rates of England and Wales alone, the greater proportion of deaths of the heads of families occurred from specified removable causes; and that the average of their ages was under forty-five years, or thirteen years below the natural probability of life, as shown by experience.

9. *It is proved* that the preventable causes of disease, and the unnecessary mortality, impose upon the people immense pecuniary burdens which might be avoided.

10. *It is proved* that the younger population, bred up under noxious physical agencies, is inferior in physical organization and general health to a population preserved from such agencies; and that these adverse circumstances tend to produce an adult population, short-lived, improvident, reckless, intemperate, immoral, and with excessive desires for sensual gratifications.

## II. THE SANITARY MOVEMENT AT HOME.

*Sanitary Police.* Some historical notice of the sanitary legislation of Massachusetts, seems proper, preliminary to any statements of its present condition. We have accordingly presented, in the appendix, the titles of all the acts relating to matters connected with the public health, from the commencement of the provincial charter, in the year 1692, to the present time, arranged in chronological order; and referred, in connection, to the printed works where they may be found. The subject seems to have received little attention from the General Court, during the old colonial charter.[1] Two acts, which have some relation to it, we shall presently notice. Laws were passed by

[1] Towns, however, under the general authority which they possessed, sometimes made regulations regarding sickness. The selectmen of Salem, in 1678, "ordered that William Stacy, who is sick of the small-pox, doth not presume to come abroad till three weeks after this date; and that he be very careful that when the time be expired he shift his clothes, and do not frequent company till he be wholly clear of the infection." And again—"The selectmen being informed that William Lord, Jr., is visited with the small-pox, at his father's house, do order that William Lord, sen., his wife and children that live with him, do keep within their house, and that they do not offer to sell any of their wares, viz.: bread, cakes, gingerbread, and the like; and that they suffer none to come to their house, but what necessity requires, upon the penalty of 20*s.* in money for each offence. It is ordered that Thomas Stacey doth forbear grinding at the mill, and that he be careful he doth not infect others, on the penalty of 20*s.* A house is ordered to be impressed for our sick, having the small-pox."—*Felt's Annals of Salem*, Vol. II, p. 423.

The following act was passed by the Massachusetts Colony, in 1660:—

"This court, considering how far Satan doth prevail upon several persons within this jurisdiction to make away themselves, judgeth that God calls them to bear testimony against such wicked and unnatural practices, that others may be deterred therefrom:

"Do therefore order, that from henceforth, if any person, inhabitant or stranger, shall at any time be found by any jury to lay violent hands on themselves, or be wilfully guilty of

the provincial government, relating to nuisances, drainage, small-pox, and some other matters; many of which were special acts, or partial in their operation. But though imperfect, they are honorable to the State, and exhibit the care which the Legislature has ever wished to exercise over the people. To them we have been indebted for many excellent sanitary municipal regulations, which have continued until the present time.

*Nuisances.* In 1692 and 1708, acts were passed, providing that "in Boston, Salem, Charlestown, respectively, and other market towns in the province," "slaughter-houses for killing of meat, still-houses, and houses for the trying of tallow, currying and dressing of leather, either with lime, alum, or oil, be assigned by the selectmen to places where it may be least offensive," and prohibited elsewhere; and records were to be kept of such assignment. The provisions of these acts were incorporated into that of June 7, 1785, and then extended to Newburyport, and other towns in the State, in which the selectmen and two justices might judge it to be necessary; and included earthen ware in the list of manufactures to be regulated. A fine of £5 was imposed for a breach of the law, which, by the additional act of March 4, 1800, was fixed at $20. The Revised Statutes modified this act, and extended its provisions to any town in the State, at the option of the selectmen, and included "any trade or employment offensive to the inhabitants, or dangerous to the public health."

*Drainage and Sewerage.* In 1702, an act was passed providing "for appointing commissioners of sewers, for the draining and removing of the banks and obstructions of the passage of waters in rivers, brooks, or ponds that occasion the overflow and drowning of meadows and low lands; and also for the draining and flowing of swamps and other unprofitable grounds, and drying of them." Another act, "for regulating drains and common shores," [sewers,] was passed in 1709, placing them under the direction and control of the selectmen of the town. These provisions were incorporated into the two laws of the

their own death, every such person shall be denied the privilege of being buried in the common burying-place of Christians, but shall be buried in some common highway, where the selectmen of the town where such person did inhabit shall appoint, and a cart-load of stones laid upon the grave as a brand of infamy, and as a warning to others to beware of the like damnable practices." *Ancient Charters and Laws*, p. 187.

State, passed Feb. 26, 1796, and Feb. 20, 1797, and remained in force until their repeal in 1836, when they were reënacted in the modified form of the Revised Statutes.

*Sickness.* Legislation on this subject, principally with reference to the small-pox, has been frequent in the history of the State. As early as 1701, "an act providing in case of sickness," was passed, "for the better preventing the spreading of infection." By this act, when persons "were visited with the plague, small-pox, pestilential or malignant fever, and other contagious sickness, the infection whereof may be communicated to others," the selectmen were empowered, "for the preservation of the inhabitants," to remove such infected persons to separate houses, and to provide "nurses, tendance, and other assistance and necessaries for them, at the charge of the parties themselves, their parents or masters, (if able,) or otherwise at the charge of the town or place whereto they belong." And the sheriff of the county, his deputy, or the constable of the town, were required, under direction of the selectmen, "to impress and take up convenient housing, lodging, nurses, tendance, and other necessaries for the accommodation and relief of the sick." And if a vessel arriving in the province happened "to be visited with the plague, small-pox, pestilential or malignant fever, during the voyage, or to come from any place where such sickness prevailed," they were authorized to prevent all persons belonging to the ship coming on shore, or those on shore having any intercourse with them. This has been the foundation of all the sanitary laws passed since that time. Its provisions were retained and much extended in the great act of June 22, 1797, which was the most important sanitary act passed in the United States, prior to the passage of the Massachusetts registration laws.

The small-pox has often prevailed in the State as an epidemic, and legislation to guard against its effects has been frequent. In 1730, an act was passed, "empowering courts to adjourn and remove from the towns appointed by law for holding courts, to other towns, in cases of sickness by the small-pox." Another act was passed, in 1751, respecting clothing and other goods supposed to be infected, containing almost the

same provisions as were reënacted in 1797, and incorporated into the Revised Statutes in 1836. Other acts respecting the small-pox were passed in 1742, 1757, 1776, 1777, 1792, and 1793. On the 6th of March, 1809, an act was passed, making it the duty of towns to choose a committee to superintend the vaccination of the inhabitants. This excellent law was so modified, improperly as we think, in the Revised Statutes, as to leave it to the discretion of the selectmen, to act or not to act under its authority, as they might choose.

*Insanity.* In 1694, towns were required to provide for the "relief, support, and safety" of persons "naturally wanting of understanding, so as to be uncapable to provide for him or herself, or by the providence of God shall fall into distraction, and become non compos mentis." Acts "for suppressing rogues, vagabonds, common beggars, and other idle and disorderly and lewd persons," were passed in 1758 and 1798, by which justices were empowered to commit insane persons to the house of correction. These acts were repealed in 1834, though some of their bad features are still retained. It seems to us that, unless crime has actually been committed, insane persons should not be treated as criminals, but should be restrained and provided for by some other tribunal than a criminal court.

*Quarantine.* We have already alluded to one law, partially quarantine. In 1700, the masters of ships were required to furnish a list of all passengers to the selectmen of towns, and give security for the support of any "impotent, lame, or infirm person" who might be discharged. At a subsequent period, not exactly known, a hospital was erected on Spectacle Island, by the town of Boston; and, in 1736, an arrangement was made between Boston and the Commonwealth, for a permanent quarantine establishment on Rainsford's Island. No hospital, however, appears to have been erected until some time afterwards. In 1757, "An Act for regulating the Hospital on Rainsford's Island, and further providing in case of sickness," was passed. This act commences, "Whereas a good and convenient house hath been provided at the charge of the province, on the island called Rainsford's Island, for the reception of such persons as shall be visited with any contagious sickness;" and

then follow the general provisions of law on the subject. An additional act was passed in 1758; and in 1799 the whole quarantine regulations were transferred to the Boston Board of Health; and there it rested, as it always should have done, until the Revised Statutes were passed.

*Special Legislation.* The first Board of Health in the State was established in Boston, by a special act of the Legislature, passed February 13, 1799. This first act was, however, repealed, and another, more comprehensive and extended, was passed in its stead, on the 20th of June in the same year. This act contains twenty-five sections, and has since formed the basis of our special legislation. Besides its own provisions, it imposed upon the board all the powers and duties of the general act of June 22, 1797. Additional acts were passed in 1803, 1804, 1806, 1809, and 1810. In the last-named year, the Board of Health were authorized to make rules and regulations for burial grounds, and for the interment of the dead; and under that act, in that year, was commenced the excellent plan of recording the name, age, and disease of every person buried; which records have been continued until the present time. June 20, 1816, a revised act for establishing the Board of Health, drawn by Benjamin Whitman, Esq., was passed, and repealed so much only of the previous acts, as were inconsistent with its provisions. By the city charter, all the powers of the Board of Health were "transferred to and vested in the city council."

Boards of Health have since been established in other places, according to the following statement:—

| *Towns.* | *When Established.* | *History.* |
|---|---|---|
| Boston, | Feb. 13, 1799. | Transferred to City Council, Feb. 23, 1822. |
| Salem, | June 21, 1799. | " " " March 23, 1836. |
| Marblehead, | Feb. 22, 1802. | Still existing in the town. |
| Plymouth, | Feb. 27, 1810. | " " " " |
| Charlestown, | June 12, 1818. | Transferred to City Council, Feb. 22, 1847. |
| Lynn, | June 16, 1821. | " " " April 10, 1850. |
| Cambridge, | March 2, 1828. | " " " March 17, 1846. |

The acts of 1799 and 1816, establishing the Board of Health for Boston, provide, "that all the powers and duties which are given to or required of the selectmen of the town of Boston,

by a law of this Commonwealth passed the 22d of June, 1797, entitled 'an act to prevent the spread of contagious sickness,' and by the several acts in addition thereto, shall be and they hereby are transferred to and made the duty of the Board of Health of the town of Boston, any thing to the contrary notwithstanding." These acts have been models, after which the charters of other boards of health, and the municipal ordinances, rules and regulations to carry them into effect, have been formed. The law of 1816 was principally a modification of that of 1799, and repealed only such parts of it as were inconsistent with its provisions. The former acts were occasioned by the then recent outbreak of two great epidemics in Boston,—the small-pox, and yellow fever, which will presently be noticed. The special acts creating boards of health in Salem, Marblehead, Plymouth, and Charlestown, all refer to the act of 1797 as part of their charters. Those of Lynn and Cambridge do not. The law of 1797, here referred to, was repealed by the Revised Statutes; but neither the special acts, nor any part of them, creating the local boards of health, were repealed; hence the general act of 1797 is in force in Boston, Salem, Marblehead, Plymouth, and Charlestown, but nowhere else!

Such was the history and condition of sanitary legislation, prior to the codification of the laws as they appear in the Revised Statutes. The commissioners who performed this work, say, in a note to their report of the twenty-first chapter, relating to public health, that "several provisions of this chapter are adopted with proper modifications from the statute of 1816, relating to the city of Boston; the general laws being deficient in various details, which seem to be requisite in cases where it shall be deemed expedient to appoint such boards. The provisions of that act, being the result of long experience, will probably be found to be adapted to the wants of other populous places, in which such offices are required."[1]

And in looking at the act itself, as thus modified, it appears that two sections, 47 and 48, were taken from the act of 1785; that nine sections, 35 to 43 inclusive, were taken from the act of 1792, relating to the small-pox; that fifteen sections, 5, 6,

[1] Report of Commissioners, p. 124.

9, 10, 11, 16 to 24 inclusive, and 33, were taken from the act of 1797; that one section, 12, was taken from that of 1801; that two sections, 45 and 46, were taken from that of 1810; and that eighteen sections, 1, 2, 3, 4, 7, 8, 14, 15, and 25 to 32 inclusive, and 34, were taken from that of 1816.

And to what trials of legislation have the Revised Statutes been subjected? In 1837, sections 16 and 40 were repealed, and two others substituted in their places. In 1838, sections 16, 17, 38, 40, 41, 42, 43, and 44, were repealed, (being the second repeal of 16 and 40.) In 1840, the 43d and 44th sections, repealed in 1838, were restored and reënacted. In 1848, the two sections substituted in 1837 for 16 and 40 of the Revised Statutes, were repealed, so far as relates to the small-pox. And, in 1849, sections 10, 11, and 46 (among the most important in the whole act) were repealed, and others, *applicable only to cities, and not to towns*, substituted in their places! And many of the provisions thus repealed are in the act of 1797, and are still in force in Boston, Salem, Marblehead, Plymouth, and Charlestown, though not in other places! All this will appear in the acts whose titles we have referred to in the appendix.

The result of this examination has led us to conclude:—

1. That the present health laws of the State are imperfect in their provisions, and are arranged on an imperfect plan; and that the whole have been rendered more defective by the removal of some of the original parts.

2. That it is difficult, if not impossible, even after wading through many works not easily accessible, to know what the laws really are, or what parts are or are not in force.

3. That they are partial in their application and operation; and, if occasion should require, it is extremely doubtful, now, whether *towns*, not cities, have any authority to enforce them.

4. That, if they could be understood and enforced, they are entirely inadequate to the present condition of society, and the present wants of the age.

It is hardly necessary to remark that, under the operation of these laws, but few facts have been preserved which would illustrate the sanitary history of the people. Records of deaths have been made in some of the towns; and the imperfect ab-

stracts of these records which have been published, relating to Boston, since 1810, under the title of "Bills of Mortality," have been noticed.[1]

The most important laws for ascertaining the facts regarding the sanitary condition of the State, in Massachusetts as in England, are those relating to the registration of births, marriages, and deaths. Before these laws were passed, great defects existed. Efforts to remedy these defects had often been made; and an order was introduced into the Boston city council, March 22, 1838, for the appointment of a committee to consider the subject. But circumstances existed, at that time, which prevented any useful action. After frequent communications with the late Hon. John Pickering, then President of the American Academy of Arts and Sciences, and with the late Drs. Hale and Fisher, active members of the Massachusetts Medical Society, the subject was brought before their respective associations; and hence originated the petitions to the Legislature for a modification of the laws, whose subsequent history has already been noticed.[2] Some facts obtained under these laws will presently be given.

A notice of the *Medical Organization*, the professional efforts, and the means for the cure of disease, which have existed in the State, form a part of the history of the sanitary movement. Previous to the formation of the Massachusetts Medical Society, medicine had been recognized rather as an art than as a science. Little or no public instruction on the subject of medicine had been given. The profession was indeed recognized as distinct, and there had been several physicians of eminence.[3] Clergymen, however, at that early period, frequently

[1] See American Journal of Medical Sciences, for April, 1840; Shattuck's Census and Statistics of Boston, pp. 126–177, and Appendix, pp. 71–95; Curtis's Sanitary Report—Transactions of the American Medical Association, Vol. II, p. 487.

[2] See first, second, and fourth Registration Reports; Senate Document No. 24, for 1848, and House Document No. 65, for 1849.

[3] LAWS IN THE OLD COLONIES. The following acts, relating to the practice of physic, appear among the laws of the old colonies, and are the oldest acts on the subject in the United States. The first was passed in Plymouth, in 1642; and the second in Massachusetts, in 1649:—

1. "If any children or elder persons shall be sent or come from one town to another, to be nursed, schooled, or otherwise educated; or to a physician, or chirurgeon, to be cured of any disease or wound, &c.: if they come to stand in need of relief, they shall be relieved and maintained by the townships whence they came, or were sent from, and not by that township where they are so nursed, educated, or at cure; and in case they come or be sent from any town or place out of this colony, then if the nurse, educator, physician, or chirurgeon, take not sufficient security of the person to be nursed, educated, or cured, to discharge

prescribed for the diseases of their brethren; and although they were not endowed with high attainments in medical science, they were nevertheless qualified for great usefulness in their respective stations. "Altogether unlike the ignorant empirics of the present times, they were actuated by the purest motives, and the highest consideration of benevolence. By their amiable manners, zealous attention, and pious conversation, they endeared themselves to their people; mutual attachments were formed, and the fullest confidence was reposed in their skill." [1]

For the first hundred years in the history of the colonies, midwifery was almost exclusively in the hands of females. The male practitioner was seldom called in, except in difficult cases. Dr. James Lloyd visited London in 1753, and witnessed the practice of some of the eminent physicians there; and, on his return, he commenced the practice himself, and has the credit of being the first male practitioner in this branch of the profession in Massachusetts.[2]

During the revolutionary war, the deficiency in medical knowledge became apparent, and "philanthropic men, in and out of the profession, were desirous that the standard of medical education should be raised, medical information diffused, and means devised to secure to the community a succession of well educated physicians, competent to its wants;" and these deliberations resulted in the formation of the Massachusetts Medical

the township of and from all cost and charge which shall or may come and befall the said township in which he or they is so to be nursed, educated, or cured: then they the said nurse, educator, physician, or chirurgeon, as neglects the same, shall discharge the said township of them themselves." *Plymouth Colony Laws*, p. 72.

2. "Forasmuch as the law of God allows no man to impair the life or limbs of any person, but in a judicial way:

"It is therefore ordered, that no person or persons whatsoever, employed at any time about the bodies of men, women, or children, for preservation of life or health, as chirurgeons, midwives, physicians, or others, presume to exercise or put forth any act contrary to the known approved rules of art, in each mystery and occupation, nor exercise any force, violence or cruelty upon or towards the body of any, whether young or old, (no, not in the most difficult and desperate cases,) without the advice and consent of such as are skilful in the same art, (if such may be had,) or at least of some of the wisest and gravest then present, and consent of the patient or patients, if they be mentis compotes, much less contrary to such advice and consent, upon such severe punishment as the nature of the fact may deserve; which law, nevertheless, is not intended to discourage any from all lawful use of their skill, but rather to encourage and direct them in the right use thereof, and inhibit and restrain the presumptuous arrogancy of such as, through prefidence of their own skill, or any other sinister respects, dare boldly attempt to exercise any violence upon or towards the bodies of young or old, one or other, to the prejudice or hazard of the life or limb of man, woman, or child."—*Ancient Charters and Laws*, p. 76.

[1] Thatcher's Medical Biography, Vol. I, p. 14. In these volumes, the lives of many physicians are noticed.

[2] Communications, Massachusetts Medical Society, Vol. II, p. 243.

Society, which was incorporated Nov. 1, 1781. Their act of incorporation contains this passage:—

"As health is essentially necessary to the happiness of society; and as its preservation or recovery is closely connected with the knowledge of the animal economy, and of the properties and effects of medicines; and as the benefit of medical institutions, formed on liberal principles, and encouraged by the patronage of the law, is universally acknowledged."—"And whereas it is clearly of importance that a just discrimination should be made between such as are duly educated, and properly qualified for the duties of their profession, and those who may ignorantly and wickedly administer medicine, whereby the health and lives of many valuable individuals may be endangered, or perhaps lost to the community: be it enacted," &c.

Additional acts were passed in 1789, 1803, 1818, 1819, 1830, 1834, 1836, (Rev. Stat., p. 214,) and 1850.

By-laws for the regulation of the society have been adopted at various periods, but they have never been enforced very stringently. Cases of expulsion for violations have sometimes, though very rarely, occurred. The influence of the society has, however, been most salutary, in raising the standard of medical education, and in producing a more respectable, more highly educated, and better qualified class of physicians.[1]

The acts of 1818 and 1819 provided as follows:—"No person, entering the practice of physic, or surgery, shall be entitled to the benefit of law for the recovery of any debt or fee accruing for professional services, unless he shall, previously to rendering those services, have been licensed by the officers of the

[1] The following extracts are from the by-laws of the society:—

"XII. Any person engaged in the practice of medicine or surgery in this Commonwealth, who has not received such a medical education as is required; and any one who shall be guilty of practices forbidden to fellows, shall be deemed an irregular practitioner; and it shall be unlawful for any fellow to advise or consult with any such irregular practitioner, or in any way to abet or assist him as a practitioner of medicine or surgery. For any breach of this law, a fellow of this society shall be disqualified for one year from giving his vote at any meeting of the society, or of the district society of which he may be a member. He shall also be liable to the censure and reprimand of the counsellors, and, in aggravated cases, to expulsion.

"XIII. Any person who shall publicly advertise for sale, or otherwise offer, any medicine, the composition of which he keeps a secret, or offers to cure any disease by any such secret medicine, shall be considered an irregular practitioner; and, if a fellow of this society, shall be liable to expulsion, or to such other penalty as the society, at their annual meeting, may think proper to inflict."

Massachusetts Medical Society, or have been graduated a doctor of medicine in Harvard University." The legal advantages of these acts were, however, seldom or never improved; and they were repealed in 1836, at the suggestion of the society. *There is no such thing as a legal* MEDICAL POLICE *existing in the State.* No restriction is laid upon any one in the practice of physic, or in dealing in drugs and medicines. Any one, male or female, learned or ignorant, an honest man or a knave, can assume the name of a physician, and "practice" upon any one, to cure or to kill, as either may happen, without accountability. "It's a free country!" [1]

That the influence of the Massachusetts Medical Society upon the health of the people may be more clearly seen, we have compiled the following account of the *movement of the medical profession in the State*, since its formation:—

| COUNTIES. | FELLOWS OF THE SOCIETY. | | | | Z. B. Adams, 1847. | Physicians in 1850. | Dead in 1840. | Ages known. | Average age. |
|---|---|---|---|---|---|---|---|---|---|
| | 1789. | 1808. | 1826. | 1840. | | | | | |
| Barnstable, - - | 1 | 1 | 2 | 16 | 31 | 34 | 5 | 4 | 78.25 |
| Berkshire, - - | 3 | 8 | 27 | 36 | 70 | 69 | 20 | 10 | 53.60 |
| Bristol, - - | 2 | 4 | 13 | 35 | 72 | 78 | 7 | 4 | 66.25 |
| Dukes, - - | 0 | 0 | 0 | 2 | 3 | 5 | 1 | 0 | - |
| Essex, - - | 9 | 30 | 44 | 86 | 124 | 130 | 42 | 35 | 62.03 |
| Franklin, - - | 1 | 4 | 10 | 19 | 54 | 48 | 9 | 4 | 60.25 |
| Hampden, - - | 3 | 4 | 19 | 17 | 58 | 54 | 13 | 9 | 60.77 |
| Hampshire, - - | 1 | 7 | 12 | 25 | 57 | 59 | 14 | 10 | 66.50 |
| Middlesex, - - | 7 | 15 | 60 | 127 | 184 | 183 | 43 | 30 | 57.73 |
| Nantucket, - - | 0 | 1 | 1 | 3 | 11 | 3 | 1 | 1 | 68 |
| Norfolk, - - | 4 | 11 | 31 | 50 | 82 | 77 | 13 | 12 | 63.92 |
| Plymouth, - - | 3 | 10 | 22 | 34 | 56 | 52 | 19 | 15 | 61.66 |
| Suffolk, - - | 13 | 25 | 60 | 136 | 280 | 261 | 53 | 42 | 53.59 |
| Worcester, - - | 5 | 23 | 55 | 78 | 155 | 163 | 36 | 18 | 61.39 |
| Total, - - | 52 | 143 | 356 | 664 | 1237 | 1216 | 276 | 194 | 60.23 |

The number of Fellows belonging to the society in 1789, 1808, 1826, and 1840, has been ascertained from its publications; in 1847, from a communication from Dr. Z. B. Adams,

[1] The following are the legal requirements of the medical profession in other states:—

"*Maine.* Formerly, none but regularly licensed physicians could collect their dues; several years since, however, the law was repealed, and the field is now open to all.

"*New Hampshire.* The state laws of New Hampshire do not require any license. There are no laws on the subject of medicine.

"*Vermont.* The state laws require no license. A law was passed in 1821, requiring the M. D. or A. B. degree; but it was repealed in 1838.

"*Rhode Island.* 'The legislature has done nothing for the suppression of quackery.' There are no laws on the subject.

in the Transactions of the American Medical Association, (Vol. I, p. 366); the physicians in 1850, from Capen's State Record; and the deaths and ages, previous to 1840, from Dr. Ebenezer Alden, of Randolph.[1]

From the history of the society, it appears that 1139 Fellows, (including 94 honorary members,) joined the society prior to 1840, exclusive of those belonging to Maine before its separation; of whom 664 were then living in the State, 65 had resigned, 105 had removed, and 276 had died.

Since 1840, as far as can be ascertained from the records, 439 Fellows have been admitted, of whom 165 were in Suffolk county. About 65 have resigned or removed, and 125 have died, leaving still connected with the society, 254; which, added to those belonging to it in 1840, make 918, as the present number of Fellows. Capen's State Record gives 1216, which probably includes physicians from other states, who are not connected with the society, and some who are not considered "regular" physicians. The number of regular physicians in the State is estimated at 1100, and the others at 400; besides dentists, and those who devote themselves exclusively to one particular branch, and are called "doctors."

The average annual charges of physicians in the State have been estimated, by intelligent members of the profession, at $800 each, and the actual receipts at $600 each. If this estimate be correct, about $900,000 is paid for medical advice. The amount paid for medicine, including the patent nostrums, is much more. *Two millions of dollars*, at least, are expended annually in the State, for the cure of disease.

The *Medical School* connected with Harvard University was founded in 1783, though the first degree was not conferred until 1788. Degrees were conferred upon 25 persons, prior to

"*Connecticut.* The legislature, several years since, repealed the law requiring a license for the legal collection of fees,—thus virtually licensing all practitioners. The State Medical Society admits to membership only such as have the diploma of M. D., or the legal license.

"*New York.* No restrictions since 1844, when the law was repealed. All persons now have the right to practice, and recover compensation for services."

See Transactions of the American Medical Association, Vol. II, p. 326, where a full account for all the states may be seen. Also, Transactions of the New York State Medical Society, App. to Vol. VI, p. 37. See note, p. 16 of this report.

[1] For a more particular history of the society, and medicine generally, see American Quarterly Register, Vol. XII, p. 358, and Vol. XIII, p. 75. Also, Thatcher's History of Medicine, prefixed to his American Medical Biography.

1800; upon 124, from 1800 to 1820; upon 393, from 1820 to 1840; and upon 259, from 1840 to 1850.

The *Berkshire Medical School*, at Pittsfield, was incorporated in 1823, and probably more than 700 have since graduated.

The *Boylston Medical School*, incorporated in 1847, and the *Tremont Medical School*, formed in 1838, and incorporated in 1850, are located in Boston. These schools are entirely independent of that connected with Harvard University, and they receive students at any time.

It is said, by those who are familiar with the medical schools in Europe and this country, that few places can be found where greater facilities exist for obtaining a thorough education than in Boston; whether we consider the high character of the scientific instruction given, the opportunities of witnessing the practical application of those principles, the ease with which subjects are obtained, or the expenses incurred.

Schools for instruction in other modes of practice have also been formed in the State.

Various medical associations for improvement in medical science and medical practice; and public hospitals, and other public institutions for the cure of disease, are to be found in the State, in as good condition as in any other part of the world.

The *Medical Literature* of the State has had considerable influence upon the health of the inhabitants. It was stated in 1810, as a remarkable fact, that "*twenty-seven* foreign medical books had been republished in Massachusetts!"[1]

The *Medical Repository*, the first periodical work devoted to medicine in the United States, was commenced in New York in 1797. The *New England Journal of Medicine and Surgery* was commenced in Boston, in 1812, and continued until 1827. The *Boston Medical Intelligencer*, edited by Dr. J. V. C. Smith, was commenced in 1822, and was published weekly until 1828. The two latter works were united; and, on the 19th of February, 1828, the first number of the *Boston Medical and Surgical Journal* was issued in their stead, which has since been continued, under the editorial charge of Dr. Smith. The

[1] Communications, Massachusetts Medical Society, Vol. II, p. 265. See New York Journal of Medicine, for March, 1850.

*Boston Medical Magazine*, commenced in 1831, and the *New England Quarterly Journal of Medicine and Surgery*, commenced in 1842, were each discontinued after the first volume was published.

These periodical publications, and several separate works and essays, contain some facts concerning the prevalence of epidemic and other diseases in Massachusetts, though they are very imperfect and disconnected. They, however, show the great value of more complete and thorough investigation and knowledge. The sanitary history and condition of the State should be known; for this knowledge might suggest the remedial measures proper to be adopted; and we deem it proper, in this connection, to refer briefly to some of the facts which we have gleaned on the subject.

In 1618, two years before our forefathers arrived at Plymouth, there appeared, among the Indians of the country, one of the most remarkable epidemics of which we have an account. So fatal was the pestilence, that the warriors "were reduced from nine thousand to a few hundreds." The Massachusetts tribe alone was supposed to have lost 2,700 out of 3,000 persons. In 1621, many places which had been populous Indian villages were found "all deserted—all dead." The bones of those who perished were lying unburied. Hutchinson says some have supposed the disease to have been the small-pox; but from the Indian account we might infer otherwise. Gookin says, "What the disease was which so generally and mortally swept them away, I cannot learn. I have discoursed with some old Indians that were then youths, who say that the bodies all over were exceeding yellow, (describing it by a yellow garment they showed me,) both before they died, and afterwards." It has been inferred from this that it was the yellow fever; but whether correctly or not seems undetermined.[1]

1621. At the commencement of the settlement of Plymouth, our venerable ancestors suffered severely from sickness. At the end of three months after their arrival, fifty-five only survived of the one hundred and one who came in the Mayflower. "The sick were destitute of almost all the comforts which

[1] Mass. Historical Collection, Vol. I, p. 143; Hutchinson's Hist. Mass., Vol. I, p. 34.

their miserable condition rendered indispensable. Their sufferings were increased by the want of well persons to perform the duties among the sick; there being, at one time, not more than six or seven persons in tolerable health."[1]

1631. The small-pox, first breaking out at Saugus, spread from Narraganset to Piscataqua, and westward to Connecticut River, and swept off entire villages of the Indians. When Increase Mather wrote, there were living some old residents, who on that occasion helped to bury whole families of the natives at the same time.

1633. At the close of this year the small-pox again broke out, and made great devastations among the unfortunate native races of Massachusetts. Chickatabut, the great sachem of the tribe, was among the victims.

1634. Plymouth was again visited with a mortal sickness, of which twenty men, women and children died; among whom was that most excellent and pious man, Dr. Samuel Fuller, the first physician of New England. "It must have been occasioned by a fever of domestic origin, as the colony had at that time no intercourse with foreign countries, except England."

1639 was sickly in the colonies, and a general fast was observed on account of the small-pox and fevers.[2]

1645. Great sickness prevailed among the Indians at Martha's Vineyard. Few escaped.

1647. A malignant fever prevailed, "occasioned by the excessive heat of summer;" and an epidemic influenza passed through the whole country, and universally affected the colonists and natives; but it was not very mortal: "wherein a special providence of God appeared, for not a family nor but a few persons escaping it; our hay and corn had to be lost for want of help; but such was the mercy of God to his people, as few died—not above forty or fifty in the Massachusetts, and near as many at Connecticut."[3]

1654. A general fast was appointed, on account of "the mortality which had been among the people of Massachusetts:" what the disease was does not appear.

[1] Thatcher's Hist. Plymouth, p. 32. [2] Webster, Vol. 1, p. 187.
[3] Winthrop's Journal, II, p. 310.

1655. Another epidemic distemper, similar to that of 1647, passed through New England. It began in June, and few persons escaped. Among those who died was Rev. Nathaniel Rogers, of Ipswich.

1658. Sickness and mortality throughout New England.

1659. Croup is first mentioned in the annals of the country. Other malignant diseases also prevailed about this time. Thirty children died in Rowley. A day of thanksgiving was appointed in Connecticut, for the "abatement of the sickness in the country, and a supply of rain in time of drought."

1668 was a year of great sickness, though few facts are preserved concerning its extent. In New York a public fast was held on account of it.

1677. Small-pox was very fatal in Charlestown. The records state that thirty-one died of the disease, one of whom was the Rev. Thomas Shepard.

1678. Small-pox in Boston; but we have seen no account of its victims.[1] Seven or eight hundred are said to have died of it in the State. About this time "the seasons were unfavorable, and the fruits blasted, while malignant diseases prevailed among the people. The sickness and bad seasons were attributed by our pious ancestors to the irreligion of the times, and to their disuse of fasting; and a meeting was held to investigate the causes of God's judgments, and to propose a plan of reformation."[2]

1697–8. The influenza began in November, and prevailed until February, in Massachusetts. Whole families and whole towns were seized nearly at the same time. In the same year, a "mortal disease prevailed so much, in Fairfield, Connecticut, that well persons were not found to take care of the sick and bury the dead. Seventy died in three months, out of a population of less than one thousand. At the same time, a dreadful mortality occurred in Dover, New Hampshire. Rev. Dr. Mather said, in a sermon preached in Boston, in 1698: "The small-pox has four times been a great plague among us. Often had one hundred bills, desiring prayers for the sick, been read in one day, in one of our assemblies. In one twelvemonth about

[1] Felt: Annals of Salem, Vol. II, p. 423. [2] Webster, Vol. I, p. 203.

one thousand of our neighbors have been carried to their long home."

1702. Small-pox in Boston: two hundred and thirteen, exclusive of blacks, died; about 4.4 per cent. of the inhabitants. It began in June, 1702, but the first death was in August of that year. In September, it became very mortal, and was attended with a fever resembling the scarlet fever. In October many died. The General Court sat at Cambridge, and they passed the first law for protection against the small-pox already noticed. It began to subside in February, 1703.[1]

1715. Plymouth lost forty of its inhabitants by a malignant disease, but no particulars are known.[2]

1717–1718. From November to February, "a very malignant and mortal distemper" prevailed in Concord. Twenty-seven persons, chiefly heads of families, died; many very suddenly. The disease is not named in the record.[3] A fast was held in Danvers, February 13, on account of a fatal disease that prevailed at the village, which threatened at one time to sweep away the entire population.[4]

1721. The small-pox again made its appearance in Boston, with more than its usual ravages and horrors, and was the occasion of one of the most remarkable and important events in the sanitary history of the State. *Inoculation with the virus of small-pox*, as a substitute for the disease taken in the natural way,—to disarm it of its malignity, and to reduce it to comparative mildness and safety,—was first introduced this year. Rev. Dr. Cotton Mather, having read, in the Transactions of the Royal Society of London, favorable accounts of the operation, recommended a trial of it to the physicians of Boston; but all of them unanimously and decidedly opposed it, excepting Dr. Zabdiel Boylston. That enlightened and upright man became forcibly impressed with the importance of the discovery; and, to show his confidence in it, made the first experiment on his own son, thirteen years of age, and two colored persons in his family, one two, and the other thirty-six years old; and all with complete success. Subsequently, others were inoculated.

[1] Webster, I, p. 216.
[2] Ibid, I, p. 224.
[3] Shattuck's History of Concord, p. 223.
[4] History of Danvers, p. 42.

The controversies which accompanied the introduction of this useful measure, were most disreputable. Many persons were struck with horror; some thought it was sinning against God, thus to interfere with the disease; and others that, if any patients died, Dr. Boylston ought to be treated as a murderer. Pamphlets and newspaper articles frequently appeared; and the populace, chiefly led on by the inflammatory conduct of the physicians, at the head of whom was Dr. Douglass, became so exceedingly enraged, that Dr. Boylston was frequently insulted in the streets, and forced to secrete himself for more than fourteen days, and afterwards to visit his patients only at midnight. His family were hardly safe in his own house. Passion and prejudice on the one side, however, were met with decision and success on the other; and inoculation soon triumphed over opposition, and became general.[1]

During this epidemic, 5,759 persons,—more than half the inhabitants,—had the disease in the natural way, of whom 844 died. Two hundred and forty-seven were inoculated by Dr. Boylston, and thirty-nine by other physicians, of whom six only died. This was one death in seven of those not inoculated, and one in forty-seven of those inoculated, showing decidedly the advantages of inoculation.

1735. On the 20th of May, in this year, scarlatina, or putrid sore throat, appeared in Kingston, New Hampshire, and became one of the most dreadful epidemics which have ever desolated

[1] Those who may wish to investigate this curious subject are referred to a volume of these pamphlets, preserved in the library of the Massachusetts Historical Society; and to Thatcher's American Medical Biography, Vol. I, pp. 20, 185, 255, where will be found notices of Drs. Boylston and Douglass.

Douglass had his prejudices and eccentricities. In his "Summary," published in 1753, (II, p. 351,) he wrote as follows, of the medical profession:—"In general, the physical practice in our colonies is so perniciously bad, that excepting in surgery, and some very acute cases, it is better to let nature, under a proper regimen, take her course, than to trust to the honesty and sagacity of the practitioner: our American practitioners are so rash and officious, the saying in the Apocrypha (38 and 15) may with much propriety be applied to them—*'He that sinneth before his Maker, let him fall into the hands of the physician.'* Frequently, there is more danger from the physician than from the distemper. Our practitioners deal much in quackery and quackish medicines, as requiring no labor of thought or composition, and highly recommended in London quack bills, (in which all the reading of many of our practitioners consists,) inadvertently encouraged by patents for the benefit of certain fees to some offices, but to the very great damage of the subject." "In the most trifling cases they use a routine of practice. When I first arrived in New England, I asked a most noted facetious practitioner what was their general method of practice; he told me their practice was very uniform: bleeding, vomiting, blistering, purging, anodynes, &c.; if the illness continued, there was *repetendi*, and finally *murderandi;* nature was never to be consulted, or allowed to have any concern in the affair. What Sydenham well observes, is the case with our practitioners: *Æger nimia medici diligentia ad plures migrat.*"

New England. The first person seized was a child, which died in three days. In a week, three other children, in a family four miles distant, were taken, and died on the third day afterwards. Of the first forty, none recovered. In August, it appeared in Exeter, and soon after spread into other places. In fourteen towns in New Hampshire, 984,—chiefly persons under twenty years of age,—died, between June, 1735, and July, 1736. Of those taken sick, in some places one in three, in others one in four, and in scarcely any less than one in six, died.

In Boston, the first case occurred on the 20th of August. Subsequently the disease spread through the town. Dr. Douglass says, in the eight previous years of medium health, about 263 persons in Boston, on the average, died in seven and a half months,—October to May 18; but in this year, 382, or 114 above the usual number, died. About 4,000, or one-quarter of the inhabitants, had the disease, of whom one in thirty-five died.

In Newbury, it began in September, and, before February, 81 persons died. Thomas Smith lost two children; John Boynton four,—all buried in one grave,—two on Saturday, and two on Sunday. Benjamin Knight had three buried in one grave. In Byfield, between October, 1735, and October, 1736, 104 died; supposed to have been about one-seventh of the population. Thirteen families buried all their children. In one family eight died; four of them were buried at one time, in the same grave. In Rowley, 190 died; "probably about one-eighth of the whole town." In 1736, in Andover, 35 died; 31 in 1737, and 123 in 1738; mostly children and young people. "Capt. James Stevens, his wife, and three children, died within a month. Nine families lost three children from each in a few days. Four families lost four children from each in less than fourteen days. John Wilson lost eight children in seven days. In 1739, fourteen children died in four families in a few days. Ebenezer Lovejoy lost three children in one day, and another in five days after. Joshua Stevens lost three children in four days. The disease raged most from August to December." In Haverhill, 199 died, from November, 1735, to October, 1737. What is here exhibited was to be seen in very many other

towns in the State. It was indeed the "*plague* among children."[1]

1740–1744 was a sickly period. Scarlatina prevailed in Massachusetts. In 1742 a destructive fever prevailed in Holliston. Rev. Mr. Stone, the minister, and fourteen of his congregation, died. In 1753, fourteen perished also, by a fever, in that town.

From 1745 to 1749, several sickly seasons occurred; but we have seen no definite account of them, which would exhibit their extent.

1752. Small-pox in Boston: 7,669 cases occurred,—5,545 in the natural way, and 2,124 by inoculation,—in a population of 15,684, of whom 569 died.

1755. An alarming fever appeared in Pepperell, and spread to some of the neighboring towns, during this and the three subsequent years. From its origin and great mortality, it acquired the popular name of the *Pepperell Fever*. Physicians called it a "*putrid malignant nervous fever;*" probably the same as a severe form of the typhus. One hundred and eighty persons were sick, from August 5 to the last of October, 1756, of whom eighteen died. September 16 was kept as a day of fasting and prayer; and December 13 as a day of thanksgiving, when the sickness seemed entirely removed. Two hundred and nineteen persons were sick, from July 1 to October 15, 1757, of whom twenty-five died,—seventeen heads of families. Ninety-six persons were sick, from August 1 to October 15, 1758, of whom eleven died,—of which number seven were heads of families. The population of the town was then about seven hundred. January 3, 1760, was set apart, by Rev. Mr. Emerson and his people, as a day of thanksgiving, "to commemorate the goodness of God to them the past year, especially in the removal of sickness, and the return of so many soldiers from the army." The sermon preached on the occasion was printed. "In the four years," says Mr. Emerson, "there were above 540 persons sick; 103 died, of whom 16 were soldiers

[1] See Douglass' History of the Epidemic. This tract was republished in the New England Journal of Medicine, Vol. XIV, for 1825, pp. 1–13. See also Coffin's History of Newbury, pp. 204, 205; Gage's History of Rowley, p. 432; Abbot's History of Andover, p. 182; New Hampshire Historical Collection, Vol. V, p. 20; Webster's History of Epidemics, Vol. I, p. 233; Rev. Messrs. Fitch and Brown's account.

from home, or just after their return; no less than 48 heads of families; 64 grown persons. How great was our distress for two years, especially in the height of the sickness, and we, notwithstanding, obliged to find our quota for the war! I know not that we were eased more than a single man, excepting the time of the general alarm, when Fort William Henry was besieged, in 1757, when our proportion was above twenty men, at which time there were not so many able to bear arms in the place, besides those who were necessarily taken up in attending on the sick in their own families, the field officers were so good as not to call for any. One of the years, there were near two hundred confined at the same time. Your pastor at the point of death, and then confined from the house of God for four months. And of this large number who have been sick, I know not of ten persons who have been visited by the same distemper twice. Nor should we forget the bounty we received by order of authority, namely, fifty pounds, to be distributed amongst the greatest sufferers." The cause of this Pepperell fever was thought to be the miasma arising from decayed vegetable matter. The swamp or meadow of John Shattuck, near Henry Jewett's, had been overgrown with bushes and various vegetables; and, in order to kill them, and bring the land into a state of cultivation, a dam was built, and the swamp overflowed with water. When the water had been drawn off, and the vegetable matter exposed to a summer's sun, the stench was very offensive, and extended perceptibly for several miles around." [1]

1763. "In August, the Indians on Nantucket were attacked by a bilious plague; and, between that time and the February following, their number was reduced from 358 to 136. Of 258 who were affected, 36 only recovered." The Indians on Martha's Vineyard suffered from the same fever. Not a family escaped. Of 52 attacked, 39 died. It was confined in both places to the Indians, and none but those of full-blood died! [2]

1764 to 1780. During this period there were many years of sickness, but we have few facts preserved to show its extent.

[1] Butler's History of Groton, p. 350. See also Holmes's Prize Dissertation, p. 113.
[2] Webster, Vol. I, p. 252.

Throat distemper and small-pox prevailed in 1764. In Salem, 44 died of the dysentery, in 1769; 56 of fever, in 1771; 51 of dysentery, 29 of fever, and 17 of small-pox, in 1773. Dysentery was very prevalent in 1775, in various places. In Concord about forty died. In the Andover South Parish about 200 were sick, and 56 died. Small-pox occurred in 1777–8, in Boston, and many of the country towns. Rowley "established a smoke house, in which they required all persons and baggage from Boston to take a smoking."

In 1780 a malignant typhus appeared in Boston, having been introduced by the Alliance frigate. Many were sick, and several died.

1792. This was the memorable small-pox year in Massachusetts. On its appearance in Boston, the inhabitants were greatly alarmed. "The whole town was inoculated in the course of three days, owing to the infatuation of the inhabitants with respect to the danger of infection, founded on a preposterous notion that so soon as any person had been inoculated the whole neighborhood was endangered. Those whose circumstances admitted had generally sent their children to the neighboring hospitals for inoculation. Those which remained were, therefore, generally in low circumstances. Whole families were often crowded together in single rooms, where fires were constantly kept up for the purposes of cooking, and the patients were destitute of most of the comforts of life, with very little personal attendance, from the disproportion of nurses to the numbers of the sick.

"The consequences which ensued constituted a scene of confusion and wretchedness which no one, who was a witness of it, could have viewed without horror and commiseration. It is to be hoped, for the cause of humanity, that the inhabitants of Boston will never again experience this calamity; as they have it now in their power, by embracing the means which heaven has put into their hands in the vaccine inoculation, to secure themselves forever from its desolating ravages." [1]

Two hundred and thirty-two took the disease in the natural way, of whom 33 died; and 8,114 by inoculation, of whom

[1] Communications, Massachusetts Medical Society, Vol. II, p. 482.

165 died. The population of the town was then 19,484. Of these, 10,655 had previously had the disease, 262 removed out of town, and 221 only, who remained, liable to the disease, escaped. The following table exhibits the cases by small-pox at the different times of its appearance in Boston :—

| Year. | Cases. | Dths. | Ratio per 100 of the population. | | Natural. | | | Inoculated. | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Sick. | Died. | Cases. | Deaths. | Ratio per cent. | Cases. | Dths. | Ratio per cent. |
| 1721 | 6006 | 850 | 54.6 | 7.7 | 5759 | 844 | 14.8 | 247 | 6 | 2.4 |
| 1730 | 4000 | 500 | 26.6 | 3.3 | 3600 | 488 | 13.5 | 400 | 12 | 3.0 |
| 1752 | 7669 | 569 | 48.9 | 3.6 | 5545 | 539 | 9.7 | 2124 | 30 | 1.7 |
| 1764 | 5646 | 170 | 36.4 | 1.1 | 669 | 124 | 18.5 | 4977 | 46 | .9 |
| 1776 | 5292 | 57 | 44.1 | 1.0 | 304 | 29 | 9.5 | 4988 | 18 | .5 |
| 1778 | 2243 | 61 | 16.6 | .4 | 122 | 42 | 34.4 | 2121 | 29 | .9 |
| 1792 | 8346 | 198 | 46.0 | 1.0 | 232 | 33 | 14.2 | 8114 | 165 | 1.8 |

In Charlestown, in September and October, 1,352 were inoculated, of whom nine died. Twelve took the disease the natural way, of whom three died. Eight hundred and seventy-nine were inhabitants ; the others belonged to the neighboring towns, and came in to be inoculated.[1]

In Concord, a hospital was fitted up, where 130 persons were inoculated. Some took the disease in the natural way. Ten died,—two had the disease by inoculation, and eight by contagion,—and they were all buried in a separate burial ground.[2]

In Framingham, it appeared in this and the next year. Mr. Barry, in his valuable history of that town, says : " In September, 1792, according to the records, ' it having been proposed by the physicians of the town to receive permission to *inoculate with the small-pox*,' the town voted ' not to have the small-pox in town, by inoculation, nor any other way, if it can be prevented.' May, 1793 : ' Voted, that the selectmen be a committee to prosecute any person that shall spread the small-pox, by inoculation, or any other way.' At the same time, the town granted £30 to assist the sick, and appointed a committee of distribution. A hospital was provided at the house of Mr. George Pratt. The disease was introduced into the town by

[1] Medical Repository, Vol. II, p. 10. [2] Shattuck's History of Concord, p. 224.

one David Butler, who came to Framingham from Peterborough, and falling sick with the disease, his nurses, to the number of seventeen, took the infection, and five persons besides Butler died."

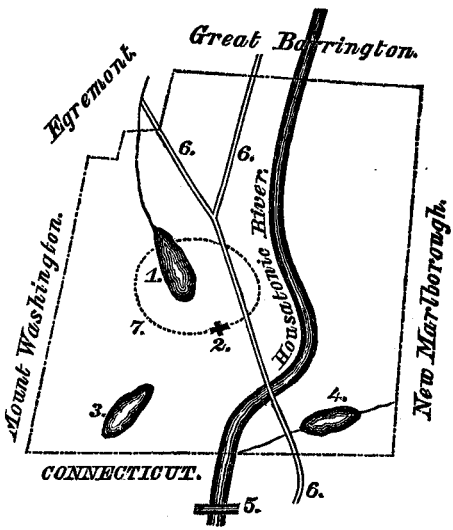
In Scituate, a small-pox hospital was opened, but it did not restrain the disease. Twelve died, in different parts of the town. "An action was commenced against the physicians, for a breach of bond for faithful discharge of duty, &c.; but after the panic which had seized the people was a little calmed, the action was withdrawn." [1]

1796. This was a very sickly year. In Boston, a very malignant typhus appeared on the 25th of August; and between that time and December many were sick, and thirty died. It created great alarm; some were buried in the night. Dr. John Warren, who wrote an account of it, says that the physicians were unanimous in the opinion that it originated from local causes.[2] "A very great portion of those taken sick were situated near extensive flats, particularly about the easterly, southeasterly, and westerly skirts of the town. The place called Oliver's Dock, where the disease was most prevalent, was exposed to exhalations from foul substances lodged about the wharves and docks of that quarter, with buildings so constructed as to admit of but very imperfect ventilation, and with large numbers of inhabitants crowded together in a small space." The following prophetic language proves that the writer then well understood the causes of disease, which have been, in recent years, brought so fully before the public: "That it originated from noxious substances, exhaled into the atmosphere from putrifying animal or vegetable matter, or both, is extremely probable, from the places in which it was most prevalent; and that a confined situation, or filthy state of the streets, alleys, and by-places of the town, will, as it becomes more populous, rents higher, and consequently the poor more closely crowded together, further expose us to the danger of such diseases, is a serious truth, which may, perhaps, in some future day, be too fatally evinced." [3]

[1] Deane's History of Scituate, p. 113.
[2] Communications, Massachusetts Medical Society, Vol II, p. 445.
[3] New York Medical Repository, Vol. I, p. 139, 140.

In this year, also, a very malignant dysentery and bilious fever appeared in Sheffield. It was confined principally to a section of the town not over one and a half miles in diameter,—in the vicinity of a pond known as Hubbard's Pond,—containing about 100 families, or 600 inhabitants. Of these, over 300 were sick, and 44 died; 12 adults, and 32 children. Among 150 who lived near the pond, on the southeasterly side, less than 10 escaped. Of those on the westerly side, about 50 were affected.

The cause of this remarkable sickness, and others of similar character, which that town suffered in other years, was attributed to this pond. A dam was built at the outlet, and, at times of high water, a large tract of land was overflowed. In dry seasons the water was drawn off, and large quantities of decomposing vegetable matter were exposed to the action of the sun, which produced a poisonous exhalation, or *malaria*, which affected nearly all who inhaled it. The accompanying cut will show the situation of this pond.[1]




1. Hubbard's Pond, the principal source of malaria. 2. Meetinghouse. 3. Bush's Pond. 4. Ashley's. 5. Dam across the river in Connecticut. 6. Roads. 7. Dotted line showing the space occupied by the endemic of 1796, and within which space it has occurred sporadically since.

1798. The yellow fever appeared in Boston, June 17, in a family living on Stoddard's wharf. Of eight persons in the family, five had the disease, of whom two died. It spread to Long Wharf, and in July to Fort Hill. On the southeast and

[1] Dr. William Buel, of Litchfield, Conn., communicated to the New York Medical Repository (Vol. I, p. 453,) an account of the sickness in 1796; and to the Massachusetts Medical Society, in 1835, a more general description of the sanitary condition of the Housatonic Valley. Large parts of these papers were published by Dr. O. W. Holmes, present Dean of the Medical Faculty of Harvard University, in his valuable Prize Dissertation on Intermittent Fever, pp. 60–81. We are indebted to this work for several valuable facts, and also for the above illustration.

south side of the hill, scarcely a family who resided below the summit escaped; one family lost five out of six. And probably the greatest part of the inhabitants in that part of the town would have fallen victims to the disease, if they had not removed into the country. In August, September, and October, it spread to the northern and western parts of the town. The number sick was not ascertained. Dr. Rand, who wrote a particular account of the epidemic, says, of 103 patients he lost 11. Whether the general proportion was the same, does not appear. He conjectured that 8,000 inhabitants removed into the country. The number who died, between June 23 and October 22, was stated by Dr. Rand at 145; by Dr. Brown at 250, and he said, "I believe that 300 is not above the real amount." The disease was supposed to have been of domestic origin, and was attributed to the filthy condition of the streets and docks, and to decayed animal and vegetable matter. The N. Y. Med. Repository contains several articles on the subject.[1]

In Newburyport, the yellow fever appeared in June, and between that time and the 16th of October, about forty persons died, principally on the fourth, fifth, sixth, or seventh day of the attack. It excited great alarm.[2]

1800. The question whether overflowing lands for mill-ponds or other purposes, generated a malaria which was unfavorable to health, was much discussed about this time, especially by the people in the westerly part of Massachusetts, and in Connecticut. As it is a question at all times of great importance, it has seemed proper to gather up some of the facts which were elicited at that time.[3] We have already described its effect in Sheffield.

[1] See Vol. II, pp. 212, 333, 390, 466.

[2] Medical Repository, Vol. I, p. 504; Coffin's History of Newbury, p. 270.

[3] We insert the following "Brief Account of a Trial at Law, in which the influence of Water, raised by a Mill-Dam, on the health of the inhabitants in the neighborhood, was considered. By Hon. David Daggett":—

"Before the Superior Court, held at Litchfield, on the fourth Tuesday of January, 1800, was tried an action of trespass, instituted by Joseph Ruggles, of New Milford, against Elijah Boardman, and others, inhabitants of New Milford.

"The claim on the part of the plaintiff was, that the defendants, in January, 1799, destroyed a part of his mill-dam, erected across the Housatonic River, and nearly opposite the most compact part of the town. The defendants acknowledged that they had injured the dam in manner as alleged, and justified on the ground that the dam was a public nuisance, in that it was the cause of a distressing sickness which had for several years visited New Milford. It was agreed that a dam had stood at or near the place of the present dam for about sixty years past; and that the dam complained of had been, by the plaintiff, in July and August, 1796, raised about ten inches. It was also agreed that a bilious remitting fever, and the fever and ague, had raged with great virulence in the vicinity of this dam, in the years 1796-7-8 and 9. The great question, therefore, in the case was, whether the raising of the

"The Housatonic is a stream of two or three hundred yards in width, running near the western border of the States of Massachusetts and Connecticut, and emptying into Long Island Sound. This stream, for thirty or forty miles above Canaan Falls, meanders through a valley of from one to five or six miles in width, of alluvial formation. Its course is serpentine, and, from the circumstance of the region being nearly of a dead level, its current is ordinarily very sluggish. It is very liable to be so swollen by heavy rains as to overflow its banks, and extensively inundate the adjacent flats. Such an inundation almost uniformly succeeds the thawing of the snow in the spring, and not unfrequently occurs at all times in the year. From the frequent occurrence of new channels, occasioned by the abrasion of its alluvial banks on one shore, and deposits on the other, new channels are constantly forming, leaving beds of the old one isolated reservoirs of stagnant water, charged with copious deposits of decaying vegetable substances floated into

dam in 1796 was the *sine qua non* of the disease? A variety of testimony was produced by the parties, tending to convince the court and jury of the truth of the affirmative and negative of this question. It was proved that, in each of the years above mentioned, an unusual sickness had prevailed; that the whole number afflicted with the bilious fever was about 300; that this fever commonly began in July, and ceased in October; that the fever and ague had also been prevalent in the period aforesaid, but was not confined to place or season. It was also proved that there were upwards of fifty acres of low, marshy ground, on the west side of the river, opposite the town; that there was, in July and August, much stagnant water in and about those marshes; and it was contended (though the fact was doubtful) that the waters in and about those sunken places were materially affected by the raising of the dam. To prove that this state of the water, &c., might and probably would produce the fever, the opinion of physicians, and the existence of similar facts in other places, were resorted to.

"It was generally agreed by the medical gentlemen, that the bilious remitting fever, and fever and ague, of our country, are produced by marsh effluvia; that this effluvia is caused by animal and vegetable putrefaction; that the action of the sun on vegetables or animals, upon the receding of waters from them, frequently causes this putrefaction; and that the months of July and August are seasons peculiarly favorable for the production of this effluvia, and its operation upon the human constitution. It was also agreed that water, though stagnant, does not become dangerous till it is so fetid as to offend the senses; and that while vegetables and animals are covered with running water, they are innoxious. Of the physicians who had viewed this dam, and the mill-pond made thereby, with the circumstances and situation of the town, some were of the opinion that it was the cause of the sickness, while others doubted or disbelieved it. It was proved that the raising of the waters by mill-dams, in Salisbury, Colebrook, Roxbury, and in various places in the States of Massachusetts, Vermont, New York, and Pennsylvania, had been followed with fevers of the same type with that at New Milford. It was testified by a respectable physician, that he had visited a family in Kent, living on one of the highest hills, and that several persons in the house were severely afflicted with a bilious fever; that on examination he discovered a small pond, nearly dry, in which there was a great quantity of dead fish, producing a very loathsome stench; that the pond was speedily covered with fresh earth, and health was restored.

"It was contended by the plaintiff, that raising the dam would not be injurious, unless thereby more ground was overflowed from which effluvia would arise, and this was denied, since the water was now kept within the well-defined banks of the river; that the situation of the town was favorable to disease, being circumscribed by high hills, and consequently subjected to a bad state of air; and that there were causes sufficient, without resorting to the dam, to account for the fever. It was proved that, in the year 1796, as early as the 20th of July, there were many cases of the bilious fever, strongly marked; and that, at that time, the dam was not raised or altered from its usual height; that the same fever had existed in many preceding years, from 1782; that in 1799, after the destruction of the dam complained

them by successive inundations, being thus rendered sources of permanent deleterious exhalation.

"Situations circumstanced like those above described have been from time immemorial recognized as originating gaseous matter, having an agency in the production of intermittent fever and its kindred diseases. And although it is not cognizable to any of the senses, the existence of such an agent may be considered as indubitable, as, where such a state of things is found to exist, there a specific class of diseases is developed; and where that, or something analogous, does not exist, none of that class of diseases are to be found.

"Mill-dams on the Housatonic and its tributary streams, by forcing the water, for miles above their location, into low grounds, marshes, and coves, and thereby producing macerating reservoirs of vegetable substance, produce foci of pestiferous exhalations, to which intermittents, in all their grades and varieties, have been obviously traceable." [1]

of, and while it stood with the water at its ancient level, the same fever raged, though with less malignancy, and in situations more remote from the mill-pond. These were urged as sufficient to encounter the presumption arising from the facts previously stated.

"It was also proved that, in 1757, a malignant fever (as it was then denominated) raged, to the destruction of about forty inhabitants; that in 1777 the dysentery prevailed, said to have been brought from the army, and that the fever and ague had always been a disease of New Milford; that the towns through which the Housatonic River runs, have been frequently visited with bilious fevers, and that, too, where no mill-dams could be resorted to as the causes.

"The physicians concurred in opinion, that persons are seldom attacked with this fever more than once during an epidemic, but that the fever and ague frequently visits the patient in the spring or summer following. They also agreed, unanimously, that from 1793 or 4, fevers have been more frequent and malignant than in any preceding years, excepting that in the last season there appeared an abatement in the number of cases and violence of the disease.

"It was proved that the same disease with the one under consideration had prevailed in many places, in this and the States of New York and Massachusetts, within the last five years, where no mill-dams or ponds could have operated,—on the most elevated hills, and in situations heretofore deemed the most healthy; that in Great Barrington, and West Stockbridge, the disease appeared remote from the ponds, while the people in the vicinity of them enjoyed usual health. A respectable physician, from Sheffield, gave an account of a very distressing fever, which had prevailed there since 1795. That a mill-dam was erected in 1787, to which it was by many ascribed; yet he declared that, from 1787 to 1795, great health prevailed, though the dam, during that period, was as high as it has been since. He also said that, during the spring of 1799, the dam was lowered, and that the disease, the summer following, was much more mild.

"It was admitted that the exposing of vegetables or animals, or other substances capable of being reduced to sudden putrefaction, to the sun, by drawing off water, draining ponds, or clearing up low grounds, tended to produce disease: but certainty, or even connection, as to particular instances in which this consequence had followed, seemed scarcely attainable.

"It was obvious to all the hearers of this trial, that the more proof, the more doubt, and that the question grew perplexed by investigation. And so fully were the court and jury impressed with this idea, that they decided in favor of the owner of the dam, and gave damages accordingly; saying that they could not find it proved a nuisance."—*Memoirs of the Connecticut Academy of Arts and Sciences*, Vol. I, p. 131.

It is not strange that the court came to this decision. Sufficient observations had not then been made, with exactness, to afford the means of deciding the question intelligently; and especially in opposition to the wishes of interested parties. It is presumed that the opinions of physicians were formed from general information, not from exact facts.

[1] Holmes's Prize Essay, p. 46.

"That the stagnant water in Sheffield," says Dr. Buel, "and the sickness which prevailed there in 1796, already mentioned, and the other late sickly years, stand in the relation of cause and effect, is, I think, a position which no person, capable of reasoning, can withhold his assent to, after admitting and candidly considering the facts which I have stated. I am sensible that new facts were not wanting to confirm a belief, among physicians and philosophers, that marsh exhalations are a poison which most infallibly produces what are called bilious fevers. But, however astonishing it may appear, it is a fact, that many of the people who dwell in the vicinity of the stagnant waters of this town, and even those who have been the greatest sufferers in the several sickly years, disbelieve the local origin of their misfortunes, and strongly oppose all attempts to remove or lessen the force of their cause." [1]

"Near the village of Pittsfield, between forty and fifty years ago, a mill-dam was erected, which caused the water to *set back*, and cover over more than one hundred acres of land, then clothed with its native forest trees of soft maple, alders, red ash, and other timber and shrubs peculiar to low alluvial lands upon the streams. Soon afterwards all the timber perished; then commenced bilious fevers, and the fever and ague, as it was called. It was very sickly; many died, all were alarmed. The owner of the mill was prosecuted, and the dam destroyed. There have been no indigenous cases of intermittent within my residence here, say forty years. The sickness above mentioned ceased soon after the destruction of the mill-dam." [2]

Dr. Charles Seeger has stated that, "in 1792, when a company built the South Hadley Canal, between eight and ten miles below the centre of Northampton, to convey boats and rafts round the falls in Connecticut River, a dam was made at the head of the falls, eleven feet high, across the river, which raised the water for ten miles above about four feet higher than its common level. In consequence of this, the spring freshets flowed back much farther than before, and left large quantities of stagnant water when they withdrew. A great many of the inhabitants of this town, living and working near and amidst

[1] Holmes's Prize Essay, p. 72. [2] Ibid, p. 82.

these low, marshy places, were for several years afterwards afflicted with the fever and ague, a disease which was unknown in this town for more than sixty years. Several of the inhabitants instituted suits against the proprietors of these works, under the nuisance law, which compelled the latter, some years after, to remove the dam, and deepen the canal sufficiently to fill it without the aid of the dam. After removing this cause, its effect of course gradually ceased, and the town recovered its character of a healthy place. The facts as to the origin of the disease, and its continuation from 1799 to 1803, were proved during the repeated trials; and many cases coming under my observation, I was called upon to inform the court and jury of what I knew of the causes and treatment of this disease."[1]

1802. The yellow fever again appeared in Boston, near the lower end of Summer street, in the vicinity of Tileston's wharf, and about Fort Hill. About fifty died, eleven of whom were in one house. The origin of the disease was not satisfactorily accounted for. Some supposed it was imported; others, "that it arose from filth, consisting of putrid animal and vegetable matter collected near the wharves, or in a cellar in the neighborhood of the place where it commenced." The latter opinion was generally entertained. No case was known of its being communicated from the sick to the attendants.[2]

1804–5. A typhus of "uncommon malignity" appeared in Boston: fifteen died of the disease.

1805–1810. The spotted fever and other epidemics prevailed during this period in some parts of the State, though no very particular account has been published concerning them. In 1808, in Amherst, six cases were fatal. In one town in Worcester County, one hundred and thirty were sick, and two died. Of ninety-one cases in Barre, nine were fatal. On the 19th of March, 1810, a gentleman from Petersham wrote:—"The distress in this part of the county is beyond anything you can conceive. Seven men and women, and one child, were buried in Barre, this afternoon: sixty are now sick. Dr. Holmes told me that twenty physicians would not be too many for that town

[1] Letter of Charles Seeger, M. D.: Holmes's Prize Essay, p. 86.
[2] Communications, Massachusetts Medical Society, Vol. II, p. 469.

alone." The same disease spread in various other parts of the State.[1]

1812–1814. This period witnessed the introduction of a most fatal and alarming epidemic. It first appeared among the soldiers at Greenbush, opposite Albany, in October, 1812, and about the same time in Sackett's Harbor and Burlington. It afterwards spread through Vermont, New Hampshire, and Massachusetts. Dr. Gallup estimated that 6,400 persons died of the disease in Vermont alone, in five months, in a population of 217,913. In Boston, 60 deaths are recorded by typhus fever, in 1812 and 1813, and 81 of "pulmonic fever" in the same time,—probably by the same disease: 400 or 500 are said to have been sick. It attacked adults principally, and was generally fatal to old people. It prevailed very generally in Worcester, and many other country towns, though the records are too imperfect to afford very accurate information.[2]

1815–1816. This winter, a typhus fever of peculiar malignity, similar to that of 1812–1814, already noticed, and confining its attacks principally to old people, appeared in Sharon, in Norfolk County. In ten days, eighteen out of the first twenty-four cases terminated fatally. Many were afterwards sick, and many died. It spread into Mansfield, Wrentham, and other places in the southerly part of the State. In Attleborough, more than one hundred died of this disease in three months. In Rochester, fifty died. "It is stated, as a fact, that this epidemic followed the course of rivers, tracing up the Accushnet and Mattapoiset, to the great pond in Freetown, and extending but very little beyond the meetinghouse in Rochester, which has ever been one of the most healthy spots in New England, and where it is dry and sandy. Dr. Mann states, that scarce a person escaped this fever, who lived within a mile of the great pond in Sharon, where it prevailed so fatally. Six persons, of the family of Ashley, died of this fever in one house, situate near the great pond in Freetown. This

[1] Communications, Massachusetts Medical Society, Vol. II, p. 138; Gallup on Epidemics, pp. 53, 58.

[2] The works which afford some further information on this epidemic are: Gallup on Epidemics, p. 69; Mann's Medical Sketches; New England Medical Journal, Vol. II, p. 241, Vol. IV, p. 98; Lincoln's History of Worcester, p. 311; New Hampshire Journal, Vol. I, p. 23, and Vol. II, p. 199. See, also, Sanitary History of Franklin County, in appendix.

singular disease seems, therefore, to choose for its location humid and swampy situations." [1]

1819. The yellow fever again appeared in Boston, and created great alarm. The first victim was Patrick Murphy, an Irish laborer, who lived at the northerly end of Purchase, near Broad street. He died the third day after the attack, on the 30th of June. On the 3d of July, a female died, in the family of Josiah Bradley, on Fort Hill. On the 5th, Mrs. Thayer, (who kept a boarding-house in Purchase street, nearly opposite the present stone church,) her daughter and her son, were all attacked in the morning, and died before three o'clock the same day. Others died soon after. On the 1st of August, the ship "Ten Brothers" arrived, in a foul condition. Mr. Eaton, (the custom-house officer,) and two laborers, who boarded her, died the night after. By order of the Board of Health, the vessel was taken into the harbor and scuttled. The effluvia of the bilge-water that flowed from the vessel was exceedingly offensive; and two persons who scuttled her, and some others who happened to be passing in a sail-boat, took the disease and died. The alarm now became very great, and very many of the inhabitants removed from the city.

The disease was confined principally to the southeastern declivity of Fort Hill, in the vicinity of Purchase, High, and Griffin streets, and Gibbs' Lane. Many persons were on board the ship, after her arrival, most of whom remained in health. About twelve, however, were seized with the fever, almost all of whom died. They and a few others were sick and died in different parts of the town.

It is not certain how many were victims to this epidemic. On the town records, thirty-four deaths by this "malignant fever" are recorded, but this does not include the whole number. Patrick Murphy, according to the record, died in consequence of "drinking cold water;" and Mrs. Thayer and her family, by "diseases unknown." Probably others died of the disease, though not so entered. This was done, perhaps, to prevent alarm. The bills of mortality, for that year, state that 108

[1] 2 Massachusetts Historical Collection, Vol. IV, p. 303, and New England Medical Journal, Vol. V, p. 317.

died by "typhus," and 46 by "pulmonic fever," both of which may include some cases of yellow fever. One physician informs us that he attended seventy-five cases of this disease in that year. It was at first exceedingly malignant, and soon terminated in death; but gradually it became more and more mild and manageable, and entirely ceased about the 1st of November.

The cause of the disease was never satisfactorily ascertained. Some attributed it to the "Ten Brothers;" but this could not have been the original and principal cause, for it prevailed here a month before the arrival of that vessel. It undoubtedly arose from some local influence, which might have been aggravated by the foul condition of that ship, as it would have been by any other similar cause, combined with the peculiar condition of the atmosphere that then existed.

It is a remarkable fact, that the disease was never known to be communicated from one sick person, or from the clothing of such person, to another, notwithstanding exposure by nurses and others to the disease in the sick and the dead, except in a single instance; and concerning that there is some doubt. The poison existed in the atmosphere of the locality, and operated where the personal condition was favorable to its reception.[1]

1831–1832. In Boston, 70 died of Asiatic cholera in 1832. Of scarlatina, 84 died in 1831, and 199 in 1832. Typhus was also charged with 45 deaths. The cholera excited great alarm, and caused special preparations to be made in the city for its avoidance.[2]

On the 5th of August, 1832, at the State Prison in Charlestown, 190 were taken with cholera,—115 in the first twenty-four hours, the remainder soon after,—all of whom recovered.

For the last forty years, notwithstanding the mass of medical literature that has been published, less definite information has been obtained concerning epidemics than in the previous periods. The almost entire neglect of records, prior to the adop-

[1] New England Medical Journal, Vol. VIII, p. 380, and Vol. IX, p. 98.

[2] The sanitary expenses of the city of Boston, for 1832, were:—

| | |
|---|---|
| For *Internal Health* Department, | $21,610 67 |
| For *External Health* and Quarantine Establishment, | 5,222 95 |
| For Special Measures against the Cholera, about | 23,600 00 |
| Total, | $50,433 62 |

*Boston Medical Journal, Vol. 9, p. 209.*

tion of the registration system, renders it difficult to give any thing approximating to an accurate view of the subject. If a careful examination were made into the history of each town, many important facts might be gathered. But it is curious and lamentable to observe, in looking over our published local histories, how little attention has been paid to this matter. *The History of the Health of the People* should be regarded as the most important part of history, yet it has generally been considered unworthy of notice, or, if noticed at all, merely among the incidental matters of little consequence. It is hoped that hereafter more attention will be paid to this subject by our local historians, and that our local sanitary surveyors will make it a matter of particular investigation. The rapid, imperfect review we have taken of the sanitary history of the State,—containing, as it does, brief notices of some of the prominent epidemics merely,—suggests many important considerations, which, if more fully illustrated, might convey the most important practical lessons.

In some towns, records have been made, and especially since the registration law went into operation. From these and other sources of information we find that dysentery, typhus fever, scarlatina, consumption, and other fatal diseases, are common in nearly all parts of the State. They are constant visiters. In some periods and places more so than in others, but in all so common that they have become familiar to us, and cease to excite notice or alarm. An amount of sickness which formerly would have thrown the whole community into a state of consternation, may now occur as an ordinary event, and elicit no special attention.

To complete this general view of the sanitary condition of the State, and as further illustrations, we have compiled from the Registration Reports, from the "Bills of Mortality" of Boston, and from other sources of information, several tabular statements, which we shall now present. A general view of the *influences on human life and longevity*, existing in the State, is presented in the table, (p. 82,) which exhibits the rate of mortality among the inhabitants of Boston at three different periods; and among those of an interior town of the State, of an average health.

*Statement of the Rate of Mortality among the inhabitants of Boston, for* 1830, 1840 *and* 1845; *and of an interior country town in Massachusetts, for* 1830.

| AGES. | POPULATION OF BOSTON. | | | | | Population of Country Towns. |
|---|---|---|---|---|---|---|
| | 1830. | 1840. | 1845. | | | |
| | Both Sexes. | Both Sexes. | Males. | Females. | Both Sexes. | Both Sexes. |
| Under 5, - | 8,068 | 11,522 | 7,234 | 7,214 | 14,448 | 1,249 |
| 5 to 10, - | 6,106 | 8,956 | 5,690 | 5,668 | 11,358 | 1,036 |
| 10 to 15, - | 5,501 | 7,221 | 4,708 | 4,928 | 9,636 | 963 |
| 15 to 20, - | 6,903 | 8,841 | 5,199 | 5,750 | 10,949 | 1,013 |
| 20 to 30, - | 16,182 | 22,960 | 15,009 | 14,586 | 29,595 | 1,791 |
| 30 to 40, - | 9,070 | 12,675 | 10,455 | 9,526 | 19,981 | 1,129 |
| 40 to 50, - | 5,019 | 6,707 | 4,991 | 5,038 | 10,029 | 752 |
| 50 to 60, - | 2,569 | 3,561 | 2,142 | 2,618 | 4,760 | 488 |
| 60 to 70, - | 1,316 | 1,640 | 1,062 | 1,406 | 2,468 | 356 |
| 70 to 80, - | 504 | 673 | 315 | 578 | 893 | 241 |
| 80 to 90, - | 140 | 212 | 73 | 148 | 221 | 86 |
| Over 90, - | 14 | 32 | 12 | 16 | 28 | 9 |
| All ages, - | 61,392 | 85,000 | 56,890 | 57,476 | 114,366 | 9,113 |
| Deaths in Boston for 9 years. | | | | | | Deaths for 10 Years. |
| Under 5, - | 4,334 | 7,600 | 6,224 | 5,481 | 11,705 | 38.2 |
| 5 to 10, - | 448 | 738 | 703 | 609 | 1,312 | 6.2 |
| 10 to 15, - | 274 | 397 | 292 | 341 | 633 | 3.1 |
| 15 to 20, - | 309 | 483 | 330 | 408 | 738 | 5.3 |
| 20 to 30, - | 1,526 | 2,036 | 1,556 | 1,747 | 3,303 | 13.2 |
| 30 to 40, - | 1,484 | 1,766 | 1,540 | 1,377 | 2,917 | 11.1 |
| 40 to 50, - | 1,025 | 1,276 | 1,138 | 810 | 1,948 | 11.0 |
| 50 to 60, - | 678 | 903 | 679 | 594 | 1,273 | 9.4 |
| 60 to 70, - | 544 | 723 | 516 | 541 | 1,057 | 11.0 |
| 70 to 80, - | 420 | 589 | 324 | 463 | 787 | 13.8 |
| 80 to 90, - | 205 | 293 | 137 | 242 | 379 | 11.6 |
| Over 90, - | 41 | 54 | 28 | 47 | 75 | 2.1 |
| All ages, - | 11,288 | 16,858 | 13,467 | 12,660 | 26,127 | 136.0 |
| Annual Mortality per cent. | | | | | | |
| Under 5, - | 5.96 | 7.32 | 9.55 | 8.44 | 9.00 | 3.05 |
| 5 to 10, - | .81 | .91 | 1.37 | 1.19 | 1.28 | .59 |
| 10 to 15, - | .55 | .61 | .68 | .76 | .72 | .32 |
| 15 to 20, - | .49 | .60 | .70 | .78 | .74 | .52 |
| 20 to 30, - | 1.04 | .98 | 1.15 | 1.33 | 1.24 | .73 |
| 30 to 40, - | 2.01 | 1.54 | 1.63 | 1.60 | 1.62 | .98 |
| 40 to 50, - | 2.24 | 2.11 | 2.53 | 1.78 | 2.15 | 1.46 |
| 50 to 60, - | 2.93 | 2.81 | 3.52 | 2.52 | 2.97 | 1.92 |
| 60 to 70, - | 4.58 | 4.89 | 5.39 | 4.27 | 4.75 | 3.08 |
| 70 to 80, - | 9.24 | 9.71 | 11.42 | 8.89 | 9.78 | 5.72 |
| 80 to 90, - | 16.21 | 15.33 | 20.82 | 18.10 | 19.04 | 13.48 |
| Over 90, - | 32.14 | 18.75 | 25.83 | 32.50 | 29.64 | 23.33 |
| All ages, - | 2.04 | 2.20 | 2.63 | 2.44 | 2.53 | 1.49 |
| Living to 1 dth. | 48 | 45 | 38 | 41 | 39 | 67 |

This important table has been compiled with great care, and will be found to represent the law of mortality in different places in Massachusetts, more accurately than any one heretofore published. The columns relating to Boston have been carefully compiled by a comparison of the population with the deaths for nine years; four before and four after that in which the enumeration was made. This admits of a fair average, and an accurate result. The column under "country towns" is compiled from a careful examination, abstract, and combination of the records of deaths in Concord and Worcester, Massachusetts, and in Amherst, N. H., for the ten years, 1826 to 1835, inclusive, with the abstract of the census of 1830. The records of those towns were at that time supposed to be full; and, though not the healthiest, may be considered, among the country towns, of about an average health. In many places, a comparison of the whole number of deaths with the population gives a much more favorable result, and in others not so favorable. This table deserves to be carefully studied. By it we may learn the liability to death at different ages, in the places specified. For all ages, the average rate of mortality for the last nine years, in Boston, was 2.53 per cent., or 1 in 39 of the whole population. In the country towns, in 1830, it was 1.49 per cent., or 1 in 67. In Boston, of those under five years of age, 9 out of every 100 died; while in the country, 3.05 only, or about one-third as many, of the same age, died. At other ages, also, a great difference may be seen between the rate of mortality in the city and country, and between one period and another. A comparison of the table with that of England (p. 34) will show a very near agreement of the health of our country towns with that of the most healthy districts in England, and of Boston with London.

The *influence of the seasons* upon health has universally been regarded as important. Some diseases prevail with more frequency and malignity at one season than at another. Persons at the extreme ages of life,—the young and the old,—and those of feeble health, are, however, most liable to be affected by the changes of the seasons. We have compiled the following statement, to show the extent of this influence in

this State. It gives the number of deaths in Boston, in each month, for the five years, from 1840 to 1845; distinguishing those under 15, those between 15 and 60, and those over 60 years of age; and those out of Boston, in the seven years covered by the Registration Reports, (1842–1848,) without distinction of age; and the proportion per cent. that each bears to the whole :—

| Number of Deaths | | | | | Months. | In each 100 there Died | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| In Boston, 1840 to 1845. | | | | In State. 7 years. All ages. | | In State. 7 years. All ages. | In Boston, 1840 to 1845. | | | |
| Under 15. | 15 to 60. | Over 60. | Total. | | | | Total. | Under 15. | 15 to 60. | Over 60. |
| 438 | 292 | 96 | 826 | 4,752 | January, | 7.52 | 7.93 | 4.21 | 2.80 | .92 |
| 431 | 315 | 84 | 830 | 4,932 | February | 7.80 | 7.96 | 4.14 | 3.02 | .80 |
| 373 | 306 | 87 | 766 | 5,351 | March, | 8.46 | 7.35 | 3.58 | 2.94 | .83 |
| 421 | 322 | 100 | 843 | 5,041 | April, | 7.97 | 8.09 | 4.04 | 3.09 | .96 |
| 425 | 330 | 101 | 856 | 4,599 | May, | 7.28 | 8.21 | 4.08 | 3.16 | .97 |
| 356 | 291 | 82 | 729 | 4,398 | June, | 6.96 | 6.99 | 3.41 | 2.79 | .79 |
| 475 | 296 | 75 | 846 | 4,946 | July, | 7.82 | 8.12 | 4.56 | 2.85 | .71 |
| 698 | 335 | 64 | 1,097 | 6,032 | August, | 9.54 | 10.53 | 6.70 | 3.22 | .61 |
| 671 | 327 | 88 | 1,086 | 6,614 | Septemb. | 10.46 | 10.42 | 6.44 | 3.14 | .84 |
| 449 | 339 | 77 | 865 | 7,127 | October, | 11.27 | 8.30 | 4.31 | 3.25 | .74 |
| 377 | 351 | 80 | 808 | 4,667 | Novemb., | 7.38 | 7.75 | 3.62 | 3.37 | .76 |
| 429 | 337 | 104 | 870 | 4,765 | Decemb., | 7.54 | 8.35 | 4.12 | 3.23 | 1.00 |
| 5,543 | 3,841 | 1,038 | 10,422 | 63,224 | Total, | 100.00 | 100.00 | 53.21 | 36.86 | 9.93 |
| 1,242 | 913 | 267 | 2,422 | 15,035 | Winter, | 23.78 | 23.24 | 11.93 | 8.76 | 2.55 |
| 1,202 | 943 | 283 | 2,428 | 14,038 | Spring, | 22.21 | 23.29 | 11.53 | 9.04 | 2.72 |
| 1,844 | 958 | 227 | 3,029 | 17,592 | Summer, | 27.82 | 29.07 | 17.70 | 9.21 | 2.16 |
| 1,255 | 1,027 | 261 | 2,543 | 16,559 | Autumn, | 26.19 | 24.40 | 12.05 | 9.85 | 2.50 |
| 5,543 | 3,841 | 1,038 | 10,422 | 63,224 | Total, | 100.00 | 100.00 | 53.21 | 36.86 | 9.93 |

By this statement, it appears that the summer quarter (July, August, and September) is uniformly the most fatal, both in city and country; autumn stands next, winter next, and spring is least so. August and September are the most unhealthy months in the city, and October in the country. This arises from the greater prevalence in the city of diseases of the digestive organs, and in the country of fevers. The effects are, however, confined principally to persons under 15 years of age. And it is curious and important to observe that, to those over 60, these diseases are less fatal than to those of other ages. The winter and spring quarters are most fatal to diseases of the

organs of respiration, especially pneumonia, or inflammation of the lungs, and consumption. Old people and those of feeble health, also, suffer most, at this season. The importance of the subject will repay a careful inspection of the table, to learn the effect of mortality in each month, and in each class of ages.

The *influence of occupation* on health and longevity is worthy of consideration. The Registration Reports, from which we have compiled the subjoined statement, relating to those who died in the period to which they refer; the American Quarterly Register,[1] and other sources, furnish some information to illustrate the subject.

Of the *clergymen* who lived and died in Massachusetts, prior to 1825, the ages of 888 have been ascertained. Divided into periods, according to the time of their decease, the following is the result:—

| | | Aggregate Ages. | | Average Age. | |
|---|---|---|---|---|---|
| 90 | who died prior to 1700 | had 5,560 | years. | 61.77 | years. |
| 123 | " 1700 to 1750 | " 7,996 | " | 65.00 | " |
| 303 | " 1750 to 1800 | " 18,957 | " | 62.55 | " |
| 372 | " 1800 to 1825 | " 23,986 | " | 64.47 | " |
| 888 | Totals, | 56,499 | " | 63.62 | " |

The Quarterly Register (Vol. X, p. 39) gives the aggregate ages of 840 clergymen, who graduated at Harvard University, and died prior to 1835, at 53,447 years; 63.62 years being the average age: 41 in each 100 attained the age of 70. This corresponds very nearly with the preceding statement; 62½ years may be considered as the average age of clergymen, in this State, during the last century, and prior to 1825. In the quarterly lists of deaths of clergymen, as given in the fifteen volumes of the Register, prior to 1841, the ages of 147 in Massachusetts are stated, amounting in the aggregate to 8,642,—averaging 58.79; and of 167 in other New England States, amounting in the aggregate to 9,423,—averaging 56.42. The average age of 114, who died in the period covered by the Registration Reports, is given below, at 56.64 years. This shows an average decline in the longevity of clergymen, of seven years.

[1] The statistics of the churches and ministers are contained in several volumes. The fifteenth volume, page 500, contains a reference by which those of each county may be found. See, also, Vol. X, p. 39, and Vol. XIII, p. 75.

*Physicians.* It appears by the table (p. 58) that 194 members of the Massachusetts Medical Society, who lived and died in this State prior to 1840, and whose ages are known, died at the average age of 60.23 years; of whom 42 in Boston lived 53.59 years, and 134 in other parts of the State lived 64.04 years. Of 900 physicians who had then died in the State, the ages of 490 were known, and they averaged 57.35 years: 35 in each 100 attained the age of 70. For the seven years prior to May, 1849, there died 95 members of the Massachusetts Medical Society, whose aggregate ages amounted to 5,428,—averaging 57.13 years. The abstract of the Registration Reports, as stated, (p. 87,) gives 55 years as the average of 137 physicians, none of whom resided in Boston. This shows a decline, from the longevity of the old physicians, of over nine years.

David Bennett died in Rowley, Feb. 4, 1719, aged 103 years, 2 months, and 3 days. He never lost a tooth, and retained his senses to the last. Hezekiah Meriam, of Ward, who died in 1803, lived with his wife 78 years, and she survived him. John Crocker died in Richmond, May 1, 1815. And Edward Augustus Holyoke died at Salem, March 31, 1829, aged 100 years and 7 months. All these physicians lived beyond the age of 100 years.

*Lawyers.* Less means are at hand to illustrate the longevity of the legal profession, than the two others above noticed. The ages of 52 are given in the Quarterly Register, (Vol. XII, p. 47,) amounting to 2,428 in the aggregate,—averaging 46.68 years. Fifty-three are given, (p. 87,) whose average age was 55.47. It would seem that they lived rather a less number of years than those belonging to either of the other professions; though the number of observations is too small to found thereon a correct opinion.

The Registration Reports contain an abstract of the number and ages of all over 20 years, whose occupations are specified in the returns. We select and combine the facts in all the reports, relating to the following occupations, as further illustrations:—

| | Occupations. | Agg. Ages. | Av. Age. |
|---|---|---|---|
| 4737 | Farmers, | 313,606 | 64.89 |
| 39 | Hatters, | 2,293 | 58.79 |
| 110 | Coopers, | 6,313 | 57.39 |
| 114 | Clergymen, | 6,457 | 56.64 |
| 55 | Lawyers | 2,940 | 55.47 |
| 137 | Physicians, | 7,535 | 55.00 |
| 287 | Blacksmiths, | 15,639 | 54.49 |
| 613 | Carpenters, | 31,366 | 51.16 |
| 323 | Merchants, | 16,386 | 50.73 |
| 65 | Tanners and Curriers, | 3,244 | 49.90 |
| 135 | Masons, | 6,541 | 48.45 |
| 213 | Traders, | 9,967 | 46.79 |
| 46 | Bakers, | 1,961 | 46.69 |
| 81 | Cabinet-makers, | 3,629 | 44.80 |
| 73 | Stone-cutters, | 3,246 | 44.46 |
| 17 | Paper-makers, | 753 | 44.29 |
| 902 | Shoe-makers, | 39,169 | 43.41 |
| 1609 | Laborers, | 68,858 | 42.79 |
| 1061 | Seamen, | 45,070 | 42.47 |
| 110 | Painters, | 4,657 | 42.36 |
| 138 | Fishermen, | 5,745 | 41.63 |
| 115 | Manufacturers, | 4,656 | 40.48 |
| 110 | Mechanics, | 4,095 | 37.20 |
| 34 | Printers, | 1,255 | 36.91 |

Dr. Casper, of Berlin, Prussia, has calculated that the age of 70 was attained by 42 clergymen in 100, by 29 lawyers, by 28 artists, by 27 professors, and by 24 physicians. Dr. Madan, an English author, in comparing the average age of celebrated men of different classes, found that naturalists lived 75 years; philosophers, sculptors, and painters, 70; lawyers, 69; physicians, 68; and clergymen, 67.[1] These, probably, however, were select lives, and not the whole of the classes.

The *influence of domestic condition* on the sanitary welfare of the people is supposed to be great; and, to estimate this accurately, the age at marriage, and the ages at death of the married and widowed, should be ascertained and stated. From the Registration Reports we are enabled to give the following statements, showing the age, in Massachusetts, at which 12,949 men and 12,916 women were married for the first time, during the four years, 1844 to 1848; and at which 16,060 men and 15,969 women were married at all times, (including first, second, and subsequent marriages,) during the same period. To render the statement still more interesting, we have inserted similar facts concerning marriages generally in England, and first marriages in Belgium:—

[1] Traité D' Hygiène publique et privée; par Michel Lévy: tom. II, p. 737. Annales D' Hygiène, tom. XIV.

| Ages. | First in Massachusetts. | | All in Massachusetts. | | All in England. | | First in Belgium. | |
|---|---|---|---|---|---|---|---|---|
| | Males. | Females | Males. | Females. | Males. | Females. | Males. | Females. |
| Under 20, | 249 | 3,688 | 257 | 3,909 | 537 | 2,711 | 757 | 2,685 |
| 20 to 25, | 6,493 | 6,764 | 6,790 | 7,475 | 10,383 | 10,424 | 4,530 | 6,966 |
| 25 to 30, | 4,654 | 1,934 | 5,283 | 2,545 | 5,103 | 3,951 | 9,420 | 8,067 |
| 30 to 35, | 1,052 | 373 | 1,551 | 828 | 1,900 | 1,498 | 5,497 | 3,841 |
| 35 to 40, | 346 | 100 | 775 | 481 | 944 | 739 | 2,488 | 1,719 |
| 40 to 45, | 86 | 35 | 462 | 282 | 603 | 532 | 1,000 | 653 |
| 45 to 50, | 39 | 11 | 320 | 201 | 371 | 273 | 340 | 225 |
| 50 to 55, | 26 | 6 | 220 | 117 | 271 | 161 | 137 | 76 |
| 55 to 60, | 2 | 3 | 146 | 67 | 147 | 69 | 56 | 27 |
| Over 60, | 2 | 2 | 256 | 64 | 178 | 79 | 72 | 38 |
| All ages, | 12,949 | 12,916 | 16,060 | 15,969 | 20,437 | 20,437 | 24,297 | 24,297 |
| Av'age age, | 25.71 | 22.61 | 28.27 | 24.50 | 27.30 | 25.35 | 29.47 | 27.47 |

From this statement, it appears that the average age at which men marry, for the first time, in Massachusetts, is 25.71 years; and women, 22.61 years. In England, the first marriage of men is at 25.45 years, and of women at 24.30; and in Belgium, of men at 29.47, and of women at 27.43. This shows that there is a difference in the ages at which females marry, between Massachusetts and England, of nearly two years; and between Massachusetts and Belgium, of five years. The average age of all marrying in Massachusetts, (either first or subsequent marriages,) is, of men, 28.27 years, and of women, 24.50; and in England, of men, 27.30, and of women, 25.35.

The last four Registration Reports give the number, aggregate ages, and average age, of all persons over 20 years, who, according to the returns, died unmarried, married, and widowed; and separately of males and females. Combining these facts, we obtain the following results:—

| | Males. | Females. |
|---|---|---|
| Number that died unmarried, . . . . | 1,655 | 1,984 |
| Their aggregate ages, . . . . | 59,292 | 90,482 |
| Their average age, . . . . . | 35.82 | 45.60 |
| Number that died in the married condition, . | 4,920 | 5,373 |
| Their aggregate ages, . . . . | 268,725 | 240,569 |
| Their average age, . . . . . | 54.61 | 44.77 |
| Number that died in widowhood, . . . | 1,051 | 2,909 |
| Their aggregate ages, . . . . | 77,720 | 214,318 |
| Their average age, . . . . . | 73.94 | 73.67 |

By comparing this remarkable statement with the average age at first marriage, (see page 88,) and deducting that age from the age at which persons die in the married condition, we obtain the average length of the married life; and find it to be,—of men, 28.90 years, and of women, 22.16! And by deducting the average age of those who died in marriage from the average age of those who died in widowhood, we obtain the average length of the period of widowhood; and find it to be,—of men. 19.33 years, and of women, 28.90 years![1]

The *influence of disease* is the most important test of the sanitary condition of the State. We have accordingly prepared the accompanying table, (pp. 90, 91, 92,) to illustrate this part of our subject. It contains the number of deaths in Boston, by each known cause, for the 39 years,—1811–1849, inclusive,[2] divided into four periods; and those in the remainder of the State, for the seven years,—1842–1848, covered by the Registration Reports; and the proportion per cent. that the number by each known cause bears to all the causes, in the respective periods. There may be, and undoubtedly are, some errors in the returns from which this table is compiled, and allowances should therefore be made; but admitting our data to be generally correct, it will afford the means of judging, approximately, if not with entire accuracy, of the comparative prevalence of different diseases.[3] The diseases are classified according to the plan recommended by the Registrar General of England. The table relates to 57,948 specified causes of death in Boston, and 57,484 out of Boston; and they are divided into twelve groups of causes, to each of which we propose to allude.

[1] Some interesting information concerning the domestic condition of the population of Boston, may be found in the Census Report for 1845, pp. 57–63. The length of married life in the living individuals is there stated at 12.50 years.

[2] Errors are sometimes made by beginners in statistical inquiries, in dividing ages and periods of time; and it may be well to state what we understand to be the correct method. When we say from "20 to 30," we mean, from the end of the 20th year, or from the beginning of the 21st, to the end of the 30th, not the 29th. It is not 30 until that year is completed. "21–30" has the same meaning; the dash indicating that the years, at each end of it,—21 and 30,—are included; not from 21 to 30, or 21 to 30, which would exclude 21. When "to" is used between the numbers, it is understood to mean *from* one *to* the other; and hence it has a different meaning from the dash. So the period 1811–1820 means, from the beginning of the year 1811 to the end of 1820, and has the same meaning as from 1810 to 1820. From 20 to 30, and other divisions, are sometimes written in the form of a fraction,—thus, $\frac{20}{30}$; or thus, –25–, giving the number intermediate between the two periods. The middle of the century is the end of the moment when the 50th year ends, and before the 51st begins.

[3] Though this method of comparing diseases with diseases is interesting, yet it has its imperfections. It is more correct, when means exist to compare the number of deaths by each disease with the number of the living inhabitants. We are able at present, however, to make such a comparison in few places in Massachusetts, beside Boston.

## *Fatal Diseases and Causes of Death in Massachusetts.*

| Deaths in Boston in 39 years. | | | | State. 7 years. | Causes of Death. | Per Ct. in State. 7 years 1842 to 1848. | Per Centage in Boston. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1810 to 1820 | 1820 to 1830. | 1830 to 1840. | 1840 to 1849. | 1842 to 1848. | | | 1840 to 1849. | 1830 to 1840. | 1820 to 1830. | 1810 to 1820. |
| 7,522 | 9,554 | 15,077 | 25,795 | 57,484 | Specified Causes, | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| 1,192 | 2,037 | 4,155 | 8,148 | 15,839 | 1. Zymotic Diseases, | 27.55 | 31.59 | 27.56 | 21.32 | 15.85 |
| 2,204 | 1,584 | 2,121 | 3,606 | 7,467 | *Sporadic Diseases of* 2. Uncertain Seat, - | 12.99 | 13.98 | 14.07 | 16.58 | 29.30 |
| 562 | 980 | 1,717 | 2,391 | 5,200 | 3. Nervous Organs, - | 9.05 | 9.27 | 11.39 | 10.26 | 7.47 |
| 2,460 | 2,302 | 3,611 | 5,778 | 17,010 | 4. Respirative Organs, | 29.59 | 22.40 | 23.95 | 29.33 | 32.70 |
| 24 | 90 | 215 | 446 | 1,105 | 5. Circulative Organs, | 1.92 | 1.73 | 1.43 | .94 | .32 |
| 228 | 645 | 1,236 | 3,150 | 2,814 | 6. Digestive Organs, | 4.90 | 12.21 | 8.20 | 6.75 | 3.03 |
| 9 | 30 | 22 | 77 | 261 | 7. Urinative Organs, | .45 | .30 | .14 | .31 | .12 |
| 64 | 132 | 214 | 408 | 654 | 8. Generative Organs, | 1.14 | 1.58 | 1.42 | 1.38 | .85 |
| 26 | 61 | 76 | 136 | 292 | 9. Locomotive Organs, | .51 | .53 | .50 | .64 | .35 |
| 3 | 17 | 30 | 61 | 92 | 10. Integumentive Org. | .16 | .23 | .20 | .18 | .04 |
| 379 | 420 | 645 | 635 | 4,414 | 11. Old Age, - - | 7.68 | 2.46 | 4.28 | 4.40 | 5.04 |
| 371 | 756 | 1,035 | 959 | 2,336 | 12. Violent Causes, - | 4.06 | 3.72 | 6.86 | 7.91 | 4.93 |
| 7,522 | 9,554 | 15,077 | 25,795 | 57,484 | Totals, | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 |
| | | | | | 1. *Zymotic Diseases.* | | | | | |
| 103 | 60 | 164 | 724 | 299 | Cholera, - - - | .52 | 2.81 | 1.09 | .63 | 1.37 |
| 19 | 89 | 298 | 473 | 1,042 | Cholera Infantum, - | 1.81 | 1.83 | 1.98 | .93 | .25 |
| 43 | 245 | 415 | 681 | 1,387 | Croup, - - - | 2.41 | 2.64 | 2.75 | 2.57 | .57 |
| 4 | 66 | 52 | 320 | 677 | Diarrhœa, - - | 1.18 | 1.24 | .34 | .69 | .06 |
| 111 | 363 | 390 | 955 | 2,413 | Dysentery, - - | 4.20 | 3.70 | 2.59 | 3.80 | 1.48 |
| 1 | 12 | 74 | 202 | 571 | Erysipelas, - - | .99 | .78 | .49 | .13 | .01 |
| 110 | 133 | 124 | 167 | - | Fever, - - - | - | .65 | .82 | 1.39 | 1.47 |
| 2 | 5 | 13 | 7 | 13 | " Intermittent, | .02 | .03 | .09 | .05 | .03 |
| 13 | 6 | - | - | 35 | " Remittent, - | .06 | - | - | .06 | .17 |
| 623 | 458 | 680 | 1,664 | 5,222 | " Typhus, - | 9.09 | 6.45 | 4.51 | 4.79 | 8.28 |
| 78 | 184 | 326 | 344 | 513 | Hooping Cough, - | .89 | 1.33 | 2.16 | 1.93 | 1.04 |
| 5 | 7 | 72 | 60 | 192 | Influenza, - - | .33 | .23 | .48 | .07 | .06 |
| 28 | 332 | 341 | 587 | 417 | Measles, - - - | .73 | 2.28 | 2.26 | 3.48 | .37 |
| 30 | 48 | 972 | 1,500 | 2,933 | Scarlatina, - - | 5.10 | 5.82 | 6.45 | .50 | .40 |
| 6 | 8 | 214 | 345 | 106 | Small-Pox, - - | .19 | 1.34 | 1.42 | .08 | .08 |
| 16 | 17 | 17 | 20 | 7 | Syphilis, - - - | .01 | .08 | .11 | .18 | .21 |
| - | 4 | 3 | 99 | 12 | Thrush, - - - | .02 | .38 | .02 | .04 | - |
| 1,192 | 2,037 | 4,155 | 8,148 | 15,839 | Totals, | 27.55 | 31.59 | 27.56 | 21.32 | 15.85 |
| | | | | | 2. *Uncertain Seat.* | | | | | |
| 13 | 37 | 40 | 50 | 70 | Abscess, - - - | .12 | .19 | .27 | .39 | .17 |
| 61 | 36 | 211 | 518 | 204 | Atrophy, - - - | .36 | 2.01 | 1.40 | .38 | .81 |
| 32 | 58 | 103 | 144 | 706 | Cancer, - - - | 1.23 | .56 | .68 | .61 | .42 |
| 44 | 82 | 132 | 266 | 163 | Debility, - - - | .28 | 1.03 | .88 | .86 | .58 |
| 193 | 237 | 321 | 423 | 1,420 | Dropsy, - - - | 2.47 | 1.66 | 2.12 | 2.48 | 2.57 |
| 12 | 8 | 4 | 1 | 16 | Gout, - - - | .03 | .30 | .03 | .08 | .16 |
| 23 | 10 | 21 | 77 | 198 | Hemorrhage, - - | .34 | - | .14 | .10 | .31 |
| 1,587 | 883 | 983 | 1,738 | 3,687 | Infantile Diseases, - | 6.41 | 6.74 | 6.52 | 9.24 | 21.10 |
| - | 26 | 35 | 5 | 152 | Inflammation, - - | .26 | .02 | .23 | .27 | - |
| - | - | 2 | - | 38 | Malformation, - - | .07 | - | .01 | - | - |
| 69 | 77 | 65 | 33 | 359 | Mortification, - - | .62 | .13 | .43 | .81 | .92 |
| 14 | 35 | 72 | 111 | 222 | Scrofula, - - - | .39 | .43 | .48 | .37 | .19 |
| 153 | 83 | 96 | 127 | 130 | Sudden Deaths, - | .23 | .49 | .64 | .87 | 2.03 |
| 3 | 12 | 36 | 108 | 102 | Tumors, - - - | .18 | .42 | .24 | .12 | .04 |
| 2,204 | 1,584 | 2,121 | 3,606 | 7,467 | Totals, | 12.99 | 13.98 | 14.07 | 16.58 | 29.30 |
| | | | | | 3. *Nervous Organs.* | | | | | |
| 109 | 107 | 188 | 188 | 586 | Apoplexy, - - | 1.02 | .73 | 1.25 | 1.12 | 1.45 |
| 22 | 73 | 98 | 130 | 440 | Cephalitis, - - | .77 | .50 | .65 | .76 | .29 |
| 239 | 309 | 479 | 602 | 1,240 | Convulsions, - - | 2.16 | 2.33 | 3.18 | 3.24 | 3.18 |
| - | 33 | 72 | 64 | 75 | Delirium Tremens, - | .13 | .25 | .48 | .40 | - |
| - | 12 | 10 | 22 | 77 | Epilepsy, - - | .13 | .09 | .07 | .13 | - |
| 86 | 270 | 554 | 947 | 1,220 | Hydrocephalus, - | 2.12 | 3.67 | 3.67 | 2.83 | 1.14 |
| 14 | 22 | 20 | 17 | 131 | Insanity, - - - | .23 | .07 | .13 | .23 | .19 |
| 80 | 113 | 132 | 205 | 953 | Paralysis, - - | 1.66 | .79 | .87 | 1.18 | 1.06 |
| 7 | 6 | 9 | 10 | 42 | Tetanus, - - - | .07 | .04 | .06 | .06 | .09 |
| 5 | 30 | 155 | 206 | 436 | Brain, &c., Disease of, | .76 | .80 | 1.03 | .31 | .07 |
| 562 | 980 | 1,717 | 2,391 | 5,200 | Totals, | 9.05 | 9.27 | 11.39 | 10.26 | 7.47 |

*Fatal Diseases, &c.*—CONTINUED.

| Deaths in Boston in 39 years. | | | | State. 7 years. | Causes of Death. | Per Ct. in State. | Per Centage in Boston. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1810 to 1820. | 1820 to 1830. | 1830 to 1840. | 1840 to 1849. | 1842 to 1848. | | 7 years. 1842 to 1848. | 1840 to 1849. | 1830 to 1840. | 1820 to 1830. | 1810 to 1820. |
| | | | | | 4. *Respirative Org.* | | | | | |
| 3 | 13 | 29 | 18 | 53 | Asthma, - - | .09 | .07 | .19 | .14 | .04 |
| - | - | 6 | 54 | 117 | Bronchitis, - - | .20 | .21 | .04 | - | - |
| 1,891 | 2,054 | 2,306 | 3,795 | 13,731 | Consumption, - | 23.89 | 14.71 | 15.30 | 21.50 | 25.14 |
| 2 | 47 | 47 | 40 | 170 | Hydrothorax, - | .30 | .16 | .31 | .49 | .03 |
| - | - | - | 10 | 19 | Laryngitis, - - | .03 | .04 | - | - | - |
| 35 | 40 | 90 | 156 | 232 | Pleurisy, - - | .40 | .60 | .60 | .42 | .46 |
| 436 | 580 | 1,072 | 1,635 | 2,534 | Pneumonia, - - | 4.41 | 6.34 | 7.11 | 6.07 | 5.79 |
| 93 | 43 | 35 | 33 | 51 | Quincy, - - | .09 | .13 | .22 | .45 | 1.24 |
| - | 25 | 26 | 37 | 103 | Lungs, &c., Dis. of, | .18 | .40 | .17 | .26 | - |
| 2,460 | 2,802 | 3,611 | 5,778 | 17,010 | Totals, | 29.59 | 22.40 | 23.95 | 29.33 | 32.70 |
| | | | | | 5. *Circulative Org.* | | | | | |
| - | 8 | 5 | - | 20 | Pericarditis, - - | .03 | - | .04 | .08 | - |
| 24 | 82 | 210 | 446 | 1,085 | Heart, &c., Dis. of, | 1.89 | 1.73 | 1.39 | .86 | .32 |
| 24 | 90 | 215 | 446 | 1,105 | Totals, | 1.92 | 1.73 | 1.43 | .94 | .32 |
| | | | | | 6. *Digestive Org.* | | | | | |
| 5 | 27 | 32 | 13 | 149 | Colic, - - - | .26 | .05 | .21 | .28 | .07 |
| 89 | 15 | 13 | 10 | 63 | Dyspepsia, - - | .11 | .04 | .09 | .16 | 1.18 |
| 6 | 162 | 360 | 529 | 889 | Enteritis, - - | 1.55 | 2.05 | 2.39 | 1.70 | .08 |
| 1 | 9 | 15 | 46 | 86 | Gastritis, - - | .15 | .18 | .10 | .09 | .01 |
| 8 | 12 | 5 | 12 | 71 | Hernia, - - | .12 | .05 | .03 | .13 | .11 |
| - | - | 1 | 1 | 64 | Intussusception, - | .11 | - | .01 | - | - |
| - | 5 | - | - | 68 | Peritonitis, - - | .12 | - | .01 | .05 | - |
| 39 | 83 | 280 | 564 | 240 | Teething, - - | .42 | 2.19 | 1.86 | .87 | .52 |
| - | - | - | 112 | 68 | Ulceration, - - | .12 | .43 | - | - | - |
| 21 | 26 | 56 | 55 | 49 | Worms, - - | .09 | .21 | .36 | .27 | .28 |
| 3 | 182 | 336 | 1,624 | 633 | Organs, Dis. of, - | 1.10 | 6.30 | 2.23 | 1.90 | .04 |
| 25 | 18 | - | 1 | 34 | Hepatitis, - - | .06 | - | - | .19 | .33 |
| 30 | 34 | 26 | 41 | 103 | Jaundice, - - | .18 | .16 | .17 | .36 | .40 |
| 1 | 70 | 112 | 142 | 296 | Liver, Dis. of, - | .51 | .55 | .74 | .73 | .01 |
| - | 2 | 1 | - | 1 | Spleen, Dis. of, - | - | - | .01 | .02 | - |
| 228 | 645 | 1,236 | 3,150 | 2,814 | Totals, | 4.90 | 12.21 | 8.20 | 6.75 | 3.03 |
| | | | | | 7. *Urinative Org.* | | | | | |
| | 3 | 5 | 16 | 71 | Diabetes, - - | .12 | .06 | .03 | .03 | - |
| 6 | 21 | 7 | 18 | 77 | Gravel, - - | .13 | .07 | .05 | .22 | .09 |
| 3 | 6 | 10 | 43 | 113 | Kidneys, &c., Dis.of, | .20 | .17 | .06 | .06 | .03 |
| 9 | 30 | 22 | 77 | 261 | Totals, | .45 | .30 | .14 | .31 | .12 |
| | | | | | 8. *Generative Org.* | | | | | |
| 63 | 121 | 197 | 389 | 601 | Childbirth, - - | 1.04 | 1.51 | 1.31 | 1.26 | .84 |
| 1 | 11 | 17 | 19 | 53 | Organs, Dis. of, - | .10 | .07 | .11 | .12 | .01 |
| 64 | 132 | 214 | 408 | 654 | Totals, | 1.14 | 1.58 | 1.42 | 1.38 | .85 |
| | | | | | 9. *Locomotive Org.* | | | | | |
| 20 | 40 | 46 | 60 | 116 | Rheumatism, - | .20 | .23 | .30 | .42 | .27 |
| 6 | 21 | 30 | 28 | 9 | Joints, Dis. of, - | .02 | .11 | .20 | .22 | .08 |
| - | - | - | 18 | 24 | Hip, Dis. of, - - | .04 | ·07 | - | - | - |
| - | - | - | 30 | 143 | Spine, Dis. of, - | .25 | .12 | - | - | - |
| 26 | 61 | 76 | 136 | 292 | Totals, | .51 | .53 | .50 | .64 | .35 |
| | | | | | 10. *Integumentive Organs.* | | | | | |
| 1 | 2 | 23 | 37 | 54 | Ulcer, - - - | .09 | .14 | .15 | .02 | .01 |
| 2 | 15 | 7 | 24 | 38 | Skin, &c., Dis. of, | .07 | .09 | .05 | .16 | .03 |
| 3 | 17 | 30 | 61 | 92 | Totals, | .16 | .23 | .20 | .18 | .04 |
| 379 | 420 | 645 | 635 | 4,414 | 11. Old Age, | 7.68 | 2.46 | 4.28 | 4.40 | 5.04 |

*Fatal Diseases, &c.*—CONTINUED.

| Deaths in Boston in 39 years. | | | | State. 7 years. | Causes of Death. | Per Ct. in State. | Per Centage in Boston. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1810 to 1820. | 1820 to 1830. | 1830 to 1840. | 1840 to 1849. | 1842 to 1848. | | 7 years. 1842 to 1848. | 1840 to 1849. | 1830 to 1840. | 1820 to 1830. | 1810 to 1820. |
| | | | | | 12. *Violence.* | | | | | |
| 86 | 139 | 216 | 314 | 743 | Accidents, - | 1.29 | 1.22 | 1.44 | 1.45 | 1.15 |
| 42 | 86 | 123 | 86 | 204 | Burns and Scalds, | .35 | .33 | .82 | .90 | .56 |
| 119 | 133 | 197 | 213 | 811 | Drowned, - - | 1.42 | .33 | 1.31 | 1.97 | 1.58 |
| 5 | 1 | 9 | 1 | - | Executed, - - | - | - | .05 | .01 | .07 |
| - | 4 | 2 | - | 3 | Frozen, - - | .006 | - | .01 | .04 | - |
| 7 | 10 | 8 | 22 | 4 | Heat, - - | .007 | .09 | .05 | .11 | .09 |
| 1 | - | - | - | - | Hydrophobia, - | - | - | - | - | .01 |
| 65 | 257 | 345 | 200 | 262 | Intemperance, - | .45 | .78 | 2.28 | 2.69 | .86 |
| - | - | - | - | 1 | Lightning, - | .001 | - | - | - | - |
| - | - | - | - | 3 | Malpractice, - | .006 | - | - | - | - |
| 6 | 8 | 5 | 14 | 17 | Murdered, - | .03 | .05 | .03 | .09 | .08 |
| 6 | 6 | 16 | 11 | 39 | Poisoned, - - | .07 | .04 | .11 | .06 | .08 |
| - | - | - | 3 | - | Starved, - - | - | .01 | - | - | - |
| 5 | 7 | 8 | 13 | 18 | Suffocated, - | .03 | .05 | .06 | .07 | .07 |
| 29 | 50 | 106 | 82 | 231 | Suicide, - - | .40 | .32 | .70 | .52 | .38 |
| 371 | 756 | 1,035 | 959 | 2,336 | Totals, | 4.06 | 3.72 | 6.86 | 7.91 | 4.93 |

1. The *Zymotic*,[1] or epidemic, endemic, and contagious diseases, or causes of death. The extent to which these diseases prevail is the great index of public health. When the proportion is comparatively small, the condition of public health is favorable; when large, it is unfavorable. If, as a class, these diseases are found to decrease, it must be inferred that the general health of the people is improving; if otherwise, that it is growing worse. Let us look at the table, and see how stand the facts.

It appears, by an inspection of the right-hand columns, that in Boston, in the first period, 15.85 per cent. of the causes of death were in this class; in the second period, 21.32 per cent.; in the third period, 27.56 per cent.; and in the fourth period, 31.59 per cent.; showing the remarkable fact, that these causes of death have doubled in the city within the last thirty years, and that the public health has been constantly growing worse. In the country, the proportion is 27.55 per cent.;—nearly the same as it was in Boston in the period, 1830 to 1840,—a more unfavorable condition than has been generally supposed to exist. By an inspection of the facts concerning the different diseases of this class, it will appear that nearly all of them have somewhat increased; but

[1] This and several other medical terms will be explained in the appendix.

those which exhibit the greatest difference, are dysentery, cholera infantum, and other diseases of the digestive organs, and scarlatina,—diseases which press most heavily upon infancy and childhood. *Scarlatina*, that dreadful enemy of the young, has increased from 30, in the period 1810 to 1820, to 972 and 1500, in the periods 1830 to 1840, and 1840 to 1849; or from forty hundredths of one per cent. to 6.45 and 5.82 per cent.! This disease, also, is the second of the class in fatality in the country! *Small-pox*, too, has increased, in the same time, from 6 to 345, or from .08 to 1.34 per cent.! It is not creditable to the age that it has permitted that disease to slay nearly half as many persons in the first four months of the present year, as it did in the great epidemic of 1792, before the preventive remedy of vaccination was known. *Typhus fever* (under which is included typhoid, nervous, and continued fevers) does not seem to exhibit a comparative increase in Boston, though always a formidable disease; but in the country it is the leading disease of this class. It is most fatal in September and October. In some known localities, in some kinds of seasons, it is almost sure to make its appearance. That 9.09 out of every 100 deaths, in the country towns, should be produced by this fever, is a fact that should arrest attention to ascertain its cause and the means of prevention. The information which may be derived from a more particular examination of the table, will compensate for devoting more time to it. When the Registration Report for 1849 is published, it will probably show a large increase in most of the zymotic diseases.

2. In the *Diseases of Uncertain Seat*, the greatest number appear against "infantile;" and there is an *appearance* of a proportional decrease in Boston, since 1811–1820. But this should be ascribed partly to more accurate records, which have transferred to other definite causes, some which were previously entered under the indefinite term, infantile. For the same reason, the number should be still further reduced. *Dropsy* and *Cancer* seem to be the most prominent diseases. About one-eighth of all the deaths in Boston, and in the State, for the last nine years, have been assigned to this class.

3. The *Diseases of the Nervous Organs* have prevailed in

about the same proportion at the different periods. The annual number of deaths by *Hydrocephalus*, which principally affects children surrounded by bad sanitary influences, has nearly doubled in Boston within the last thirty years.

4. The *Diseases of the Respiratory Organs* furnish one of the largest classes of causes of death; and, in this class, consumption and pneumonia (inflammation of the lungs, or lung fever) are preëminent.

*Consumption*, that great destroyer of human health and human life, takes the first rank as an agent of death; and as such, we deem it proper to analyze more particularly the circumstances under which it operates. Any facts regarding a disease that destroys *one-seventh* to *one-fourth* of all that die, cannot but be interesting.

We have compiled the following table, to illustrate the influence of the *seasons* upon this disease. The Registration Reports, from which the facts relating to Massachusetts are derived, admit of classifying the sexes for four years only. The months are given for both sexes, in all the reports. We have added Boston for 1849,—the only year in which the abstracts specify the months,—and New York for six years:—

| Months. | Massachusetts—except Boston. | | | Boston. | New York. |
|---|---|---|---|---|---|
| | 7 years. 1842—1848. Both sexes. | 4 years. 1845—1848. | | 1 year—1849. | 6 years. 1838—1843. Both sexes. |
| | | Male. | Female. | | |
| January, | 1,113 | 273 | 446 | 68 | 888 |
| February, | 1,134 | 296 | 439 | 43 | 865 |
| March, | 1,248 | 317 | 484 | 57 | 923 |
| April, | 1,242 | 306 | 484 | 75 | 917 |
| May, | 1,195 | 273 | 463 | 50 | 799 |
| June, | 1,084 | 270 | 410 | 49 | 711 |
| July, | 1,159 | 302 | 434 | 62 | 698 |
| August, | 1,197 | 315 | 474 | 56 | 718 |
| September, | 1,270 | 315 | 498 | 45 | 745 |
| October, | 1,198 | 286 | 470 | 34 | 766 |
| November, | 1,060 | 277 | 417 | 50 | 690 |
| December, | 1,127 | 272 | 439 | 65 | 751 |
| Total, | 3,502 | 3,502 | 5,458 | 654 | 9,471 |
| Winter, | 3,495 | 886 | 1,369 | 168 | 2,676 |
| Spring, | 3,521 | 849 | 1,357 | 174 | 2,427 |
| Summer, | 3,626 | 932 | 1,406 | 163 | 2,161 |
| Autumn, | 3,385 | 835 | 1,326 | 149 | 2,207 |

This statement shows that, in this State, the seasons do not exercise much influence upon the disease, especially in its terminating period. As in other diseases, the largest number of deaths occur in September; though in March and April they are nearly the same. In November, and the autumn quarter, the smallest number occur. This seems to be the general law in New York and London, as well as in Massachusetts. It has been supposed, however, that in no season are the seeds of the disease more extensively planted than in the autumn and winter. Spring has usually been considered the most unfavorable, though accurate statistical investigation does not prove it. The duration of the disease varies very much in different persons and under different circumstances; and death may take place in any month, without reference to the time of its commencement. It would be useful to learn the influence of the seasons upon the *causes*, rather than the termination, of this disease.

*Age* and *sex* have a greater influence, in modifying the operations of this disease, than the seasons, as will appear from the following statements, relating to this State, and to the cities of New York, Philadelphia, and London:—

| Ages. | Massachusetts. | | | New York City. 6 years. 1838—1843. | | New York State. 2 years. 1847, 1848. | | Philadelphia. 10 years 1836-45. | London. 4 years. 1843—1846. | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 7 years. 1842-48. Both sexes. | 4 yrs. 1845-48. | | | | | | | | |
| | | Male. | Fem. | Male. | Fem. | Male. | Fem. | Both sexes. | Male. | Fem. |
| Under 1, | 396 | 172 | 151 | 110 | 93 | 116 | 144 | 240 | 593 | 583 |
| 1 to 2, | 255 | 97 | 79 | 123 | 119 | 87 | 82 | 194 | 491 | 525 |
| 2 to 5, | 208 | 65 | 79 | 157 | 136 | 84 | 70 | 247 | 344 | 378 |
| Under 5, | 859 | 334 | 309 | 390 | 348 | 287 | 296 | 681 | 1,428 | 1,486 |
| 5 to 10, | 192 | 62 | 82 | 107 | 101 | 56 | 74 | 142 | 350 | 439 |
| 10 to 15, | 304 | 68 | 142 | 52 | 82 | 48 | 110 | 102 | 263 | 389 |
| 15 to 20, | 1,065 | 182 | 518 | 158 | 245 | 146 | 367 | 405 | 757 | 895 |
| 20 to 30, | 3,368 | 708 | 1,409 | 959 | 1,165 | 631 | 1,010 | 2,124 | 3,199 | 3,167 |
| 30 to 40, | 2,412 | 567 | 945 | 1,065 | 949 | 417 | 572 | 1,815 | 3,478 | 2,999 |
| 40 to 50, | 1,649 | 431 | 610 | 812 | 498 | 339 | 372 | 1,180 | 2,819 | 2,004 |
| 50 to 60, | 1,241 | 338 | 453 | 443 | 254 | 289 | 302 | 592 | 1,644 | 1,027 |
| 60 to 70, | 1,239 | 364 | 423 | 260 | 163 | 257 | 286 | 405 | 723 | 471 |
| 70 to 80, | 1,062 | 310 | 365 | 67 | 79 | 220 | 260 | 183 | 145 | 86 |
| Over 80, | 320 | 79 | 128 | 37 | 27 | 86 | 71 | 37 | 18 | 11 |
| Total, | 13,711 | 3,443 | 5,384 | 4,350 | 3,911 | 2,776 | 3,720 | 7,666 | 14,824 | 12,964 |
| Und. 15, | 1,355 | 464 | 533 | 549 | 531 | 391 | 480 | 925 | 2,041 | 2,314 |
| 15 to 60, | 9,735 | 2,226 | 3,985 | 3,437 | 3,111 | 1,822 | 2,623 | 6,116 | 11,897 | 10,092 |
| Over 60, | 2,621 | 753 | 916 | 364 | 269 | 563 | 617 | 625 | 886 | 568 |

This important table shows that this disease takes its subjects principally at the productive period of life,—15 to 60,—the most precious and most useful season. In the ages 20 to 30,—"the beauty and hope of life,"—far more die than at other ages. In more advanced life, however, it selects its victims in nearly the same proportion from the same number of living individuals.

It seems to be partial, too, in this State, in its selection from the sexes. It appears from the table that, at the ages 20 to 30, the number of females who die of consumption is nearly double that of the males,—being 1409 of the former to 708 of the latter. At the ages 30 to 40, the next in the number of its victims, it also selects from the sexes in nearly the same proportion. The operation of the disease does not seem to be the same in the country as it is in cities, as will appear from the following statement:—

| Places. | | Both Sexes. | Males. | Females. | Proportion of each. |
|---|---|---|---|---|---|
| Massachusetts, | 4 years, | 8,827 | 3,443 | 5,384 | as 39.01 to 60.99 |
| New York City, | 7 " | 9,606 | 4,938 | 4,668 | " 51.41 " 48.59 |
| " " State, | 2 " | 6,715 | 2,827 | 3,888 | " 42.08 " 57.92 |
| Philadelphia, | 10 " | 7,666 | 3,851 | 3,815 | " 50.23 " 49.77 |
| London, | 4 " | 27,788 | 14,824 | 12,964 | " 53.35 " 46.65 |
| England, | 1 " | 52,136 | 24,048 | 28,088 | " 46.13 " 53.87 |

These remarkable facts show that, while the disease destroys more males than females in the cities of New York and London, it destroys nearly the same of both sexes in Philadelphia. In the country towns in Massachusetts, the proportion of the sexes is as 39.01 males to 60.99 females; in New York, it is as 42.08 to 57.92; and in England, except London, it is as 46.13 to 53.87. A difference appears in all the ages over 20. It would seem, from these facts, that some causes exist in country towns to extend the disease among females; while different causes exist in cities, to aggravate the disease in the other sex.

The influence of *occupation, place of birth, personal habits,* and *hereditary tendency,* is worthy of investigation, but it is here omitted.[1]

We next desire to ascertain the influence of *locality* on the disease; and for this purpose have compiled the following state-

[1] See some interesting information on this subject, in Annales D' Hygiène publique, tom. XI, p. 5.

ment, showing its prevalence in each county in the State, in the period, 1842–1848. We have arranged the counties into four divisions: the four western; the three middle; the six eastern and southern, bordering on the ocean, exposed to the easterly winds; and the metropolis. In each we have given the whole number of deaths by all causes, and the number by consumption; and the proportion the latter bears to the former:[1]—

| Places. | Periods. | All Causes. | Consumption. | In 100. | 1 in |
|---|---|---|---|---|---|
| Berkshire, | 7 years, 1842–1848, | 3,055 | 559 | 18.29 | 5.43 |
| Franklin, | " " | 2,270 | 492 | 21.67 | 4.61 |
| Hampshire, | " " | 3,226 | 672 | 20.83 | 4.80 |
| Hampden, | " " | 3,252 | 675 | 20.75 | 4.81 |
| | Totals, | 11,803 | 2,398 | 20.31 | 4.92 |
| Worcester, | 7 years, 1842–1848, | 11,269 | 2,373 | 21.05 | 4.74 |
| Middlesex, | " " | 12,564 | 2,584 | 20.56 | 4.87 |
| Norfolk, | " " | 5,049 | 1,028 | 20.36 | 4.91 |
| | Totals, | 28,882 | 5,985 | 20.72 | 4.82 |
| Essex, | 7 years, 1842–1848, | 10,721 | 2,578 | 24.04 | 4.15 |
| Plymouth, | " " | 3,680 | 802 | 21.79 | 4.58 |
| Barnstable, | " " | 2,441 | 622 | 25.48 | 3.92 |
| Bristol, | " " | 4,599 | 972 | 21.13 | 4.73 |
| Dukes & Nantucket, | " " | 1,489 | 359 | 24.11 | 3.87 |
| | Totals, | 22,930 | 5,333 | 23.25 | 4.29 |
| State, exclusive of Boston, | 7 years, 1842–1848, | 63,615 | 13,716 | 21.08 | 4.63 |
| Boston, | 10 years, 1810 to 1820, | 8,470 | 1,891 | 22.32 | 4.47 |
| " | " 1820 to 1830, | 11,470 | 2,054 | 17.82 | 5.58 |
| " | " 1830 to 1840, | 16,414 | 2,306 | 14.04 | 7.11 |
| " | 9 years, 1840 to 1849, | 26,127 | 3,795 | 14.10 | 6.88 |
| Salem, | 5 " 1768 to 1773, | 642 | 117 | 18.22 | 5.49 |
| " | 10 " 1799 to 1808, | 1,932 | 483 | 25.00 | 4.00 |
| " | 10 " 1818 to 1828, | 2,178 | 527 | 24.19 | 4.13 |
| Lowell, | 13 " 1836 to 1848, | 6,168 | 929 | 15.03 | 6.63 |

It appears, from this statement, that the proportion of deaths in the four western counties, by consumption, does not vary

[1] In this statement are included 5,935 deaths,—about one-tenth of the whole,—returned without a specified cause. Some of these were by consumption. If they had been included, it would have given an increased proportion to this disease. It is probably really larger than here represented. The *still-born* deaths are excluded from all tables in this work, as they should always be in estimating *relative mortality*.

much from that on the sea-coast; a fact that has been supposed not to exist. In Suffolk and Middlesex Counties, diseases affecting the digestive organs prevail in greater proportions than in other parts of the State; and this fact will produce an apparently less number in the proportion by consumption.

It thus appears that this dreadful disease is a constant visiter in all parts of our Commonwealth,—on the mountains of Berkshire, and in the valley of the Connecticut, as well as along the sea-coast. The occasional visit of the cholera, or some other epidemic disease, creates alarm, and precautionary measures are adopted for prevention. But where is the alarm and precaution against a more inexorable disease, which, in this State, in every day in every year, deprives more than *seven* human beings of their lives? Over this disease curative skill has little or no power. It generally goes on, from its commencement to its termination, uncontrolled and uncontrollable by any remedies as yet discovered. Cholera, typhus, scarlatina, though terrible in themselves, when compared with this disease, are far less so in fatality. *But it may be avoided*, before it attacks. Its onset and its development may be prevented. And if it is ever to be ameliorated or eradicated, it can only be done by prevention, and not by cure. May the people be wise in time to learn the causes and apply the proper remedies to avert this greatest of calamities,—the invasion of consumption!

The average population of Boston, in the periods covered by the table, was, in 1810–1820, 38,642; in 1820 to 1830, 52,-345; in 1830 to 1840, 73,196; and in 1840 to 1849, 111,429. The deaths by consumption in those periods were 1,891; 2,054; 2,306, and 3,795; or, an annual average proportion of 1 death in 204 living persons in the first, 1 in 254 in the second, 1 in 317 in the third, and 1 in 264 in the fourth; showing a comparative decline from 1810–1820 to 1830–1840, but an increase since that period. In New York, for the six years, 1838–'43, there was, on the average, annually, one death by consumption to 194 inhabitants; in Philadelphia, in the ten years, 1836–'45, 1 in 284; and in London, in the four years, 1838–'42, 1 in 205.

We subjoin some additional facts respecting this disease in places without this Commonwealth :—

| Places. | | Periods. | All Causes. | Consumption. | In 100. | 1 in |
|---|---|---|---|---|---|---|
| Portsmouth, N.H., | 19 yrs. | 1801–'11, 1818–'25, | 2,367 | 471 | 19.81 | 5.02 |
| " | 3 " | 1829, '30, '32, | 329 | 72 | 21.88 | 4.58 |
| Providence, | 5 " | 1841–'45, | 3,032 | 718 | 23.68 | 4.22 |
| New York City, | 10 " | 1811–'20, | 25,896 | 6,061 | 23.40 | 4.27 |
| " " " | 10 " | 1821–'30, | 42,816 | 8,010 | 18.70 | 5.34 |
| " " " | 10 " | 1831–'40, | 68,965 | 13,415 | 19.45 | 5.14 |
| " " " | 5 " | 1841–'45, | 43,084 | 7,437 | 17.28 | 5.79 |
| " " Country, | 2 " | 1847, '48, | 24,378 | 6,715 | 25.00 | 4.00 |
| Philadelphia, | 10 " | 1811–'20, | 23,582 | 3,629 | 15.38 | 6.49 |
| " | 10 " | 1821–'30, | 37,914 | 5,522 | 14.56 | 6.86 |
| " | 10 " | 1831–'40, | 49,678 | 7,070 | 14.23 | 7.02 |
| " | 5 " | 1841–'45, | 27,238 | 3,959 | 14.53 | 6.88 |
| Baltimore, | 10 " | 1821–'30, | 18,099 | 2,810 | 15.52 | 6.44 |
| " | 10 " | 1831–'40, | 23,878 | 3,778 | 15.82 | 6.32 |
| " | 5 " | 1841–'45, | 12,618 | 2,450 | 19.41 | 5.15 |
| Charlestown, S.C., | 9 " | 1822–'30, | 7,523 | 1,139 | 15.14 | 6.60 |
| " | 10 " | 1831–'40, | 6,663 | 968 | 14.63 | 6.88 |
| " | 5 " | 1841–'45, | 2,974 | 475 | 15.97 | 6.26 |
| England, | 5 " | 1838–'42, | 1,734,435 | 297,390 | 16.10 | 6.20 |
| London, | 8 " | 1840–'47, | 397,871 | 57,047 | 14.33 | 6.97 |
| " | 8 years | Winter Quarters, | 106,713 | 14,581 | 13.66 | 7.31 |
| " | 8 " | Spring " | 89,965 | 14,978 | 16.64 | 6.00 |
| " | 8 " | Summer " | 92,538 | 13,927 | 15.05 | 6.64 |
| " | 8 " | Autumn " | 108,655 | 13,561 | 12.48 | 8.01 |
| Paris, | 4 yrs. | 1816–'19, | 85,339 | 15,375 | 18.01 | 5.55 |
| Geneva, | 2 " | 1844–'45, | 2,936 | 296 | 10.08 | 9.91 |
| Hamburgh, | 6 " | 1833–'38, | 27,257 | 5,224 | 19.16 | 5.22 |
| Berlin, | 10 " | 1830–'39, | 73,216 | 12,800 | 17.48 | 5.71 |
| Stuttgard, | 10 " | 1828–'37, | 4,356 | 924 | 21.21 | 4.71 |

We might extend this statement, and show the prevalence of this disease in the milder climates of the West Indies, and on the sunny shores of Italy; and demonstrate how fruitless, generally, are the attempts to arrest its ravages. It is stated that, "of thirty-five consumptive patients who went to Madeira in 1821, two-thirds died at sea; three died in the first month after their arrival; five or six survived the winter, and about the same number survived the following spring; three or four lived to the second winter; but, of the whole number, there

were but thirteen living in 1824. The grave-yards of Rome, Naples, Marseilles, Pisa, Nice, and Malta, bear ample testimony to the fatality of this disease among those who have been induced to seek a foreign clime in the vain hope of recovery." [1]

5. The *Diseases of the Circulative Organs* are principally confined to those affecting the heart. These seem to have increased, both in the State and in Boston. In the latter, from .37 to 1.73,—more than 500 per cent.

6. The *Diseases of the Digestive Organs* embrace a very large class. Some may be zymotic or sporadic, as circumstances occur by which they are developed. The zymotic diseases, affecting these organs, are cholera, cholera infantum, diarrhœa, and dysentery; and the principal diseases of the sporadic class, as they appear in the tables, are enteritis, or inflammation of the bowels, teething, and the undefined diseases of these organs. The whole of both classes, in the table, may be stated as follows:—

| | STATE. | | CITY. | |
|---|---|---|---|---|
| | Number. | Proportion. | Number. | Proportion. |
| Zymotic Diseases, | 4,431 | 7.71 | 2,472 | 9.68 |
| Sporadic Diseases, | 2,814 | 4.90 | 3,150 | 12.21 |
| Total, | 7,245 | 12.61 | 5,622 | 21.89 |

This statement shows that these diseases cause 12.61 per cent., or about one-eighth, of the deaths in this State, and 21.89, or about one-fifth, in Boston.

The influence of seasons and ages is greater in these diseases than in any other class, as will appear from the statement on the next page.

This table illustrates, in a remarkable manner, the modifying influences of the seasons and ages upon the diseases specified. When it is known how dangerous the months of July, August, September, and October, are to children, we should be especially taught to guard against all the causes which, at that time, excite these diseases.

[1] British and Foreign Medical Review, Vol. XXIV, p. 107.

| Months. | Cholera. | Cholera Infantum. | Diarrhœa. | Dysentery. | Total. | Ages. | Cholera. | Cholera Infantum. | Diarrhœa. | Dysentery. | Total. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| January, | 7 | 4 | 4 | 19 | 34 | Under 1, | 28 | 469 | 254 | 341 | 1092 |
| February, | 3 | 5 | 6 | 8 | 22 | 1 to 2, | 20 | 246 | 122 | 377 | 765 |
| March, | 7 | 6 | 17 | 13 | 43 | 2 to 5, | 14 | 47 | 63 | 372 | 496 |
| April, | 6 | 7 | 17 | 12 | 42 | 5 to 10, | 8 | 8 | 20 | 119 | 155 |
| May, | 9 | 10 | 17 | 14 | 50 | 10 to 20, | 11 | - | 11 | 86 | 108 |
| June, | 9 | 19 | 20 | 23 | 71 | 20 to 30, | 14 | - | 21 | 97 | 132 |
| July, | 40 | 93 | 73 | 165 | 371 | 30 to 40, | 17 | - | 14 | 69 | 100 |
| August, | 72 | 275 | 179 | 544 | 1070 | 40 to 50, | 15 | - | 8 | 73 | 96 |
| September, | 25 | 184 | 170 | 660 | 1039 | 50 to 60, | 23 | - | 18 | 73 | 114 |
| October, | 10 | 55 | 65 | 281 | 411 | 60 to 70, | 32 | - | 14 | 57 | 103 |
| November, | 2 | 19 | 20 | 38 | 79 | 70 to 80, | 20 | - | 26 | 75 | 121 |
| December, | 6 | 7 | 14 | 20 | 47 | Over 80, | 17 | - | 16 | 42 | 75 |
| Total, | 196 | 684 | 602 | 1797 | 3279 | Total, | 219 | 770 | 587 | 1781 | 3357 |

7. The *Diseases of the Urinary Organs* do not constitute a large class, and in neither period amount to one per cent. Gravel and diabetes are the most numerous of the class.

8. The *Diseases of the Generative Organs* are an important though not a large class. Cases of puerperal fever are classed under the diseases of child-birth; and they have been in nearly the same proportion in all periods of our history, in Boston and in the country.

9. The *Diseases of the Locomotive Organs.* Rheumatism, or rheumatic fever, has occasioned the greatest number of deaths. Spinal diseases are also increasing.

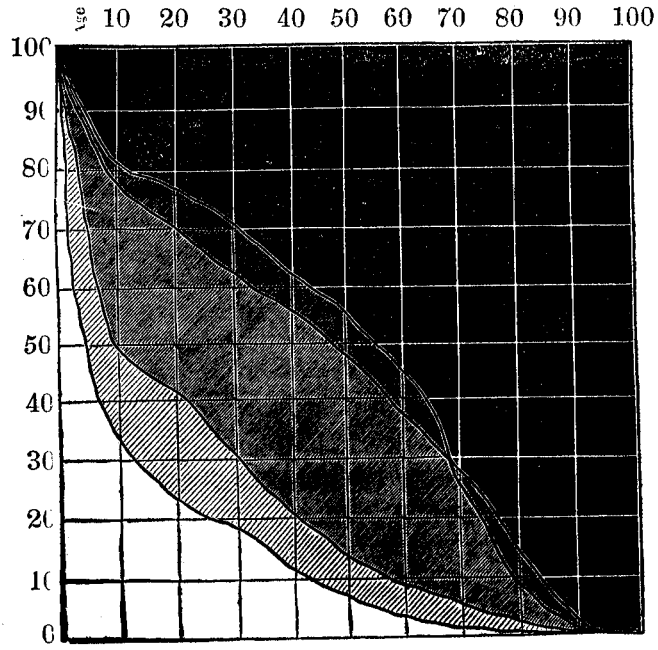
10. The *Diseases of the Integumentive Organs* have caused about the same uniform proportion. *Ulcers* are stated to have produced more deaths than all other diseases of this class.

11. *Old Age* has fewer deaths, in proportion to the whole, to record among its victims now, than at the former periods of our history. In Boston, in 1810 to 1820, it destroyed 5.04 per cent.; in the last period, only 2.46; a decrease of more than one-half.

12. The *Deaths by Violence* are nearly as great in the country as in Boston, though the proportional numbers vary in both places. Accidents and drowning are the most numerous causes. Burns and scalds, intemperance and suicide, cause nearly the same proportions.

The following are some of the many important conclusions to which the facts thus far disclosed lead us:—

1. *It is proved* that there is a great difference, in this State, in the longevity of people living in different places and under different circumstances. This fact is presented in a forcible manner in the subjoined illustration, taken from the Census of Boston, (p. 158.) The cut is drawn in ten divisions, each way; those from left to right representing the ages of life; those from top to bottom, the per centage of survivors:—




Take one hundred persons from each of four different classes of people: 100 of those who enjoy an amount of life equal to the healthy classes in England; 100 of those who died at Newton, in 1810 to 1830; 100 of those who died in Boston, in 1840 to 1845; and 100 of the Catholics of Boston. If each of the hundred persons in all these classes had lived 100 years, each class would have enjoyed 10,000 years of life. But persons die at all ages, and in some classes very much earlier than in others. Accordingly four lines are drawn diagonally

across the cut, from the top on the left to the bottom on the right, to represent the amount of life that each class enjoyed. The white and shaded spaces below these lines represent life, and the dark and shaded spaces above the lines represent death. The upper line represents the survivors in England; the next below, those in Newton; the third, the general population of Boston; and the fourth, the Catholics. It will be perceived that 82 per cent., or 82 out of every 100, of the lives in England pass the line of 10 years, or survive that age; while only 34 per cent., or 34 out of every 100 Catholics, pass the same line! That 38.75 per cent., in Newton, survived 60 years, while only 9.95, in Boston, survived the same age! Other comparisons, equally striking, may be made.

2. *It is proved* that causes exist in Massachusetts, as in England, to produce premature and preventable deaths, and hence unnecessary and preventable sickness; and that these causes are active in all the agricultural towns, but press most heavily upon cities and populous villages.

3. *It is proved* that measures,—legislative, social and personal,—do not at present exist, or are not so fully applied, as they might be, by the people, for the prevention, mitigation, or removal, of the causes of disease and death.

4. *It is proved* that the people of this State are constantly liable to typhus, cholera, dysentery, scarlatina, small-pox, and the other great epidemics; and to consumption, and the other fatal diseases, which destroy so many of the human race in other parts of the world.

5. *It is proved* that the active causes of disease and death are increasing among us, and that the average duration of life is not as great now as it was forty or fifty years ago.

We are fully aware that the general opinion does not coincide with this fact, and that a directly opposite one has been expressed. It has been frequently said, that, owing to the different modes of living, the increased medical skill, and other causes, diseases have been ameliorated, and the average length of human life has been extended; and particularly within the last fifty years. We have long thought differently, especially in regard to the more recent periods of our history. Those who

make this assertion seem to rely upon imperfect or uncertain data to support their opinion. Statistical observations of the living and the dead, gathered in ancient times, should be taken with great caution as comparative tests. Ten years since, it was said that "the average value of life is not as great as it was twenty years ago; that it was at its maximum in 1810 to 1820; and that it has since decreased."[1] Subsequent investigations have fully established the correctness of this statement.

Taking the mean duration of life as our guide, it appears that the average age of all that died in Boston, in 1810 to 1820, was 27.85 years, while in 1840 to 1845 it was 21.43 years only, showing a difference of 6.42 years. In New York, in 1810 to 1820, it was 26.15 years, and in 1840 to 1843 it was 19.69,—a difference of 6.46 years. In Philadelphia, in 1810 to 1820, it was 26.25, and in 1840 to 1844 it was 22.01, —a difference of 4.24 years. If the more recent and last years were included, it would show a still further decline.

Taking a comparison of the number of the whole population out of whom one may die annually, as our guide, it appears from the table, (p. 82,) that, in Boston, in 1830, the deaths were 1 in 48, and in 1845 they were 1 in 39. Compare the annual mortality per cent. of the different ages, (an undoubted test,) and it appears that, in those under 5 years of age, 5.96 per cent. died in 1830, 7.32 in 1840, and 9 in 1845; nearly doubling in less than 20 years; and, in all the years under 40, there also appears an increased mortality.

We have shown (pp. 85, 86) that neither clergymen nor physicians live as long now as they did during the last century; and within the last thirty or forty years, the former, on the average, have lost seven years, and the latter nine years of life. And, it would be difficult to find a physical power of endurance, and an average longevity, among men and women, in the ordinary occupations of life, as great as existed at the time of and before the revolution. This, it seems to us, might be fully proved, by examining and analyzing the pension list of Massachusetts, and other authentic sources of information.

[1] American Journal of Medical Sciences, Vol. I, for 1841, p. 382.

It is undoubtedly true, that in many things society has improved; that medical skill in the cure of disease has greatly increased; and that some diseases are not as fatal as formerly, or are now better understood and controlled. But while all this may be true, it is no less true that the active causes of disease have increased faster than the appliances for their prevention and cure; that new diseases, or old ones in a new and modified form, equally fatal and uncontrollable, have appeared; and that sickness and death advance more rapidly than the improvements devised to arrest them.

These statements, concerning the decreasing vital energies of man, are confirmed by recent investigations in England. Thos. Rowe Edmonds, Esq., Actuary to the Legal and General Life Assurance Society, in London,—a good authority in this matter,—has recently published some interesting papers, from which it appears "that the mortality of the population of England, after decreasing for 35 years to the year 1815, has since that time, up to the end of 1848, been regularly increasing; that nearly the whole of this increase arises from the increase of the mortality of children under 10 years of age, which increase has amounted to 44 per cent. in twenty years; that the mortality of every age above 20 years has remained the same, with little or no variation, for the last 30 or 40 years, and probably for a longer period; that in the greatest part of the population of England, with the exception of the population of larger towns, the mortality of females exceeds that of males in the interval of age comprehended between 8 and 45 years; and that at other intervals of age it is in excess over that of females in England as in other countries."[1] And he confirms the statement by the following tabular comparison of the mortality in England in 1813–1830, with 1838–1844; and in Carlisle in 1779–1787:—

[1] London Lancet, Vol. I, for 1850, pp. 301, 329. Mr. Edmonds had previously contributed some valuable papers on vital statistics to the Lancet. See Dec. 5 and 12, 1835, pp. 364, 408; Oct. 28, 1837, p. 154; Vol. II, for 1838–9, pp. 185, 353, 778, 837. He also published, in 1832, a new theory in regard to Life Tables.

| Ages. | England—18 years. 1813—1830. | | England—7 years. 1838—1844. | | Carlisle—9 years. 1779—1787. |
|---|---|---|---|---|---|
| | Males. | Females. | Males. | Females. | Both sexes. |
| Under 5, - | 4.90 | 4.22 | 7.07 | 6.04 | 8.23 |
| 5 to 10, - | .66 | .61 | .93 | .90 | 1.02 |
| 10 to 15, - | .46 | .48 | .50 | .55 | .54 |
| 15 to 20, - | .66 | .70 | .70 | .79 | .64 |
| 20 to 30, - | .93 | .95 | .94 | .94 | .75 |
| 30 to 40, - | 1.05 | 1.14 | 1.09 | 1.13 | 1.06 |
| 40 to 50, - | 1.37 | 1.37 | 1.45 | 1.32 | 1.43 |
| 50 to 60, - | 2.14 | 1.98 | 2.26 | 1.98 | 1.83 |
| 60 to 70, - | 4.15 | 3.78 | 4.28 | 3.79 | 4.12 |
| 70 to 80, - | 9.28 | 8.88 | 9.22 | 8.42 | 8.30 |
| 80 to 90, - | 20.82 | 19.67 | 20.11 | 18.32 | 17.56 |
| Over 90, - | 33.93 | 34.09 | 36.53 | 34.58 | 28.44 |
| All ages, - | 1.99 | 1.90 | 2.27 | 2.10 | 2.50 |

An exception to these statements, in their general application, may be found in Geneva, which has often been quoted to show the improving condition of human life. Great improvements have undoubtedly taken place in that city; and they arise from the excellent system of registration and the superior sanitary regulations that exist there, by which the people are made better acquainted with the laws of health and the means of preventing disease. But the improvements are not so great as they may at first sight appear to be. The proof rests upon a comparison of the average age at death, which, as we shall presently show, is an uncertain test. Mr. Mallet, from whom the statement was originally derived, gives some facts in the same paper which partially account for the great apparent improvement. He says marriage there is now deferred to a later period of life than it was in the 18th century; that each marriage then, on the average, produced five children, and now less than three; and that, during the 16th century, 25.92 in each 100 deaths were those of children under one year old; while in the period he describes, 1814–1833, only 13.85 died of that age! This shows that there were less children *to die*, and consequently the average ages of *all that died* would be greater. It shows, however, a higher state of civilization, and that a greater proportion of the children born were preserved to the ages of maturity and usefulness.[1]

[1] Annales d' Hygiène publique, tom. XVII, p. 114.