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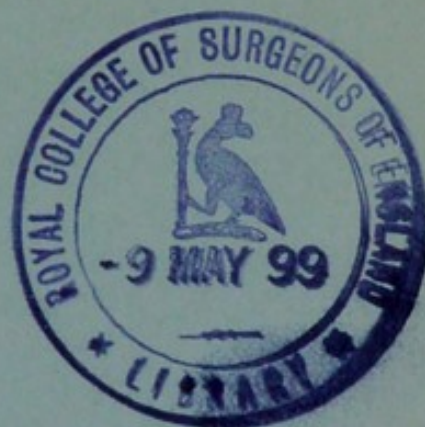
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A QUARTER CENTURY
... OF ...
PUBLIC HEALTH WORK
IN MICHIGAN

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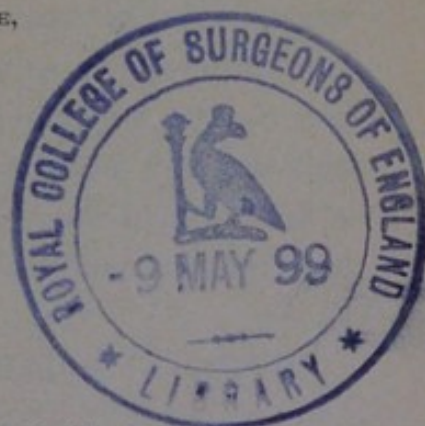
1873 - 1898



THE STATE BOARD OF HEALTH
AND
A QUARTER CENTURY
OF
PUBLIC-HEALTH WORK IN MICHIGAN

BY
THEO. R. MACCLURE,
CHIEF CLERK STATE BOARD OF HEALTH OFFICE,
LANSING, MICHIGAN.

[REPRINT No. 524.]



[Supplement to the Annual Report of the Michigan State Board of Health for 1897.]

WITH ILLUSTRATIONS.

ROBERT SMITH PRINTING CO., STATE PRINTERS AND BINDERS,
LANSING, MICHIGAN.

"Hygiene aims at rendering growth more perfect, life more vigorous, decay less rapid, death more remote."

Edmund A. Parkes, M. D., F. R. S.

"Every individual shall be taught to become the intelligent custodian of his own health."

Sir James Cox.



Membership of Board in 1898.

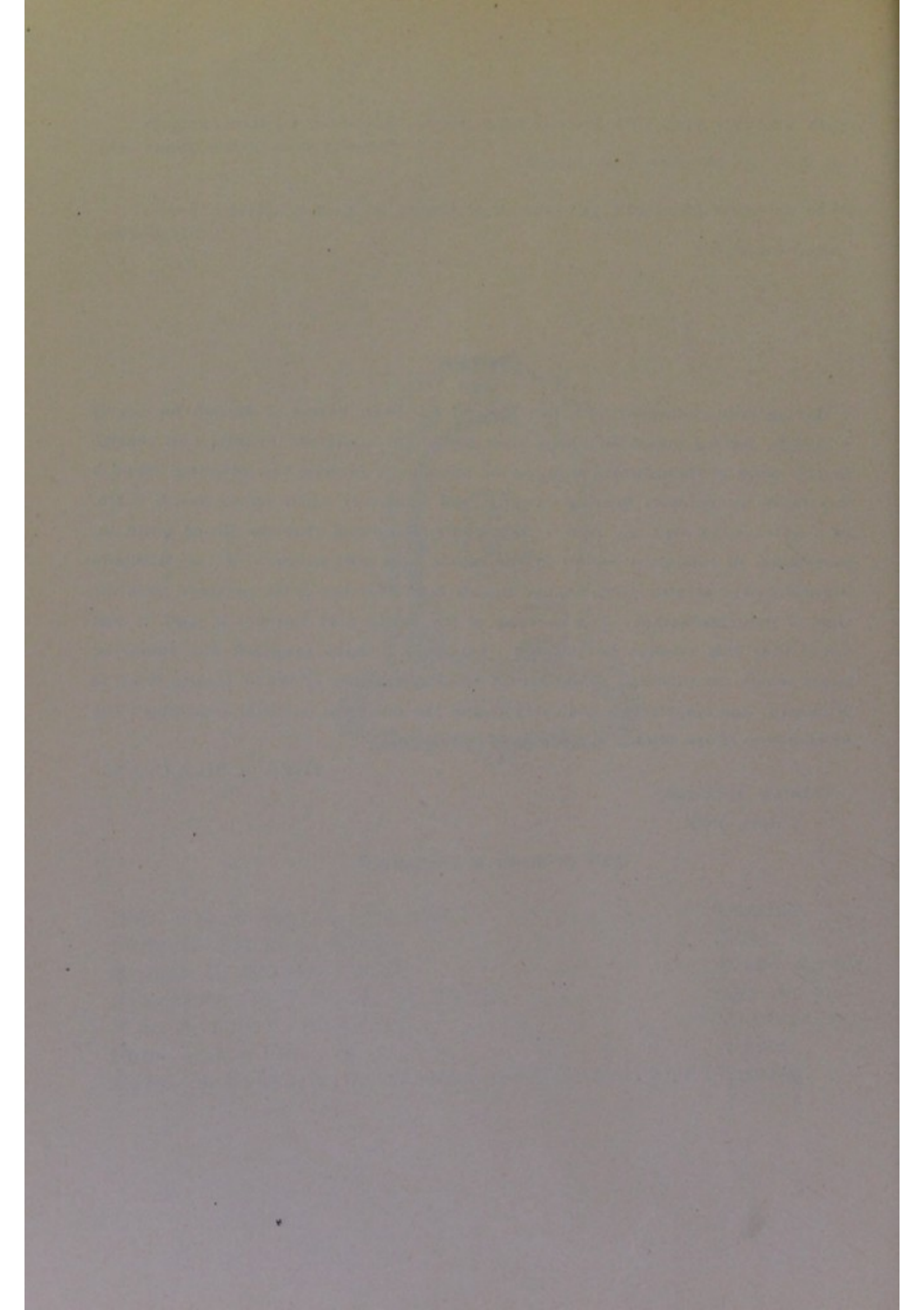
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Preface.

Having been connected with the office of the State Board of Health for nearly a decade, having observed during that period the unselfish, faithful and philanthropic work of its members, and having noted with interest the advanced stand it has taken on subjects bearing directly and indirectly upon public-health work, in a letter dated Sept. 15, 1896, I respectfully requested that the Board grant me permission to compile a record of the labors and achievements of the Michigan State Board of Health which should include brief sketches of its members from the time of its organization. At a meeting of the Board held January 8, 1897, it was voted that this request be granted. Therefore I have prepared the following pages which are intended to exhibit "A Quarter Century of Public-Health Work in Michigan" and respectfully dedicate them to the president, secretary, members and ex-members of the Michigan State Board of Health.

THEO. R. MACCLURE.

Lansing, Michigan,
July, 1898.



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Sanitary Knowledge Twenty-five Years Ago.

Sanitary knowledge twenty-five years ago can be best judged by the literature of that period, and the literature of that period was not only meagre but exceedingly indefinite. Among the people generally those in sympathy with sanitary work were in the small minority. The prevailing opinions were that such diseases as diphtheria, scarlet fever, etc., were due to climatic conditions, to filth, were the will of God; and many superstitious beliefs were prevalent. One superstition was that diphtheria could be prevented if a wafer previously moistened in a diphtheric mouth was placed in the mouth of the individual to be protected. Even physicians who stood high in their profession were in doubt concerning the origin of dangerous diseases. Strange as it may seem, however, typhoid fever was then believed by some to be not only a communicable but a contagious disease, that the *materies morbi* were spread by direct contact, and through the air.

At this period the germ theory of disease was in its infancy; it was hardly an hypothesis. It was not uncommon to have authors with seeming sincerity characterize the so-called germs as fictions of the imagination. Most of those who did believe in germs held the doctrine of spontaneous generation. However, there were those more advanced minds who believed that certain maladies were due to living germs, organisms capable of multiplication, organisms which when introduced into the body produced poisons that were fatal to human life. But the exact nature of the microscopic organisms, how they grew, how they were introduced into the human body, were unsolved questions.

It was known that vaccination was a preventive of small-pox, but its popularity was hampered by the frequent bad effects from the application of contaminated virus.

Concerning the other dangerous communicable diseases, there was practically no restrictive or preventive measures in force; they were either unknown or disregarded. Isolation of the patient suffering from such a disease was thought to be an act of barbarism, a cruelty to the patient, a hardship to the family. Disinfection of clothing, rooms, etc. was not often practiced.

Heating by means of stoves, fire-places, and other direct means, had been and were, at that time, the methods employed; drainage for health or for any other purpose was not a matter of science; sewerage and the sanitary disposal of waste and excreta was but infrequently employed, outside of the large cities.

Sanitary knowledge twenty-five years ago was not in the possession of the thousands as it is today.

Advancement in Sanitary Knowledge.

Since the work of Pasteur, Koch, Löffler, Behring, Eberth, Klein, Kitisato, and others, preventive sanitation has come to stand on a sound footing; the theory of the causation of specific disease by germs has become a science. There is no longer doubt concerning the *materies morbi* of communicable diseases; germs of such diseases have been isolated, have been grown in the laboratory, have been inoculated into and the disease has been produced in animals. From these animals germs have been isolated, other animals inoculated with these minute organisms, and the disease produced as before. This process may be continued indefinitely, and furnishes the strongest possible evidence that each of these diseases is due to a special germ. Although progress has been comparatively rapid, new claims along this line have needed to stand the crucial test of confirmative independent researches by a number of investigators, and public knowledge has come by continuous and vigorous efforts of the leaders in scientific work. The specific germs of certain dangerous diseases have been discovered, studied, and their nature learned. As a result of this knowledge mortality from various infectious diseases has diminished, and sanitation has revolutionized the methods of living of both poor and rich.

In Michigan nearly every public building and many residences are now supplied with the improved methods of heating and ventilating, and the cold or vitiated dwellings and public buildings of a quarter of a century ago have become less and less common; systems of sewerage and drainage are to be found in nearly every city and village of any size; the construction of house-drains and sewers is more perfect, better material is used, traps are ventilated; and many other improvements in accordance with modern knowledge have been adopted.

Some of this advancement in knowledge and practical sanitation may be justly claimed as a result of the educational campaign of the Michigan State Board of Health.

How the State Board Came to be Established.

About the only public-health work that had been done in this country, up to the time of the movement for a State Board of Health, had been done in the army. The army physician's pay did not depend upon the number of patients he had, but the extent of his labors did have a direct relation to the number of his patients. The instructions from the Surgeon-General's office were voluminous, and related almost exclusively to the prevention of sickness among soldiers. Three years' experience as an army surgeon undoubtedly gave Doctor Baker the idea that a State public-health service would be of value.

In Michigan there was a State Board of Agriculture created to look after the interests of the agriculturalists, and it became apparent to the father of public-health work in Michigan that the health interests would equally warrant the establishment of a State Board to promote those interests.

One of Doctor Baker's first efforts in this direction was to interest Doctor I. H. Bartholomew of Lansing, his partner in the practice of medicine during the years 1866-68. In 1870 the effort was renewed, but Doctor Bartholomew's reply then as before was "One man can do nothing", conveying the idea that it was a hopeless undertaking. However, by persistent effort Doctor Bartholomew did become interested, and thereafter the movement was not confined to "one man", there were "two men".

Probably the move for a State Board of Health would have been less vigorous had it not been that similar action had been taken in Massachusetts. The first report of the Massachusetts Board was made about January, 1870, and sent to Doctor Baker at Wenona in a package of Massachusetts vital statistics reports; and immediately after the receipt of the report, a bill was framed by him providing for a State Board of Health in Michigan.

In June, 1870, the State Medical Society met in Lansing, and Doctor Baker read a paper, and advocated the creation of a State Board. Doctor Bartholomew was elected president of the society, and afterwards appointed Doctor Baker as chairman of the committee to assist the Secretary of State in the compilation of vital statistics in accordance with the State law. The same law also provided for a similar committee to represent the faculty of the Michigan University. Prof. A. B. Palmer had been appointed that committee, but gave way to Doctor Baker in order that the effort for the proposed State Board might be better subserved. About October, 1870, Doctor Baker came to Lansing to superintend this compilation. Soon after the fall election he had a conference with Senator-elect I. M. Cravath of Lansing, who introduced a bill to create a State Board of Health and made it the main measure in which he was interested during that session. By individual effort with other senators and by speeches, he wrought vigorously for the passage of this proposed legislation. The bill was not favorably reported from the committee to whom it was referred, possibly because one member of that committee was a dealer in drugs and patent medicines, and may have thought the proposed legislation might interfere with his business. Hon. Francis B. Stockbridge was also a member of that committee and was in sympathy with the movement, but said the bill had no chance whatever of passing the house of representatives, therefore it was a waste of effort to try to have it pass the senate. It failed to pass in committee of the whole.

Doctor Robert C. Kedzie, Homer O. Hitchcock, E. W. Jenks, and A. B. Palmer became interested in the effort; the first bill was so drawn as to legislate into office the members of the proposed Board; and the above-mentioned persons with Doctor I. H. Bartholomew and Doctor Henry B. Baker were named as its members. At the meeting of the State Medical Society, at Kalamazoo, June, 1871, as special committee on vital statistics, Doctor Baker made an extensive report in which he reviewed the unsuccessful effort for a State Board of Health.

During the two years that intervened between the sessions of 1871 and 1873, the persons mentioned in the original bill, and a few other persons, wrought assiduously to create public opinion in favor of a State Board of Health. Experi-

ence and observation concerning two dangers to life and health—illuminating oils and poisonous wall papers—supplied evidence which was effectively used as arguments for the need of a central board to protect the health and lives of the citizens of Michigan. Editorials and many short articles on the need for a State Board of Health were written and published. The retiring and incoming governors were persuaded to make favorable recommendations in their messages to the legislature. Having in mind the proposed establishment of the Board, Doctor Bartholomew was elected to the legislature. He introduced a bill that differed from the preceding one in that it did not dictate to the governor who should be appointed members of such a Board. Professor Kedzie lectured before the legislature on subjects relating to dangers to life and health from poisonous wall papers, dangerous illuminating oils, and deaths from typhoid fever caused by using water of wells into which the contents of privy vaults had leached. During some of Doctor Kedzie's experiments showing the explosiveness of light oils, legislators retired from the hall stating that they did not care to risk their lives.

Besides those heretofore mentioned as laboring for a State Board of Health, the following-named persons are entitled to recognition: Senator H. H. Wheeler, who had charge of the bill in the senate; Senator J. Webster Childs of Ypsilanti; Hon. L. D. Watkins of Manchester; Doctor Manly Miles, Stephen D. Bingham, and Benjamin B. Baker of Lansing; Dr. A. F. Whelan of Hillsdale; Dr. S. S. French of Battle Creek; and Doctor E. J. Bonine of Niles.

With some opposition, the bill passed both branches of the legislature, was signed by Governor Bagley, and took effect July 30, 1873.

Organization of a Public Health Service for the State.

When the State Board of Health undertook the general supervision of the health interests of the State, there were already a few laws upon the statute book; but, as for their value or usefulness, they were inoperative. After the establishment of the State Board, one of the first efforts was to re-organize or rather organize a public-health service for the State.

There was a law which provided for a local board of health, to consist of the supervisor and the four justices of the peace of the township, but this provided for a board of health that seldom if ever met. The law was so changed as to make the board of health the township board; and in this way the board of health could meet whenever the township board was called together without the trouble of calling a meeting of a special board of health.

There was a law on the statute books which *permitted* the local board of health to appoint a health officer, but this law was amended to make it mandatory upon the board to appoint a health officer who should be a well-educated physician in cities and villages, and in townships when practicable; the health officer was made the sanitary advisor and executive officer of the local board; and it was made obligatory upon the board to meet within thirty days after the annual township

IRA HAWLEY BARTHOLOMEW, M. D.

DOCTOR BARTHOLOMEW was born at Madrid, St. Lawrence Co., N. Y., January 4, 1828, and died in Lansing, October 18, 1889. He received his early education in the academies at Canton and Ogdensburg, N. Y. State, and graduated from the Department of Medicine, Michigan University, in the spring of 1853. He commenced the practice of medicine in his native town, but in the fall of 1854 removed to Michigan, where he resided until his death. In 1863 Doctor Bartholomew was elected mayor of Lansing, and was twice re-elected, a distinction which no one has ever shared with him. In 1870-1 he was president of the Michigan State Medical Society, and it was at that time that he became interested in the movement for a State Board of Health, and in 1873-74 represented Ingham County in the Michigan Legislature, his aim being to secure the establishment of a State Board of Health. He succeeded, and would undoubtedly have been made one of its members had it not been for the constitutional provision which provided that no member of the Legislature could receive an appointment on a board created by the Legislature of which he was a member. Consequently this publication would not be complete without a reference to Doctor Bartholomew.



HOMER OWEN HITCHCOCK, A. M., M. D.



DOCTOR HITCHCOCK was born in Westminster, Vermont, January 28, 1827, and died December 7, 1888, at Kalamazoo, Michigan. He came of sturdy New England stock, and through his early life the district school was the extent of educational advantages. Largely through his own efforts he succeeded in obtaining an education and graduated from Dartmouth College in 1851, and from the College of Physicians and Surgeons of New York City in 1855; and, after serving as interne at the Bellevue Hospital for a short time, moved to Michigan in 1856, where he

practiced his profession for 32 years. His greatest delight was his life work—the practice of medicine, and he was always a leader in local medical matters; for several years he served as a member of the Kalamazoo Board of Education; and, for 23 years was a trustee of Olivet College. He was a member of the American Public Health Association, as well as a member of local, state and national medical societies; and, in 1872, was president of the Michigan State Medical Society. April 23, 1873, being appointed by Governor Bagley, he was the first-named member of the Michigan State Board of Health, of which organization he was its first president, and continued in that office for four years. He served on the Board until July 7, 1880, when, because of a feeling that he could no longer spare adequate time from his private practice, he resigned, the vacancy being filled by Prof. Strong of Grand Rapids. He was an active member of the Board, and labored assiduously for the promotion of public health. His chief work on the Board was that in connection with the education of the people on the dangers from the use of alcohol.

meeting to appoint a health officer and immediately report to the State Board the name and postoffice address of the health officer.

In changing these laws there came a question of just who should appoint the health officer; some thought the central board should appoint that official; but, partly through the influence of Hon. Witter J. Baxter, the principle of local self government was made to prevail, the health officer to be appointed by the local board, and the local board to have absolute jurisdiction over health matters in its township, city or village. The local board is the medium of communication, of the people with the State Board, and the State Board with the people.

There was a statutory provision that householders and physicians should report small-pox and other "diseases dangerous to the public health" to the board of health or to the health officer. The law was changed to read that the reports should be made to the president or clerk of the board of health or to the health officer. This still left it quite indefinite and uncertain about the reception of the reports; and, in 1895, the law was changed to have such reports "made immediately to the health officer", and to the health officer only.

The principal duty imposed upon the local board of health, at the time the State Board was established, was in connection with nuisances, it being then believed that most of the dangerous diseases were most frequently spread by filth. With some few exceptions these laws have remained the same; but the duties of local health officers have been very greatly changed.

By reason of this organization, in place of inactive boards with no health officer, there are active boards of health with active health officers, with certain specified duties to perform, which relate more directly to the actual restriction and prevention of diseases.

By-Laws of the Michigan State Board of Health.

ARTICLE I.—MEETINGS OF THE BOARD.

SECTION 1. The regular meetings of the Board shall be held at Lansing, in the Capitol, on the second Fridays of January, April, July, and October in each year, at 10:30 A. M.; and the meeting in April shall be the annual meeting. [As amended Oct. 8, 1878, Oct. 11, 1892, June 15, 1894.]

SEC. 2. Special meetings of the Board may be called at any time and place by the President. The President shall also call special meetings of the Board on the written request of a majority of the members of the Board, by giving a proper and sufficient notice of the time, place, and object of the meeting to all the members of the Board.

ARTICLE II.—OFFICERS OF.

SECTION 1. The President of the Board shall hold his office for two years, and until a successor is elected. The election shall take place at the annual meeting of the Board in each alternate year, beginning with 1875.

SEC. 2. In the absence of the President, a President *pro tem.* may be chosen by the members present at any meeting of the Board.

SEC. 3. The duties of the President and Secretary shall be those specified in the law, in these by-laws, and those usually performed by such officers.

SEC. 4. At the annual meeting of the Board, in April in each year, the President, if he desires to do so, shall present an address. [As amended April 13, 1880.]

SEC. 5. At the October meeting in each year, the Secretary shall make to the Board a written report for the fiscal year, which report shall include a true account of the nature and amount of property belonging to the Board, which has been received, issued, expended, and destroyed since the last report, and of the property remaining on hand, and also in whose care each item of property is intrusted.

SEC. 6. The Secretary shall receive a salary of three thousand dollars per annum. [As amended Feb. 18, 1880, Dec. 3, 1884, and June 16, 1893.]

ARTICLE III.—COMMITTEES.

SECTION 1. Standing Committees shall be appointed on the following subjects [as amended July 8, 1879, July 13, 1880, and Sept. 29, 1893]:—

1. Epidemic, endemic and communicable diseases.
2. Sewerage, and the disposal of excreta.
3. Water supply, including purification of sewage—contaminated water.
4. Buildings, including house drainage, ventilation, heating, etc.
5. Climate, geology, topography, and drainage.
6. Foods, drinks and their adulterations.
7. Poisons, explosives, etc.
8. School hygiene and sanitation.
9. Sanitary inspection in cities and villages.
10. Statistics of mortality and sickness.
11. Public-health legislation.
12. Finances of the Board.
13. Animals' diseases dangerous to man.
14. Relations of preventable sickness to taxation.
15. Quarantine at the Michigan border and within the State.

SEC. 2. Standing committees shall consist of one member.

SEC. 3. At the first meeting of the Board and at the meeting in April in each alternate year thereafter, the chairman of each standing committee shall be nominated by the incoming President and confirmed by the Board, unless otherwise provided by a majority vote of the members present at such annual meeting.

SEC. 4. Special committees may be appointed at any time by the Board, or by the President of the Board.

SEC. 5. Each committee may employ assistance, but only with the consent of the Board where the expenditure of money is required.

SEC. 6. All papers for the Annual Report shall be in the hands of the Secretary on or before the day of the October meeting in each year. (Added July 10, 1877.)

ARTICLE IV.—SUPPLIES AND EXPENDITURES.

SECTION 1. No unusual expenditure shall be ordered except by a majority of the members of the Board, and then only at the regular meeting, or at a special meeting called to consider the subject of the unusual expenditure.

SEC. 2. Orders for stationery, postage, and other supplies for the use of members, and for the office of the Secretary, shall be executed by the Secretary, who shall, at the first subsequent regular meeting, present to the Board bills or accounts therefor to be audited.

ARTICLE V.—ORDER OF BUSINESS.

SECTION 1. The order of business at regular meetings shall be as follows [As amended Jan. 14, 1879, and July 10, 1883.]—

1. Calling the roll.
2. Reading of minutes of the last meeting.
3. Auditing of bills and accounts.
4. Brief announcements of business to be brought before the Board.
5. Communications by the President.
6. Communications by the members.
7. Communications by the Secretary.
8. Introduction of new business.
9. Reports of standing committees.
10. Reports of special committees.
11. Miscellaneous business.

At the annual meeting, the President's address shall follow the reading of the minutes; and at each alternate annual meeting, the election of President shall follow the President's address.

SEC. 2. At special meetings the same order shall obtain as at regular meetings, except that the consideration of the special subjects for which the meeting is called may precede the usual order.

SEC. 3. When not conflicting with established rules of the Board, the rules of the Senate of Michigan shall apply to the action of this Board, so far as they are applicable. Points of order for the settlement of which no other provision is made shall be decided by the usual rules of parliamentary practice.

SEC. 4. The order of business may be suspended at any meeting by a majority vote of the members present.

ARTICLE VI.—AMENDMENTS.

SECTION 1. These by-laws may be amended or repealed at any regular meeting of the Board by a majority vote of the members of the Board.

Duties of Local Health Officials.

The duties of local health officials are many and varied; and, the extent of the authority vested in them for the protection of the people, is practically unlimited.

In order to point out and define the most material duties of the local health officials, the Board has issued a small pamphlet [120]; and, until recently it has had for distribution, a larger pamphlet compilation of the laws in force relative to public health.

The health officer is executive officer of the board, and unless instructed otherwise, he is obliged to: (1) Immediately investigate if he has good reason to believe that there exists a disease dangerous to the public health; (2) order the prompt and thorough isolation of those sick or infected with such disease, so long as there is danger of communicating the disease to others; (3) to order the prompt vaccination or isolation of persons who have been exposed to small-pox; (4) to see that no person suffers for lack of nurses or other necessities; (5) to give public notice of infected premises by placard or otherwise; (6) to notify teachers and superintendents of schools concerning families in which there are contagious diseases;

(7) to supervise funerals of persons dead from dangerous diseases; (8) to disinfect rooms, clothing and articles likely to be infected; and (9) to keep the Secretary of the State Board of Health constantly informed concerning outbreaks, their origin, progress, termination and means used for their restriction, and make annual reports on blanks supplied by the Board.

The principal duties of local health officials are those connected with the restriction and prevention of the dangerous diseases, but there are other duties such as the investigation of and the abatement of nuisances, sources of sickness, etc., management and control of cemeteries, transportation of corpses, quarantine, registration of medical practitioners, enforcement of all public health laws; and other duties prescribed by law.

The powers of the local board of health are practically unlimited. It is required by law to frame and publish rules and regulations respecting nuisances, sources of filth, removal and disposition of garbage, sewage and other causes of sickness, articles which are liable to convey infection, interment of the dead, movement of infected persons and animals, slaughter-houses and offensive trades. When published, such rules have the force of law. Specimen rules and regulations recommended to local boards for adoption are printed in the annual report of the Board for 1875.

Compensation for Local Health Work.

In another portion of this publication will be found a statement relative to the lives saved by public-health work. That lives are saved by public-health work, there can be no question; and to local health officers is largely due the credit for such saving. While Sec. 3 of Act 137, laws of 1883, has provided compensation, for fulfilling the requirements of that Act, at the rate of not less than two dollars per day when other provisions have not been made, and while in many instances the local board of health has fixed an annual salary for the health officer, local health officers have been, as a rule, shabbily paid. Except in a very few of the larger cities, it has been unusual for the health officer to receive more than one hundred dollars for his year's work; and, in many instances, the amount is much less. This is not just, and some change should be inaugurated which will secure, to efficient work, a fair compensation. It is believed that the health officer could, in any jurisdiction in Michigan, save at least one life; and one life saved is a small estimate. The saving of that one life ought to justify the payment of an annual salary of at least \$500. The State Board of Health has labored during many years to educate the local boards of health in the value of public-health work. Secretary Baker has written numerous papers, in which he has accurately shown how much certain localities could well afford to pay their health officer. Reprints Nos. 321 and 362 are such papers, and the facts contained therein are generally applicable to localities other than those mentioned.

ROBERT CLARK KEDZIE, A. M., M. D., Sc. D.

PROFESSOR KEDZIE was born January 28, 1823, at Delhi, N. Y., and has been a resident of Michigan for 72 years, except the time he spent at Oberlin College. He received A. B. degree at Oberlin College in 1847, his A. M. degree from the same College in 1864, graduated from the Medical Department of the Michigan University in 1850, and has been professor of Chemistry at the Michigan Agricultural College for the past 35 years. In recognition of his eminent services in scientific investigations along agricultural lines, and of the high position he has attained



among the scientists of this country, the honorary degree of Doctor of Science was conferred on him in 1898 by the Michigan State Board of Agriculture. In 1867 he represented Ingham County in the Michigan Legislature. He has been president of the Michigan State Medical Society, of the Michigan State Board of Health, of the American Public Health Association, and of the Sanitary Council of the Mississippi Valley, and vice-president of the American Medical Association and of the American Association for the Advancement of Science and is Fellow of the American Academy of Medicine. April 25, 1873, Governor Bagley appointed him member of the original Michigan State Board of Health for the term of two years; in April, 1875, Governor Bagley reappointed him; and March 22, 1881, Governor Jerome again appointed him, for a third term, as member of the Board; but, because of his duties at the College, he declined the appointment. In this capacity Doctor Kedzie served the State for eight years, during four years of which he was President of the Board. Resolutions of regret at his retirement and expressions of appreciation and thanks for his valuable services, were adopted by the Board April 12, 1881, and are printed on page xl of the Report for that year. One of the first papers published by the Board, in the annual report for 1873 was the paper by Doctor Kedzie on "School Buildings: in relation to their construction, warming, and ventilation, as influencing the health of teachers and scholars."

ZENAS EMORY BLISS, M. D.



DOCTOR BLISS was born in Poolville, Madison county, New York, July 4, 1832, and died at Grand Rapids, Michigan, April 21, 1877. He was a physician and surgeon by profession, having graduated from the Medical Department of the Michigan University in 1855. He was a resident of Michigan for about a quarter of a century, and during that time held many offices of public trust. In 1861 he volunteered as assistant surgeon of the third Michigan infantry, later promoted to surgeon, Jan. 26, 1866, promoted to Brevet Lieut. Col. U. S. Volunteers for

faithful and meritorious service during the war of the rebellion, after which he was honorably discharged from the service. He was a member of the Michigan State Medical Society, American Medical Association, and Grand Rapids Medical and Surgical Society. April 25, 1873, Doctor Bliss was appointed by Governor Bagley as one of the original members of the Michigan State Board of Health; but, because of seriously impaired health, he resigned the office Sept. 12, 1874, having served on the Board for a little more than a year. During the time he was member of the Board he collected the histories of numerous cases of trichiniasis that had occurred in Michigan, and the study was continued by his successor Dr. Hazlewood, and is printed in the annual report for 1875. Upon the retirement of Doctor Bliss from active public-health work, resolutions of regret and sympathy were unanimously adopted by the Board and are printed on page IX of the report for 1875; and resolutions relative to the death of Doctor Bliss are printed on page lxiii of the report for 1877.

Co-operation of the People With Health Officials.

Experience in Michigan has indicated that it is necessary to have the coöperation of the people, if the dangerous communicable diseases are to be restricted and prevented. In order to accomplish this result, the State Board of Health has published leaflets relating to the modes of spreading and the best methods for the restriction and prevention of such diseases. These leaflets have been printed by tens of thousands; and, whenever a dangerous disease is reported to the central office, the Secretary has usually sent to the health officer several copies of the special leaflet relating to the disease in question. The health officer is requested to place one of these instructive publications with the family where the disease exists, and a copy with each neighbor of the infected premises. The instruction comes at a time when it is desirable to know about the dangerous disease in question; and, in this way a general coöperation of the people is sought to be secured. The people are thus educated and become familiar with their duties in the premises, they are taught wherein the dangers lie, and the manner in which the life and health of their dear ones can be protected; diseases are then promptly reported to the local health officials; and active efforts are employed for the eradication of the disease.

Injuries and Loss of Life and Property Consequent on the Use of Kerosene, Gasoline, etc., and the Establishment of State Inspection of Illuminating Oils.

One of the first subjects that occupied the attention of the Board was the dangerous illuminating oils being brought into Michigan from Ohio. There was practically no test in Michigan, the only test being that by the manufacturer by means of the Tagliabue open cup. Dangerous oils were branded "Warranted to stand 175° Fire Test", etc., and other such deceptions were common. It being apparent that property, life and health were being jeopardized in Michigan by reason of these light and inflammable oils, Prof. Kedzie undertook the examination of samples from various parts of the State, and nearly uniformly it was found that the sample fell far below what it was branded, although Prof. Kedzie used nearly the same form of tester. The results of these researches were exhibited in an article by him published in the annual report of the Board for 1873, and had an important bearing upon the future action of the Board and the legislature in this connection.

In order to place the testing of oils on a more accurate foundation, the State Board of Health recommended that the legal test be by the "Michigan State Board of Health oil tester", a cup devised by Prof. Kedzie and believed to give more accurately the actual condition of the oil when burning in an ordinary lamp. Through the efforts of the Board, in 1875 that cup was made the legal cup, and no oil could be sold in Michigan that did not stand a flash test of 150° F. or a burning test of 140° F.

Although efforts were repeatedly made to reduce the legal test, the Michigan

Board was able to counteract such efforts, and Michigan had for a number of years been blessed with a comparatively safe oil; but in 1879 the test was made 120° F. by the State Board of Health tester. In 1891, the opposition in favor of a lower grade oil was able to influence the legislature to make the test 120° F. burning test, in the Tagliabue cup and the casualties were immediately noticeably increased; and, in 1893, the test was made slightly more exacting when it was made 120° F. flash test in the Foster cup. The efforts of the Board to uphold the test were vigorous, but they were not completely successful, the advocates of low-grade oil were, in a measure, victorious. However, the law in Michigan is still better than in some States.

The State Board then thinking that other work it had undertaken was of more consequence to the citizens of Michigan, it relinquished its active efforts in this line, but a close watch is kept up of all casualties from this cause. This whole system of State inspection and testing was built up under the direction of the State Board; and, while the Board's advice was taken there was very little loss of property and life in Michigan by inflammable or explosive kerosene, and even now there is not such danger as there was before this system was established by the State Board.

The credit for the movement for better and safer kerosene oil is largely due to Dr. Ira H. Bartholomew who, while in the legislature, labored assiduously for the legal control of that subject, at the same time that he was laboring for the establishment of the State Board of Health.

Poisonous Wall Papers, Etc.

One of the first reports made to the State Board of Health was that by Prof. Kedzie, chairman of Committee on Poisons, etc., relative to "Poisonous Paper." It seems that at that time it was apparently a "fad", "habit" or "economy" on the part of manufacturers of papers to use arsenic in the coloring; the pretty bright green predominating; but other colors also contained this deadly poison. Not only was arsenic used in the manufacture of papers but in coloring paints, the green fan, the green blinds, the green pump, the green cup, etc., all contained the poison. Apparently vigorous persons, especially children, would go into a decline and die; the trouble being attributed to a convenient pretense—consumption. Pencils, toys, and other baby articles were decorated with coloring material loaded with arsenic, and the child was slowly poisoned to death. But Doctor Kedzie, benevolent and always alert and anxious to render aid to some suffering individual, was not long in determining the cause. He found that many cases of such mysterious illness could be traced to the poison in the wall paper, the granules of poison becoming dust, floated in the air, were taken into the lungs and subsequently into the whole system and caused the "general decline" spoken of.

In the report of the Board for 1874, Prof. Kedzie made a further report on this subject. This report was published by the Board in a separate volume together with samples of the poisonous wall papers and distributed in November, 1874.

The title of the book was "Shadows from the Walls of Death". It contained a hundred or more actual samples of wall paper which had been tested and proved to contain arsenic. A copy was sent to each library in Michigan, especially to the numerous ladies' libraries, as an "horrible example", and to inform the ladies throughout the State of the danger and of the exact kinds of wall paper which were dangerous. The book was distributed elsewhere where it was thought it would do good. Notwithstanding the opposition against the Board because of its stand on this subject, the work was continued. The results were undoubtedly very valuable. It educated the people to protect themselves by a judicious choice of paper, and undoubtedly helped to revolutionize the manufacture of wall paper and other articles containing arsenical coloring matter.

Resuscitation of the Drowned and Electrically Shocked.

Secretary Baker first called the Board's attention to rules for the resuscitation of the drowned. The subject was referred to a committee consisting of Professor Kedzie and Secretary Baker, and after nearly a year's effort to perfect rules for the treatment of the drowned, the committee reported in 1874. The committee was aided by Doctor J. H. Beech of Coldwater. The rules recommended by the committee were modeled after those prepared by Doctor Benjamin Howard, and published by the Life-Saving Society of New York; but in some important particulars were new. The Michigan rules were published as wall posters and in leaflet form, with illustrations, and the original draft can be found in the annual report of the Board for 1874.

Because of the numerous inland lakes and streams and the Great Lakes in and around Michigan, the chances for loss of life by drowning has been very great. Thousands of lives have been thus sacrificed, but just how many have been saved through compliance with the recommendations of the State Board it is impossible to estimate, but the number is large. Many instances of enforcement of the rules, resulting in the saving of life, have reached the office of the Board, and this portion of the Board's work has been highly commended.

Thousands of the leaflets have been issued and distributed over Michigan. The leaflet has several times been revised, and the latest edition will be found printed in the annual report for 1897, and deals with the treatment of the electrically shocked as well as the drowned.

Ventilation.

Whether a room receives a sufficient amount of fresh and germ-free air, whether a room is free from drafts, whether the system of ventilation is comparatively inexpensive, are questions of importance; and when that room typifies the rooms in which the people of the State live, these questions have a direct bearing upon the healthy condition of our people. In order to have healthy men and women, care must be taken that the children are supplied with plenty of good wholesome air.

The importance which the State Board has attached to this subject has been eminent, and many addresses and papers have been published and distributed by the Board. One which went minutely into the principles of ventilation, and is applicable to the present time, is the one published by the Board in its first (1873) annual report. The paper was by Prof. R. C. Kedzie, and was entitled "School Buildings: in relation to their construction, warming, and ventilation, as influencing the health of teachers and scholars". The report of 1873 is yet in very frequent demand because of that article.

One valuable paper "On suggestions respecting the Ventilation of Buildings", by Dr. John H. Kellogg, was printed in the annual report of the Board for 1891, and another recent paper was by Doctor Henry B. Baker and is printed in the annual report for 1894.

By reference to the alphabetical index (Reprint No. 522) printed by the office, it will be seen that during the existence of the Board many papers on this subject have been written.

Examinations in Sanitary Science.

Upon suggestion of Doctor Lyster, Oct. 8, 1878, the Board appointed a committee consisting of Doctor Henry F. Lyster and Hon. LeRoy Parker to report upon a plan for the examination of candidates in subjects relating to the public health. The report of the committee is printed in the annual report for 1879. The Board had in mind the improvement of the health service of the State, thinking that calling attention to the fact that the Board would examine candidates would tend to have local boards of health appoint health officers who had been thus examined. It was also believed that health officers would be stimulated to increase their knowledge upon health subjects and thus better qualify themselves to perform the duties required of them by law. The Board also had in mind that after the movement had been established an amendment to the law might require that only such persons as had passed the examination would be eligible to the office of health officer. The first examination was conducted by the Board July 14, 1880, and there were two successful candidates. The questions asked are printed in the annual report for 1880, and a list of books that were recommended by the Board as valuable to candidates for examination is printed in the same report. An amended list of questions is printed in the report for 1881.

The reason that the proffer for examination was short lived, was because of the lack of applicants, and undoubtedly the reason why there were not more applicants was because it was not required by law in order to fill the office of guardian of the public health. But some day this plan should be resumed and a law enacted which will require that health officers shall be fully qualified to perform the duties required by law.

CHARLES HENRY BRIGHAM, A. B.

REV. MR. BRIGHAM was born July 27, 1820, in Boston, Mass., and died Feb. 19, 1879, in Brooklyn, N. Y., having been a resident of Michigan for thirteen years. He graduated from Harvard University in 1839, and was an active minister for many years. He was a member of the American Oriental Society, the German Oriental Society, the American Philological Society, the American Social Science Association, etc.; and during the years 1872-8 served as a member of the Ann Arbor School Board. For 12 years during his life he was a Lecturer in the Theological School at Meadville, Penn. April 25, 1873, he was by Governor Bagley appointed member of the Michigan State Board of Health for a term of two years; and April 26, 1875, Governor Bagley again appointed him, for a term of six years. At the end of an eight year service, because of ill health, he retired from public-health work; resolutions of regret and sympathy were adopted by the Board July 10, 1877, and are printed on page lxxiii of the annual report of the Board for that year. He was a prolific contributor upon theological subjects. As committee of the Board on "Occupations and Health" he prepared a report on "The Influence of Occupations upon Health" that is printed in the report of the Board for 1875, and wrote a paper on "Recreations considered with reference to their Influence on Health" which was printed in the annual report for 1877.



HENRY FRANCIS LYSTER, A. M., M. D.



DOCTOR LYSTER was born at Sanderscourt, Ireland, Nov. 9, 1837, and died Oct. 3, 1894, while enroute for California. Both his degrees were received from the Michigan University, in 1857 and 1859 respectively. He served in the Medical Department of the U. S. Army for the years 1861-5, was a member of the Loyal Legion, and was a member of the Detroit School Board. He was a member of the Detroit Medical and Library Association, Wayne County Medical Society, Michigan State Medical Society, National Association of Railway Surgeons, and the National Association of Medical Directors of

Life Insurance Companies. Doctor Lyster was professor in the Michigan Medical College from its organization until its amalgamation with the Detroit College of Medicine; and, for four years, he served in the capacity of non-resident professor in the State University. His educational work especially related to Surgery, Theory and Practice and Clinical Medicine. Having been appointed April 25, 1873, by Governor Bagley as member of the original State Board of Health, he served as member of the Board continuously for eighteen years, having been twice reappointed. During this period he was an active and energetic member, especially along the lines in which he was most interested, and his name will be frequently found mentioned in this souvenir publication, in connection with draining for health and for profit, the evil effects of alcohol, the prevention of consumption, and various other subjects on which he wrote extensively.

Meteorological Statistics.

Michigan is not only remarkable for its extraordinary topographical characteristics but it has peculiar meteorological conditions. The mean temperature varies but slightly from the mean temperature of localities farther east or west in the same latitude, but the changes are widely different and present peculiar phenomena. That the meteorological conditions have a direct influence on the condition of health, there is no doubt. Although meteorological observations have been taken since 1834 in places in Michigan, one of the first to take regular and systematic and complete observations was Prof. R. C. Kedzie, of the Agricultural College, who began the work about 1864. But there was no systematic effort to collect such statistics throughout Michigan until the movement was started by Doctor Baker in 1870, when he was supervising the compilation of vital statistics in the State Department, at Lansing, under the direction of which he was working, to collect meteorological statistics for the purpose of study in connection with mortality statistics. The study was commenced even before the State Board of Health was established, and was probably the first effort ever made to show a casual relation between the atmospheric conditions and mortality from such diseases as pneumonia and croup. The beginning of the study will be found in the Registration Report for 1870.

However, the work did not cease when Doctor Baker became Secretary of the State Board of Health, and it has been in operation during the many years' existence of the Board. In each annual report of the State Board since 1876 will be found a study of the meteorological conditions in Michigan. Not only have the mortality statistics but the morbidity statistics been studied in connection with the meteorological statistics, and the work is a part of one of the most interesting and scientific studies the Board has carried along. In recent years this portion of the annual report of the Board has been reprinted in pamphlet form, for convenient study by meteorologists and others studying the causation of diseases.

Sickness Statistics.

Mortality statistics are valuable and have supplied important information that has played a significant role in medical and sanitary progress; but these statistics are collected only after death has occurred. Morbidity or sickness statistics deal with the condition of the living. For importance and usefulness the Michigan Sickness Statistics are second to none in the World. The system was modelled after that devised in England by Benjamin Ward Richardson, M. D., LL. D., and copied by the Massachusetts State Board of Health; in each of which instances the attempt was short lived. While the Michigan plan was not the first, it has been successfully maintained through a long series of years; and its value is enhanced by its long extent. The expense connected with the collection of the facts concerning every case of sickness, would be enormous and of no greater value than a careful collection of the facts concerning the sickness that would come

under the observation of representative medical practitioners in active general practice in various parts of the State. This was the plan that Secretary Baker presented to the Board at its meeting in July, 1876, when the work was authorized and commenced. At first the Board collected the facts concerning twenty-two of the most important causes of sickness. It was then the practice that the weekly card reports by a physician should include not only the cases seen by him but by the other physicians in that vicinity. In May, 1885, the practice was changed and the card-reporter was requested to include in the report only the cases of sickness under his own observation, without regard to area. The statistics rest upon the law of averages, a sample of the sickness in the State is taken as the condition of all sickness; and, the system has been proved to be useful. The average number of cards received each week for a series of years was about 60. Twenty-eight important diseases are now reported upon.

In each of the annual reports since 1876 will be found a compilation of these statistics, and a study of the relation between the atmospheric conditions and conditions of sickness. Doctor Baker, by his unique systems of curves, has been able to show very graphically that the sickness from pneumonia is quantitatively related to the atmospheric temperature and atmospheric ozone, the colder the atmosphere and the more ozone the more sickness from pneumonia; that the curve representing the sickness from influenza quite nearly coincides with the curve representing atmospheric ozone; and many other such interesting relations between sickness and atmospheric conditions.

One wishing to study this important work in detail, can do so by referring to the annual reports of the Board since 1876, and by reading an article on "Sickness Statistics" in the annual report for 1892.

Bulletins of "Health in Michigan."

In connection with the sickness statistics and from the data received upon the weekly card-reports of sickness, the Board has since 1882 issued a weekly bulletin of "Health in Michigan". The data are compiled from physicians' reports from various parts of the State. The bulletin publishes the condition of sickness in Michigan during each week, and compares the sickness of that week with that of the preceding week. The places where each dangerous communicable disease is present are mentioned. Monthly and quarterly bulletins similar to the weekly have been published. These bulletins are distributed where it is thought they will be likely to be appreciated, and a statement of what they include can be found in each annual report of the Board since 1883.

What are the Dangerous Communicable Diseases?

The Michigan legislature wisely left the question of "what are the dangerous communicable diseases" to the highest authority on that subject in the State—the State Board of Health; that Board not only studies the vital statistics of the

State, but keeps up with the most recent advances in public-health work. The Board has determined which are the most dangerous diseases, and the order of their importance. When the State Board of Health has, after deliberate consideration, decided that a certain disease is dangerous to the public health, it has so declared it, and placed it on the "list" of "diseases dangerous to the public health" in accordance with the State laws.

Diseases which have been placed on the "list" are: Measles, whooping-cough, scarlet fever, typhoid fever, small-pox and cholera, placed on the list in 1873; diphtheria, in 1875; puerperal fever and erysipelas, in 1878; typhus fever, in 1879; rōtheln (mainly because scarlet fever is so liable to be mistaken for rotheln), in 1886; membranous or inflammatory croup and typho-malarial fever (because for practical purposes it must be considered as typhoid fever), in 1889; consumption, in 1893; yellow fever, glanders, rabies, tetanus, pneumonia, influenza and cerebro-spinal meningitis, in 1895.

The above-mentioned dates do not indicate the times that active effort commenced for the restriction and prevention of each disease; in some instances it commenced before and in other instances the effort commenced after the disease was formally declared to be a dangerous communicable disease.

In the public-health laws, four expressions are used: "Sickness dangerous to the public health," "disease dangerous to the public health," "communicable disease dangerous to the public health," and "dangerous communicable diseases." Each of these expressions may represent a different classification of the diseases in accordance with the purposes of the various sections of State law.

Michigan Plan for the Restriction of the Dangerous Diseases.

Section 1675 and 1676 Howell's Statutes require each householder, hotel keeper, keeper of a boarding house or tenant, and physician to immediately give notice thereof to the health officer of the township, city or village, of any case of small-pox, scarlet fever, diphtheria, or any other disease dangerous to the public health. Act 137, laws of 1883, requires the local health officers to keep the secretary of the State Board of Health constantly informed respecting every outbreak of a dangerous disease. The first report of an outbreak is sometimes made by letter, by postal card, etc., but more frequently upon a special outbreak blank [L] for reporting the first case. As soon as the first information reaches the office of the State Board, the account of the outbreak is immediately opened in a book for that special disease; a "blue letter" of instructions relating to that disease is immediately sent, together with blanks [M] for making weekly reports to the Board; and there are also sent several copies of the leaflet that relates especially to the restriction and prevention of the disease in question; the health officer is requested to distribute these leaflets not only to the family but to the neighbors of the family in which the disease exists. Thus the record of the outbreak is opened, a book account with that disease started. Every weekly report received from a health officer is

credited to that account; and, if he fails to make the weekly reports so long as the disease lasts, he is reminded of the failure by postal card or by letter.

Relating to each disease, there is a specially-prepared final report blank; and, at the end of the outbreak, one of these blanks is sent the health officer, with stamped envelope for its return, with request that, after sufficient time has elapsed after the last case has recovered or died, the blank be properly filled and returned to the central office.

In addition to the reports just mentioned, each health officer is, at the end of the year, required to make an "annual report" of the diseases that occurred during the year.

It is essential that these reports be made on the specially-prepared blanks, because it is practicable to secure therefrom the information wished for compilation, which it would not be practicable to sift out from letters, postal cards, etc.

From all these reports spring the communicable-disease statistics.

Communicable-Disease Statistics.

From reports from all sources, one branch of the office force compiles the data contained therein, using numerous different working blanks which have been evolved after years of experience in the work and learning just what kind of a blank will best facilitate the work. Each compilation relates to a certain disease; and, together with letters, and other information of interest, the data in the office book are worked into an article relating to a specific disease in Michigan during a certain year. These articles are carefully prepared with statistical studies of the normal and of the peculiar conditions, are printed in the annual reports of the Board, and form the communicable-disease statistics of the office. There are articles relative to: Diphtheria, scarlet fever, measles, typhoid fever, whooping-cough, consumption, etc. Articles of this nature have appeared in the annual reports of the Board from year to year; and, in recent years, have been reprinted from the annual reports in pamphlet form, expediting the distribution and enabling the Secretary to supply this portion of his report in separate form, with less expense for postage; because, when an application is made for the communicable-disease statistics, it is not necessary to send the complete annual report of the Board. Then again it enables the secretary to distribute these reprints even before the annual report is ready for distribution.

Vital Statistics,—Mortality Statistics.

Within vital statistics lies the foundation of public-health studies, and none knew it better than did those framing the law for the establishment of the State Board of Health; for, in that act, the Board is required to "especially study the vital statistics of this State, and endeavor to make intelligent and profitable use of the collected records of death and of sickness among the people." Although collected and compiled by the Secretary of State the role that vital statistics has

REV. JOHN S. GOODMAN.

REV. DOCTOR GOODMAN was born in London, England, October 2, 1822, and died at Saginaw, Michigan, November 12, 1884. He came to America in early childhood, and with the exception of a few brief absences, Michigan was his home. He studied in the Literary and Theological Departments of the Michigan University, and in the Madison University at Hamilton, New York, graduating from the last-mentioned institution in 1850; and, during the same year at Lockland, Ohio, he was ordained in the ministry of the Baptist church. His father had been a



clergyman for more than half a century, and the son emulated the father in working for the good of others. The active, helpful life of Rev. John S. Goodman extended over a period of 34 years; he preached in many churches in many cities of Michigan, and he gave three years of his active useful life to the missionary cause of West Africa. When the terrible conflagration swept over Huron county, in 1881, causing great devastation, he was appointed agent of the charitable, and with the material assistance rendered, the help and solace which he gave to the sorrowful and suffering were of much avail. For eight years he filled the office of superintendent of schools for Saginaw county, and the service he rendered in this capacity will live as a lasting memorial to his usefulness. He was one of the first members of the Michigan State Board of Health, being appointed April 25, 1873, by Governor John J. Bagley, for a term of two years; and April 26, 1875, Governor Bagley reappointed him to succeed himself for a term of six years. Rev. Doctor Goodman lived with the belief that the labors of a State Board of Health could not fail to accomplish great and beneficent results, and he lived long enough to see much of his prophesy verified. Some of the good work accomplished by the Michigan Board can be traced to the impetus given by Doctor Goodman during eight years of humanitarian service to the State in connection with the public health.

ARTHUR HAZLEWOOD, M. D.



DOCTOR HAZLEWOOD was born Sept. 22, 1839, in England, and has been a resident of Michigan since 1868. In 1866 he graduated from the St. Louis Medical College, Missouri. He is a member of the American Medical Association, Michigan State Medical Society, and is the present President of the Grand Rapids Academy of Medicine, and member of the consulting staff of the Butterworth Hospital. He served also as Secretary of the Western Michigan Medical Society and as Secretary and President of the Grand Rapids Medical and Surgical Society when those

societies existed. April 26, 1875, Governor Bagley appointed Doctor Hazlewood member of the Michigan State Board of Health to fill the vacancy caused by the resignation of Doctor Bliss, and he served in this capacity for two years. In March, 1881, he was again appointed, by Governor Jerome, to serve as member of the State Board of Health; and January 12, 1887, Governor Luce reappointed him for a term of six years. Doctor Hazlewood served the State as member of the State Board of Health for 14 years, retiring in 1893. During this long and gratuitous service he wrought vigorously in the interests of public health, he served on standing and special committees, attended and took part in the sanitary conventions held under the auspices of the State Board of Health, contributed to sanitary literature, and in many other ways worked for the public welfare. Among some of the papers written by him can be mentioned those relating to "Vaccination," "Water and the Water Supply of Michigan," "Remarks on Infant Diet," "Prevention and Restriction of Scarlet Fever and Diphtheria," "Hints on the Care and Preparation of Food."

played in the public-health work in Michigan has been extensive; from those statistics the State Board has gained much valuable information; it has been able to show what diseases cause most deaths, the time of year, the age, sex, when most dangerous, the section of the State most usually affected with each disease, and also the necessity for public-health work. The Board has been able to compare the death-rates before and after the restriction of any special disease has been commenced, thus being able to compute with considerable accuracy the number of lives that would have been lost had the recommendations of the State Board been ignored.

One great disadvantage the Board has had to contend with, however, through most of its existence, was the imperfect returns of deaths. The law was imperfect, and the value of the vital statistics was thus lessened, because it was not known just what proportion of all deaths was reported to the Secretary of State. For many years at least forty per cent needed to be added to the reported deaths in order to approximate the probable number of deaths.

However, it is gratifying to state that the legislature of 1897 is to be congratulated on the good judgment it displayed when it enacted a law which provided for more perfect vital statistics by requiring their immediate return. The statistics are returned to and compiled by the office of the Secretary of State, and the prompt and accurate work of the local registrars is worthy of high commendation; under the new law about 97 per cent of the population is represented by deaths returned, whereas under the old law only about 60 per cent of the deaths were returned. A "Monthly Bulletin of Vital Statistics" is issued by the State Department at Lansing, and it is exceedingly valuable to the work of the State Board of Health.

Life Saving in Michigan by Public-Health Work.

The State Board of Health was organized as a health-preserving and life-saving institution, and its history exhibits its success in that benevolent work. The first address of the first president of the State Board, printed in the first (1873) annual report, teems with suggestions for life-saving work, which are about as applicable today as they were at that time. Interspersed through the series of annual reports, and especially those of recent years, will be found statistical studies of sickness prevented and of lives estimated to have been saved by public-health work. The data for these life-saving tables is taken from the actual experience of health officers in Michigan, and the estimates can be made with more or less accuracy. In the report for 1897 will be found such a study that estimates that 149,296 cases of sickness and 7,121 deaths have been saved during the seven years 1890-96, from the four diseases diphtheria, scarlet fever, typhoid fever and measles, by complying with the recommendations of the Board. The recommendations of the Board are told in three words—isolation and disinfection—and are so easily applied that there should be no excuse for non-compliance with them. Reprints Nos. 472, 495 and 501, and another article being prepared for the twenty-fifth

annual report, now being printed, relates to this branch of humanitarian work, and can be had on application to the office of the Board at Lansing.

Money Value of Public-Health Work.

The money values saved to the taxpayers in Michigan through the work of State and local health officials is enormous. As stated in the preceding head, during the seven years 1890-6, it is probable that there were saved 149,296 cases of sickness and 7,121 deaths from diphtheria, scarlet fever, typhoid fever and measles, four infectious and preventable diseases. In its annual report for 1897, the State Board estimates that the total money value saved the people of Michigan is \$6,973,680 or a little less than one million dollars per year. In these estimates it is believed that each life saved represents at least \$500—less than the price of a slave during war times; and each case of sickness avoided represents a saving of at least \$40 for funeral expenses, and \$20 for medical attendance, medicines, and other necessities consequent upon a case of sickness from a communicable disease.

State Live Stock Sanitary Commission.

Although as early as in 1869 the laws of Michigan empowered the Governor to appoint three cattle commissioners, the law was inactive until the State Board of Health saw the need of a central board of commissioners who could supervise the interests of the health of the animals, restrict the spread of dangerous disease among animals, and prevent the spread of animals' diseases to man. Secretary Baker, with others interested in the subject, petitioned Governor Croswell, and the law was made operative by the appointment of three commissioners. This Commission held its first meeting with and in the office of Secretary Baker, and he advised with them regarding future action. However, there was no appropriation with which to work, and the first step was to secure more effective laws and an appropriation with which to carry out such laws. Act 182, laws of 1885, authorized the Governor to appoint three commissioners and a State Veterinarian to protect the health of the domestic animals of the State from all contagious diseases of a malignant character, and by so doing aid in protecting the lives of the citizens of Michigan. The members of that commission receive compensation and they can afford to give their attention to the work. While the State Live Stock Commission and the State Board of Health are entirely separate State organizations, they have worked together for the common cause of the protection of the public health, and great good has been done.

Persons who discover or have reason to believe that any animal is affected with a contagious or infectious disease, are required to report such fact to the president of the State Live Stock Commission, who at present is the Hon. H. H. Hinds, Stanton, Michigan. However, reports of such outbreaks are frequently made by local health officers to the Secretary of the State Board of Health, and he immediately turns such report over to the State Live Stock Commission, and at the

same time responds to the report calling attention to the law and requesting that every precaution possible be taken to prevent the spread of the disease to other animals or to the human family. The State Live Stock Commission has issued a number of very valuable reports, especially one upon "Glanders" by Prof. E. A. A. Grange, V. S., who for a number of years efficiently served the State in the capacity of State Veterinarian.

Animals' Diseases Dangerous to Man.

Contagious and infectious diseases in animals seemed to be of so much importance in connection with public-health work, that Secretary Baker urged the State Board of Health to appoint a standing committee on diseases of animals in relation to public health. The committee was provided for, and Doctor Baker was made the Committee. Besides laboring for the organization of a State Live Stock Commission, other work has been done, papers have been written and reports made. The first report of the Committee was a paper by Doctor Baker on "Glanders in Man and in Domestic Animals" and will be found in the annual report of the Board for 1879. It is an exceedingly valuable report and has been widely distributed where it was thought it would do good. Another valuable paper on "Trichinæ" by Dr. Arthur Hazlewood, was printed in the annual report for 1875, and was the starting point of considerable effort to educate the people of the State in the importance of thorough cooking of pork to be used for food. In the annual report for 1884 the Secretary reported a number of "Outbreaks of Trichiniasis in Michigan." Besides these papers on glanders and trichiniasis, there will be found among the publications of the office and in the annual reports of the Board, papers, reports, etc., relative to tuberculosis in animals, lump-jaw, rabies, and other infectious diseases of animals that are dangerous to mankind.

Michigan Plan for Sanitary Conventions.

The credit for the suggestion for sanitary conventions is due to Doctor R. C. Kedzie. At the regular quarterly meeting of the State Board of Health, April 9, 1878, in his presidential address, he recommended the holding of sanitary conventions or meetings in various parts of the State, to consider and discuss subjects relating to sanitation. A committee, consisting of Doctor Baker, Doctor Kedzie, Hon. LeRoy Parker, and Rev. D. C. Jacokes, was appointed to formulate a plan for such meetings. The Committee recommended that they be held in a manner similar to the Farmers' Institutes conducted by the State Board of Agriculture; to be held by the State Board assisted by citizens in the locality decided upon. The first Convention was held at Detroit January 7 and 8, 1880, over 18 years ago. Since that time forty-five such Conventions have been successfully held in various parts of the State, and have done great good. The State Board has thus been able to place before the people by word of mouth the cogent truths concerning the modes by which the dangerous diseases are spread and how they are best

restricted, and other facts concerning the laws of sanitation and right living. This personal contact with the people has enabled the Board to comply with one of the requirements in the act establishing the Board,—the dissemination of information.

Before accepting an invitation to hold a Sanitary Convention, it is necessary for the Board to be assured that a sufficient number of representative citizens (doctors, lawyers, ministers, teachers, and others) will coöperate in making the Convention a success. If the invitation is accepted, a committee of the Board visits the locality, confers with a local committee of citizens, and arrangements are made. The expense of a hall for holding the meetings, local advertising, and a few other local expenses are required of the locality; the printing and distributing announcements and programs, expenses of members of the State Board, and the expense of publishing the proceedings is borne by the State. During the last eighteen years the members of the Board have thus *gratuitously* served the State, when it has been a money loss to them, most generally meaning that each time a convention was held the work in their every-day avocation was discontinued for three days.

Conferences of Health Officers in Michigan.

Another similar way in which the Board has been able to disseminate information is by means of the "Conference of Health Officers." It was suggested that a meeting of health officers for the presentation of facts, and general comparison of views between local and State health officials, would enable the local and State officials to more intelligently perform the duties required of them by law. It was deemed best that these Conferences should be held at the State Laboratory of Hygiene at Ann Arbor where, by actual and practical demonstrations, many of the subjects discussed could be more easily comprehended by all concerned. Three of these meetings have been held: the *first* was held June 15 and 16, 1893, for the express purpose of discussing "Asiatic Cholera and its Prevention," it being the time when this country was threatened with an invasion of that disease; the *second* June 14 and 15, 1894, to consider tuberculosis, typhoid fever, and small-pox, their restriction and prevention; and the *third* was held July 16 and 17, 1896, at which was considered summer diarrhœa in infancy, cheese and milk poisoning, diphtheria and its prevention by antitoxin and by isolation and disinfection, and bacteriological diagnoses of consumption, diphtheria and typhoid fever. In the invitations issued the State Board urged the local boards of health to send delegates, and the meetings were very instructive. The proceedings of the second and third conferences were published in pamphlet form, and are extremely interesting and valuable publications.

Educational Campaign.

One of the requirements in the act establishing the State Board of Health is that

DANIEL COOK JACOKES, A. M., D. D.

REV. DOCTOR JACOKES

was born April 13, 1813, at Charleston, Montgomery county, New York, and died January 10, 1894, at Pontiac, Michigan, having been a resident of Michigan for sixty years. He was a Methodist Episcopal Clergyman, received his degree of A. M. from the University of Middletown, Connecticut in 1871, and his D. D. degree from the Ohio Wesleyan University at Delaware, Ohio. In 1875 Governor Bagley appointed him Commissioner to represent the Michigan Educational Interests during the Centennial Exposition at Philadelphia in 1876.

May 21, 1877, Governor Croswell appointed him member of the State Board of Health, in which capacity he served the State for six years. In 1882 he was elected member of the American Public Health Association. For many years before his death he was Chaplain at the Eastern Michigan Asylum at Pontiac. As committee of the Board on "Buildings, public and private, including ventilation, heating, etc.," he was especially active, and in the annual report of the Board for 1879 will be found a report of his on "Methods of Heating and Ventilating private dwellings and public buildings already constructed." This paper was extremely valuable because it pointed out means by which ventilation could be secured in buildings already constructed. The demand for this paper was large, and the distribution extensive.



HON. LEROY PARKER, A. B.



HON. LEROY PARKER was born in Flint, Michigan, Dec. 15, 1844, and was a resident of Michigan for forty years. He received his A. B. degree in 1865 at Hamilton College, Clinton, N. Y. During the years 1874-86, being twice elected, he represented the Second District of Genesee County in the Michigan Legislature. May 21, 1877, Governor Crosswell appointed him member of the State Board of Health, in which capacity he served the State for six years, being president of the Board during two years of his term. In 1885 he moved to Buffalo, N. Y.,

and began the practice of his profession; and, in 1887, with other lawyers of that city, organized the Buffalo Law School, with which institution he has since been connected as professor of law, and vicedean. He was awarded the \$250 prize, given by the State Bar Association of New York, for the best thesis on the subject of "Divorce laws and the desirability of uniform divorce legislation." Mr. Parker has devoted much time to the study of questions relating to the public health, and has written considerably on the subject, especially upon the legal relations of public health bodies and the powers and duties of health officials in general. In 1892 Mr. Parker, in collaboration with Mr. Robert H. Worthington of the New York City Bar, published a work entitled "The Law of Public Health and Safety," which is a very complete treatise, and is largely used by the legal profession as well as by public-health officers throughout this country. Mr. Parker's legal ability made him a very useful member of the Board; he planned and advocated amendments to the laws relating to the public health, and did much in defining the duties of health officers and local boards of health in Michigan.

it shall collect and disseminate information. Pursuant to this requirement, it has from an early date carried on a campaign of education, a dissemination of information, an education of the people. The people have come to recognize that diphtheria and scarlet fever are dangerous diseases and are to be avoided, and the credit for this enlightenment of the people is due to the persistent efforts of the State Board of Health. Pamphlets on each of the dangerous communicable diseases have been issued and distributed by the thousands, over 500 reprints have been made, and twenty-five annual reports have been issued, all for the education of the people. While the Board has published a large amount of literature, and while the people have come to know that diphtheria and scarlet fever are dangerous infectious diseases, some facetious individual has dubbed the office the State's literary Bureau. True it is a literary Bureau and one to which Michiganders can point with pride.

Isolation Hospitals.

The cottage system of hospitals for the isolation of cases of dangerous communicable disease, is the plan that the office of the State Board of Health has at various times recommended to localities where the construction of hospitals has been contemplated, especially in the larger cities of the State. There should be a place of refuge where the patient with a competent nurse or relative could be taken, receive the best of care and medical attendance, and where the chances of recovery would be multiplied. Then, again, it would do away with the difficulty experienced in endeavoring to isolate a case of dangerous disease in the home. There may be only the one case in the family, and the other members of the household may have been exposed to the contagion. If the patient were removed to a cottage hospital, the other members of the family were held under surveillance until after the period of incubation had passed, the clothing of such suspects and the house were thoroughly disinfected, isolation would be simple. The father and perhaps other bread-winners of that household would not need to be held in isolation for a great length of time.

A recent plea for such hospitals is printed on page 204 of the annual report of the Board for 1894. This plea is only one among many similar ones that members of the Board have made during years past.

Educational Hospital or Home for Consumptives.

Since Koch discovered the tubercle bacillus to be the specific cause of tuberculosis, since it has been demonstrated that this microscopic organism is found in large numbers in the sputa of consumptives, and when we stop to think of the immense numbers of these germs that must be deposited daily in the streets, and in other public places, the restriction of the disease has become practicable. It has become more practicable because it has been demonstrated where and how this enemy of humanity is lurking. It is deposited by those suffering with the disease.

those who cough and expectorate where the sputa becomes dried and the germs of the great white plague float in the air, are taken into the lungs of some healthy individual, where they find a favorable soil and commence to reproduce their kind, causing sickness and sometimes death. While consumption is an extremely fatal disease, it is not attended with such great fatality as is commonly believed, it being known that about one-half of those who have at some time or other been infected with this dreaded disease, have recovered and finally died from other causes. It has been estimated that one out of every seven members of the human family die with that insidious destroyer of mankind. It is known that there are annually in Michigan about three thousand deaths from this communicable and preventable disease, and it is also known that many of these lives could have been saved had they been surrounded with the proper sanitary environments. Had these unfortunates been under the management of some sanitary home or hospital, not only their lives might have been saved, but the lives of many innocent and healthy human beings would not have been sacrificed. There should be built in Michigan one or more hospitals or homes where this class of unfortunates could go and receive care, attention and education in accordance with the most recent and improved methods. There are a few such institutions in this country, but comparatively many more in Europe; they are not asylums, prisons, nor penitentiaries; they are hospitals or homes, not only for the scientific care of consumptives, but are schools for the education of that class of individuals in the way by which the disease is spread and how it can be prevented.

The State Board of Health has labored for such State home for consumptives. Secretary Baker first brought the subject to the attention of the Board at its meeting April 6, 1894, the proposition was well received, and the utility of such an institution was readily recognized. The subject was referred to Professor Vaughan, who reported at the next meeting of the Board, when preambles and resolutions were adopted, briefly advancing the needs for, and value of, and asking that the legislature make a small appropriation for such a hospital. A bill was framed under the direction of the State Board, and was introduced in the house of representatives by the Hon. Byron S. Waite, and in the senate by the Hon. O. A. Janes, but the bill was never reported from either of the committees to whom it was referred. A copy of the bill is printed on page xxix of the annual report for 1895.

The educational campaign marches steadily on, and the time is not far distant when such a public sentiment will be arrayed as to demand the building of such a State Home for Consumptives. In the meantime let some one of our many benevolent and public-spirited millionaires bequeath a sum sufficient for the erection and equipment of such a Home that will send his name down to posterity, he will be known as a public benefactor, and the results of his act will be a monument greater than imagination can picture.

Sanitary Science in the Schools.

The educational campaign carried on by the State Board has reached mainly

the adult population, and with them has had telling effect. But, to the mind of the writer, the Board has never in all its existence taken up a work of such great import to the State—the future health and welfare of the present and coming generations—as that provided for by the legislatures of 1895 and 1897, which requires that there shall be taught in every public school in Michigan the modes by which the dangerous communicable diseases are spread and the best methods for their restriction and prevention. The great benefits that this new work will confer cannot now be estimated, because the work has practically only been commenced. It is difficult to have such a system take immediate effect; it will necessarily go through a process of evolution; but, before many years have passed the results will have assumed proportions which will make them a living monument to a portion of the unselfish and gratuitous work of the Michigan State Board of Health.

In order to comply with the statutory requirement, the Board has issued and widely distributed a leaflet [226] which, in a short and concise manner tells how the dangerous diseases are spread, and how they may be restricted and prevented. It is hoped that an important advance will be made when the Board issues the more extensive teachers' manual, now in process of construction. The Board will in time be able to place in the hand of each teacher a complete plan by which that teacher can even more fully comply with the law; but, for the present, the teaching of the "data and statements" supplied in the leaflet [226] meets all the requirements.

In time, sanitary science will be one of the prominent features in the curriculum of every school. There will be large wall charts or wall studies, after the plan of the Yaggie anatomical chart or the Sunday-school catechism, in every school room, to be in plain view of every child and will serve as object lessons. Another advance might be in holding of teachers' sanitary institutes or inspiration meetings which will bring the teachers together to confer with each other and with members of the State Board. These meetings might be wholly devoted to sanitary subjects, or might be a portion or section of the regular county institutes. However, these meetings should be for the teachers and by the teachers. They should be conducted by teachers, teachers should read the papers, the discussions should be by teachers; but the work might be under the auspices of the State Board, and a member of the State Board should be at each meeting to direct or observe its proceedings.

While this personal word-of-mouth meeting with the teachers would be extremely valuable, there is issued monthly, by suggestion of the writer, a "Teachers' Sanitary Bulletin," after the plan of the Farmers' Bulletins, issued by the U. S. Government and by State Agricultural colleges; such bulletins serve to keep the teachers in constant touch with the State Board of Health and with recent sanitary progress. Such Bulletins are brief statements relative to the salient facts concerning each of the dangerous diseases, and relating to other public-health subjects, and have been prepared by members of the Board, but may be by professors, superintendents, teachers, and others willing to contribute manuscript.

Alcohol and Narcotics.

The effects of alcohol and narcotics upon the human organism, is a subject to which the State Board has given attention. While it still has a certain degree of importance, and even a relation to the work of the Board, its importance has not recently been considered by the Board to be of such magnitude as to warrant further special attention; the Board has apparently been of the opinion that there are other lines of public-health work in which it could labor to better advantage and with greater results; this feeling may have been due somewhat to the knowledge and belief that the Woman's Christian Temperance Union, and other voluntary organizations, could well take care of that reform work.

Earlier in the history of the Board, its members gave the subject much consideration. This subject was given considerable attention by Doctor Hitchcock, the first president of the Board, in papers printed in the annual reports of the Board for 1874 and 1876. He proposed that the legislature should provide for a commission to thoroughly study and investigate the amount of sickness and deaths due to the habitual use of ardent spirits. Great numbers of Dr. Hitchcock's papers were reprinted and distributed by the Board. Doctor Henry F. Lyster was also an active worker in this line. Probably the most recent and valuable paper (Reprint No. 394) on this subject was written by Prof. Delos Fall, and read at the Lapeer Sanitary Convention, and reprinted and distributed in great numbers by the State Board.

A few persons not members of the Board have prepared papers for the Board's Sanitary Conventions: Doctor A. F. Kinne—"The Sanitary Relations of a Single point in the New Physiology of Alcohol" (Reprint No. 85), and Doctor Henry M. Hurd—"The Hereditary Influence of Alcoholic Indulgence upon the Production of Insanity" (Reprint No. 201.) This last paper, also, was very widely distributed.

There is no doubt that the several papers on these subjects have had a strong influence throughout Michigan.

Coroners and Coroners' Inquests.

The question whether a person found dead came to his death from natural causes or unnatural causes, is one of importance; it is a question that ought to be settled in every case, if any human power can settle it. In Michigan this duty or decision is left to the Coroner's jury, a system which has not proved satisfactory. The Board at one time undertook to secure improved laws relative to coroners and coroners' inquests. The subject came to the attention of the Board in a report by Hon. LeRoy Parker, delegate of the Board to the meeting of the Department of Health of the American Social Science Association at Saratoga Springs, N. Y., Sept. 1877, which report is printed on page 93 of the annual report of the Board for 1877. At this time Mr. Parker was the committee of the Board on public-health legislation, and he made vigorous effort to secure a change in the law. Of his investigations he made an extensive report (printed in the annual report for

JOHN HARVEY KELLOGG, M. D.

DOCTOR KELLOGG was born at Tyrone, Michigan, February 26, 1852, and has been a resident of Michigan since that time. He commenced his medical studies at the Michigan University, and received his degree at Bellevue Hospital Medical College in March, 1875, having taken special instruction during his medical course. For 22 years he has been Medical Superintendent of the Battle Creek Sanitarium, one of the largest of its kind in the world, and has been surgeon to a number of other hospitals. He is a life member of the British Gynecological Society, member of the French Society of Hygiene, founder and life member of the International Periodical Gynecological Society, member American Medical Association, Miss. Valley Medical Assoc., the Michigan State Medical Society, and many other State, National and International medical, public-health and scientific associations. He is a prolific writer on medical, sanitary and scientific subjects. He is editor of "Good Health" and "Modern Medicine," two monthly journals published at Battle Creek, Michigan. May 29, 1879, Governor Crosswell appointed him member of the State Board of Health, in which capacity he served the State for twelve years, having been reappointed by Governor Alger in 1885. During this long term of service he wrote many papers and addresses that were published by the Board, on subjects relating to "Domestic Sanitation," "Relation of Preventable Sickness to Taxation," "Sanitary Conditions of Public Buildings," etc. One of the most recent articles written by him for the Board was on "Practical Suggestions respecting the Ventilation of Buildings" and is printed in the annual report for 1891.



EDWIN ATSON STRONG, A. B., A. M.



PROFESSOR STRONG was born January 3, 1834, in Otisco, Onondaga, New York State, and has been a resident of Michigan since 1858. He received his degrees from Union College in 1858 and in 1863 respectively. He was Principal of the Grand Rapids High School for 14 years, Superintendent of the Grand Rapids Schools for 11 years, professor of Natural Sciences at the New York State Normal School for 2 years, and is now and has been for 12 years professor of Physical Science in the Michigan State Normal School. He has been president

of the Kent Scientific Institute of Grand Rapids, of the museum of which he was for 18 years curator; of the Michigan Teachers' Association; of the Michigan School Masters' Club; of the Michigan Association of High School Principals; vice-president for three terms of the National Educational Association; has held official positions in the Sanitary Association of Grand Rapids; and was one of the American delegates to the London International Educational Conference of 1884. July 7, 1880, Governor Croswell appointed him member of the State Board of Health to fill the vacancy caused by the resignation of Doctor Hitchcock; and, in this capacity Professor Strong served the State until the expiration of the term. He declined to be a candidate for reappointment because the Grand Rapids School Board claimed his entire time.

1878, pages 313-320); and he strongly recommended changes in the existing laws which, if adopted, would produce more perfect and desirable results in the holding of inquests upon dead bodies. His recommendations were:

1. The abolition of the office of coroner, and of coroners' juries.
2. The appointment or election of medical experts to make the physical examinations in cases of persons found dead or suddenly dying.
3. The holding of judicial investigations in cases where crime is suspected, by a magistrate or other than the person who makes the physical examination.

Mr. Parker being a member of the legal fraternity could well see the necessity of the change, and worked vigorously to secure an amendment to the laws of Michigan, and it is to be regretted that the laws remain practically the same at the end of this quarter century of public-health work.

Inspection of State Institutions and Public Buildings.

This work probably started when Doctor Kedzie was invited to examine into the ventilation and sewerage of several State institutions. He found the conditions bad, and recommended ways in which improvement might be made. His report is printed in the annual report for 1874. Following Doctor Kedzie's work, special committees made similar investigations at county jails, county houses, poor houses, and other State institutions, and the reports of those committees will be found in the annual reports of the Board.

At the meeting of the Board in April 1879, the Secretary presented a communication he had received from Hon. C. D. Randall, of Coldwater, suggesting that legal provision be made which would require this Board to examine all plans and specifications for proposed State institutions, and in 1881, probably at the instance of Mr. Randall, the legislature passed Act 206, which has since been amended by Act 86 laws of 1889, and Act 58 laws of 1897. Before the board of control of any charitable, penal, educational or reformatory institution shall determine on the plans for any proposed building, or on any system of sewerage, ventilation or heating, such plans shall be submitted to the State Board of Health for examination and opinion; and, when necessary the State Board shall visit such institution for the purpose of examination.

Reports of examinations of plans and specifications, with the recommendations of the Board, will be found printed in nearly every annual report since 1881. The law does not require that the recommendations of the Board be adopted, and in a few instances the Board's advice has not been heeded, unsatisfactory systems have been constructed only to be reconstructed at considerable additional expense to the State.

A special committee consisting of Doctor Milner, Prof. Fall and Doctor Baker are now preparing a statement of the best systems of house drainage, heating, and ventilating with a view of placing the report of the committee in the hands of and thus aiding the several superintendents and boards of control of these institutions

to prepare plans which shall be in accordance with the best modern methods of sanitary construction.

Advice Relative to Systems of Sewerage and Water Supply.

During the existence of the Board, its officers and members have gratuitously advised with local authorities relative to proposed systems of water supply and sewerage, or changes in the existing systems, and in some instances the advice has been acted upon and approved systems have been constructed. The holding of sanitary conventions in various parts of the State has been the means of securing better systems of sewerage and water supply in many cities and villages in Michigan. At these conventions papers have been read and the subjects have been discussed from various standpoints. The proceedings of such conventions have been printed in pamphlet form, and widely distributed.

In July, 1897, the subject of sewage filtration and sewage disposal laws, and the protection of the purity of the inland waters of the State, was presented by Secretary Baker, and the subject was referred to the committees of the Board on "Water Supply" and "Sewerage", Prof. Fall and Prof. Novy respectively. This joint committee is making a thorough investigation of the subject, and its report soon to be made will be a valuable contribution to popular information on this branch of sanitary knowledge—of what has been done in Massachusetts and elsewhere, and the need for immediate legislative action in Michigan.

President Frank Wells in his address to the Board in April, 1898, dwelt extensively upon the contamination of St. Clair river by typhoid discharges, in connection with the recent outbreak of typhoid fever at St. Clair city. He thought that such contamination might endanger the water supplies of the cities and villages situated along that water course, and suggested that the Board undertake a systematic bacteriological investigation which would determine just how far that contamination was carried, and whether it entered the water supply for Detroit. The importance of such knowledge in protecting the life and health of the inhabitants of the towns and cities in that portion of the State seemed to be great, and the Board authorized the investigation.

Bearing upon the question whether typhoid fever germs can be carried many miles in running water, a valuable paper (Reprint No. 517) by Gardner S. Williams, C. E., Detroit, has been published by the Board. The paper seems to contain proof that the typhoid germs were carried from Port Huron through many miles of running water into the water supply of Detroit, causing outbreaks of typhoid fever.

In January, 1898, the Board adopted general resolutions recommending that local boards of health frame and publish rules and regulations which shall forbid the construction of cess-pools for the storage of sewage or for use as privy vaults. It has come to the attention of the Board that its advice has been heeded in a number of localities.

HON. JOHN AVERY, M. D.

DOCTOR AVERY was born in Watertown, New York, February 29, 1824, and removed to Michigan in 1836; graduated from the Cleveland Medical College in 1850, and has been in active practice since that time; was assistant surgeon and surgeon of the 21st Michigan Infantry during the War of the Rebellion; was pension examiner and member of the Stanton Board of U. S. Examiners for sixteen years; was member of the School Board and of the Common Council of the city of Greenville; and, for twelve years, was annually elected member of the Board of



Supervisors in Montcalm Co. He was elected to the fifty-third and re-elected to the fifty-fourth U. S. Congress, and served through both Congresses. He is a member of the American Medical Association, Northwestern Michigan Medical Society and the Montcalm County Medical Society, of the last two of which he has been president. May, 1881, Governor Jerome appointed Doctor Avery member of the State Board of Health; and, in January, 1887, Governor Luce reappointed him. He served the State for 12 years as member of the State Board of Health, and during this time he was president of the Board for ten successive years. From the time he came on the Board he took a prominent part in the popular sanitary conventions in his official capacity, it being a part of his duty to respond to the addresses of welcome and state the objects of the convention. He is author of numerous papers on subjects relating to "Contagious and Infectious Diseases," "Ventilation," "The Public-Health Service of Michigan," and "Pasteur and Preventive Medicine."

VICTOR C. VAUGHAN, M. S., M. D., Sc. D., Ph. D.



DOCTOR VAUGHAN was born in 1851 at Mt. Airy, Missouri, and has been a resident of Michigan for 24 years. He received his M. S., Ph. D., and M. D. degrees at the Michigan University in 1875, 1876, and 1878 respectively; and, in 1897, the University of Western Penn. granted him the degree of Sc. D. Since 1876 he has been at the University of Michigan in the capacity of professor, and for a number of years has been Dean of the Medical Faculty. He is Director of the State Laboratory of Hygiene, which is connected with the University at Ann Arbor. He is a member of the International Congress of Hygiene and Demography, International Congress of Medicine, Association of Ameri-

can Physicians, American Medical Association, and many other State, National and International medical, sanitary and scientific associations. In 1896 he was president of the Michigan State Medical Society. He was twice appointed member of the State Board of Health, by Governor Begole January 12, 1883, and by Governor Luce January 11, 1889, in which capacity he served the State for 12 years. Conjointly with Doctor Novy, Prof. Vaughan is author of several editions of "Ptomaines and Leucomains," and has also written many papers on medical, sanitary and scientific subjects. To Doctor Vaughan is due the credit of discovering the poisonous principle—tyrotoxicon—causing cheese sickness which will be found mentioned in another portion of this publication. While he has written many papers that were published by the Board, his services have been especially valuable to the public-health service in connection with the examination of foods suspected of being poisonous, samples of water suspected of containing the cause of typhoid fever, bacteriological diagnoses, and other lines of work too numerous to mention.

Surface and Sub-soil Drainage.

As India is the home for cholera, Michigan many years ago could have been called a home for malaria. In an early day Government officials were sent here to investigate, and on returning to Washington reported that the State was not worth the taking.

While it might not then have seemed that Michigan was a desirable State in which to spend the summer, a great transformation has taken place; surface and subsoil drainage has made Michigan what it is. Lands that seemed worthless, are now valuable farming lands; a climate exceedingly unhealthful, is now one of the most healthful in the western hemisphere; malaria has ceased to exert its baneful influence on the inhabitants of the State, and Michigan with all its propitious and salubrious surroundings has come to be the summer resort of the western hemisphere.

These conditions in Michigan have been brought about by many causes, but are in part due to the efforts of the State Board of Health, especially through the efforts of one of its members, Prof. Henry F. Lyster, M. D., who made this subject of draining for health and for profit one of his special works as a member of the Board. He wrote many articles on the subject, some of which were published in the annual reports of the Board for 1874, 1875, 1877, 1878, and 1879, and attracted much attention.

An unique way in which drainage had been accomplished in some instances was brought to the attention of the Board by Prof. Fall and is mentioned in the annual report of the Board for 1898, where it was reported that drainage was being accomplished by means of artesian wells driven down through the clay in low places sufficiently far to make connections with an underground stratum of gravel. Whole farms, barn yards, stables, etc., were drained in this way. The State Board pointed out the great danger to water-supplies, and it is believed that the practice has been discontinued.

Michigan a Summer Resort and Health Resort State.

The blue skies of sunny Italy, the world-wide fame of southern Europe, and the mild climates of southern and western portions of North America have their charms, and the advantages of each are proclaimed; but while it may not be known to all the world, the Wolverine State, "Michigan, our Michigan," has extraordinary advantages; advantages for summer and health resorting which are not excelled by any other State or country having the same area. Just take the map and see where Michigan is located! Judge for yourself whether or not on general principles you think Michigan has extraordinary facilities for accommodating thousands and thousands of those seeking pleasing and healthful places to spend the hot months of summer. Look upon the map and see how the State is practically surrounded by the Great Lakes. There are over sixteen hundred miles of Lake line, and the greater share of that distance is or can be utilized for summer-resort purposes;

there are in the State 5,173 inland lakes varying in size, and having a total area of 712,864 square acres of water; and there are many rivers running through the State, on the banks of which are delightful places for camping and for recreation.

At the Quarter-Centennial Celebration of the Establishment of the State Board of Health which is to occur at Detroit, Aug. 9, special effort will be made to place before Michigan's visitors and others interested in public-health work the great advantages Michigan has for summer resorting. One way which the State Board of Health has endeavored to spread the information is by the publication of a souvenir "Summer Resort Directory" (Reprint No. 523) which is to aid in making Michigan one if not the most popular summer-resort States in the Union.

With a view to maintaining healthful conditions at summer resorts Doctor Milner has offered resolutions proposing a State Sanitary Inspection of all summer resorts, in order that the sewerage, drainage, water-supply and other safeguards for the prevention of sickness and deaths at such places shall be of the most improved kind. The State Board of Health may secure some general legislative enactment which shall be applicable to all resorts.

Abatement of Nuisances.

At the time the act establishing this Board was being considered, one Senator was persistent in his efforts to have the act provide that the State Board of Health should be the court of appeals or the court of final action relative to the abatement of nuisances. The effort to keep this clause out of the act, caused considerable opposition, and the aforesaid Senator voted against the Bill; a similar provision in the act relative to the first Massachusetts State Board, was the cause of the destruction of that Board. The Board undertook the abatement of a nuisance maintained by a large money interest, and the money interest was too strong for the Board; soon afterward the Board of Health was consolidated with another State Board and discontinued as a separate Board. Most nuisances complained of do not generally endanger the public health; they are usually only an annoyance to some individual or to a few persons. Wisely do the Michigan laws give the local board of health jurisdiction, and only by advice has the State Board of Health stepped in and sought to aid in abating nuisances that seemed to endanger the health and life of citizens of Michigan. However, its advice is frequently asked and given, and the law governing the subject is pointed out to the complainant. Accounts of this work, and reports of special committees have been published in the annual reports. The office of the Secretary has in recent years compiled information relative to actions taken for the abatement of nuisances; and commencing with the report for the year 1888, these compilations have been printed in the annual reports.

Venereal Diseases.

This is a subject of immense importance, but one attended with such difficulties

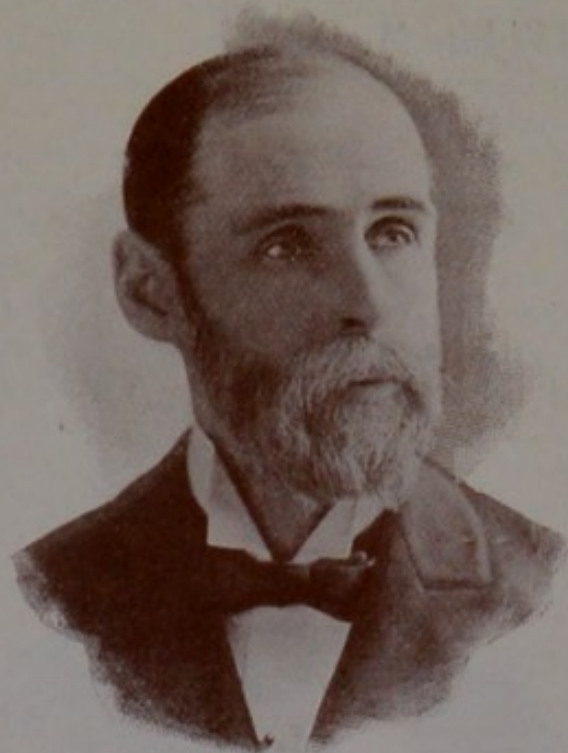
COLUMBUS V. TYLER, M. D.

DOCTOR TYLER was born in Auburn, N. Y., in 1825, and died in Bay City, Michigan, June 1, 1889. In 1836 he moved to Flushing, Michigan, and has resided in Michigan since that time. He practiced medicine in Flushing for nineteen years, and graduated from the Detroit College of Medicine in 1870, after which he resided at Bay City. He was a member of the Michigan Senate during three different terms, 1877, 1879 and 1889, and died while serving during his last term. He was a prominent politician in Michigan, having held many offices of trust. Upon



receipt of notice of the death of Doctor Tyler, the Michigan Senate and House of Representatives, by addresses and resolutions, gave befitting testimony of the high character and worth of the deceased, and the high esteem with which he was held by his fellow associates. An abstract of these memorial exercises will be found printed in the annual report of the Board for 1890. Doctor Tyler was president of the Bay County Medical Society and a member of the Michigan State Medical Society, American Medical Association, and the National Sanitary Association. January 12, 1883, Governor Begole appointed him member of the State Board of Health, in which capacity he served the State until Nov. 5, 1888, when he resigned in order to give his time to the duties of State Senator, to which office he had just been elected.

PROF. DELOS FALL, B. S., M. S., Sc. D.



PROFESSOR FALL was born in Ann Arbor, January 29, 1848, and has resided in Michigan since that time. From the University of Michigan he received his B. S. degree in 1875, and his M. S. degree in 1882; has been a member of the American Association for the Advancement of Science, American Public Health Association, National Conference of Boards of Health, North Central Association of Colleges and Secondary Schools, National Educational Association, and the Michigan State Teachers' Association, of which he was president in 1897. During

the years 1890-98, he has been member of the Albion Board of Education; during 1894-96 he was a member of the Common Council of Albion; and, for the past 20 years has been connected with Albion College as professor of chemistry and in recognition of meritorious service, Albion College conferred the degree of Sc. D. in 1898. Since 1889 Prof. Fall has served the State as member of the State Board of Health, being appointed in January, 1889, by Governor Luce, and reappointed in May, 1895, by Governor Rich. Prof. Fall's many years identification with the educational interests of the State has made him especially valuable and helpful in connection with the campaign of education in which the Board is so vigorously engaged. At the sanitary conventions held under the auspices of the Board he has been a popular lecturer and his paper on "The Michigan Plan for Sanitary Conventions" has been useful in work of the office of the Board. His paper on "A study of the Action of Alcohol on the Human Body" was printed in the annual report for 1891 and its distribution has been large. In connection with the teaching in the public schools in Michigan the modes of spreading and the best methods for the restriction and prevention of the dangerous communicable diseases he has written a number of papers, among which is a recent one on "The Teaching of Hygiene and Sanitary Science in the Secondary Schools."

that, although the Board has given it attention, it has not yet entered upon any general system of work for their restriction. In an article in the annual report of the Board for 1881, Doctor Lyster made a vigorous plea for the control of syphilis. The subject of State control has several times been presented. Apparently the Board has all along felt that there were other lines of work in which its efforts could be directed that would be of more direct benefit to the people, and at the same time the Board would meet with less opposition in its undertaking.

The immense importance of this class of disease to society and to humanity is almost incredible, unless one is familiar with the conditions existing all about us, and with the prevalence of such diseases in the human family, especially in the armies and navies of the world. These diseases are among the greatest scourges to which the human family is heir, the suffering they cause is incalculable, and it is to be regretted that the suffering and misery is not alone confined to the vicious and wayward.

It is gratifying to see that the public press, medical societies, and nearly all of the medical journals in this and other countries are advocating vigorous measures for the restriction and prevention of these diseases. Such effort will educate the people, and public-opinion will be so moulded that public-health work along this line will not be looked upon only from an esthetic standpoint, but from the great and everlasting benefits that will be reaped by the human race.

Transportation of Dead Bodies.

For a number of years the transportation of corpses dead of communicable diseases, has been under the supervision of the Secretary of this Board. The movement started in 1885, when a diphtheria corpse was taken to Ypsilanti, Michigan, and there spread the disease. The attention of the officials of the Michigan Central R. R. was called to the subject, and it was referred to H. P. Dearing, General Baggage Agent of that railroad. A committee of the American Association of General Baggage Agents met in Lansing and conferred with Secretary Baker. Rules governing the transportation of all dead bodies were formulated, and subsequently became the rules of the National Association of General Baggage Agents; the movement in Michigan being the initial movement, started by the Secretary of this Board.

For several years the rules have required the permit of the Secretary of the State Board of Health before a *disinterred* corpse would be accepted, it making no difference what the cause of death was. Before issuing such a permit and in order to facilitate the work and secure reliable information, the secretary has required: (1) A certificate of the cause of death by the attending physician; (2) permit of the health officer of the place *from* which and of the place *to* which the body is to be removed; and (3) assurance of the health officer of the place from which the body is to be removed that the corpse had been prepared in accordance with the rules of the General Baggage Agents' Association. These requirements by the Secretary yet remain in force.

Precautions for exhuming dead bodies are printed in the annual report for 1889.

At the January, 1898, meeting of the Board, amended rules for the transportation of dead bodies were adopted. A committee was appointed to formulate plans by which the rules could be carried into effect; but, when the committee reported, the subject was referred to Judge McAlvay the legal member of the Board for his opinion concerning the advisability of the Board undertaking the new work. He made his report at the meeting April 8, 1898, and discouraged the Board's proposed action, and the members of the Board agreed with the Judge's finding. The report of the committee, the opinion by Judge McAlvay, etc., are printed in the Quarterly Bulletin of the Board for April, 1898.

The Board failing to see its way clear to carrying into effect the change in the Rules of the Baggage Agent's Association, the old rules now govern, and the requirements by the Secretary are in effect relative to disinterred bodies.

Vaccination and Re-vaccination.

Truly Jenner was a benefactor; because, by making vaccination against small-pox a practical act, millions of lives have been saved that would have been lost from that terrible scourge of over a century ago. At that time it was believed that every person must at some time or other have the disease; but, during the last century the ravages of small-pox have been restricted, and it is now conceded by nearly all that there is no necessity for any person to have the disease.

One of the first works of the Michigan Board was to commence the education of the people concerning the efficiency of vaccination and revaccination. The first paper published by the Board was by Doctor Hazlewood, committee of the Board on Epidemic, Endemic, and Contagious Diseases, and is printed in the annual report of the Board for 1876.

Many enquiries where reliable vaccine virus could be obtained were made, and the Board after investigation recommended virus supplied by certain dealers, in their opinion reliable and likely to be free from poisonous and pus-producing germs that frequently get into virus not prepared under sanitary conditions.

In 1879 (Act 146) the legislature of Michigan authorized the board of health of each city, village, and township at any time to direct its health officer or health physician to offer free vaccination, with bovine virus, to every child not previously vaccinated, and to all who have not been vaccinated within the preceding five years. By the distribution of thousands of leaflets containing this law the Board has been able to educate the people until it is in Michigan generally conceded that vaccination is almost a sure preventive against an attack of small-pox, and small-pox is practically an unknown disease in the State.

In 1881 the Board published a sixteen-page pamphlet (No. 54) on "The Restriction and Prevention of Small-pox," and in 1888 the pamphlet was revised. For many years this pamphlet was used for the instruction of the people and of the health-officers. Doctor Baker's paper (Reprint No. 426) "Small-pox and its Restriction and Prevention," was published in 1894, and has since that time taken the place of

MASON WILBUR GRAY, B. S., M. D.

DOCTOR GRAY was born July 23, 1855, on a farm near Troy, Oakland Co., Michigan, and has been a resident of the State all his life. After securing his early education in the district school and the Birmingham high school, he attended the Michigan Agricultural College from which institution he received his B. S. degree. From the Department of Medicine and Surgery, Michigan University, he received his degree of doctor of medicine in July, 1880, after which he took a post-graduate course in medicine at the University of Pennsylvania. He com-



menced the practice of medicine at the Quincy and Nonesuch Copper Mines of Lake Superior; and in 1883 removed to Pontiac, Michigan, where he has since been engaged in the practice of his profession. Doctor Gray is a member of the Michigan State Medical Society, American Medical Association, and American Public Health Association; and since 1892 he has been a member of the Pontiac school board, of which he is now president. Doctor Gray has been prominent in local politics, having been mayor of Pontiac, during which time he pointed out the need for a good, general water-supply with which Pontiac is now blessed; he has also served as health officer during two terms. In June, 1891, Governor Winans saw fit to appoint Doctor Gray member of the State Board of Health, in which capacity he served for six years. During the time he was member of the State Board he was extremely attentive and active, attending and taking part in the sanitary conventions held by the Board in various parts of Michigan, attending meetings, work in standing committees, and other work connected with the public-health service.

HON. FRANK WELLS



MR. WELLS was born in the State of New York, came with his parents to Ohio in early youth where he attended the Huron Institute at Milan, a college preparatory school; from thence he came to Michigan and settled in Howell, where he was engaged in the mercantile business for ten years. In 1861 he moved to Lansing where he has since resided. Here for many years he was engaged in the drug business. During the last ten years his interests have extended, and various mercantile pursuits have claimed his attention. He has occupied his leisure

time largely in literary work. He has been a member of the U. and I. Club of Lansing, one of the most prominent literary organizations in central Michigan, and served that Club ten successive years as its presiding officer. Mr. Wells has been president of the Michigan Business Men's Association, was the first president of the State Pharmaceutical Association, and has been identified with various public organizations. His reading and studies have been largely in the direction of scientific research and investigation, and he is the author of several papers relating to this class of knowledge. Among these is one on the Germ Theory of Disease, written at a time when micro-organisms as a cause of disease was still a theory only with many. This address was published by the State Board of Health, and has had a wide circulation. It was this work doubtless, together with the interest taken by Mr. Wells in public health work, that induced Governor Winans to appoint him, on January 29, 1891, to serve as a member of the Board. Mr. Wells was reappointed by Governor Pingree in May, 1897. He has been presiding officer of the Board since 1893.

the larger pamphlet relative to small-pox, and has been sent out from the office together with a two-page leaflet (No. 167) a copy of one edition of which is printed on page 209 of the annual report for 1892.

Michigan Inspection of Immigrants.

Because of Michigan's geographical position and a large part of the boundary line being the boundary line between the U. S. and a foreign country, because of the immense numbers of immigrants that annually enters the U. S. by way of Port Huron, Detroit and Sault Ste. Marie, and because of the fact that a number of outbreaks of dangerous disease had originated from sick or infected immigrants, in 1881 the State Board of Health adopted resolutions memorializing the National Board of Health to establish a system of inspection along the Michigan-Canadian border. According to the statistics of the U. S. Treasury Department, more immigrants enter the U. S. via Port Huron, than any other port of entry in the country except the port of New York. The petition of the Board was effective and secured the proposed system of inspection which began June 1, 1882. The inspection continued at Detroit until Dec. 15, 1882, and at Port Huron until May 31, 1883. An account of the inspection will be found printed in the annual reports of the Board for 1882 and 1883.

Act 230, laws of 1885, "An Act to provide for the prevention of the introduction and spread of cholera and other dangerous communicable diseases," took effect in due course of time, and rules for a State inspection were framed and published. A copy of the law and an account of the Inspection in Michigan in 1885 will be found in the annual report for 1885.

After the downfall of the National Board of Health, the governmental inspection of immigrants and travelers was placed under the supervision and control of the U. S. Marine Hospital Service; and inspectors were stationed at Detroit, Port Huron and Sault Ste. Marie, and continued with more or less efficiency.

During the fall and winter of 1891-92 small-pox was wide spread in Canada, and the disease had been brought to this country by infected travelers. The Board had secured from the U. S. Government additional inspectors at Detroit and Port Huron who acted under the direction of the Board, but Jan. 10, 1892, these inspectors were discontinued. Cholera was rife in European countries and there seemed to be great danger to Michigan and the Northwest. The Government was urged for a more vigorous inspection of immigrants and travelers and disinfection of baggage.

Not knowing just what the U. S. Government was doing to prevent the invasion of dangerous diseases, a committee of the National Conference of State Boards of Health made a tour of inspection of Canadian and Atlantic Quarantine stations, and the finding was not satisfactory, and Doctor Baker being a member of that committee reported to the Board that he believed that more active effort should be made to protect Michigan and States further west from the introduction and spread of small-pox, cholera, and other diseases dangerous to the public health. Chicago

was preparing for the World's Columbian Exposition, and it was especially important that no dangerous disease gain a foot-hold in that city just prior to the opening of the great fair.

While Secretary Baker was yet away on the inspection tour, but in consequence of his reports, the State Board of Health held a special meeting, Sept. 6, 1892, and published a quarantine proclamation which started probably the most complete system of inspection of immigrants and travelers that any State has ever maintained. Efficient rules were framed and published under Act 230, laws of 1885, and later were republished under the same act as amended by Act 47, laws of 1893. However, the Board met with obstacles, the authority of the Board was denied, and their rules violated by one railroad operating in Michigan. Arrests were made of those violating the Board's rules, litigation commenced, and was carried from one court to another and finally a decision of the Supreme Court of Michigan decided that the act under which the rules were framed was constitutional, but that such rules as the State Board believed to be necessary in order to be of use were not constitutional. Therefore the Board abandoned every attempt to carry on border inspection until the law shall have been amended. During this recent quarantine inspection system, the Board appointed a special committee consisting of President Wells and Secretary Baker to direct the operations of the inspection service. This Committee's work was extremely satisfactory, the work in connection therewith was expedited, and there was no great expense of frequently calling the Board in special meeting to consider questions which could be settled by the Committee residing in the Capitol City.

Michigan's experience in the inspection of immigrants and travelers is an interesting chapter in the history of the Board's work. A history of the most recent system will be found in the annual reports of the Board for 1892 to 1895 inclusive.

Notices of Possibly-Infected Immigrants Destined to Michigan.

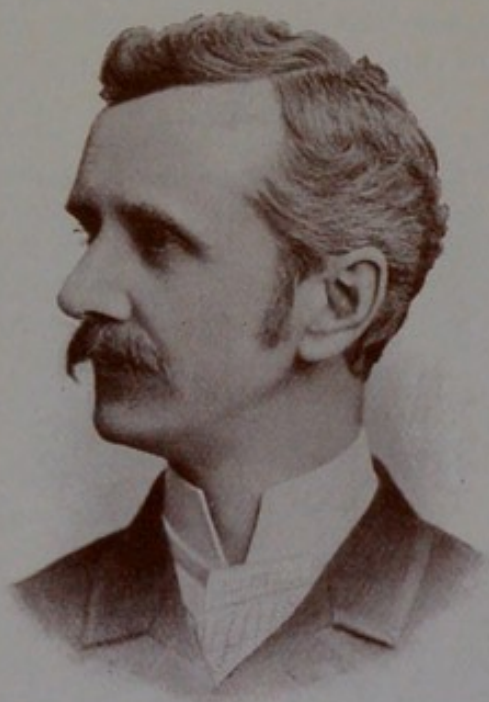
Immigrants who had passed "quarantine" at some of the eastern ports of entry, had come to Michigan and spread dangerous diseases. This led the Secretary to request that notice of the destination of such immigrants be given in time that the Central office could pass the information along to the health officer of the township, city or village to which the immigrant was destined in order that the possibly infected individual could be kept under surveillance and promptly isolated in case he developed symptoms of a dangerous disease. Such notices have been regularly received from the superintendents of immigration at the various eastern ports of entry, and the system has undoubtedly done much to lessen the number of cases of diphtheria, scarlet fever, etc., in Michigan.

Inter-State Notification of Dangerous Communicable Diseases.

At the meeting of the National Conference of State and Provincial Boards of Health, at Toronto, October, 1886, preamble and resolutions were adopted, and at

SAMUEL GEORGE MILNER, A. B., A. M., M. D.

DOCTOR MILNER was born May 18, 1846, in Salineville, Ohio, but has been a resident of Michigan for the past twenty-six years. At the Michigan University he received the degrees of Bachelor of Arts and Master of Arts in 1872 and 1876 respectively; and, from the Homeopathic Medical College of the Michigan University he received the degree of Doctor of Medicine in 1887, since which time he has been an active practitioner in Grand Rapids, Michigan. Doctor Milner has been a member of State and National Medical Societies, and is member of the staff of the Union Benevolent Association Hospital of Grand Rapids. He is president of the Grand Rapids College of Homeopathic Physicians and Surgeons. In 1895 he received the appointment of a professorship in the Homeopathic Medical College of the Michigan University, but declined to accept. During the years 1872-1885 he was prominently identified with the educational forces of the State, being principal of the Union School at Grand Rapids. By Governor John T. Rich, he was appointed member of the Michigan State Board of Health, May 27, 1893, in which capacity he has since served. As committee of the Board on "Buildings, including house drainage, ventilation, heating, etc.," and on "School hygiene and sanitation," he has done considerable labor, and is now engaged in preparing a report relative to better sanitary conditions at the public school, buildings, grounds, etc. In the pamphlet proceedings of the Detroit sanitary convention will be found a paper by Doctor Milner on "A Study of Diphtheria and Scarlet Fever, from the Standpoint of the State Board of Health."



HON. GEORGE H. GRANGER, M. D.



DOCTOR GRANGER was born in Wayland, New York, January 17, 1841. He received his early education at the Danville Seminary and at the Genesee Wesleyan Seminary at Livonia, N. Y. He studied medicine at Wayland, N. Y., but when the war of the rebellion broke out he volunteered in a New York regiment as assistant surgeon. In 1866 he moved to Michigan where he entered the Michigan University and graduated from the Medical Department in 1867 and commenced the practice of his profession at Unionville, Tuscola county. During the years

1879-81-82 he represented Tuscola county in the Michigan legislature, and in 1880 he served the village of Unionville as its president. In 1888 he moved to Bay City where he has since continued in the practice of medicine. For a number of years he was a member of the Bay City board of education, and was president of that board during 1887, 1888 and 1890. Doctor Granger being a man of prominence in public affairs, and being a representative medical practitioner in that section of the State, Governor Rich appointed him member of the State Board of Health, in which office he served the State four years, resigning because of the impaired condition of his health. It is gratifying to state that Doctor Granger has regained his health and is again actively engaged in the practice of medicine. Doctor Novy was appointed by Governor Pingree to fill the vacancy caused by the resignation of Doctor Granger.

the Washington meeting of the Conference in Sept., 1887, the resolutions were reaffirmed. The agreement was to keep each State and Provincial Board of Health constantly informed concerning outbreaks of dangerous communicable diseases, with a view to conveying reliable official information relative to the danger of the spreading of such diseases. A copy of this agreement is printed in the annual report of the Board for 1887.

Accordingly, when an outbreak of small-pox has occurred in Michigan, the facts relative to the first case have been immediately sent to the Secretary of each State and Provincial Board of Health. Relative to diphtheria, scarlet fever, etc., the Board has given the information by means of regular weekly, monthly and quarterly bulletins which show the condition of sickness in Michigan, and at just which places the communicable diseases are.

State Laboratory of Hygiene.

At the meeting of the Board in January, 1884, the subject of a well-equipped sanitary laboratory for special investigation was discussed, but not until October, 1886, did the State Board of Health take action which resulted in the establishment of the first State Laboratory of Hygiene in the World. At that meeting of the Board the following resolution was adopted:—

While Secretary Baker was yet away on the inspection tour, but in consequence *Resolved*, That the regents of the University be respectfully requested to consider the advisability of establishing a laboratory of hygiene, in which original investigations,—chemical, microscopical and biological,—shall be carried on, and attention shall be given to the subjects of the analysis of water, the adulteration of food, and the practical investigation of other questions in sanitary science; regular reports of important results of laboratory work to be made to the State Board of Health.

A committee of the Board consisting of Doctor Lyster, Prof. Vaughan and Secretary Baker appeared before the Board of Regents of the Michigan University, Dec. 7, 1886, and abstracts of their remarks are printed in the annual report of the Board for 1887. Memorials to the Michigan legislature, petitions to the Regents and other persistent efforts finally secured the legal provision, and the State Laboratory of Hygiene was established under the direction and supervision of Prof. Vaughan, assisted by Prof. Novy. Under the direction of these highly scientific gentlemen, the results of the work have been of incalculable value, not only to Michigan but to the entire world. The teaching of bacteriology and sanitary science at the Michigan University, yearly sends out many physicians who lead in scientific medicine, they are able to make microscopical diagnoses of cases of suspected tuberculosis, diphtheria, typhoid fever, and other diseases, the germ origin of which has been demonstrated.

The first quarterly report of the Laboratory is printed in the annual report of the Board for 1887, and the results of analyses of food suspected of being poisonous, samples of water supposed to contain the cause of typhoid fever, etc. will be

found in the annual reports of the Board for the year 1887 and since. A brief resumé of the work of the laboratory from its organization to the present time, will be found in the report of the Board for 1897.

Tyrotaxon—Cheese Poison.

Cases of violent but not fatal poisoning from eating cheese frequently came to the notice of the Secretary of the State Board of Health, and the cause of the condition was searched for by him and by others, and many chemical analyses were made by Prof. R. C. Kedzie with the same object in view.

The symptoms of the sickness were those of acute poisoning; and, although few if any deaths resulted, the sickness was extremely annoying and painful. Different theories were projected concerning the exact etiology; the coloring material used, adulterants, mineral poisons, poisonous plants eaten by the cows, decomposition, etc., were various explanations offered. However, in 1883 and 1884 cheese-poisoning in Michigan seemed to be wide spread, and samples of the suspected cheese were sent to Prof. Victor C. Vaughan, committee of the Board on "food, drinks, and water supply" and committee on "poisons, etc.", to Prof. J. T. Burrill, of the Illinois State Industrial University, and also to Doctor George M. Sternberg, since Surgeon-General of the U. S. Army. Doctor Sternberg and Doctor Vaughan each made written reports which are printed in the annual report of the Board for 1885. Doctor Sternberg isolated micrococci, and concluded that it was "not improbable that the poisonous principle is a ptomaine". Doctor Vaughan's extensive experiments went further; and after two years of close investigation he isolated a ptomaine poison and decided that it was the cause of the sickness. This substance he named tyrotaxon—cheese poison—and to Doctor Vaughan alone is due the credit for the discovery of the chemical nature of the cause of cheese sickness, or sickness caused by tyrotaxon.

Prof. Vaughan found that tyrotaxon was not confined to cheese but could be demonstrated in poisonous ice cream, milk, etc. He also found that a causal relation existed between the tyrotaxon and cholera infantum, that insidious destroyer of innocent infants, and no doubt his discoveries along this line were the starting point of the practice so common, especially in large cities, of supplying pasteurized milk for infant food, and which has greatly reduced the mortality from cholera infantum and other summer diarrhœas of infants.

Disinfection Day.

In a letter dated June 9, 1898, Doctor Belknap gave notice that at the next regular meeting he would recommend that the Board take action tending to cause an annual disinfection of all school houses in Michigan, and recommending sanitary precautions to be taken in the care of school rooms, forbidding the use of slates, permitting the interchange of books only under such conditions as render the transmission of disease improbable, etc. Resolutions including some of the fore-

HON. AARON VANCE McALVAY, A. B., LL. B.

JUDGE McALVAY was born in Ann Arbor, July 19, 1847, and since that time has been a resident of Michigan. He took his preparatory course at the Ann Arbor High School; from the Michigan University he received an A. B. degree in 1868, and the degree of LL. B. in 1869. After teaching school for one year, he entered the office of Judge Beakes, of Ann Arbor, where he remained one year. In 1871 he commenced the practice of his profession at Manistee, Michigan, where he has since resided. He has always been interested in local affairs, especially in the



matter of improving the public schools. From the time of entering into active professional life, Judge McAlvay has frequently been called upon to serve in places of trust. He has been four times city attorney, once chairman of the board of supervisors, once prosecuting attorney, and for four years deputy collector of customs at the port of Manistee. In 1878 he was appointed Judge of the 19th Judicial Circuit, being one of the youngest circuit judges who ever served in Michigan. After leaving the bench he resumed the practice of law, which practice has been one of the most successful in western Michigan. In 1885 he was candidate for the office of Regent of the University; and in 1895, before the State Convention, he was candidate for Justice of the Supreme Court, failing of nomination by a few votes. In June, 1897, he was appointed non-resident professor of the Law Department of the Michigan University, to lecture upon equity jurisprudence. In April, 1895, Judge McAlvay was appointed by Governor Rich to serve as member of the State Board of Health, which office he has since filled. He has brought to the work of the Board the results of an extensive practice of his profession, and has been of very great service to the public-health work by reason thereof, and by reason of his ripe experience in public affairs, and his interested, apt, and judicious devotion to the work.

FRED RICE BELKNAP, B. S., M. D., M. S.



DOCTOR BELKNAP was born in Rochester, Vermont, November 27, 1862, has been a resident of Niles, Michigan, since 1873. He received his B. S. degree from the Norwich University, Northfield, Vermont, and his degree of Doctor of Medicine from the Bellevue Hospital Medical College of New York City; and, after graduating at Bellevue, spent one year abroad taking special work along the line of his profession at the Hygienic Institute and Royal University of Berlin, and the London School of Gynæcology. At a meeting of the Board of Trustees of the Norwich University in July, 1898, the degree of Master of Science was conferred upon Doc-

tor Belknap. He has been a member of the Michigan Political Science Association, and of the Kalamazoo Academy of Medicine, and has been president of several local political and other associations. He now holds a commission, as First Lieutenant issued by the Governor of Vermont. Doctor Belknap was appointed by Governor Pingree April 22, 1897, to serve as member of the State Board of Health for six years from February 1, 1897, since which time he has taken an active part in the Board's educational work especially along the line of the sanitary conventions held in various parts of the State under the auspices of the Board. He has written several papers on public-health subjects, the most recent of which is one on "Healthy Homes," which was read at the sanitary convention at Tawas City in January, 1898, and in which he deals with the sanitary location, construction and care of the home.

going mentioned precautions will be presented to the Board at its July (1898) meeting by Doctor Belknap.

If school boards, and others having in charge assembly rooms and other places of public gathering, will do what is practicable to carry out the recommendations of the State Board, it cannot fail to prevent the spread of disease. Disease will undoubtedly be lessened, and no doubt that Dr. Baker's curves showing that communicable diseases common to school children increase with the opening of school will cease to represent the facts. In order to bring about a millennium of this kind the people will need to coöperate with the school and health authorities. When a child is first sent to school its parents should take just as much pains to see that its clothing is free from disease producing germs as to see that the child has had a bath, has on a nice new suit of clothes, clean waist, etc. Such a raid on the germ causes of disease cannot fail to lessen disease and death.

Sanitary Day.

At the meeting of the Board in July, 1892, Doctor Baker proposed a "Sanitary Day," a day which should be provided for by law after the plan of the annual school meeting. It was proposed that such a day would be a time set aside by law when there should be an annual public sanitary meeting in every township, city and village, when the citizens should decide just how much money should be assessed and collected for public-health purposes for the ensuing year. The local health officials should report at such a meeting the results of public-health work during the past year, and estimate how much money would be needed for the ensuing year. Further details concerning the proposition for a "Sanitary Day" can be found in the annual reports of the Board for 1892 and 1893.

Carbon Dioxide in the Atmosphere.

As committee on climate, etc., and at the regular meeting of the Board in July, 1894, the Secretary presented the subject of a decrease of the amount of carbonic acid gas in the atmosphere, and remarked that some twenty years ago he had asked the Board to authorize a series of regular and accurate chemical analyses of the atmosphere with a view to determining whether there was any change in the amount of carbonic acid gas in the atmosphere by seasons of the year, and in a long period of years. Doctor Baker read from the Chemical News (Aug., 1893) which stated that "the last and most careful determinations of carbonic acid in the air have shown a decided decrease (0.05 to 0.03) in the last fifty years." The question of the advisability of making observations was referred to Prof. Delos Fall, the chemist of the Board. At the meeting of the Board Oct. 12, 1894, Prof. Fall made a written report which will be found in the annual report for 1895. The report did not recommend that the observations should be made, but did point out methods and apparatus needed for the proposed observations.

Regulation of the Practice of Medicine.

That the charlatan and impostor are unrestrained in the practice of medicine in Michigan cannot be denied; they are conspicuous by their presence. They are a source of danger to the very life and health of every man, woman and child in the State; and, although it is true, it is to be regretted that our great and glorious State is far in the rear in connection with the regulation of the practice of medicine; it is classed with those States and Territories a hundred years behind Michigan in degree of civilization. For over a quarter of a century effort has been made to secure some legislation that would save Michigan from being the dumping ground for the worse than refuse that would have the audacity to class themselves as doctors; a class of individuals often not possessed of even a common school education who, by the payment of a small amount of money to some bogus doctor factory are granted a diploma, come into Michigan and practice their imposition upon our citizens with perfect impunity. Such impostors in a similar walk of life, would be placed where they would do no harm.

It can be truly said that Michigan is today without the slightest protection from the so-called doctors; the present law which relates to that subject, unless it can be amended, might just as well be wiped off the Statute books. But what is the reason for this unprotected condition? There are two: (1) The legislators and (2) the physicians. Why are the legislators to be censured? Because they do not take the subject in hand from a humanitarian standpoint and pass a law which shall protect the people. Why are the physicians to be censured? Because they are not united on any one plan. If they have united, a bill has been framed, committees have been appointed from the various societies to place the subject before the legislature, before action can be taken by the legislative body, the doctors are fighting among themselves. The honorable physicians should get together, agree upon some possible legislation on this subject, unite and stand united, until the bottle is won.

It is hoped that another quarter century will not pass without some change in our present law. Let a law pass which shall define or appoint a State Board to decide what are reputable and legally-authorized medical colleges and a good work will have been done. It is not well to try to regulate the past, but endeavor to regulate the future. It is not wise to try to pass a law which shall dictate to the Governor just whom he shall appoint; this should be left to his good judgment; no Governor can make the conditions worse than they are at the present time. In this work the State Board of Health has wrought assiduously and nobly and it cannot be said with any selfish interest; its interest has been for the public-health and welfare. It is hoped that some day its influence may so accumulate that a proper law can be enacted.

Legislative Investigations.

It would be strange if a State Institution that had been in existence for so many

FREDERICK GEORGE NOVY, Sc. D., M. D.

DOCTOR FREDERICK G. NOVY was born in Chicago, Dec. 9, 1864, and has been a resident of Michigan for the past sixteen years. He received his degrees at the Michigan University at Ann Arbor with which institution he has been connected as a teacher for twelve years, serving as assistant in Organic Chemistry, instructor and later as assistant professor of Hygiene and Physiological Chemistry, and recently as Junior professor of Hygiene and Physiological Chemistry. He is a member of the Michigan State Medical Society, Pan-American Medical



Congress, International Medical Congress, International Congress of Hygiene and Demography. He was appointed member of the State Board of Health by Governor Pingree September 17, 1897, to fill the vacancy caused by the resignation of Doctor George H. Granger. Prof. Novy is author of "Cocaine and its Derivatives," 1887, "Directions for Laboratory Work in Bacteriology," "Laboratory Work in Physiological Chemistry," and, conjointly with Prof. Vaughan, is author of several editions of "Ptomaines and Leucomaines." He spent the summer of 1888 in the laboratory of Doctor Koch in Berlin; that of 1894 at Prague; and during the summer of 1897 he studied in the Pasteur Institute at Paris. Considering Doctor Novy's training in scientific work and as assistant director of the State Laboratory of Hygiene his appointment as member of the State Board was a very wise selection by Governor Pingree. Even before he became a member of the Board, he wrote numerous papers relating to germ life and other phases of public-health work. Recently he has reported to the Board the results of actual laboratory experiments tending to establish the efficiency of formaldehyde for the disinfection of rooms.

HENRY BROOKS BAKER, A. M., M. D.



DOCTOR BAKER was born December 29, 1837, in Brattleboro, Vt., and, excepting three years during the war, less than a year just preceding the war and less than a year in New York just after the war, has resided in Michigan since 1849. When the war began he was teaching school in southern Illinois. In the winter of 1861-2, having studied medicine, he attended lectures in the Department of Medicine and Surgery at the Michigan University. In August, 1862, he enlisted in the army, and soon afterwards was appointed Hospital Steward, of the 20th

Michigan Infantry Volunteers; in 1863-4 he acted as Assistant Surgeon; July, 1864, was mustered as such, and from that time until the close of the war he was the medical officer in charge of the regiment. After the war he continued his studies at Bellevue Hospital Medical College, and graduated therefrom in the spring of 1866; practiced medicine at Lansing and at Wenona, Michigan, until October, 1870, when, as a committee from the State Medical Society, he went to Lansing to compile the State Vital Statistics. July, 1873, on the day of its organization, he was elected Secretary of the Michigan State Board of Health, in which capacity he has since served. From the University of Michigan in 1890 he received his A. M. degree. He is a member of many State, National and International medical and public-health associations; in June, 1884, was made corresponding member and later Honorary Member of the French Society of Hygiene; and, in 1890, was president of the American Public Health Association. Doctor Baker has written many papers and public addresses on public health subjects. Among the papers are several on the causation of diseases—influenza, pneumonia, and typhoid fever.

years could have always "smoothed the fur the right way", and the State Board of Health is no exception; it has made some enemies but vastly many more friends. Its lines of work have tended to antagonize certain individuals and corporations, but it is believed that at the present time it has as many staunch friends as has any other State Institution. Almost every session of the legislature the animosity against the Board is shown by the introduction of a bill or two to abolish the office; hardly a session has passed without such proposed legislation; but sometimes the activity and pressure for such legislation is more than usual. There are different reasons for the animus which prompts such hostile legislation:

(1) For many years the Board endeavored to maintain a safe test for illuminating oils used in the State, and it is easy to understand why those interested in the sale of oil should be represented in the legislature by agents and lobbyists; (2) during the World's Fair and at a time when cholera and other diseases were likely to be brought into this country, the Board maintained a State inspection of immigrants and travelers at the Michigan border, and it is not difficult to understand why certain officials of railroads should not wish the State Board all happiness; (3) from time to time clerks have left the office for cause, and it should not be difficult to see the reason why such discharged clerks should come to the legislature and labor for the abolition of the Board; and (4) disgruntled physicians who may have been prosecuted for violating the public-health laws, and misinformed persons who have been beguiled to do things which they would not have done had they been correctly informed. A few such reasons have caused the Board some trouble.

However, the last effort to abolish the Board was made in 1895, the attack was vigorous and annoying. When the onslaught was most vigorous, the Board asked for an investigation of the office, and the request was granted. The investigation was long, expensive and tiresome, but the outcome was most satisfactory. Reprint No. 462 gives a detailed statement of the attack against the Board, the proceedings of the investigation, and also gives the finding of the legislative investigating committee. The result of the investigation is probably concisely told in the first paragraph of the report, that reads: "We find that the charges against the State Board of Health as set forth have not been proved, in substance or in spirit, in general or in particular. And we characterize them as unfounded, and undoubtedly prompted by ill-will; and so far as made on the floor of the House they must have been the result of deception practiced upon members."

The Friends of Public-Health Work.

Following up a statement of the opponents of the Board, it is well to make a passing tribute to the friends of the State Board of Health and of health work in Michigan.

Those who esteem the high character of the work that has been done, and attempted to be done, are numerous, and space would not permit mention of each one who has aided the humanitarian work of the Board. A brief allusion to one may serve as an example of the others. Among the many and long-continued services

of Dr. George E. Ranney of Lansing, may be mentioned that for many years, while small-pox was still an enemy frequently present, he was an agent to aid the Board in securing promptly for each threatened locality reliable and safe vaccine virus. He has written papers and attended sanitary conventions at his own expense; and, in recent years, he has several time represented the Board as State communicable disease inspector, investigating and aiding localities in the restriction of dangerous diseases. He was one of the first, in the early history of public-health work, to call attention to the relation of typhoid fever to low water in wells.

Publications of the Board.

During the quarter of a century, the Board has published twenty-five annual reports; numerous supplements to the annual reports, many of which are the pamphlet proceedings of forty-five sanitary conventions held under the auspices of the Board; papers on such subjects as the restriction and prevention of each of the dangerous communicable diseases, ventilation, sewerage, drainage, water supply, illuminating oils, poisonous foods, infant mortality, cholera infantum, disinfection, school hygiene, coroner and coroners' inquests, meteorology, rabies, glanders and many other subjects relating directly or indirectly to public-health work.

A list of these papers may be found in an alphabetical index, Reprint No. 522.

These pamphlet publications of the Board and even the annual reports are sent gratis to those believed to be sufficiently interested in public-health work to appreciate them, also in exchange for valuable publications from different parts of the world.

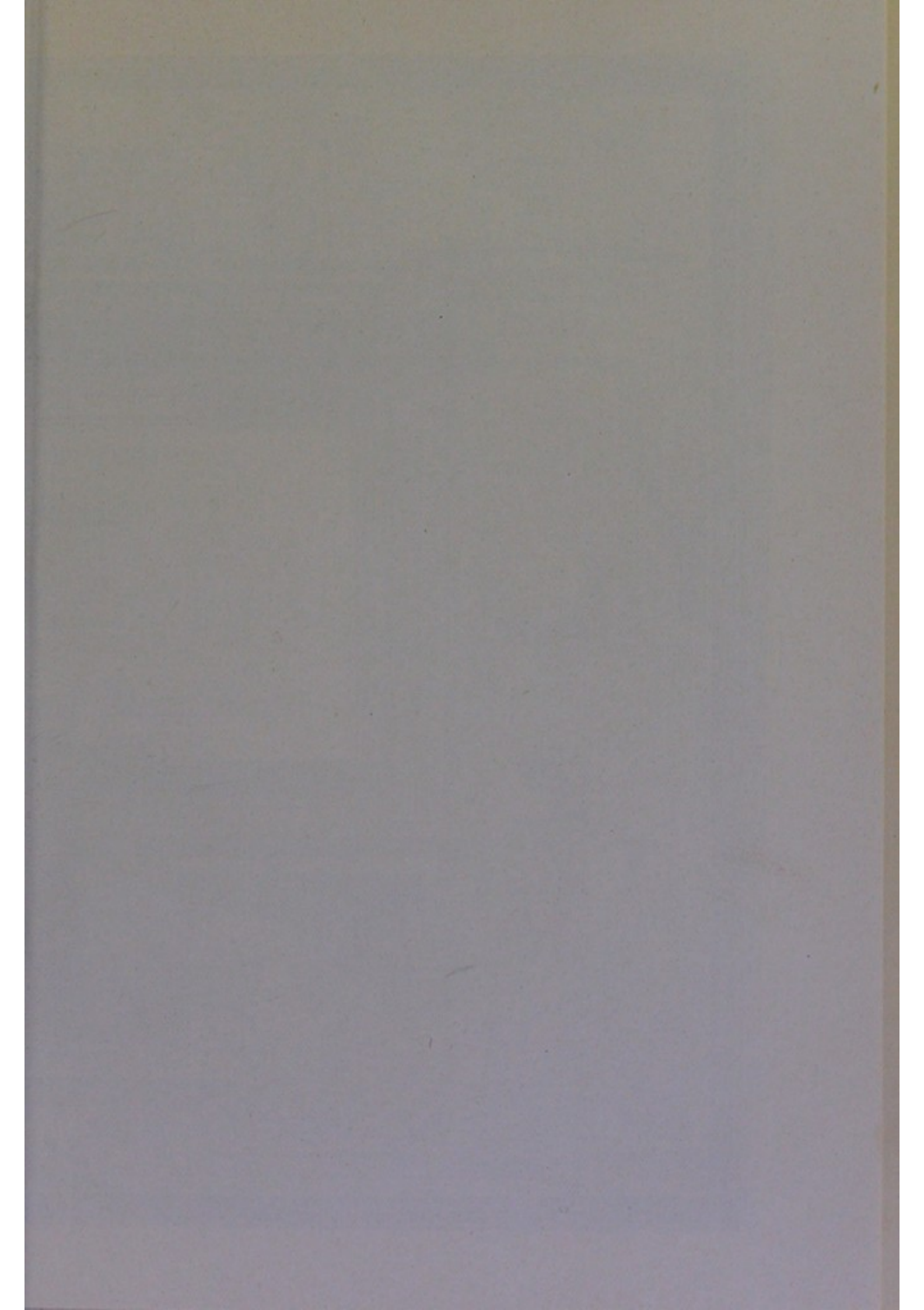
In addition to these pamphlets and bound publications, the Board has for many years issued circulars or leaflets on the "Restriction and Prevention" of each of the dangerous communicable diseases—one each on diphtheria, scarlet fever, small-pox, measles, whooping-cough, typhoid fever, etc. Fifty or sixty thousand copies of some of the leaflets have been printed and distributed about the State with a view to educating the people how dangerous diseases are spread and how they can best be prevented or restricted.

It is not difficult to understand why the State Board of Health Office has been dubbed the "State Literary Bureau"; rightly has it been so characterized. It is a literary bureau of which the State may be proud. May the good work go on and may the State Board continue to spread its literature where it will do good.

The State Board of Health Library and its Card Catalogue.

During its existence, by purchase, and especially by exchange or gift, the State Board of Health has collected together some eleven thousand pamphlets and bound volumes which comprise a very valuable sanitary library. The accessions include files of most of the leading medical and sanitary journals of the world.

The library has been very valuable for reference in connection with the pre-







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HEALTH EXHIBITION

N - 1884 -

HAVE AWARDED THIS

of Thanks

an State Board of Health.

Washington Maudes

CHAIRMAN OF THE EXECUTIVE COUNCIL.



paration of papers for sanitary conventions, special papers and lectures, etc. The library has been a sort of "traveling" one; for, when requested, the Secretary has loaned portions relating to certain subjects to those persons preparing papers for sanitary conventions and other occasions.

What has made the library especially useful is an extensive card-catalogue which has been in process of construction for a number of years. It is hoped that some day this card-catalogue can be printed in pamphlet form, and the pamphlets placed where the usefulness of the library can be extended.

An alphabetical index of the subjects and authors of the publications of the Board during its twenty-five years' existence has been prepared by Mr. Thos. S. Ainge, and is printed in pamphlet form (Reprint No. 522).

State Board of Health Exhibit at World's Fair and Tennessee Centennial.

The Board's exhibit at the World's Fair was installed in the Anthropological Building, and consisted of a set of the annual reports and other publications of the Board, two large wall diagrams, one of which showed the lives saved from public health work in Michigan, and the other showing the results of isolation and disinfection in the restriction of the two dangerous diseases—diphtheria and scarlet fever. There was also a wing frame upon a standard that contained twenty diagrams, most of the diagrams exhibiting the relations of disease to meteorological conditions. All the diagrams were photo-engraved, plates made (reduced in size) and printed in a twenty-four page leaflet. This leaflet was distributed in connection with the same exhibit.

A statement of the exhibit is made in the annual report for 1894.

About the same articles were exhibited at the Tennessee Centennial at Nashville in 1897, and a leaflet similar to that reproduced in the 1894 report was placed with the exhibit for distribution to those who wished the pamphlet.

What Outsiders Think of the Work of the Board.

The knowledge of what has been done in Michigan in public-health work is not confined to the State alone, nor to the western hemisphere, but many congratulatory and commendatory expressions of the worth of the work come to the notice of the Board, some even from the remotest portions of the world, and the principles and methods used in Michigan have been widely copied.

For its exhibit at the World's Columbian Exposition at Chicago in 1893, the Board was awarded a diploma and medal which were given "for completeness, exactness and statistical value". An award was also given for the exhibit sent to the Tennessee Centennial in 1897.

At the International Health Exhibition in London in 1884 the Board was represented by an exhibition of some of its work and the "certificate of thanks" awarded was such a piece of artistic beauty that it is thought well worthy of reproduction

in this publication. The original certificate is 24 by 30 inches, but the reproduction here given will exhibit what it contains.

The Presidents.

The Presidents of the State Board of Health have been elected by the members of the Board from their own number, and have given earnest and thoughtful work exceeding even that of other members of the Board. Each one of them has been especially active along certain lines of work:

President Hitchcock devoted an exceeding amount of labor to the subject of alcoholic liquors as related to public health.

President Kedzie devoted years to the improvement of illuminating oils so far as relates to the safety of their use by the public. He contributed to the public health service of the State that most useful line of work, the sanitary convention.

President Parker did the State excellent service in interpreting the public-health laws, and in advising relative to the enactment of new laws.

President Avery brought to the work of the Board rare judgment and discretion as to its relation to the people. His service on the board of supervisors in his county throughout a long series of years gave him experience which was especially valuable in guiding the action of the State Board. He was especially active in advocating the germ theory of disease.

President Wells has given the Board the benefit of many years experience in important business interests, and his services have been particularly valuable in many directions. One of the first was in connection with the State quarantine against the threatened introduction of cholera and other diseases during the period of greatest influx of immigrants. Even before he became a member of the Board, he contributed valuable papers on subjects which are ordinarily dealt with only by physicians; his studies extending through many years on the subject of the germ causes of diseases, fitted him for exceedingly useful work for the State on those subjects. His influence toward guiding the work of the Board in proper directions has been great and has been highly appreciated.

The Veteran Secretary.

Truly the Secretary of the State Board of Health of Michigan is a veteran, not because of his advanced age, not because he served through the war of the rebellion, not for the many battles he has fought for the public health, but because he has served the State long and faithfully in the cause of humanity. For twenty-five long years he has had his finger on the public pulse, and during those many years he has faithfully and fearlessly stood by and held his hands upon the throttle of that great engine that has guided public-health work in Michigan during the past quarter of a century.

Fresh from the war of the rebellion and from the labors of regimental surgeon, where his duties required him to keep the soldiers from sickness, and in the prime

of life, he could appreciate the need for a State health service. The movement for this Board was conceived by him, and he energetically advocated it until the legislature enacted the law establishing the Board. He was its first secretary, and its only secretary. In the face of better prospects in other lines of work, his love for public-health work would not permit an acceptance of the proffers. Considering the nature of the work devolving upon him, the remuneration has been insignificant compared with that received by an active practitioner or by other talent in the various walks of life.

Much of the progress made by the Board along the various avenues of its humanitarian labors, has been suggested by the secretary and guided by him through the many stages of development, although he may not have been individually identified with the work.

The secretary possesses an immense fund of knowledge, not only in the field of the sanitarian, but upon many branches of general intelligence. He has been a prolific contributor to literature, and especially to that literature pertaining to sanitation.

Doctor Baker is a man of individual personalities, a man with strong determination, and he possesses almost superhuman energy and vitality. In scientific work, in public life, and in private life he is highly esteemed, and is a recognized authority along lines of his special inclinations. Not difficult of approach, generous, affable, he has been a benefactor; many an ambitious youth owes his success in life to the magnanimous spirit of Doctor Henry Brooks Baker, for a quarter of a century the efficient Secretary of the Michigan State Board of Health.

The Members.

During the existence of the Michigan State Board of Health there have been twenty-three different members, some of whom have served less than the time for which they were appointed while others have served two and even three terms, members being appointed to serve for six years. This service for the people of the State of Michigan has been given without remuneration of any kind and has involved great and continuous labor, careful thought and at all times great anxiety to perform the best work possible on subjects involving life or death to thousands of our people. Much of the work has been done in committees and under circumstances such that general public recognition of it has been impossible. It has had to do with epidemic, endemic and contagious diseases, with sanitary drainage of land, sewerage and house drainage in cities, the use of alcoholic liquors, the sanitary construction of houses, including the ventilation of public and private buildings, the examination of plans for public buildings, the work of educating the people by means of specially-prepared pamphlets teaching how the several communicable diseases are spread and how restricted, and on other special sanitary subjects, the work of the forty-five sanitary conventions in different parts of the State, the work of the several State Conferences of Local Health Officials, and numerous other lines of effort which have been carefully planned and laboriously carried out. All this

labor has been performed without any compensation whatever, and constitutes a contribution to the welfare of the State which is priceless and beyond computation.

The philanthropic men who have done this noble work deserve the gratitude of the people of Michigan. Seven of the twenty-three members and ex-members have passed away, and their deeds should be recorded and their memories cherished through all coming time.

