established under special authority from the state in 1826, and is intended for the reception, instruction, and reformation of certain juvenile offenders. A small number of the boys are taught the printing business, and a portion of the city printing is done by them. A few others are instructed as musicians and drummers, but most of the boys are employed in farming during the summer, and are kept at school in the winter. The girls are taught general housework, knitting, mending, sewing, etc., in addition to the ordinary branches taught in the lower grades of schools.

A house for poor and neglected children has recently been established on Marcella street, in the Roxbury district. The "poor" children are those whom the city is required to provide for as paupers; the "neglected" children are committed under a law of the state which provides that when it shall be proved that any child under sixteen years of age, by reason of orphanage, or of the neglect, crime, drunkenness, or other vice of parents, is growing up without education or salutary control, and in circumstances exposing it to an idle and dissolute life, any judge or justice may commit the child to such institution of instruction or other place as may be assigned for the purpose by the authorities of the city or town.

In addition to the penal and reformatory institutions, the directors have charge of a local asylum for the insane, situated within the inclosure occupied by the house of correction at South Boston, and of the almshouses located on Deer island, Rainsford island, and the Austin farm.

The actual running expenses of the several institutions above named for the year ending April 30, 1880, were as follows:

	Total ex- penditures.	Income.	Actual cost.
House of industry.....	\$158,301 51	\$11,525 82	\$146,775 69
House of correction.....	79,223 04	47,698 95	31,524 99
Lunatic hospital.....	44,909 42	4,666 99	40,332 43
Marcella Street home.....	24,704 75	93 55	24,611 20
Almshouse, Austin farm.....	13,249 48	1,588 06	11,660 82
Almshouse, Charlestown district (a).....	6,423 04	514 13	5,914 51
Pauper expenses.....	82,011 50	1,242 36	80,769 14
Steamer "J. Putnam Bradlee" (b).....	13,610 34	2,048 04	11,562 30
Office expenses.....	7,059 79		7,059 79
Total.....	429,589 37	69,378 50	360,210 87

a Discontinued since the 1st of May, 1880.

b The steamer is used for the transportation of prisoners, paupers, and supplies to the institutions located on the islands in the harbor.

The following table shows the average number of inmates, the aggregate expenditure for the institutions in which they have been supported, and the average expenditure for each inmate from 1870 to 1880:

Year.	Average number of inmates.	Expendi- ture.	Average expendi- ture for each in- mate.	Year.	Average number of inmates.	Expendi- ture.	Average expendi- ture for each in- mate.
1870-71.....	1,664	\$251,112 99	\$150 91	1875-76.....	2,543	\$366,907 24	\$144 27
1871-72.....	1,773	259,432 84	146 32	1876-77.....	2,590	340,317 22	131 39
1872-73.....	1,827	288,162 42	157 72	1877-78.....	2,714	363,898 91	134 08
1873-74.....	2,042	346,354 90	169 62	1878-79.....	2,543	329,840 30	129 71
1874-75.....	2,292	376,064 56	164 07	1879-80.....	2,480	326,907 74	131 82

The jail, located on Charles street, at the West end, is the "common prison of the county of Suffolk," and as such is under the direct charge of the sheriff. It is a commodious building of granite, and was built in 1849-'51, at a cost of about \$450,000. In general arrangement it has served as a model for many institutions of the same character in many parts of the country. The several corridors containing the cells are so arranged as to radiate from a rotunda as a common center from which a direct supervision can be exercised over all parts of the building simultaneously. The jail has accommodations for 225 prisoners, giving each a separate room. Prisoners are required to assist in all necessary and regular work of the establishment.

PUBLIC BUILDINGS.

The public buildings of Boston are under the supervision and control of a committee of the city council, whose executive officer is the superintendent of public buildings. Suffolk County buildings are included among those of the city of Boston, the board of aldermen exercising the powers in this respect held by the commissioners of other counties of the commonwealth. The act of the general court passed in 1831 transferred to the city of Boston all the real and personal estate which theretofore had been vested in the county of Suffolk, and Chelsea, Revere, and Winthrop were thereby relieved of all county charges.

The public buildings may be classified as follows: County, 4; municipal, 131; school-houses, 168. These buildings cover 4,780,941 feet of land, an increase of 3,681,307 feet during the last sixteen years, largely due to the annexation of outlying districts. Public buildings, exclusive of county buildings and school-houses, have increased from 32 in 1864 to 131 in 1880. School-houses in the same time have increased from 74 to 168, occupying at present 2,694,793 feet of land. The estimated value of the several county public buildings and school-houses is:

County buildings.....	\$2,000,000
City buildings.....	6,534,364
School-houses.....	7,996,500
Total.....	<u>16,530,864</u>

The county buildings comprise the court-house, covering 15,175 feet; the registry of deeds and probate office, 2,423 feet; the jail, 135,900 feet; the municipal court of the southern district of Suffolk, 14,390 feet; and five buildings occupied in part by the police courts of the several districts. The court-house was erected about forty-five years ago, and as it has not proved adequate to the increased growth of Boston, a project for the erection of

a new building on another site is now before the city government. For the increased accommodation of the registry of deeds and the probate court and registry, the city hires a building belonging to private owners for \$9,000 per annum. Additional rooms for the trial of jury-waived cases before the superior court are rented for \$2,400 yearly. The court-house is built of granite, and is without architectural pretensions. The jail is built of the same material, and is well adapted for the purposes of a house of detention.

The most important of the public buildings devoted to municipal purposes is the city hall, covering 25,915 feet, located on School street, in the vicinity of the court-house. It was begun in 1862 and completed in 1865, at a cost of about \$500,000. It is built of white granite, and is of the modified Italian renaissance school of architecture. Herein are concentrated most of the offices of the administrative and executive departments of the city government and the chambers of the two branches of the city council. In front of the building are statues of Benjamin Franklin and Josiah Quincy. For the accommodation of the directors of public institutions, the city solicitor, the police and park commissioners, and the board of health, apartments are hired mostly in Pemberton square, at a cost of \$8,750 per annum, including in two cases taxes. Other buildings for branch library purposes are hired at a cost of \$5,600 per annum.

The school-houses are generally built of brick, trimmed with granite or freestone, and average 8 rooms each, the 168 permanent buildings devoted to this purpose containing 1,296 rooms, while 6 hired for the purpose make up the total rooms to 1,302. For the accommodation of the English high and Latin schools the city is now constructing a spacious building, at an estimated cost of \$400,000.

The buildings designed primarily for police stations are thirteen in number, and cover 64,634 feet. In addition to these, portions of the former city hall of Charlestown and the town hall of Brighton are occupied for police purposes, and there are several lockups besides the city prison.

Station-houses are constructed generally of brick, and contain the offices of the several police districts, a guard-room, and cells for the detention of persons in custody. One station-house also contains a branch of the public library, and another the municipal court of the West Roxbury district.

The fire department occupies thirty-four engine-houses, twelve hose-houses, and ten hook-and-ladder houses. The houses occupied by the force contain accommodations for the horses attached to the apparatus, and for the men permanently employed; they vary in dimensions, according to the date of their construction, from 1,600 feet to 14,356 feet. Two fuel-houses are also occupied by the department.

Twenty-five ward-rooms are located in different buildings, mostly public, for the transaction of ward business and for election purposes. The wards being divided into 107 election precincts, rooms to accommodate the voters in these are hired or fitted up for the occasion, the law requiring that twice a year polling-places shall be obtained and prepared.

The 131 buildings above enumerated as "public" were maintained during the year ending January 1, 1880, at an expense of \$68,912 12, against which should be set the rent of others let by the city, \$126,306 08. Of this latter sum \$101,016 58 came from Faneuil Hall market stalls and cellars; \$16,000 from the old state-house, formerly the city hall, and previous to 1795 the meeting-place of the general court. On the county buildings during the same time \$29,367 03 were expended, of which \$9,284 97 were on the court-house, \$12,006 03 on the probate buildings, the amounts in each case including gas, fuel, water, repairs, etc. The sum of \$91,074 40 was expended on the school-houses, exclusive of the new high-school building elsewhere mentioned. A new grammar-school house had been completed in the Brighton district, costing \$50,186 37, and a primary-school house at Charlestown at a cost of \$28,459 51.

PRIVATE BUILDINGS.

Whole number of dwelling-houses, including hotels, in Boston, May 1, 1879, as returned by the local assessors of taxes.....	41,652
Number unoccupied at that date.....	1,432
Whole number of hotels.....	199
Number of dwelling-houses valued at—	
Less than \$1,000 each.....	3,439
\$1,000 and less than \$2,000.....	7,604
\$2,000 and less than \$3,000.....	7,895
\$3,000 and less than \$4,000.....	5,876
\$4,000 and less than \$5,000.....	3,966
\$5,000 and less than \$6,000.....	2,606
\$6,000 and less than \$7,000.....	1,936
\$7,000 and less than \$8,000.....	1,475
\$8,000 and less than \$9,000.....	1,257
\$9,000 and less than \$10,000.....	988
\$10,000 and over.....	4,411
Number of hotels valued at less than \$10,000 each.....	19
Number valued at \$10,000 and over.....	180
Total.....	41,652

REAL ESTATE IN BOSTON, MAY 1, 1880.

Ward.	Number of dwelling-houses.	Number of vacant houses.	Value of vacant houses.	Hotels.	Houses erecting.	Stores.	Miscellaneous buildings.	Family hotels.	Feet of land.	Feet of vacant land.	Value of vacant land.	Feet of marsh-land and flats.	Value of marsh-land and flats.
Total.....	41,652	1,432	\$5,782,300	85	139	3,319	4,258	114	775,519,580	549,374,146	\$41,948,500	126,327,796	\$6,008,800
1.....	2,017	51	75,200	.....	15	148	223	.....	218,850,143	15,301,577	928,400	25,211,960	184,700
2.....	1,563	25	30,400	3	.....	0	287	.....	6,583,380	1,044,959	338,300	6,208,969	700,200
3.....	1,370	24	36,100	.....	.....	.....	71	.....	4,230,927	413,484	252,400	2,714,098	171,900
4.....	1,738	113	191,400	.....	.....	30	190	.....	5,871,372	2,713,401	670,700	4,279,161	379,400
5.....	1,474	31	103,100	2	13	11	144	1	5,782,158	72,816	80,700	150,944	12,600
6.....	1,327	23	31,600	.....	.....	884	55	.....	4,425,635	20,013	30,900	473,226	174,500
7.....	924	33	165,700	19	1	418	186	.....	3,000,211	20,455	94,700	.....	.....
8.....	1,234	60	160,000	3	.....	34	66	1	2,171,803	10,698	82,000	.....	.....
9.....	1,448	24	329,000	2	.....	.....	72	.....	2,528,013	67,070	153,800	.....	.....
10.....	960	20	256,200	13	1	575	71	2	3,746,336	41,852	417,900	.....	.....
11.....	1,962	63	1,061,300	3	30	.....	59	16	11,919,844	6,405,008	7,522,500	84,204	38,100
12.....	1,103	16	147,900	4	.....	557	109	18	6,448,645	104,780	966,600	692,437	351,200
13.....	1,873	52	75,400	.....	1	17	179	.....	9,841,439	896,054	497,900	5,639,725	376,500
14.....	2,441	94	178,400	2	10	24	226	.....	13,618,675	5,963,786	1,284,300	11,040,380	99,100
15.....	1,752	28	54,500	.....	10	17	146	.....	10,262,581	2,331,304	526,600	9,101,499	194,100
16.....	1,320	44	245,600	2	.....	23	65	16	2,474,982	301,801	943,300	271,330	258,800
17.....	1,596	33	295,600	1	.....	.....	87	18	4,409,201	595,814	625,200	468,857	220,500
18.....	1,723	57	495,000	3	.....	7	58	16	4,358,018	749,504	893,000	.....	.....
19.....	2,327	112	100,600	3	6	435	102	13	6,512,700	1,199,218	884,600	.....	.....
20.....	2,049	80	305,300	10	6	9	94	9	23,061,505	12,235,237	2,247,000	5,612,149	137,600
21.....	2,113	92	428,900	5	13	8	185	4	29,599,900	16,706,785	4,190,300	.....	.....
22.....	1,408	76	215,800	1	6	.....	136	.....	80,944,154	22,817,485	4,231,200	11,902,149	2,404,800
23.....	2,381	113	326,700	.....	19	99	680	.....	276,852,084	250,663,365	5,003,700	.....	.....
24.....	2,036	124	344,700	2	9	10	610	.....	170,699,233	135,059,541	4,923,200	27,588,797	98,500
25.....	890	44	112,000	7	1	7	151	.....	89,026,465	72,508,105	2,866,900	12,689,411	94,900
Islands in the harbor not included in the above.(a)	23	.....	.....	.....	.....	.....	.....	.....	20,800,206	.....	.....	2,248,500	51,400
Lands owned by the state (b)	.....	.....	.....	.....	.....	.....	.....	.....	514,886	412,200	434,700	.....	.....
Lands owned by the state (c)	.....	.....	.....	.....	.....	.....	.....	.....	407,784	407,784	346,700	.....	.....
Navy-yard (d)	.....	.....	.....	.....	.....	.....	.....	.....	3,484,800	.....	.....	.....	.....

a In ward 2.

b In ward 5.

c In ward 11.

d In ward 3.

MARKETS.

Soon after the settlement of Boston a regular market-day was established, in imitation of the custom which prevailed in English towns. No permanent market-house was opened until 1742, when Peter Faneuil erected the building which bears his name, and which has become famous in the annals of the city and town as the meeting-place of the inhabitants. About the time when Boston became a city the necessity for more liberal market accommodation was experienced, and a new market-house, locally known as the Quincy market, but officially designated as the New Faneuil Hall market, was erected. This building, adjoining old Faneuil hall, was completed April 27, 1825, and is a handsome granite structure, two stories high, 535 feet long, 50 feet wide, and covering 27,000 feet of land. These two markets, virtually one, are owned by the city, which receives from leasing the stalls and cellars in them a considerable revenue. In 1870 the question of freeing the markets was agitated, and a special committee of the city government was appointed to consider the subject. This committee subsequently reported that the market did not fulfill the expectation in which it had been established, as it had become the great provision exchange of New England, the business carried on being largely wholesale and jobbing. Of the 50,000 families then residing in Boston it was estimated by the committee that not more than 1,500 or 2,000 depended directly on the market for their daily supplies. As a result the increase of retail dealers and the establishment of private market-houses in the different sections of the city had been very rapid. It was then reported that the number of wagons used to peddle provisions was 93; stores for the sale of fruit and vegetables, 65; stores for the sale of groceries and vegetables, 326; for groceries and provisions, 322; meat and vegetables, 219; vegetables, 51; meat, 25. From this and other statements appended to the committee's report it appeared that the whole number of stores and stalls in private markets for the sale of meat and vegetables in 1870, exclusive of Dorchester, was 1,201, while within the limits of Faneuil Hall market there were 165 stalls, 32 cellars, and accommodations for about 200 wagon stands. Of the cattle slaughtered at Brighton it was estimated that less than one-seventh went to Faneuil hall. The proportion taken by outside dealers will be appreciated when it is stated that 53,000 beeves, 342,000 sheep, and 144,000 hogs were slaughtered within 6 miles of Boston during the year preceding the report of the committee.

What was true of Faneuil Hall market in 1870 is true to a great extent to-day, the development of the provision business at this point having tended more and more to confirm its position as an exchange rather than a market where producer and consumer are brought into direct communication. During the last decade a number of private markets have been opened, so that it may safely be estimated that there are at least 2,200 private stores and stalls for the sale of meat and vegetables within the city limits. Faneuil Hall market now contains 152 cellars and stalls, whose rent aggregates \$86,247 44, and 250 wagon stands, for occupation of which no charge is made.

The supervision of the market is committed to a superintendent, with full powers for its regulation. From October 1 to June 1 the market is open from sunrise to 5 p. m. daily, Sundays and legal holidays excepted, and from June 1 to October to 5.30 p. m. Every Saturday during the year the market is open until 9 o'clock p. m.

A provision of the state laws prohibits the city of Boston from making any law, ordinance, or regulation excluding from the occupation of street stands within the limits of Faneuil Hall market, for the sale of fresh provisions or any perishable produce, any persons taking such stand for the sole purpose of selling such provisions or produce, if the same are the productions of the farm of the seller, or of some farm within 10 miles of his residence, or are to be sold at wholesale only by the party acting as agent for parties not residing or having their usual place of business within 8 miles of the market, or all meats to be sold at wholesale only by the person who slaughtered the animals of which the same was a part. The city is also forbidden to make any by-laws prohibiting the occupation of such stands between the hours of 4 in the afternoon and the time of closing the market at night, and before 11 in the forenoon, except on Sundays and holidays.

No license is required of peddlers selling fruits and provisions, live animals, or articles the production of their labor or of that of their families, but they are not allowed to occupy the public streets for that purpose. The mayor and aldermen have power to regulate the sale of all articles by minors.

The following tables illustrate the receipts and exports of the leading articles of animal food. They are compiled from the reports of the board of trade and the produce and commercial exchanges:

Beasts at Brighton and Watertown markets.

Year.	Cattle.	Sheep.	Veals.	Fat hogs.
1879.....	183,556	479,227	17,507	582,615
1878.....	188,385	372,787	15,874	509,884
1877.....	155,907	346,647	15,981	325,770
1876.....	158,989	348,510	13,027	352,202
1875.....	145,285	372,370	16,781	317,938
1874.....	163,800	364,281	17,670	561,937
1873.....	167,730	414,026	19,358	398,203
1872.....	157,366	412,217	17,852	592,727
1871.....	129,147	467,065	13,230	338,027
1870.....	124,592	450,997	16,000	168,092
1869.....	120,353	440,404	13,000	145,200

The exports of live-stock for the past two years from this port have been as follows:

Year.	Cattle.	Sheep.	Hogs.
1879.....	34,261	77,061	15,976
1878.....	34,658	27,905	13,680

Receipts and exports of flour.

RECEIPTS.

	Barrels.		Barrels.
Total, 1879.....	2,368,585	Total, 1874.....	1,890,487
1878.....	1,756,557	1873.....	1,795,272
1877.....	1,860,223	1872.....	1,586,017
1876.....	1,830,985	1871.....	1,539,843
1875.....	1,637,972	1870.....	1,552,579

EXPORTS.

	Barrels.		Barrels.
To foreign ports	832,890	Total, 1875.....	271,171
To coastwise ports	7,409	1874.....	287,710
Total, 1879	840,299	1873.....	231,368
1878	385,629	1872.....	217,586
1877	231,370	1871.....	344,550
1876	268,093	1870.....	219,517

SOCIAL STATISTICS OF CITIES.

Receipts of provisions and produce.

Articles.	1876.	1877.	1878.	1879.
Pork.....barrels..	43,190	38,750	41,769	33,742
Lard.....tierces..	72,908	81,342	121,540	95,921
Lard.....cases..	32,764	30,624	27,030	23,451
Bacon.....boxes..	174,021	162,390	175,581	168,600
Hams.....tierces..	8,972	10,009	14,011	12,092
Hams.....barrels..	5,989	4,525	4,048	5,265
Dressed hogs.....number..	70,467	60,327	26,881	24,698
Provisions.....packages..	13,409			
Tongues.....barrels..	2,238	1,971	2,306	4,359½
Beef.....barrels and tierces..	23,251	19,790	14,105½	
Butter.....packages..	544,331	507,635	649,238	651,921
Cheese.....boxes..	136,552	166,262	204,270	222,380
Eggs.....do	No report.	No report.	41,213	25,172
Eggs.....barrels..	do	do	16,094	15,055
Eggs.....cases..	do	do	107,461	134,895
Beans.....barrels..	73,948	62,530	66,832	72,935
Apples.....do	No report.	No report.	293,398	420,469
Potatoes.....cars..	do	do	3,034	3,346
Potatoes.....bushels..	do	do	415,798	456,846
Hay.....cars..	do	do	5,343	6,058

No data exist for estimating what percentage of these several articles goes into immediately local consumption.

MILK SUPPLY.

The city of Boston draws its milk supply mainly from the more distant country, the different railroads bringing in not far from two-thirds of the entire quantity consumed. The milk thus brought in comes from Maine and New Hampshire, as well as from Massachusetts. It is estimated that the daily supply of the city is 29,000 gallons, costing, at 27 cents per gallon (the average price), \$6,960. This would make the yearly supply 10,585,000 gallons, and the annual cost \$2,540,000. The milk trade of the city is subject to the supervision of the inspector of milk, who, with a staff of assistants, is charged with the enforcement of the state laws and the city ordinances punishing adulteration of the article. By enactment of the legislature of 1880 all milk-dealers must be licensed by the inspector, whether selling from carts or from stores. The law imposes severe fines upon persons exposing skim-milk for sale without affixing to the vessel containing it a label indicating its character. A further provision is that—

Whoever, by himself, his servant, or agent, or as the employé of any other person, sells, exchanges, or delivers, or has in his custody or possession with intent to sell or exchange, or exposes or offers for sale or exchange, adulterated milk, or milk to which water or any foreign substance has been added, or any substance deleterious to the quality of the milk, or milk produced from cows fed on the refuse of distilleries, or from sick or diseased cows, shall, for the first offense, be punished by a fine of not less than fifty nor more than two hundred dollars, and for a second offense by a fine of not less than one hundred nor more than three hundred dollars, or by imprisonment in the house of correction not less than thirty nor more than sixty days, and for any subsequent offense by a fine of fifty dollars and imprisonment in the house of correction not less than sixty nor more than ninety days.

ICE SUPPLY.

Boston's supply of ice is drawn from various lakes and ponds in Massachusetts, and in part from Maine. Two notable sources of supply in the vicinity of Boston are Fresh pond, in Cambridge, and Wenham lake, in the town of Wenham. It is estimated that the local consumption in Boston amounts to about 400,000 tons per annum. Ice is delivered by the wagons of companies or individuals in quantities to suit purchasers, unrestricted by municipal regulations.

COMMERCE.

The commerce of Boston may be said to date from the year following its settlement, the first vessel to hail from that port, "The Blessing of the Bay," having been launched in the summer of 1631 at Mystic, now Medford. The circumstances of the colony favored a rapid development of its commerce. It was largely dependent for supplies upon the old country, and, as the visions of gold which had allured some sanguine spirits faded at the touch of actual experiment, and as the fur trade, environed with dangers and difficulties, proved scarcely more remunerative, the colonists were perforce compelled to look to the forest and the sea as the sources of their wealth and for articles which might be bartered for foreign products. Then began the fishery and the lumber business of New England. The natural position of Boston, with its secure anchorage and capacious harbor, favored the scheme of commercial development, and the hardy spirit of the settlers was stimulated by their isolation to extend and strengthen their connection with the old world. Ship-building early sprang into prominence as an industry, and several ships followed "The Blessing of the Bay" in carrying on a coastwise trade. In 1642 a large ship was loaded

with fish and dispatched to Bilboa, in Spain, where her cargo was disposed of to advantage. She returned laden with wine, fruit, oil, and wool. The success of this experiment encouraged the growth of the foreign trade. Each succeeding season witnessed a further extension, until in 1647 a colonial writer boasted that Boston had "in twice seven years" acquired the appearance of a small city. From official reports it appears that in 1665 Massachusetts had more than 130 sail, 12 of which were ships of 100 tons and over. Ten years later there were said to be in the colony 30 master shipwrights, and in 1676 the following vessels were said to have been built in Boston and vicinity and hailed from its neighborhood: 30 vessels between 100 and 250 tons, 200 between 50 and 100 tons, 200 between 30 and 50 tons, 300 between 6 and 30 tons. A French Protestant refugee who came to Boston in 1687, with a view to examine the inducements held out for Huguenot emigration, noted a large trade as existing between the port of Boston and the West Indies and the ports of the Spanish main. At the beginning of the eighteenth century Lord Bellamont credited Boston with the ownership of 25 ships of from 100 to 300 tons, 89 of 100 tons and under, besides smaller craft, making a total fleet of 194 sail. Boston had then eclipsed New York as a commercial center. Twenty-five years later Boston and Salem owned between them 25,000 tons of shipping. In 1731 the trade of Massachusetts, largely concentrated at Boston, employed 600 sail, aggregating 38,000 tons, one-half in the European trade. Trade connections had been made with the West Indies, and the fisheries continued to furnish a profitable business, the estimated export of fish to Bilboa alone being estimated at 50,000 quintals. As early as 1700 the royal governor looked upon the commerce of the town as capable of great expansion, despite the discrimination exercised in favor of ships hailing from the mother country; thenceforward, up to the time of the disturbances preceding the Revolution, trade continued to flourish. The outward clearances for the province of Massachusetts during the year ending January, 1771, amounted to 70,284 tons, and the inward clearances to 65,271 tons, the difference representing the new ships built and making their initial voyages during that period. A very large proportion of this extensive trade was on Boston account.

Commerce suffered heavily during the Revolution, but with the restoration of peace it began to revive. With the adoption of a stable government came increased confidence and the further extension of commerce. When the European wars following in the wake of the French revolution broke out, throwing the carrying trade largely into American hands, the merchants of Boston were prompt to appreciate their opportunities. Between the years 1790 and 1800 foreign arrivals averaged 569 vessels annually, and in the next decade the average rose to 789. The war of 1812, and the embargo and non-intercourse act preceding it, had a very depressing effect on commerce and trade throughout New England. The average foreign arrivals from 1810 to 1820 were reduced to about 610 per annum. The city then began to regain its position as a commercial port, and in 1835 the foreign arrivals were not far short of 1,200. In 1843 the foreign business was made up of 1,688 arrivals and 1,549 clearances. Tonnage had increased from 150,000 tons in 1810 to 193,500 in 1842, progress between the two dates having been interrupted by periods of commercial depression.

Meanwhile various new articles swelled the limited range of the original list of exports, and in 1827 the first cotton goods were shipped to the East. A large coastwise trade had grown with the progress of foreign commerce and of the demands of distribution. The total arrivals and clearances during 1840, foreign and coastwise, were estimated at 10,211 vessels. Trade connections with the East had been made as early as 1787, and in 1843 Boston ranked as the first port in the United States for the extent of its trade in this direction, and with South America. The importation of European goods continued very large, and a steadily increasing export demand had sprung up. Foreign clearances had increased from 567 in 1830 to 1,362 in 1840.

From a statement published in 1842, it appears that there were in Boston 142 commercial and 89 commission houses engaged in foreign trade, with a capital of \$11,676,000; 572 retail stores, with a capital of \$4,184,220. Among the adjuncts of commerce were 25 banks, with a capital of \$17,300,000, and 28 insurance companies, having \$6,600,000 capital.

Boston shared in the commercial enterprise which followed the discovery of gold in California, and a large number of ships were built for the consequent trade. So great was the demand that vessels were not infrequently equipped within ninety days from the laying of the keel. A large number of new shipping-houses were established at this time, some of which continue to this day notwithstanding the changes wrought by steam communication and by the construction of transcontinental railroads.

It was not until 1853 that systematic efforts were made to collect and tabulate the statistics of trade in Boston. In that year the exports from Boston were \$20,773,173 and the imports \$43,317,379. Notwithstanding the extraordinary developments of the East Indian trade, which reached its zenith about 1857, the close of the decade showed a decline both in exports and in imports. For 1860 the exports were \$14,889,985 and the imports \$40,296,234. Ten years later there was an even greater balance against us in the foreign trade, the exports aggregating \$12,493,445 and the imports \$47,859,375.

Immediately after this date began the development of Boston's export trade in provisions and breadstuffs, consequent upon the extension of its railroad and steamship facilities, which during the last three years of the previous decade had been greatly reduced by the withdrawal of the direct line of steamers for Europe. The turn of the tide in foreign trade became marked in 1871, and in 1876 the exports had increased to \$44,356,844.

in 1878 to \$50,375,392, in 1879 to \$52,034,071, the largest in the commercial history of the port. Imports declined, and in 1879 footed up for the entire collection district of Boston \$40,516,981. This increased exportation has been to a very large extent carried on under foreign flags—English shipping preponderating—and the American carrying tonnage has been proportionately reduced. During the year 1854 there were 991 American vessels entered with a tonnage of 320,638, while 990 cleared with a tonnage of 284,530; of foreign vessels there were 2,083 entered with a tonnage of 333,249, and 2,064 cleared with a tonnage of 329,038. There was an increase of American tonnage during the development of the Calcutta trade; but since 1853 “there have been only four years, and those almost a decade before the war, in which there has been an access of American over British tonnage at this port”. (a) These years were 1855, 1856, and 1857, when the tonnage stood as follows: 1855, American 727,413, foreign 668,536; 1856, American 691,661, foreign 638,017; 1857, American 745,897, foreign 635,876. During the war of the rebellion American tonnage fell off rapidly, amounting in 1864 to only 181,484 tons entered and 158,032 cleared. Since the war American tonnage has slowly gained. During 1879, 673 American vessels entered and 545 cleared, with an aggregate tonnage of 490,609. In that year foreign shipping was represented by the entry of 1,722 vessels and the clearance of 1,677, with an aggregate tonnage of 1,673,406, largely due to the constantly-increasing fleet of steamers. There were 243 steamship clearances to English ports in 1879. The total tonnage belonging to the port of Boston is one-fourteenth of the aggregate tonnage of the United States, being, in round numbers, 300,000 tons. Of late a marked feature of Boston's imports has been the increase of the West Indian trade. According to the best authorities, the importation of sugar into the port for the past ten years has aggregated 977,649 tons, equal to 2,234,703,760 pounds. The sugar importation of 1879 was 127,739 tons, the largest in the history of the trade. Making allowance for the sugar from the East this large importation may fairly be considered as due to the enlargement of our connection with the West Indies and the adjacent sugar-producing countries. Of the vast quantities of sugar imported during the past decade, it is estimated that at least 90 per cent. went into domestic consumption.

The total value of the foreign trade of Boston in 1879 was estimated at \$100,643,073.

DOMESTIC TRADE.

Boston's annual domestic trade is estimated at \$1,200,000,000. The capital invested in manufacturing amounts to \$75,000,000, and the value of the goods made and work done yearly is estimated at \$150,000,000. During the last twenty-five years the increase in the special markets of Boston, notably of wool, and of leather and its products, has been remarkable, especially in the past decade. While Boston holds its own—maintaining the ascendancy it early gained—in cotton manufacture, the sales of this class of fabrics beyond the demands of local and New England consumption are mostly made in New York, whither the selling agencies were transferred about 1847-'49, consequent upon the establishment in that city of more direct communication and better facilities for transacting trade with the South and West. Boston merchants had made preparations for overcoming this disadvantage by the establishment of steamship lines to the southern ports, when the outbreak of the war caused the abandonment of the enterprise and the diversion of ships to other employment.

The extent of the domestic trade of the city during the past decade is shown by the receipt of the following articles in the period specified: Cotton, 3,329,110 bales; wool, 2,444,545 bales of domestic and 469,908 bales of foreign—total bales, 2,914,453. The export of domestics for the period has been 170,981 packages. The receipts of flour have been 17,818,520 barrels. The receipts of corn have been 61,314,299 bushels, and of oats 29,527,674 bushels. The receipts of wheat during the same period have been 16,873,634 bushels, one-third of which was received in 1879. The imports of hides have reached 13,446,948 pieces and 38,000 or more bales. The sides of leather received in the past ten years aggregate 14,788,032, and 6,095,299 bundles and rolls. The exports of leather have been about 10,500,000 sides. The imports of molasses have equaled 497,230 hogsheads, 32,132 tierces, and 66,195 barrels. (a)

Summarized, Boston's commercial position at the termination of the year 1879 was that of the second city of the Union in the value of its imports, and the third in the value of its domestic exports.

Reviewing the progress of Boston's commerce and trade during the past thirty years, it may be observed of it that it has shown a generally steady and in some instances really remarkable increase. The decline of particular branches of foreign commerce has been more than offset by the expansion of its wool, boot and shoe, and sugar trades, and by its comparatively recent development of exportation of breadstuffs, cattle, and provisions. The growth of its domestic trade has been really great, as is shown by the development and present condition of its markets. That its foreign trade has in general results maintained a fairly steady upward tendency is shown in the accompanying table:

Table showing the declared value of exports and imports from the district of Boston and Charlestown during the years ending June 30, 1856 to 1880.

Year ending June 30—	MERCHANDISE, COIN, AND BULLION.			
	Imports.	Foreign ex-ports.	Net imports.	Domestic exports.
1856.....	\$41,061,068	\$3,312,076	\$38,348,902	\$24,673,575
1857.....	44,840,083	3,432,899	41,407,184	24,894,019
1858.....	40,432,710	5,706,061	34,726,649	15,273,792
1859.....	41,174,670	1,975,990	39,198,680	14,196,130
1860.....	30,366,560	1,637,245	37,729,315	13,590,770
1861.....	44,014,151	2,501,188	41,512,963	12,947,276
1862.....	23,957,621	1,688,039	22,269,582	12,183,046
1863.....	27,083,272	2,203,840	24,879,426	10,150,215
1864.....	30,263,853	1,385,013	28,878,840	15,240,097
1865.....	24,540,494	2,200,142	22,331,352	19,219,409
1866.....	42,050,884	892,787	41,758,097	13,205,065
1867.....	45,280,555	2,019,191	43,261,364	17,298,307
1868.....	37,039,730	1,087,521	36,352,215	15,690,873
1869.....	44,636,967	1,262,251	43,374,716	13,118,827
1870.....	47,524,845	1,885,162	45,639,683	12,251,267
1871.....	53,652,225	1,450,398	52,201,827	12,061,291
1872.....	70,398,185	1,756,514	68,641,671	21,443,154
1873.....	68,063,307	2,353,720	65,729,587	27,088,025
1874.....	52,212,405	2,275,023	49,937,382	28,335,627
1875.....	51,982,226	1,678,868	50,303,358	29,187,165
1876.....	37,413,623	1,214,244	36,199,379	30,041,892
1877.....	42,275,125	1,327,401	40,947,724	42,748,595
1878.....	40,350,600	1,429,818	38,920,782	46,542,044
1879.....	40,516,981	1,093,645	39,423,336	48,100,019
1880.....	68,609,658	1,237,404	67,372,254	58,023,587

The imports for the quarter ending March 31, 1880, were valued at \$18,869,672, and the exports \$13,945,711, the balance of trade being largely in favor of imports. The largest day's business ever done at the Boston custom-house was transacted in the month of April, 1880, the imports being, in round numbers, about \$10,000,000 and the exports about \$6,000,000.

The arrivals and clearances of foreign steamers since 1870 are shown in the following table:

Year.	Arrived.	Cleared.	Wheat exported.	Corn exported.
			<i>Bushels.</i>	<i>Bushels.</i>
1870.....	132	156	12	10,854
1871.....	107	93	191,486	804,143
1872.....	139	125	151,860	1,673,760
1873.....	160	152	486,128	102,727
1874.....	225	191	1,062,366	380,254
1875.....	155	159	784,941	1,551,776
1876.....	169	174	112,915	4,160,817
1877.....	238	216	1,612,814	3,182,844
1878.....	296	283	3,883,609	6,069,138
1879.....	310	333	4,884,514	7,070,343

The following table shows the number and tonnage of all vessels which entered the customs district of Boston and Charlestown, Massachusetts, from foreign countries during the years ending June 30, 1871 to 1880, with the number and tonnage of all vessels which cleared for foreign countries during the same periods, as given in the annual reports of the Bureau of Statistics on commerce and navigation:

Year ending June 30—	ENTERED.		CLEARED.	
	Number.	Tons.	Number.	Tons.
1871.....	3,514	836,104	3,289	602,553
1872.....	3,447	881,486	3,255	750,421
1873.....	3,159	819,819	3,005	703,974
1874.....	2,717	730,769	2,652	659,102
1875.....	2,889	768,678	2,279	632,873
1876.....	1,891	637,738	1,776	577,515
1877.....	2,040	752,391	1,917	701,500
1878.....	2,101	938,102	1,908	797,624
1879.....	2,390	1,137,633	2,222	1,025,280
1880.....	2,374	1,347,447	2,827	1,235,752

TRADE WITH THE EAST INDIES.

The commercial intercourse between Boston and the East dates from about the year 1787, when the first ship cleared from this port for China. In this enterprise Boston had been anticipated by two years by Salem, and for forty years the latter city maintained its undisputed lead and remained the great American mart for East Indian goods. The earlier voyages undertaken from Boston were long and perilous, involving a cruise on the northwestern coast of this continent, where furs were secured by barter with the Indians and made the medium of exchange for teas, spices, silks, and other products of the Indies. Gradually the China trade was diverted from Salem to Boston. In 1830 there were only about half a dozen cargoes direct from Calcutta to Boston, and as late as the year 1840 there were entered at this port but 25 vessels from the East, of which 5 were from China. Ten years later the number had risen to 41, all from Eastern ports, the China trade having meanwhile greatly decreased, and arrivals having become exceedingly irregular. The years 1856-'59, inclusive, appear to have constituted the period of the greatest prosperity of Boston's commerce with the East, and the Calcutta trade in all its branches flourished and contributed largely to the wealth of the city. It is stated in an official publication issued during 1857 that the progress of the Calcutta trade had been almost unparalleled in the commercial history of the United States. In 1840-'41 the exports from Calcutta to all United States ports consisted of about 17,000 tons of goods, carried in 21 small ships, the first cost at Calcutta not exceeding \$1,250,000; while in 1856 the number of ships had risen to 93, and the value of their cargoes at first cost in Calcutta to \$10,000,000. It should be remembered that at both periods the Calcutta trade of the United States meant largely the Calcutta trade of Boston. At the beginning the trade was confined to the few who could send out specie wherewith to purchase goods; but in the progress of time, the inconvenience of this primitive method being realized, letters of credit and bills on London were substituted for hard money, and the trade was thrown open to all whose resources enabled them to command the confidence of the business community. As a consequence, the business was developed too rapidly, and in 1859 a reaction set in which led to the partial transfer of the trade to New York.

The earlier, and what may be called the experimental, cargoes from Calcutta had consisted mainly of saltpeter, silks, indigo, coarse cottons, shellac, and a few drugs; but with the extension of the facilities for carrying on trade, the importation of linseed, gunny-bags, and gunny-cloth was gradually introduced, and soon attained large proportions. In 1856 there were brought into Boston over 7,000,000 gunny-bags and 43,348 bales of gunny-cloth—about 360 yards to a bale—together with 46,200 shipping tons of linseed. The release of much of the shipping employed in the California and Australian trade, and that chartered for transport service in the Crimean war, promised at this time a very large extension of the business. The *Report of the Boston Board of Trade* for the year 1857, speaking of the India trade and the magnitude it had attained, says: "One would hardly believe that we received at this port nearly as many bushels of linseed as of Indian corn; yet for several years such has been the fact." During the year ending September, 1856, there were received of linseed 330,000 bags, $3\frac{1}{2}$ bushels to the bag. Boston was then the undisputed distributing center in the United States for East Indian goods, not only supplying our home market, but shipping considerable quantities to foreign ports. The distribution of these goods from Boston to coastwise points constituted no unimportant branch of the city's business. A large return trade had at this time been established, and in 1857 it was estimated that nine-tenths of the exports of the United States to Calcutta were shipped from Boston. These exports included domestic lumber, mahogany, brimstone, tobacco; brown drills (in 1857), 1,522,158 yards; brown jeans, 121,175 yards; sheetings, 191,370 yards; cotton flannels, 32,484 yards; ice, 3,459 tons. The relative position of Boston in the Calcutta trade of the United States was shown by the fact that of 93 arrivals at all ports, 78 came to Boston, 14 to New York, and 1 to Philadelphia. During the following year the number of arrivals at Boston out of a total of 122 was 96; at New York there were 22. In 1859 the importation of Calcutta goods into the United States, exclusive of California, was 179,086 tons, against 117,058 in the previous year; and the distribution showed that 141,825 tons went into Boston, 26,234 into New York, and the balance into Philadelphia, Charleston, and New Orleans. Boston's distribution had then fallen off from 1857 about 5,000 tons, and New York 11,000 tons, the decrease in some measure being due in both instances to the direct participation of cities farther south in this trade, which depended largely for its support upon southern consumption, especially in gunny-bags and bagging. In 1860, partially as the result of the unfortunate overdoing of the trade, together with the unsettled state of the country, then on the eve of the rebellion, the arrivals at Boston from the East Indies had fallen as low as 65. The war produced a serious disturbance in the Calcutta trade, and during 1861 and 1862 there was a general falling off in all articles of importation except saltpeter and indigo, which were in demand for military purposes. The rebellion cut off the southern demand for gunny-cloths, bags, etc., and also had an unfavorable influence on the trade in linseed, hides, and skins. New York profited from the decadence of Boston's trade with the East, and the old-time position of the two cities became almost completely reversed. In 1869 Boston received from Calcutta but 267,877 bags of linseed, against 530,996 at New York. Ten years previous the amount received at other United States ports than Boston had been very inconsiderable, amounting to but a few thousand bags. In 1871 it was stated that Boston crushers would in all probability have to buy largely in the New York market to

supply the demands of their business. During the year 1870 the arrivals at Boston from the East Indian ports were 49, in 1871, from Calcutta, 31, and in 1877 the East Indian commerce of the city was stated to be about one-third that of New York. The import of linseed into Boston in 1879 was stated to have been 10,774 bags, while in 1878 it was but one-tenth of that quantity.

Various causes have operated to produce the decline of Boston's East India commerce. Among them may be enumerated the gradual attraction of commerce to the largest distributing centers—New York having drawn from Boston as the latter had drawn from Salem; the unwise legislation of Massachusetts imposing a tax on auction sales of merchandise, repealed too late to undo the mischief it had already done, and which previous to 1852 had driven the tea trade to New York; the lack at Boston, until comparatively recent years, of adequate railroad facilities for distribution to remote points; the growth of American bagging manufacture and linseed cultivation; the establishment of transcontinental railroads, and steam communication with the East at San Francisco and New York.

The auction-tax above alluded to imposed a charge of 1 per cent. on sales of merchandise by auction. Its effect was to drive trade sales to New York, and merchants consequently ordered their ships thither. It virtually destroyed the tea trade of Boston. The extent of the auction sales of teas at this port may be inferred from the fact that the revenue from this source in 1837-'38 fell not far short of \$60,000. Various modifications of the law were subsequently enacted by the Massachusetts legislature in 1852, but too late to regain the lost trade. The revenue from this tax had then become inconsiderable. Although the Calcutta trade subsequently rose, flourished, and declined here, the China business, especially in teas, Boston never regained.

THE WEST INDIA TRADE.

The West India trade is a branch of commerce which has been followed to a greater or less extent from the time when the earlier settlers of Boston shipped dried fish, staves, and vegetables to "the islands of the Spanish main". Its progress had been uniform up to within a few years, when it extended rapidly, the imports, especially of sugar, showing a very marked increase. During the fiscal year 1877 the importation of brown sugar, of which an immense proportion was Cuban, aggregated 239,046,082 pounds at Boston, being a little less than one-fifth of the total amount received at all the ports of the United States. The value of the sugar, molasses, melada, etc., imported into Boston, as given at the ports of exportation, was \$12,268,374. The fiscal year closing June 30, 1879, showed a very large increase during the intermediate period, the importation at Boston being 324,239,659 pounds, valued at \$12,094,865, while of molasses 4,676,710 gallons were received, of a value of \$895,350, making the total, with melada, of \$13,024,863. These figures show Boston to be the second sugar handling port of the Union, the balance of the sugar received going largely to New York, which in 1879 took 1,169,668,086 pounds of brown sugar. On the basis of the custom-house returns of 1879, one-ninth of all the molasses received in the United States comes to Boston. Of 2,598 vessels arriving at the ports of the United States from Cuba 316 came to Boston, a very large increase over the years immediately preceding. Boston owns a considerable fleet of vessels employed almost exclusively in the Cuba and Porto Rico trades.

The consumption of sugar in the mercantile year ending December 31, 1879, is estimated to have been 121,886 tons, against 75,210 in 1870. The progress of the trade is illustrated in the accompanying table, compiled from the board of trade reports, showing the imports, exports, and domestic consumption:

Year.	Imports.	Boston's consumption.	Exports.				
			Tons.	Tons.	Boxes.	Hhds.	Bbls.	Bags.
1870.....	71,400	75,210	272	417	1,471	75	
1871.....	91,900	83,470	318	150	2,821		
1872.....	82,600	87,320	129	71	8,327	1,700	
1873.....	90,500	80,350	435	232	9,044		
1874.....	78,660	85,480	182	292	10,614		
1875.....	124,350	99,330	278	134	20,192		
1876.....	88,260	80,750	333	79	23,678		
1877.....	121,770	84,100	533	122	23,272	933	
1878.....	101,050	90,510	280	130	13,834	2	
1879.....	127,739	121,886	50	47	58,475		
Total.....	977,629	888,406	2,860	1,674	171,728	2,710	

Boston's position as a center of the supplies entering into manufacturing makes her an extensive depot of dye-woods and other dyeing materials of West Indian or Central American production, and a large business is done in tropical fruits and produce.

SOCIAL STATISTICS OF CITIES.

TRADE WITH BRITISH NORTH AMERICA.

Boston's trade connections with the provinces of British North America are extensive and intimate, employing a considerable capital and a large fleet of vessels. The general course of this branch of commerce during the past few years is shown by the following tables, prepared by the custom-house officials:

Newfoundland and Labrador.

Year ending--	Imports.	Domestic exports.	Foreign exports.
June 30, 1875.....	\$192,520	\$278,378	\$0,253
June 30, 1876.....	163,235	260,419	2,696
June 30, 1877.....	82,332	265,004	716
June 30, 1878.....	163,393	238,263	999
June 30, 1879.....	70,691	274,731	619
June 30, 1880.....	68,737	263,700	6,449

Nova Scotia, New Brunswick, and Prince Edward Island.

Year ending--	Imports.	Domestic exports.	Foreign exports.
June 30, 1875.....	\$2,158,540	\$3,383,591	\$308,854
June 30, 1876.....	1,514,919	2,649,085	100,048
June 30, 1877.....	1,509,070	2,830,516	142,748
June 30, 1878.....	1,757,734	2,610,018	173,239
June 30, 1879.....	1,739,907	2,151,850	140,872
June 30, 1880.....	2,098,206	1,335,379	103,024

Quebec, Ontario, Manitoba, Rupert's Land, and the Northwest Territory.

Year ending--	Imports.	Domestic exports.	Foreign exports.
June 30, 1875.....	\$51,105	.....	\$425,128
June 30, 1876.....	52,477	\$25,000	182,568
June 30, 1877.....	33,410	.....	419,282
June 30, 1878.....	15,728	.....	491,833
June 30, 1879.....	30,285	.....	345,050
June 30, 1880.....	69,064	.....	351,271

THE MEDITERRANEAN FRUIT TRADE.

The Mediterranean trade in recent years has illustrated in a striking manner the revolution that steam is working in the commerce of the world. For many years this branch of Boston's commerce afforded employment for a special sailing fleet composed of vessels, mostly barques, specially built and equipped for this business, the bulk of the trade then, as now, being made up of fruit. This fleet, which was owned in Boston, was supplemented by charter made from selected vessels, mostly American, of a special fitness for the transportation of Mediterranean products and adapted to making quick voyages. Boston vessels, being better built and manned than foreign craft, took the "northern passage", and were expected to make the trip from the fruit ports in from forty to fifty-five days. These vessels had a capacity varying from 2,000 to 10,000 boxes of green fruit, and their cargoes included as well general Mediterranean staples. About ten years ago one of the English lines put on steamers direct from the Mediterranean ports to New York, and a serious encroachment was made on the Boston trade, her large western jobbing connections being interrupted. In addition to these disadvantages large accumulations of fruit at New York compelled a reduction of prices and gradually drove sailing-vessels out of the trade. In default of adequate steam accommodation enabling it to compete with New York, Boston's fruit trade was for a time in a very depressed condition. The "fruit fleet", as it was called, was broken up, the 12 or 15 vessels composing it being sold or diverted to other employment, and it was not until the increase of our steam facilities that this commerce revived. Now, of the many transatlantic steamers arriving in port, scarcely one is without a fruit invoice, and, in addition to these, there are direct steamships which land from 9,000 to 15,000 cases per trip. Some eight years ago an enterprising firm struck out a new source of supply and commenced to import from Valencia. This Valencia fruit grew rapidly in favor, and now the Liverpool steamers land from 500 to 1,500 cases each during the season, which is now much longer than in the days of sailing-vessels. Besides the fruit received from these sources, large quantities come on through bills of lading via New York. That the quantity of green fruit is very nearly up to that received in what are popularly considered to have been the best days of the trade is shown by the increased

consumption and the reduced price. This is especially true of oranges, the sales of which to small retailers have grown during the last few years from a petty business to one in which considerable capital is invested. Grapes, which once were considered a luxury and retailed at from 65 cents to \$1 per pound, are now sold at 20 cents, and are imported in greatly increased quantities. The western jobbing trade in fruits has increased with the growth of our export business and consequent enlarged railroad facilities, and a considerable portion has been regained in answer to the demand for return freights from the sea-board.

So much can not be said for the dry-fruit trade, wherein the loss has been positive, as is shown by the decline of the articles which once constituted the bulk of exports. Thus we find the receipts of figs were, in 1859, 705,512 drums and 11,621 cases, and in 1878 were 3,882 drums and 3,512 cases, indicating the almost entire extinction of a business which once employed a considerable fleet.

The following table, made up from the board of trade reports, illustrate the fluctuations of the trade :

Articles.	1860.	1870.	1878.	1879.
Lemons.....boxes..	28,388	80,389	39,517	90,784
Oranges.....do....	106,998	161,122	182,566	152,331
Figs.....drums..	668,905	183,027	3,882	8,439
Figs.....cases..	9,595	4,085	3,512	5,676
Raisins.....casks..	3,055	1,076	.....	.....
Raisins.....drums..	11,819	.....	.....	.....
Raisins.....boxes..	245,596	205,020	110,791	98,709

The following table shows the commerce of Boston with foreign countries during the year ending June 30, 1880, as given in the annual report of the Bureau of Statistics on commerce and navigation :

Countries.	MERCHANDISE.			Countries.	MERCHANDISE.		
	Imports.	Foreign exports.	Domestic exports.		Imports.	Foreign exports.	Domestic exports.
Argentine Republic.....	\$3,501,493	\$5,645	\$10,296	Hawaiian islands.....	.....	\$5,478	\$53,363
Belgium.....	537,095	179,946	377,795	Haiti.....	\$392,623	0,007	784,509
Brazil.....	1,512,017	.....	15,337	Italy.....	960,497	.....	56,277
Central America.....	913	.....	.....	Japan.....	.....	.....	10,000
Chili.....	535,846	.....	407,322	Liberia.....	9,703	.....	42,540
Denmark.....	.....	.....	7,931	Mexico.....	7,130	.....	.....
Danish West Indies.....	82,078	2,011	44,085	Netherlands.....	10,248	135,422	254,574
France.....	122,027	5,751	169,206	Dutch Guiana.....	245,601	1,118	251,011
French West Indies.....	99,583	934	69,409	Dutch East Indies.....	820,724	.....	0,215
French Guiana.....	3,272	389	75,045	Portugal.....	.....	.....	10,000
Miquelon and Saint Pierre.....	3,901	17,951	260,896	Azore, Madeira, and Cape Verde islands.....	50,898	1,369	102,853
French possessions in Africa.....	36,338	263	165,606	Portuguese possessions in Africa, etc.....	.....	206	28,414
Germany.....	.....	.....	115,870	Russia on the Baltic and White seas.....	159,826	.....	.....
England.....	37,625,539	300,450	45,945,178	San Domingo.....	13,721	.....	11,928
Scotland.....	1,269,458	13,743	2,413,641	Spain.....	174,802	.....	.....
Ireland.....	5,600	36	1,215,145	Cuba.....	7,798,902	.....	160,708
Gibraltar.....	1,425	.....	20,293	Porto Rico.....	2,044,130	.....	81,279
Nova Scotia, New Brunswick, and Prince Edward Island.....	2,008,206	103,624	1,385,379	All other Spanish possessions.....	913,533	.....	.....
Quebec, Ontario, and Manitoba.....	69,064	351,271	.....	Sweden and Norway.....	145,934	.....	22,131
Newfoundland and Labrador.....	68,737	6,449	263,700	Turkey in Asia.....	74,556	.....	55,242
British West Indies.....	859,958	7,959	159,572	Turkey in Africa.....	11,341	.....	.....
British Guiana.....	530,259	1,190	103,392	United States of Colombia.....	2,270	2,014	18,703
British Honduras.....	.....	182	5,532	Uruguay.....	.....	9,634	.....
British East Indies.....	2,820,704	.....	18,025	Venezuela.....	.....	.....	1,180
British possessions in Africa, etc.....	987,914	38,789	1,326,309	All other countries and ports.....	177,767	.....	307,680
British possessions in Australasia.....	1,702,927	12,938	1,130,826	Total.....	68,563,130	1,214,754	58,023,587
All other British possessions.....	2,438	.....	.....		

The following statement shows the values of the principal articles imported into Boston from foreign countries during the year ending June 30, 1880, as given in the annual report of the Bureau of Statistics on commerce and navigation :

Brown sugar.....	\$12,377,734
Wool.....	12,011,450
Hides and skins.....	7,391,363
Bar-iron.....	2,774,755
Manufactures of flax.....	1,653,636
Rags and other paper materials.....	1,646,613
Woolen dress-goods.....	1,615,412
Tin-plates.....	1,388,586
Pig-iron.....	1,258,394
Leather.....	1,163,690
	1,007,570

The following statement shows the values of the principal articles of foreign merchandise exported from Boston to foreign countries during the year ending June 30, 1880, as given in the annual report of the Bureau of Statistics on commerce and navigation :

Vegetable oils	\$358,274
Wool	281,748
Tea	50,255

The following statement shows the values of the principal articles of domestic merchandise exported from Boston to foreign countries during the year ending June 30, 1880, as given in the annual report of the Bureau of Statistics on commerce and navigation :

Bacon and hams	\$9,601,503
Cotton unmanufactured	7,033,344
Indian corn and meal	5,190,113
Horned cattle	5,110,563
Wheat	4,618,222
Wheat-flour	4,389,641
Lard	3,524,541
Pork	1,788,552
Tallow	1,482,745
Butter	1,242,311
Manufactures of cotton	1,174,024
Fresh beef	1,172,882

THE BOOT, SHOE, AND LEATHER TRADE.

While other branches of business have experienced fluctuations, the boot and shoe trade has steadily increased, and Boston is without doubt the largest mart in the world for the sale of these goods. Here are concentrated the sales-rooms or agencies of all the great manufacturing establishments of Lynn, Haverhill, Brookfield, Georgetown, Spencer, Milford, Hopkinton, Worcester, Auburn, and many minor places. The manufacture of boots and shoes has been carried on in the vicinity of Boston from the earliest times; and, even in the beginning of this century, Lynn had a national reputation for the extent of its shoe manufacture. The greater facilities for carrying on trade in Boston naturally made it the center of distribution, and, notwithstanding the temptations held out to it to remove to New York, the business has increased year by year. In 1858 it was reported that there were in Boston 218 wholesale boot, shoe, and leather dealers, whose annual sales amounted to \$34,100,000; 106 hide and leather dealers, who sold \$25,600,000, while retailers disposed of \$1,390,000 worth of goods—making a total of \$61,090,000. The loss of southern trade during the rebellion was more than covered by the increased demand for boots and shoes for the army and navy. With the termination of the rebellion the area of distribution was extended, and the direct shipments from Boston, exclusive of those made direct from the factories and those for New England trade, rose from 520,440 cases in 1864 to 715,844 cases in 1865. Five years later (1870) the shipments reached an aggregate of 1,213,129 cases; in 1875, 1,449,180; and in 1878, 1,648,724—in the latter year distribution having been disturbed by the prevalence of yellow fever in the South. From 1860 to 1878, inclusive, shipments of boots and shoes from Boston direct to points outside of New England, by rail and water, aggregated 20,362,345 cases. In 1870 the number of houses in the leather trade was estimated at 160, with yearly sales of \$47,881,991; 341 houses sold boots and shoes on manufacturers' account, and 43 were jobbers, making a total of 384 establishments in the wholesale trade. The aggregate sales of wholesale dealers, exclusive of resales, was calculated at \$63,188,255. The year 1879 was one of marked activity in all branches, although it opened under peculiarly depressing circumstances, heavy failures occurring in the southern and western business. With the opening of the spring trade, prices for leather of all kinds advanced sharply, causing a proportionate upward movement in boots and shoes. The firmness of the market was maintained by a largely increased demand consequent on the revival of business activity throughout the country, and the aggregate shipments—1,959,577 cases—were largely in excess of the business for many years previous.

Recently a marked change has taken place in the methods of doing this business. Instead of making to sell, as in former times, manufacturers now sell to make—a more conservative policy, enabling them to calculate the extent of their necessary supplies, and steadying the leather market. During the past three or four years the manufacturer and the retailer have been brought into closer connection, many small jobbers in the southern and western states now coming to Boston to purchase directly of the maker, thus avoiding the payment of middlemen's prices. The years 1878 and 1879 were especially characterized by the development of this feature, and in the opinion of many prominent manufacturers the time is not far distant when the relations between the retailer and the factory will be yet more intimate. It is no infrequent occurrence for representatives of small houses in Kentucky, Missouri, and states even farther south, to be found in the city bargaining with our heaviest manufacturers. The credit of this class of buyers is generally good, and the dealers are endeavoring to extend this branch of their patronage. These developments have strengthened Boston's position as the great distributing

point of the country, and assure the permanence of its position. Notwithstanding the growth of the boot and shoe manufacture in other sections of the country, Boston has, during the past five years, not only maintained but has actually increased its importance as a distributing center to the southern and western trades, as is illustrated by the following table showing the direct shipments to the points named, exclusive of those made from the factories themselves:

Table showing distribution of boots and shoes to important points south and west. (a)

Cities.	1874.	1879.
	<i>Cases.</i>	<i>Cases.</i>
Atlanta, Georgia.....	7,991	20,999
Baltimore, Maryland.....	61,438	108,645
Chicago, Illinois.....	98,320	193,891
Cincinnati, Ohio.....	70,168	111,167
Cleveland, Ohio.....	22,190	34,305
Detroit, Michigan.....	15,569	45,117
Galveston, Texas.....	22,015	30,734
Indianapolis, Indiana.....	12,200	18,089
Louisville, Kentucky.....	38,873	42,035
Milwaukee, Wisconsin.....	18,447	33,145
New York, New York.....	155,875	128,699
New Orleans, Louisiana.....	46,631	46,148
Nashville, Tennessee.....	20,001	38,203
Philadelphia, Pennsylvania.....	103,081	99,707
Pittsburgh, Pennsylvania.....	14,478	25,377
Richmond, Virginia.....	14,424	19,924
Saint Louis, Missouri.....	107,745	139,136
San Francisco, California.....	39,095	37,899
Total.....	877,010	1,173,950

a These figures are compiled from a record kept by the *Shoe and Leather Reporter* of actual shipments as collected from dealers.

It is estimated by some dealers that the shipments to points outside of New England made from Boston direct, in 1879 (1,959,577 cases), represented, including the purchase of leather, a value of between \$90,000,000 and \$100,000,000. The receipts of leather in Boston during 1879 were reported as 244,103 sides, 66,826 rolls, 25,594 bundles, 6,852 bags, and 3,520 packages.

THE WOOL TRADE.

Boston is the great wool market of the United States, by far the larger proportion of the raw wool entering into the consumption of American woolen manufactures being handled by her dealers and brokers. The wool business appears to have been followed in Boston since early in the present century, the commercial position of the city having naturally made it the center of distribution at a time when woolen manufactures were first established. During the war of 1812 wool sold as high as \$1 75 per pound and was in great demand. Previous to 1840, however, the business appears to have been conducted on a small scale. The bulk of woolen manufacturing being concentrated in New England and eastern New York, Boston naturally became the center of supply, drawing to her markets not only the wool product of New England—which has long ceased to be an important factor—but absorbing the greater portion of the clip of the West, and importing largely from South America, Australia, and the cape of Good Hope. With the extension of the business came an extension of the influence and facilities of Boston. Thus, in 1850, we find the receipts were 26,247 bales and the imports 18,174 bales. Nine years later the receipts had risen to 45,858 bales and the imports 36,708 bales and 33,774 quintals. Boston's position even at that early date appears to have controlled the wool import of the country, its percentage of the total amount received from abroad from 1853 to 1857, inclusive, having been 58.18, 62.59, 60.12, 58.16, 56.66 per cent., respectively. The rebellion, by stimulating woolen manufacture, gave a marked impetus to the business, many new houses springing into existence after its close. At the same time it drove much of the importing trade into foreign hands and foreign bottoms, and thus to New York. During 1863 the receipts were 112,681 bales, and prices rose rapidly, the government being the leading consumer. Business did not, as was apprehended, decline with the close of the rebellion, the receipts in 1869 being 216,320 bales and bags, and the imports 27,399. Two years previous Boston's claim to be the leading market of the country had been generally conceded by manufacturers. Receipts of domestic wool experienced a check in 1870, and in 1872 had fallen to 157,741 bales and bags, while imports had increased, attaining in the last-mentioned year a total of 88,157 bales. With 1873 came a change for the better, and in the following year, notwithstanding the influence of the panic, receipts were 272,724 bales and bags, while imports had fallen to 32,774 bales. During 1874 the concentration of the trade in Boston was marked, and that year witnessed the largest trade in domestics transacted until 1879, a

period of unusual activity. Receipts fell off in 1875 to 262,174 bales, and imports increased to 44,668, so that the actual amount of wool, foreign and domestic, handled was as large as in the previous year. Trade showed a decline during 1876, but rallied in 1877, the favorable exhibit being due to increased imports. In 1878 the receipts and imports both fell off, the former being 255,931 bales and bags, and the latter 30,883. The year 1879 was characterized by great activity in all branches of the trade, the receipts being 360,441 bales and bags, and the imports 69,307. Prices rapidly advanced. Manufacturers took from the Boston market, in round numbers, 52,500,000 more pounds of wool, foreign and domestic, than in the previous year. It is estimated that during the six months ending December 31, 1879, weekly transactions averaged 3,000,000 pounds—2,000,000 pounds of foreign wools were understood to have been purchased by one mill alone. The stock of domestic wool was estimated, December 31, 1879, to be 13,495,492 pounds, of which three-quarters were made up of fleeces and "California fall". The foreign stock at the same date was 3,450,424 pounds, of which about one-third was English combing and somewhat less than one-fourth Valparaiso. The year 1880, thus far, appears likely to show even larger results than its predecessor. It is estimated that up to April 15 between 15,000,000 and 17,000,000 pounds of foreign wool had been imported into Boston, the quantity imported during the first quarter aggregating 14,832,280 pounds. New York has increased in importance as an importing point for wools, the balance in this branch of trade inclining in her favor. In the fiscal year 1877 Boston imported 19,646,763 pounds of wool, alpaca, hair, etc., and New York 17,114,545. The fiscal year 1879, however, showed an importation of 16,778,786 pounds for Boston and 17,660,399 for New York. A considerable proportion of the wool received at New York ultimately drifts into the hands of Boston dealers.

The annual value of the business at Boston is estimated by well-informed dealers at about \$50,000,000, on the basis of recent trade, and the capital invested at from \$8,000,000 to \$10,000,000. So largely is the business of supply concentrated at Boston that one prominent firm owning a mill within 30 miles of New York confines its purchases entirely to the Boston market. Trade has been stimulated of late years by the growth of the domestic carpet industry, of which there are large establishments at Lowell, Palmer, and Clinton, Massachusetts, and Thompsonville, Connecticut. The wools taken by these consumers are mostly foreign, Philadelphia largely absorbing the domestic carpet wools. The revival of the clothing business in 1879 also occasioned an animated demand for certain varieties of wool, especially English and colonial, Australian, Cape, and South American.

The following table shows the receipts of wool during the past decade:

Year.	Domestic.	Foreign.
	<i>Bales and bags.</i>	<i>Bales.</i>
1879.....	360,441	69,307
1878.....	255,931	30,833
1875.....	262,174	44,668
1870.....	185,015	26,193
1869.....	210,320	27,399

INFLUENCE OF IMPROVED RAILROAD FACILITIES.

The development of Boston's export trade, mainly with Liverpool and other ports of the United Kingdom, dates from about 1870, and was the result of the increased railroad and terminal facilities furnished at that time. In 1867 important improvements had been made in western connections, mainly through the Boston and Albany railroad and the encouragement extended to the Boston, Hartford, and Erie (now New York and New England) and the Troy and Greenfield. Previous to 1870 the exportation of breadstuffs and provisions had been of comparatively little consequence, the greater portion of the receipts being absorbed by the domestic consumption; but with the completion of the improvements above alluded to, and the opening of the Hoosac Tunnel line, there came a rapid extension of the business and a revival of steam communication.

Boston had early taken a leading place in the development of steam traffic with Europe, but the vicissitudes of commerce had, just previous to the date alluded to, deprived her of much of her prestige in this respect. This city was, from 1840 to about 1850, the American terminus of the Cunard steam service, which was regularly established in the first-mentioned year. The Cunard service was regularly continued without interruption for twenty-seven years, when, in 1867, the passenger business was transferred to New York, and Boston depended on the freight steamers of the line which touched here *en route* to the former city. During all these years the Cunard line had been substantially without serious rivalry, the Irish line, established before the rebellion, having failed after a brief and disastrous experience. In 1867 an experiment made with American steamers, built by Boston capitalists, proved equally unsuccessful, and was abandoned, the steamers being sold and diverted to other employments. The rise of the export business was therefore hailed by the commercial community as presaging the re-instatement of Boston's steam communications, and the result justified their belief. The Cunard line resumed its service at this port, and was supplemented by other lines.

THE PROVISION TRADE.

In 1869 the export of lard was, according to the board of trade reports, but 1,789 barrels and 5,227 kegs and pails; in 1871 it had risen to 32,013 barrels and 14,758 kegs and pails. The export of pork and bacon rose in the same period from 14,014 to 63,213 barrels. During the five years following 1870 the general export business increased largely, and in the board of trade reports the secretary says, that in 1870 the total value of the exports amounted to \$12,092,643, while in 1875 they aggregated \$34,388,027. The importation of foreign goods had fallen from \$48,499,763 to \$46,997,163, due in large measure to the depression consequent upon the panic of 1873. The increased export business had therefore a specially beneficial influence in tiding the business of the city over a critical period in its history. In 1875 the Hoosac Tunnel line had fairly got into operation, and was beginning to make its influence felt in compelling a more liberal policy on the part of other railroads, and relieved the city from its dependence on a single through western connection.

The business of shipping live cattle has recently been largely developed. Beginning with an experimental cargo in the fall of 1877, it attained large proportions in 1878, during which year 34,658 cattle, 27,905 sheep, 13,680 hogs, and 207 horses were exported to Liverpool. The following year 34,261 cattle, 77,061 sheep, and 15,976 hogs were shipped abroad.

The export of breadstuffs has increased to a remarkable extent under the stimulus of improved western connections. The first exports following the revival of steamship business were to a considerable extent on the account of owners of the lines. Boston merchants now, however, export largely on their own account. In 1870 the receipts of corn were 4,000,000 bushels, against 2,343,840 in 1869, and wheat receipts doubled, rising from 213,000 bushels to 500,000. In 1876 the receipts of corn had risen to 9,000,000 bushels, of which 4,220,000 went abroad, against 380,000 in 1874; and as a result of this business a fleet of 106 sailing-vessels (including many flying the Italian, German, and Norwegian flags) loaded here in the first-mentioned year. The influence of the increasing facilities was felt in other departments of the export trade, and the export of cotton rose from 2,117 bales in 1870 to 68,057 in 1876, and 143,315 in 1879.

The export trade in breadstuffs and provisions for 1878 showed that there were sent to the old world: Indian corn valued at \$3,582,502; wheat, \$4,488,007; flour, \$2,079,787; lard, \$3,063,610; bacon and ham, \$8,736,635; pork, \$1,130,632; live cattle, including sheep and hogs, \$3,037,513. These figures were largely increased during 1879, when there were exported 832,890 barrels of flour, 4,884,514 bushels of wheat, 7,070,343 bushels of corn, 203,642 boxes of bacon, 44,410 barrels of pork, 101,377 tierces and 19,224 cases of lard, 12,319 barrels of beef, 107,072 boxes of cheese, and 131,856 packages of butter. The increase in butter and cheese over previous years was peculiarly marked. The export of cheese in 1877 had been 46,274 boxes, and of butter 28,462 packages. A special feature of the exports of 1879 was the shipment of sugar to Glasgow and other British ports, including 50 boxes, 47 hogsheads, and 58,475 barrels. The total exports of refined sugar amounted to 16,802,331 pounds, valued at \$1,377,867, against a total value for the previous year of \$380,540.

MANUFACTURES.

The following is a summary of the statistics of the manufactures of Boston for 1880, being taken from tables prepared for the Tenth Census by Robert T. Swan, 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	8,605	\$47,848,384	39,810	18,150	1,253	\$24,024,009	\$81,688,100	\$130,531,993
Artificial feathers and flowers (see also Millinery and lace goods).....	4	20,000	16	102	.....	25,540	21,350	124,900
Awnings and tents.....	4	16,200	12	40	1	21,180	43,840	77,150
Baking and yeast powders (see also Drugs and chemicals)	4	254,000	40	36	8	25,530	160,230	305,230
Belting and hose, leather	3	40,000	28	.....	.....	16,333	160,000	204,000
Billiard tables and materials.....	4	47,200	43	.....	.....	20,000	42,700	88,200
Blacking.....	0	63,500	38	44	.....	28,080	204,000	324,400
Blacksmithing (see also Wheelwrighting).....	155	218,275	576	.....	7	278,741	192,544	663,525
Bookbinding and blank-book making.....	46	410,328	423	596	31	402,082	359,700	980,416
Boot and shoe cut stock.....	13	62,500	57	209	8	61,075	243,600	352,200
Boot and shoe findings.....	11	117,700	104	71	15	63,012	258,975	389,883
Boots and shoes, including custom work and repairing	83	348,775	1,015	306	29	514,356	1,158,366	1,928,740
Boxes, fancy and paper.....	18	139,900	80	442	16	115,432	176,937	380,062
Boxes, wooden packing	5	18,500	46	.....	1	16,507	50,993	80,900
Brass castings	26	222,400	244	2	4	121,532	198,203	410,552
Bread and other bakery products	113	292,950	484	128	18	265,927	946,803	1,471,582

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.			
Bridges	9	\$53,000	138			\$61,020	\$206,300	\$255,003
Brooms and brushes	16	290,300	246	167		168,321	491,392	828,290
Carpentering	305	818,605	2,419		14	1,163,648	1,841,710	3,748,358
Carriage and wagon materials	8	52,000	23			15,363	70,000	110,770
Carriages and wagons (see also Wheelwrighting)	23	375,000	419	1		222,567	259,891	632,085
Cars, railroad, street, and repairs	3	100,000	100			45,329	61,399	127,225
Clothing, men's	222	4,200,193	2,246	6,844	190	3,418,126	9,844,108	16,157,892
Clothing, women's	24	319,900	229	1,740	17	423,573	1,028,135	1,808,520
Coffee and spices, roasted and ground	12	289,000	88	33		70,089	1,243,971	1,448,869
Coffins, burial cases, and undertakers' goods	9	27,300	33			18,956	18,625	52,950
Confectionery	33	251,475	275	255	5	193,436	1,059,225	1,006,214
Cooperage	21	79,467	119			51,532	89,374	188,560
Coppersmithing (see also Tinware, copperware, and sheet iron ware)	8	107,200	141		5	85,350	115,800	249,100
Cordage and twine	7	706,550	343	108	19	134,995	774,925	1,124,400
Cork cutting	4	32,434	34	16	6	15,749	62,467	106,125
Corsets	5	45,000	19	242	10	59,240	105,000	226,600
Cotton goods (see also Hosiery and knit goods; Mixed textiles)	4	143,000	33	81	80	54,200	161,000	275,000
Cutlery and edge tools (see also Hardware)	11	34,600	41		1	19,198	17,670	58,500
Drugs and chemicals (see also Baking and yeast powders; Patent medicines and compounds)	11	200,500	104	10	1	51,584	321,182	450,961
Dyeing and cleaning	20	41,300	71	141	3	55,782	27,390	135,371
Electrical apparatus and supplies	9	162,500	86	1	1	48,308	44,506	119,289
Electroplating	19	113,450	91	4	2	41,241	53,990	147,550
Engraving and die-sinking	22	53,150	137	33	4	83,850	68,302	224,031
Engraving, steel	5	7,600	11	3	2	6,950	3,040	18,700
Engraving, wood	11	20,135	62		2	40,125	4,250	83,975
Fancy articles	6	17,500	26	18	11	11,580	23,100	48,200
Fertilizers	5	568,000	254			136,427	805,490	1,231,170
Files	7	57,200	64	4		23,448	11,700	57,133
Flavoring extracts	6	65,500	22	30	2	19,900	172,400	266,500
Flouring and grist-mill products	8	510,000	69			40,792	1,009,010	1,101,000
Foundry and machine-shop products (see also Steam fittings and heating apparatus)	134	4,824,833	3,813	13	19	2,068,609	2,739,690	6,234,775
Fruits and vegetables, canned and preserved	8	242,700	97	181	30	83,997	496,250	681,188
Furnishing goods, men's	15	69,900	26	152	5	47,300	219,250	377,925
Furniture (see also Mattresses and spring beds; Upholstering)	123	1,368,875	2,269	70	26	1,078,199	2,011,807	3,867,917
Furniture, chairs	7	70,600	102	2		49,261	170,279	257,238
Furs, dressed	13	64,547	42	73	2	31,016	179,177	263,250
Glass, cut, stained, and ornamented	10	55,650	77	12	3	48,511	34,630	114,940
Gold and silver leaf and foil	5	19,300	31	16	5	20,085	65,900	96,175
Grease and tallow	4	392,000	68		2	54,880	436,210	564,868
Hairwork	13	28,000	9	65		20,441	33,360	73,400
Hand-stamps	5	9,500	12			4,867	8,750	20,350
Hardware (see also Cutlery and edge tools)	11	117,850	46	4	1	22,575	22,430	79,000
Hardware, saddlery	3	26,000	39	1	2	17,720	9,500	39,300
Hats and caps, not including wool hats	27	106,200	222	167	13	146,252	196,592	441,276
Housefurnishing goods	5	20,700	25	10	4	11,575	22,750	46,200
Hosiery and knit goods (see also Cotton goods)	9	156,800	94	1,370	53	101,275	291,825	484,183
Instruments, professional and scientific	12	81,000	93	7	3	53,446	20,400	123,540
Iron and steel	5	1,624,408	1,108			444,095	1,523,002	2,189,987
Iron bolts, nuts, washers, and rivets	3	30,000	34	4	1	21,060	17,000	51,000
Iron forgings	3	420,000	149	95	2	107,779	250,947	592,970
Japanning	6	4,600	27		2	12,890	4,390	25,060
Jewelry	28	193,100	277	94	7	133,382	228,815	481,722
Kindling wood	3	19,000	52		6	19,085	24,223	58,687
Labels and tags	5	288,000	74	58		52,210	338,725	450,325
Lapidary work	4	39,000	33	3	3	19,700	56,575	102,200

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.			
Lasts	3	\$10,500	14			\$7,820	\$3,000	\$18,100
Leather, curried	20	420,800	534		8	240,250	2,035,332	2,520,792
Leather, dressed skins	8	315,500	200		2	82,753	430,840	570,350
Liquors, distilled	3	245,000	75		2	35,000	415,500	590,500
Liquors, malt	18	2,874,400	1,014			486,448	2,461,159	4,426,264
Lithographing (see also Printing and publishing)	0	487,550	576	98	22	336,327	437,360	959,020
Lock and gun-smithing	20	29,000	50		1	21,019	22,895	66,500
Looking-glass and picture frames	45	123,700	207	8	13	147,775	268,895	533,077
Lumber, planed (see also Sash, doors, and blinds; Wood, turned and carved)	11	372,500	233		5	109,754	261,500	480,810
Marble and stone work	43	690,600	1,033			387,113	674,141	1,442,801
Masonry, brick and stone	101	284,725	1,178			515,208	612,351	1,302,231
Mattresses and spring beds (see also Furniture)	19	181,597	169	123	12	124,063	460,722	677,792
Millinery and lace goods (see also Artificial feathers and flowers)	4	38,500	15	109	20	33,300	224,000	317,000
Mineral and soda waters	8	74,000	90		1	51,340	137,084	230,044
Mixed textiles (see also Cotton goods; Silk and silk goods)	5	600,000	106	402	26	176,010	581,472	909,000
Models and patterns	22	24,850	84	2	1	30,564	13,640	88,455
Musical instruments and materials (not specified)	6	28,200	39	1		10,550	7,307	36,000
Musical instruments, organs and materials	8	445,366	512	8		319,804	414,000	904,732
Musical instruments, pianos and materials	23	1,073,000	1,107	11	3	693,867	943,069	2,100,360
Oil, illuminating, not including petroleum refining	3	90,000	11			6,500	300,000	345,000
Painting and paperhanging	230	256,828	1,001	2	7	490,361	391,689	1,204,861
Paints (see also Varnish)	6	241,500	69	2	2	38,530	281,400	390,900
Patent medicines and compounds (see also Drugs and chemicals)	21	170,650	67	56	2	49,647	345,850	771,631
Perfumery and cosmetics	7	21,500	23	17		12,690	69,550	126,000
Photographing	41	103,900	121	59	6	92,581	66,047	231,925
Pickles, preserves, and sauces	4	12,500	9	10	2	6,530	34,500	78,600
Plumbing and gasfitting	117	232,550	668	3	18	201,156	467,697	973,538
Pocket-books	3	2,400	5	1	1	1,050	2,560	7,000
Printing and publishing (see also Lithographing)	145	2,496,535	2,342	436	98	1,783,913	1,955,668	5,469,513
Printing materials	4	15,300	12	1	2	8,460	12,600	28,050
Refrigerators	5	52,350	64			22,450	44,400	87,700
Roofing and roofing materials	41	173,625	238			109,142	249,705	405,567
Rubber and elastic goods	10	1,095,000	407	506	10	362,106	1,304,347	2,095,490
Saddlery and harness	60	175,300	390	21	7	164,357	248,052	550,558
Sash, doors, and blinds (see also Lumber, planed; Wood, turned and carved)	12	73,300	80	3	4	39,625	124,480	195,645
Scales and balances	3	49,000	39	1	4	23,770	11,440	51,613
Sewing-machines and attachments	3	243,000	41			29,358	86,870	102,700
Ship-building	116	1,451,850	841			536,458	724,422	1,479,148
Shirts	7	69,300	34	159	3	44,626	206,800	329,800
Show-cases	5	10,800	17		1	8,900	11,460	29,980
Silk and silk goods (see also Mixed textiles)	9	132,800	81	262	37	160,845	222,315	443,425
Silversmithing	5	4,250	11	2		5,811	4,176	16,235
Slaughtering and meat-packing, not including retail butchering	21	918,000	211			153,263	6,509,139	7,096,777
Soap and candles	11	161,400	59	14		33,739	124,600	208,633
Soda-water apparatus	3	95,000	189	5	6	73,335	279,635	487,306
Spectacles and eyeglasses	7	8,200	18	2	1	11,500	4,630	25,730
Sporting goods	3	8,000	8	18		5,020	2,950	10,800
Springs, steel, car, and carriage	5	4,450	13			2,750	9,500	18,509
Stationery goods	10	48,800	73	11	3	41,695	103,870	207,050
Steam fittings and heating apparatus (see also Foundry and machine-shop products)	9	260,500	186		17	97,089	223,918	308,780
Stencils and brands	12	28,500	28	3	4	16,660	14,525	53,200
Stereotyping and electrotyping (see also Type founding)	5	38,000	66	2		59,021	34,008	115,630
Stone and earthen-ware	5	58,000	72	6	4	33,450	23,735	97,000
Straw goods	3	41,000	33	125	5	51,227	122,974	220,295
Sugar and molasses, refined	4	1,629,500	395			202,061	15,644,084	16,513,760

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.			
Surgical appliances	5	\$30,500	30	19	2	\$28,300	\$43,000	\$100,000
Taxidermy	3	1,800	7	2		2,900	5,100	14,000
Tinware, copperware, and sheet-iron ware (see also Coppersmithing).....	94	322,280	520	23	16	258,033	531,861	1,055,472
Tobacco, cigars, and cigarettes.....	88	135,556	333	103	15	100,976	253,413	524,283
Trunks and valises	20	104,500	158	6		82,665	235,503	400,708
Type founding (see also Stereotyping and electrotyping)	3	72,200	75	50	5	65,500	55,500	162,000
Umbrellas and canes	3	17,600	7	15		8,811	28,425	50,045
Upholstering (see also Furniture).....	41	122,757	179	45	3	105,103	210,267	390,848
Varnish (see also Paints)	3	65,000	16			9,600	170,000	235,000
Watch and clock repairing.....	0	0,700	12			5,504	1,162	12,000
Watch-cases	5	65,000	163	16	3	86,142	274,480	427,371
Whalebone and rattan	4	24,500	31	21	2	10,115	41,044	60,417
Wheelwrighting (see also Blacksmithing; Carriages and wagons).....	56	90,225	218			98,735	73,477	232,965
Window blinds and shades.....	12	10,250	46	11		18,140	40,760	76,345
Wirework	15	69,400	107	16	11	55,106	104,771	214,567
Wood, turned and carved (see also Lumber, planed; Sash, doors, and blinds).....	44	327,960	441	1	8	208,829	433,555	791,355
Wooden ware	3	6,000	21			8,950	13,500	33,500
All other industries (a).....	116	4,142,030	2,265	1,103	100	1,393,393	4,990,581	8,041,307

a Embracing agricultural implements; artificial limbs; bags, other than paper; bags, paper; baskets, rattan and willow ware; belting and hose, lines; boot and shoe uppers; boxes, cigar; brick and tile; buttons; carpets, other than rag; carpets, rag; carpets, wood; carriages and sleds, children's; cement; cheese and butter (factory); chocolate; cleansing and polishing preparations; clocks; cloth-finishing; collars and cuffs, paper; cordials and sirups; cotton-ties; drain and sewer pipe; dyeing and finishing textiles; dyestuffs and extracts; engravers' materials; explosives and fireworks; fire-arms; food preparations; foundry supplies; gas and lamp fixtures; gas machines and meters; glass; glue; graphite; grindstones; hat and cap materials; hones and whetstones; ink; iron doors and shutters; iron nails and spikes, cut and wrought; iron work, architectural and ornamental; jewelry and instrument cases; lamps and reflectors; lard, refined; lead, bar, pipe, sheet, and shot; leather goods; lime; lumber, sawed; malt; matches; millstones; mirrors; needles and pins; nets and seines; oilcloth, floor; oleomargarine; pens, gold; photographic apparatus; plated and britannia ware; regalias and society banners and emblems; rules, ivory and wood; safes, doors, and vaults, fire-proof; saws; shoddy; silverware; smelting and refining; starch; telegraph and telephone apparatus; terra-cotta ware; tobacco, chewing, smoking, and snuff; toys and games; tools; veneering; vinegar; washing-machines and clothes-wringers; watches; and woolen goods.

From the foregoing table it appears that the average capital of all establishments is \$12,919 07; that the average wages of all hands employed is \$420 92 per annum; that the average outlay, in wages, in materials, and in interest (at 6 per cent.) on capital employed is \$29,864 41.

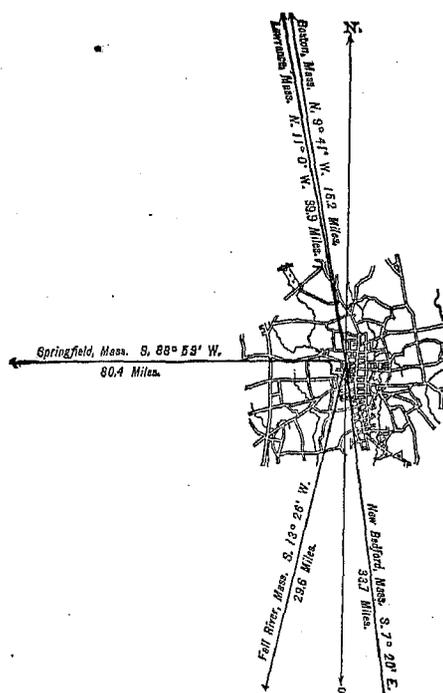
BROCKTON,

PLYMOUTH COUNTY, MASSACHUSETTS.

POPULATION

IN THE
AGGREGATE,
1830-1880.

	Inhab.
1790.....	
1800.....	
1810.....	
1820.....	
1830.....	1,953
1840.....	2,616
1850.....	3,939
1860.....	6,584
1870.....	8,007
1880.....	13,608



POPULATION

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

Male	6,823
Female	6,785
—	
Native	11,585
Foreign-born	2,023
—	
White	13,569
Colored	39

Latitude: 42° 8' North; Longitude: 72° 1' (west from Greenwich).

FINANCIAL CONDITION:

Total Valuation: \$5,977,488; per capita: \$439 00. Net Indebtedness: \$71,200; per capita: \$5 23. Tax per \$100: \$1 70.

HISTORICAL SKETCH.

Brockton was formerly a part of the ancient town of Bridgewater, which was settled in 1650. That part now known as Brockton was incorporated as North Bridgewater in 1821, the name being changed to Brockton in 1874. No settlements were made in this part of the town prior to 1700. Brockton has never been ravaged by fire. It has always had a steady growth, and latterly a rapid one, doubling its population in the last twenty years. Originally it was settled by the old Puritan stock whose descendants predominate. A considerable population of Irish extraction, say one-sixth, and also many Swedes are now coming in.

BROCKTON IN 1880.

The following statistical accounts, collected by the Census Office, are all that could be obtained to indicate the present condition of Brockton:

LOCATION, ETC.

Brockton lies in latitude 42° 8' north, longitude 72° 1' west from Greenwich, on the Old Colony railroad, 20 miles south of Boston. Nothing could be learned as to its elevation above sea-level, its topography, character of tributary country, or climate. The railroad gives the town constant communication with Boston on the north, and with Fall River and Newport on the south. The town is reputed to enjoy a lively traffic with a home and neighboring population of some 45,000. The map shows several streams and ponds within the town limits, but their size and area were not learned. There are no marshes or elevated lands of any extent in the town, and it is said that the heats of summer are often reduced by the sea-breeze, while the winter is some four weeks shorter than at some points not far inland.

STREETS.

There are 75 miles of streets in Brockton, all of which are finished with gravel. The cost per square yard could not be learned. The sidewalks, excepting a few miles of asphalt or concrete, are laid in gravel. A few miles of gutters are paved, the balance being natural. The streets were originally well lined with trees, but as the town grew the streets had to be widened, and many of the trees were removed. The annual appropriation for streets is \$20,000, being for highways and bridges \$15,000, and for construction \$5,000. All work on the streets is done by day labor. The selectmen advise the purchase of a stone-crusher, so that some of the streets can be macadamized. A horse-railroad, 4 miles in length, with 7 cars and 40 horses, has just been put in operation; the rate of fare is 6 cents.

WATER-WORKS.

The works for the water-supply are now in course of construction, and so far \$150,000 has been expended. The water will be supplied by gravitation from a natural head of some 70 feet, or a pressure in the pipes of 30½ pounds to the square inch.

GAS.

Gas is supplied by a private corporation. The streets are lighted by 220 lamps, 70 being supplied with gas and 150 with oil. The cost to the town for the gas-lights is not stated. There are no public buildings reported.

PUBLIC PARKS AND PLEASURE-GROUNDS.

Perkins Park, with an area of 2 acres, is the only park in the town. The land was donated, and is now valued at \$3,500. There does not appear to be anything appropriated for its care and maintenance, nor is it controlled or managed in any special way.

PLACES OF AMUSEMENT.

There is one theater in the town, known as the opera-house, with a seating capacity of 1,000. It pays an annual license of \$100. There are two halls occasionally used, with a seating capacity of from 300 to 400 each.

DRAINAGE.

In answer to the schedule on sewers sent to Brockton, the selectmen made the following return: "We have just put in water-works, but we are entirely destitute of any system of sewerage."

CEMETERIES.

There are 11 cemeteries in the town, but no detailed information was furnished regarding them.

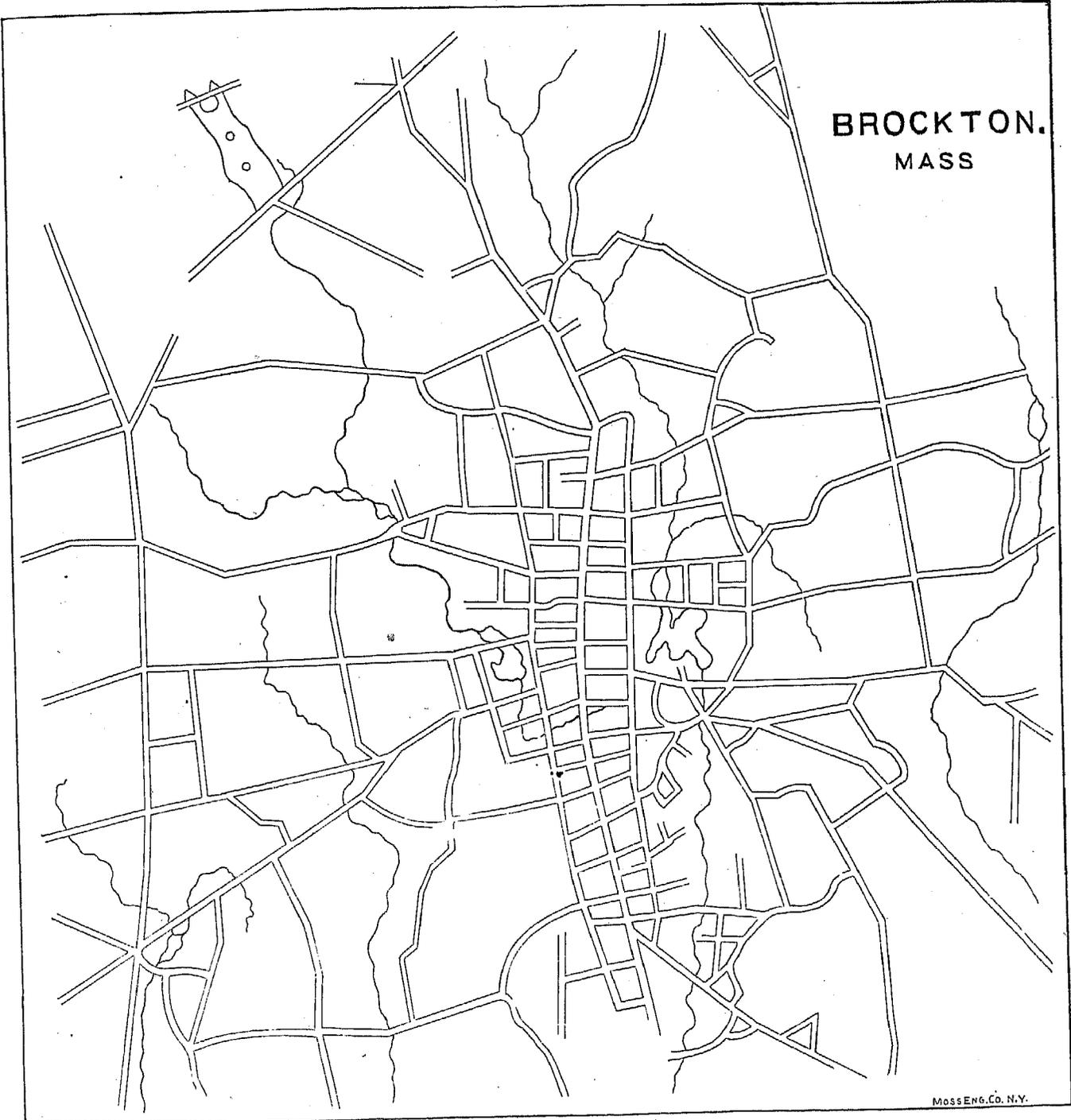
MARKETS.

There are no public or corporation markets in Brockton.

SANITARY AUTHORITY—BOARD OF HEALTH.

Up to the close of the year 1880 the selectmen of Brockton performed the duties of a board of health, but no data were obtainable regarding the way in which the work was performed, or the regulations, etc. It has been decided to elect a regular board of health during the coming year, under the general laws of the state, that shall have full charge of sanitary affairs, and which will enact all regulations deemed best for the preservation of the public health.

BROCKTON.
MASS



MUNICIPAL CLEANSING.

There is no system of street-cleaning, removal of garbage and ashes, or the burial of dead animals, but all these matters are now receiving attention, and plans are being studied for future adoption. As there are no sewers, all household wastes are thrown into vaults and cesspools. There is no system in the matter, but, like street-cleaning, etc., something will shortly be done to meet the needs of the growing town.

POLICE.

The police force of the town is appointed and governed by the selectmen. The chief of police is the executive officer, and has general supervision over the force. He is required to perform police duty himself, and is paid by the hour—generally about \$70 a month. Five men are employed on active, but not constant, duty. Their pay is not reported. The uniform is blue, and each man provides his own. The men are equipped with revolvers and clubs. One is on duty all the time, and the length of streets patrolled is about 5 miles. No record seems to have been kept of arrests, amount of property lost or stolen, number of station-house lodgers, or the number of free meals given. Special policemen are appointed by the selectmen when occasion requires. The yearly cost of the force (1880) is \$3,000.

FIRE DEPARTMENT.

The force of the fire department consists of 270 men, divided as follows: 1 chief and 4 assistant engineers, 3 engine companies of 50 men each, 1 engine company of 30 men, 3 chemical companies of 20 men each, and 1 hook-and-ladder company of 25 men. The apparatus consists of 1 steam fire-engine, 4 hand and 4 chemical engines, 1 four-wheel hose-carriage, and 1 hook-and-ladder truck. There are 5,500 feet of serviceable hose in use. The department has a system of fire-alarm telegraph. The department has been called out eleven times on account of fire during the year.

PUBLIC SCHOOLS.

There are 19 school-buildings in Brockton, divided into 43 schools and employing 43 teachers. During the past year the expenditures for the public schools were \$35,511.62. The average membership in all the schools for the year was 2,014; the average attendance, 1,803; and the average percentage of attendance, 89.5.

In addition to the above, there is an evening drawing-school, with an average attendance of 45, the free-hand class consisting of 23 and the mechanical class of 22 pupils.