

# BIRTH AND DEATH REGISTRATION IN MASSACHUSETTS

## IV. THE SYSTEM ATTAINS ITS BASIC GOALS, 1870-1900\*

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**I**N THREE earlier papers, I have tried to describe the development of the birth and death registration system of Massachusetts between 1639 and 1869, the date when the Board of Health was established. The present paper, the last of the series, is concerned with the history of the system between 1870 and 1900. In those thirty years, the basic goals of registration were finally attained. Birth registration became virtually complete by the end of the nineteenth century.<sup>1</sup> The returns of the causes of death achieved a degree of accuracy that was commendable, given the relatively low standards of medical training which still prevailed. The quality of the annual Registration Reports was good enough to meet the needs of most users. Important measures were adopted to increase the frequency with which the returns of mortality and the causes of death were made available for the work of sanitarians and local boards of health. The critics who proposed reforms in the registration system during the 1850's and 1860's had been thwarted in their hope that the State Board of Health would replace the department of the Secretary of State as the agency primarily responsible for registration.<sup>2</sup> But because the General Court allowed the Board to make a liberal interpretation of the powers granted to it for investigating the public health,

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<sup>1</sup> Death registration was almost complete by 1870. See Gutman, Robert: Birth and Death Registration in Massachusetts: III. The System Achieves a Form, 1849-1869. *Milbank Memorial Fund Quarterly*, July, 1959, xxxvii, No. 3, p. 310; and Gutman, Robert: THE ACCURACY OF VITAL STATISTICS IN MASSACHUSETTS, 1842-1901. Ann Arbor: The University of Michigan Microfilm Series, 1956, p. 231 and *passim*.

<sup>2</sup> Gutman, Robert: Birth and Death Registration in Massachusetts: III. The System Achieves a Form, 1849-1869. *loc. cit.* p. 325.

the Board and the Secretary of State were able to work out an effective administration of the birth and death registration system.<sup>3</sup>

#### REGISTRATION OF THE CAUSES OF DEATH

Although the registration of the causes of death was more accurate in 1870 than it had been in the decade preceding the formation of the State Board of Health, it was nevertheless true that 5 per cent of the returns for 1870 had no cause of death assigned to them. Perhaps even more distressing was the fact that a significant proportion of the deaths for which causes were assigned used outmoded or relatively meaningless nosological terms, such as "teething," "old age" and "infantile diseases" (Table 1). Several factors contributed to the unfortunate condition of the records. Clerks and undertakers did not use the powers granted them under the law of 1860, to request physicians to provide a certificate of the cause of death of persons whom they had attended. Indeed, an inquiry which the State Board of Health conducted in 1876 revealed that physicians in many of the towns never had been asked to fill out a medical certificate, in spite of the fact that the law was passed seventeen years before this date.<sup>4</sup> Many physicians who were approached by clerks and undertakers refused to comply with the law because they were given no fee for writing a certificate.<sup>5</sup> The physicians complained, furthermore, that the law did not discriminate between certificates written by members of the Massachusetts Medical Society and those which were made by amateur empirics and quacks.<sup>6</sup> Since undertakers had the power

<sup>3</sup> The powers of the Board are described in the bill which established it. See Massachusetts, FIRST ANNUAL REPORT OF THE STATE BOARD OF HEALTH. Boston: Wright and Potter, 1870, pp. 7-8. (In subsequent references this series will be listed as FIRST STATE HEALTH REPORT, SECOND STATE HEALTH REPORT, and so on.)

<sup>4</sup> Massachusetts: EIGHTH STATE HEALTH REPORT, pp. 235-248, *passim*.

<sup>5</sup> *Ibid.*, pp. 251-258, *passim*. Also see Buckingham, Charles E.: False Certificates of Death and the Registration Law. *Boston Medical and Surgical Journal*, 1868, 1, p. 225; and Derby, George: The Registration of Deaths. *Boston Medical and Surgical Journal*, 1868, 1, p. 265.

<sup>6</sup> Buckingham, *op. cit.*, 1, p. 225.

YEAR	CAUSE OF DEATH										
	Cholera Infantum	Debility	Infantile Diseases	Old Age	Teething	Heart Disease	Consumption	Cancer	Peritonitis	Still-born	Unknown
1870	6.5	1.2	1.9	6.4	1.2	3.6	18.9	1.9	0.2	2.4	4.7
1871	5.4	1.7	2.2	6.3	1.0	4.0	18.0	2.0	0.1	3.8	4.6
1872	9.3	1.6	2.1	5.6	1.2	3.4	16.3	1.6	0.1	2.6	4.4
1873	7.4	1.9	—	5.7	1.1	3.8	16.7	1.8	0.2	2.8	4.1
1874	6.8	2.0	—	5.5	1.0	3.9	16.4	1.8	0.2	3.4	3.6
1875	7.3	1.9	—	5.6	1.0	3.8	16.8	1.6	0.3	3.2	2.9
1876	6.1	2.4	—	5.7	0.9	3.8	16.3	1.9	0.3	3.1	2.9
1877	5.6	2.2	—	5.6	0.9	4.4	17.3	1.8	0.3	3.2	3.0
1878	4.9	2.5	1.7	5.9	0.7	4.5	16.6	2.5	0.5	3.4	2.6
1879	3.9	2.3	1.1	5.6	0.4	4.6	16.2	2.7	0.7	3.2	2.3
1880	6.0	2.5	1.1	5.5	0.5	4.8	15.4	2.5	0.7	3.2	1.8
1881	5.3	2.8	1.2	6.0	0.5	5.6	16.2	2.6	0.8	3.4	1.7
1882	6.1	2.6	1.8	6.5	0.4	5.5	15.8	2.6	0.8	3.4	1.4
1883	5.0	3.1	1.5	6.3	0.1	5.9	16.0	2.6	0.9	3.9	1.6
1884	5.7	2.8	1.8	6.3	0.3	5.9	15.7	2.7	0.8	4.1	1.1
1885	4.9	2.4	1.6	6.2	0.3	5.9	15.6	2.8	0.9	3.8	1.0
1886	5.3	3.0	2.0	6.0	0.3	6.9	15.1	2.8	0.9	4.4	0.9
1887	5.4	3.2	2.0	5.6	0.3	7.5	14.1	2.7	0.9	4.2	1.6
1888	5.2	2.6	1.9	5.4	0.2	7.2	12.5	2.9	0.9	4.1	1.5
1889	5.4	3.5	2.2	5.1	0.2	8.3	12.7	3.2	1.2	4.6	1.5
1890	6.1	3.6	—	4.6	0.2	8.0	13.1	3.2	1.2	4.6	—
1891	6.9	3.8	—	4.8	0.2	9.6	12.1	3.2	1.1	4.7	—
1892	6.3	3.3	—	4.4	0.2	8.1	11.6	2.9	1.2	4.5	—
1893	5.2	2.4	2.4	3.6	.09	7.2	10.7	3.0	1.1	4.7	1.1
1894	5.4	2.5	2.4	3.4	.12	7.4	11.1	3.2	1.2	4.8	1.0
1895	4.8	2.4	2.3	3.4	.15	7.6	11.0	3.5	1.4	4.7	.9
1896	6.0	2.9	2.7	3.5	.14	7.8	11.2	3.6	1.2	5.3	1.0
1897	4.7	2.7	2.9	3.4	.12	8.1	11.5	3.7	1.1	5.6	.8
1898	5.0	2.7	3.0	3.6	.11	8.2	11.3	4.1	1.2	5.8	.7
1899	4.1	2.7	3.1	3.6	.08	8.3	10.9	3.9	1.1	5.6	.7
1900	4.7	2.1	3.4	3.3	.14	8.0	10.2	3.9	1.1	5.6	.5

SOURCE: Twenty-Ninth Registration Report to Fifty-Ninth Registration Report inclusive.

Table I. Ratio of selected causes of deaths to total deaths in Massachusetts, excluding Boston, 1870 to 1900 inclusive.

to request certificates but were not required to do so, one obvious solution to the faulty operation of the system would have been to pass an amendment to the registration law requiring them to request a certificate. But this step was not taken until the very end of the period we are considering, in 1897,<sup>7</sup> perhaps because it was assumed that most of the physi-

<sup>7</sup> Massachusetts, ACTS AND RESOLVES PASSED BY THE GENERAL COURT FOR THE YEAR 1897. Boston: Wright and Potter, 1897, chap. 444. (In subsequent references this series will be listed as ACTS AND RESOLVES.)

cians would not have complied with it. Another solution would have been to offer the physicians a fee; but this idea, too, was ignored, a fact which probably reflected the low prestige of the medical profession among members of the General Court and the public at large.<sup>8</sup>

It is worth noting one general characteristic of the measures which were eventually taken to close the gaps in the system for recording the causes of death. The great majority of them applied to the operation of registration in the towns and cities, rather than on the level of the administration of the system by the officials of the State government in Boston. When reforms of registration were advocated during the 1850's and 1860's by the Massachusetts Medical Society and other professional organizations, it was believed that little improvement could be achieved by changing the laws as they affected the performance of undertakers and clerks. It was the feeling at the time that the major focus of change should be the office of the Secretary of State. If expert medical personnel, instead of laymen in the Secretary's office, could somehow be made responsible for registration, so the argument ran, all the problems of registration would clear up by themselves.<sup>9</sup> Two events, or series of events, ultimately disabused the critics of registration of this idea. In the first place, by establishing a State Board of Health, and then not giving the Board direct control over registration, the General Court indicated unmistakably its wish to keep registration in the hands of the department of the Secretary of State. And in the second place, such reforms as the Secretary had introduced into his supervision of registration did not eliminate the poor quality cause of death returns.

<sup>8</sup> For a discussion of the low prestige of the medical profession during the nineteenth century, see Gutman, Robert: *Birth and Death Registration in Massachusetts: II. The Inauguration of A Modern System, 1800-1849*. The Milbank Memorial Fund *Quarterly*, October, 1958, xxxvi, No. 4, p. 381. Incidentally, it was just about this time that the prestige of the medical profession began to turn upward, as a result of the great advances in scientific medicine made during the last quarter of the nineteenth century. Massachusetts began to license physicians again in 1894.

<sup>9</sup> See Gutman, Robert: *Birth and Death Registration in Massachusetts: III. The System Achieves A Final Form, 1849-1869*, *loc. cit.*, p. 318.

In trying to improve registration by reforming the system as it worked on the local level, the General Court enacted an amendment to the registration law in 1872. This law ordered all towns and cities in the State to license undertakers, who were then threatened with the loss of a license if they failed to perform the duties required by law, including the duty of reporting deaths.<sup>10</sup> All the cities in the State had licensed undertakers, under powers granted by the Health Act of 1849.<sup>11</sup> Now all the towns as well as cities were required to license them. Unfortunately, compliance with the law was limited: an examination of town financial reports reveals that probably no more than one-fourth of the towns which had not licensed undertakers previously did so between 1872 and 1875.<sup>12</sup>

The law was passed at the behest of the State Board of Health, which decided at its January, 1872, meeting, to address a petition about the subject of undertakers to the General Court. The action of the Board was precipitated not only by its knowledge of the weaknesses of the cause of death data, but more immediately, grew out of the accumulating evidence that the health conditions of the State were becoming worse, especially in the urban areas. The Board hoped that the licensing of undertakers would reduce the number of sanitary nuisances brought about by poorly prepared burial sites and inadequately embalmed bodies.<sup>13</sup>

<sup>10</sup> The text of the law is given in Massachusetts, *ACTS AND RESOLVES, 1872*, chap. 275. For the legislative history of the bill, see Massachusetts, *Journal of the House of Representatives of the General Court of the Commonwealth, 1872*, p. 419ff. and *Journal of the Senate of the General Court of the Commonwealth, 1872*, p. 309ff. (These sources will be referred to hereafter as *House Journal* and *Senate Journal* respectively.)

<sup>11</sup> See Massachusetts, *ACTS AND RESOLVES, 1849*, chap. 211. The fact that the various cities took advantage of their powers under the law is known from an examination of their ordinances and municipal registers. The best collection of these sources is available at the Massachusetts State Library, State House, Boston, Mass.

<sup>12</sup> The financial reports of the towns are also available at the Massachusetts State Library.

<sup>13</sup> Records of the Massachusetts State Board of Health, I, 1869-1879, p. 139. This is a bound manuscript volume preserved in the office of the Commissioner of Health, State House, Boston. The petition is included along with the manuscript copy of the bill, on file in the Massachusetts State Archives, State House, Boston.

Two additional amendments were incorporated in the registration law in 1873. One amendment continued the tradition begun in 1860 of offering extra rewards to clerks who *collected* deaths in addition to having recorded them. The fee paid the clerk who performed both these tasks was raised from twenty to thirty-five cents.<sup>14</sup> The other amendment raised the fee of undertakers for returning a death from ten cents for each death to twenty-five cents.<sup>15</sup> Although neither of these additions to the registration laws was introduced at the direct suggestion of the State Board of Health, some members of the Board were consulted by the General Court when the bills were being considered. The amendments themselves appear to have been initiated by complaints addressed by the clerks and undertakers to their representatives in the legislature.<sup>16</sup>

#### THE LEGISLATION OF 1878

A glance at Table 1 will show that only the proportions of deaths attributed to consumption were lower in 1872 than before, and also continued at this new level thereafter. Even if we ascribe the decline in the proportion of deaths of unknown cause which became marked in 1874 to the new legislation, it is obvious that the amendments of 1872 and 1873 had a very limited impact on the accuracy of the returns of the causes of death. Dissatisfaction with the causes of death registration continued, and several attempts were made subsequently in the 1870's, and in the 1880's, to plug the loopholes in the system. The most important attempt was a many-faceted amendment enacted in 1878. This amendment provided, first, that neither a burial was

For a discussion of the worsening health conditions in urban areas following the arrivals of heavy tides of immigration, see Handlin, Oscar: *BOSTON'S IMMIGRANTS, 1790-1865*. Cambridge: Harvard University Press, 1941, pp. 117-119. These conditions were reflected in the rising death rates recorded in the annual Registration Reports. See Gutman, Robert: *THE ACCURACY OF VITAL STATISTICS IN MASSACHUSETTS . . .*, pp. 249-258.

<sup>14</sup> Massachusetts, *THIRTY-FIRST REPORT RELATING TO THE REGISTRY AND RETURN OF BIRTHS, MARRIAGES AND DEATHS*. Boston: Wright and Potter, 1874, p. clvi. (These reports will be referred to hereafter as *Thirty-First Registration Report*, *Thirty-Second Registration Report*, and so on.)

<sup>15</sup> *Ibid.*, p. clvi.

<sup>16</sup> Massachusetts, *House Journal*, 1873, pp. 162 ff. and pp. 471 ff.

to take place in a community nor was a body to be removed from it, without the record of death having been returned to the clerk.<sup>17</sup> Previous legislation, it will be recalled, had provided that the undertaker obtain a burial permit before the burial, *when practicable*. The latter qualification was stripped from the new version. Secondly, the law provided that "no clerk or local registrar shall give such certificate or burial permit, until the certificate of the cause of death from the physician, if any, in attendance at the last sickness of the deceased has been obtained, and placed in the hands of said clerk or local registrar."<sup>18</sup> By means of this provision, the law apparently intended to force undertakers to request certificates from physicians, although the law did not state this demand explicitly. Finally, the law provided that, in cities and towns where boards of health had been established, the local boards be required to approve all certificates of the cause of death prior to the grant of a burial permit.<sup>19</sup> The last provision of the law is especially interesting because it is indicative of a shift in strategy after 1869 among the reformers of the registration system. These critics, of whom the members of the Massachusetts Medical Society were probably the most notable, continued to believe that it was necessary to bring medical personnel into a more direct supervisory relation over the registration system. But with the General Court apparently unwilling to give the Board of Health control of the state administration of registration, the only remaining alternative was to make use

<sup>17</sup> The text of the law is given in Massachusetts: Thirty-Seventh Registration Report, p. clxv; also in Massachusetts: ACTS AND RESOLVES, 1878, chap. 174. Portions of the legislative history of the bill can be found in Massachusetts, LEGISLATIVE DOCUMENTS OF THE SENATE OF THE GENERAL COURT OF THE COMMONWEALTH, 1878, No. 20 and No. 70. (This source will be referred to hereafter as SENATE DOCUMENTS, and its companion series relating to the House of Representatives of the General Court as HOUSE DOCUMENTS.)

<sup>18</sup> Massachusetts, Thirty-Seventh Registration Report, p. clxv.

<sup>19</sup> *Ibid.*, p. clxv. The bill also provided that in cases of violent deaths, the medical examiner should be the person who would furnish the required certificate of the cause of death. This provision followed logically from a law passed in 1877 which abolished the office of coroner and thereby separated the medical and legal responsibility involved in the investigation of violent deaths. The provision was intended to add force to the law requiring burial permits by making it more difficult for deaths caused by homicide or suicide to go unregistered.

of the organizations of medical personnel on the level of local government. The idea was first developed in Boston where, in 1874, the Boston Medical Society had tried to get the Mayor and Council of that city to abolish the office of City Registrar and substitute for it an office of registrar of death and burials under the authority of the Boston Board of Health. But because such reorganization of the Boston registration system would have been inconsistent with the requirements of the State registration law, the Boston Medical Society withdrew its proposal. Instead the members of the Society pressed for a revision of the State laws, which, with the support of the State Board of Health, then eventuated in the law of 1878.<sup>20</sup>

In spite of obstacles to its enforcement, the law of 1878 did improve the accuracy of the returns of the causes of death (Table 1). For instance, the proportion of deaths assigned to "unknown" causes declined from 3 per cent in 1877 to 2.3 per cent in 1879 and beginning with 1880 never rose above 1.8 per cent. (At this date, the category "unknown" included returns lacking any information as well as returns using such vague terms as "tumor" or "hemorrhage.") Teething as a cause also declined significantly beginning in 1879 although there was no marked change downward in the proportion of deaths assigned to some of the other ambiguous diseases. Perhaps the most convincing evidence of the ameliorative impact of the new law was the increase in the percentage of deaths said to have been caused by cancer, peritonitis, and heart disease. These were causes of death that trained medical practitioners were likely to assign but which were relatively unfamiliar to laymen. In other words, the rise in deaths ascribed to these diseases would be consistent with a view that, as a result of the 1878 law, more deaths were returned to the clerks

<sup>20</sup> See Boston: SECOND ANNUAL REPORT OF THE BOSTON BOARD OF HEALTH. Boston: Wright and Potter, 1874. Also Boston: *Majority and Minority Reports on the Duties of the City Registrar and Board of Health* (Boston City Documents, 1875, No. 70); and Boston, *Reply of the City Registrar to the Charge of Inaccuracies in His Department* (Boston City Documents, 1876, No. 36). The State Board of Health's opinion of the bill is given in Massachusetts: NINTH STATE HEALTH REPORT, p. xiii.

along with medical certificates from physicians than had been the case earlier in the history of registration. In addition to increasing the participation of physicians, the law seems also to have brought about greater cooperation from the undertakers, especially from the undertakers in small towns. In many such communities undertakers had made no returns of death before 1878 but then began to comply with the law either in that year or shortly thereafter.<sup>21</sup>

I have mentioned that there were certain obstacles to the enforcement of the law. One obstacle was that relatively few Massachusetts communities in 1878 had local boards of health which were separate from the town selectmen and which included a physician or other person familiar with medical matters.<sup>22</sup> According to a law passed in 1836, all towns in the State were given the right to appoint such boards, and failing that, the selectmen were automatically constituted the board. But apparently few towns made use of their appointive powers.<sup>23</sup> The situation was more complicated in the cities, because unlike the towns, the city governments did not have the right to appoint boards of health unless they received specific permission to do so from the General Court. Only Boston had asked for this permission, which was granted in 1872.<sup>24</sup> To put it in another way, the provision of the 1878 law that local boards of health approve medical certificates before burial was con-

<sup>21</sup> For the effect of the 1878 law on registration practices in small towns, see the financial reports for the period 1875-1885 of the towns of Bridgewater, Hinsdale, Norton, and Westport, Massachusetts.

<sup>22</sup> Of the more than three hundred towns in Massachusetts, 185 replied to a survey dealing with local boards of health which the State Board conducted in 1875. Of the 185 communities, the selectmen acted as the board in 80, there were no boards in 70 (which probably was equivalent to saying that the selectmen acted as such) and in only 26 towns were there separate boards of health. It is likely that there also were no separate boards in the towns which failed to reply to the inquiry. Massachusetts: SEVENTH STATE HEALTH REPORT, p. 527.

<sup>23</sup> Massachusetts: THE REVISED STATUTES OF THE COMMONWEALTH OF MASSACHUSETTS. Boston: Dutton and Wentworth, 1836, p. 208. Also see, Massachusetts, Commissioners on the Sanitary Survey: REPORT OF A GENERAL PLAN FOR THE PROMOTION OF PUBLIC AND PERSONAL HEALTH. Boston: Dutton and Wentworth, 1850, p. 52 ff.

<sup>24</sup> Boston: *Report of the Joint Special Committee on Intramural Interments*. (Boston City Documents, 1879, No. 96).

structed on a legal fiction. Fortunately, this fact was immediately obvious to the State Board of Health which then undertook a campaign to get towns to use their powers and also urged cities to seek the right to appoint boards. As a result of this campaign, all the cities of the State had separate boards of health by 1888, and boards of health also were established in about sixty per cent of the towns in the State by the same date.<sup>25</sup>

Another obstacle to the enforcement of the law was the extra labor it imposed on undertakers. Any undertaker who wished to fulfill his duties with respect to registration before 1878 had to do two things: he had to obtain a certificate of the cause of death from a physician and he had to bring this certificate to the town clerk, along with other information. Even if he was as scrupulous as the old law intended, and more scrupulous than it required, and he brought the information to the clerk before the burial, he still had to deal with only two people. But according to the new law, he had now to perform at least three tasks: he had to get the physician's certificate, he had to bring it to the local board of health for their approval, and then he was supposed to carry it to the town clerk's office. And all this within a matter of hours or a few days at the most, or else the body could not be buried. The amount of extra labor imposed by the third task is perhaps fully understood only when we realize that very few communities, indeed less than ten per cent in the whole State, had an office where the clerk could be found regularly; and in even fewer towns and cities was there a place where the board of health met.<sup>26</sup> Undertakers in Boston were so irate over the conditions imposed by the new law that they organized their colleagues in every town and city in the State in order to address a common petition to the General Court calling for some reform of the law. In their petition, the undertakers were joined by a group of Boston physicians. The petition was submitted to the General Court in the Spring of

<sup>25</sup> Massachusetts: TWENTIETH STATE HEALTH REPORT, p. 265.

<sup>26</sup> Massachusetts: EIGHTH REPORT OF THE COMMISSIONER OF PUBLIC RECORDS. Boston: Wright and Potter, 1896, p. 5.

1880. It called for a reorganization of the system to give boards of health the power not only of approving the certificate of the cause of death but also of granting the burial permits.<sup>27</sup> The petition was referred to the Committee on Public Health, but the Committee took no action on it.<sup>28</sup> In the following year, the undertakers recommended an alternative solution, namely that the old arrangement be reinstated and that the clerk be given the right to approve the certificate as well as to grant the burial permit. This recommendation, too, went unheeded.<sup>29</sup> The undertakers probably would have had more success were it not that the State Board of Health, generally the great rational force in matters affecting registration, was merged with the Boards of Lunacy and Charity in 1879. As a consequence, the powers, even the advisory powers, of the Board in legislation affecting health and statistical questions was severely limited.<sup>30</sup> Indeed, not a single improvement was made in the registration law between 1879 and 1886, when the Board of Health again was granted independent status.<sup>31</sup> On

<sup>27</sup> The petition, from which the activities of the undertakers and physicians can be inferred, is included in the manuscript version of the order presented to the General Court in 1880, on file in the Massachusetts State Archives, State House, Boston.

<sup>28</sup> Massachusetts, *Senate Journal*, 1880, pp. 21, 225 and 233.

<sup>29</sup> *Ibid.*, 1881, pp. 84 and 291.

<sup>30</sup> Henry Bowditch, who was appointed the first chairman of the State Board of Health in 1869, wrote of the merger of the three boards as follows: "In 1878 came mutterings of political disaster to the ruling powers, and forebodings of what the renowned Gen. Butler [Benjamin "The Beast" Butler, Civil War general, Congressman from Massachusetts, and later Governor] would do with the numerous 'commissions' (that of health among them) that were 'spending wastefully the people's money.' Accordingly, to attack this redoubtable general upon his political 'flank,' the legislature, under suggestions from Governor Talbot, merged the three departments of health, lunacy and charity, a Cerebus, in fact, in its grotesqueness of head. Three commissions, all different in ideas and modes of action, jumbled into one heterogeneous mass, simply because the ruling party feared the advent to power of a political adventurer! The prospects were chilling in the extreme to me, and I soon found two sad results: viz., heartburning and jealousies among the increased number of members, and an almost total neglect of sanitary work. At one time, for three or four successive meetings, nothing was done about sanitation, . . . Such neglect of that which we had been for years laboring for was distressing." Bowditch, Vincent Y.: *LIFE AND CORRESPONDENCE OF HENRY INGERSOLL BOWDITCH*. Boston: Houghton Mifflin, 1902, II, pp. 226-227.

<sup>31</sup> MacDonald, Eleanor J.: *A History of the Massachusetts Department of Public Health*. *The Commonwealth*, 23 (1936), p. 98.

the recommendation of the reconstituted Board, and with the help of a petition sent by the Mayor of Boston on behalf of the Boston Board of Health, the General Court in 1888 took up the problem imposed on the undertakers by the registration law and finally granted local boards of health the right to grant burial permits.<sup>32</sup>

It is testimony to the achievement of the system for registering causes of death during the period between 1870 and 1888 that no further innovation in its operations was introduced during the remainder of the nineteenth century.

### IMPROVEMENTS IN THE REGISTRATION REPORTS

In earlier papers in this series, attention was called to the fact that the motivations for recording vital events in the seventeenth, eighteenth, and also in the early nineteenth century were almost exclusively legal and genealogical. By the time a modern statistics system was established in Massachusetts in 1840, this motivation had undergone a change. The State government of Massachusetts was led to assemble vital records by the appeals of the new professional statistical organizations, and by the medical societies and allied public health groups. What mainly interested these groups were records of death, especially accurate records of the causes of death. They hoped to use these data to study the factors associated with disease and to forewarn physicians and their patients of the approach of epidemics. It was in order to facilitate the fulfillment of these ambitions that so much effort was applied to getting undertakers to secure physicians' certificates. Partial success along these lines was not sufficient, however, if the goals of the consumers of registration data were to be achieved. Even as the accuracy of the records returned by undertakers and clerks

<sup>32</sup> In towns in which there were no separate boards of health, the responsibility for granting burial permits remained with the town clerks. Massachusetts: Acts AND RESOLVES, 1888, chap. 306. For the events leading up to the enactment of the law, see *Boston City Documents*, 1888, No. 17; Boston, *City Council Minutes*, 1888, pp. 34-36; Records of the Massachusetts State Board of Health, III, p. 44 (this is a bound manuscript volume preserved in the office of the Commissioner of Health, State House, Boston); and Massachusetts, *House Journal*, 1888, p. 80.

improved, there was still the question whether the data would be analyzed and displayed properly in the annual Registration Reports which the Secretary of State submitted once each year to the General Court. And, furthermore, there was the problem of making the data available to consumers more immediately following their collection. Physicians, local boards of health, and sanitary organizations needed the information quickly in order to combat epidemics. The State Board of Health, making use of its general powers to inquire into the condition of the public health and to cooperate with other agencies of the government in matters related to health, did something about both of these problems between 1870 and 1900.

The work of the State Board of Health with the annual Registration Reports began when the Secretary of State inquired whether the members of the Board would be interested in having their Secretary edit the Reports. The Secretary of State believed that it would be more economical for the government if the Board's Secretary would perform the work as part of his regular salaried duties.<sup>33</sup> The members of the Board accepted the opportunity because they saw in it a chance to achieve by administrative fiat one of the central goals of the public health movement.<sup>34</sup> The first fruits of the liaison appeared in September of 1879, when the Registration Report for 1878 was published under the editorship of Dr. Charles Folsom, Secretary of the State Board of Health.

The Registration Reports for 1869 through 1877 had continued to exhibit the improvement in form which had characterized their development during the Civil War years and immediately thereafter. One example of the improvement was the order and consistency introduced into the supplementary tables included in the text of each volume. The tables were chosen to illustrate particular aspects of the returns which the editor of the Report wished to discuss. Some of these tables,

<sup>33</sup> Massachusetts: *FIRST REPORT OF THE BOARD OF HEALTH, LUNACY AND CHARITY*. Boston: Wright and Potter, 1879, p. xlcv. (This series will be referred to hereafter as *HEALTH, LUNACY, AND CHARITY REPORT*.)

<sup>34</sup> Massachusetts: *TENTH STATE HEALTH REPORT*, p. xxxix.

such as those showing the variation in fertility and mortality by nativity, were indispensable to the student of vital trends and public health, although they were not part of the basic tables of the Reports. One of the weaknesses of the Reports before 1869, however, was that these supplementary tables tended to appear or disappear rather haphazardly, depending on the editor's whim. After the Board of Health was established, a feature of the reports was that the same supplementary tables were included in each successive volume.<sup>35</sup>

When Folsom took charge of the reports several additional changes were made. For many years prior to 1878, a table entitled "Comparative Mortality," showing the causes of death for the sum of all deaths occurring since 1842, nosologically classified, and for each of the previous five years separately for each year, had been included among the basic tables.<sup>36</sup> Folsom introduced the innovation of reducing the number of years covered by the table to those beginning with 1857, and of showing the causes of death in *each one* of the intervening years in a separate column. Another innovation, of even greater utility, was a table which classified several leading causes of death *by towns* for the year covered by the report.<sup>37</sup>

Another change adopted in 1878 occurred in the basic table which abstracted the fertility and mortality returns of the previous decade. In 1877, and in earlier years, this table had employed the ratio of deaths to population as an index of the trend of vital events.<sup>38</sup> Folsom substituted for it the average age of the decedents in each year. He was, of course, aware of the serious deficiencies of this measure as an index of mortality, but he believed that, when used comparatively, it was more reliable than a crude death rate based on an extrapolated esti-

<sup>35</sup> Some examples of the most important of the supplementary tables, in addition to those showing births and deaths by nativity, were tables of births by quarters of the year; the sex ratio of births; mortality by geographical divisions; deaths by quarters of the year and the order of the ten principal causes of death. *See Massachusetts: Thirty-First Registration Report*, pp. 5, 6, 23, 25 and 48.

<sup>36</sup> *Massachusetts: Thirty-Sixth Registration Report*, pp. c-cvii.

<sup>37</sup> *Massachusetts: Thirty-Seventh Registration Report*, pp. c-cvii and cxvi-cxxv.

<sup>38</sup> *Massachusetts: Thirty-Sixth Registration Report*, pp. cxiv-cxxxv.

mate of population size for each year. Folsom based this view on the extreme volatility of the Massachusetts population resulting from the large annual shifts in the amount of immigration, and the difficulty of obtaining accurate data on the number of immigrants.<sup>39</sup> Folsom's scepticism about extrapolated population estimates was carried over into the supplementary tables included in the text. For instance, in the tables which in previous volumes had shown the trend of the birth and death rates since the inauguration of a modern statistics system, he printed ratios only for the census years; and for the other years, he simply listed the number of births and deaths in those years.<sup>40</sup> In the section of the text included in the Report for 1880, Folsom presented a number of special supplementary tables dealing with diphtheria and croup; in the report for 1881, a similar analysis was provided of deaths by typhoid fever.<sup>41</sup> For all three diseases, the number of deaths in each town in the State over a number of years was listed. To make the reports more helpful to the sanitarian, Folsom began the practice of numbering the supplementary tables. He also included a meteorological section, something which had not appeared since 1859.<sup>42</sup>

Folsom's work on the reports for 1880 and 1881 was done in a private capacity, as a consultant to the department of the Secretary of State. This arrangement came about because of merger of the State Board of Health with the Boards of Lunacy and Charity, after which event the agreement was revoked between the Secretary of State and the Board of Health to have the latter's Secretary edit the reports. The reports for 1882 to 1885 inclusive were edited by Dr. Frank Wells, a well-known vital statistician of the time and formerly health officer of Cleveland.<sup>43</sup> When merger of the three boards proved to be un-

<sup>39</sup> Massachusetts: Thirty-Seventh Registration Report, pp. iii-iv.

<sup>40</sup> *Ibid.*, pp. 9 and 38.

<sup>41</sup> Massachusetts: Thirty-Ninth Registration Report, pp. 86-110; FORTIETH REGISTRATION REPORT, pp. 90-108.

<sup>42</sup> Massachusetts: Thirty-Seventh Registration Report, pp. 88-90.

<sup>43</sup> Massachusetts: Forty-First Registration Report, Secretary's Preface.

workable and an independent State Board of Health was set up again, the then Secretary of State renewed the request of one of his predecessors that the Secretary of the Board become the editor of the registration reports. The Board received the request with pleasure and Dr. Samuel Abbott became the editor of the report of 1886.<sup>44</sup>

The short space of time which elapsed between Abbott's appointment to the job and the date set for the publication of the 1886 report made it almost impossible for him to introduce any changes in its form or its contents. The report of 1887, however, which appeared in 1888, showed considerable evidence of his work. One table which had the causes of death arranged alphabetically by month, age, and sex of the decedent was replaced by two tables, one of which gave the causes of death arranged nosologically by month and sex and the other of which showed the same basic information, but by age and sex.<sup>45</sup> A new table listed the nativity of the parents of children, the nativity of the deceased, as well as the nativity of the parents of the deceased.<sup>46</sup> Tables similar to this particular one had been included among the supplementary tables of previous reports, but never among the basic tables. Abbott also changed the table which in earlier reports had given the occupation of deceased persons. In the revised version, it listed, in addition to this information, the occupation of fathers of children.<sup>47</sup> Abbott introduced innovations, too, in the section of the text dealing with mortality, including a supplementary table showing the death rate in relation to density of population, by county; another supplementary table listing the proportion of deaths returned with unspecified or unknown causes from 1865 onward; and a lengthy discussion of the returns made by the medical examiners.<sup>48</sup> In general, in his discussion of mortality, Ab-

<sup>44</sup> Massachusetts: Forty-Fifth Registration Report, Secretary's Preface. Also, Massachusetts, NINETEENTH STATE HEALTH REPORT, p. xlviii.

<sup>45</sup> Massachusetts: Forty-Fifth Registration Report, pp. lxxii-lxxxix; Forty-Sixth Registration Report, pp. 80-119.

<sup>46</sup> Massachusetts: Forty-Sixth Registration Report, pp. 170-171.

<sup>47</sup> *Ibid.*, pp. 172-179.

<sup>48</sup> *Ibid.*, pp. 326, 340 and 405-418.

bott carried out a more detailed analysis of specific causes of death than could be found in the registration reports edited by any physician or sanitarian before 1890.

#### THE WEEKLY RETURNS OF MORTALITY

The lag between the occurrence of deaths and the date when these events became known to health officials was a matter which concerned observers of the registration system almost since its foundation. Already in the 1840's, the members of the Massachusetts Medical Society, and the editors of the medical journals published in Boston, lodged protests with the Secretary of State and with the General Court over the delay of eighteen months or more between the collection of annual returns and the publication of the Registration Reports. These protests were effective and by the middle of the 1860's no more than one year, on the average, separated collection and publication.<sup>49</sup> But a reduction of the delay in the publication of the annual returns was only a partial solution at best, since the returns, after all, were filed with the Secretary of State only once a year. Something had to be done both to assemble and to issue the returns more frequently. The Medical Society did attempt during the 1850's to get the General Court to require the more frequent collection of returns from the towns as well as to have the Secretary of State initiate a system for the registration of diseases through regular reports from physicians in the State.<sup>50</sup> These suggestions were turned down by the State government and, for a while, the Society experimented with its own system for registering diseases, but with little success.<sup>51</sup> In the large urban communities, the problem was met by having

<sup>49</sup> An example of the complaints about the date of publication of the Registration Reports can be found in the *Boston Medical and Surgical Journal* for 1847, p. 539. After 1865, it was a favorite ploy of the Secretaries to write in their prefaces to the Reports that the corresponding document issued by the British Registrar-General was not published in England until two years after the date of the returns. See, for instance, the comment by Secretary of State Oliver Warner in Massachusetts, Twenty-Second Registration Report, p. vii.

<sup>50</sup> See Burrage, Walter L.: A HISTORY OF THE MASSACHUSETTS MEDICAL SOCIETY. Boston: privately printed, 1923, pp. 137-138. Also see Massachusetts: FIFTH HEALTH, LUNACY AND CHARITY REPORT, Supplement, p. 64.

<sup>51</sup> Burrage, *op. cit.*, p. 138.

the City Registrar or Clerk issue reports to the newspapers or medical magazines once a week. In Boston, for instance, such a system seems to have been set up soon after 1849.<sup>52</sup> But for the State as a whole, nothing was accomplished until the State Board of Health, making use of its general powers, decided at one of its first meetings in the fall of 1869 to collect returns of mortality and their causes each week and to publish them immediately.<sup>53</sup>

The Board sent forms and a circular announcing the plan and the reason for adopting it, to the clerks and registrars of the twenty most populous towns and cities of Massachusetts, and requested their cooperation. In view of the difficulty which previous efforts to introduce innovations in the field of vital registration had encountered, it was surprising and also encouraging that all of the communities expressed interest in the plan. By November of 1869, it was in full operation. The cooperation of clerks and registrars was facilitated by the fact that all these communities had an efficient system of burial supervision, which meant that undertakers made returns promptly and did not bury their dead without having first obtained burial permits. The returns from the twenty communities were published each Wednesday in the *Boston Morning Journal*.<sup>54</sup>

The weekly mortality returns were made to the Board more or less voluntarily, since there was no provision in the registration statutes which required towns and cities to file returns so often. It was not long, therefore, before members of the Board of Health were suggesting that the idea of the system be incorporated into the registration law, and that all the towns and cities in the State be required to file returns weekly.<sup>55</sup> The Board's recommendation was not adopted, however, at any time during the period covered by our study, although begin-

<sup>52</sup> See the series BOSTON: REPORT OF THE CITY REGISTRAR OF THE BIRTHS, MARRIAGES AND DEATHS IN BOSTON FOR THE YEAR. . . . The series begins in 1849.

<sup>53</sup> Massachusetts: FIRST STATE HEALTH REPORT, p. 14.

<sup>54</sup> *Ibid.*, pp. 17-18.

<sup>55</sup> Massachusetts: EIGHTH STATE HEALTH REPORT, p. 15.

ning in 1894, towns and cities of 5,000 inhabitants or more were required by law to file returns with the Board annually. Nevertheless, through persuasion, the number of towns filing weekly returns was increased to over one hundred by 1883.<sup>56</sup> In fact, as time went on the Board discovered that it had a surfeit of data to deal with each week, so in 1886 it altered the system, and requested weekly returns only from towns of 10,000 population or over. All other towns were henceforth to file returns once a month.<sup>57</sup> Apart from the importance of these returns in helping the Board keep close tabs on the public health, they also undoubtedly served as a means of stimulating interest in the subject of registration in general, and probably help to explain why only one or two per cent of the deaths in Massachusetts as a whole went unregistered in 1900.<sup>58</sup>

#### BIRTH REGISTRATION

At the time of the formation of the State Board of Health the underregistration of births was a more serious problem than the underregistration of deaths. Only about ninety per cent of the births which occurred in 1870 were registered, compared to ninety-seven or ninety-eight per cent of the deaths.<sup>59</sup> In spite of this fact, when so much was done during the ensuing decade to improve the accuracy of death registration, almost no attention was paid to the condition of the system for registering births. One reason for this neglect was that it was more difficult to cope with deficiencies in the registration of births than of deaths. Large proportions of births—in rural areas, perhaps as many as fifty per cent—took place without either physicians or

<sup>56</sup> Massachusetts: FIFTH HEALTH, LUNACY AND CHARITY REPORT, Supplement, p. 65.

<sup>57</sup> Massachusetts: EIGHTEENTH STATE HEALTH REPORT, p. xviii.

<sup>58</sup> See Gutman, Robert: THE ACCURACY OF VITAL STATISTICS IN MASSACHUSETTS . . . , p. 231; also Massachusetts: THIRTIETH STATE HEALTH REPORT, p. 812; and Fisher, Irving: Mortality Statistics of the United States Census. THE FEDERAL CENSUS: CRITICAL ESSAYS BY MEMBERS OF THE AMERICAN ECONOMIC ASSOCIATION. "Publications of the American Economic Association," New Series, no. 2 (New York, 1899), p. 128.

<sup>59</sup> Gutman, Robert: The Birth Statistics of Massachusetts During the Nineteenth Century. *Population Studies*, 1956, x, p. 76. Also see, Gutman, Robert: THE ACCURACY OF VITAL STATISTICS IN MASSACHUSETTS . . . , p. 231.

midwives in attendance.<sup>60</sup> On the other hand, by the 1870's, almost every corpse was buried either by an undertaker or a sexton. In this way, the fact of death acquired a public and legal character lacking in the case of births. Parents and householders still were required by law to report births but virtually no parent was aware of the requirement.<sup>61</sup> And because parenthood obviously is not a governmental office, there were great obstacles to making parents comply with the law. Perhaps they could have been prosecuted had there been professional organizations actively interested in birth registration making efforts comparable to the work of the Massachusetts Medical Society in behalf of death registration. But there was no society of demographers during this period and the American Statistical Association seems not to have had any special interest in the problem of fertility analysis. The bar associations, whose members ought to have been aware of the importance of adequate birth records, did not debate the subject at their meetings. The genealogists had a certain concern for birth data but their attention was focussed on historical rather than contemporary records and they did not press for reform.<sup>62</sup> Probably the most telling evidence of the lack of interest in birth registration is that the State Board of Health took no position on the subject until ten years after it was established. Only in February, 1879, shortly before the Board lost its independent status, did its members decide to circularize physicians, directing their attention to the law regarding births and requesting their assistance

<sup>60</sup> See Gutman, Robert: *Birth and Death Registration in Massachusetts: II. The Inauguration of A Modern System, 1800-1849. loc. cit.*, p. 385.

<sup>61</sup> *Boston Medical and Surgical Journal*, 1868, I, p. 226.

<sup>62</sup> In the 1890's the genealogists were active in behalf of reforming the registration law but the measures they were successful in introducing were unrelated to the use of vital records for statistical and medical purposes. The measures dealt, instead, with such matters as the facilities for storing records, the types of indelible inks and papers used in transcribing them and the methods of binding and indexing the returns. For a discussion of this aspect of the genealogists' work, see *Massachusetts: REPORT TO THE LEGISLATURE OF MASSACHUSETTS MADE BY THE COMMISSIONERS APPOINTED UNDER RESOLVE, CHAPTER 60, 1884, UPON THE CONDITION OF THE RECORDS, FILES, PAPERS AND DOCUMENTS IN THE SECRETARY'S DEPARTMENT*. Boston: Wright and Potter, 1885, *passim*. Also see *Massachusetts: FIRST REPORT OF THE COMMISSIONER OF PUBLIC RECORDS*. Boston: Wright and Potter, 1889, *passim*.

in enforcing it.<sup>63</sup> The widespread apathy with regard to birth statistics resulted from the fact that fertility was not regarded as a social problem during the nineteenth century. The one possible exception was the worry manifested among some of the older ethnic stocks in Massachusetts that their fertility was not keeping pace with the birth rate among the immigrant groups. Their fears were based on observations of family life in the slums inhabited by the foreign-born, and it was confirmed by the returns published in the Registration Reports.<sup>64</sup> But the higher fertility of the immigrants did not become an incentive for revision of the birth registration law because no one doubted that what the returns showed in this respect was accurate.

The first change of any importance made in the birth registration law after 1869 was enacted in 1880.<sup>65</sup> This law was constructed along the lines of the birth registration bill passed in 1865 which then had been repealed in 1866. It required physicians and midwives in every town and city except Boston to return once each month to the town clerks a list of the births they had attended. The precise source of the bill which became the 1880 law is not known.<sup>66</sup> In view of the discussion of the subject at a meeting of the State Board of Health in 1879, the proposal may well have originated with it. On the other hand, we know that the bill was presented to the General Court by a

<sup>63</sup> Records of the Massachusetts State Board of Health, I, 1869-1879, pp. 528-529. This is a bound manuscript volume preserved in the office of the Commissioner of Health, State House, Boston.

<sup>64</sup> See a report of a talk on the subject given before an agricultural society in Lowell by Dr. Nathan Allen, statistician and a member of the State Board of Charities: APPLETON'S ENCYCLOPEDIA, 1866, p. 479. The research on which Allen's talk is based is printed in full in Massachusetts: THIRD ANNUAL REPORT OF THE STATE BOARD OF CHARITIES. Boston: Wright and Potter, 1867, pp. 19-31. The popular anxiety over what was called the "growing degeneracy" of the native stock is evident even in this presumably "scientific" paper.

<sup>65</sup> The only other change in the birth registration law to occur between 1869 and 1880 was the amendment adopted in 1873, which raised the fee of clerks, who collected as well as recorded births, from twenty-five to fifty cents for each birth. See Massachusetts: Thirty-First Registration Report, p. clvi.

<sup>66</sup> The legislative history of the bill is recounted in Massachusetts, *House Journal*, 1880, pp. 96 ff. The text itself can be found in Massachusetts, Thirty-Ninth Registration Report, p. clxxvi.

member of the House from Taunton and therefore we can guess that it may have been suggested by the clerk of that City. A careful analysis of the returns made under the new law indicates that it had no effect on the completeness of birth registration. Even prior to the passage of the law, only about five per cent of all births in Massachusetts escaped registration. The number of registered births in 1880 increased to 44,217 from the 40,295 births recorded in 1879 but the rise can be accounted for in terms of a higher level of fertility. The higher fertility resulted from the economic revival following the depression of 1873-1879 which, in turn, drew large numbers of immigrants to Massachusetts from Europe and French Canada, led to a rise in the marriage rate and allowed for renewed fertility among those families which had postponed having children during the depression.<sup>67</sup>

The law was not successful largely because the physicians in the State refused to comply with its provisions. Their objections were similar to those they made attacking the law of 1860, which first required them to return a certificate of the cause of death. In the case of both laws, physicians felt that by not offering them a fee for making a return, the State failed to acknowledge that they were performing a professional service. The low public prestige of the medical profession, combined with the fact that the State refused to assume the responsibility for licensing physicians, made doctors especially sensitive to laws of this sort. The members of the Massachusetts Medical Society, in particular, viewed such legislation as an insult to their professional independence and integrity. Unlike the objections to the death certificate law, however, medical opposition to the 1880 law was well organized. In 1882, the Medical Society discussed its provisions and voted to address a petition on the subject to the General Court. In their petition, delivered in 1883, the Society recommended that the towns and cities pay physicians and midwives twenty-five cents for each birth they

<sup>67</sup> Gutman, Robert: *The Birth Statistics of Massachusetts During the Nineteenth Century*, *loc. cit.*, p. 74.

certified.<sup>68</sup> A similar petition had been addressed to the legislature in 1882 by thirty-six physicians, all members of the Massachusetts Medical Society but who practiced in Berkshire County.<sup>69</sup> At the same time that these requests were addressed to the General Court, other physicians, also from the western part of the State, were recommending the wholesale repeal of the law and asking for a hearing on the subject.<sup>70</sup> All the petitions were referred to the Judiciary Committee. The opinion which held that the law should be reaffirmed and a fee provided for physicians and midwives prevailed in the legislature. A debate lasting several days developed, however, over the appropriate amount the physicians ought to receive. A fee of twenty-five cents finally was established and the bill became law in May of 1883.<sup>71</sup>

The revision of the law had a pronounced effect. The financial reports of a sample of Massachusetts communities, made up of thirty-three towns and cities, indicates that in sixteen of these communities, physicians and midwives began to report births in 1883. In eight towns, they did so in 1884, in two in 1885, in two others in 1887, in two towns in 1888, while in three communities, births were still not being returned as late as 1890. Although observance of the law was thus almost universal by 1890, a census supervised by the town or city clerk continued to be used as a means of recording births, in part to compensate for the births not attended by physicians or midwives but also to make up for the physicians and midwives who failed to report births.<sup>72</sup> This was true particularly in the

<sup>68</sup> The petition is included in the manuscript materials relating to Chapter 158 of Massachusetts, ACTS AND RESOLVES, 1883, on file in the Massachusetts State Archives, State House, Boston.

<sup>69</sup> Listed as the petition of A. N. Smith in the files for 1882 of the Massachusetts State Archives, State House, Boston. Also see Massachusetts: *House Journal*, 1882, p. 227.

<sup>70</sup> Petition of Henry Copes, M.D., in the files for 1883 of the Massachusetts State Archives, State House, Boston. Also see Massachusetts, *House Journal*, 1883, p. 204.

<sup>71</sup> Massachusetts, *House Documents*, 1883, Nos. 202 and 281. Also see, Massachusetts: *House Journal*, 1883, pp. 398 ff.

<sup>72</sup> See, for instance, the annual city reports of Taunton and Haverhill after 1885,

larger towns and in the cities. In Taunton, for instance, in the period 1883–1886, only 53 per cent of all the births registered were obtained from the returns of physicians and midwives.<sup>73</sup> In Haverhill, the proportion was 70 per cent. So far as the smaller communities were concerned, the performance of physicians there was either much better or much worse than in the cities. Almost all the births which occurred between 1883–1886 in Barre, a town of 2,400 inhabitants in Worcester County, were returned by physicians and midwives. The same was true in Hinsdale, in Berkshire County, a town with 1,700 residents. On the other hand, in the towns of West Boylston and Westborough, both in Worcester County, a smaller proportion of births were returned by physicians and midwives than in Haverhill and Taunton. The variations among the smaller communities probably depended upon whether they had a resident physician or the nearest physician lived two or three towns away.<sup>74</sup>

Did the law of 1883 improve the completeness of birth registration? It is hard to say definitely, but I believe that it did. We know, for instance, that a similar law, passed later in the decade, brought about a marked improvement in the returns of births in the City of Boston. Boston had been specifically excluded from the provisions of the 1883 law, in spite of the fact that the editor of the Registration Reports mentioned the probability that births occurring to immigrants who used the City as a port of entry were not recorded in the semi-annual census of births.<sup>75</sup> On the appeal of the Boston Board of Health, this feature of the 1883 law was repealed and physicians and

which continue to list expenditures for a census of births. The Massachusetts State Library, State House, Boston, has an almost complete collection of these reports.

<sup>73</sup> The estimates for Taunton, like those for Haverhill, Barre, Hinsdale, West Boylston, and Westborough, were made by comparing the fees paid annually to physicians and midwives as listed in the financial reports of these communities, with the total number of births registered in these towns and cities, as listed in the annual Registration Reports.

<sup>74</sup> Probably one-fifth of the towns in Massachusetts had no resident members of the Massachusetts Medical Society; and about the same proportion had only one resident member. See TRIENNIAL CATALOG AND DIRECTORY OF THE MASSACHUSETTS MEDICAL SOCIETY. Boston: David Clapp, 1881.

<sup>75</sup> Massachusetts: Twenty-Seventh Registration Report, p. 6.

midwives in Boston were required to return births in 1889.<sup>76</sup> During the first few years it was in effect, the bill has virtually no influence on the returns because the Boston City Council refused to pay physicians and midwives the required fee. Only 421 births out of a total of 12,650 registered in the city in 1889 were returned by physicians and midwives.<sup>77</sup> The system was changed, however, beginning in 1893, through the protests of the physicians themselves,<sup>78</sup> and, perhaps more importantly, because of the efforts of William Whitmore, the antiquarian and genealogist and former Massachusetts Record Commissioner, who was appointed Registrar of Boston in 1892.<sup>79</sup> Whitmore sent out circulars to the physicians of the City advising them of the 1889 law and attempting to impress them with its significance.<sup>80</sup> He succeeded well enough so that of the 14,602 births registered in Boston in 1893, 10,938 were returned by physicians and midwives.

#### THE PERIOD 1890-1900

There were only two changes of importance in the registration system during the last decade of the nineteenth century. In 1894, the State Board of Health finally succeeded in gaining the sanction of law for the returns of deaths made directly to it by some of the towns and cities in Massachusetts. The weekly returns of mortality which the Board began to collect in 1869 from the twenty most populous communities in the State had been sent to it voluntarily. Under the new law, all towns with 5,000 inhabitants or more were obliged to file a return with the Board, on a form and according to a plan prescribed

<sup>76</sup> Massachusetts: *House Journal*, 1889, pp. 180 ff. Also see *Boston City Documents*, 1888, No. 17. For the text of the 1889 law, see Massachusetts: *Forty-Seventh Registration Report*, p. 417.

<sup>77</sup> Boston: *REPORT OF THE CITY AUDITOR OF THE RECEIPTS AND EXPENDITURES OF THE CITY OF BOSTON AND THE COUNTY OF SUFFOLK, 1889-1890*.

<sup>78</sup> Boston: *City Council Minutes*, 1889, pp. 1050, 1054 and 1055. Also see Boston: *City Council Minutes*, 1890, p. 348.

<sup>79</sup> *DICTIONARY OF AMERICAN BIOGRAPHY*. XX, pp. 153-154.

<sup>80</sup> Boston: *ANNUAL REPORT OF THE REGISTRY DEPARTMENT FOR THE YEAR 1892*. Boston: Rockwell and Churchill, 1893.

by it, although the returns were restricted to once a year.<sup>81</sup> The second change was that in 1891 all the supplementary tables and the interpretative text based on the annual returns of births and deaths sent to the Secretary of State were included in the State Health Reports instead of in the Registration Reports. The latter Reports continued to offer only the basic data, with few guides to its significance. In 1892 and 1893, and thereafter as well, the State Health Reports ignored the annual returns collected by the Secretary and dealt with the weekly mortality returns. Following the passage of the 1894 law, the State Health Reports also included a discussion of the returns made by communities with 5,000 inhabitants or more.<sup>82</sup> In other words, the returns made to the Secretary of State, and the Reports his department issued which were based on them, lost their singular status as the major source of published information about the trend of mortality, morbidity and the causes of death.

Neither of the changes introduced between 1890 and 1900 had significant effect in helping the registration system to achieve its basic goals, for the reason that by 1890, the main features of an adequate system had been adopted and put into operation. No more than one or two per cent of the births and deaths which occurred in the State were not registered.<sup>83</sup> Information relating to the age, sex, and nativity of the deceased and the sex and nativity of the parents and month of birth of the new born was recorded in almost every case. The returns of the causes of death had attained a high degree of accuracy and reliability. The data collected by the system were made available quickly and easily to consumers of vital statistics. Probably the major defect of the system was that the birth record did not include the order of the birth. Unfortunately the crucial importance for studying fertility of this item of information was not recognized at the turn of the present

<sup>81</sup> See Massachusetts: TWENTY-SIXTH STATE HEALTH REPORT, p. 778.

<sup>82</sup> See Massachusetts: Fifty-First Registration Report and Massachusetts: TWENTY-FOURTH to TWENTY-NINTH STATE HEALTH REPORTS, inclusive, *passim*.

<sup>83</sup> Fisher, Irving: *op. cit.*, p. 128.

century. Now, of course, birth order is recorded on the birth certificate in every American state with the exception, oddly enough, of Massachusetts.

Although they had no influence on the development of the major features of the registration system, the law of 1894 and the changes in the form of the Registration Reports introduced in 1891 are significant because they symbolize so well the outcome of the struggle for the control of vital registration which had been going on between the Board of Health, on the one hand, and, on the other, the General Court and the department of the Secretary of State. The modern system was inaugurated in 1842 at the insistence of physicians and statisticians who recognized that the existing procedures of recording births and deaths made the records virtually useless as data for studying the condition of the public health. The department of the Secretary of State was put in charge of registration. It did a fairly good job of getting the system established: by the 1850's, all the communities in the State were making returns of births and deaths and no more than fifteen per cent of the deaths and less than twenty per cent of the births were not registered. But the causes of death were often given inaccurately in the returns, and besides, the Registration Reports, which summarized them, did not make the best possible presentation of the available data. The physicians and the statisticians had a simple explanation of these faults: the system was being run by laymen unfamiliar with medical matters. The proper therapy which seemed to follow from this diagnosis was equally obvious: put medical personnel in charge of the system. The sanitary movement was gaining public support during the 1850's and 1860's. The movement found its expression in the agitation in behalf of the formation of a State Board of Health. The thought occurred to the critics of registration that the most perfect solution for the weaknesses of the system would be to have the Board of Health take charge of registration. The General Court and the Secretary of State, however, did not view the matter in the same way, and although they finally set

up the Board of Health in 1869, they kept the registration system under the authority of the Secretary of State. From the point of view of the General Court, it seemed as if vital records were still primarily legal documents, and, therefore, they ought to be collected and handled by the same department as collected other official documents of the towns and cities. After 1869, the physicians and statisticians, working through the Board of Health, conducted an incessant campaign to minimize the consequences of the decision of the General Court. Making use of its advisory and consultative powers bearing upon the public health, the Board gradually was able to assume many of the responsibilities for the operation of the system which traditionally belonged to the department of the Secretary. The Board made investigations of the operation of registration, it initiated legislation designed to reform the system, it obtained authority for the local boards of health to supervise death registration in the towns and cities, and the Secretary of the Board even became the editor of the Registration Reports. I have called the events of the 1890's symbolic, because having had no effect on the attainment of the basic goals of registration, they are meaningful only as a sign of the successful campaign conducted by the physicians and the statisticians. The outcome of the campaign was satisfactory to both physicians and the government, for the reason that it preserved the conception of the birth and death records as important legal documents and at the same time it enabled the records to be used to the maximum degree as statistics for studying the public health. What better finale could there have been to the history of birth and death registration in Massachusetts during the nineteenth century?

#### APPENDIX

At several places in this series of papers, I have offered generalizations about the response of towns and cities to the registration law that were based on a study of the financial or town reports of a representative group of communities. To the reader trained in demography and the behavioral sciences, a phrase like "representa-

tive group" is irritating in its ambiguity and, therefore, I think it is appropriate to comment on the nature of this group of communities and why I chose to study it.

To answer the latter question first, I would like to point out that as early as 1840 there were over 300 towns and cities in Massachusetts and that by the end of the century, there were exactly 352 separate communities in the State. In dealing with the impact of the registration laws on the work of clerks, undertakers, physicians, and boards of health, it would have been impossible to study their effect in each one of the 300 towns and cities. Not only because of the burden in terms of time and labor complete coverage would have imposed, but also because financial reports and other sources were available for only a portion of the communities, I decided instead to examine only a group of towns and cities in detail. In so doing, I hoped not merely to simplify my task. I also wanted, *insofar as was possible*, to avoid the kind of crude generalization represented by statements like "most of the towns did thus-and-so" or "in general, the response was positive"—the sorts of statements that one usually finds in the writings of conventional historians.

The nature of the sample chosen for study is perhaps best made evident by describing the manner in which it was formed. The universe from which the sample was drawn consisted of 304 towns and cities listed in the First Registration Report. Altogether 311 towns and cities were listed in this Report, but I decided to exclude seven of them, as follows: Boston, Lowell, and Salem (omitted for the reason that they were the dominant population centers in the State and I wanted to include them in the sample, whether or not they turned up by means of the procedure used); Charlestown and Somerville (not included because their vital statistics were tabulated together in the early Registration Reports); and Blackstone and Ashland, two small towns (they were excluded because they had not been established at the time of the 1840 census, and therefore no population figures were available for them until 1850).

The 304 towns and cities in the universe were stratified into six sub-universes. The six sub-universes were: towns of 000–799 inhabitants; towns of 800–999 inhabitants; towns of 1,000–1,499 inhabitants; towns of 1,500–2,199 inhabitants; towns of 2,200–3,299 inhabitants; and towns and cities of 3,300 inhabitants or more. A table of random numbers was used to construct the sample list of towns

from each sub-universe. Although my goal was a sample of thirty-five to forty towns equally distributed among each of the six sub-universes, a list was drawn of one hundred towns distributed fairly equally among the sub-universes. A large list was used initially because I wanted the towns in the final sample to be communities which could meet certain criteria. For instance, I preferred towns and cities for which published reports of town expenditures going back into the 1840's and 1850's would be available. I preferred communities with good town histories written about them. I also wanted to be sure that a certain proportion of the towns in the final sample would be included among the communities whose vital records had been printed in the series of genealogical records dealing with the years before 1850, published by the New England Historic Genealogical Society and other historical societies in Massachusetts. A preliminary study of these sources had revealed that, at the most, only one-half the towns and cities in the State had such materials available about them. It was necessary, therefore, to begin with a list of one hundred communities in order to compensate for the loss of sample candidates that would occur inevitably when these criteria were applied to communities chosen at random from the sub-universes.

My final decision was to try to develop a sample of thirty-six towns and cities, plus the communities of Boston, Salem, and Lowell. This sample was to include six towns with 000-799 inhabitants; six towns with 800-999 inhabitants, and so on, until all the sub-universes were represented in the sample. The actual selection of towns and cities proceeded in the following way. In order to reduce the list of one hundred towns, I began by choosing six towns at random from each of the sub-universes. I then checked each of these six towns against the available sources in the Massachusetts State Library, State House, Boston; and in the Widener Library, Harvard University, Cambridge, to see whether it met the criteria I had established. If the community did meet the criteria, it was admitted to the sample. If the town or city failed the test, it was discarded and another community was selected *at random* from the appropriate sub-universe in the list of one hundred towns, until towns and cities from each sub-universe were found which met the standards of the sample.

The available sources proved to be even less adequate than the

preliminary canvass of the materials had indicated, and consequently there were towns admitted to the sample although they did not meet all the criteria which were adopted at first. Indeed, so poor was the quality of the sources that I could find only five towns in the list of one hundred that could be included in the sample as representatives of the sub-universe of towns having 2,200–3,299 inhabitants. Seven communities were chosen for the sub-samples of towns with 1,000–1,499 inhabitants and 1,500–2,199 inhabitants. These sub-samples included one more than the usual six towns for the reason that unusually good source material was available for a seventh community. As a consequence of these various procedures and decisions, the final sample included thirty-seven towns, plus Boston, Salem and Lowell; or a total of forty towns and cities. The full list of the communities in the sample is given below.

*A. Towns with under 800 Inhabitants in 1840*

1. Leyden	Franklin	County
2. Montgomery	Hampden	"
3. Easthampton	Hampshire	"
4. Boxborough	Middlesex	"
5. Burlington	"	"
6. Lincoln	"	"

*B. Towns with 800–999 Inhabitants in 1840*

7. Hancock	Berkshire	County
8. Hinsdale	"	"
9. Bedford	Middlesex	"
10. Tewksbury	"	"
11. Wayland	"	"
12. Medfield	Norfolk	"

*C. Towns with 1,000–1,499 Inhabitants in 1840*

13. Brighton	Middlesex	County	(statistics merged with Boston 1874)
14. Bellingham	Norfolk	"	
15. Brookline	"	"	
16. Foxboro	"	"	
17. Walpole	"	"	
18. Northbridge	Worcester	"	
19. West Boylston	"	"	

D. *Towns with 1,500–2,199 Inhabitants in 1840*

20.	Norton	Bristol	County
21.	Reading	Middlesex	"
22.	Milton	Norfolk	"
23.	Bridgewater	Plymouth	"
24.	Ashburnham	Worcester	"
25.	Lancaster	"	"
26.	Westborough	"	"

E. *Towns with 2,200–3,299 Inhabitants in 1840*

27.	Lee	Berkshire	County
28.	Westport	Bristol	"
29.	Amesbury	Essex	"
30.	Abington	Plymouth	"
31.	Barre	Worcester	"

F. *Towns with 3,300 or More Inhabitants in 1840*

32.	Adams	Berkshire	County
33.	Taunton	Bristol	"
34.	Beverly	Essex	"
35.	Haverhill	"	"
36.	Springfield	Hampden	"
37.	Roxbury	Norfolk	" (incorporated in Boston 1867)

F.	38.	Lowell	Middlesex	County—20,796 inhabitants in 1840
	39.	Salem	Essex	" 15,082 "
	40.	Boston	Suffolk	" 93,383 "

Some communities are included in the sample for which town reports were not published until after the inauguration of the modern registration system in 1842. This fact will explain why generalizations in the text of the four papers are often based on data drawn from fewer than forty towns and cities. In other words, the appropriate information was not available for certain towns early enough to answer various questions posed in the series of papers. In some cases, although town reports were printed, they were not sufficiently detailed to provide answers to the questions which concerned me.