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Contributors

Shattuck, Lemuel, 1793-1859.
Massachusetts. Office of the Secretary of State.
National Library of Medicine (U.S.)

Publication/Creation

[Boston?] : [publisher not identified], [1845?]

Persistent URL

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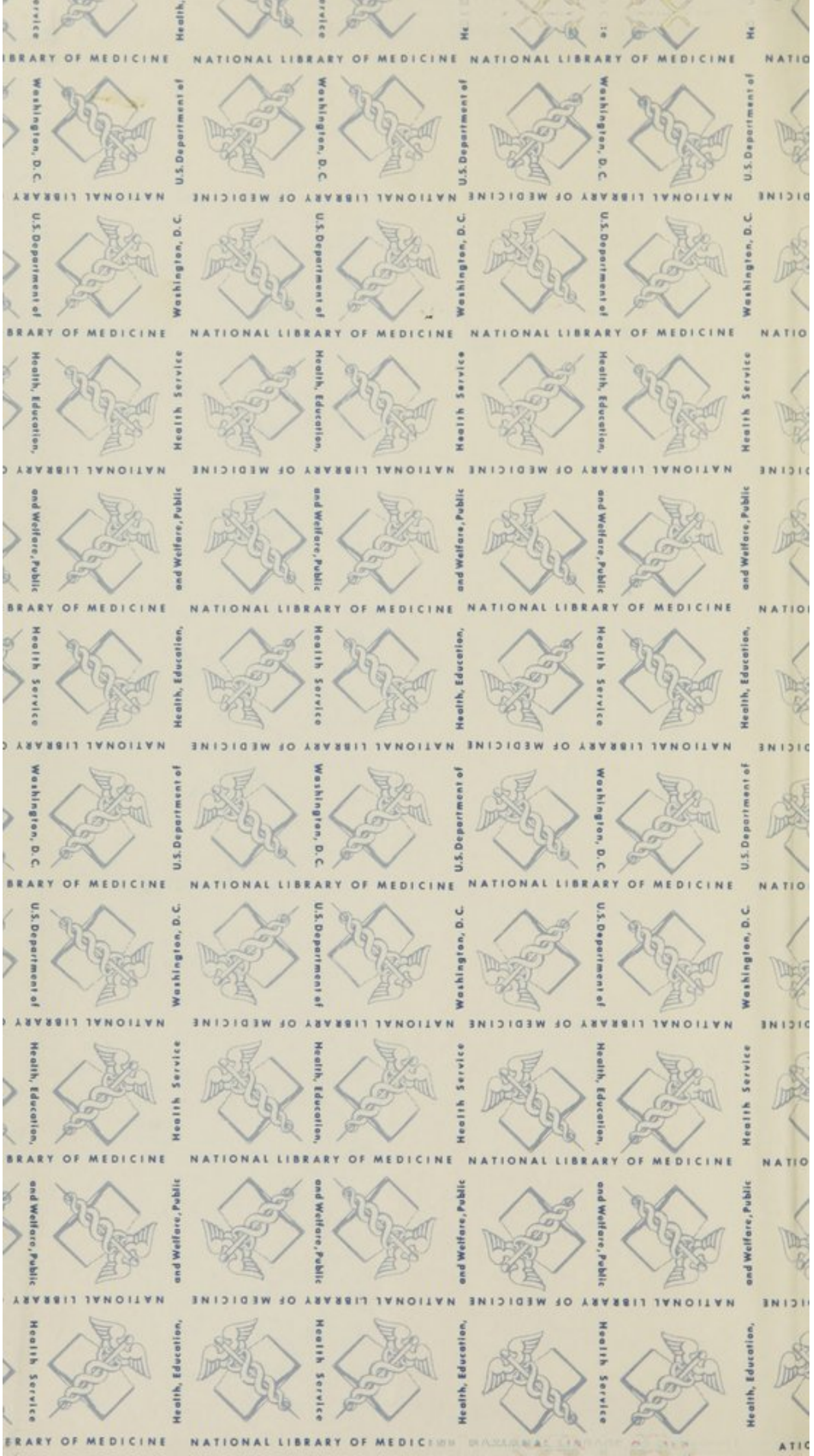
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LETTER

TO THE

SECRETARY OF STATE,

ON THE

REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS,

IN MASSACHUSETTS.

BY LEMUEL SHATTUCK.

LETTER TO THE SECRETARY.

Boston, December 12, 1845.

Hon. John G. Palfrey,

Secretary of the Commonwealth.

Sir:—Agreeably to your request, and as far as other special engagements would permit, I have examined the returns made under the Registry Law of this State, and the tables abstracted from them, and proceed to give you the results of this examination. I had the honor, on the 13th December, 1843, to address a letter to John A. Bolles, Esq., your predecessor in office, in which I alluded to the defects of the then existing laws on the subject, and the almost entire neglect of registration by all classes of people. I pointed out some of the objects to be gained by a new and more efficient system; and at the close of the letter submitted a plan, accompanied by forms and instructions, for carrying such a system into successful operation. This communication was published in the Second Annual Registration Report. Since that time, a new act on the subject has been passed, and my plan, in relation to the Registry Books for the towns, has been generally carried into operation. With a slight modification of the entries in the Register for marriages, which the Registrar may easily make, these books are all that may be desired for the most efficient system. Without a proper and uniform plan for making the original records, no general results can be deduced from the facts they contain, which would be of much value. Here then one of the first and most important objects in this matter has been attained. In the notes accompanying the returns this year, some town clerks allude to the additional labor which these forms require, but generally the plan is regarded with increasing favor, and a firmer conviction of its importance; and should proper blanks be used, and a suitable compensation be allowed, the labor would be comparatively trifling, and the system would soon become very popular.

The law is, however, very imperfect in the means it proposes for obtaining the facts to be recorded; and for this reason it has failed to be useful in many towns.

This is an important part of its operations. I stated, in my letter of 1843, above alluded to, that "the experience of every government, where systems of registration have been adopted, shows that it must be made the special duty of some individuals to collect the facts, and furnish them to the proper officer. To leave this to the voluntary action of any one in the community, fails of producing those full and accurate returns, which are essential to render the record valuable. It is also bad policy to exact a fee of the connexions or friends of those whose births or deaths are recorded, as was once the provision of our statutes. So far as they are concerned the record should be free. But to the proper officers and persons concerned, rewards should be offered for the performance of duty, and penalties imposed for the neglect of it. In this way it will be made their interest, as well as their duty, to perform what the law may require."

The justice of these views is confirmed by experience, and the uniform testimony of the town clerks in the notes accompanying their returns. Should attempts be made to amend the provisions of the present law, it is important that proper ones should be passed to supply their place. It is believed that such a bill might be drawn, as would entirely remove any objections which may exist in the minds of clergymen and others, against any part of the present act; and, while it would be simple in its operations, would accomplish all the objects to be desired, especially if carried into effect with competent attention and ability.

Without further remark, I proceed to notice some results, obtained from the returns under our Registry System. Before doing so, however, I wish to notice a few facts relating to the condition of the population.

In 1844, Edwin Chadwick, Esq., author of the able Report on the Sanatory Condition of England, published a work on the "Pressure and Progress of the Causes of Mortality among different Classes of the Community," in which he alludes to America as follows:—

"In America, little attention and labor appear to have been bestowed in any of the rural districts on general land drainage. Yet nature inflicts terrible punishment for the neglect of the appointed and visible warnings. The cleansing and the general sanatory condition of the American towns appear to be lower than in England or Scotland, whilst the heat there at times is greater and decomposition more active; pestilence, in the shape of yellow fever, ague, and influenza, is there more rife; the deaths in proportion to the population more numerous, and the average age of death (so far as there is information) amongst the resident population much lower.

	Years.	*Months.*
The average age of the whole of the living population in America, so far as can be deduced from the returns at the periods given in the census, is only	22	2

"Notwithstanding the earlier marriages, and the extent of emigration, and the general increase of the population, the whole circumstances appear to me to prove this to be the case of a population depressed to this low age, chiefly by the greater proportionate pressure of the causes of disease and premature mortality. The proportionate numbers at each interval of age, in every 10,000 of the two populations, are as follows:—

	United States of America.	*England and Wales.*
Under 5 years	1744	1324
5 and under 10	1417	1197
10 " 15	1210	1089
15 " 20	1091	997
20 " 30	1816	1780
30 " 40	1160	1289
40 " 50	732	959
50 " 60	436	645
60 " 70	245	440
70 " 80	113	216
80 " 90	32	59
90 and upwards	4	5
	10,000	10,000
Average age of all the living	22 years 2 months	26 years 7 months.

"Here it may be observed, that whilst in England there are 5025 persons between 15 and 50, who have 3610 children or persons under 15; in America there are 4789 persons living between 15 and 50 years of age, who have 4371 children dependent upon them. In England there are in every ten thousand persons 1365 who have obtained above 50 years' experience; in America there are only 830.

"The moral consequences of the predominance of the young and passionate in the American community, are attested by observers to be such as have already been described in the General Sanatory Report as characteristic of those crowded, filthy, and badly administered districts in England, where the average duration of life is short, the proportion of the very young great, and the adult generation transient.

"The difference does not arise solely from the greater proportion of children arising from a greater increase of population, though that is to some extent consistent with what has been proved to be the effect of a severe general mortality; the effects of the common cause of depression is observable at each interval of age; the adult population in America is younger than in England, and if the causes of early death were to remain the same, it may be confidently predicted that the American population would remain young for centuries.

	Years.	*Months.*
The average age of all alive above 15 in America is . . .	33	6
The average age of all alive above 15 years in England and Wales is	37	5
The average age of all above 20 years in America is . . .	37	7
In the whole of England the average of all above 20 years is .	41	1 "

These are important statements; and, coming from a man so eminent for the ability and knowledge he has displayed on this subject, deserve serious consideration. The prevailing opinion among us is, that "no people in the world are more healthy than Americans." But if the above statements are true, this prevailing opinion is incorrect. Let us examine the subject by such aids as we have at command, to ascertain how far they are applicable, especially to the people of Massachusetts. We will first take a view of the facts obtained by the National Census of 1830 and 1840; and afterwards of those obtained under the Registry

Law, concerning births, marriages, and deaths. The census of 1840 contained many errors, but when compared with that of 1830, the results correspond so well that it may be taken as a near approximation to the truth. It is much to be desired, that measures should be devised, when the next State census shall be taken, to have it more full and accurate than any hitherto taken; and to obtain other particulars concerning our population, which are important to be known.

In presenting facts of this kind, to give the mere numbers without the proportions, affords but an imperfect view of the subject. Such a collection of facts may be likened to the bones of our bodily system without the accompaniments which give them vitality. I have, therefore, in most of the tables in this communication, calculated these proportions,—a work which has been attended with considerable labor. This is a mode by which even statistics can be made both interesting and useful.

The following is a statement of the ages of the white population of Massachusetts, according to the National Censuses of 1830 and 1840, and the proportion in every 10,000, living at each specified age.

(*a*)

Age.	Number of Persons.		In every 10,000, there were in	
	1830.	1840.	1830.	1840.
Under 5	80,131	92,626	1,329	1,270
5 to 10	70,558	80,411	1,170	1,103
10 to 15	67,971	74,803	1,127	1,026
15 to 20	67,331	77,429	1,117	1,063
20 to 30	118,908	150,535	1,972	2,065
30 to 40	73,601	101,607	1,221	1,394
40 to 50	50,342	63,270	835	868
50 to 60	33,482	41,954	555	575
60 to 70	23,203	26,077	385	358
70 to 80	12,693	14,860	210	203
80 to 90	4,276	4,869	71	67
90 to 100	507	570	8	8
Over 100	3	19	-	-
Total,	603,006	729,030	10,000	10,000

This table is read thus. There were in Massachusetts, under 5 years of age, 80,131 persons, in 1830; and 92,626 persons in 1840;—and to every 10,000, of all ages, there were 1329 under 5, in 1830; and 1270 under 5, in 1840. The other ages are read in the same way. The proportion may be read as so much *per cent.* in this and many other tables in this communication, by separating the two right hand figures by a decimal point, when they will be read 13.29 and 12.70.

From this statement, it appears that the proportion under 15 years of age was 2.27 per cent. more in 1830 than in 1840; from 15 to 60 it was 2.65 per cent. less; and over 60, it was .11 more. In the census of 1840 there was an error of about 8000 in Boston, as I shall show in the report of the census of that city this year. This error was made in regard to the class from 15 to 60; and, taken in connection with the increased immigration to our cities, of the same class, during this period, will account for the difference in the proportions.

There are various modes suggested of comparing the energies and prosperity of one people with another. It has been said, with much truth, that "a country is placed in the most favorable circumstances for advancement, when it has the largest proportionate numbers of its inhabitants of an age suited to active employments." That age, according to the above extract from Mr. Chadwick's work, is between 15 and 50. It appears to me, however, that, in New England at least, 15 to 60 would be a better division; for most persons here between 15 and 60 are able to labor. I propose, therefore, to adopt the following standard of comparison. Those under 15 years of age to be called the *Dependent Class*, because they are dependent on those older for support; those from 15 to 60 to be called the *Productive Class*, because they are the only class who enjoy the full vigor of life, and are capable of discharging all its manifold duties; and those over 60, the *Aged Class*. The first and third classes combined may be called the *Burdensome Class*, and the other the *Productive Class*. The word *productive* is used here as applied to labor, in contradistinction from idleness or inability. One class are producers and the other consumers.

The educational age, as fixed by the laws of Massachusetts, is 4 to 16. It seems to me, however, that this specific classification is injudicious, and that 5 to 15 would be a better division. One object in specifying any age, is to have a basis by which to proportion the public school money to the several towns. It is probable, however, that it would make little or no difference in the result, whether this sum were proportioned to the children between 4 and 16, or between 5 and 15. The latter are universally adopted by nations as important points in the divisions of the population, and in the statistics of the dead; and there are many reasons why the educational age should be within these points. It would be less labor to make the enumeration; and, from examinations which have been made, it appears that the ages of children attending school, more nearly correspond to them. Comparisons could be more readily made with the ordinary divisions of the population. I agree in opinion with a recent eminent writer in thinking, in its application to schools, that "hereafter 15 will be the age at which, in any census, it will be considered that, in the mass of the community, occupation begins and education ends."

I will now apply the above test to the population of each county, the whole State, and some other places; and calculate the proportions of the whole population living in each class. (Table *b*, next page.)

From this statement it appears that, while the whole United States had 52.35 per cent. of the population of the productive class, between 15 and 60, Massachusetts had 59.65 per cent. and England 56.70; showing this State to be better situated, in this respect, than either. In the aged class it appears, however, that England had 7.20 per cent. while this State had but 6.74—a result in favor of the longevity of that country. Some counties compare better than others or the whole State. Boston has 64.65 per cent.—the greatest proportion of the productive class; and only 2.93 per cent.—the least of the aged.

The condition of a population is very much affected by emigration and immigration. The character of the emigrants varies, however, very much in different places. To illustrate this point we will take the city of Lowell and the State of Illinois. In one the productive class, and in the other the dependent class, pre-

dominates. Few of the productive class in either case were natives. By the census of 1840, it appears that to every 10,000 persons there were

	Under 15	15 *to* 60	*Over* 60.
In Lowell, ...	2500	7368	132
In Illinois, ...	4762	5045	193

That is, while Lowell had 2500 persons dependent upon every 7365 for support, Illinois had 4762 persons dependent on 5045 for support; showing, from the ages alone, that the productive energies of the one are more than double those of the other. If the other circumstances of the population were taken into consideration, such as the greater amount of sickness and mortality, necessarily suffered in one more than in the other, the difference would appear still more striking. Lowell is a remarkable instance; and perhaps there cannot be found, anywhere, 25,000 persons in one place, in which the productive class comprises 73.68 per cent. and the burdensome class only 26.32 per cent.,—a little more than one quarter. In neither place are to be found many of the aged class, most of the immigrants being of the other classes, and who had not lived long enough there to pass out of them. Combining the dependent and the aged classes, as proposed, the following proportions are obtained. (Table *c*, next page.)

There is another question: What proportion of our people survive different ages, as compared with others in other places? This is a subject of interest, though when taken alone it should not be considered as a sure basis of a comparison of longevity. From the facts already given, table *d* is compiled.

It appears from this table, that in Massachusetts 63.74 per cent. of the population in 1830 had survived the age of 15, and 66.01 in 1840. In the United States 55.01 in 1830, and 56.29 in 1840, and in England 63.90, had survived the

(b)

In	Whole Population,	Number of Persons.			To every 100 persons, there were		
		Under 15.	15 to 60.	Over 60.	Un. 15.	15 to 60	Ov'r 60
Massachus. 1830,	603,006	218,660	343,664	40,682	36.26	57.00	6.74
" 1840,	729,030	247,840	434,795	46,395	33.99	59.65	6.36
Boston, - - -	83,012	26,904	53,674	2,434	32.42	64.65	2.93
Essex Co. - -	94,482	33,039	54,494	6,949	34.97	57.68	7.35
Middlesex, - -	106,118	34,383	65,982	5,753	32.40	62.18	5.42
Worcester, - -	94,740	32,906	54,892	6,942	34.73	57.94	7.33
Hampden, - -	37,034	12,363	22,427	2,244	33.38	60.56	6.06
Hampshire, - -	30,696	10,763	17,672	2,261	35.06	57.58	7.36
Franklin, - - -	28,724	10,466	15,972	2,286	36.44	55.60	7.96
Berkshire, - -	40,467	14,411	23,376	2,680	35.61	57.77	6.62
Norfolk, - - -	52,980	18,162	31,327	3,491	34.28	59.13	6.59
Plymouth, - -	47,020	16,574	26,482	3,964	35.25	56.32	8.43
Barnstable, - -	32,111	12,378	17,472	2,261	38.55	54.41	7.04
Bristol, - - -	58,934	20,712	34,202	4,020	35.14	58.04	6.82
Dukes, - - -	3,938	1,335	2,244	359	33.90	56.98	9.12
Nantucket, - -	8,433	2,572	5,210	651	30.50	61.78	7.72
U. States, 1830,	10,526,058	4,737,335	5,368,275	420,448	44.99	51.01	4.00
" 1840,	14,189,108	6,201,219	7,427,579	560,310	43.71	52.35	3.94
England, 1841, -	15,858,075	5,723,782	8,991,903	1,142,390	36.10	56.70	7.20
Sweden, 1835, -	3,025,439	1,065,444	1,722,332	237,663	35.22	56.93	7.85

same age. In Massachusetts, 6.74 in 1830, and 6.36 in 1840; in the United States, 4.00 in 1830, and 3.94 in 1840; and in England, 7.20 had survived the age of 60. These deductions show that a less proportion of the population live through the productive age to be classed with the aged, and less experience and maturity of mind is preserved, in the United States, and even in Massachusetts, than in England or Sweden. Though this State compares better with England than the whole Union, yet even here is found some confirmation of Mr. Chadwick's statements, so far as they apply to the existing population.

The following statement will illustrate the average age of the population. In the United States it applies only to the whites.

	Years.	*Persons.*	*Average age.*
In the United States, ...	1840	14,189,108	22,71
Massachusetts, ...	1830	603,006	25.34
"	1840	729,030	25.89
England, ...	1841	15,858,075	26.59

(c)

In	Year.	Proportion, per cent., of the	
		Productive Class.	Burdensome Class.
Massachusetts, - -	1830	57.00	43.00
" - -	1840	59.65	40.35
Lowell, - - - -	1840	73.68	26.32
Illinois, - - - -	1840	50.45	49.55
United States, - -	1830	51.01	48.99
" - -	1840	52.35	47.65
England, - - -	1841	56.70	43.30
Sweden, - - - -	1835	56.93	43.07

(d)

Age surviving.	Number persons per cent., surviving, were in				
	Massachusetts.		United States.		England.
	1830.	1840.	1830.	1840.	1841.
At Birth,	100.	100.	100.	100.	100.
5 years,	86.71	87.30	82.00	82.56	86.76
10 "	75.01	76.27	67.44	68.39	74.79
15 "	63.74	66.01	55.01	56.29	63.90
20 "	54.57	55.38	43.90	45.38	53.93
30 "	32.85	34.73	26.09	27.22	36.13
40 "	20.64	20.79	15.18	15.62	23.24
50 "	12.29	12.11	8.30	8.30	13.65
60 "	6.74	6.36	4.00	3.94	7.20
70 "	2.89	2.78	1.47	1.49	2.80
80 "	.79	.75	.37	.38	.64
90 "	.08	.08	.06	.04	.05

This subject is an important one, and might be profitably examined more in detail; but I leave it for the present to advert to the facts obtained under the Registry Law of this State.

The number of births, marriages and deaths, returned under the Registry Law of Massachusetts, in all the counties but Suffolk, in 1845, and the three preceding years, not including the still born, were—

	1842.	1843.	1844.	1845.
Births, ...	8,470	8,659	14,646	15,564
Marriages, ...	4,974	5,023	4,275	4,841
Deaths, ...	7,491	8,305	8,250	8,642

An examination of the Abstract of each town, on pages 3 to 11 inclusive, and the notes appended to that abstract, shows that these returns do not include all that have occurred. Some towns have omitted to make any returns, and others are so imperfect, that a comparison between these numbers and the population would present a fallacious result. I stated, in my communication to Mr. Bolles, already referred to, that the population then was "about 750,000, and in this number it may be estimated that 1 in 30, or about 25,000 births; 1 in 125, or 6,000 marriages; and 1 in 60, or 12,500 deaths, take place in the whole State every year. This is a mere estimate, and may be erroneous, though it is supposed to be not far from the truth." From a comparison of some of the returns since that time, I am inclined to think the proportional number of births and marriages too small; and the deaths also, unless Boston be excluded. Taking the rural districts alone, it would be a fair estimate, but including the cities, it would perhaps be too low an estimate of the number of deaths. The number of births returned has increased each year, and in 1845 amounted to nearly double those of 1842. This is an encouraging fact, and shows the increasing attention of the people to Registration. The number of marriages and deaths returned has not varied materially in the four years.

The following table (e) is compiled from the latest information in my possession, showing the proportions which the births, marriages and deaths, bear to the population in various European states.

(e)

States.	Period of Observation.	Annual number of Marriages, Births, and Deaths, to 100 persons living, or per cent.			Number of persons living to *one* annual Marriage, Birth, and Death.		
		Marriages. per cent.	Births. per cent.	Deaths. per cent.	Marriages. One in	Births. One in	Deaths. One in
England, -	1839–1842	.770	3.200	2.209	130	31	45
France, -	1840–1842	.825	2.837	2.397	121	35	42
Austria, -	1839–1841	.807	3.874	2.995	124	26	33
Prussia, -	1839–1841	.887	3.767	2.658	113	27	38
Russia, -	1842	1.013	4.284	3.590	99	23	28

This interesting statement shows that in England, a less proportion of marriages and deaths takes place than in either of the states mentioned. France exceeds her in births. In Russia, the proportion of each is very large, exceeding

by nearly 25 per cent. those of England. It has been said, that in warm countries marriages take place earlier, and births and deaths are more numerous; but the Russian returns do not seem to confirm its truth. It would be interesting, if we had the means of making a similar statement respecting each State in our confederacy.

MARRIAGES.—The age of the parties at marriage is an important element to be recorded. Some have objected to give it from a desire for "fictitious youth," from false ideas of delicacy, or a misapprehension of its importance; and in other cases it has been omitted through the carelessness of those whose duty it was to make the records. The consequence has been, that in a portion only of the returns has the age been stated. Better results, it is hoped, will be produced in future. Abstracts of these returns are presented in five tables, pages 38 to 40, constructed in such a manner as to present the ages of the parties in a very interesting view. It appears that 9,682 persons were married and returned the last year, of whom the ages of 6,852 are stated—3,422 males and 3,430 females; and 2,830 are not stated—1,419 males and 1,411 females. The condition of the parties was as follows:—

Marriages in which both parties were married for the first time, . .	3,490
" the man was married for the first time and the woman not,	113
" the woman was married for the first time and the man not,	490
" both parties had been married before, ...	194
" the condition of the parties was not stated, . . .	554
Total, ...	4,841

G. R. Porter, Esq., an eminent English statistician, in a recent work quoted in the American Almanac for 1846, says "the rapid growth of the population of the United States is not attributable to the great duration of life, but arises from the number and fruitfulness of marriages, aided in a considerable degree by emigration." It is important to know whether this be true or false. Knowing the *age at marriage*, and instituting a comparison with other countries, are the means of arriving at the truth. The Belgian returns, and the report of the last census of Ireland, afford the means of doing it in relation to those countries. Those of England do not. It is, however, proposed to alter the Registration law there, so as to require it. The last report of the Registrar General has the following sensible remarks on this subject: "It is not a little remarkable, that although the increase of population and the influence of early and late marriages on the welfare of nations, have for the whole of the present century occupied public attention, and been made the basis of theories which have guided or biased legislation, no provision has yet been made for determining the simplest fundamental facts—the foundation of all reasoning on the subject—such as the ages at marriage, the ages of mothers, of children, the numbers of married and single persons at the several periods of life. Upon many of these points the greatest ignorance prevails, writers on population depending on rough approximations, derived from scanty, imperfect, and often erroneous data, because the censuses and registers have not yet been taken and abstracted upon a comprehensive and well-considered plan."

These are the views of those who proposed to have inserted in the Massachusetts Register the age of the parties at marriage; and if further reasons were

necessary to show its importance, they will appear from the facts already obtained, some of which are presented in this report.

The following table, (*f*) containing those marriages only, where both parties were married for the first time, and whose ages are stated, is compiled from the Massachusetts returns of 1845, and the Belgian returns of 1841.

(*f*)

Age.	Number of persons married in				To 10,000 married, there were in			
	Massachusetts.		Belgium.		Massachusetts.		Belgium.	
	Males.	Females	Males.	Females	Males.	Females	Males.	Females
Under 20,	53	690	757	2685	198	2583	312	1105
20 to 25,	1308	1422	4530	6966	4897	5324	1864	2867
25 to 30,	952	446	9420	8067	3564	1670	3877	3320
30 to 35,	247	79	5497	3841	925	296	2262	1581
35 to 40,	81	17	2488	1719	303	64	1024	707
40 to 45,	17	14	1000	653	64	52	412	269
45 to 50,	8	2	340	225	30	7	140	93
50 to 55,	5	1	137	76	19	4	56	31
55 to 60,	.	.	56	27	.	.	23	11
Over 60,	.	.	72	38	.	.	30	16
	2671	2671	24,297	24,297	10,000	10,000	10,000	10,000
Average age,	25.84	22.69	29.47	27.43				

The Belgian tables give the marriages "under 21." Our tables give them "under 20," which will make a slight difference in the proportion at that and the subsequent age, but in no other. It appears from this table, that while in Massachusetts, to every 10,000 of all ages, 4,897 males and 5,324 females are married between the ages of 20 and 25; in Belgium only 1,864 males and 2,867 females out of the same number, are married at those ages. The average age in Massachusetts of the males was 25.84 and the females, 22.69, while in Belgium the males averaged 29.47 and the females 27.43. This average age shows a difference of 3.63 years in the males, and 4.74 in the females. This is the result of the marriages in which both parties were married for the first time. I will next present a view of all the marriages, whatever the condition of the parties. And in the table (*g*) is given the ages of 506,652 males, 522,205 females, when married, taken from the last census of Ireland.

This table shows that in Massachusetts 40.59 per cent. of the males were between the ages of 20 and 25 at marriage, while in Belgium the proportion was only 15.65 per cent. The proportions at the other ages differ very materially. Those married under and over 25 will appear by the comparison exhibited in table (*h*,) next page.

These remarkable results show that the proportion of males married under 25 was even greater in Massachusetts than in Ireland, and the proportion of females was nearly as large; and both were more than double those of Belgium.

The number of marriages in 1842 and 1843, is given in the reports, without

specifying the month in which they took place. In 1844 and 1845, they occurred in the different months as represented in table (*i*,) next page.

This statement shows that the seasons have considerable influence on the number of marriages, varying from 461 to 1,379 in 1844, and from 544 to 1,305 in 1845. The average number each month was 347 in 1844, and 401 in 1845. The month in which the smallest number occurred was July, and that in which

(g)

Age.	Number of persons married, of all conditions, in					
	Massachusetts.		Belgium.		Ireland, 1830—1840.	
	Males.	Females	Males.	Females	Males.	Females.
Under 20,	56	738	774	2831	44,267	153,312
20 to 25,	1389	1587	4677	7421	165,664	209,758
25 to 30,	1093	602	10,067	9082	145,531	98,465
30 to 35,	371	201	6527	4928	76,349	34,812
35 to 40,	175	117	3636	2791	36,415	14,752
40 to 45,	115	92	2037	1477	17,525	6,122
45 to 50,	85	43	934	753	10,074	2,942
50 to 55,	48	23	512	357	5,396	1,183
55 to 60,	31	18	310	126	5,431	859
Over 60,	59	9	402	110	.	.
	3422	3430	29,876	29,876	506,652	522,205
Age.	To 10,000 married, of all conditions, there were					
Under 20,	164	2152	259	948	873	2936
20 to 25,	4059	4627	1565	2484	3270	4017
25 to 30,	3194	1755	3370	3040	2872	1886
30 to 35,	1084	586	2185	1650	1507	667
35 to 40,	511	341	1217	934	719	282
40 to 45,	336	268	682	494	346	117
45 to 50,	248	125	313	252	199	56
50 to 55,	140	67	171	119	107	23
55 to 60,	91	53	104	42	107	16
Over 60,	173	26	134	37	.	.
	10,000	10,000	10,00	10,000	10.000	10,000

(h)

In	Males.		Females.	
	Under 25	Over 25.	Under 25.	Over 25.
Massachusetts, - -	42.23	57.77	67.79	32.21
Ireland, - - - -	41.43	58.57	69.53	30.47
Belgium, - - -	18.24	81.76	34.32	65.68

the largest number occurred, November,—the month of the annual return of the New England festival, Thanksgiving. Many families meet together on that day to congratulate the newly formed marriage connexions.

Births.—The number only of the births is given in the Reports of 1842 and 1843, without distinction of sex, or the months in which they took place. In 1844 and 1845, the sex and time of birth are specified. It appears that

	In 1844.	*In* 1845.
The whole number of births returned, were	14,646	15,564
Of which the male births were	7,344	7,793
" the female births were	6,991	7,594
" the births in which the sex is not stated, were .	311	177
Of those in which the sex was known, the females were to		
100 males, . . .	95.08	97.44
" " " the males to 100 females, .	105.04	102.62
" " " the males to 100 both sexes,	51.23	50,65
" " " the females to 100 both sexes,	48.77	49.35

This shows that there are more males than females born; and the proportions are nearly the same as occur in other parts of the world. The months of the year in which they took place, appear in table (*j*,) next page.

These observations are not sufficiently extensive to form any very correct opinion on the subject; but, so far as they go, they do not show that the seasons have any perceptible influence on the number of births, as is stated to be the fact in some parts of the world. The average number each month was 1,209 in 1844, and 1,280 in 1845.

In 1844 there was	1	case of	twin births	to	123	cases of	birth.
" 1845 "	1	"	"	to	129	"	
" 1844 "	1	"	triplets	to	7261	"	
" 1845 "	1	"	"	to	15,444	"	
" 1844 "	1	"	quadruplets	to	15,523	"	
" 1845 "	no case of		"				

(i)

Month.	Number of Marriages in		To 10,000 Marriages, there were in	
	1844.	1845.	1844.	1845.
January, - -	337	414	809	859
February, - -	264	270	633	560
March, - - -	264	262	633	544
April, - - -	429	474	1029	983
May, - - -	429	465	1029	965
June, - - -	325	336	780	697
July, - - -	192	263	461	546
August, - -	229	286	549	593
September, -	284	419	681	869
October, - -	442	538	1060	1116
November, -	575	629	1379	1305
December, -	399	464	957	963
Specified, - -	4169	4820	10,000	10,000
Not specified, -	106	21		
Total, - -	4275	4841		

It would be interesting and important to know the average number of children born to each marriage in Massachusetts. Our returns are, however, not sufficiently full to allow us to make even a safe comparison as to the proportion the births bear to the marriages, deaths or population. I venture the opinion that the number of births to a marriage here, is greater than in England; but that the number here is not as great now as it was 30 or 40 years ago.

"The births registered in England are in proportion to the population one seventh part more numerous than in France, and one seventh part less than in Prussia. To 3,525 inhabitants 100 births are annually registered in France, 113 in England, 133 in Prussia, 136 in Austria, 151 in Russia. The small number of births in France is not accounted for by any difference in the proportion of the persons married, who are, in fact, more numerous in France than in any other country from which I have been able to procure returns. It appears that 100 French wives had 14 children, 100 Prussian wives 21 children yearly; or, in other terms, 717 wives bore annually 100 children in France, 152 children in Prussia. If the births are divided by the annual marriages that took place seven years before, there were 3.33 births (in wedlock) to a marriage in France—4.05 to a marriage in Prussia, and 4.34 to a marriage in Austria; 4.26 to a marriage in England, and if a correction be made for first marriages, 4.79 to every *two* persons married. The total annual births in England, divided by the persons married seven years before, give on an average 5.12 children to every two persons married; and as many illegitimate children are the offspring of married persons before, during or after marriage, the number of children to every two persons married in England must be between 4.79 and 5.12, or little short of *five*, about three of which attain the age of marriage to replace the two parents and those who have no offspring; the surplus swelling the number of the existing inhabitants of the island, or flowing in of emigration."

(j)

Month.	Number of Births in		In 10,000 Births, there were in	
	1844.	1845.	1844.	1845.
January, - -	1170	1335	806	869
February, - -	1210	1295	834	843
March, - - -	1239	1512	854	984
April, - - -	1230	1452	847	945
May, - - -	1144	1013	788	659
June, - - -	1134	1063	781	692
July, - - -	1164	1235	802	804
August, - -	1350	1350	930	878
September, -	1282	1314	883	855
October, - -	1206	1324	831	661
November, -	1195	1235	823	804
December, -	1192	1238	821	806
Specified, - -	14,516	15,366	10,000	10,000
Not Specified,	130	198		
Total, - -	14,646	15,564		

Deaths.—It has been stated that the number of deaths returned was 7,642, not including the still born, and 8,715 including them. They occurred in the several counties as stated in the subjoined table. (*k*) We have arranged the counties so as to admit of being easily grouped together; the 4 western in one division, the 4 middle in another, and the 5 southern in another, if desired.

(*k*)

Counties.	Population, 1840.	Deaths.			
		Male.	Female.	Not Specified.	Total.
Berkshire, - -	41,745	218	252	18	488
Franklin, - - -	28,812	143	182	6	331
Hampshire, - -	30,897	168	210	17	395
Hampden, - -	37,366	239	254	16	509
Worcester, - -	95,313	696	824	7	1527
Middlesex, - -	106,611	734	750	22	1506
Essex, - - - -	94,987	705	772	27	1504
Norfolk, - - -	53,140	298	333	26	657
Plymouth, - -	47,373	228	243	13	484
Bristol, - - -	60,165	336	369	14	719
Barnstable, - -	32,548	211	184	13	408
Dukes, - - -	3,958	28	23	2	53
Nantucket, - -	9,012	64	70	.	134
	641,927	4068	4466	181	8715

The returns fall so far short of the actual number, that a comparison of the proportion they bear to the population would be fallacious. Accuracy in this respect can be attained only after the Registry Law shall have been amended and the records and returns perfected. I am inclined to the opinion, from an examination of several of the returns last year, which appear most correct, that if the whole number of deaths in the State had been stated, it would not have amounted to more than 1 in 57 of the living. This proportion may, however, be found to be incorrect by full and authentic data.

An interesting view of the proportion of deaths in the two sexes may be given, embracing the abstracts for the four years. (*l*)

(*l*)

Year.	Deaths.				Of those whose sex was known, there were		
	Whole Number.	Male.	Female.	Not stated.	To 100 Deaths of both sexes.		Females to 100 Males.
					Males.	Females.	
1842	7496	3329	3693	474	47.41	52.59	110.93
1843	8305	3684	4261	350	46.37	53.65	115.66
1844	8338	3712	4173	453	47.08	52.92	112.41
1845	8715	4068	4466	181	47.67	52.33	109.78

It has already been shown that more males than females are born. From the above statement it appears that fewer males than females die. A comparison can be instituted between them only in the last two years, since in the first two Reports they are not both specified.

(m)

In	To every 10,000 males there were females		Showing a difference of
	Born.	Died.	
1844	9508	11,241	1733
1845	9744	10,978	1234

It may be asked, what becomes of this difference? The answer is principally found in the greater number of males than females, which the State furnishes to people other parts of the Union, and to traverse the world. From the census of New York city, just published, it appears that 16,086 of its inhabitants were born in New England; and throughout all the Western States, New England men are found. It would be an exceedingly interesting inquiry, how many emigrants have been furnished each year by Massachusetts. And if a good system of Registration had been in operation, we should have been able to show it. We should have been able to show how many have gone hence to spread the wholesome influence of the land of their birth in other States and other regions. If every 10,000 births furnish 1,250 emigrants, the 25,000 births which have been estimated to take place in the State annually, would furnish over 3,000 to spend the remainder of their lives in other lands than that of their nativity.

The influence of the seasons over the number of deaths is universally acknowledged to be great; but it varies according to place, age, disease, and other circumstances. It is highly important to know how far all these influences effect the health of the people. The following facts (table (*n*,) next page) compiled from the returns afford a general illustration of the matter.

This table shows a great difference in the mortality of the different months of the year. It will be perceived that the smallest number of deaths generally occurs in May and June, and the greatest number in August and September, varying this year, in those months, from 582 in every 10,000 to 1092. A particular examination of the other months will be of interest. By dividing the year into quarters, the following proportion per cent. will appear.

	1842.	1843.	1844.	1845.
Winter—Jan. Feb. March, . . .	26.63	22.16	23.82	24.70
Spring—April, May, June, . .	22.81	25.03	21.21	20.41
Summer—July, Aug. Sept. . .	25.14	29.28	28.80	29.86
Autumn—Oct. Nov. Dec. . . .	25.42	23.53	26.17	25.03

The ages at death make one of the most important elements in vital statistics. Combined with the ages of the living, they give us the means of measuring the value of life, and estimating the comparative health enjoyed by persons in different places and under different circumstances. In proportion as the average shall be high or low, will a people of similar ages of the living be healthy or un-

healthy. In the first place, I will present for each county the number returned at each age specified for the year 1845. (*o*) The counties are so arranged that those who choose may make the divisions of the State, as before suggested. Whether any such divisions may hereafter be adopted, will depend on the facts elicited by future investigation.

(*n*)

Month.	Number of Deaths.				In every 10,000 Deaths, there were in			
	1842.	1843.	1844.	1845.	1842.	1843.	1844.	1845.
January, .	608	563	641	682	820	687	795	789
February, .	627	608	635	690	845	742	787	798
March, .	740	645	645	763	998	787	800	883
April, . .	711	635	577	697	959	775	715	807
May, . .	495	753	592	563	667	919	734	651
June, . .	486	663	542	504	655	809	672	583
July, . .	487	654	584	706	657	798	724	817
August, .	620	844	821	928	836	1030	1018	1074
September, .	757	901	918	946	1021	1100	1138	1095
October, .	806	726	757	838	1087	886	939	970
November, .	527	627	639	651	711	765	792	753
December, .	552	575	715	674	744	702	886	780
Specified, .	7416	8194	8066	8642	10,000	10,000	10,000	10,000
Not specified,	132	147	184	.	.	.	.	.
Total, . .	7548	8341	8250	8642	.	.	.	.
Average, .	618	682	672	720	833	833	833	833

(*o*)

Age.	Berkshire.	Franklin.	Hampshire.	Hampden.	Worcester.	Middlesex.	Essex.	Norfolk.	Plymouth.	Bristol.	Barnstable.	Dukes and Nantucket.	Total.
Under 1,	68	33	59	78	275	308	237	105	62	141	66	46	1478
1 to 2,	34	11	22	48	119	138	132	53	38	58	31	13	697
2 to 5,	47	25	32	39	142	135	139	43	48	50	30	9	739
5 to 10,	18	9	10	20	55	61	70	23	25	37	19	7	354
10 to 20,	36	23	20	48	109	84	112	49	35	40	25	11	592
20 to 30,	70	51	68	64	168	175	143	71	42	64	67	12	995
30 to 40,	41	31	33	38	134	142	110	53	31	51	28	12	704
40 to 50,	26	25	27	39	80	91	95	29	20	38	28	10	508
50 to 60,	23	27	29	26	104	74	79	37	25	41	23	11	500
60 to 70,	30	26	21	29	92	84	88	47	44	42	18	20	541
70 to 80,	45	34	36	35	114	80	142	56	55	50	42	16	705
80 to 90,	25	20	21	31	67	62	87	45	36	41	20	7	462
90 to 100,	5	4	8	6	25	15	18	6	6	5	7	2	107
Over 100,	.	.	2	.	.	2	.	1	.	1	.	.	6
Specified,	468	319	388	501	1484	1451	1452	618	467	659	404	177	8388
Not spec'd,	13	9	7	6	38	41	37	22	16	56	4	5	254
Total,	481	328	395	507	1522	1492	1489	640	483	715	408	172	8642
Aver. age,	30.89	37.5	33.59	29.81	29.42	26.43	30.66	32.22	34.24	28.38	31.08	30.23	30.26

A careful examination and analysis of the ages in each county, will show some difference in the average duration of life, so far as ascertained by the average age at death. I will not, however, attempt this analysis at this time, but present the aggregate returns of deaths for the whole State during the four years, 1842—1845, for each specified age, and the proportion they bear to 10,000 of all ages. (*p*)

(*p*)

Age.	Number of Deaths.				To every 10,000 Deaths there were			
	1842.	1843.	1844.	1845.	1842.	1843.	1844.	1845.
Under 1, - -	808	1052	1250	1478	1157	1349	1626	1762
1 to 2, - -	466	553	542	697	667	709	705	831
2 to 5, - -	637	679	556	739	912	871	723	881
5 to 10, - -	351	446	333	354	502	572	433	422
10 to 20, - -	493	496	532	592	706	636	692	706
20 to 30, - -	854	882	839	995	1222	1131	1091	1186
30 to 40, - -	555	648	655	704	794	831	852	839
40 to 50, - -	526	525	478	508	753	673	622	606
50 to 60, - -	474	488	434	500	679	626	564	596
60 to 70, - -	540	603	602	541	773	773	783	645
70 to 80, - -	649	767	751	705	929	984	977	840
80 to 90, - -	491	531	576	462	703	681	749	551
90 to 100, -	137	122	137	107	196	156	178	128
Over 100, - -	5	6	4	6	7	8	5	7
Specified, - -	6986	7798	7689	8388	10,000	10,000	10,000	10,000
Not specified, -	510	507	561	254				
Total, - -	7496	8305	8250	8642				

One of the first ideas presented by this table, is the remarkable increase of infantile mortality within the four years, being from 1157 to 1762, or 605; over 6 per cent. And from the table it appears that this increase has been nearly gradual each year. Some variation is presented in other ages, but in none is it so striking as in that under one year. Are we aware that 17.62 per cent. of all the deaths, are of children under one year old? In a work on the Vital Statistics of Boston, which I published in 1840, the attention of the public was called to the great proportional increase of deaths among children under five years of age in cities; but I was not aware, until I made the above calculations, that in the more rural districts embraced in this report, the same causes had been in operation, there, though not in an equal degree, to destroy human life at its very beginnings. Such developments should arrest the serious attention of parents and all concerned, to ascertain and remove, if possible, the destructive agencies at work among us on this class of human beings.

These facts will appear in a still more forcible light, by presenting the proportionate number of survivors, calculated from the age of the dying, in the same manner as we have presented the number of survivors calculated from the age of the living. (See table (*d*,) p. 73) Against the survivors in Massachusetts those of Preston, England, are given, taken from the Parliamentary Report on the Health

of Towns. The survivors there are presented in three divisions. One represents the upper class, among whom the best health and greatest longevity prevail; another, the middling class, who enjoy a lower grade of health; and the other the laboring class, who suffer most. The difference in the number of survivors, at the different ages, is very remarkable.

(q)

Age surviving.	Number surviving each specified age, calculated from the deaths.						
	In Massachusetts.				In Preston, England.		
	1842.	1843.	1844.	1845.	Gentry.	Tradesmen	Operatives
At Birth,	100.	100.	100.	100.	100.	100.	100.
1 year,	88.43	86.51	83.74	82.38	90.8	79.6	68.2
2 years,	81.76	79.42	76.69	74.67	87.6	73.5	57.5
5 "	72.64	70.71	69.46	65.26	82.4	61.8	44.6
10 "	67.62	64.99	65.13	61.04	81.1	56.6	38.8
20 "	60.56	58.63	58.21	53.98	76.3	51.6	31.5
30 "	48.34	47.32	47.30	42.12	72.3	45.9	25.2
40 "	40.40	39.01	38.78	33.73	63.4	37.5	20.4
50 "	32.87	32.28	32.56	27.67	56.	28.1	15.6
60 "	26.08	26.02	26.92	21.71	45.1	20.5	11.2
70 "	18.35	18.29	19.09	15.26	25.4	13.3	6.1
80 "	9.06	8.45	9.32	6.86	8.	4.5	2.1
90 "	2.03	1.64	1.83	1.35	1.3	.8	.2
100 "	.07	.08	.05	.07	.	.	.

It appears from this table, that in Massachusetts, 60.56 per cent. in 1842 survived the age of 20, and only 53.98 in 1845; while in Preston, 76.3 per cent. of the "gentry," 51.6 per cent. of the "tradesmen," and only 31.5 per cent. of the "operatives," survived the same age. In Massachusetts, 26.08 in 1842, and only 21.71 in 1845, survived the age of 60, while in Preston 45.1 per cent. of the gentry, 20.5 per cent. of the tradesmen, and only 11.2 per cent. of the laborers survived that age. This shows that the people of Massachusetts do not enjoy so good health as the better classes in England, though better health than the laboring classes. The influence of circumstances and occupation on health and longevity, is strikingly illustrated by the statement concerning Preston. It appears that while 72.3 per cent. of the gentry survived 30 years, only 25.2 of the operatives, or laborers, survived the same age.

Place of birth has some influence on health and longevity. It is useful to know, not only whether the person dying was a native of the State, but the town, and, if possible, the locality in the town where he lived and died. Some particular places, near marshes and stagnant water, in rural districts, and in dirty streets and lanes, in cities, are known to be surrounded with a miasmatic atmosphere, that injures health and abridges life. To ascertain how far such causes exist, and what influence they possess, was one reason for inserting the place of birth in the Register. The Alphabetical Abstract of causes of death, specifies the facts in relation to each. From this the following table, including the still born, is compiled. (Table (r,) next page.)

(*r*)

Counties.	Natives of the town.	Other Americans.	Foreigners.	Not specified.	Total.
Berkshire, . .	250	131	10	97	488
Franklin, . .	139	103	.	89	331
Hampshire, . .	206	92	1	96	395
Hampden, . .	236	161	15	97	509
Worcester, . .	887	431	26	183	1527
Middlesex, . .	822	378	92	214	1506
Essex, ...	937	245	23	299	1504
Norfolk, . .	405	117	9	126	657
Plymouth, . .	368	50	3	63	484
Bristol, . .	425	124	12	158	719
Barnstable, . .	326	55	12	15	408
Dukes and Nantucket,	166	14	6	1	187
Total, . .	5167	1901	209	1438	8715

This table shows, in a forcible manner, the stationary habits which govern the inhabitants of the interior towns in Massachusetts. Of the 7,277, whose place of birth is specified, there were

	Number.		*In* 100.
Natives of the town in which they died, ...	5,167	or	71.01
Natives of other places in the United States, ...	1,901	"	26.12
Born in foreign countries, ...	209	"	2.87
Total, ...	7,277		100.00

The counties having the largest proportion of persons who were not born in the town in which they died, were Worcester and Middlesex. Essex was the next, and Hampshire had the least. Middlesex, including Lowell and Charlestown, had nearly four times as many foreigners as any other. The counties in which large manufacturing towns are situated are affected by immigration to these towns, and they show a larger proportion of Americans, born in other places, as well as foreigners.

Occupation is supposed to have some influence on health and longevity. Some employments are supposed to be favorable and others unfavorable. The table, page 86, was compiled from the three published reports and the manuscript returns for this year, and it will be found to possess interest. Subjoined are a few facts from this table, showing the influence of some of the occupations specified. The table contains the number and average age each year, and the total for the four years. (Table (*s*,) next page.)

Though these observations are too limited to show how far occupation has an influence over life, yet they show there *is a difference*, which it is important to have investigated and known by a long series of observations extending throughout the State. According to this statement, the average age of 2,673 farmers was 64, and of 461 shoemakers, 43.

Domestic condition has been supposed to have some influence on longevity. From an examination of the returns last year, it appears that of 4,528 persons, whose ages are specified as having died over 20 years old, the domestic condition of 36,439 is stated. This is 39.75 per cent. of the whole deaths, and 75.95 per cent. of those over 20. The number, aggregate age, and average age of each class, appears as follows: *(t)*

(*s*)

Occupation.	1842.		1843.		1844.		1845.		Total.	
	No.	Age.	No.	Age.	No.	Age.	No.	Age.	No.	Age.
Farmers, . .	660	66	706	66	663	64	645	61	2673	64
Physicians, .	7	61	25	57	27	54	20	56	79	56
Clergymen, .	14	55	22	55	18	51	11	50	65	53
Lawyers, . .	12	56	5	53	7	44	7	49	31	51
Teachers, . .	9	38	16	37	14	33	21	29	60	34
Blacksmiths, .	34	57	35	59	31	50	45	52	145	54
Carpenters, .	95	62	99	48	76	51	79	52	349	53
Painters, . .	12	41	8	42	21	41	10	41	51	41
Shoemakers, .	104	46	113	48	110	39	134	41	461	43
Laborers, . .	193	49	171	51	158	50	208	49	735	49
Seamen, . .	176	39	199	43	128	37	131	42	634	42
Tailoresses, .	.	.	.	.	7	41	16	40	23	41
Dress-makers,	.	.	.	.	3	25	11	30	14	29

(*t*)

Class.	Males.			Females.		
	Number	Aggregate Age.	Aver. Age.	Number	Aggregate Age.	Aver. Age.
Unmarried,	338	12,149	35.91	424	23,392	55.16
Married,	956	53,613	56.07	963	46,334	48.11
Widowed,	162	11,671	72.04	596	35,384	59.03
Total,	1456	77,433	53.18	1983	105,110	53.00

This table is formed by adding the complete years of each class together, as they appear in the returns. As many lived more than the full years, in parts from one to twelve months, it is presumed they lived, on the average, half a year longer than above specified. This would give the average age of the males 53.68 years, and the females 53.50, and the classes in the same proportion. Though no definite conclusions should be drawn from these facts, yet they possess great interest, and should be preserved and combined with others of a similar nature which future investigations may produce.

Public Health.—The *diseases and causes of death* are presented in this Report in three separate abstracts. The first (p. 41) gives them arranged in alphabetical order, under names generally as they were registered and returned, and designating, in regard to each, the sex, (which has not been done in previous years,) age, month of the year, and place of birth. This mode of presenting the causes of death will afford easy data to some persons for more minute analysis, if desired. In the two next abstracts, the causes of death are classified, with some slight modifications, according to the nomenclature prepared by William Farr, Esq., and adopted by the Registrar General of Births, Marriages, and Deaths, in England. Some alteration of his list has been made, and each class arranged alphabetically.

Some classification of diseases is absolutely necessary for statistical purposes; but there is a difficulty in making one that shall be entirely satisfactory even to one's own mind. Physicians disagree in regard to it. While it may be proper that each one should be at liberty to return the cause of death under such name as he shall select, it is much to be desired that such names only should be used, as would give a clear definition of such cause. I have in possession the printed abstracts of the interments in Boston, New York, Philadelphia, and Baltimore, for the last twenty years, beside those in our State, and other places, and have copied every cause of death, as it appears in these documents. They show not only that a great variety of causes of death exist, but that very many different names are given to the same cause. It will at once be perceived, that it would be almost impossible to make a statistical analysis of each cause, as given under these numerous names. It becomes necessary to group them together in classes, giving those that are synonymous, or nearly so, under one name, and those affecting a particular organ or function, under one class. With such a classification, a comparison may be instituted in regard to the prevalence and fatality of diseases in different places and in different seasons.

In the second table (p. 49) the causes of death are given for this year by counties. In the third table (p. 55) a summary for each of the four years is given, and the proportions of deaths from each specified cause, to 10,000 from all causes; the most interesting comparison that can be presented from the facts. It would be instructive to know the number of deaths from each cause that take place in a given number of the living, but this cannot be done without full returns, which can be obtained only under an improved method of collecting the facts.

In making these tables, the county of Suffolk has been excluded, as in the other tables. It was desirable to make a comparison in regard to diseases in the same territory each year, and it could not be done without excluding that county. It appears that

	In 1842.	1843.	1844.	1845.
The deaths from all causes were . .	7,496	8,305	8,250	8,642
The deaths from specified causes were	6,149	7,177	7,076	8,070
Leaving from causes not specified,	1,347	1,128	1,174	572

Showing that the causes of death have been more accurately returned this than any former year.

The following table represents the comparative prevalence of the different classes of diseases, taking 10,000 as the basis of the calculation for all known causes of death. (Table (*u*,) next page.)

1. *Zimotic Diseases.*—This term is used to designate all epidemic, endemic, and contagious diseases. It is the property of *zimotic* diseases to prevail more at one time than at another, or more in one locality than in another; and to become epidemic, endemic, or contagious, under certain circumstances. In some seasons and places they occur with more frequency, or with more virulence and fatality, than in others. It is supposed that the best index to public health may be deduced from the proportion in which these diseases prevail.

In looking at the table, it does not appear that the proportion of these diseases has varied very much in the four years. Last year there were 92 more in every 10,000 than in either other year, and 432 more than in 1844, showing an increase

of this class of diseases. Cholera infantum, croup, dysentery, fevers, and scarlatina, have been the predominant diseases of this class. Scarlatina, one of the diseases most to be dreaded among us, caused nearly one quarter of all the deaths of this class the last year. The ages at which this disease occurred for the four years, appear in table (*v.*)

2. *Diseases of Uncertain or General Seat.*—If accuracy were at all times used in recording the cause of death, this class would be small. It appears that half of all the deaths in this class the last year, and more than half the previous year, were returned under the convenient name of "Infantile Diseases." Such an indefinite term should not be used in the Registers, when the specific causes can be ascertained.

3. *Diseases of the Nervous System.*—The diseases under this head have maintained about their usual proportions. Delirium tremens was classed, before this

(*u*)

Classes of Causes.	To 10,000 Deaths by all specified causes, there were of			
	1842.	1843.	1844.	1845.
1. Zimotic Diseases, . .	2644	2583	2299	2736
Sporadic Diseases				
2. Of Uncertain or General Seat,	745	1243	1625	1102
3. Of the Nervous System, .	891	942	892	984
4. Of the Organs of Respiration,	3186	2852	2878	3150
5. Of the Organs of Circulation,	194	171	199	168
6. Of the Digestive Organs, .	418	748	612	641
7. Of the Urinary Organs, .	39	45	45	40
8. Of the Organs of Generation,	132	166	96	118
9. Of the Organs of Locomotion,	68	54	48	42
10. Of the Integumentary System,	15	20	17	21
11. Of Old Age, . . .	1060	798	892	624
12. Of External Causes, . .	608	378	397	374
Total, ...	10,000	10,000	10,000	10,000

(*v*)

Age.	Massachusetts.					Philadelphia. 1841—44.	Ireland. 1830—1840.
	1842.	1843.	1844.	1845.	Total.		
Under 1, - -	31	79	49	83	242	81	1571
1 to 2, - -	49	90	42	89	270	161	1128
2 to 5, - -	150	308	123	204	785	464	1879
5 to 10, - -	99	163	59	83	404	214	2380
10 to 20, - -	32	41	32	41	146	15	678
20 to 30, - -	11	9	8	16	44	11	145
Over 30, - -	11	16	6	7	40	15	53
Not specified,	100	26	11	15	152	.	42
Total, - -	483	732	330	538	2083	967	7876

year, under intemperance. That is undoubtedly the cause, but not the disease itself. Hydrocephalus has increased from 182 to 234 in 10,000 deaths.

4. *Diseases of the Organs of Respiration.*—This class of causes produces nearly one third of all the deaths, maintaining, however, about its usual proportions during the four years. Consumption, that great destroyer of human life in New England, Old England, and other places, caused 2,072, or 2,567 in every 10,000 deaths last year.

The fatality of this disease is so general, that some more detail in regard to it may be profitable to present to the public. In the four years, the returns show the ages and the months of the year, in which consumption took place, as follows:—

(w)

Age.	1842.	1843.	1844.	1845.	Month.	1842.	1843.	1844.	1845.
Under 1, - -	35	35	3	119	January, - -	117	136	141	166
1 to 2, - -	14	24	41	54	February, - -	137	127	135	136
2 to 5, - -	20	23	21	24	March, - - -	153	167	127	175
5 to 10, - -	15	15	18	28	April, - - -	145	174	133	198
10 to 20, - -	132	165	172	171	May, - - -	125	183	151	196
20 to 30, - -	349	490	412	445	June, - - -	130	148	126	179
30 to 40, - -	255	364	281	339	July, - - -	124	156	143	198
40 to 50, - -	190	234	184	244	August, - -	114	164	130	148
50 to 60, - -	149	162	139	191	September, -	120	180	157	156
60 to 70, - -	144	166	142	194	October, - -	131	175	136	179
70 to 80, - -	121	135	131	175	November, -	94	143	129	190
80 to 90, - -	35	30	35	44	December, -	128	158	130	171
Over 90, - -	1	7	5	3					
					Specified, - -	1518	1911	1638	2072
Specified, - -	1460	1850	1584	2031	Not Specified,	288	9	15	
Not Specified,	346	70	69	41					
					Total, - -	1806	1920	1653	2072
Total, - -	1806	1920	1653	2072					

From these tables, it appears that age has a great influence on the disease, but the seasons have not. A more accurate and extensive range of facts might, however, in some respects, vary this result.

5. *Diseases of the Organs of Circulation.*—The diseases of the heart constitute the principal part of this class. The proportion has not varied much during the period of observation.

6. *Diseases of the Digestive Organs.*—This is a very important class of diseases. Several of the Zimotic diseases, such as cholera, cholera infantum, diarrhœa, and dysentery, particularly affect these organs. They may be reclassed as follows:—

	1842.	1843.	1844.	1845.
Zimotic disease of the digestive organs, .	792	724	547	795
Sporadic diseases of the digestive organs,	418	748	612	641
Both, ...	1,210	1,472	1,159	1,436

From this statement, it appears that affections of these organs are the cause of an eighth or a ninth of all the deaths. The age and seasons have great influence in

their production, as will appear from a more particular examination of the tables. Taking four diseases of the Zimotic class last year, we have the following results:—

(x)

Age.	Cholera.	Cholera Infantum.	Diarrhœa.	Dysentery.	Total.	Month.	Cholera.	Cholera Infantum.	Diarrhœa.	Dysentery.	Total.
Under 1, .	5	64	10	71	150	Jan'y,	1	.	1	2	4
1 to 2, . .	3	38	5	46	92	Feb'y,	1	.	.	1	2
2 to 5, . .	3	5	.	28	36	March,	.	2	.	2	4
5 to 10, .	3	3	.	5	11	April,	4	1	1	1	7
10 to 20, .	3	.	.	8	11	May,	1	.	1	4	6
20 to 30, .	5	.	3	3	11	June,	.	4	2	8	14
30 to 40, .	4	.	.	6	10	July,	5	21	3	42	71
40 to 50, .	2	.	1	3	6	August,	21	34	3	71	129
50 to 60, .	2	.	1	1	4	Sept'r,	9	36	7	50	102
60 to 70, .	7	.	.	6	13	Octob'r,	2	10	3	12	27
70 to 80, .	5	.	2	17	24	Nov'r,	.	2	2	3	7
80 to 90, .	1	.	.	6	7	Dec'r,	1	1	1	4	7
Not specified,	2	1	2	.	5	.	.	.	.	.	.
Total, .	45	111	24	200	380	.	45	111	24	200	380

Here is a remarkable illustration of the influence of age and seasons in the production of diseases. Perhaps the number in the diseases specified may not be strictly correct, as it is difficult to distinguish them, and to give each such a diagnosis, as would lead to an exact classification; notwithstanding the statements as a whole are very instructive. When it is known that more than two thirds of all the deaths by these diseases occur to those under *two years of age*, and in the months of *August and September*, it should lead people to guard those ages, especially in those months, against their attack.

7. *Diseases of the Urinary Organs.*—Gravel is one of the most formidable diseases of this class. Cystitis, or inflammation of the bladder, the next. The returns show some variation in particular diseases, though nearly the same proportion in the class.

8. *Diseases of the Organs of Generation.*—Childbirth and puerperal fever are assigned to this class, as their appropriate place in this abstract, though the latter is a zimotic disease. The number of deaths from these causes is very considerable, as will appear on examination of the tables. Puerperal fever is supposed to be highly contagious, and is a disease which frequently proves fatal.

9. *Diseases of the Organs of Locomotion.*—Cases which sometimes are returned as rheumatic fever are classed here. Rheumatism and diseases of the spine, are the principal part of this class.

10. *Diseases of the Integumentary System.*—Ulcers cause the greatest part of the deaths of this class.

11. *Old Age.*—The number returned as having died of old age, has decreased in the four years, from 1060 to 624 in 10,000. It is, however, doubtful, whether there would have been that difference had the cause of death been always accurately stated.

12. *Deaths from External Causes.*—In 1842, the number of deaths from these causes was apparently much larger than it has since been. This is partly accounted for, from the fact that those dying by delirium tremens were classed with these causes then, but have not been so classed this year. There appears also to have been an unusual number drowned that year. Burns and scalds, and casualties, have maintained about their usual porportions. Suicides have somewhat decreased.

It might be profitable to go into a more particular analysis of each of these classes of diseases, but I will not attempt it at this time. Persons who desire it can find many interesting facts by a careful examination of the printed tables.

Such are some of the facts developed under the Registry System, and they lead us to hope that those in future will be still more interesting. Other suggestions present themselves, but the intended limits of this communication will not allow of their introduction. I wish, however, before closing, to offer some more general remarks on the importance of Registration in its connection with the health of the people.

Man comes into existence a helpless being; arrives at maturity by the aid of others; exists in a state of maturity an indefinite period, and then decays and dies; "the dust returns to the earth as it was." This is the common lot of all. Life may extend to 70, 80, 90, or even 100 years; and it may terminate in a year, a month, or even in an hour. We know that we all must die; but the time of our death we do not know. It may come comparatively soon; it may not. We believe, however, that the time of our death, though unknown, is in some respects within our own control. We believe that disease and death come not from a mysterious, unconditional Providence, but are the result of the condition of our bodies, and the influences that are brought to bear upon them. Many of these influences we bring around us by our own voluntary choice. One person takes proper food, at proper times and in proper quantities; another indulges his appetite, and takes unwholesome food, at irregular intervals, and in injurious quantities. One person clothes himself so as to maintain an uniform temperature of the body at all times; another guards not against the changes in the temperature of the seasons, but allows himself to be alternately heated and chilled. One man selects a place of residence where the air he breathes is pure and invigorating; another, where the noxious impurities of the air carry disease and death to his vitals. One person keeps his skin in a healthy state by frequent bathing; another permits it to be coated over with impurities. One chooses an occupation which gives sufficient exercise, physical and mental, to keep all the energies of his body vigorous; another, one that requires too much labor for his physical nature, or has in itself unhealthy influences, or, in his occupation over-exerts himself so as to impair his physical and mental capacity. One man exposes himself to the contagion of small pox, knowing, at the same time, that it is dangerous, takes the disease and dies; another vaccinates himself, and thus protects and saves his life. One man ventures upon the ocean without sufficient knowledge to manage his craft, and thus exposes himself to accidental death; another is cautious, and ventures no farther than safety permits. The act of the *one* in each case is favorable, and prolongs life; the act of *another* is unfavorable, and abridges it. And will not every one say, that all these acts and influences

for good or for evil, are more or less within the control of man?—That life may be saved and prolonged, and that the time of our death may, in some sense, be postponed? Numerous illustrations of this truth present themselves within the circle of our own knowledge. The late Rev. Dr. Ripley, of Concord, when settled, in 1778, had a feeble constitution; and one man voted against him because he thought it useless to settle a man whose probabilities of living were so small. He, however, by great care and attention to his health, acquired a pretty good constitution, and survived his 90th year. He probably added 50 years to a life, which another man, under similar circumstances, would not have enjoyed.

We know, we have seen in these Reports, that these influences are not alike in all places, nor in all seasons, nor in all employments, nor in all circumstances; and that sickness and death take place in proportion as these influences are favorable or unfavorable. Some places and circumstances are more fatal to children, some to adults, and some to the aged, than others. In one locality one class of diseases, and in a different one another class prevail. Endemic influences differ very much in different places and seasons. But what these influences are, or wherein they differ, we are not informed. We only know it by partial investigation and vague report. We have not sufficient data for definite plans of action.

The tendency of our people is to become a manufacturing people; and manufactures have been so far investigated, that the cost of every article—material, transportation, labor, wages, board, &c.—is clearly known. But what amount of life is sacrificed thereby we know not. We do not know, though we ought to know, whether there exists, or whether there is any tendency to, such a condition in any of our cities and towns, as would justify the remark of Mr. Chadwick, before quoted, making them "characteristic of those crowded, filthy, badly administered districts in England, where the average duration of life is short, the proportion of the young very great, and the adult generation transient."

The impression seems to have become general, that human life is improving; that it is longer and healthier now than formerly. This, however, needs confirmation, before it shall be asserted as truth. From investigations which have been made, I am inclined to think otherwise, especially in some places, and when the present time is compared with a period fifty years ago. We do not know, though we ought to know, how far our habits—the universal thirst for wealth in America, the reckless speculations of some, the hap-hazard mode of living and disregard to health of others, the luxury and extravagance of certain classes, and other practices of modern society—tend to check the progress of the population, increase disease, and weaken the race.

The average duration of life, and the average age at death, vary according to different influences. We have not, as yet, a sufficient number of facts to illustrate these differences in America. Life insurance is now as common in Europe as insurance on property; and it is becoming more common in this country. But data do not exist, sufficiently accurate, to form a proper table of rates which shall be paid here for such risks. The rates charged by the Massachusetts Life Office were calculated from the deaths alone, and are therefore supposed to be incorrect, as are others which have since been calculated here. These matters concern the insured—the people as much as the insurers—and are important to be generally known. But there is a higher value than this to be gained. For while it is important to the insured and the insurer, (comprising a

small part only of the people,) to know how long a known life will probably continue, it is also important to all others, comprising the great mass of the population, to know how long they may probably live, under the different circumstances in which they may be placed.

As this matter is one of interest, we have compiled, from the latest information, the following statement of the mean duration of life in several places in Europe. We have also given similar calculations made by Mr. Wigglesworth for the Massachusetts Life Insurance Company. It shows how many years a person may, on the average of the whole population, reasonably expect to live in each place, at birth, and when he arrives at the other ages specified.

(*y*)

A PERSON HAS AN AVERAGE CHANCE OF LIVING						
In	At					
	Birth.	1 year.	5 years.	15 yrs.	30 yrs.	60 yrs.
	years.	years.	years.	years.	years.	years.
England and Wales, .	41.16	47.13	50.01	43.74	33.68	14.0
Surry, England, . .	45.3	50.3	51.5	45.4	34.8	14.4
London, " . .	36.7	42.7	48.0	41.3	30.3	.
Liverpool, " . .	25.7	33.1	42.8	37.4	27.0	.
France, ...	39.6	45.9	49.0	43.6	33.71	13.2
Massachus. Life Ins. Co.	28.15	36.78	40.88	36.17	30.25	15.45
Sweden, ...	39.0	.	50.0	48.8	32.7	12.6
Difference between Surry and Liverpool,	19.4	17.02	8.07	8.0	7.8	.

Here is a remarkable illustration of the influence of locality on health and longevity. Surry is an example of the health enjoyed in the interior, rural districts of England; London in a favorable town district; and Liverpool in an unfavorable one. In Liverpool, the population is dense, and adequate means are not adopted for cleanliness and ventilation. It appears that while a child has a chance of living 45 years in Surry, it has a chance of living only 25 in Liverpool, showing a difference of 19.6 years; or, in other words, life is but five ninths as long in Liverpool as in Surry! At 30 it is shortened 7.8 years, or about one fifth! Yet before the facts developed by the Registration System were known, it was asserted by one of the most accurate writers in England, that "the great increase in the town of Liverpool is attributed to the *salubrity of the air*, and the progressive improvement in its trade, commerce, steam-navigation and rail-roads"! This is a forcible illustration of the importance of Registration. Facts of equal importance may be developed in our own State, in relation to the condition of our towns and cities. If the table of Mr. Wigglesworth adopted by the Massachusetts Life Insurance Company is a correct representation of the mean duration of life in this State, (though we believe it is not,) it is as unhealthy as Liverpool, and the most unhealthy districts of England.

The average age at death, as has been already said, is not to be taken as an exact index of comparison for the health of a place, unless we have the number, age, and condition of the living. It is, however, an interesting fact to be known, and we present, in the subjoined table, several calculations made from such data as are in our possession.

(z)

Period of Observation.	Number of years.	Place and Circumstances.	Number of Deaths.	Average age at death.
1779 to 1842,	63	Concord, ...	1,600	38.08
1812 to 1845,	33	Plympton, (see page 32,) .	494	41.00
1805 to 1836,	32	Amherst, N. H. . .	815	32.00
1817 to 1843,	27	Dorchester, Mass. . .	1,767	32.20
1842, . .	1	Massachusetts Returns, .	6,986	34.77
1843, . .	1	" " .	7,798	33.82
1844, . .	1	" " .	7,689	33.74
1845, . .	1	" " .	8,388	30.26
1811 to 1820,	10	City of Boston, . . .	8,020	27.25
1821 to 1830,	10	" " " . . .	10,731	25.88
1831 to 1840,	10	" " " . . .	16,314	22.72
1841, . .	1	England, ...	335,106	29.46
1841, . .	1	Ireland, ...	.	28.00
1841, . .	1	London, ...	.	27.00
1841, . .	1	Liverpool, ...	.	20.00
1814 to 1833,	20	Geneva, Switzerland, males,	5,219	38.44
1814 to 1833,	20	" " females,	5,688	42.68
1814 to 1833,	20	" " both,	10,907	40.67

This statement affords another striking illustration of the influence of locality on longevity. Estimating by the above average age at death, the value of life to be 100 per cent. enjoyed by the people of Plympton, then the people of Boston would, according to the age 1831—1840, enjoy but 55.41 per cent.; or, in another view, the people of Boston, on the average, live a less number of years by 44.59 per cent. than do the people of Plympton!

To obtain all the needful information on this subject, we must have the aid of government. The Legislature must direct as to the method of collecting and registering the facts in the towns, and the agency by which they shall be returned, digested, arranged, published and spread before the people. We have had a trigonometrical survey that has drawn out the topography and boundaries of our towns, the height of our elevations, and the course of our rivers; we have had a geological survey that has figured to us the structure and formation of our soil, and pointed out the probable mineral worth of every place; we have had an agricultural survey, designed to reveal the physical resources of our lands, and to teach our farmers where and by what means crops of grain and grass may be produced in greatest abundance and at the cheapest rate, where and how sheep can be best and cheapest raised, hogs fattened and cattle maintained; we have had a zoological survey which presents the names, localities and habits of beasts, birds, fishes, insects and reptiles, which exist in this Commonwealth; and we rejoice that such surveys have been made. It was for the good of the people that they were undertaken, and they reflect high honor on those who instituted them.

But while we have all these surveys and maps, pointing out the boundaries of our counties and towns, the localities of our mineral wealth, the best lands for farming and the production of domestic animals, and the existence of noxious and innoxious wild animals, we may ask where is the sanatory map which points out the healthy and unhealthy localities in the State, which will reveal to our people where and how human life can best be sustained and longest continued,

and where and how human energy and productive power can be best brought to bear upon the culture and development of the sources of wealth in the State? Have we not said by such legislation that our cattle and our hogs are of more value than the lives of ourselves and our children? Have we not extended to the brute, whose worth is measured by dollars and cents, a species of legislation which has been withheld from man, who is of immeasurable value? When compared to investigations into the physical condition of man, all other investigations dwindle into insignificance.

The following sensible remarks on this subject are quoted from a review of Dunglison on Human Health, in the American Journal of the Medical Sciences, published in Philadelphia, for April last, a most able quarterly periodical work:—

"What our governments, either national or state, have done for the health of the people is unknown to us. If they have enacted any laws, or taken any measures to prevent the beginning and the growth, in this country, of the lamentable state of things that has been shown to exist in regard to the poor of Europe, they have escaped our notice. They have done almost every thing else; but this they have left undone. They have legislated for property, but not for life. They have cared for the lands, the cattle, the money of their constituents, but not for their health and longevity. They have held out encouragements for the people to raise the largest crops, the strongest horses, the fattest hogs, and the most active silk-worms; in short, for the greatest productive power of land or beast, but nothing is done for the great producer, the owner, director and enjoyer of all. Congress has surveyed the public lands, and ascertained how much and what sort of crops can be raised upon them; and urged their fruitfulness as a motive for people to buy and settle upon them; but whether these settlers are to live or to die upon those lands, is not thought worth the inquiry. They have taken pains to inquire at how much cost of capital and machinery, and of labor, horse-power and steam-power, of men-power, mines can be wrought, cloth can be made, and ships can be sailed; but how much cost of life, how much deterioration of health and strength are necessary for these operations, these have not received any examination. Whether our manufacturing population is sinking to the weakness and depravity of the operatives of Manchester, or are yet as healthy and live as long as men and women in other employments; these are matters which our governments ought to inquire into, but which they have not regarded.

"Massachusetts is the only State that has provided for the Registration of Births and Deaths, and the causes of mortality. And even this law is not completely enforced. The only attempt which the national government has made to gather any facts in regard to the sanitary condition of the people, was an inquiry into the number of the deaf and dumb, the blind and the insane, at the enumeration of 1840. And these facts were so carelessly gathered and faithlessly published, as to be worse than useless.

"The same diversity of physical and sanitary condition, which is shown to exist among the rich and the poor of Britain, is also found here in this favored land. We have examined a few towns, and our facts corroborate those of Mr. Chadwick. The difference of domestic condition and of longevity between the comfortable and the straitened classes is not so wide here as it is there, but it is none the less certain. In Dorchester, Mass., the poor averaged 27 years, and the prosperous farmers 45 years of life. In Concord and Brooklyn, a similar differ-

ence was shown. This partial dealing of death with his subjects is evinced the most among the children. Among the poor of Dorchester, 32 per cent. of all the deaths were under two years of age; among the richer, only 12 per cent. died at that age. On the other hand, 27 per cent. of the prosperous, and only 9 per cent. of the unprosperous, reached or passed their threescore and ten years. These facts show that there is, at least, a field of inquiry almost untouched in America, but which we commend to the paternal care of our government to investigate and ascertain the extent of the evils, and the discrepancies which are found in the three towns above-named."

It is melancholy to think that out of 30,761 persons, whose ages are known and embraced in the Reports for the past 4 years, 13,154 died under 20 years of age, and before they had attained their full maturity of life; more melancholy that this great mortality among the young is increasing from year to year; and more melancholy still, that it is owing to circumstances which are mostly within the control of the people, and are partly preventable, if known and understood.

It may seem strange that any attempt should be made to estimate in money what money did not procure, and cannot restore if taken away; yet the inclination of some people is to estimate every measure by the profit or loss in dollars and cents which it will produce, rather than by any general good it affords to humanity. These considerations justify the remarks I propose now to make.

Looking at this subject, then, merely in a pecuniary point of view, and upon man merely as a producer, who is to add to the wealth of the State, we must consider this subject of Registration and its consequent developments, as having a most important bearing upon its prosperity. In this view, man may be regarded as worth so much to the State as his power of production exceeds the cost of his maintenance. We may look upon all expenditures for his support and education, during infancy and childhood, as so much capital invested, which may be made profitable, when he shall receive his full development and productive power. The death of all children may be considered a loss equal to the whole cost of their previous maintenance. Some persons open family accounts with every child, and can at any time show the expenses incurred. It may be below the truth to estimate the average annual expenses which each child in the State incurs, at $50.

The population of Massachusetts may now be estimated at 800,000. From the returns of deaths received, I have estimated the whole number of deaths in the State last year to have been 14,000, which is nearly 1 in 57, or 1.75 per cent. of the population. Of these 14,000, there died at least 6,000 children and youth under 15 years of age. Estimating the average ages of the whole of these in the same proportion as those actually known, it will give for each about 4 years, or 24,000 years of life for all. This, at $50 a year, amounts to $1,200,000 as the cost of their maintenance. And all this sum was lost to the State last year by premature deaths, before any return could be made for it. Can any one doubt that half, at least, might have been saved by proper knowledge and care?

The proportionate number of deaths among the young has been increasing for several years past in this country, as our investigations prove; and we see no reason to believe it will be less, until more knowledge is diffused in regard to the laws of life and the liability to death, under different circumstances. This immense loss of the productive power of the State, may be considered as an

annual tax, which the people must pay every year, until they find out and use the means of prevention.

It has been said that the strength and dignity of a nation consist not in its lands, its houses, its wealth,—but in its people. And I have already stated, that that people is most prosperous which contains the greatest proportionate number of the productive age. In the above calculation, we have not taken into account the loss sustained by the death of those belonging to this age. This would greatly swell the amount of loss. We have stated that by care and attention the late Dr. Ripley probably added 50 years to his life. We are now considering, time as money, labor as money, *life as money*, and not the real, moral value of that good man's services. Estimating then this time to be worth $1.00 per day, or $300 per annum, the 50 years of life were worth $15,000, and that sum was saved by the prolongation of his life. The deaths in this State last year, as we have estimated, were 14,000. Of these, 5,000 probably died between 15 and 60 years of age. Let us suppose that by proper knowledge of the laws of health and a proper care in obeying these laws, 5 years might, on the average, have been added to each of their lives,—and this seems not an extravagant supposition, —then we should have saved, instead of losing, as we have done, 25,000 years of life, which, estimated to be worth in this adult age, only $150 a year, would have produced $3,750,000! And this loss must be annual!

There is still another view of this great subject. William Farr, Esq., one of the ablest writers on Vital Statistics of the age, stated in McCulloch's Statistical Account of the British Empire, that "when 1 person in 100 dies annually, 2 are constantly sick; although this exact relation is, perhaps, not preserved in in fancy and old age, or where the rate of mortality deviates from the standard, it may be safely assumed as a near approximation to the truth." This principle may be more simply expressed thus: The proportion of persons constantly sick in a population, is double the annual proportion per cent., which the deaths bear to the living in that population. According to the estimate already given, the proportion of deaths to the population in Massachusetts was 1 in 57, *or* 1.75 *per cent.* Double this per centage, and we have 3.5 as the proportion per cent.; and this proportion of 800,000 is 28,000, the actual number constantly sick in this State.

Sickness occasions a two-fold loss; one for the time and labor of the sick, and the other for the nursing, medical attendance, medicine, and other expenses, which they require. The first may be estimated at $50, and the second at $150, or $200 per annum for both, which multiplied by the 28,000, give a total annual loss by sickness of $5,600,000! It is supposed that half of this sickness is preventable, and that half of this enormous sum might be saved if the laws of health were properly understood and obeyed.

We might save then—

By diminishing the mortality of infancy and childhood, ...	$600,000
By prolonging the lives of adults, ...	3,750,000
By preserving the general health and diminishing sickness, ...	2,800,000
Making, according to this view, an annual total saving of . . .	$7,150,000

This amounts in ten years to $71,500,000, or about *one quarter of all the property of the Commonwealth*, according to the valuation of 1840!

This is a pecuniary view of the subject. But, however striking it may appear, it deserves not to be mentioned, when contrasted with another, which presents itself. The amount of widowhood and orphanage which death occasions, and the poverty and suffering which often accompany them, may be estimated by the community or individual who contributes to their relief. Man may be convinced that vast losses are annually incurred by neglect of health, and that any sums expended to prevent them would be a capital invested, on which an enormous interest would be paid, by diminishing the sickness and mortality and increasing the productive labor of the people. But who can estimate, in dollars and cents, the care, anxiety and suffering, mental and physical, which the premature sickness or death of a husband or wife, a father or mother, a son or daughter, a brother or sister, a friend or connexion, may occasion? Who can tell how much even one such death, by blighting earthly hopes, impairs the vital energies of the living, and accelerates the approach of another? The mental anguish and physical suffering which sickness and death produce, may possibly be feebly figured to one's own imagination, but their full force must lie concealed in the mind of each individual sufferer.

But we would not rest our reasons in favor of Registration on any pecuniary view of the subject. Man is not a mere producer—a mere machine. His life or death, his happiness or misery are much too high objects upon which to place a pecuniary value. He is more nicely made, more wonderfully organized, requires to be guarded with more care from any influence that may surround him, to produce disorganization and unfit him for use, is capable of higher and more noble purposes, and has a higher and more noble destiny; and in proportion as in each of these he exceeds a mere machine, in such proportion ought we to regard his intellectual and moral nature, and the means used to preserve and develope his physical powers to enable him best to accomplish the great purposes of his intellectual and moral existence.

This is a matter of great magnitude. It deserves that full illustration which could only be derived from facts preserved and gathered from every part of the State. "As there is a poverty that is self-inflicted, and may be self-removed," says a late writer, "so there is a certain amount of disease and annual mortality in every place that is self-inflicted; and the community that does not strive by every available means to reduce its disease and mortality bills to the lowest sum of human suffering, and the lowest rate of annual mortality, is as guilty of suicide as the individual who takes with his own hands the life God has given, and hurries unbidden into the presence of his Judge."

It may be asked, what can the government do to arrest the hand of death? We do not suppose that an act of the Legislature can compel a child to live, or an adult to keep his energies in a healthy state of action. But it is as certain that human life may be prolonged by knowledge and care, as it is that an ox will fatten, a silk worm spin its thread, or a plant thrive, better, where knowledge and care are bestowed, than where they are not. Let the facts which the Registry System proposes to collect concerning Births, Deaths and Marriages, and the circumstances which attend them, be collected, digested, arranged, published and diffused annually, and their effects on the living energies of the people would be incalculable. They would be an annual lesson on the laws of human life in their operation among ourselves—a kind of *Practical Physiology* taught in all our towns and at our

firesides—and hence, far more instructive and impressive than any derived from books. They would teach our people how to understand human life, and how to improve, prolong and make it happy. They would also teach a highly important moral lesson. Registration would sometimes operate as a check upon vice, and it would lead our people so "to *number* our days as to apply our hearts unto wisdom." It behooves the State to develop and preserve its productive power—the lives and health of the people—as much as possible, and search out those causes which tend to blast it in its bud, or wither it in its ripeness.

These are not the speculations of a visionary theorist, but the legitimate deductions from serious, sober facts. We are not a theorist—an experimentalist. We have no sympathy with the opinions of some modern reformers, who seem to be governed by theories founded on uncertain, partial data, or vague conjecture. We are a statist—a dealer in facts. We wish to ascertain the laws of human life, developed by the natural constitution of our bodies, as they actually exist under the influences that surround them, and to learn how far they may be favorably modified and improved. This can only be done by an accurate knowledge of the facts that are daily occurring among us. These matters are important to the physician to aid him in curing the sick, but far more important to the people to aid them in *learning how to live without being sick*; and they deserve the serious consideration of all persons in this Commonwealth.

To show that these matters are practicable, we cite the example of other governments. In most European states, facts of this kind are registered and collected in a careful, systematic manner, not for the purpose of aiding any police regulations, as some have erroneously supposed, but for the physical benefit of the people. And, whatever we Americans may say to the contrary, the average longevity in many places where these measures have been in operation, appears greater than with us.

Geneva was one of the earliest cities to establish a system of Registration of Births, Marriages and Deaths. The Registers were begun as early as 1549, and have since been continued with great care. They are viewed as prëappointed evidences of civil rights. The registration includes the name of the disease which caused the death, entered by a district physician, who is charged by the State with the inspection of every person who dies within his district. A second table is made up from certificates setting forth the nature of the disease, with a specification of the symptoms, and observations required to be made by the private physician who may have had the care of the diseased. These registers have been frequently examined. I have before me the results of an examination made by Edward Mallet, a very able work, published in the "Annales D'Hygienne." From this work it appears that human life has wonderfully improved since these registers were kept. The number of years which it was probable that every individual born would live, appears in the different periods as follows:

Period.	*Years.*	*Months.*	*Days.*	*Rate of Increase.*
1550 to 1600	8	7	26	100
1600 to 1700	13	3	16	153
1701 to 1750	27	9	13	321
1751 to 1800	31	3	5	361
1801 to 1813	40	8	10	470
1814 to 1833	45	0	29	521

Showing that the mean duration of life has increased more than five times during these periods!

The progression of the population and increased duration of life has been attended by a progression in happiness. As prosperity advanced marriages became fewer and later. The proportion of births were reduced, but a greater number of the infants born were preserved, and the proportion of the population in manhood became greater. In the early ages, the excessive mortality was accompanied by an excessive fecundity. In the last ten years of the 17th century a marriage still produced more than five children; the probable duration of life attained was not 20 years. Towards the end of the 18th century, there was scarcely three children to a marriage, and the probabilities exceeded 32 years. At the present time, a marriage only produces 2¾ children, and the probability of life is 45 years.

Geneva has arrived at a high state of civilization. The real productive power of the population has increased in a much greater proportion than the increase in its actual number. The absolute number of the population has only doubled during three centuries; but the value of the population—the productive power, has more than doubled upon the mere numerical increase. In other words, a population of 27,000 in which the probability of life is 40 years for each individual, is more than twice as strong for the purposes of production, as a population of 27,000, in which the probability or value of life was only 20 years for each individual.

This wonderful improvement is attributed, among other things, by M. Mallet, to the information obtained, rendering the science of public health better known and understood; to larger, better and cleaner dwellings; to more abundant and more healthy food; and to a better regulated public and private life. He cites an instance of the effects of regimen in the preservation of life, where 86 orphans had been reared in one establishment in 24 years, and one only of whom had died. They were taken from the poor, among whom the average mortality was six times as great.

We have been accustomed to cite the example of Prussia as worthy of imitation in the measures she has taken to promote the intellectual advancement of her people; but her measures to advance their physical energy and power deserve equal if not greater praise. Every fact there is gathered with great care under the direction of a central officer at Berlin, and arranged and published for the benefit of the people. Not long since I received from M. Hoffman, the director of the Statistical Bureau at Berlin, a paper on the Average Length of Life in the Prussian States, two extracts from which, translated from the German, I propose to present to show how these things are managed under that government. I have also other similar papers detailing the births, marriages and deaths.

The first extract is designed to illustrate the principle of the average length of life, and to show its operation under different circumstances, and the manner in which it was obtained in Prussia.

"The average length of life from birth up, will be found expressed in years and fractions of years, if we divide the number of the living by the mean proportion of annual deaths. For example, if among 1,000 there annually die, upon an average, 25, then the average length of life will be 40 years: that is, these 1,000 persons, taken together, live 40,000 years, and to each one of them, in the average, falls a life of 40 years, different as the length of life among indi-

viduals may actually be. The same result may arise in very different ways. A great many may die early, and yet the few survivors live so long, that still the average for each among the thousand will be 40 years; or the great majority may attain to but a little above or below forty years, and very few die early or live to a great age. If, for example, 600 were to die so early as to average only 12 years apiece, or altogether 7,200 years, still an average of 40 years might result for the whole 1,000, if the other 400, taken together, were to live 32,800 years, or on an average 82 years each. But the same average length of life for the 1,000 would occur, if the first mentioned 600 should reach, on the average, 36 years each, or, all together, 21,600 years; then the other 400, taken together, would live only 18,400 years, giving an average of only 46 years to each individual. It is clear that the condition of human society would be a very different thing, according as one or the other of the above hypotheses should be realized. Consequently, observations of this sort are particularly instructive, when the mean duration of life is reckoned, not merely from birth up, but also from certain other remarkable points in the course of human life. The age of those who die is commonly given, and hence it is easily possible to determine the number of those who died after the completion of a certain age. Thus, by comparing the annual entries upon the records in the Prussian States, we see how many died after the completion of their 1st, 2d, 5th, 7th, 10th, 14th, 20th, 25th year, and then again, from 5 to 5 years until the completion of the 90th year. With these aids it has become possible to ascertain the mean duration of human life, for the last named and peculiarly important divisions of life. This must be done separately for each of the sexes, since remarkable differences appear between them. It is known that for 100 girls, 105 or 106 boys are born, but this excess generally dies away during the first year of life; hence from birth up the mean duration of the male sex appears smaller than that of the female; but this difference, for the most part, vanishes in the mean duration for those over one year, which is found to be considerably greater, than that for the newly born, because they have already happily survived the first and most dangerous year of life. The mean duration for those over 14 is for the most part not very different from the mean duration for those over one year old; the diseases of childhood are past at the close of the 14th year, and this increases the hope of life; but then the 14th year completes a fifth part of the natural term of life, if we reckon it at seventy, and this again diminishes the hope of living. For those over 60, the mean duration of life in most of the provinces is not much under ten years, sometimes a little more.

"The difference of the mean duration of life in the different divisions of the Prussian States is very considerable; and it is by no means sufficient to estimate the same for each governmental district separately, for many districts consist of very unequal parts, which were only put together because singly they were too small to bear the expense of separate local governments. Accordingly, by comparing neighboring circles of similar soil and population, seventy divisions have been formed, for which the average length of life of the inhabitants is estimated below. We adopt that division of the State-domain into provincial (landsräthliche) circles, which existed at the reception of the statistical tables at the end of the year 1834; later changes in the territorial boundaries could not here be regarded. The averages have been drawn, from the 15 years, from the beginning of the year 1820 to the end of 1834: that is, from the same years with the comparative statement of births and deaths."

The Prussian States are divided into three principal divisions, nine sections, and seventy subdivisions, in which are classed the towns, or "circles," as they are there called, and the average duration of life in each subdivision is calculated. The extract given below is the entire account of one section, containing eight subdivisions.

"C. Third section, comprising the southern part of Upper Lausitz, all Middle Silesia, and Upper Silesia, west of the Oder.

Div. 1. *Circ.* Görlitz and Bunzlau.
" 2. " Kainau-Goldberg, Liegnitz, Jauer and Striegau.
" 3. " Neumarkt, Wohlau, Militsch, Trebnitz, Oels, Breslau, Ohlau and Brieg.
" 4. " Strehlen, Nimptsch and Münsterberg.
" 5. " Reichenbach, Schweidnitz, Waldenburg, Bolkenhain, Landshut, Kirschberg, Schönau, Lowenberg and Lauban.
" 6. " Frankenstein, Glatz, and Kabelschwerdt.
" 7. " Neustadt, Falkenberg, Neisse and Grottkau.
" 8. " Ratibor and Leobschütz.

The whole embraces 397.75 geographical square miles, and the population amounted, at the

Beginning of 1820 to	1,422,694
End of 1834 to	1,681,250

Making an average, to the square mile, at the

Beginning of 1820, of	3577
End of 1834, of	4227

So that the population increased about 18 1-6 per cent. in the 15 years.

"This section contains, in the first place, the fertile and highly cultivated plain, which stretches away between lower Silesia and the mountains, and continues east of the Oder beyond the Trebnitz mountain and to the Partsch, where it is considerably poorer. Moreover, to it belongs the whole front, middle and highest part of the mountains as far as to the Austrian boundary, and to the southernmost point of Upper Silesia. By far the greatest part of the soil is here very fruitful, with the exception of the high mountainous parts, where the rougher climate and partly also the rocky soil is unfavorable to cultivation. The whole tract is occupied by Germans, except a few countries, in which the Polish speech and manners have passed over into the neighboring circles; but in the circles of Leobschütz and Ratibor there is a numerous colony of Moravians, who have preserved their provincial language and manners. The religion of the inhabitants in divisions 1, 2, 3, 4 and 5 is mainly evangelical, although a considerable number belong to the Catholic church; in division 6, 7, 8, on the contrary, the Catholic confession of faith prevails almost exclusively, and the few protestants for the most came in when the Prussians took possession in the year 1742. The mean duration of life here was:

(*a*) From birth up:

	For Males.	*For Females.*
Div. 1.	37 years, 280 days.	41 years, 245 days.
" 2.	32 " 26 "	35 " 10 "
" 3.	32 " 180 "	35 " 348 "
" 4.	36 " 198 "	39 " 166 "
" 5.	29 " 172 "	32 " 27 "
" 6.	31 " 176 "	34 " 234 "
" 7.	30 " 304 "	32 " 331 "
" 8.	26 " 140 "	27 " 99 "

(*b*) From the beginning of the 2d year, up:

	For Males.	*For Females.*
Div. 1.	59 years, 27 days.	59 years, 112 days.
" 2.	52 " 53 "	51 " 280 "
" 3.	46 " 156 "	48 " 139 "
" 4.	53 " 228 "	53 " 59 "
" 5.	49 " 51 "	48 " 2 "
" 6.	47 " 170 "	47 " 55 "
" 7.	46 " 12 "	44 " 309 "
" 8.	37 " 189 "	35 " 209 "

(*c*) From the beginning of the 15th year, up:

Div. 1.	52 years, 124 days.	51 years, 265 days.
" 2.	49 " 214 "	48 " 278 "
" 3.	46 " 64 "	47 " 276 "
" 4.	50 " 27 "	49 " 167 "
" 5.	46 " 203 "	44 " 254 "
" 6.	44 " 162 "	42 " 129 "
" 7.	45 " 199 "	43 " 135 "
" 8.	40 " 47 "	36 " 61 "

(*d*) From the beginning of the 61st year, up:

Div. 1.	10 years, 57 days.	9 years, 161 days.
" 2.	9 " 157 "	8 " 227 "
" 3.	9 " 69 "	9 " 208 "
" 4.	10 " 92 "	9 " 201 "
" 5.	9 " 108 "	8 " 245 "
" 6.	9 " 284 "	7 " 358 "
" 7.	8 " 346 "	8 " 66 "
" 8.	7 " 250 "	7 " 12 " "

Can any one doubt the great value of such calculations, if applied to the different sections of Massachusetts, and made from the correct data which a Registry system would give?

England has had a Registry system in operation since 1838, as we have before stated, and it has already developed facts of the utmost importance to that nation and the world. Among other results, it has led to the adoption of measures for the relief of unhealthy districts. It has also afforded the means of forming a Life Table, showing the mean duration or expectation of life in England, which is of very great value. I extract the following interesting account of that table from the Fifth Registration Report.

"In the years 1840–1, a million children (1,014,461) were born in England, and their births were registered; if the mortality should remain the same, the Life Table will enable us to follow this million, and to determine how many will be alive, and how many will die, through the several years of the next century, until they have all 'returned to the earth from which they came,' and been replaced by other generations destined to pursue the same rounds of life. To bring the observation within narrower limits, let us take 100,000 as the basis of the observation; and from the proportions of the two sexes registered, it will be found that 51,274 of them were boys, 48,726 girls. And here it will be recollected that they are not government annuitants—nor persons who have assured their lives—nor selected lives—nor the inhabitants of any particular town—but the children of all ranks and classes of Englishmen; some of them born in halls and palaces,

and surrounded by all the luxuries and conveniences of life; others born in huts on the mountain side, in the cellars of ill-constructed cities, in lodging-houses, in cottages, farm-houses, or such dwellings as our towns afford. Let it be assumed that the 100,000 were all born on the same day—the 1st of January, 1841; and that the survivors, counted on the first day of 1842, 1843, and of every year for the next 100 years, will exist in the numbers against the respective ages of the table, which I shall call the English Life Table.

Of the 100,000 children born, according to the supposition, on January 1st, 1841, 85,369 were alive on January 1, 1842. They were exactly a year old, and are placed against the age "1" of the table. 14,631 perished in the first year, the fourth part of them in the first month of life. This is a smaller proportion of deaths than people have been led to suppose occur in the first year; but the facts leave it undoubted that at least this number of children survived in 1841 out of 100,000 born. On January 1, 1843, the survivors were two years old, and in number 80,102; 5,267 died in the second year. On January 1, 1846, the 5th birthday will be attained, and there will be 74,201 living. In the first five years, therefore, 25,799 of the 100,000 children born, die; during this period, when they are at home and under the care of the mother, and encounter the contagious diseases which beset the beginning of life, their safety depends very much upon the power of the parents to supply them with food and raiment—upon the mother's watchfulness and cleanliness—upon the air they are doomed to respire in imprisoned courts and alleys, or in the fresh open atmosphere of healthy country districts. During the next 5 years, when they leave home more, and when great numbers pass part of the day at school, the mortality becomes less considerable; 70,612 are alive at the age of 10; and from 10 to 15, when those "who labor with their hands" begin to follow the plough—enter the factory—or descend the mine—the loss of life remains small; 68,627 will live to the age of 15. At this age the loss of life among girls is rather greater than the loss of life among boys, and it continues so for the next five years, when both sexes are more detached from the care of their parents, and the majority pursue the professions or trades by which they afterwards gain a livelihood. The mortality appears to increase rather rapidly from 12 to 15; and then at a slow regular rate from 15 to 55 years; 66,059 attain the age of 20. It was observed that 51,274 boys were born alive to 48,726 girls; but the mortality in infancy is greater among boys than girls; so that 31,958 males attain the age of twenty-five and 31,623 females attain the age of twenty-four. This is about the average age of marriage in England; and the number of the two sexes is then nearly equal. About four-fifths of the males who attain the age of manhood marry; the proportion of women who marry being the same. It might have been supposed that the peculiar danger which women encounter at this age enhances their mortality; it does so, but less than the mortality of males is increased: 50,301 of the 100,000 persons born attain the age of forty-five; namely, 25,311 men, and 24,990 women. The chance of living from 25 to 45 is rather in favor of English women. The violent deaths of men on the rivers, and the sea-coast, in mines, in the streets, in travelling, in their dangerous occupations; the mental agitations and anxieties, terminating unhappily sometimes in suicide—the accumulation of workmen in ill-ventilated shops, or the hard exhausting work of the agricultural laborer, independently of war, and service in unhealthy climates, counterbalance the dangers and sorrows of

child-bearing. At the age of 55, this generation will have given birth to, and brought up the generation by which it is to be succeeded; a more rapid rate of mortality will then set in, and more than a thousand die every year; yet 37,996 will be alive at the age of 60, and 24,531 attain the age of 70—11,823 men, and 12,708 women—the mortality of women being less than that of men after 55. The mental faculties, ripened and developed by experience, will not protect the frame from the accelerated and insidious progress of decay; the toil of the laborer the wear and tear of the artisan, the exhausting passions, the struggles and strains of intellect, and, more than all these, the natural falling off of vitality, will reduce the numbers to 9,398 by the age of 80. After the age of 80 the observations grow uncertain; but if we admit their accuracy, 1,140 will attain the age of 90; 16 will be centenarians; and of the 100,000, one man and one woman—like the lingering barks of an innumerable convoy—will reach their distant haven in 105 years, and die in 1945.

'Crebrescunt optatæ auræ, portusque patescit
Jam propior.'"

I have thus far considered those advantages only which would result to the physical welfare of the people from a system of Registration. There are very many personal advantages which might be mentioned and illustrated. It has been well said, that "*it is fully as necessary for the preservation of the rights of individuals to preserve a register of births, marriages, and deaths, as it is to preserve a register of deeds.*" But I have extended my communication already too far, and must restrain an inclination to go into this part of the subject.

The effort of Massachusetts to establish a Registry System is highly commended in various places. The American Journal of Medical Sciences, of July, 1844, already referred to, in noticing the Second Annual Report, after speaking of the general defects of Registration, says: "So far as we know, Massachusetts is the first of the States to set about correcting this deficiency. In doing so, she deserves all praise, as well as for the intelligence displayed by her Legislature in effecting numerous other important objects." "When the States generally shall have followed the enlightened example of Massachusetts, an amount of data will be amassed, from which the most important results must be deduced." Again, in noticing last April the Third Report, that journal speaks of the measure as "reflecting such high credit upon the State of Massachusetts—a measure which places her far above the other States of the Union." "There are some obstacles in the way of obtaining correct information, which the enlightened gentlemen who regulate the affairs of Massachusetts will doubtless overcome in due time. The present age owes them much for what they have accomplished, and the promising commencement will lead to the most valuable result. May other States soon follow the example of Massachusetts by making provisions for similar reports!"

The American Almanac, for 1846, contains a favorable notice of the last Annual Report, and highly commends the example of Massachusetts. I close this communication with an extract from the Fifth Report of the Registrar General of Births, Deaths, and Marriages, in England:—

"The census has been taken with regularity in the United States of America, but abstracts of the Register of deaths have only been published by the cities of

Boston, New York, Philadelphia, and some of the more advanced towns. No correct life table can therefore be framed for the population of America, until they adopt, in addition to the census, the system of Registration which exists in European States. Since the English Life Table has now been framed from the necessary data, I venture to express a hope, that the facts may be collected and abstracted, from which Life Tables for other nations can be constructed. A comparison of the duration of successive generations in England, France, Prussia, Austria, Russia, America, and other States, would throw much light on the physical condition of the respective populations, and suggest to scientific and benevolent individuals in every country, and to the governments, many ways of diminishing the sufferings, and ameliorating the health and condition of the people; for the longer life of a nation denotes more than it does in an individual—a happier life—a life more exempt from sickness and infirmity—a life of greater energy and industry, of greater experience and wisdom. By these comparisons, a noble national emulation might be excited; and rival nations would read of sickness diminished, deformity banished, life saved—of victories over death and the grave—with as much enthusiasm as of victories over each other's armies in the field; and the triumph of one would not be the humiliation of the other; for in his contention none could loose territory, or honor, or blood, but all would gain strength."

Let Massachusetts perfect the measures she has already begun; and thus take the lead in efforts to improve the physical condition of her population, and to reduce the mass of human misery they suffer. She will then set an example worthy of imitation by all her sister States.

I have the honor to be,

With great respect,

Your obedient servant,

LEMUEL SHATTUCK.


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