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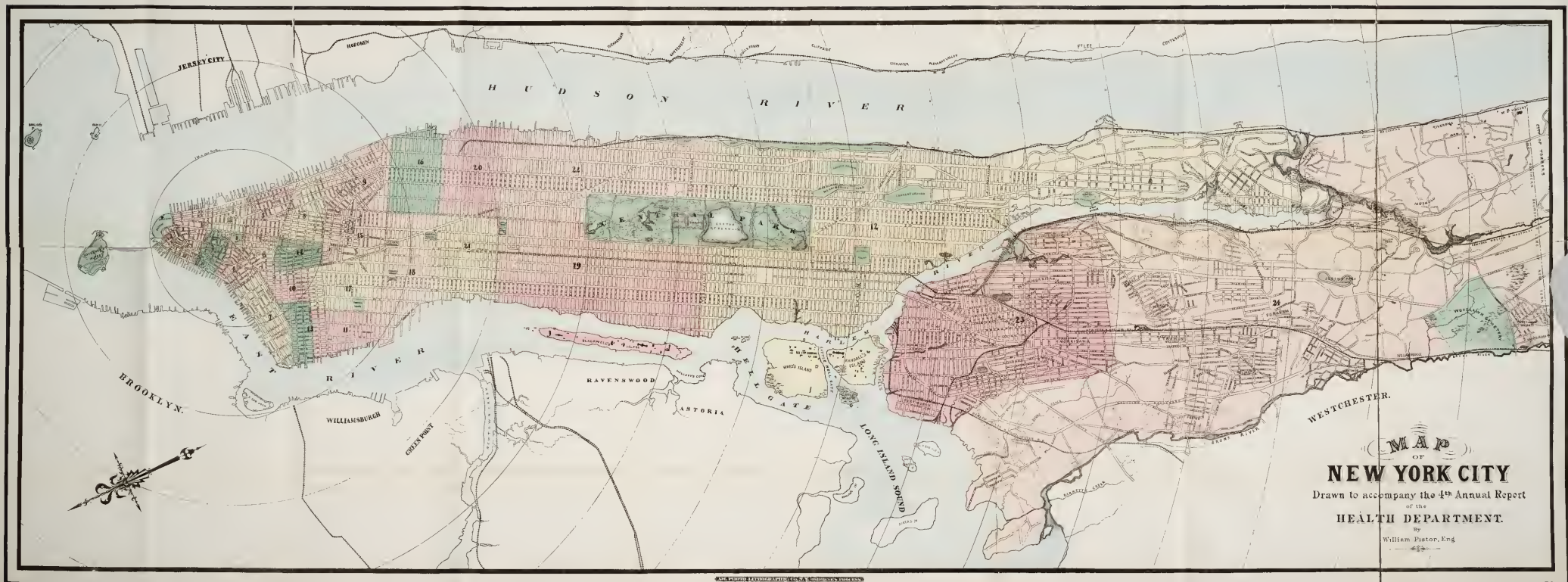
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MAP
 OF
NEW YORK CITY
 Drawn to accompany the 4th Annual Report
 of the
HEALTH DEPARTMENT.
 By
 William Pistor, Eng.

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FOURTH ANNUAL REPORT

OF THE

BOARD OF HEALTH

OF THE

HEALTH DEPARTMENT OF THE CITY OF NEW YORK.

May 1, 1873, to April 30, 1874.

NEW YORK:
D. APPLETON AND COMPANY,
549 & 551 BROADWAY.

1874.



WALTER EMERSON

Officers of the Board.

WALTER DE F. DAY, M. D., *Sanitary Superintendent.*
ELISHA HARRIS, M. D., *Register of Records.*
WILLIAM P. PRENTICE, *Attorney and Counsel.*
GEORGE S. HASTINGS, *Chief Clerk.*
STEVENSON TOWLE, *Consulting Sanitary Engineer.*
E. G. JANEWAY, M. D., *Consulting Pathologist.*
DANIEL DRAPER, M. D., *Consulting Meteorologist.*
EDWARD CURTIS, M. D., *Consulting Microscopist.*
A. F. LIAUTARD, M. D., *Consulting Veterinary Surgeon.*
CARL PFEIFFER, *Consulting Sanitary Architect.*

Sanitary Inspectors.

| | |
|-----------------------------|---------------------------|
| ADONIRAM B. JUDSON, M. D. | CHARLES F. ROBERTS, M. D. |
| STUYVESANT F. MORRIS, M. D. | ROGER S. TRACY, M. D. |
| WILLIAM H. B. POST, M. D. | JOSEPH D. BRYANT, M. D. |
| CHARLES P. RUSSEL, M. D. | WILLIAM E. HALL, M. D. |
| AUGUSTUS VIELE, M. D. | |

Assistant Sanitary Inspectors.

| | |
|-----------------------------|------------------------------|
| BERNARD HUGHES, M. D. | JOHN E. COMFORT, M. D. |
| ALLAN McL. HAMILTON, M. D. | CHARLES F. RODENSTEIN, M. D. |
| CHARLES E. LOCKWOOD, M. D. | PALUEL DE MARMON, M. D. |
| WILLIAM A. EWING, M. D. | EUGENE B. SANBORN, M. D. |
| GEORGE W. FOWLER, M. D. | HENRY SHEPPARD. |
| ALEXANDER STRONG, M. D. | ELWYN WALLER, E. M. |
| CALEB H. ATWATER, M. D. | THOMAS J. NEALIS. |
| NATHANIEL B. EMERSON, M. D. | CHRISTOPHER Y. HAMMOND. |

Secretary's Department.

| | |
|---|-------------------------------------|
| EMMONS CLARK, <i>Secretary.</i> | JOSEPH H. HANSON, <i>Clerk.</i> |
| GEORGE S. HASTINGS, <i>Chief Clerk.</i> | EDWIN B. LENT, “ |
| CASPAR GOLDBERMAN, <i>Aud. Clerk,</i> <i>and Chief Clerk to Secretary.</i> | JOSEPH F. SWORDS, “ |
| JAMES A. HILL, <i>Clerk.</i> | MARTIN KELLY, <i>Janitor.</i> |
| | WILLIAM H. DAYAS, <i>Messenger.</i> |

Attorney's Department.

| | |
|---------------------------------------|----------------------------------|
| WILLIAM P. PRENTICE, <i>Attorney.</i> | WM. F. T. CHAPMAN, <i>Clerk.</i> |
| EDWARD A. FARRINGTON, <i>Clerk.</i> | CHARLES HOYER, “ |

Bureau of Sanitary Inspection.

| | |
|---|--|
| WALTER DE F. DAY, M. D., <i>Sanitary Superintendent.</i> | HERMAN ENDEMANN, Ph. D., <i>Chief of Disinfecting Corps.</i> |
| EDWARD H. JANES, M. D., <i>Assistant Sanitary Superintendent.</i> | WM. ROBERTS, <i>Disinfecting Corps.</i> |
| JAMES R. GRISWOLD, <i>Chief Clerk to Superintendent.</i> | THOMAS D. YATES, “ “ |
| WILLIAM B. FERNHEAD, <i>Clerk.</i> | BARTH'W MCGOWAN, “ “ |
| BLOOMFIELD USHER, JR., “ | WILLIAM REYNOLDS, “ “ |
| ROBERT C. MORGAN, “ | JOHN J. DEVITT, “ “ |
| WILLIAM A. SMALLEY, “ | RICHARD KIERNAN, “ “ |
| JOSEPH L. BERKWICH, <i>Messenger.</i> | ROBT. DANFIELD, Jr., “ “ |
| | SIGISM'ND DAVIDSON, “ “ |

Bureau of Vital Statistics.

| | |
|--|----------------------------------|
| ELISHA HARRIS, M. D., <i>Register of Records.</i> | HENRY G. WHEELOCK, <i>Clerk.</i> |
| JOHN T. NAGLE, M. D., <i>Deputy Register of Records.</i> | WILLIAM LEGGETT, “ |
| LOUIS KRAUSHAAR, <i>Clerk.</i> | OGDEN N. CHAPIN, “ |
| JACOB A. WEIL, “ | JOHN W. CONKLIN, “ |
| EBENEZER W. FARRINGTON, “ | WILLIAM H. RESSEGIUE, “ |
| ALBERT M. HOLDEN, “ | CHARLES BUCKINGHAM, JR., “ |
| | ALLOTT LODGE, “ |

PROPERTY OF
WILLIAM EMERSON

HEALTH DEPARTMENT,
No. 301 Mott Street, New York,
June 1, 1874.

TO THE HON. WILLIAM F. HAVEMEYER,

Mayor of the City of New York.

SIR: I have the honor to transmit the Annual Report of the Board of Health of the Health Department of the City of New York, for the period commencing May 1, 1873, and ending April 30, 1874, containing the Vital Statistics of the city for the year 1873.

Respectfully yours, etc.,

EMMONS CLARK,

Secretary.

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Board of Health.

CHARLES F. CHANDLER, Ph. D., } *Commissioners of Health.*
STEPHEN SMITH, M. D., }

S. OAKLEY VANDERPOEL, M. D., *Health Officer of the Port.*

HENRY SMITH, *President of the Board of Police,*
(May 1, 1873, to February 23, 1874).

HUGH GARDNER, *President of the Board of Police,*
(March 17, 1874, to April 30, 1874).

President.

CHARLES F. CHANDLER, Ph. D.

Secretary.

EMMONS CLARK.

REPORT.

TO THE HONORABLE WILLIAM F. HAVEMEYER,

Mayor of the City of New York:

THE Board of Health of the Health Department of the City of New York respectfully submits the following Annual Report, which contains a review of its proceedings for the year ending April 30, 1874.

Reorganization.—The Board of Health, reorganized under chapter 335, Laws of 1873, held its first meeting at No. 301 Mott Street, on the 14th day of May, 1873, all the Commissioners present, viz.: Henry Smith, President of the Board of Police; S. Oakley Vanderpoel, M. D., Health Officer of the Port; Charles F. Chandler, Ph. D., Commissioner of Health and President of the Board, and Stephen Smith, M. D., Commissioner of Health. Emmons Clark was elected Secretary of the Board. The two Bureaux provided for by law, and of which the "Sanitary Superintendent" and "Register of Records" are the chief officers respectively, were at once organized and called the "Sanitary Bureau" and the "Bureau of Vital Statistics," and the powers and duties were assigned to each as prescribed by law, and the rules and regulations of the former Board. The duties of the Sanitary Permit Inspector under the preceding Board were duly conferred upon the Sanitary Superintendent and Secretary. As the officers, clerks, and employés of the former Board were by law transferred to the service of this Board until the appointment of their successors, there was no interruption in the business of the Department. The routine of the business of the Board and the forms and methods of transacting the same required no material modification, and were continued in use in the Department.

Rules and Regulations.—The rules and regulations governing the Health Department as before existing, after a critical examination, were adopted without material alteration. They had been so perfected during the period since the organization of the Metropolitan Board of Health in 1866, that the only important changes made were those rendered necessary by the reduction in the number of Commissioners, and of the Bureaux of the Department. Among the alterations in the rules and regulations worthy of special notice, may be

mentioned a radical change in the construction of the Standing Committees of the Board, the holding of regular meetings twice instead of once in each week, and the examination of all applicants for appointment in the Department. The officers of the Board, before called Health Inspectors, were in the rules and regulations, as amended, designated Sanitary Inspectors.

The Sanitary Code.—In the discharge of the duty imposed by section 82, of the act entitled “An act to reorganize the local government of the City of New York,” passed April 10, 1873, which declares that it shall be the duty of the Board of Health of the Health Department, immediately upon its organization, to cause to be conformed to Article II. of said act the Sanitary Ordinances then or lately adopted by the existing Department of Health, the Board, immediately upon its organization, proceeded to the consideration of this subject, and, on the 2d day of June, adopted the “Sanitary Code,” and caused the same to be published. The Sanitary Code, as adopted and published by this Board, is a copy of the Sanitary Code existing previous to the passage of the act above referred to, with the exception of the immaterial changes necessary to conform it to said act, and some changes in the numbers of the sections for the purpose of grouping sections relating to the same subject under their proper heads. The Sanitary Code is a compilation of the ordinances relating to the public health, which have been, from time to time, adopted by the proper authorities of the city, during its corporate existence, and which were collected and reënacted, under the authority of law, by the Metropolitan Board of Health in 1866. By the acts of 1870 and 1873, reorganizing the local government of the City of New York, the Sanitary Code of the City of New York has received indorsement and confirmation. To the Sanitary Code, as re-adopted June 2, 1873, this Board has, by virtue of and in pursuance of the authority and power conferred by law, added some additional provisions for the security of life and health in the City of New York, all of which have been duly published as required by law.

Appointments.—In addition to the officers, clerks, and employés in the service of the Health Department at the time of the organization of this Board, who were applicants for reappointment, a large number of new applicants urged their claims for appointment to the various positions in the Department. That the Board might avail itself of the services of the most intelligent and faithful of those already on duty, and select from the numerous applicants those best qualified by education and general character to perform the duties required, the Committee on Applications instituted an examination of all applicants for appointment and reappointment. A series of questions was presented to each class, to which answers were required to be written by the candidates while present at the office of the Board. To each class the questions presented were such as pertained to their special duties as clerks or inspectors, and as would test the ability and qualification of the respective applicants. For clerkships, the applicants were so examined as to ascertain their qualifications in penman-

ship, copying, spelling, punctuation, and in the four simple rules of arithmetic; to applicants for the position of Sanitary or Assistant Sanitary Inspectors were presented questions relating to the cause, diagnosis, care, and treatment of contagious diseases, the ventilation of tenement-houses, drainage, the use of disinfectants, etc., etc. The answers given to the questions proposed were critically examined by the committee, and its decision as to their relative value was recorded. As a rule, the answers were pertinent and generally correct, and to select from the number of applicants found competent was an embarrassing duty. The number of applicants examined was nearly one hundred and fifty, from which number were selected the sanitary officers and clerks of the Department. The ability and fidelity with which the Board has been served by its employés justifies the care exercised in the selection, as well as the method of ascertaining their qualification. The names of all officers, clerks, and employés of the Board, on the 30th day of April, 1874, are forwarded herewith.

Honorary Appointments.—During the year the Board has received valuable aid and counsel from several gentlemen of distinguished scientific attainments, upon whom it has conferred honorary appointments in recognition of their services. The following are the honorary appointments referred to :

Dr. E. G. Janeway, Consulting Pathologist.
 Dr. Edward Curtis, Consulting Microscopist.
 Dr. Daniel Draper, Consulting Meteorologist.
 Dr. A. F. Lioutard, Consulting Veterinary Surgeon.
 Stevenson Towle, Consulting Engineer.
 Carl Pfeiffer, Consulting Architect.

By resolution of the Board no salary is attached to any honorary appointment, nor are such appointees authorized to incur any expense in the name of the Board, without its express order or consent.

Orders of the Board.—The orders of this Board for the abatement of nuisances are issued upon the facts and evidence contained in the written reports of Sanitary Inspectors, the result of personal inspections of the premises complained of. Such reports are numbered, and placed on file, and orders with corresponding numbers, in the form required by law, and applicable to each case, are issued in writing, and served upon the owners, lessees, or tenants of the premises. Generally the orders of the Board are promptly and cheerfully complied with. Whenever a party affected by an order of the Board expresses dissatisfaction with the terms of such order, or considers the same unnecessary or unreasonable, the officers of the Board are instructed to explain the circumstances which render such order necessary, or, if there is any doubt as to the facts in the case, to cause a reinspection of the premises. The result of this official action is a general compliance with the requirements of the Board upon notice. But whenever the orders of the Board are not complied with, and there has been no request for a modification or suspension of the order, or a

hearing thereon, suits are at once instituted for penalties, and this speedily secures the necessary compliance, except in a limited number of cases. It is rarely necessary for the Board to execute its own orders, by reason of the refusal or neglect of the owners or lessees of property; though occasionally nuisances are of so aggravated a character that the abatement of the same cannot await the delays necessarily attending suits for penalties.

During the period covered by this Report, the number of orders issued by this Board for the abatement of nuisances was sixteen thousand four hundred and eight. Of this number, six thousand three hundred and fifty-one were issued under the first subdivision of section 14 of chapter 74, Laws of 1866, by the terms of which the party served is allowed three days in which to demand a hearing by the Board of the testimony which may be presented, to show that the order should be modified or revoked. In cases where no hearing has been asked for, and the order has not been complied with, final orders to the number of twelve hundred and twenty-one have been issued, and the Board has directed the Attorney to commence suits for penalties for non-compliance with such orders. All other written orders, in number ten thousand and fifty-seven, have been issued under the second subdivision of section 14 of chapter 74, Laws of 1866, and are of a peremptory character requiring that the nuisance be abated within five days; and, if not complied with, the Attorney has been directed to commence actions for penalties for non-compliance. In a few of the most aggravated cases, the Sanitary Superintendent has been directed by the Board to execute the orders, but the want of money for that purpose has prevented the Board from promptly executing many orders for the abatement of important nuisances, and has compelled it to resort to suits for penalties.

The following is a statement of the subjects of the orders above referred to :

Alleys, cleaned, disinfected, drained, graded, paved, or repaired.

Areas, cleaned and disinfected.

Ceilings, cleaned and whitewashed.

Cellars, cleaned, disinfected, connected with sewer, drained, filled, graded, or vacated.

Cesspools, cleaned, disinfected, connected with sewer, covers made for, emptied, filled, made, or repaired.

Cisterns, covers made for, disinfected, emptied and cleaned, filled, or repaired.

Drains, cleaned, disinfected, filled, made, obstructions in removed, or repaired.

Floors, house, privy, or stable, repaired, or relaid.

Gutters, house, sidewalk, or street, cleaned, obstructions in removed, or repaired.

Halls, cleaned or whitewashed.

Hydrants, removed or repaired.

Leaders, connected with sewer, extended, made, repaired, or obstructions in removed.

Lots, vacant, cleaned, disinfected, connected with sewer, drained, filled, graded, or fenced.

Manure-vaults, cleaned, disinfected, constructed, covered, or repaired.

Pigs, removed, and pens cleaned, disinfected, or removed.

Pipes (soil and water), cleaned, extended, obstructions in removed, repaired, extended, or trapped.

Ponds, drained or filled.

Premises, cleaned, disinfected, connected with sewer, fumigated, or repaired.

Privies, disinfected, emptied, and cleaned.

Privy-houses, altered, cleaned, constructed, removed, or repaired.
 Privy-vaults, connected with sewer, ventilated, filled, made, or repaired.
 Roofs, repaired.
 Sewer-pipes, constructed, obstructions in removed, repaired, or trapped.
 Sidewalks, cleaned or reset.
 Stables, cleaned or removed.
 Stagnant water, removed.
 Urinals, cleaned, constructed, or repaired.
 Water-closets, cleaned, disinfected, connected with street-sewer, constructed, removed, or repaired.
 Walls, cleaned and whitewashed.
 Yards, cleaned, disinfected, drained, filled, graded, paved, or repaired.

Suits for Penalties.—Upon application to the Corporation Counsel, this Board was duly authorized to commence actions for penalties in the name of the Mayor, Aldermen and Commonalty for non-compliance with the orders of the Board, and for violations of the Sanitary Code. By section 81 of chapter 335, Laws of 1873, this Board is authorized to appoint an Attorney, and William P. Prentice was duly appointed to that office. In the laborious duties of said office he has been assisted by George S. Hastings, the Chief Clerk of the Board. The following summary will show the volume and character of the business transacted in the office of the Attorney during the year ending April 30, 1874:

| | |
|---|------------|
| Number of actions commenced..... | 3,117 |
| Classified as follows: | |
| For non-compliance with the orders of the Board..... | 2,985 |
| For violations of the Sanitary Code..... | 132—3,117 |
| Of this number there are now pending..... | 425 |
| Discontinued for all causes, nuisance having been abated in each instance..... | 2,099 |
| Tried and judgment rendered for plaintiff..... | 531 |
| Judgment of dismissal, or nonsuit..... | 62—3,117 |
| Amount realized in settlement of actions, and deposited with the City Chamberlain during the year..... | \$9,872 22 |

In all cases of discontinuance or settlement of suits, compliance with the order, ordinance, or law, upon which the proceeding was based, has been made a condition precedent. By this method, the collection of but a small percentage of the penalty incurred has not been attended with the diminution or sacrifice of a proper respect for the authority of the Board.

Tenement-Houses.—The thorough enforcement of chapter 908, Laws of 1867, commonly known as the “Tenement-House Act,” has resulted in a considerable improvement in the condition of the tenement-houses of this city. Additional means of ventilation have been generally secured; privies and drains have been improved; the attention of owners and lessees to the proper

care of tenement property has been enforced, and the attempt has been made, with some success, to educate the people in the densely-populated parts of the city as to the necessity of cleanliness, and obedience to the sanitary regulations of this Board. But the twenty-four thousand tenement-houses of the city require, and will continue to require, constant supervision and frequent inspection. Rooms will be found overcrowded; windows and doors and apertures for ventilation will often be purposely closed; refuse matter will be thrown into the sinks and water-closets, clogging the waste-pipes and sewer connections; and filth will accumulate in the halls, cellars, and yards. The greatest watchfulness on the part of this Board cannot entirely relieve this city from the evils of overcrowding. It is confidently believed that rapid and cheap transit, by which a part of the laboring population of the city would obtain houses in rural or more sparsely-populated districts, will afford the desired relief. When mechanics and laborers can reach their homes in quick time, and at a moderate cost, it is believed that they will not all be content with their limited quarters in the tenement-houses and densely-populated wards of the city. To the health and comfort of the poor of New York, cheap and rapid transit is of the utmost importance, as the most practicable method of relief from the surplus population which now compels them to locate their families in those overcrowded parts of the city adjacent to their workshops or the places of employment. The enlargement of the city limits will, it is hoped, induce some portion of the tenement-house population to remove from their crowded homes, which at best are very unhealthy, to small and more isolated cottages in the districts beyond the Harlem River. The Board considered this subject of sufficient importance to memorialize the Legislature, urging the necessity for cheap trains, morning and evening, as an inducement to the laboring-classes to seek houses in the new wards; such inducement having been found very effective in London and Boston. The Reports of the Sanitary Committee upon the relief of overcrowded districts is appended. The statistics of mortality afford ample and indisputable evidence of the value of the sanitary work of the Board of Health of this city among the habitations of the poor. During the past year the Board has given special attention to this subject, and has caused a careful inspection to be made of those tenement-houses which, during the year 1872, exhibited the greatest mortality, and by the proper order in each case has endeavored to improve the condition of the premises. The privies have been cleaned or disinfected, and, whenever so located that the odors entered the doors or windows, ventilating-shafts have been ordered, extending from the interior of the privies to a point above the roofs of the buildings. No greater improvement for large tenement-houses has been introduced than properly-constructed ventilating-shafts, which convey the privy-odors away from the habitations of the crowded poor. The cellars of tenement-houses, when reported unfit for human habitation, have been vacated; white-washing and other methods of cleanliness have been ordered and enforced, and various other measures have been inaugurated for the protection of the inhabitants from the usual diseases of the summer months, and from impending pesti-

lence. This important subject will continue to receive the necessary attention of this Board.

Under the powers conferred by section 11 of the Tenement-House Act, the Board has caused twenty-four such houses as were certified by the Sanitary Superintendent to be unfit for human habitation, by reason of want of repair, or because of their being so infected with disease as to be likely to cause sickness among their occupants, to be vacated, and has ordered that the same be not reoccupied until rebuilt or properly repaired. Prominent among these were Nos. 5, 7, and 9 Mulberry Street, formerly an old church, but then occupied by twenty-one families, containing some eighty individuals. On consulting the records of deaths in the Bureau of Vital Statistics, the death-rate for 1872, in these premises, was shown to have reached the height of 96.7 per 1,000. Complaints on four other buildings, found dangerous from faulty construction, were referred to the Department of Buildings. This provision of the act referred to has been found most valuable and salutary, and its enforcement results in the erection of new and improved buildings, or the thorough repair of those most conspicuous for dilapidation. Relief is not only afforded to the suffering tenants, but in every case the owners or lessees of the property have found that the increased receipts for decent accommodations amply justified the improvements ordered by the Board.

Cellars.—During the early part of the year 1873 the Board of Health ordered a thorough inspection of the cellars of the city used as human habitations. This sanitary inquiry was directed to the following subjects, viz.: number, size, and condition of rooms occupied; number of persons in family; number of lodgers; diseases and mortality of cellar population; condition of floors, and of space underneath; height of ceilings above the level of the adjoining ground, in front and rear; the diameter and depth of, and space in front and rear; number and size of windows; means of ventilation, and condition of drainage. The result of this important investigation was, that about five hundred and fifty of the cellars in that part of the city south of Houston Street were declared unfit for human habitation, and were ordered to be vacated. By constant and persistent pressure by the officers of the Health Department, both upon landlords and tenants, about four hundred of the orders to vacate cellars were complied with, but early in June one hundred and fifty orders were returned to the Board with the report that all peaceful and persuasive efforts to secure compliance had been exhausted. The Board therefore directed the Sanitary Superintendent to execute and enforce the orders referred to, and during the month of June, with the aid and assistance of the Sanitary Company of Police, all cellars below Houston Street, which had been declared unfit for human habitation, were vacated by the ejection of the persons occupying them, and of their furniture and effects. In the performance of this duty, the officers of the Health and Police Departments exercised due kindness and consideration toward the choleric and unfortunate people removed, and carefully avoided the destruction or injury of their property. On the 12th of August, the Board

directed the Sanitary Superintendent to cause an inspection to be made of all cellars north of Houston Street, and such as were found deficient in light, ventilation, or drainage, or not conforming in other respects with the provisions of the Tenement-House Act, were ordered vacated, and to be no longer used as human habitations. The action of the Board in this particular has resulted in a great improvement in the sanitary condition of the unfortunate class heretofore crowded into the dark, damp, and unhealthy cellars of the city.

House-Drainage.—During the past year the investigations of the Sanitary Inspectors have shown that some of the greatest and most frequent evils with which the occupants of our dwelling-houses are afflicted, are caused by imperfect sewerage.

This evil is not confined to any particular class of dwellings, but is found in the best and the poorest houses alike, and is mainly attributable to the defective manner in which the house-drains or their connections have been laid; to a lack of good trapping and ventilation, and to the imperfect knowledge of the sanitary requirements of dwellings on the part of the persons usually intrusted with the construction of this class of work.

House-drains, to be safe and harmless to the inmates, should at all times be air and water tight, and have ample ventilation. But this much-desired condition is seldom found, and seems to be rather the exception than the rule, as experience has clearly shown that there are many causes constantly arising which tend to impair the efficiency of even the best-laid drains. From the liability of such drains to get out of repair and become the media for conveying the poisonous gases generated in the street-sewers into our dwellings, it will readily be seen that means should be taken for shutting off the gases in the main sewers from the house. This has been effectually done in many cases by providing a water seal or trap in the drain-pipe before connecting the same with the main sewer. Where there are wash-pipe connections with the soil-pipe from wash-bowls, bath-tubs, sinks, and safes, they should be well trapped by means of independent traps, and frequently supplied with water, and there should be a ventilating-pipe extended from the soil-pipe to the roof, which should be as near the diameter of the pipe intended to be ventilated as practicable. Where the sewer-pipes are laid below the surface of the cellar, the joints should be made with a good quality of cement, and the surface of the cellar likewise well cemented, and, before laying the drain, its bed should be well rammed, so as far as possible to prevent a settling of the ground and a breakage of the pipes from that cause.

Street-Cleaning.—By chapter 677, Laws of 1872, and by chapter 335, Laws of 1873, the Board of Police has full and exclusive power and authority, and is charged with the duty of causing all streets, avenues, lanes, alleys, gutters, wharves, piers, and heads of slips, to be thoroughly cleaned, from time to time, and to be kept at all times thoroughly clean. Although the Board of Health is relieved of all direct responsibility in respect to the cleanliness of the streets,

it is evident from a provision in section 67, of the last-named act, that the Legislature intended it should have a constant supervision of a subject of such vital importance to the public health. In the performance of this duty the Board has required the Sanitary Inspectors in charge of the several districts into which the city is divided, to inspect the streets of their respective districts, and to report weekly to the Sanitary Superintendent as to their condition. Abstracts from these reports are forwarded to this Board, and officially transmitted to the Board of Police, thereby notifying the Department having charge of the cleaning of the streets of any deficiencies or neglect on the part of its subordinates, which may have come under the observation of the Sanitary Inspectors. The Board of Police and the Inspector of Street-Cleaning have invariably manifested a desire to perform the necessary work in a manner satisfactory to this Board, and to the public. And it is due to them to state that in the opinion of this Board the streets of the city of New York, during the present summer, have been uniformly in a more cleanly condition than at any period during the past ten years. That the methods and machinery for cleaning the streets are susceptible of considerable improvement will hardly be questioned. And to keep them uniformly clean it is absolutely necessary that the police should enforce those parts of the Sanitary Code which prohibit the throwing of ashes, garbage, and other refuse matter, into the streets. However perfectly the work of cleaning the streets may be performed, and however large the expenditure of the public money for this purpose, the streets will not remain clean, if the sweepings and refuse of stores and houses are allowed to be thrown into them at all hours of the day and night. *The frequent and regular collection of garbage and ashes from stores, dwellings, and tenements of the city, the prompt arrest of persons who, under any pretense whatsoever, make the street a receptacle for any refuse matter, and the punishment of such offenders by the Police Courts, would materially aid the Police Department in keeping the streets uniformly and perfectly clean.* It is also necessary, if proper cleanliness of the streets is expected, that the dilapidated wood and cobble-stone pavements shall be replaced by stone-block or other reliable pavement, and that there shall be no delay in the repairs which are from time to time necessary.

By section 67, chapter 335, Laws of 1873, the Inspector of Street-Cleaning is required to "perform such additional cleaning as, in the opinion of the Board of Health, is necessary to keep said streets, avenues, and public places clean." But this Board has not at any time found it necessary to order any additional cleaning, and has secured the desired results by simply calling the attention of the Board of Police to such apparent deficiencies or neglect on the part of its subordinates as were reported, from time to time, by the sanitary officers of this Department.

Street-Garbage.—The disposal of the garbage, and of the dirt and manure collected in cleaning the streets, is a subject which has demanded the attention and action of this Board. The separation of the ashes from the garbage and street-manure, which, though difficult, is believed to be practicable, and which

would render the ashes useful as filling for sunken lots and for street construction, and the garbage valuable as food for swine, has not yet been successfully accomplished. Separate receptacles in each dwelling and tenement for ashes and garbage, and separate carts for the collection of the same, would probably solve the difficulty of disposing of these materials, and render both a source of income instead of expense to the city.

To dispose of this refuse matter as collected, without considerable expense to the city, has been attended with great difficulty. During the early part of the year 1873 a part of it was deposited upon the vacant and low lands lying between Ninety-second and One Hundred and Sixth Streets, Fifth Avenue and East River. But, with the advent of warm weather, complaints were received from the people residing in the vicinity, and the Board ordered that the material should be thoroughly disinfected before it was deposited, and that an equal quantity of fresh earth should be mixed with it. This did not relieve the apprehensions of the complainants, and, believing that they were entitled to protection from all possible danger, the Board, on the 18th day of July, ordered "that the Board of Police be requested and directed to stop and prevent the dumping of all street-filth and garbage on any vacant lots within the city limits." The predominance of coal-ashes over vegetable refuse during the winter months makes the use of this rubbish for filling less objectionable than during the summer, and for this reason the Board has permitted the use of some of this material for that purpose during the past winter.

Analyses of street-sweepings, made with a view to determine their fitness for filling sunken lots, will be found in the report of Assistant-Inspector Waller.

With a view to relieve the Police Department from the difficulties in the way of disposing of street refuse, the Board has caused the shores of Randall's Island to be examined, and has signified to the Department of Docks its approval of the plan for the erection of a bulkhead on the exterior water-line of the island, to provide a space for the deposit of the material collected by the Street-Cleaning Bureau.

Complaints having been received from occupants of West Washington Market, in respect to the street-sweepings and garbage dumped by employés of the Bureau of Street-Cleaning at the foot of Vesey Street, this Board caused the premises to be carefully inspected with the view of abating the nuisance. On the 5th of August, after a full consideration of the subject, the Board decided that the inclosing and covering of the Vesey Street dump, and the other improvements proposed, would not relieve the food exposed for sale in West Washington Market from the danger of contamination from the gases, vapors, dirt, etc., thrown out by the street-manure and garbage dumped there, and that the only satisfactory remedy was the entire removal of the dump.

Street Pavements.—Intimately connected with the subject of street-cleaning is the condition of the street pavements of the city. Dilapidated wood or stone pavements furnish reservoirs for putrefying street-filth which emits odors detrimental and dangerous to the public health, and defies the implements of the

street-sweepers. For sanitary reasons it is desirable that wood and cobble-stone should be replaced as soon as possible by stone-block or other pavement, and that there should be no delay in making necessary repairs. In the opinion of this Board, the expenditure of any reasonable amount of money for this purpose would be a judicious investment, and, apart from sanitary considerations, would insure a large saving in horses and vehicles by the increased loads which could be drawn on smooth roadways. To the Department of Public Works, charged with the duty of keeping the streets in repair, this Board has appealed for the necessary action, in all cases reported by the Sanitary Inspectors. That Department has given the communications from this Board prompt attention, and has abated many of the nuisances complained of by making the necessary repairs.

The health of the inhabitants of the Sixth Ward was seriously endangered during the year by delays in the repairing of Worth and other streets in the vicinity of the Five Points. This Board endeavored to secure the necessary signatures of a majority of the property-owners for the repavement of the streets referred to, but without success. It therefore caused said streets to be thoroughly disinfected, from time to time, that being the only method of relief within its power, until the necessary legislation is procured for the needed improvement. This Board has also endeavored to secure the necessary consent of the property-owners to the extension of the Twelfth Avenue, from Thirty-fifth Street to Forty-second Street, and is confident that the building and paving of the avenue as proposed would remove permanently many of the nuisances for which that vicinity has been long notorious.

Sewerage and Drainage.—The system of street-sewers is being gradually extended, to the great improvement of the sanitary condition of the city. The Board frequently certifies to the necessity, for sanitary reasons, of constructing new sewers, and the reports of its sanitary inspectors in respect to sewers needing repairs, or from which obstructions should be removed, are forwarded from time to time to the Department of Public Works, for the necessary action. While the street-sewers provide for the proper disposal of the surface and waste water of the city, time and experience have demonstrated that they do not always afford relief from the evils of soil-saturation. When natural water-courses are obstructed by the building of streets, or low and marshy grounds are reclaimed by filling, it has been found necessary to construct drains below the sewer-level in order to remove stagnant water, and to relieve the vicinity from malarious diseases. Under chapter 566, Laws of 1871, the Board of Health is authorized, upon the certificate of the Sanitary Superintendent, when for the protection of the public health it is necessary that any part or parcel of land within the corporate limits of the City and County of New York needs to be drained by other means than sewers, to direct that the same be done by and under the direction of the Department of Public Works. Considerable very important work has been accomplished under this law, and the health of the present and future occupants of the upper part of the island is thus being secured from malarious influences. The Twenty-third and Twenty-

fourth Wards of the city, lately the towns of Morrisania, West Farms, and Kingsbridge, of Westchester County, require a large amount of this kind of work, and the attention of the Department of Parks has been called to the sanitary importance of a correct sewerage and drainage system for this new and extensive district of the city. No part of the duties of this Department are of more prominent importance to the public health than its constant care to secure the people of the upper part of the city from the evils of soil-saturation and defective drainage. Some parts of the built-up portions of the city constantly suffer from the neglect to provide at the proper time for effective drainage, and relief can now only be secured at a vast expense and by a system of drains, based upon original maps and surveys, which would give outlets to the natural springs, ponds, and marshes, with which the island once abounded. The projected improvements in the Sixth Ward and vicinity, by which the grade of the streets is to be raised, it is expected will in time afford considerable relief to that section of the city.

Wharves and Piers.—The sanitary condition of the water-front of the city has not escaped the observation of this Board. A radical defect in the construction of the sewers of the city, by which their contents are discharged into the slips instead of being conveyed to the ends of the piers, is a prominent cause of complaint. Fermenting and decomposing animal and vegetable refuse in large quantities is constantly deposited, which at low tide is exposed to the sun, and emits odors dangerous to life and detrimental to health. Dredging is at present the only mode of relief, and this Board has been obliged in several cases to call the attention of the Department of Docks to the immediate necessity, for sanitary reasons, of removing these dangerous accumulations. That Department has cheerfully coöperated, to the extent of its ability, in this direction, but has been constantly embarrassed in the disposal of the slip-deposits. It is believed that the nuisance complained of cannot be permanently abated until a proper bulkhead and the piers are so constructed that the action of the tides will regularly wash the water-front of the city, and remove the foul refuse discharged by the sewers. The water-front between Thirty-sixth and Fortieth Streets, North River, is a notable illustration of the evil referred to. The importance of this subject to the public health commends it to the attention of all who are responsible for the present condition of the water-front of this city. The proposed improvements by the Department of Docks are of the utmost importance to the sanitary condition of the city, and rapid progress in the work is earnestly recommended, in the interest of the public health.

Public Markets.—Among the first subjects which demanded the attention of this Board, was the sanitary condition of the public markets. Nearly all of these were found to be in a dilapidated condition, deficient in ventilation, drainage, and the facilities for cleanliness. Notorious among the abuses which for a long period had been tolerated, was the erection of stands, stalls, or booths upon the public sidewalks and streets adjacent to Washington and Fulton Markets,

by which the markets proper were deprived of light and air, the gutters obstructed and rendered filthy, and the operations of street-cleaning impeded. In 1866 the Metropolitan Board of Health, immediately upon its organization, attempted the removal of these stalls as a nuisance, and declared their existence and continuance dangerous to life and detrimental to health. Judicial and legislative interference, however, prevented for a time their removal. After a careful examination of the subject, and repeated inspections, this Board requested their removal by the Department of Public Works, as obstructions to the public streets and sidewalks. The desired result was not accomplished, and the Board obtained and placed upon file the facts and evidence which, in its opinion, justified the declaration that the stalls referred to were a nuisance, dangerous to life and detrimental to health, and entered in its minutes, in accordance with the provisions of the law to that effect, the order for the removal of the stalls surrounding Washington Market. At a meeting of this Board, held on the 18th day of July, the Board of Police was directed to remove the booths, stalls, and stands around Washington Market, on or before the 21st. As the order was not duly executed, this Board, on the 22d day of July, resolved to execute the order through its own officers and agents, but directed the Board of Police to provide a sufficient force to protect the officers and agents of the Health Department, and laborers employed. On the 22d day of July the papers in a suit brought by Leonard Thorne and others against the Board of Health and others, praying for an injunction against the action of the Board in this matter, with an order by Judge Pratt, of the Supreme Court, staying all proceedings, and ordering the Board of Health to show cause on the following morning why a preliminary injunction should not issue, were served upon the Board of Health. On the 23d of July, upon the application of the Corporation Counsel and the Attorney of this Board, the stay of proceedings was vacated by Judge Pratt. During the evening of the same day, the duly-authorized officers of this Board, with a force of police and a gang of laborers, proceeded to Washington Market, and executed the order. The property of the occupants of the stalls was carefully protected, and at one o'clock P. M. of the following day the work of demolition and removal was accomplished. Subsequently the stalls in the streets in the vicinity, but not adjoining Washington Market, were also removed by this Board. Similar proceedings were taken for the removal of the stalls in the vicinity of Fulton Market; and on the 2d day of August the order was executed by the officers and agents of this Board.

During the month of August the Board caused careful inspections to be made of Catharine and Centre Markets, and placed upon file the facts and evidence which in its opinion justified the declaration that certain stalls, stands, or booths around said markets were public nuisances, dangerous to life and health. On the 12th day of August the Board ordered the removal of the offensive stalls, and the orders were generally complied with in due time by the owners or occupants.

The improved ventilation of these markets, and the cleanliness of the gutters and streets in their vicinity, resulting from this action of the Board, have

amply justified its efforts in that direction. On the 5th of August the Board approved of a report made by Sanitary Inspector Judson and Carl Pfeiffer, Consulting Architect of this Department, detailing the alterations in Washington Market necessary to improve its sanitary condition, and forward a copy of the same to the Controller for the necessary action. The principal alterations recommended were: "1. That the roof of the central portion of the market, about 30 feet wide by the entire depth of the building north and south, be raised at least 15 feet, so as to give more cubic space for the circulation of air, and to admit of additional sashes or openings with slats being placed in the exterior walls. 2. That over the portion not thus raised, skylights, 10 feet wide, covered with half-inch thick opaque glass, be constructed over every alternate passage across the entire width of the roof, and running north and south, the skylights to be sufficiently above the roof to admit upright, movable sashes 4 feet high, and provided with ventilators placed on the ridge of the skylights about 10 feet apart, and 2 feet 6 inches in diameter, and of such construction that half of them shall receive an inward and the other half an outward current."

The Board concurred in the opinion expressed in the report, that "the entire reconstruction of the market is desirable as a sanitary measure," and that "the above alterations only satisfy the immediate necessities of the case."

The subject of public markets is one which demands the immediate attention of the proper authorities. With few exceptions, they are unfit in every respect for the transaction of a business so important to the public health. This Board, as the recognized guardian of the public health, most earnestly protests against the continuance of such dilapidated, ill-ventilated, and badly-drained places, for the sale of meats and vegetables. This Board also respectfully protests against the occupation of any part of the public markets for restaurants, the constant fires and exhalations from such establishments being injurious and destructive to the meats and vegetables which are exposed for sale in their vicinity.

Unripe Fruit.—The consumption of unripe and decaying fruit and vegetables is believed to be a prominent cause of fatal diseases of the bowels, and of the large increase of the death-rate during the summer months. The attention of the Board was called to the subject by the Sanitary Committee on the 1st of August, with a view of preventing the sale of unwholesome articles of this kind from fruit-stands and venders' carts, especially in those parts of the city inhabited by the poorer classes. The Sanitary Superintendent was directed to cause an inspection to be made of fruits of every description, with instructions to seize, condemn, and cause the destruction of all unripe, decayed, and unwholesome fruits offered for sale, as provided by the ordinances of the Board. Special inspectors were appointed, and were detailed by the Sanitary Superintendent for this duty, and during the months of August and September were actively engaged in suppressing the traffic in fruit unfit for use. Large quantities of such fruit were condemned, seized, and removed from the city, and the

action of the Board resulted in a decided improvement in the character of the fruit exposed for sale, not only at the retail stands, but at the wholesale depots. To prevent the importation of unripe and unwholesome fruit from the rural districts, a circular was published by order of the Board, containing the sanitary ordinances applicable to the case, which was extensively distributed among fruit producers and dealers.

Slaughtering.—The number of the slaughter-houses in the city of New York was reported to be forty-nine, of which number forty-two were used in the slaughtering of cattle and sheep, and seven for the slaughtering of hogs. They are located near the North River, above and near Fortieth Street, and near the East River, between Forty-fourth and Forty-eighth Streets. They are frequently inspected by officers of this Board, a weekly report in detail is made upon the condition of each, and any defects in drainage or want of cleanliness are ordered to be corrected. But the business of slaughtering is not conducted in this city in such a manner as to be free from sanitary objections. In the opinion of this Board, this business should be conducted in very large establishments, in which the animals can be yarded and slaughtered, and the fat, blood, offal, and all parts of the animal, can be utilized while fresh and inoffensive. Large abattoirs in other cities have proved that with proper care, capital, buildings, and appliances, the slaughtering of animals, the melting of fat, and the utilization of the blood, offal, bones, etc., etc., can all be conducted without inviting the interference of the health authorities.

On the 27th day of June, 1873, the Board met the principal parties engaged in hog-slaughtering, and considered the practical methods of securing a thorough sanitary reform in the business, and subsequently received from them, in writing, their views upon the subject. The Sanitary Committee gave the matter a careful consideration, and on the 22d of July reported to the Board its conclusions: That the business should be entirely suppressed within the city limits, or that it should be concentrated or conducted in large abattoirs. It is confidently believed that the latter alternative will be accepted by the parties interested in the business. The Board also gave a public hearing on the 30th day of March, 1874, to all parties engaged in the business of slaughtering animals, upon a proposition "to prohibit the slaughtering of cattle, sheep, hogs, and calves, at any place in the city of New York south of One Hundred and Tenth Street, except in abattoirs or buildings, of a plan approved by the Board of Health, and of a capacity sufficient to accommodate the entire business of slaughtering in said city, and to admit of the yarding of the animals, and the use and disposition of all parts of the animals slaughtered, so as effectually to prevent all miasmatic or offensive odors therefrom, and to secure the wholesomeness of the meat as human food." At the date of this report the Board has this important subject under consideration, but has not arrived at any conclusion.

Fat-Melting, etc.—The complaints in respect to fat-melting in this city, and of the manner in which other parts of slaughtered animals are disposed of, are

due to the fact that the material is not always utilized while fresh and inoffensive; that the appliances and machinery used are defective or unfit for the purpose; and that the business is not conducted with proper care and the necessary capital. It is confidently believed that this business when transacted by careful and responsible parties, in large and properly-constructed establishments, the material used being fresh and inoffensive, can be conducted without material offense or danger to the public health. To secure this result, fat-melting should be directly connected with the business of slaughtering, as a part of a general abattoir system for utilizing all parts of the slaughtered animal upon the same premises. Until such facilities are afforded, a large part of this business will be conducted by irresponsible persons in the rudest and most offensive manner, in buildings and with machinery unfitted for the purpose, at night and with closed doors, and in defiance of law and sanitary ordinances. This Board has been obliged to employ special inspectors to patrol, night and day, that part of the city in which these offensive trades are conducted in defiance of the Sanitary Code and the orders of the Board, and to station officers at the doors of such establishments to secure compliance with the law. Arrests have also been made of persons found in these establishments violating the law. A gut-cleaning establishment near the foot of Fortieth Street, North River, was found to be so offensive, and the sheds so saturated with animal matter and filth, that they were in themselves a nuisance detrimental to health, and that the only effective remedy was to demolish the structures, and to burn the materials of which they were built, which was promptly done by officers of the Board. The Algonquin, a vessel lying at the foot of Fortieth Street, and occupied by the New York Fertilizer Manufacturing Company in manufacturing fertilizers from blood, scrap, and other animal matter, was by due process declared a nuisance, the business ordered to be discontinued, and the vessel removed. An application for an injunction against the Board was made by the New York Fertilizer Manufacturing Company, and, on the 2d day of August, Judge Pratt, of the Supreme Court, rendered a decision fully sustaining the powers of the Board in its efforts to abate nuisances of this character. Subsequently the vessel was removed from the pier, and the offensive business was continued upon the waters of the Hudson River, opposite the city, and near the shores of New Jersey. Many complaints in respect to the offensive odors from the steamer Algonquin made it the duty of the Board to enforce its order, and to cause the removal of the vessel beyond the city limits; it was accordingly towed to Barren Island. Several other offensive establishments located within the city, and engaged in utilizing offensive animal matter, have discontinued operations during the year, this result having been accomplished by the constant surveillance of premises occupied for such business by special inspectors detailed by this Board for that purpose.

Permits are granted by this Board for the rendering of fresh lard in all cases when the proper apparatus is used, and when the material is rendered upon the premises where it is taken from the slaughtered animal. This article to be merchantable must be free from taint or sourness, and for this reason the

same objections to the business are not likely to exist as to the melting of fat or tallow.

Stable-Manure.—The accumulation and storage of stable-manure and stable-straw upon vacant lots in the city is a nuisance which has long defied the sanitary authorities. The objections of dealers in this material to its immediate removal from the city are, that at certain periods the demand from the agricultural districts is light, and that the straw from stables is bulky, and is valueless until it is rotted by exposure to the elements. Upon its organization this Board found large deposits of manure in the vicinity of Thirty-seventh Street, North River, and Forty-fifth Street, East River. Orders were at once issued for its removal, and applications for permits to dump manure in any part of the city were denied. Attempts to violate the Sanitary Code in respect to dumping manure by those engaged in the business were frequent, and when arrests were made the Police Courts either discharged the offenders or inflicted only nominal penalties. This Board was therefore obliged to appoint special inspectors to watch the principal places of deposit, both day and night, and to invoke the special aid of the police in arresting offenders. By this means the Board succeeded, during the summer of 1873, in preventing the dumping of stable-manure within the city limits. But it was not until November that the last accumulations of the early part of the year were entirely removed; and this result was not accomplished until the Sanitary Superintendent had been directed to execute the orders of the Board upon this subject, and to contract for the removal of the manure beyond the city limits.

During the winter months (1873-'74) the dumping of stable-manure was permitted at the foot of East Forty-fifth Street and of West Thirty-eight Street, upon express stipulations, and heavy bonds, with the parties engaged in this business, that such manure should be removed from the city previous to the 1st day of May, and that meantime such arrangements be made for transportation and storage that it will be unnecessary hereafter to store any stable-manure within the city limits. At the date of this report, the parties referred to have acted in good faith so far as the removal of the accumulations of the winter months are concerned. When it is thoroughly understood that no part of the city of New York is to be made a dumping-ground for manure, that this aggravated nuisance and source of foul odors will not be tolerated, and that this valuable material must be dumped only upon boats for immediate removal (except during the period when the rivers are obstructed by ice and are not navigable for the manure-boats), it is believed that the business will adjust itself to the necessary sanitary regulations upon this subject. Proper economy in the use of straw for stable purposes would relieve the subject of the principal difficulties.

Night-Scavenging.—The removal of night-soil from the privies of the city in buckets, and its transportation to the boats furnished for its reception in rude carts, were so offensive, and detrimental to the public health, that the late Board of Health in 1872 welcomed the introduction of air-tight tanks for its trans-

portation and its removal from the privies to such tanks in air-tight hose by means of pumps, and gave the new process its official sanction. Experience, however, proved that the solid part of the contents of privies, and the foreign substances often found there, could not be removed effectually by this apparatus, and that many privies must be emptied in whole or in part by means of buckets or cans. The Legislature of the State on the 22d day of April, 1873, passed an act (chapter 251), giving to the Mayor the power to license scavengers, and to make rules and regulations for the government of this business. The rules and regulations adopted by the Mayor were substantially the same as existed before the introduction of the air-tight apparatus, and licenses were issued to the scavengers who adhered to the old system, as well as to the owners of the air-tight apparatus. Nearly all the scavenging work during the year ending April 30, 1874, has been performed by the old process. In the rules and regulations adopted by the Mayor, this Board is authorized to issue the permits which are required whenever privies are emptied, and on the 11th day of July this Board commenced the issuing of permits to the scavengers licensed by the Mayor.

Upon the frequent complaints made by citizens in respect to the offensive manner in which the night-scavengers performed the work of emptying privies, this Board directed the Sanitary Superintendent to thoroughly investigate the subject. On the 15th of August a report, based upon the personal observations of the sanitary officers, was submitted by the Sanitary Superintendent to the Board, which fully established the correctness of the complaints as to the offensive odors produced by careless scavenging, and by imperfect methods. The report concludes as follows:

“The system of scavenging now in vogue in this city is utterly unworthy of the age. Although it is undoubtedly possible, by great care and neatness, to empty vaults without offense by it, the temptation of darkness, which prevents surveillance, and the character of the employés, to whom ordure is not a nuisance, will insure the work being often done in a slovenly manner, allowing the air of densely-populated blocks to be nightly filled with the most poisonous and disgusting emanations, by which low forms of fever, diarrhoea, and dysentery are created or seriously aggravated. Every possible precaution should be thrown around this business, and any well-sustained complaint should cause the scavenger to lose his license.”

To effect an improvement in the mode of conducting this business, and to detect violations of the rules and regulations for the government of night-scavengers established by his Honor the Mayor, the Board appointed on the 19th day of August two special Inspectors for temporary service, to observe the operations of the scavengers. A considerable improvement was by this means effected in the manner of conducting the business, and while the special Inspectors remained on duty the rules and regulations were somewhat respected. Reports of delinquencies on the part of the night-scavengers, verified by the affidavits of the special inspectors, were duly forwarded to his Honor the Mayor, who is charged by chapter 251, Laws of 1873, with the licensing

of night-scavengers and the making and enforcing of rules for their government. This Board adheres to the opinion that night-scavenging should be done by air-tight apparatus (pumps and air-tight tanks and cans), and that the use of open carts and buckets, and the offensive nuisance which necessarily attends them, should be prohibited in this city. But under the act of the Legislature, which has removed from this Department all practical control over night-scavengers, this Board is powerless to effect any reform in the method of conducting this offensive business, or of enforcing any regulations which may have been made for the purpose of securing proper care and cleanliness in the operations of the scavengers.

Removal of Night-Soil from the City.—On May 1, 1865, a contract was made by the City Inspector with Thomas Andrews, for a period of ten years, to receive from the scavengers the night-soil of the city, and to deliver the same to Daniel Gallagher, at the place of deposit of the Lodi Manufacturing Company on the Hackensack River, the said Gallagher being the owner of a contract with the city, by which, for the sum of \$4,000 per annum, the city was bound to deliver the night-soil to the Lodi Manufacturing Company. Under this contract, the work was performed until June, 1870, when notice was received by the Board of Health from the parties representing the contractor, that the boats for receiving the night-soil would be withdrawn, and that work under the contract would cease on the 11th day of that month. The Board of Health was compelled, thereupon, to employ from day to day a party to receive, retain, and remove, all the contents of privies brought by scavengers' carts, as required by the original contract, for the sum of \$150 per day, or \$900 per week. In March, 1873, the Board of Health engaged Francis Swift to perform this work for the sum of \$634.62 per week, and he has continued to perform the same to the present time in an unexceptionable manner.

But the assignee of a contract with Daniel Gallagher, to receive on the Hackensack River the night-soil removed from the city of New York, has not complied with said contract. Suitable and sufficient receptacles for the material were not provided. The willful neglect of the assignee of the Gallagher contract to receive, and to provide a suitable place for the night-soil, compelled this Board, on the 28th day of July, 1873, to order the necessary arrangements to be made for its reception elsewhere. On the following day, Francis Swift, the contractor for the removal of night-soil from the city, was authorized and directed to secure, at a proper distance from the city of New York, a suitable place for its reception, provided that the city was subjected to no additional expense, and since that date there has been no interruption or delay in the disposal of this material.

Removal of Dead Animals, Offal, etc.—A contract was made in April, 1865, by the City Inspector, with the "Long Island Bone Laboratory Company," for the collection and removal of dead animals, and for the removal of blood, offal,

and other refuse matter from the city of New York, for a period of ten years. The dock at the foot of West Thirty-eighth Street was designated as the place for receiving dead animals, offal, etc., and was assigned to the City Inspector for that purpose, and the contractor agreed to provide suitable vessels for receiving the material, and to transport the same, at least once in each day, beyond the limits of the city. In the year 1867 the "New York Rendering Company," with a view of utilizing the material by a new patent process, became the assignee of the contract, or the agents for the original contractor. The apparatus for this purpose was located upon vessels lying at the dock at the foot of Thirty-eighth Street, North River; and, in the beginning, its operations were believed to be inoffensive. But the constant complaints of citizens, and frequent inspections by sanitary officers, established the fact that foul odors and offensive gases were caused by the operations of this company. Upon the organization of this Board in May, 1873, the New York Rendering Company was found to be violating both the spirit and letter of the contract referred to, and, while making no attempt to remove the dead animals, offal, etc., from the city limits, was actually creating a nuisance, dangerous to life and detrimental to health by its rendering operations. After a thorough investigation of the facts in the case, the Board, on the 17th of June, directed the New York Rendering Company "to discontinue the work of rendering dead animals and offal at the foot of Thirty-eighth Street, North River, on or before the 10th day of July next, and that thereafter they perform the work according to the specifications of the contract." The order was not obeyed, and on the 18th day of July the Board notified the New York Rendering Company that unless the rendering of offal and dead animals within the city limits was discontinued on or before the 21st of July, the Board would cause the arrest of all persons engaged in the business, and "also make arrangements with other parties for the removal of offal and dead animals, and the performance required of the said company by the terms of the contract." The company having removed the boat upon which offal and dead animals were rendered from the dock at the foot of Thirty-eighth Street, continued the business in the waters of the Hudson River, and, on the 25th of July the Board instructed the Sanitary Superintendent to place an inspector on the rendering-boat, and to ascertain when and where the rendering was conducted; and that, if it should be found that rendering was carried on anywhere in the city of New York, or its waters, the inspector was ordered to cause the arrest of all the persons directly or indirectly engaged in such rendering, or other offensive operation. The company then suspended the business of rendering, and undertook to comply with the terms of the contract, and to remove the offal and dead animals beyond the city limits. But complaints were forthwith received from various sources that the New York Rendering Company was throwing the offal in the lower bay, in such a way as to create a nuisance, and the fact that a large number of dead animals and immense quantities of offal appeared upon the shores of Long Island and Staten Island, and the waters of the bay, immediately after the suspension of the operation of rendering, seemed to confirm the fact. The Board soon obtained posi-

tive evidence that the New York Rendering Company had deposited offal and dead animals within the Bay of New York. All reasonable efforts to compel this company to comply with the letter and spirit of the contract had been exhausted, and on the 8th day of August the Board rescinded the contract.

On the same day, the Board arranged with Francis Swift to remove the dead animals, offal, etc., from the city to Barren Island, upon the same terms and conditions as those of the previous contract with the Long Island Bone Laboratory Company, and for the same consideration, with the express condition that none of said dead animals, offal, etc., shall be dumped in the waters of the bay, but shall be taken to said island, and be finally disposed of thereon.

The new contractor immediately introduced new and elegant closed carts for the collection of dead animals, by which their transportation through the streets has ceased to be offensive to the citizens.

Since that time no complaints have been received as to the care and cleanliness of the pier, or the manner in which the business of removing this offensive material has been conducted. The offensive odors which, during the operations of the New York Rendering Company at the foot of West Thirty-eighth Street, distinguished that part of the city, have disappeared, nor is there any evidence that any of the offal or any dead animals from this city find their way into the adjacent waters to annoy the neighboring cities and suburban districts. The result has justified this Board in insisting that the terms and conditions of the contract of 1865 should be carried out, both in letter and spirit.

The transporting of offal from the slaughter-houses on the east side of the city to the offal dock, foot of West Thirty-eighth Street, has been for many years a subject of frequent complaint by citizens residing upon the usual routes of such transportation. To relieve the public from this nuisance, the Board on the 1st day of August adopted an additional sanitary ordinance, prohibiting the transportation of offal or other refuse of slaughter-houses in that part of the city lying between Second and Tenth Avenues. In compliance with this regulation, the slaughtering establishments on the east side of the city have made arrangements with the contractor for the removal of offal, to receive their refuse material by boat in the vicinity of their places of business, and a part of the pier at the foot of East Forty-second Street has been appropriated for this purpose.

Manufacturing of Illuminating Gas.—The only company engaged in the manufacture of illuminating gas in this city which has been the subject of complaint to this Board during the past year, is the Metropolitan Gas-Light Company, at the foot of Forty-second Street, North River. The methods of purifying gas were the subject of a long and thorough investigation by the Metropolitan Board of Health in 1868, in which the *dry-lime process*, as conducted by this company, was condemned for sanitary reasons, and ordered to be discontinued. As the Metropolitan Gas-Light Company continued the use of this process, this Board, on the 20th day of June, notified its

President that it would require the "abandonment of the offensive dry-lime purification of gas as practised by the Metropolitan Gas-Light Company, on or before July 1, 1873." Subsequently the President of this Board met, by invitation, the directors of the company, and the result was a pledge that the dry-lime process of purification should be so modified as to be unobjectionable, as soon as the necessary changes in the works could be made. No complaints have been recently made to the Board against the large establishments for the manufacture of illuminating gas in this city.

Croton Water.—An analysis of the Croton water is made weekly by an officer of this Department, and the result is communicated to the Sanitary Superintendent, who is instructed to report to the Board any indications of impurities likely to endanger the public health. The facts heretofore established by chemical investigation as to the purity of the Croton water are constantly confirmed. The following are the results of the examination of the Croton water for the last week in each quarter of the year ending April 30, 1874:

WEEK ENDING JULY 26, 1873.

| CONSTITUENTS. | Grains in one U. S. Gallon of 231 Cubic In. | Parts in 100,000. |
|--|---|-------------------|
| Inorganic matter..... | 3.266 | 5.6 |
| Organic and volatile matter (loss on ignition)..... | 0.700 | 1.2 |
| Total solids in solution (dried at 260° Fahr.)..... | 3.966 | 6.8 |
| Suspended impurities..... | 0.043 | 0.0734 |
| Total solids..... | 4.009 | 6.8734 |
| Carbonate of lime, or its equivalent "hardness"..... | 2.146 | 3.68 |
| Oxygen required to oxidize organic matter..... | 0.0778 | 0.123 |

WEEK ENDING NOVEMBER 1, 1873.

| CONSTITUENTS. | Grains in one U. S. Gallon of 231 Cubic In. | Parts in 100,000. |
|--|---|-------------------|
| Inorganic matter..... | 4.664 | 8.0 |
| Organic and volatile matter (loss on ignition)..... | 1.400 | 2.4 |
| Total solids in solution (dried at 260° Fahr.)..... | 6.064 | 10.4 |
| Suspended impurities..... | 0.067 | 0.115 |
| Total solids..... | 6.131 | 10.515 |
| Carbonate of lime, or its equivalent "hardness"..... | 2.097 | 3.608 |
| Oxygen required to oxidize organic matter..... | 0.125 | 0.217 |

WEEK ENDING JANUARY 31, 1874.

| CONSTITUENTS. | Grains in one U. S. Gallon of 231 Cubic In. | Parts in 100,000. |
|--|---|----------------------|
| Inorganic matter..... | 3.499 | 6.0 |
| Organic and volatile matter (loss on ignition)..... | 0.223 | 0.4 |
| Total solids in solution (dried at 260° Fahr.)..... | 3.732 | 6.4 |
| Suspended impurities..... | 0.039 | 0.068 |
| Total solids..... | 3.771 | 6.468 |
| Carbonate of lime, or its equivalent "hardness"..... | 1.501 | 2.576 |
| Oxygen required to oxidize organic matter..... | 0.055 | 0.095 |

WEEK ENDING MAY 2, 1874.

| CONSTITUENTS. | Grains in one U. S. Gallon of 231 Cubic In. | Parts in 100,000. |
|--|---|----------------------|
| Inorganic matter..... | 3.383 | 5.8 |
| Organic and volatile matter (loss on ignition)..... | 0.816 | 1.4 |
| Total solids in solution (dried at 260° Fahr.)..... | 4.199 | 7.2 |
| Suspended impurities..... | ..... | ..... |
| Total solids..... | ..... | ..... |
| Carbonate of lime, or its equivalent "hardness"..... | 1.866 | 3.268 |
| Oxygen required to oxidize organic matter..... | 0.068 | 0.117 |

A detailed report on the water supply is appended.

Street Railroad Cars.—The frequent and fatal accidents which occur in this city, to persons getting on or off the front platforms of street-cars, was the subject of a report to this Board, on the 23d day of September, by the Sanitary Committee. In order to give practical effect to the rule established by the city railroad companies, which forbids persons from getting on or off the front platforms, the committee recommend that the companies should be required to inclose the front platforms of their cars in such a manner as to render them inaccessible to persons on the street.

The propriety of legislating to prevent accidents by which life or health is endangered, even though such accidents can only occur through the negligence of the individuals injured, is universally recognized, and this action of the Board in respect to accidents from street-cars is not without precedent. The Legislature of the State of Missouri enacted on the 6th day of February, 1866, that "no passenger shall be permitted to get on or off any car by the front platform while the car is in motion, and each car shall be furnished with such adjustable gate or guard as shall effectually prevent it."

On November 5th the Board heard statements of the presidents of the city railroad companies with regard to the provisions of the Sanitary Code, requiring

that the front platforms shall be inclosed, and that stuffed cushions shall not be used. To the latter requirement they promised compliance, but as to the former, they expressed their earnest belief that it was impracticable and impossible to so inclose the front platform as to prevent occasional accident and loss of life. The subject is still under consideration, and the Board will insist upon such practicable and feasible measures as will, in its opinion, diminish and prevent these accidents. Many complaints have been received with regard to the want of ventilation in street-cars, and this has been the subject of an investigation by the Sanitary Engineer of this Department. The Board is not entirely satisfied with any method for the improvement of the ventilation of city cars that has yet been submitted, but hopes that some satisfactory plan will be devised by which this serious evil can be remedied.

The Fourth Avenue Improvement.—The dangerous condition of the Fourth Avenue above Forty-ninth Street, on the line of the Harlem Railroad, during the year 1873, received due consideration from this Board. A careful inspection was made of the improvements in progress, and on the 9th day of December the Sanitary Committee submitted to the Board a report upon the dangers to life at various street-crossings, from the frequently-passing trains, and from the careless and inefficient manner in which pedestrians are protected from the excavations. This report also referred to the great importance of giving due attention during the progress of the work to the grading and sewerage along the line, to the end that the health of the vicinity should not in future be endangered by stagnant water or imperfect sewerage. A copy of this report was forwarded to the Common Council, with the request that ordinances be adopted for the protection of human life on the line of the Fourth Avenue, and for the grading of the street-gutters and sidewalks, so that all surface-water will be freely discharged therefrom. The completion of this great and important work upon the plans adopted for the sewerage and drainage of Fourth Avenue above Forty-second Street, will doubtless greatly improve the sanitary condition of that part of the city.

The Westchester District.—The annexation of Morrisania, West Farms, and Kingsbridge to the city of New York has increased the expenses as well as the jurisdiction of this department. The new territory was divided into three Sanitary Districts: the first, including Morrisania and a small part of Harlem; the second, West Farms, or the territory lying east of the Croton Aqueduct; and the third, including Kingsbridge, or the territory west of the Croton Aqueduct, as well as that part of the Twelfth Ward of the city of New York lying above One Hundred and Twenty-fifth Street. To each of these districts an Assistant Sanitary Inspector has been appointed and assigned. For the convenience of the rural district including the late townships of West Farms and Kingsbridge, the Assistant Sanitary Inspector at West Farms was authorized to grant burial-permits in cases of deaths occurring in said district. An additional member of the Disinfecting Corps was also appointed, and was located in Mor-

risania, and has been engaged under the direction of the Sanitary Inspectors of the new territory in the necessary disinfection in cases of contagious diseases, and in the disinfection of streets, gutters, privies, etc., etc. The importance of a complete and perfect system of sewerage and drainage for the newly-annexed districts has already been referred to. Some portion of the necessary work for sanitary reasons should be commenced and completed at the earliest period practicable.

The Thirty-eighth Street Nuisance District.—For many years that part of the city bounded by Thirty-seventh Street, Forty-second Street, Eleventh Avenue, and the North River, has been famous as the location of business pursuits which are, or are liable to become, dangerous to life and detrimental to health. In the vicinity of the offal-dock at the foot of West Thirty-eighth Street, manure-dumping, fat-melting, gut-cleaning, tripe-boiling, yarding and slaughtering of animals, soap-making, and other kindred occupations have been conducted, and to this section of the city have retreated those offensive trades which other localities would not tolerate. To abate the nuisances abounding in this district, the Board directed the Sanitary Superintendent to cause it to be patrolled hourly, day and night, by special inspectors, and that said inspectors be directed to cause the immediate arrest of any and all persons found directly or indirectly engaged in violating the Sanitary Code, and that they be also directed to report to the Attorney of the Board the circumstances of each and every violation as the basis of a warrant for the arrest of the proprietors or other persons under whose orders such violations take place. The inspectors detailed to the district were directed to give especial attention to the manure dumping-grounds, the fat-melting and slaughtering establishments, the hog and sheep yards, and the works of the Metropolitan Gas-Light Company. Under the vigorous measures thus inaugurated a marked improvement has taken place. Several offensive establishments have been closed, the dumping of stable-manure has ceased, the removal of offal and dead animals is conducted with the least possible offense, and more care and cleanliness are exercised by those engaged in pursuits which are liable to be offensive. A survey of the district has also been made, and maps have been prepared showing the boundaries of each lot, with the names of the owners, occupants, and agents, and the character of the business conducted thereon, for the use of the Board and its officers in future operations for the improvement and purification of the district. The grading and paving of Twelfth Avenue, between Thirty-fifth and Forty-second Streets, would materially improve the sanitary condition of this section of the city.

Hanover Square.—Upon complaints made by members of the New York Cotton Exchange and others doing business in the vicinity of Hanover Square, in respect to the offensive character of articles stored in that public place, the Board ordered inspections to be made of that locality. It was ascertained that offensive and damaged goods were frequently stored, exposed for sale, and sold at auction on Hanover Square, that the use of this square for temporary stor-

age interfered with the proper cleaning of the street, and that the refuse matter of various kinds collected there from time to time, and exposed to the alternate action of heat and moisture, became offensive and detrimental to health. On the 30th day of September, the Board ordered all goods stored in Hanover Square to be removed therefrom, and the use of said square for the storage of goods to be prohibited. The Attorney of the Board was also directed to commence actions against all parties violating the Sanitary Code by the use of Hanover Square.

Rescue of Drowning Persons.—The life-saving apparatus, which was placed by the Metropolitan Board of Health at the most important points upon the North and East Rivers for use in the rescue of drowning persons, was completely repaired in the summer of 1873, and such portions as had been lost in previous years were replaced. The Board has evidence of its usefulness in the preservation of life in many instances. The number of stations should be increased, and the usefulness of the apparatus would doubtless be enhanced if the persons regularly employed at the ferries and steamboat-landings were instructed and expert in its use, as well as in the resuscitation of persons rescued from the water.

Cholera in the Southwest.—During the month of March a disease appeared at New Orleans which, though markedly resembling Asiatic cholera, was called cholera-morbus. The mortality from this disease was slight, and about the 21st of June it disappeared from the mortality records of that city. But other cases of a similar affection appeared at different points along the river, and were traced to New Orleans. At Memphis this disease prevailed severely, and soon after it broke out at Nashville, where it assumed all the characteristic features of malignant cholera. It rapidly extended to other towns in immediate communication with Nashville and Memphis.

On the first appearance of this malady at New Orleans, this Board took active measures to place this city in good condition, and also to prevent the importation of cases by sea and land. The tenement-houses, then undergoing the usual spring inspection, were thoroughly renovated; all forms of nuisances were brought under the orders of the Board; and on the 6th day of June a circular was issued to keepers of lodging and immigrant houses, to the agents of steamship and railroad lines and to the public, which contained the necessary information as to the disinfectants and disinfection, and the sanitary rules to be observed when threatened by an epidemic of this character. The circular appears in the report of the Sanitary Superintendent.

There was much difference of opinion among physicians as to the nature of this epidemic, but in general it was not regarded as Asiatic cholera. In order to determine the nature of this disease, and the prospective liability of New York to an invasion by cholera from the West and South, the Board availed itself of the observations of Dr. John C. Peters, who had made special studies of cholera, and who visited Cincinnati, Nashville, and other towns, in pursuit

of this object. On the 22d of July he submitted to the Board a preliminary report, in which he stated his conclusions to be that the so-called cholera-morbus of the West is Asiatic cholera. His report, as well as a special report by Sanitary Inspector Judson upon the same subject, will be found in this volume.

Small-pox and Vaccination.—The city has been remarkably exempt from small-pox during the year, which fact is attributable mainly to the general vaccination and revaccination of the people of the city during the epidemics of 1870–1872. Exemption from this dangerous disease is only secured by constant vigilance in the use of the well-established measures of prevention; and to this end the Sanitary Superintendent was directed on the 9th day of December to commence the work of general vaccination by house-to-house visitation. He was also directed to prepare and submit to the Board the plan of a branch of service in the Sanitary Bureau, which shall secure the general vaccination in this city, as well as provide an ample supply of pure and reliable vaccine virus.

As the result of the consideration of this subject, this Board has memorialized the Legislature of the State for the passage of a law authorizing the appointment and maintenance in the city of a permanent corps of vaccinators, for the purpose of more effectually preventing the spread of small-pox by the thorough and systematic vaccination of all uninoculated persons. The proposed act also provides for the collection, preservation, and sale of pure vaccine lymph, or virus. The passage of this act will enable this Board to organize a new and most important branch of its service, and in due time to provide and furnish to the people of this city the most reliable facilities for the prevention of small-pox.

Disinfection and Disinfectants.—The value of disinfection as an auxiliary in preserving the public health and preventing the spread of disease has been fully established by various sanitary authorities, and science and experience have determined the kind of disinfectants best adapted to various forms of putrescent matter, and for the purification of clothing and dwellings. On the 2d day of June, the Board authorized the chairman of the Sanitary Committee to direct the disinfection of such gutters, streets, and places as may need the same, and disinfectants have been liberally used during the year, with satisfactory results. With a view to economy, this Board has as far as possible availed itself of the waste products of chemical manufactories for the purpose. Zinc-iron chloride solution has been freely used for the disinfection of privies, yards, cellars, street-gutters, etc., either alone or diluted with water or carbolic-acid solution. Chloride of manganese solution has also been used, but is obtainable only in small quantities in this city, on account of the limited manufacture of chlorine. Carbolic and cresylic acids of various grades have been used, from the crude or dead oil containing from five to fifteen per cent. of carbolic acid to carbolic acids of ninety-five per cent. The lower grade acids are employed for the disinfection of privies, street-gutters, etc., while the higher grades are used in the

sick-room, and for the disinfection of clothing. A diluted solution of the sulphate of zinc is used for the disinfection of infected clothing and bedding, and sulphate of iron for the disinfection of gutters, garbage-boxes, and privy-vaults. Sulphur is commonly employed for the fumigation or final disinfection of sick-rooms, sulphurous acid being produced by combustion for that purpose. The use of quick-lime for the disinfection of gutters has been discontinued, for the reason that it is far more expensive for that purpose than other chemicals. To disinfect the gutters of sixteen miles of street with fifty-two barrels of lime, employing a one-horse cart, and two laborers, costs one hundred and ten dollars, while the same work, with the same force, can be performed for sixty-two dollars and forty cents, using one hundred and forty-four gallons of zinc iron chloride disinfectant and twelve gallons of carbolic acid; and, if a two-horse cart with a large tank is used, the same work is done for forty-five dollars and forty cents. Other details in respect to the use of disinfectants may be found in that part of the report of the Sanitary Superintendent relating to disinfection and the operations of the Disinfecting Corps.

The Sanitary Bureau.—The Sanitary Bureau, of which the Sanitary Superintendent, Dr. Walter De F. Day, is the chief officer, is charged with the duty of inspecting, and reporting in proper form, all nuisances or causes which endanger the public health; the care of contagious diseases; and with the execution of the orders of the Board. The regular corps of officers consists of an Assistant Sanitary Superintendent, ten Sanitary Inspectors, and twelve Assistant Sanitary Inspectors, all of whom except two are physicians. In addition to this force special inspectors are appointed temporarily, as occasion may require, for the detection and arrest of violators of certain provisions of the Sanitary Code, and other necessary purposes. The Disinfecting Corps is an important part of the working force of this Bureau.

The city is divided into twenty sanitary districts, to each of which is assigned a Sanitary or Assistant Sanitary Inspector, who is responsible to the Sanitary Superintendent and to the Board for the proper inspection of his district and the care of contagious diseases therein. They are always on duty, and are liable for detail upon special service at any hour of the day or night in any part of the city. The reports of its sanitary officers are mainly the basis for the action of the Board in the abatement of nuisances and in its efforts to preserve and protect the public health. For this reason it is necessary that great care should be exercised in their selection, that they should be men of education, capacity, and integrity, and that they should be thoroughly instructed in their duties and under the strictest discipline.

During the year, 118,161 inspections have been made by the regular Sanitary Inspectors and Assistant Sanitary Inspectors, and on these inspections 33,631 complaints were based. This is exclusive of a large number of inspections of fruit, manure-dumps, slaughter-houses, and fat-rendering establishments, made by the temporary corps of special inspectors during the summer months.

The number of citizens, complaints received and answered amounted to

4,174, being an increase over former years. There were 2,720 permits issued to unload vessels, and 5,501 permits issued to scavengers. The inspectors visited and offered vaccination to 5,241 families in the immediate vicinity of cases of small-pox, and performed 2,906 vaccinations and revaccinations.

There were 320 cases of small-pox reported, of which 253 were sent to the hospital; 1,528 cases of measles; 3,215 of scarlet fever, and 2,073 cases of diphtheria; of typhoid fever, 383 cases, and of typhus fever 66. The whole number of cellars vacated during the year was 517.

During the year the Disinfecting Corps have visited 2,474 cases of contagious disease, have performed thorough disinfection in 276 cases, and partial disinfection in 2,148 cases. They have disinfected 2,438 privies, have removed 6 bodies to the morgue, and 222 patients to the hospital. They have disinfected 2,277 miles of street-gutters.

The following is a tabulated statement of the work of the Sanitary Bureau :

TABULATED STATEMENT of the Amount and Kind of Service rendered by the Sanitary Bureau, from April 1, 1873, to April 30, 1874.

| Matter and Places inspected. | Total Inspections. | Causes of Complaint. | Matter and Places inspected. | Total Inspections. | Causes of Complaint. |
|----------------------------------|--------------------|----------------------|---|--------------------|----------------------|
| Public Buildings..... | 290 | 74 | Uninhabitable Dwellings..... | 24 | 24 |
| Markets and Market-Places..... | 133 | 4 | Dangerous "..... | 4 | 4 |
| Fertilizing Works..... | 9 | 5 | Tenement "..... | 52,064 | 8,762 |
| Sausage-Factories..... | 7 | 3 | Private "..... | 11,194 | 2,071 |
| Smoke-Houses..... | 4 | 3 | Other "..... | 6,798 | 628 |
| Slaughter-Houses..... | 2,537 | 69 | Piers and Bulkheads..... | 50 | 8 |
| Offal Shed..... | 1 | | Vessels..... | 4 | 1 |
| Pork-Packing Establishments..... | 3 | 1 | Cemeteries..... | 4 | |
| Gut-Cleaning "..... | 113 | 6 | Public Sewers and Water-Courses..... | 89 | 53 |
| Fat-Rendering "..... | 475 | 44 | Sunken and Vacant Lots..... | 2,572 | 728 |
| Lard-Rendering "..... | 41 | 12 | Stables..... | 4,359 | 991 |
| Head-Cleaning "..... | 11 | 4 | Waste-pipes and Drains..... | 3,273 | 3,291 |
| Rag and Bone "..... | 5 | 2 | Cellars and Basements..... | 5,840 | 2,148 |
| Bone-Burning "..... | 1 | 1 | Yards, Courts, and Areas..... | 3,644 | 3,555 |
| Dyeing "..... | 2 | 1 | Privies and Water-Closets..... | 13,546 | 6,316 |
| Wool-Pulling "..... | 1 | | Cisterns and Cesspools..... | 182 | 150 |
| Swill and Garbage Yard..... | 1 | 1 | Streets, Gutters, and Sidewalks..... | 4,980 | 2,234 |
| Sheep and Hog Yards..... | 8 | | Smoky and Dangerous Chimneys..... | 6 | 6 |
| Cattle-Yards..... | 60 | 1 | Dangerous Stairways..... | 396 | 396 |
| Dumping-Grounds..... | 96 | 2 | Piggeries..... | 30 | 30 |
| Manure-Dumps..... | 134 | 12 | Ferry-Houses..... | 14 | |
| Breweries and Distilleries..... | 53 | 14 | Other Nuisances..... | 1,060 | 980 |
| Scavenger Sheds and Boats..... | 10 | | Violations of Code..... | | 161 |
| Mills..... | 1 | 1 | Number of Visits by Medical Officers to Cases of Contagious Diseases..... | 414 | |
| Chemical Works..... | 1 | 1 | | | |
| Lime-Kilns..... | 4 | 2 | | | |
| Manufactories and Workshops..... | 1,504 | 356 | | | |
| Stores and Warehouses..... | 2,114 | 565 | Total..... | 118,161 | 23,621 |

Summary of the semi-weekly reports of the Inspectors, exhibiting the amount and kind of labor performed by the Medical Officers of the Sanitary Bureau, from April 1, 1873, to April 30, 1874.

| | |
|--|--------|
| Whole number of reports received..... | 34,600 |
| Whole number of positive reports received..... | 29,907 |
| Whole number of negative reports received..... | 2,086 |
| Whole number of general reports received..... | 2,607 |
| Whole number of reports found correct..... | 34,288 |
| Whole number of reports returned for correction..... | 312 |
| Whole number of reports forwarded to Board..... | 29,595 |

| | |
|---|-------|
| Whole number of negative reports forwarded..... | 2,086 |
| Whole number of general reports forwarded..... | 2,667 |
| Whole number of complaints received from citizens..... | 4,174 |
| Whole number of vessels permitted..... | 2,730 |
| Whole number of permits granted to scavengers to disinfect, empty, and clean privy-vaults..... | 5,501 |
| Whole number of families visited by the medical officers, to whom vaccination has been offered..... | 5,241 |
| Whole number of primary vaccinations performed..... | 237 |
| Whole number of secondary vaccinations performed..... | 2,669 |
| Total number of vaccinations performed..... | 2,906 |

The Disinfecting Corps.—The Disinfecting Corps of the Health Department is under the general direction of the Sanitary Superintendent, and is located at No. 128 Worth Street. It is an important and valuable auxiliary to the Chief Executive office of the Board in the execution of orders for disinfection and in the case of contagious diseases. The chief duties of the corps are the practical disinfection of streets, gutters, privies, yards, and cellars, the removal of persons sick with contagious diseases to hospital, and the disinfection or fumigation of rooms and dwellings infected, or that have been exposed to infection. The regular employés may be regarded as experts in their peculiar duties; and laborers are employed in such number and for such periods as circumstances may require. The disinfectants used by the Department are prepared under the direction of a practical chemist, and the material and form of application are adapted to the particular purposes for which they are used.

The Sanitary Company of Police.—The members of the Sanitary Company of Police, under Captain Yule, serve the orders of this Board upon owners, lessees, or occupants of premises requiring cleaning or other sanitary improvement; they report the compliance or non-compliance of parties served with the orders of the Board; they report in due form upon minor nuisances, which come under their observation, and they are often detailed by the Board of Police to execute orders of this Board. Officers of this Company are also constantly employed on the public markets in the inspection of meats offered for sale, and large amounts are condemned every week as unfit for human food, and removed to the offal-dock. The services of the Sanitary Company of Police are recognized by this Board for their value and importance. The following is the amount of meat, fish, etc., condemned during the year ending April 30, 1874:

| | | | |
|---------------------------|----------------|----------------------|---------------|
| Cattle, slaughtered,..... | 28 carcasses. | Ham..... | 2,093 pounds. |
| Sheep, "..... | 281 " | Pork..... | 14,826 " |
| Lambs, "..... | 54 " | Corned beef..... | 80 " |
| Hogs, "..... | 65 " | Game..... | 1,019 " |
| Calves, "..... | 182 " | Calves (case)..... | 17 " |
| " (bob) "..... | 436 " | Bologna sausage..... | 13½ " |
| Pigs, "..... | 16 " | Buffalo-meat..... | 264 " |
| Beef (cut)..... | 42,397 pounds. | Veal (cut)..... | 1,529 " |
| Veal..... | 19,484 " | Squirrels..... | 33 " |
| Mutton and lamb..... | 6,619 " | Rabbits..... | 44 " |
| Poultry..... | 43,822 " | Pigeons..... | 130 " |
| Fish..... | 288,710 " | | |

Bureau of Vital Statistics.—The Bureau of Vital Statistics, of which the Register of Records, Dr. Elisha Harris, is the chief officer, is charged with the

duty of receiving and properly registering the births, marriages, and deaths which occur in the city of New York. The immediate care of the records of former years also devolves upon the Register of Records, and, under the rules of the Board, he is the officer designated to grant permits for the removal and burial of the dead. He is also expected to make a study of the vital statistics of the city, and to report to the Board any indications derived therefrom of an increase of deaths by preventable diseases, the particular locality in which such increase occurs, and the probable cause of the same.

The Register's report shows that, in the year 1873, there were recorded 29,084 deaths, 22,683 births, and the marriages of 17,774 persons; also that the number of searches and transcripts for legal and social uses by persons and estates in interest has greatly increased. Nothing can more clearly demonstrate the necessity and importance of vital registration than the great value and permanent effect which attach to the facts sought for in the public registers and the transcripts from them. But with all this daily demand for the evidence and uses afforded by the records of birth, marriage, and death, the State of New York is still destitute of a system of registration of vital statistics. In the absence of a State system of records, it has been esteemed especially important that the working and methods of this Bureau of the municipal government should not fail to present a perfect example of its utility and adaptation in matters relating to social order, the rights of individuals and families, and the formation of sanitary duties. The system of accurate vital registration will be found more and more important in an advancing civilization, promoting in various ways the happiness and health of the people. There is a special use of the records of causes and circumstances of death which the Bureau of Vital Statistics contributes daily, and almost hourly, in the sanitary service of this Board of Health: every death from any contagion or other dangerous cause of disease, every circumstance that leads to suspicion of preventable causes of death, unusual mortality in any house, block, or street, or frequent recurrence of deaths from the same or similar causes in them. The increase of mortality in particular districts, or the persistence of special kinds of disease in them, and a current account of the monthly and annual mortality in the tenement-houses, and an annual footing-up of this account against each tenement-house, constitute a leading feature in the duties of the Bureau which has charge of the death-records. In the report of the Register it will be seen that in 8,856 of the tenement-houses in 1873, there died 14,109 persons, and that in certain of those houses there were ten or more deaths. In 119 of the houses there were five deaths in each, and in the entire district of the city south of Fourteenth Street, which, in the year 1873, contained more than one-half of the population of the city, no less than 75 per cent. of all who died were inmates of this class of dwellings. To the excessive degree of crowding which prevails throughout the tenement-house districts, and to the special degree of insalubrity which such crowding signifies, is justly attributed the constantly high death-rate among the inhabitants of such dwellings. The Register's report shows that the allotment of ground-space occupied by all the tenement property of the city, including

court-yards and other ground unbuilt upon, but pertaining to tenements, is less than seven square yards to each individual tenant resident thereon. No other statement could more forcibly illustrate the necessity for better methods of housing the industrial classes of the city, and especially the need of facilities for rapid transit and wide dispersion for the benefit of this half-million of the population.

In answer to the question, "Does the death-rate decrease in this city?" the report of the Register shows that it does, and that it is between the ages of twenty and forty-five—that period of life which has the highest value to its possessor and to society—that this decrease in the death-rate has occurred. How this decrease of mortality has occurred, what preventable diseases have been diminished in their ravages, and in what classes of the population this gain of life is noticeable, will be shown in the report of the Register. It should be mentioned here, however, that all the fatal fevers, and some other destructive diseases which, like the enteric or typhoid fever, were most fatal in persons during the middle period of life as here mentioned, have, year by year, for the past seven years, continued to decrease, apparently as the result of sanitary improvements and an increasing knowledge of hygienic duties throughout the city. The fact is also shown that there is some decrease in the relative amount of pulmonary consumption, and the report of the Bureau of Records shows that this occurs in the youthful and middle periods of life. From these facts, and others like them, it is reasonably believed that, as Prof. Parkes, one of the most eminent hygienists in Europe, has remarked, "the reason that hygiene has commenced to attract so much the public attention, is undoubtedly owing to the application of statistics to the public health, and that it is impossible for any nation or government to remain indifferent, when, in figures that admit of no denial, the national amount of health and happiness, or disease and suffering, is determined." The death-rate is an index of the sickness rate and the degrees of bodily disability and suffering which sickness and disease always signify.

The fact that nearly half of the deaths in this city are of children under five years of age, proves that the general death-rate will necessarily be high while the mortality of infants and young children is so excessive. But that this excess of infant mortality is not peculiar to the city of New York alone, is proved by the records of death in all the great cities which have a torrid temperature in summer, and a densely-crowded tenement population. In the statistical returns from other cities (*see* appended Statement 2 in report of the Bureau of Vital Statistics), it appears that with a yearly death-rate of 28.23 in 1,000 inhabitants, Cadiz reports 52.67 per cent. of its mortality to be of children under five years of age:

| | | | | | |
|-------------|----------------|-------|---------|-------|-----------|
| Berlin, | with a rate of | 27.81 | reports | 56.32 | per cent. |
| Leipsic, | " | " | 26.08 | " | 48.24 |
| Palermo, | " | " | 28.46 | " | 48.97 |
| Birmingham, | " | " | 25.28 | " | 49.12 |
| Manchester, | " | " | 28.29 | " | 48.04 |
| Leicester, | " | " | 23.74 | " | 53.67 |

The report of the Bureau of Vital Statistics shows that

| | | | | | | | | | | |
|-------|-----------|--------------|--------|------|-------------|-------|---------|--------|----|------|
| 52.99 | per cent. | of the total | deaths | were | of children | under | 5 years | of age | in | 1867 |
| 52.50 | " | " | " | " | " | " | " | " | " | 1868 |
| 51.09 | " | " | " | " | " | " | " | " | " | 1869 |
| 49.06 | " | " | " | " | " | " | " | " | " | 1870 |
| 48.08 | " | " | " | " | " | " | " | " | " | 1871 |
| 49.58 | " | " | " | " | " | " | " | " | " | 1872 |
| 48.76 | " | " | " | " | " | " | " | " | " | 1873 |

The registration of deaths has been brought to its present good condition by the aid of amended laws relating to the duties of medical attendants, and of the Board of Health, in regard to the certified returns made to the Bureau of Vital Statistics. The certificates of births and marriages cannot be brought under the same methods of verification and numerical completeness as we find practicable in the certified returns of mortality. The methods best adapted to secure complete returns of birth will need create and define certain necessities for the individual and social uses of evidence of a birth registry, and in a certain manner to canvass at stated periods for the purpose of gleaning the records of all neglected cases; and, in respect of the registration of marriages, there should be no delay on the part of the State Legislature to frame a statute which shall have full effect, in all respects, in every portion of the State, by methods of the *code civil*, which will provide that a suitable registration shall be the first step in every marriage under the forms of law in this State. The report of the Register of Records shows that the existing system of voluntary returns by the professional attendants at births and marriages, secures the registration of about 70 per cent. of the number due to these two branches of the records of vital statistics, and that the individuals whom ignorance and indifference deprive of the advantages of these records, are chiefly those who, in later years of their lives, will most need the social and legal benefits of such registration.

The Bureau of Attorney and Counsel.—As the orders of this Board, and the provisions of the Sanitary Code, are generally enforced by means of suits for penalties, the duties of its Attorney and Counsel are of the greatest importance. Particular attention is called to the report of these officers in the Appendix.

A new class of cases, of actions against the Board in the Supreme Court, in which injunctions were sought, and the action of the Board in the matter of nuisances was to be prevented, is noted in the reports of the Attorney and Counsel. No sooner had measures been matured to relieve the city from the danger arising from the nuisances of the stalls and stands about the markets, and from the offal and fat-rendering on the North River side, than in three actions, in which market-stall occupants, and the New York Fertilizer Manufacturing Company, were respectively plaintiffs, preliminary injunctions were sought upon orders to show cause, at very short notice, why the action of the Board should not be arrested. The defense made on the part of the Board was completely

successful, and the decision of the Court supported the decisions and action of this Department.

It is to be regretted that no written opinion was filed by the Court, but, on the hearing of the motion made by the "New York Fertilizer Manufacturing Company," his Honor Mr. Justice Pratt expressed orally the following views :

"It seems to me that the answer to all these suggestions, although they are exceedingly plausible, is to be found in the Health Act itself, and in the decision in Heister against the Board of Health, in the 37th New York Reports. In construing the statute, reference must be had to the object in view by the Legislature in passing it, which was to protect the health and life of the people of the city. Now, if any party could challenge the decision of the Board of Health, and frame an issue, and have that issue tried by the dilatory process of the courts, and a trial by jury, which would be the only process to determine the question, the whole purpose of the law would be thwarted. It was intended to offer a summary remedy by this Board, to prevent injury to the health and life of the citizens; hence the reason of the statute is apparent. Again, as to the suggestion that, instead of abating a nuisance, they contemplate the destruction of private property, it is an answer to it that, if they destroy private property, and the act is unconstitutional, so that they obtain no jurisdiction, they are trespassers *ab initio*, and the party has his remedy by an action at law. Under my construction of the law, they can act on personal examination. It is not necessary that they should, in every instance, go through the form of sworn evidence before they can proceed. They can view the premises, or take such evidence as, in their judgment, shows that the place is dangerous to health, and then proceed according to the statute, and make such entry in their minutes as they see fit, and notice thereof, being served on the party, they are justified in making the destruction, or otherwise abating the nuisance. There may possibly be doubts as to some of the provisions of the act being unconstitutional, but it is not the practice of the Court at Special Term, when hearing motions in a summary way, to declare a solemn act of the Legislature unconstitutional, because every intendment is in favor of the constitutionality of such an act, and it is only when the unconstitutionality of such acts is apparent on their face, that the Court, sitting at chambers, will declare them unconstitutional and void. As for the suggestion last made, which raises some important questions entitled to consideration, the answer here must be, that there is an adequate remedy at law.

"The Legislature has exclusively vested this discretion in the Board of Health, as plainly as language can do it. If the act is unconstitutional, they have no right under it. If it is constitutional, I have no right to interfere. As to the latter point (the regulation of the markets), I am inclined to think that, when both acts are read together, the authority of the Controller, etc., is subservient to that of the Board of Health, in determining what is, and what is not, a nuisance. They are responsible for the discharge of their duties under

this act, and in the discretion invested in them, nobody, so long as they act in good faith, and take the necessary preliminary jurisdictional steps, can interfere."

This reasoning was approved by Mr. Justice Davis, upon the more formal argument of the motion for an injunction in the Fulton Market case.

Sanitary Permits.—The Board has considered various applications made under the provisions of the Sanitary Code for permits to conduct those business pursuits which are liable to become dangerous to life or detrimental to health, and which it is necessary to subject to police regulations and sanitary provisions. Preliminary to any action, an inspection of the premises is made by a sanitary officer, and a report of the facts in each case is made to the Board. The Board has granted, during the year ending April 30, 1874, 244 permits, and 104 applications for permits have been denied. The following are among the subjects of the permits granted :

| | | | |
|--|----|------------------------------------|---|
| To render fresh lard..... | 41 | To manufacture solder and tin..... | 1 |
| “ render fresh fat..... | 4 | “ manufacture fertilizers..... | 2 |
| “ slaughter animals..... | 27 | “ remove sweet fat..... | 1 |
| “ keep cows..... | 40 | “ smoke fish..... | 1 |
| “ keep fowls..... | 69 | “ dump manure..... | 3 |
| “ keep goats..... | 15 | “ construct manure-vaults..... | 3 |
| “ occupy cellars or basements as human habitations..... | 24 | “ remove swill..... | 1 |
| “ collect, store, and assort rags..... | 3 | “ manufacture oleomargarine..... | 1 |
| “ manufacture tallow-oil..... | 1 | “ store hides and fat..... | 1 |
| “ keep pigs..... | 2 | “ cure calves' rennets..... | 1 |
| “ manufacture soap..... | 1 | “ erect tenement-house..... | 1 |
| | | “ keep shooting-gallery..... | 1 |

244

In addition to the permits granted by the Board upon special application as above stated, the Sanitary Superintendent, under the rules and regulations of the Department, has continued to grant permits to scavengers to empty privies ; permits to land cargoes from infected ports, the vessels having been discharged from quarantine ; and permits to remove and transport manure.

Amendments to the Sanitary Code.—Under the power conferred by law upon the Health Department, additional sections to the Sanitary Code for the security of life and health have been adopted during the past year, and published as required by law. Such amendments to the Sanitary Code as have become necessary have also been adopted and published. The Sanitary Code, including the additional sections and amendments above referred to, is published in the Appendix to this report.

Expenditures.—The expenditures of this Department have been reduced and limited so far as consistent with its public duties and responsibilities. Its officers and employés are moderately paid, considering the services rendered, and purchases of supplies are made upon estimates from responsible parties.

The amount of the vouchers, including pay-rolls, forwarded to the Control-

ler for payment during the year ending April 30, 1874, was \$163,381.23. This does not include the amounts audited by the Board for the removal of night-soil, offal, dead animals, etc., from the city, for which special appropriations have been duly made by the Board of Estimate and Apportionment. The fact that a balance of about \$8,000 remained in the City Treasury to the credit of the Health Fund, after all liabilities incurred in 1873 had been paid, besides the \$20,000 appropriated for use in case of epidemics, being a total of \$28,000 unexpended, is evidence of the fact that this Department has endeavored to limit its expenditures to the just and reasonable requirements of the public service.

Changes in the Board.—A vacancy in this Board was caused by the death of Hon. Henry Smith, President of the Board of Police, on the 23d day of February. The Board adopted, on the 25th day of February, the following preamble and resolutions:

“The Board of Health of the City of New York, desirous to express its sincere regret in the death of their colleague, Henry Smith, and their appreciation of his loss, have unanimously passed the following resolutions:

“*Resolved*, That during his connection with the present Board, both as a member of the Board, and in his official capacity as President of the Board of Police, he has rendered signal and efficient service. As a member of the Board his constant interest in measures which tended to promote the public health, his practical suggestions, aided and encouraged the other members, while as President of the Police he assumed a hearty coöperation in executing the orders of this Board.

“*Resolved*, That we tender to his family in their affliction our earnest sympathies, and that the members attend his funeral.”

Hon. Hugh Gardner, having been elected President of the Board of Police, *vice* Smith, deceased, took his seat as a member of the Board of Health on the 17th day of March, 1874.

The City Departments.—This Board desires to acknowledge the uniform courtesy and attention with which its suggestions in respect to sanitary matters have been uniformly received by the various departments of the city government. With the Departments of Police, Public Works, Docks, Parks and Buildings, and the Board of Education, it is necessarily in frequent communication, and all have manifested an earnest desire to make any improvements which are deemed necessary for sanitary reasons, and to heartily coöperate with this Board in all sanitary measures. With the Department of Police this Board is necessarily most intimately associated, and its support and assistance in the enforcement of the Sanitary Code, and of orders for the abatement of nuisances, are constantly required, and are cheerfully and promptly rendered.

Respectfully submitted:

C. F. CHANDLER, *President*.

EMMONS CLARK, *Secretary*.

NEW YORK, May 15, 1874.

REPORT OF THE SANITARY SUPERINTENDENT.

SANITARY BUREAU, BOARD OF HEALTH,
May 1, 1874.

To the Secretary of the Board of Health :

I beg respectfully to submit the following report of the duties performed by the Sanitary Inspectors, and other officers and employés of the Board, under my control, and by myself, during the past year.

On the 18th of June, 1873, this Bureau was organized by the following appointments, viz. :

Sanitary Superintendent and City Sanitary Inspector,
Walter De F. Day, M. D.

Assistant Sanitary Superintendent,
Edward H. Janes, M. D.

| | |
|----------------------------|----------------------------|
| A. B. Judson, M. D., | <i>Sanitary Inspector.</i> |
| C. P. Russel, M. D., | “ “ |
| W. H. B. Post, M. D., | “ “ |
| Augustus Viele, M. D., | “ “ |
| S. F. Morris, M. D., | “ “ |
| R. S. Tracy, M. D., | “ “ |
| Charles F. Roberts, M. D., | “ “ |
| J. D. Bryant, M. D., | “ “ |
| Paul F. Munde, M. D., | “ “ |
| H. R. Stiles, M. D., | “ “ |

| | |
|-----------------------------|--------------------------------------|
| W. A. Ewing, M. D., | <i>Assistant Sanitary Inspector.</i> |
| William E. Hall, M. D., | “ “ |
| N. B. Emerson, M. D., | “ “ |
| Charles E. Lockwood, M. D., | “ “ |
| Bernard Hughes, M. D., | “ “ |

| | | |
|--------------------------|--------------------------------------|------------------------|
| A. McL. Hamilton, M. D., | <i>Assistant Sanitary Inspector.</i> | |
| George B. Fowler, M. D., | “ | “ |
| Hamilton Walker, M. D., | “ | “ |
| C. H. Atwater, M. D., | “ | “ |
| Alexander Strong, M. D., | “ | “ |
| Thomas J. Nealis, | “ | “ <i>special duty.</i> |
| Eugene Waller, | “ | “ |
| C. Y. Hammond, | “ | “ |

| | |
|------------------------|---------------------------------------|
| James R. Griswold, | <i>Chief Clerk to Superintendent.</i> |
| William B. Fernhead, | <i>Clerk.</i> |
| Bloomfield Usher, Jr., | “ |
| William A. Smalley, | “ |
| R. C. Morgan, | “ |
| Joseph Berkwick, | <i>Messenger.</i> |

Disinfecting Corps.

| | |
|-------------------|-------------------------------------|
| Hermann Endemann, | <i>Chief of Disinfecting Corps.</i> |
| William Roberts, | <i>in charge of Ambulance.</i> |
| Thomas D. Yates, | <i>Disinfecting Corps.</i> |
| B. Mc Gowan, | “ |
| E. Richardson, | “ |
| William Reynolds, | “ |
| John J. Devitt, | “ |
| Richard Kiernan, | “ |

The following changes in the *personnelle* of this Bureau have occurred during the year:

June 27th.—E. L. Bullock and William Patten appointed Special Assistant Sanitary Inspectors, and detailed for duty at the manure-yard, Forty-fifth and Forty-seventh Streets, East River.

July 1st.—By the resignation of Dr. H. R. Stiles, the Board was deprived of the services of one of its most valuable inspectors.

July 22d.—John V. Gridley appointed an Inspector of Nuisances; Joseph W. Hunter, John Waters, Jr., Louis H. Landy, S. A. Goldschmidt, and Louis Frank, appointed Special Assistant Sanitary Inspectors, and assigned to the Thirty-eighth Street and North River District.

July 28th.—Elisha Alvord and William Whollahan appointed Special Inspectors, and assigned to the Thirty-eighth Street District.

August 19th.—Dr. William E. Hall, promoted to full Inspector in place of Dr. Stiles, resigned. Allen Conroy and W. T. Ashman, appointed for temporary service as Inspectors of Fruit and Vegetables, and Robert Sheehan and L. T. Brennan appointed Inspectors of Scavenging.

August 26th.—Dr. John O. Bronson was appointed Assistant Sanitary Inspector.

September 30th.—The services of the following named special inspectors were dispensed with: Messrs. Laudy, Brennan, Whollahan, Bullock, and Frank.

October 7th.—Dr. Hamilton Walker resigned the position of Assistant Sanitary Inspector, and Dr. Henry Sheppard was appointed in his place.

December 30th.—The services of Special Inspector Joseph H. Hunter were dispensed with. Dr. John E. Comfort, Dr. Charles F. Rodenstein, and Dr. Paluel De Marmon, appointed Assistant Sanitary Inspectors, and the services of Dr. John O. Bronson dispensed with, in consequence of a change of districts.

January 13, 1874.—Robert Danfield, Jr., appointed a member of the Disinfecting Corps.

January 27th.—Dr. E. B. Sanborn appointed Assistant Sanitary Inspector.

March 3d.—Resignation of Inspector Paul F. Munde, M. D.

March 31st.—Elisha Alvord, Sigismund Davidson, and William Roberts, transferred to the Bureau of Vital Statistics.

April 1st.—Resignation of Special Inspector Elisha Alvord.

In addition to these, day-laborers have been employed from time to time, in the Disinfecting Corps, and in the vacation of cellars.

With insignificant exceptions, the Board has been fortunate in selecting its inspectors and employés during the year. The choice of inspectors is a matter of great importance, since the usefulness of the Board is chiefly built on the character of the Inspectorial Corps. Here, as elsewhere, the necessary qualities are not always found united in the same person. Besides familiarity with sanitary science, unsuspected honesty, and zealous application, there must be quick perception, accuracy of statement, and sound judgment. The inspector must be absolutely unpartisan, and entirely fair. He must have tact and good-nature in his district. He must not presume on his position, while appreciating it, and he must have the courage to take and meet its responsibilities.

Often, in making official complaints, he will be embarrassed by circumstances outside of sanitary considerations. Although advice is usually available, it sometimes happens that questions of a delicate nature must practically be decided by the inspector. Putting aside official authority, he has often to consider peculiar circumstances, and to ask himself, "What would I do in this case, if, appreciating its sanitary necessities, I had to pay the bill?" The power necessarily intrusted to the Board, in the interest of public health, demands the utmost care in the selection of its officers, lest what was meant for the protection of the community should become arbitrary and oppressive. This is especially true as regards the removal of small-pox cases to hospital. To show the accuracy of this year's corps, I beg to call attention to the fact that, of the 34,600 reports received from the inspectors, but 312 have been returned for correction.

The changes in the Bureau, consequent upon the adoption of the new city

charter, would necessarily have occasioned some interruption of sanitary work, but for the experience of Dr. Janes, the Assistant Sanitary Superintendent, whose familiarity with the difficulties daily encountered by the inspectors enabled him to impart such instructions to the new ones as prevented any serious suspension of labor.

The clerical work of the Bureau has been performed to my entire satisfaction, and in a prompt and cheerful manner.

The Disinfecting Corps, an exceedingly valuable and efficient branch of this service, has maintained the reputation for faithfulness and alacrity earned in former years.

The removal of cases of small-pox to the hospital, and the disinfection of premises infected by that and other contagious diseases, call often for decision combined with great kindness and consideration, and I have yet to learn of any case where these have been wanting. The members of the corps assist the inspectors in searching for concealed cases, and they remove to the Morgue such bodies of persons dead from small-pox as cannot be interred in metallic coffins.

REPORT OF CONTAGIOUS DISEASES FOR 1873-1874.

Total Number of Cases of Contagious Diseases reported to the Sanitary Bureau from April 1, 1873, to April 30, 1874.

| | | | |
|-----------------------|-------|---------------------------------|-------|
| Typhus Fever | 66 | Measles | 1,528 |
| Typhoid Fever | 383 | Diphtheria | 2,073 |
| Scarlet Fever | 3,215 | Cerebro-Spinal Meningitis | 50 |
| Relapsing Fever | 5 | Small-Pox | 320 |

TYPHUS FEVER.

| | |
|---|----|
| Total number of cases of Typhus Fever | 66 |
| Number of houses in which Typhus Fever occurred | 61 |

TYPHOID FEVER.

| | |
|--|-----|
| Total number of cases of Typhoid Fever | 383 |
| Number of houses in which Typhoid Fever occurred | 356 |

CEREBRO-SPINAL MENINGITIS.

| | |
|--|----|
| Total number of cases of Cerebro-Spinal Meningitis | 50 |
| Number of houses in which Cerebro-Spinal Meningitis occurred | 44 |

SMALL-POX.

From April 1, 1873, to April 30, 1874.

| | |
|--|-----|
| Total number of cases reported | 320 |
| Total number of houses in which cases occurred | 228 |
| Number of houses in which 2 cases occurred | 18 |
| “ “ “ 3 “ “ | 13 |
| “ “ “ 4 “ “ | 7 |
| “ “ “ 5 “ “ | 3 |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|--------------------------------|---|---------------------------------|----|
| Hester street | 5 | West Thirty-eighth street | 6 |
| Montgomery street..... | 5 | Stanton street | 7 |
| Third avenue | 5 | East Eleventh street | 8 |
| Washington street..... | 5 | Sixth street | 8 |
| East Thirteenth street..... | 6 | Second avenue | 9 |
| First avenue | 6 | Park street | 11 |
| Mulberry street | 6 | Baxter street | 14 |
| West Twenty-eighth street..... | 6 | Pearl street | 15 |

HOUSES CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|---------------------------------|---|--|---|
| 315 Broome street | 3 | 80 Sullivan street..... | 3 |
| 529 Canal street..... | 3 | 327 West Thirty-eighth street | 3 |
| 640 East Ninth street | 3 | 38 Baxter street | 4 |
| 531 East Twelfth street | 3 | 80 Charlton street | 4 |
| 608 East Thirteenth street..... | 3 | 176 Hester street..... | 4 |
| 947 First avenue..... | 3 | 87 Park street | 4 |
| 66 Monroe street | 3 | 488 Pearl street..... | 4 |
| 243 Mulberry street..... | 3 | 12 Washington street..... | 4 |
| 515 Pearl street..... | 3 | Corner Sixty-eighth street and Third av. | 4 |
| 21 Rutgers street | 3 | 533 East Eleventh street | 5 |
| 44 Suffolk street | 3 | 322 West Twenty-eighth street..... | 5 |

| | |
|---|-----|
| Cases sent to hospital (residing out of town) | 6 |
| Vagrants..... | 6 |
| Cases on shipboard | 3 |
| Number of cases sent to the hospital | 253 |
| “ “ isolated at their homes | 38 |
| “ “ absconded | 3 |
| “ “ reported first as dead | 21 |
| “ “ found after recovery | 5 |

VACCINATIONS.

| | |
|---|-----|
| In infancy only | 164 |
| Vaccinated within 1 year previous to attack | 10 |
| “ “ 2 “ “ “ | 2 |
| “ “ 3 “ “ “ | 3 |
| “ “ 4 “ “ “ | 2 |
| “ “ 5 “ “ “ | 1 |
| “ “ 6 “ “ “ | 1 |
| “ “ 7 “ “ “ | 1 |
| “ “ 8 “ “ “ | 2 |
| “ “ 14 “ “ “ | 1 |
| “ “ 15 “ “ “ | 1 |
| “ “ 20 “ “ “ | 1 |
| “ “ 30 “ “ “ | 1 |
| Number of cases never vaccinated | 52 |
| “ “ whose history of vaccination could not be ascertained | 78 |

NATIONALITY.

| | |
|--------------------|-----|
| United States..... | 117 |
| Germany..... | 96 |
| Ireland | 48 |

NATIONALITY.—(Continued.)

| | |
|------------------------|----|
| Italy | 15 |
| England | 10 |
| Norway | 1 |
| Nativity unknown | 33 |

The tabulated statement shows that 320 cases of small-pox were reported to this Bureau from April 1, 1873, to April 30, 1874. The disease was, as a general thing, impartially distributed throughout the city. However, during March and April of the present year, two cases imported from Newark, N. J., and concealed in the vicinity of the "Five Points," established two nuclei, around which other cases soon clustered, giving rise to some anxiety lest the disease should get a foothold there. Dr. Tracy, Inspector of the District, aided by Dr. Ewing, Assistant Inspector, and Mr. Reynolds of the Disinfecting Corps, thoroughly searched the suspected neighborhood from roof to cellar. In his report on this special inspection, Dr. Tracy says of the inhabitants of the Sixth Ward, "Their apathy in respect to vaccination in ordinary times is complete, and during the past month I have performed primary vaccinations upon children, three, four, and five years old." He complains that the Germans in his district will not be vaccinated excepting in May, and that the Italians strenuously resist the vaccination of adults. He adds that "the Italians of the Sixth Ward are largely responsible for what small-pox has occurred there during the winter and spring."

Soon after this, an opportunity was embraced of revaccinating at one time 430 Italians living in that ward, and the disease immediately diminished there.

Our ordinary method of dealing with small-pox may be understood from the following letter issued to the inspectors at the beginning of my term of office :

SANITARY BUREAU.

NEW YORK, *January, 1874.*

When a case of small-pox is reported at this office, a telegram is at once sent to the inspector in whose district the patient resides. For example :

John Smith, aged, ——— residing at No. ——— Street, is reported at this office by his attending physician, the police, or an inmate of the same house, as sick with small-pox. The following telegram is then sent to the inspector :

To Inspector ———.

John Smith, aged———, is reported sick with small-pox at No. ——— Street.

DR. DAY, *Sanitary Superintendent.*

On receipt of this telegram by the inspector, it is his duty to proceed at once to the residence of the patient. If a tenement, or should there be more than one family in the same house, who would, in the judgment of the inspector, be exposed to the contagion by the patient remaining therein, he must advise the patient and friends of the necessity of immediate removal to hospital.

The inspector will at once telegraph from the nearest police-station as follows :

TO DR. DAY.

John Smith, aged —, at No. — Street, has small-pox. Remove to the hospital, disinfect and fumigate (also add if inspector thinks necessary), destroy bedding.

(Signed)

—, *Inspector.*

Should the patient refuse to go to the hospital, and the friends offer decided opposition to the removal, the inspector will immediately report to the Superintendent at the Central Office, who will give further instructions.

If the inspector finds the case to be in a private dwelling, and the patient can be properly isolated on the upper floor, and strict quarantine enforced, then telegraph as follows, viz. :

TO DR. DAY.

John Smith has small-pox at No. — Street, case isolated. Send disinfectants.

—, *Inspector.*

When a case of small-pox is isolated by the inspector, he is required to exercise strict surveillance over the patient and inmates of the house, visiting the premises at least twice a week until the recovery or death of the patient, on which, in either case, the premises need fumigation, the bedding and clothing disinfection, and the mattresses (if straw) to be burned. Notify Superintendent when this is needed.

The next duty of the inspector will be to secure at once the protection of the persons in the vicinity, and prevent the further spread of the contagion, by careful vaccination of all the inmates of house in which case occurred, also of the occupants of adjoining houses, on either side, and the houses on the opposite face of the block.

The inspector may telegraph to the Superintendent for a supply of vaccine virus, if desired, as follows, viz. :

DR. DAY.

Send — points of vaccine virus to my office.

—, *Inspector.*

The inspector will, within forty-eight hours after first seeing the patient, fill out the blank furnished by the Bureau, headed "Inspector's Report on Contagious Diseases," and deliver the same at this office.

WALTER DE F. DAY, M. D.

Sanitary Superintendent.

The inspector is required to trace the case to its origin if possible. The ambulance is usually at the Central Office, awaiting the inspector's telegram, and immediately on its receipt, if removal has been recommended, the patient is taken to the Reception Hospital. If resistance is shown, the Superintendent*

* No. 57, Rules and Regulations.

is advised of it; and if two inspectors report in writing that "the continuance of such sick person in the place where he or she is, is dangerous to the lives of other persons residing in the neighborhood," the Superintendent may cause his or her removal. Experience has shown that the circumstances must be exceedingly favorable to warrant the isolation of a small-pox patient at his home. To be reliable, isolation should extend beyond the period of desquamation—a matter of about three weeks from the inception of the disease.

The patient should preferably be on the upper floor, and his room, which should not be ventilated into the hall, should be entered by no one save the doctor. Food and other necessaries should be handed in. This is isolation. It is sometimes practicable in private houses and among intelligent people but not often in boarding or tenement houses, or in shanties. In the latter, too, medical attendance is the exception. Small-pox has many complications, some of which require to be met promptly. The absence of proper care and food, the small room, often dark, always and necessarily close and reeking with variolous exhalations, are conditions the most unfavorable to the recovery of the patient. It is evident that the removal of such a case to hospital, which means the providing of good air, food, medical care, and comparative personal freedom, is an act as beneficent to the patient as it is prudent toward the community. Proper isolation under the circumstances above described is practically impossible. The visits of sympathizing friends do not tend to circumscribe the disease. Within the month, in several instances, the Disinfecting Corps have found a roomful of friends kissing a corpse dead of confluent small-pox! Now, it is such as these that object to vaccination and revaccination; and even if their removal to the small-pox hospital were an invariable and undoubted hardship, it is a question as to how much consideration they are entitled who, by willfully neglecting so sure a prophylaxis, sow broadcast the seeds of a loathsome and fatal disease.

I have no doubt that the public health would be best preserved by placing the Small-Pox Hospital, wrongly called a "pest-house," under the exclusive control of the Board of Health of the Health Department; and, indeed, I think the hospital should be located on Manhattan Island.

The public health suffers from a divided responsibility. It is the officers of your Board that, in the recent words of a city journal, "snatch a sick person—perhaps a daughter, a mother, a helpless child—from a home where every comfort is provided." The friends of the patient naturally hold the Board morally accountable for his welfare; while, on the other hand, the general public hold the Board responsible for the existence of small-pox at all. It is practically the Board that fills the hospital over which it has not the slightest power. An evident advantage of placing the whole handling of variola under the Board of Health would be the facilities thereby offered for tracing the sources of contagion in every case—a subject in which the officers of Charities and Correction cannot reasonably be expected to take much interest. In this way concealed cases, the most frequent cause of the spread of small-pox, would be revealed, and the disease in a given locality could be instantly stamped out.

During the year small-pox has not been epidemic, not because the public has been properly protected by vaccination, but on account of the vigilance and promptness of the inspectors and Disinfecting Corps of this Bureau. The vaccinations and revaccinations, amounting to 2,906, and confined to the immediate locality of each outbreak, have hemmed in the disease; but they have also revealed the fact that the number of unvaccinated children between the ages of six months and two years is unusually large. Thorough vaccination, even when confined to the immediate vicinity of a case of small-pox, is inconsistent with the other duties of the inspectors, and, recognizing this fact, the Board by resolution, last December, directed "the Superintendent to submit a plan for a permanent branch of service in his Bureau which should secure general vaccination."

This plan, together with a report upon the importance of the measure proposed, I had the honor to submit to the Board on the 3d of February, 1874, and it will be found immediately following this report upon contagious diseases.

The manner in which premises infected with small-pox are disinfected is stated by H. Endemann, Ph. D., in charge of the Disinfecting Corps, whose report will also be found in the Appendix.

SCARLET FEVER.

| | |
|---|-------|
| Total number of cases reported..... | 3,215 |
| Total number of houses in which cases occurred..... | 2,205 |
| Total number of houses in which 2 cases occurred..... | 368 |
| “ “ “ “ 3 “ “ | 112 |
| “ “ “ “ 4 “ “ | 42 |
| “ “ “ “ 5 “ “ | 16 |
| “ “ “ “ 6 “ “ | 6 |
| “ “ “ “ 7 “ “ | 2 |
| “ “ “ “ 8 “ “ | 1 |
| “ “ “ “ 9 “ “ | 2 |
| “ “ “ “ 14 “ “ | 1 |

HOUSES CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|--|---|------------------------------------|---|
| Cor. Eighty-ninth street and Avenue A | 4 | 239 East Eighty-second street..... | 4 |
| 73 Avenue A..... | 4 | 327 East One Hundred and Fifteenth | |
| 174 Avenue C..... | 4 | street..... | 4 |
| Boulevard Seventy-seventh and Seventy- | | 151 Eighth avenue..... | 4 |
| eighth streets..... | 4 | 45 Eldridge street..... | 4 |
| 77 Columbia street..... | 4 | 859 First avenue..... | 4 |
| 333 East Nineteenth street..... | 4 | 98 Forsyth street..... | 4 |
| 320 East Thirty-ninth street..... | 4 | 478 Fourth avenue..... | 4 |
| 3 East Forty-first street..... | 4 | 72 Grove street..... | 4 |
| 302 East Forty-first street..... | 4 | 85 Henry street..... | 4 |
| Sixty-eighth street, near Broadway.... | 4 | 101 Lewis street..... | 4 |
| 204 East Eightieth street..... | 4 | 237 Madison street..... | 4 |

HOUSES CONTAINING THE LARGEST NUMBER OF CASES.—(Continued.)

| | | | |
|---|---|--|----|
| 118 Mulberry street..... | 4 | 105 East One Hundred and Fifth street..... | 5 |
| 51 Norfolk street..... | 4 | 214 East One Hundred and Seventh street..... | 5 |
| 129 Ridge street..... | 4 | 71 Mangin street..... | 5 |
| 1061 Second avenue..... | 4 | 44½ Sheriff street..... | 5 |
| 707 Seventh avenue..... | 4 | 816 Sixth avenue..... | 5 |
| 74 Suffolk street..... | 4 | 417 Tenth avenue..... | 5 |
| Tenth avenue, near One Hundred and Fifty-eighth street..... | 4 | 1275 Third avenue..... | 5 |
| 771 Tenth avenue..... | 4 | 418 West Sixteenth street..... | 5 |
| 1358 Third avenue..... | 4 | 450 West Thirty-second street..... | 5 |
| 337 West Tenth street..... | 4 | 324 West Thirty-eighth street..... | 5 |
| 16 West Seventeenth street..... | 4 | 324 East Thirty-sixth street..... | 6 |
| 512 West Twenty-seventh street..... | 4 | 149 Eldridge street..... | 6 |
| 326 West Thirtieth street..... | 4 | Tenth avenue, between One Hundred and Sixty-second and One Hundred and Sixty-third streets.... | 6 |
| 262 West Thirty-first street..... | 4 | 248 West Forty-seventh street..... | 6 |
| 269 West Fortieth street..... | 4 | 22 West Sixtieth street..... | 6 |
| 437 West Fortieth street..... | 4 | One Hundred and Thirtieth street, near St. Nicholas avenue..... | 6 |
| 457 West Fiftieth street..... | 4 | 39 Chrystie street..... | 7 |
| 328 West Fifty-second street..... | 4 | 154 East Ninety-second street..... | 7 |
| Sixty-first street, between Tenth and Eleventh avenues..... | 4 | 61 West Thirteenth street..... | 8 |
| One Hundred and Forty-third street, near Eighth avenue..... | 4 | One Hundred and Fifty-ninth street, near Tenth avenue..... | 9 |
| 123 Clinton place..... | 5 | One Hundred and Sixty-first street, near Tenth avenue..... | 9 |
| 270 East Fourth street..... | 5 | 42 West Twenty-eighth street..... | 14 |
| 215 East Nineteenth street..... | 5 | | |
| 209 East Fortieth street..... | 5 | | |
| 159 East Sixtieth street..... | 5 | | |
| 217 East Seventy-fourth street..... | 5 | | |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|--------------------------------------|----|--|----|
| Avenue D..... | 13 | West Houston street..... | 14 |
| Baxter street..... | 13 | West Thirty-second street..... | 14 |
| East Twenty-sixth street..... | 13 | Columbia street..... | 15 |
| East Thirty-ninth street..... | 13 | East Forty-seventh street..... | 15 |
| East Forty-first street..... | 13 | East Eighty-second street..... | 15 |
| East Eighty-third street..... | 13 | East One Hundred and Seventeenth street..... | 15 |
| Seventh street..... | 13 | Stanton street..... | 15 |
| Sheriff street..... | 13 | Washington street..... | 15 |
| Thompson street..... | 13 | West Twenty-seventh street..... | 15 |
| West Nineteenth street..... | 13 | West Forty-first street..... | 15 |
| West Thirty-sixth street..... | 13 | Broome street..... | 16 |
| Allen street..... | 14 | Chrystie street..... | 16 |
| Cannon street..... | 14 | East Thirteenth street..... | 16 |
| East Tenth street..... | 14 | Rivington street..... | 16 |
| East Thirtieth street..... | 14 | West Thirty-first street..... | 16 |
| East Sixtieth street..... | 14 | West Forty-sixth street..... | 16 |
| East One Hundred and Nineteenth St.. | 14 | East Houston street..... | 17 |
| Mott street..... | 14 | Forsyth street..... | 17 |
| Pitt street..... | 14 | | |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.—(Continued.)

| | | | |
|--------------------------------|----|--------------------------------|----|
| Second street..... | 17 | East Eleventh street..... | 23 |
| West Thirteenth street..... | 17 | West Sixteenth street..... | 23 |
| West Forty-seventh street..... | 17 | East Twelfth street..... | 24 |
| West Fifty-fourth street..... | 17 | West Thirty-eighth street..... | 24 |
| East Sixteenth street..... | 18 | West Fortieth street..... | 24 |
| Eleventh avenue..... | 18 | East Fourth street..... | 25 |
| Ridge street..... | 18 | Mulberry street..... | 25 |
| Avenue B..... | 19 | West Twenty-fifth street..... | 25 |
| Fifth street..... | 19 | Eldridge street..... | 26 |
| Lewis street..... | 19 | Third street..... | 26 |
| Seventh avenue..... | 19 | West Thirty-third street..... | 27 |
| Sixth avenue..... | 19 | West Fifty-second street..... | 27 |
| Hudson street..... | 20 | Greenwich street..... | 28 |
| Monroe street..... | 20 | Sixth street..... | 28 |
| West Twenty-sixth street..... | 20 | West Twenty-eighth street..... | 31 |
| Madison street..... | 21 | Avenue A..... | 35 |
| West Thirtieth street..... | 21 | Ninth avenue..... | 35 |
| West Forty-third street..... | 21 | Eighth avenue..... | 39 |
| West Forty-fourth street..... | 21 | First avenue..... | 66 |
| Delancey street..... | 22 | Second avenue..... | 78 |
| West Seventeenth street..... | 22 | Tenth Avenue..... | 78 |
| Avenue C..... | 23 | Third avenue..... | 96 |

| | |
|--|----|
| Cases occurring in the annexed district..... | 65 |
| Home for the Friendless..... | 1 |
| St. Francis's Hospital..... | 2 |
| Foundling Asylum..... | 3 |
| Juvenile Asylum..... | 6 |
| Nursery and Child's Hospital..... | 17 |
| Half-Orphan Asylum..... | 22 |
| Colored Orphan Asylum..... | 33 |
| Shipboard..... | 1 |

DIPHThERIA.

| | |
|--|-------|
| Total number of cases of diphtheria..... | 2,073 |
| Number of houses in which diphtheria occurred..... | 1,598 |
| Number of houses in which 2 cases occurred..... | 212 |
| “ “ “ 3 “ “..... | 44 |
| “ “ “ 4 “ “..... | 19 |
| “ “ “ 5 “ “..... | 5 |
| “ “ “ 6 “ “..... | 1 |
| “ “ “ 7 “ “..... | 1 |
| “ “ “ 9 “ “..... | 1 |
| Infant Hospital..... | 1 |
| Juvenile Asylum..... | 1 |
| Colored Orphan Asylum..... | 11 |
| Deaf and Dumb Institution..... | 12 |
| Foundling Asylum..... | 22 |
| Westchester..... | 37 |

HOUSES CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|---|---|--|---|
| 215 East Nineteenth street | 3 | 407 West Thirty-fourth street | 3 |
| 226 East Thirty-fourth street | 3 | 260 West Thirty-eighth street | 3 |
| 30 East Thirty-seventh street | 3 | 512 West Thirty-ninth street | 3 |
| 326 East Fifty-second street | 3 | 514 West Thirty-ninth street | 3 |
| 147 East Fifty-ninth street | 3 | 351 West Forty-third street | 3 |
| 74 Eldridge street | 3 | 409 West Forty-third street | 3 |
| 203 Forsyth street | 3 | 328 West Forty-eighth street | 3 |
| 171 Franklin street | 3 | 551 West Fifty-first street | 3 |
| 67 Greenwich street | 3 | 36 Bethune street | 4 |
| 439 Greenwich street | 3 | 224 East Forty-first street | 4 |
| 564 Greenwich street | 3 | 241 East Fifty-fourth street | 4 |
| 154 Henry street | 3 | 116 East Fifty-ninth street | 4 |
| 204 Hester street | 3 | 331 East Fifty-ninth street | 4 |
| 120 King street | 3 | 25 Essex street | 4 |
| 180 Ludlow street | 3 | 9 Horatio street | 4 |
| 102 Mott street | 3 | 146 Perry street | 4 |
| 87 Mulberry street | 3 | 45 Renwick street | 4 |
| 111 Mulberry street | 3 | 727 Third street | 4 |
| 182 Ninth avenue | 3 | 945 Third street | 4 |
| 57 Ridge street | 3 | 154 West Eighteenth street | 4 |
| 81 Tenth avenue | 3 | 423 West Twenty-sixth street | 4 |
| 161 Tenth avenue | 3 | 528 West Twenty-seventh street | 4 |
| 475 Tenth avenue | 3 | 141 West Thirtieth street | 4 |
| 496 Tenth avenue | 3 | 504 West Thirtieth street | 4 |
| 42 West Fourth street | 3 | 439 West Thirty-second street | 4 |
| 16 West Tenth street | 3 | 445 West Thirty-ninth street | 4 |
| 122 West Seventeenth street | 3 | 405 West Forty-sixth street | 4 |
| 452 West Nineteenth street | 3 | 62 Mulberry street | 5 |
| 257 West Twenty-first street | 3 | 18 Vandam street | 5 |
| 446 West Twenty-sixth street | 3 | 41 Vesey street | 5 |
| 248 West Twenty-eighth street | 3 | 454 West Sixteenth street | 5 |
| 335 West Twenty-eighth street | 3 | 439 West Forty-ninth street | 5 |
| 50 West Twenty-ninth street | 3 | 55 West Twenty-eighth street | 6 |
| 505 West Twenty-ninth street | 3 | 141 Reade street | 7 |
| 300 West Thirtieth street | 3 | 61 West Thirteenth street | 9 |
| 423 West Thirty-second street | 3 | | |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.

| | | | |
|--------------------------------------|---|--------------------------------------|---|
| Allen street | 4 | East Seventy-second street | 4 |
| Broadway | 4 | East Eighty-fourth street | 4 |
| Centre street | 4 | Grand street | 4 |
| Desbrosses street | 4 | Jane street | 4 |
| Downing street | 4 | Leroy street | 4 |
| East Ninth street | 4 | Market street | 4 |
| East Twenty-sixth street | 4 | Renwick street | 4 |
| East Thirty-first street | 4 | Roosevelt street | 4 |
| East Thirty-seventh street | 4 | St. Mark's place | 4 |
| East Fortieth street | 4 | West Eleventh street | 4 |
| East Thirty-eighth street | 4 | West Twenty-second street | 4 |
| East Sixty-second street | 4 | West Twenty-fourth street | 4 |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.—(Continued.)

| | | | |
|-------------------------------------|---|--------------------------------------|----|
| West Twenty-fifth street | 4 | East Fourteenth street | 7 |
| William street | 4 | East Fifteenth street | 7 |
| Canal street | 5 | East Eighteenth street | 7 |
| Carmine street | 5 | East Nineteenth street | 7 |
| Crosby street | 5 | East Twenty-third street | 7 |
| East Houston street | 5 | East Twenty-fourth street | 7 |
| East Twenty-sixth street | 5 | East Forty-ninth street | 7 |
| East Forty-first street | 5 | East Fifty-second street | 7 |
| East Forty-fifth street | 5 | East Seventy-fourth street | 7 |
| East Fifty-first street | 5 | Reade street | 7 |
| East Fifty-fifth street | 5 | Rivington street | 7 |
| East Fifty-sixth street | 5 | West Fourth street | 7 |
| East Sixtieth street | 5 | West Thirty-fourth street | 7 |
| East Seventy-fifth street | 5 | Willet street | 7 |
| Hester street | 5 | Bethune street | 8 |
| Laight street | 5 | Broome street | 8 |
| Leonard street | 5 | East Seventeenth street | 8 |
| North Moore street | 5 | East Sixty-sixth street | 8 |
| Sixth street | 5 | Eighth street | 8 |
| Sullivan street | 5 | Franklin street | 8 |
| Vesey street | 5 | Perry street | 8 |
| Watts street | 5 | Spring street | 8 |
| West Broadway | 5 | Thompson street | 8 |
| West Fifteenth street | 5 | West Twentieth street | 8 |
| West Forty-sixth street | 5 | West Forty-first street | 8 |
| West Fiftieth street | 5 | West Forty-eighth street | 8 |
| Attorney street | 6 | Avenue D | 9 |
| Bayard street | 6 | Cannon street | 9 |
| Bleecker street | 6 | Cherry street | 9 |
| Bowery | 6 | East Fifty-fourth street | 9 |
| Christopher street | 6 | Essex street | 9 |
| East Tenth street | 6 | Henry street | 9 |
| East Thirteenth street | 6 | Second street | 9 |
| East Forty-sixth street | 6 | Seventh street | 9 |
| East Seventy-first street | 6 | West Tenth street | 9 |
| Fifth avenue | 6 | West Forty-ninth street | 9 |
| Fourth avenue | 6 | Avenue C | 10 |
| Goerck street | 6 | Delancey street | 10 |
| Horatio street | 6 | East Fourth street | 10 |
| Little Twelfth street | 6 | East Twelfth street | 10 |
| Pitt | 6 | East Forty-seventh | 10 |
| Ridge street | 6 | Elizabeth street | 10 |
| Sheriff street | 6 | West Thirty-sixth street | 10 |
| South Fifth avenue | 6 | West Forty-third street | 10 |
| Suffolk street | 6 | West Forty-fourth street | 10 |
| Vandam street | 6 | West Fifty-fourth street | 10 |
| Varick street | 6 | Avenue B | 11 |
| West Houston street | 6 | Baxter street | 11 |
| West Thirty-fifth street | 6 | Eleventh avenue | 11 |
| West Forty-seventh street | 6 | Fifth street | 11 |
| East Eleventh street | 7 | Forsyth street | 11 |

STREETS CONTAINING THE LARGEST NUMBER OF CASES.—(Continued.)

| | | | |
|--------------------------------------|----|-------------------------------------|----|
| King street | 11 | Hudson street | 16 |
| Ludlow street | 11 | Third street | 16 |
| Lewis street | 11 | Seventh avenue | 17 |
| Orchard street | 11 | Eldridge street | 18 |
| West Thirteenth street | 11 | West Seventeenth street | 19 |
| West Thirty-third street | 11 | Ninth avenue | 21 |
| West Thirty-eighth street | 11 | West Twenty-sixth street | 21 |
| Madison street | 12 | East Fifty-ninth street | 22 |
| Sixth avenue | 12 | Mott street | 22 |
| Stanton street | 12 | West Thirtieth street | 22 |
| West Twenty-first street | 12 | West Sixteenth street | 24 |
| West Twenty-ninth street | 12 | West Eighteenth street | 25 |
| Avenue A | 13 | West Twenty-eighth street | 25 |
| Christie street | 13 | West Nineteenth street | 26 |
| East Sixteenth street | 13 | Second avenue | 27 |
| East Fifty-third street | 13 | Washington street | 27 |
| West Twenty-seventh street | 13 | West Thirty-ninth street | 27 |
| West Thirty-first street | 13 | Eighth avenue | 29 |
| Lexington avenue | 14 | Greenwich street | 39 |
| West Thirty-second street | 15 | Tenth avenue | 41 |
| West Thirty-seventh street | 15 | Mulberry street | 42 |
| West Fortieth street | 15 | First avenue | 50 |
| West Fifty-first street | 15 | Third avenue | 50 |

Scarlet Fever, Measles, and Diphtheria.—As will be seen by the tabulated statements, these diseases have been unusually prevalent. Of the first, 3,215 cases have been reported; of the second, 1,528, and of the latter, 2,073. Disinfection has generally been performed, and where many cases have occurred in the same locality, search has been made for local causes. This search has been especially successful in diphtheria, and no doubt, apart from contagion, the disease has been often traced to such favoring causation as broken drains, damp cellars, and defective soil-pipes.

Typhus and Typhoid Fever.—The total number of these cases reported were respectively 66 and 383. As will be seen by the tabulated statement, there was no tendency to concentration. When requested, the premises have been examined and disinfected.

Report of a Plan for the Organization of a Permanent Branch of Service in the Sanitary Bureau which shall secure a more thorough Public Vaccination.—The report of the Sanitary Committee of December 9, 1873, calls the attention of the Board to the necessity of undertaking general vaccination. It ascribes the present immunity from small-pox to the vaccination directed by the Board during the years 1870-'73. But, since it is probable that not half the newly-born children will be vaccinated, unless the subject is brought directly to the attention of parents by sanitary inspectors, it urges the necessity of annually repeating house-to-house vaccination. It proposes that vaccination should be

more perfectly systematized and be made a permanent feature in the work of the Board, that the inspectors who vaccinate should be especially trained, and that the result of inspections of vaccinated cases, and the proper records of all important matters thereto pertaining, should be accurately kept.

The report ends with a resolution directing the Sanitary Superintendent to "prepare and submit to the Board a plan of a branch of service in the Bureau of Inspection which shall, as far as practicable, secure the results contemplated in this report."

Before submitting the called-for plan, the Superintendent respectfully presents some facts relating to small-pox and vaccination, as interesting and not unimportant, in view of the action proposed in the report of the Sanitary Committee.

Vaccination was introduced into New York in 1800, and the first bill of mortality, two years afterward, showed 108 deaths from small-pox. From 1804 to 1872 inclusive, subtracting four years for which there is no record, the total mortality reached 14,061, the average deaths being $215\frac{2}{3}\frac{6}{9}$ per annum.

The following table shows the distribution of the deaths from small-pox during that period, and the population as per census :

Deaths by Small-Pox in the City of New York from 1804 to 1874.

| Year. | Deaths. | Population. | Year. | Deaths. | Population. | Total Mortality from all Causes in New York. |
|----------|---------|-------------|----------|---------|-------------|--|
| 1804.... | 169 | | 1841.... | 200 | | |
| 1805.... | 62 | | 1842.... | 181 | | |
| 1806.... | 48 | | 1843.... | 117 | | |
| 1807.... | 29 | | 1844.... | 21 | | |
| 1808.... | 62 | | 1845.... | 425 | 371,223 | |
| 1809.... | 66 | | 1846.... | 141 | | |
| 1810.... | 4 | 96,373 | 1847.... | 53 | | |
| 1811.... | 117 | | 1848.... | 544 | | |
| 1812.... | 21 | | 1849.... | 326 | | |
| 1813.... | 2 | | 1850.... | 231 | 515,547 | |
| 1814.... | 2 | 95,519 | 1851.... | 562 | | |
| 1815.... | 94 | | 1852.... | 497 | | |
| 1816.... | 179 | | 1853.... | 656 | | |
| 1817.... | 14 | | 1854.... | 611 | | |
| 1818.... | 19 | | 1855.... | 101 | 629,810 | |
| 1823.... | 18 | | 1856.... | 388 | | |
| 1824.... | 394 | | 1857.... | 423 | | |
| 1825.... | 40 | 166,086 | 1858.... | 492 | | |
| 1826.... | 58 | | 1859.... | 60 | | |
| 1827.... | 149 | | 1860.... | 274 | 805,358 | |
| 1828.... | 93 | | 1861.... | 599 | | |
| 1829.... | 16 | | 1862.... | 268 | | |
| 1830.... | 176 | 197,112 | 1863.... | 73 | | |
| 1831.... | 224 | | 1864.... | 382 | | |
| 1832.... | 89 | | 1865.... | 664 | 726,386 | 24,843 |
| 1833.... | 25 | | 1866.... | 26 | | 26,818 |
| 1834.... | 233 | | 1867.... | 19 | | 23,159 |
| 1835.... | 351 | 268,089 | 1868.... | 25 | | 24,889 |
| 1836.... | 173 | | 1869.... | 203 | | 25,167 |
| 1837.... | 164 | | 1870.... | 293 | 942,229 | 27,175 |
| 1838.... | 91 | | 1871.... | 805 | 975,000 | 26,976 |
| 1839.... | 68 | | 1872.... | 929 | 1,000,000 | 32,647 |
| 1840.... | 232 | 312,710 | 1873.... | 117 | | 29,084 |

During the several years in which the Board has conducted public vaccination, economical reasons have sometimes led it to assign the collection of virus to the Vaccinating Corps, but its repeated experiments have shown the necessity of intrusting this most important work to an expert.

A natural desire to return as many points as possible, and a want of appreciation of the importance of the process, were accountable for this. To the inexperienced eye, serum would charge a quill as acceptably as true protective lymph. A vesicle patiently teased by the tyro would charge a hundred quills with a material which was either innocuous or inefficient, and so the lymph rapidly deteriorated. This result, recognized at the time and instantly remedied, always follows similar conditions. Seaton says that, "ordinarily, a vesicle produced by a single deep puncture should charge but six or eight ivory points. There should be no squeezing of the vesicle to make the lymph exude, and when lymph ceases to stand spontaneously on its surface, that vesicle must be considered no longer usable for lymph-supply. Moreover, the experienced vaccinator does not take his lymph from every vesicle, it must be characteristic and the subject perfectly healthy." To enable the vaccinator to have a choice, he must have more successful cases from which to select than usually falls to the lot of private practitioners. Says the same writer: "A vaccinator who is dependent on only one, two, or three vaccinations of the previous week, is liable to be stopped in his proceedings, not merely by the cases having failed, but by the vesicles being such as experience dictates he had better not employ for continuing his lymph. If, rather than be stopped, he succumbs to the temptation of vaccinating from such cases, more especially if (as such a vaccinator is sure to do) he succumbs again and again, he will soon find his stock of lymph deteriorate."

It is not permissible to tap any vesicle not abnormal; only the best of the successful ones are to be used, as, says Steinbrenner, "the wise husbandman picks out the finest grain for his seed-corn."

Even the mere manipulation with the vaccinating instrument is an affair of more importance than is usually supposed. It is not merely a trick of the fingers. Mr. Marson, for twenty-five years physician to the Small-Pox Hospital in London, in a petition to the House of Commons, in the summer of 1856, states that vaccination was far less satisfactorily performed in England than in any other country in Europe, and he explains this by saying that all persons, medical men, clergymen, amateurs, druggists, old women, midwives, etc., are allowed to vaccinate in any way he or she may think fit, and the persons so operated on are considered to have been vaccinated. Seaton and Buchanan, in their inquiry into the state of vaccination in London, made in 1863, compared the results obtained by various vaccinators, as shown by the cicatrices of large numbers of children, and were struck with the great difference of results of different operators working under the same conditions apparently, a difference which was "quite irrespective of general professional attainments, and which depended altogether upon special knowledge and special practical skill." They expressed themselves as strongly convinced that the vaccination of London would be best done by a few thoroughly-trained vaccinators who devoted themselves exclusively to the work.

Seaton says: "A group of children of various ages and vaccinated at vari-

ous times by *one* vaccinator, would, by their scars, show themselves, with rare exceptions, thoroughly protected against small-pox; while, in an adjacent district, similarly situated in all other respects, or in an adjacent school, would be found another group, whose vaccination had been the work of another hand, few of whom were really well protected, and in many of whom the vaccination had been little more than a sham.—“Thus it is,” he says, “that we are able to read without surprise that, of 150 cases of small-pox in the practice of the Lincoln General Hospital, during a recent epidemic, no fewer than eighteen were in persons who said they had been vaccinated, but that the vaccination had not taken.” “If,” says Marson, “a little operation—little important in practice, but very important in its results—well performed, can save many lives, as most certainly, it can, and prevent much suffering and sorrow, it should surely always be done with the greatest care and in the best-known way. . . . The success of *all* operations depends on nice care and management.”

With these two factors favorable, i. e., good lymph and an expert vaccinator, in primary vaccinations, failure should not occur, according to Marson, oftener than once in 150 times, while Seaton estimates one failure in 170 cases as a fair proportion.

Yet, with these results attainable, vaccination being properly performed, the report of the medical officer of the Privy Council shows that official inquiries, in the course of which the arms of nearly half a million children were examined, proved the great extent to which insufficient vaccination prevailed.

Taking the country throughout, not more than one child in eight was found to be so vaccinated as to have the highest degree of protection that vaccination can afford, and not more than one in three, on the most indulgent estimate, could be considered perfectly protected. If we accept these figures even as approximate, we can easily explain the bad repute into which, in certain quarters and at various times, vaccination has fallen; while they also show that even the vaccination which comes short of furnishing the highest protection, tends powerfully to impede the progress of small-pox.

Drs. Buchanan and Seaton, after critically examining 50,000 children in various public institutions, estimated that, while the best vaccination was more than thirty times as protective as the worst, the worst was more than forty-seven times better than none at all?

The exemption from small-pox now almost universal over the civilized world, is due, not to the gradual decadence of the disease, but to the extent to which vaccination has prevailed. Simon well says that “our exemption from its ravages tempts us to forget how our grandfathers regarded it.” Dr. Haygarth, writing in 1793, five years before Jenner’s discovery, stated that, during his long attention to this subject, not a single case had occurred to prove that persons liable to it could associate in the same chamber with a patient in the distemper without receiving the infection. Carried to Mexico in 1520, it spread thence throughout this continent, where, according to Robertson, it destroyed three and a half millions of people. Introduced into Iceland in 1707, it de-

stroyed one-quarter of the entire population; and, reaching Greenland in 1733, it almost depopulated the country.

Nearly one-tenth part of all the persons who died in London, within the bills of mortality, during the last half of the last century, died from it. Writing of this time, Macaulay says: "Small-pox was always present, filling the church-yard with corpses, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which its mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover!"

During the hundred years previous to the discovery of vaccination, small-pox is calculated to have destroyed 45,000,000 of the people of Europe. Nor is there reason to believe that small-pox has lost any of its virulence by lapse of time. The records of the Small-Pox Hospital in London show that, during the last twenty-five years of the last century, the death-rate in the hospital (the patients being all unvaccinated) was $32\frac{1}{2}$ per cent., while, in the same hospital, during the years 1836-'51 inclusive, the deaths of unvaccinated patients reached 35 per cent., and those nations where vaccination has been scantily performed, such as the Argentine Confederation and Japan, have suffered terribly.

Even in our own city, the deaths from small-pox in 1872 reached the formidable proportions of 929, the total mortality for the year being 32,647.

Small-pox being the contagious disease most certainly controlled by preventive measures, what measures are now and here in vogue to reach the poor classes? Especially exposed by poverty, ignorance, and prejudice, philanthropy and self-preservation unite in urging the use of every means for their protection. In a peculiar sense they may be called the "dangerous class," for they are the principal medium of infection, and, in one way or another, find entrance into every house. They rely chiefly upon the Dispensaries for vaccination.

Appended is a list of the total number of Dispensary vaccinations for the years 1854-'67 inclusive. The figures do not show an increase proportionate to our increased population, but rather the reverse.

TABLE showing the Yearly Number of Dispensary Vaccinations, both Primary and Secondary, from 1854 to 1867 inclusive, in the City of New York:

| YEAR. | Dispensary Vaccinations. | Year. | Dispensary Vaccinations. |
|-----------|-----------------------------|-----------|-----------------------------|
| 1854..... | 10,729 | 1861..... | 19,122 |
| 1855..... | 8,218 | 1862..... | 18,408 |
| 1856..... | 12,274 | 1863..... | 15,737 |
| 1857..... | 12,783 | 1864..... | 18,843 |
| 1858..... | 14,390 | 1865..... | 45,481 |
| 1859..... | 12,097 | 1866..... | 8,726 |
| 1860..... | 17,416 | 1867..... | 8,853 |

Most of the public vaccinations fall to the four following Dispensaries, and the figures show a notable falling off during the last year.

| YEAR. | New York Dispensary. | Demilt Dispensary. | Northern Dispensary. | Eastern Dispensary. |
|--------------------|-------------------------|-----------------------|-------------------------|------------------------|
| 1870..... | 1,279 | 2,421 | 637 | 5,258 |
| 1871..... | 2,983 | 4,817 | 833 | 4,842 |
| 1872..... | 2,323 | 2,233 | 716 | 6,744 |
| 1873 (11 mo.)..... | 727 | 700 | 120 | 2,500 |

This decrease is, no doubt, due to the vaccinations by the Board in former years, and although it is impossible to estimate the number of young children, of one year old and younger, who are at present unprotected and are waiting for the "Health-Doctor" to come around again, they undoubtedly amount to thousands. The public vaccinations instituted by the Board, at a time when small-pox was prevailing, were popular, and naturally directed the people from the dispensaries, and it is suggested with much show of reason that, unless such vaccinations are continued, the result will be undesirable. Twice at least, in this State, have attempts been made to secure by legislation a more perfect vaccination of the masses; chapter 438, volume iii., "Revised Statutes of the State of New York," contains "an act to encourage and provide for a general vaccination in this State." It was passed April 16, 1860. It provides that children not having been vaccinated may be excluded from common schools. It authorizes trustees and local boards to carry this provision into effect, after having given at least ten days' public notice thereof, and advertising due provision for the vaccination of any child or person of suitable age, who desires to attend school, but is from poverty unable to procure vaccination. It authorizes the appointment of competent physicians to ascertain the number of children in the school district of an age suitable to attend the common school, who have not been already vaccinated, and to furnish a list of such children to the trustees or local board. The physicians are directed to vaccinate those requiring it, and to give certificates of vaccination.

The necessary expenses incurred by the provisions of this act are to be included in the annual tax-bill of the said district, town, or village, and the trustees of the several school districts of this State are required to include in their annual report the number in their several districts, between the ages of five and twenty-one years, who are vaccinated and the number unvaccinated.

In 1862 the Legislature was memorialized by the Board of Commissioners of Health to enact such laws as would properly enforce efficient and universal vaccination, to be repeated every five years until the age of twenty-one.

The memorial, after presenting facts as to the prevalence of small-pox, recommended that physicians failing to report cases of small-pox under their charge within twenty-four hours should be fined \$100.

That any hotel proprietor, keeper of a boarding or lodging house, or head of a family, should under the same circumstances be fined \$50.

That no child should be admitted into any public school without first presenting a certificate of vaccination.

That all private schools, colleges, and benevolent institutions, should make vaccination requisite for admission.

That in all penal institutions and hospitals vaccination should be obligatory.

That every family engaging a servant, every merchant hiring a clerk, every captain when shipping a sailor, every mechanic receiving an apprentice, and every officer enlisting a recruit, should compel the applicant to exhibit his certificate of vaccination.

And that the physician at Quarantine should be compelled to vaccinate every person on arrival at this port, who has not the necessary certificate, or who does not present evidence of having had the disease.

Besides the general vaccinations done by the Board of Health in former years, it has always appreciated the importance of more comprehensive and permanent measures than those now in vogue, for protecting the public health by vaccination. The late Dr. J. P. Loines, in an exhaustive report made to the Board at its request, in 1868, after answering certain questions upon vaccination submitted by the Board, suggested a plan which would, he thought, if carried out, secure the vaccination of nine-tenths of the poorer population without any compulsory law. His recommendations were briefly these, viz.: That no children who had not been well vaccinated, or variolated, within seven years, should be allowed to attend any school receiving any part of the public moneys; that, after a proper period of public notice, no children should attend such school who came from families where all the other members of that family above the age of three months could not prove, or show a valid certificate of, vaccination within that time, or of former variolation.

That the Police Department cause all persons under their control, with their families, and all others who receive any benefit, such as lodging, etc., to be vaccinated, or to show a proof of vaccination within seven years; that every prisoner should be vaccinated; also, that the Commissioners of Charities and Correction, as well as all other public bodies having the care of the poor, withhold all in or out door relief, of any kind, until vaccination is performed, or the date of previous vaccination ascertained.

Compulsory Vaccination of England, 30 and 31 Vict., 6, 84.—An act to consolidate and amend the laws relating to vaccination (August, 1867) provides that the parent of every child born in England shall, within three months after the birth of such child—or where, by reason of the death, illness, absence, or inability of the parent, or other causes—any other person shall have the custody of such child, such person shall, within three months after receiving the custody of such child, take it or cause it to be taken to the public vaccinator of the vaccination district in which it shall be then resident, who shall vaccinate it with all reasonable dispatch. Upon the same day in the following week the child is to be brought to the vaccinator for inspection, and successful vaccination requires a certificate to that effect to be sent to the registrar, and a duplicate to be given to the parent or custodian. If the child is in a condition unfit for vaccination, a certificate is given to that effect, said certificate to remain in force

for two months, and to be renewable for successive periods of two months until a public vaccinator or medical practitioner shall deem the child to be in a fit state for successful vaccination. The parent or custodian of a child successfully vaccinated by a medical practitioner is required to transmit a certificate to that effect to the registrar of the district. Penalties are enacted for failure to comply with these requirements. Justices, on proper information in writing, and on proper notice having been given to the parent or guardian, may exact a penalty not exceeding twenty shillings for any child under fourteen years of age, being within the union or parish for which the informant acts, who has not been vaccinated or who has not had small-pox.

The English "National Vaccine Establishment," under which these vaccinations are made, is stated to have vaccinated nearly three-fourths of the newly-born in England and Wales, while in the years 1865-'66 no fewer than 27,903 separate applications for virus were made to it by private practitioners in those countries.

The facts above presented in regard to small-pox and vaccination, far from exhausting the subject, are merely matters of common knowledge among medical men, and their statement has, perhaps, already trenched too far upon the object of this report. At present the city has no law in force bearing on vaccination, every one doing what seems right in his own eyes. Physicians vaccinate whenever called upon, but keep no records. The poor do not go to the dispensaries in any considerable numbers. Within the knowledge of this Bureau there is now an unusually large number of unvaccinated children in the 24,000 tenement-houses of the city, not to speak of other houses not technically classed as tenements. The German tenement-house population is prejudiced against vaccination excepting in May, and is therefore unusually exposed. All this prepares a fertile field for variola, when chance shall sow the seed.

Compulsory vaccination is at present impracticable. General vaccination, as performed by the Board in former years, valuable as it was, was necessarily expensive, the virus alone costing thousands of dollars, and, worst of all, it was imperfect. Made hastily, in the actual presence of an epidemic, parents absent at work and children absent at school were often unavoidably overlooked, and only the barest records could be kept. In compliance with the resolution of the Sanitary Committee directing the submission of a plan for the organization of a permanent branch of service in this Bureau for public vaccination, I would respectfully present the following sketch:

The vaccinating corps should be under the supervision of the executive officer of the Board, and should constitute a branch of his Bureau.

It should consist of an inspector, ten assistant inspectors, and a clerk.

The inspector, who should be a physician and an expert in vaccination, should train his subordinates in vaccination and the procuring of lymph, should inspect their vaccinations when necessary, should supervise their reports, and be responsible for the character and quantity of their work, and the quality of the virus. He should also make written reports to the superintendent as often as the Board may direct.

The ten assistant inspectors should be educated physicians, and carefully selected on account of merit. A public vaccinator should possess tact and patience. To one more anxious to add to his bank account than to protect the public against small-pox, the position might offer peculiar temptation to slur over his work.

They should pass an examination to test their fitness, and they should not be retained, after a sufficient trial, unless their work attained a certain standard of excellence.

They should be required to fill out printed blanks in every case of vaccination and revaccination, which should notice the following points: Name, age, sex, nationality, primary or secondary, character of scar, concomitant affections, manner of vaccination, as to instrument and form of virus, together with any constitutional, hereditary, or acquired tendencies. The assistant inspectors should be employed exclusively in vaccinating and its allied duties. The duties of the clerk would consist in keeping the records of the corps, distributing virus, and, if it is desired to make the department self-sustaining, in selling it. As to the sale of virus by the Board, if there are no objections to it on the ground of expediency, it is believed that it would eventually go far toward sustaining the vaccination corps. The advantages of such a body, working intelligently, systematically, and not under the pressure of an epidemic, are apparent, and, in case of small-pox prevailing, it would afford an invaluable nucleus for a larger force.

PREVENTION AGAINST CHOLERA.

Early in the spring of 1873, the Board, apprehensive of the approach from the Southwest of a disease resembling Asiatic cholera, directed special measures to be taken with the view to observe its progress, and to prevent if possible its entrance into the city. Inspector Judson was directed to report each week its progress in the West, and an interesting special report from him upon this subject will be found in the Appendix.

On the 5th of June, Dr. Janes, at that time Superintendent, "directed that a special inspection be made of the different railroad-depots, ferry-houses, steamboat-landings, cheap lodging-houses for second-class car-passengers, and emigrant boarding-houses, with the view to the immediate adoption of such preventive measures as might be applied to these points of influx, which were more likely, by giving lodgment to the poison, to become the earlier centres from which the disease might radiate. In making these inspections special attention was given to the disinfection and cleaning of the privies and water-closets connected with these several places, as the ready means of destroying any germs of cholera deposited there by persons from the infected districts, either passing through the city or making it a place of temporary abode."

In reporting this action to the Board, Dr. Janes recommended that full publicity be given to the most approved precautionary measures, and thereupon the following circular was issued:

INSTRUCTIONS REGARDING THE PREVENTION OF CHOLERA.

1. To disinfect diarrhœal discharges, and to purify water-closets, privies, drains, and cesspools, dissolve ten pounds of sulphate of iron (copperas) in five gallons of water, and add half a pint of common carbolic acid. Keep a small quantity of this solution in the vessel which is to receive the discharges. Pour a pint of the solution into the pan of the water-closet three or four times a day, or add half the entire quantity to the contents of an ordinary privy-vault. If this practice is made general in all private dwellings, not only will the house-drains of such dwellings be disinfected, but the benefit will extend even to the public sewers.

2. The seats and floors of all water-closets in private houses, at ferry-houses, at hotels, and lodging-houses, on steamboats and rail-cars, should be frequently washed with a solution of one ounce of carbolic acid in each gallon of water.

3. During the prevalence of cholera, all diarrhœal discharges should be received in vessels containing some of the disinfecting fluid, before being thrown into the privy-vault or pan of the water-closet. Patients suffering with diarrhœa, however mild, should remain isolated, observe the recumbent posture, and avoid unripe fruits and stale vegetables. Nothing is of more importance in these cases than ABSOLUTE REST.

4. Clothing, sheets, towels, etc., from cholera patients, should be immediately boiled; but, when this is impracticable, they may be thrown into a tub of water, in which have been dissolved eight ounces of sulphate of zinc, with one or two ounces of carbolic acid to every three or four gallons of water, or in water containing sufficient permanganate of potash to maintain a light-purple color, until the articles can be boiled.

5. To absorb moisture from damp cellars, closets, courts, and sunken areas, use fresh stone-lime finely broken, and suitably distributed, or placed on plates in the places to be dried. Whitewashing should be done with pure fresh lime. Putrid and offensive gases may be destroyed by chloride of lime.

6. Open and thoroughly ventilate cellars, garrets, closets, sleeping-rooms, and all other apartments, and keep them clean and dry. Observe the utmost cleanliness in basements, areas, and grounds about the house.

7. *“Personal health requires pure drinking-water, fresh air, substantial food, the needed rest, and bathing of the body.”*

This was widely circulated among the “agents of foreign and domestic steamships, railroad officials, proprietors of hotels, of emigrant and sailor boarding-houses, cheap and vagrant lodging-houses, and all similar places where strangers congregate.” “The effect,” says Dr. Janes, “of this early action was extremely gratifying, in that it secured a general cleansing of such premises as were in most danger of infection, and drew public attention to the importance of timely adopting preventive measures.”

TENEMENT-HOUSES.

The Sanitary Code defines a “tenement-house” to mean “every house, building, or portion thereof, which is rented, leased, let, or hired out to be occupied, or is occupied, as the house, home, or residence, of more than three families living independently of one another and doing their cooking upon the premises, or by more than two families upon a floor, so living and cooking, but

having a common right in the halls, stairways, yards, water-closets, or privies, or some of them."

Inclusive of "French flats," which fall into this class technically, and exclusive of some four hundred shanties, we have this year, according to a recent census of the police, in round numbers, 24,000 of them. Allot six families to each house, and four members to each family, and we account for more than half our population. Their number is steadily increasing. The city borders, cut sharply off by wide rivers, compel the population, which otherwise would shade off into the country, to crowd together and pile story upon story. The work of this Bureau lies largely among tenement-houses. During the year past, 52,064 inspections of them have been made by its officers, and 8,762 causes of complaint have been found. It concerns itself chiefly with defective waste and water pipes, damp and dirty cellars, areas, and yards, leaky roofs and skylights, filthy and poorly-ventilated water-closets and privy-vaults, faulty ventilation, dirty walls and ceilings, and defective sidewalks and gutters.

This branch of inspection, necessarily routine in its character, does not attract the public eye, but it is, by far, the most important service of this Bureau. Although it might seem scarcely possible, at first, that much substantial sanitary progress should be made where the field is so vast and the laborers so few, yet the inspectors find marked improvement in their tenements from year to year. They observe that the landlords and their agents obey the orders of the Board more promptly, while they themselves are recognized by the tenants as their friends.

Great diversity exists in the character of tenement-houses. Those constructed under the "Tenement-house Act" are comparatively light, airy, and cheerful, although in several of the annexed reports the complaint of previous years is repeated, that the latter clause of section 15 of the act is not enforced, which clause requires that "the halls on each floor shall open directly to the external air, with suitable windows, and shall have no room or other obstruction at the end, unless sufficient ventilation is otherwise provided for said hall, in a manner approved by the Metropolitan Board of Health."

The old ones are, many of them, badly ventilated, in spite of the measures taken by the Board. The flue constructed to relieve the middle room is often stopped with rags, to prevent catching cold. The window opening into the hall is always closed at night. The halls are often absolutely dark, permitting the commission of nuisances and giving opportunity to vice. Where the avarice of the landlord has built on the entire lot, so that no yard is left, the privy is placed in the cellar, or thrust under the sidewalk, where it can be neither ventilated nor kept clean. Both sexes grope down to it indiscriminately, or, if modesty avoids this violence to its feelings, it is at the expense of neglecting the regular and daily observance of one of Nature's most important functions.

The evils of this class of tenements, constructed without the slightest reference to the health or convenience of their occupants, are too grave for any substantial remedy but demolition. Whenever they come within the law, they

are vacated by order of the Board on certificates from this Bureau. Fortunately, the march of business and the rigor of the Board are gradually accomplishing important changes in this regard.

A most valuable auxiliary in sanitary work, valuable to the tenant, the landlord, and the Board, is the appointment of a competent house-keeper for each tenement-house. She should be selected with some reference to her fitness for the position, and not, as is now too often the case, because of her unfitness for any thing else. If she were faithful and efficient, one can hardly over-estimate her influence on the side of health and cleanliness, and it is probable that she would eventually save the landlord much expense.

Disposal of Human Excrement.—A most important element in the health of tenement-house districts is the disposal of human excrement. It is often a question which to prefer—the sewer-connected privy, the privy-vault unconnected, the school-sink, or the common water-closet.

The objections to the sewer-connected privy-vaults are mainly that the connecting-pipe is a prolongation of the sewer, and is an outlet for sewer-gas, when free, and that it is liable to become obstructed by things thrown into the vault. Water-closets, in a certain class of tenements, are apt to become disarranged, so that the apparatus does not work, and, without abundant flushing, they become exceedingly offensive. School-sinks, which are shallow metallic troughs, with a plug to keep them full of water, and to allow of their frequent cleansing, have found great favor in cases where it was desirable to leave as little as possible to the care and faithfulness of the tenants; and the same may be said of vaults, water-tight and unconnected with the sewer. Which of these expedients to recommend in a given case will depend much on the character of the tenants, and the efficiency of that most important functionary, the house-keeper.

In this connection I beg to call attention to the report of Assistant-Inspector Nealis, with special reference to the plan for a modification of the sewer-connected privy, which seems to be an improvement on any thing now in use for thickly-populated neighborhoods.

The old-fashioned, unconnected privy-vault is gradually giving place to the water-closet. This is shown by the number of permits granted to scavengers by this Bureau during the last and the present year. In 1872, 5,848 permits were issued, while in 1873 the number did not exceed 5,501, and this, too, in spite of the city's increased population.

The ventilating shaft, which consists of an eight-inch earthen-ware pipe, laid at least six inches below the surface of the yard, from the vault to the nearest wall of the building of the greatest altitude, upon the premises, and there connecting with a metallic shaft of like diameter, extending not less than two feet above the roof of such building, is a successful means of avoiding the stench from privy-vaults. During the year, the Board has ordered 1,362 of these ventilating flues, as against 370 the previous year.

In the water-closets of tenements, and even of private buildings, the ventilation of the soil-pipe, by extending it two feet above the roof, has worked ad-

mirably. The importance of this measure, in a sanitary point of view, can hardly be over-estimated, but it has only been recently adopted, ninety-four of them having been ordered during the year.

VACATION OF CELLAR-DWELLINGS.

A very large number of cellars were vacated by the Board as living-rooms, having been condemned for non-compliance with section 6, chapter 908, Laws of 1867. The following report, by Assistant-Superintendent E. H. Janes, M. D., under whose administration the preliminary inspection was begun, will be read with interest :

During the winter preceding the organization of the present Board of Health, a careful sanitary inspection was made of all occupied cellars and basements situated south of Houston Street, with a view of vacating those which were declared unfit for human occupancy. As the winter was severe, and many of these poor tenants had not only paid advance rent, but had laid in their little stores of coal, the difficulties of moving in midwinter became apparent, and it was finally determined that the inspections be continued, but the orders to vacate be suspended until April 1st. The Inspectors therefore continued their work, reporting such cellars as, according to the law, were unfit for human habitation, and, by the 1st of April, the work was completed, and 493 orders had been issued for vacating as many underground dwellings. It was then determined that all peaceable efforts should be exhausted before resorting to any coercive measures for securing the enforcement of these orders, and the inspectors were unremitting in their efforts to effect by persuasive means a peaceable compliance. A few at once set about removing, others delayed under various pretenses and excuses ; some pleading the difficulty in securing apartments before May, the general moving-time, others proposing to make such alterations and repairs as would render the apartments tenatable, and still others endeavoring through political influence to have these orders rescinded ; while the Inspectors continued their steady pressure upon tenants and landlords alike, assuring all that the orders would ultimately be enforced if not otherwise complied with, and that the temporary forbearance on the part of the Board was only intended to give all a fair opportunity of completing the necessary arrangements. As a result of this peaceable though firm pressure made by the Inspectors, there were vacated, during the months of April and May, 330 cellars, leaving 163 still occupied, when the orders were returned to the Board with the report that all peaceable efforts had been exhausted ; whereupon the Board, by resolution, instructed me to execute the remaining orders without unnecessary delay. This required the issuing of a final notice to each family, informing them that, if their respective premises were not vacated within a specified time, the orders requiring such vacation would be enforced by aid of the police. Those who were early served were allowed until the 15th of June, while those who did not receive their notices until later in the month were allowed until the 1st of July to make their arrangements. At the expiration of the first term, there being apparently no disposition manifested by the occupants of these cellars to comply with the orders of the Board, the aid of the sanitary company of the police was asked and obtained, when the Inspectors of the several districts in which these cellars are located were directed to see that the orders for vacation were immediately enforced by police aid.

On this occasion sixty-nine cellars were visited, and sixty-two were vacated ; of the remaining seven, it was found that from five the families had removed since receiving their final notices, and in two instances sufficient evidence was afforded that the occupants had already engaged other apartments, of which they could not get immediate possession.

On the 1st of July, the time allowed by the remaining ninety-four notices expired, when a similar raid was made, and the work of vacating cellars south of Houston Street was completed.

Most of the cellars thus vacated as human dwellings were fitted up for business purposes, many were afterward occupied as kitchens, and quite a number, especially in the Fourth Ward, were, after a few weeks, reoccupied as dwellings, rendering it necessary that the work of vacating them be repeated. The incomes derived from the occupation of these dens of vice, immorality, and disease, are too considerable to be relinquished without a struggle, and thus it is that the proprietors of lodging-cellars and underground bagnios will submit to the fines imposed by the courts, and the forced execution of the orders of the Health Department, and immediately return to their old quarters, trusting that the "law's delay" will afford them time to accumulate sufficient to enable them to meet the next "raid" without any serious detriment to their financial affairs. This class of cellars gives the Inspectors far more trouble than those occupied as family-dwellings, and should be kept under constant surveillance after being vacated, to prevent their being reoccupied.

LIST OF CELLARS BELOW HOUSTON STREET VACATED BY THE BOARD AS HUMAN DWELLINGS DURING THE PRESENT YEAR.

| | |
|--|--|
| Albany, 4½. | Division, 62, 91, 92, 71, 110, 113, 128, 155, 189, 205, 205, 205, 211½ ^P , 221, 223, 233, 251. |
| Attorney, 157. | Dominick, 11, 17½. |
| Batavia, 20, 22, 22. | Doyer, 16. |
| Baxter, 5, 10, 12, 18, 24, 26, 36, 38, 45, 46, 68, 70, 70, 74, 76, 78, 135 ^F , 142 ^F , 80. | Dover, 14. |
| Bayard, 88 ^P , 57, 62, 72, 73, 77, 79, 86 ^P , 107. | Duane, 7. |
| Beach, 4. | East Broadway, 18, 18, 62, 62, 65, 90, 92, 92, 121, 143. |
| Bowery, 32, 41, 155, 167, 175. | East Houston, 388 ^{Oc} . |
| Broome, 548. | Eldridge, 10, 36, 39, 115. |
| Canal, 21, 41, 59, 60 ^{Oc} , 62, 68, 79, 98, 99 ^{Oc} , 385, 403, 411, 422, 505, 509, 510, 517. | Elizabeth, 199 ^{Oc} . |
| Carlisle, 2. | Essex, 13, 13, 14, 48, 62, 130. |
| Catharine, 1, 3, 5, 20, 21, 22½, 26, 35. | Forsyth, 53. |
| Centre, 16. | Franklin, 3, 7 ^P , 133 ^{Oc} , 135, 149 ^{Oc} , 151, 151, 164. |
| Charlton, 59, 61, 78, 94, 95, 96, 99, 108, 109. | Greene, 102, 131. |
| Chatham, 59, 61, 73, 75, 77, 79, 81, 83, 85, 91, 101, 103, 103, 149. | Greenwich, 16, 25 ^{Oc} , 27, 32, 33, 33, 34, 64, 66, 70, 107, 108, 124, 127, 127, 132, 152, 300, 405, 463, 463, 488, 492, 495, 502, 551, 577. |
| Chrystie, 33, 61, 63, 68, 70, 88 ^{Oc} . | Goerck, 87, 89, 97. |
| Cherry, 15, 16, 20, 22, 31, 34, 35, 37, 48, 48½, 49, 50, 53, 55, 56, 57, 59, 60, 64, 65, 66, 67, 68, 62, 73, 63, 93, 104½, 106, 107 ^F , 107 ^R , 109 ^F , 109 ^R , 119, 138½, 158½, 160, 156, 182, 191. | Hamilton, 10, 12, 12, 18, 31, 33 ^P , 40, 40, 47, 50. |
| City-Hall Place, 22. | Henry, 74 ^P , 74, 94, 112, 113, 338. |
| Clark, 6, 22, 25, 28 ^P . | Hester, 29, 36, 56, 125. |
| Cliff, 107, 109, 111, 113, 115. | Hubert, 7 ^{Oc} , 7 ^{Oc} , 24 ^{Oc} , 26. |
| Clinton, 45, 47, 51, 53. | Hudson, 80 ^{Oc} , 88, 27, 131 ^P , 200. |
| Columbia, 91. | Jackson, 1, 85. |
| Delancey, 46. | James, 9, 55, 55, 55, 62, 65, 66, 66, 71, 76, 79, 79, 90. |
| Desbrosses, 13 ^P , 15, 17, 26. | |

The letters "F." and "R." mean front and rear; those marked "Oc." had been reoccupied, contrary to law, when the inspection for this report was made.

| | |
|--|--|
| Leonard, 7 ^{0c} , 11, 23, 29 ^{0c} , 31, 151 ^P , 161, 163. | Spring, 204, 265. |
| Ludlow, 21, 23, 69, 49, 84, 87, 118, 120 122, 124 ^{0c} . | Stanton, 228, 230, 230. |
| Madison, 28, 31, 153, 161, 311. | St. John's Lane, 13. |
| Monroe, 6, 11, 15, 31, 19, 51 ^{0c} , 79, 116, 124. | Sullivan, 46, 46, 78, 80, 227½ |
| Market, 62, 83. | Thomas, 40, 42, 44, 44. |
| Mott, 6, 13, 17, 35, 35, 47, 49, 54, 56, 59, 69, 70, 136 ^P . | Thompson, 35, 63, 138. |
| Mulberry, 3, 22, 23, 26, 38, 46, 54, 56, 62, 64, 78, 80, 80. | Vandam, 38, 58, 86, 98. |
| New Chambers, 60, 68, 73, 73. | Vandewater, 9, 27. |
| New Church, 120. | Varick, 30 ^{0c} , 90, 135, 144, 146, 173, 191, 199, 201. |
| Norfolk, 7, 11. | Wooster, 95, 98. |
| North Moore, 8, 38, 56, 58. | West Broadway, 55, 56, 78, 172, 174. |
| North William, 10, 12, 16, 29. | West Houston, 79, 105, 311. |
| Oak, 13, 20, 34, 36, 44. | Water, 301, 332, 336, 337, 337½, 338, 339, 340, 343½, 406, 594. |
| Oliver, 43, 46, 53, 88. | Washington, 23, 25, 27 ^{0c} , 29 ^{0c} , 28½, 57, 129, 388 ^{0c} , 449, 464, 474. |
| Orchard, 19, 19, 21, 47, 49, 49, 123. | Walker, 3. |
| Park, 39, 48, 53, 69, 69. | William, 226. |
| Pearl, 19 ^{0c} , 320, 324, 465. | Watts, 62. |
| Pell, 28. | Worth, 1, 11, 23. |
| Pike, 35, 51. | West, 22 ^{0c} , 24. |
| Roosevelt, 3, 5, 7, 6, 9, 10, 11, 14, 15, 17, 25, 52, 60, 76, 93, 94, 97, 98, 99, 113. | York, 1, 5, 6, 13, 13. |
| Rose, 28, 36, 55, 55. | |
| Renwick, 17, 27, 27, 26, 29. | |
| Rector, 7. | |
| Sheriff, 76, 90, 90, 90. | |
| South Fifth Avenue, 74, 193. | |

RECAPITULATION.

| | |
|----------------|-----|
| Permitted..... | 11 |
| Occupied..... | 22 |
| Vacated..... | 466 |
| Total..... | 499 |

On the 14th of August, 1873, the Board directed me to cause an inspection to be made of cellars north of Houston Street, occupied as human habitations, with a view to determine their fitness for that purpose, and as the result the following were eventually vacated :

CELLARS NORTH OF HOUSTON STREET.

| | |
|---|--|
| Avenue B, 93, 167, 177, 187, 229. | East Twenty-fourth Street, 306 ^P , 308 ^P , 336 ^P , 338 ^P . |
| Avenue C, 163. | Eighth Street, 320. |
| Avenue D, 14, 121. | Seventh Avenue, 176. |
| Bowery, 309. | Tenth Avenue, 100. |
| East Fourth Street, 293 ^F , 293 ^R . | Third Street, 238. |
| East Ninth Street, 617. | West Eleventh Street, 347. |
| East Eleventh Street, 721. | |

RECAPITULATION.

| | |
|----------------|----|
| Permitted..... | 4 |
| Vacated..... | 18 |
| Total..... | 22 |

STREET-CLEANING.

On the 7th of June, the Board directed me to report to the Sanitary Committee, at least once in each week, the condition of the streets of the city as to cleanliness.

A report was therefore compiled each week from the reports of the Inspectors as to the condition of their districts, and this report was ultimately referred to the Board of Police.

The streets have been comparatively well cleaned during the portion of the year that street-cleaning was performed at all. Well-paved streets have generally been well swept. Unfortunately, the pavements of the crowded tenement-house districts are too often of cobble, in which are depressions, and the gutters are out of gradè. Specific complaints in regard to pavements requiring special attention have been made from time to time, and referred to the Department of Public Works.

The tenement-house streets during the summer months are unhealthy, from the presence in them of decomposing animal and vegetable matter. Intelligent physicians do not willingly allow young children to remain in town during July and August, though living in the most salubrious localities. No doubt the large mortality among young children in crowded portions of the city is largely due to filthy streets.

The Board has supplemented the efforts of the street-cleaners by disinfecting the gutters of the streets which most needed it. During the summer months, as will be seen by the report of the chief of the disinfecting corps, 2,277 miles of street-gutters have been disinfectèd.

On the 29th of July I had the honor to forward to the Board the following special report upon street-cleaning :

DR. STEPHEN SMITH, *Chairman Sanitary Committee.*

SIR: While I desire to reiterate a belief already expressed, that our streets are cleaner now than ever before, it is not denied that there is room for great improvement.

In the problem of the proper cleaning of the streets, and *keeping* them clean, there are several factors.

One is—the condition of the streets and gutters themselves as regards perfection. Another is—the manner in which the actual cleaning is performed. Another pertains to the manner of collecting and removing the garbage and ashes. And still another—to the mode in which these are handled by those who produce them.

Those parts of the city which are properly paved, whose occupants observe the laws of public decency, leave little usually to be desired; but a very considerable portion of this city is paved with cobble-stones, in which are depressions—sometimes holes—inviting offensive accumulations which defy the broom of the ordinary sweeper. The gutters are almost invariably out of grade, and the very water used for flushing them, since it cannot run up-hill, becomes eventually itself a nuisance, because it hastens the decomposition of the garbage flung into it.

All radical improvement here must be made by the Department of Public Works. This Board can only indicate where work is needed. Such impediments to cleaning as are presented by the presence of stalls and booths encroaching on the streets have been in some

slight degree removed already; but a much greater evil exists in the thousands of trucks and wagons which line many of the cross-streets, and even the outer avenues. This very serious annoyance is perhaps inevitable in an insular city, which has no proper suburbs.

As to the manner in which the actual cleaning is performed, any recommendation to increase the efficiency and number of the sweepers may be considered impracticable in the present state of our finances, but surely the streets should be cleaned every day, not only because they need it, but in order to educate the lower classes to habits of decency. The foremen of the gangs, being thus often in the street, could trace the origin of filth to individuals and thus cooperate with others in enforcing the laws.

The two topics of making and collecting garbage and ashes are, by far, the most important ones. They have received the serious attention of former Boards, and the following are the sections of the Sanitary Code which especially apply to the subject, viz.:

"SECTION 87. That no ashes, garbage, rubbish, or dirt, shall be by any person flung or allowed to run or drop into or remain in any street or public place, etc.

"SEC. 91. That no person shall throw into or deposit in any vault, sink, etc. . . . garbage, or other substance except that of which such place is the appropriate receptacle.

"SEC. 95. That it shall be the duty of every owner, tenant, lessee, and occupant of any and every building or place of business in the generally built-up portions of the city of New York, forthwith to provide or cause to be provided, and at all times thereafter to keep and cause to be kept and provided within such building or place of business, suitable and sufficient boxes, barrels, or tubs, for receiving and holding without leakage . . . all the ashes, rubbish, garbage, . . . that a separate vessel shall be provided for ashes and rubbish, and another for garbage and liquid substances, . . . and no such box, barrel, or tub, shall remain on any sidewalk, or in any public place, longer than may be needful for the removal of the contents thereof.

"SEC. 103. That the drivers of all carts for the removal of any garbage, offal, rubbish, or dirt, from any building, . . . shall give adequate notice to those dwelling in any street whose buildings or premises such cart is about to or should approach for the removal of any substances aforesaid."

There have been many earnest attempts to carry out these laws. Attempts have been made by the police to enforce sections 87, 80, 96, and with the usual result, that the officer performing the unpleasant duty of arresting a woman for throwing garbage in the gutter has been reproved by the court, while the culprit was dismissed triumphant. When an attempt was made to enforce that portion of section 95 which provides that ashes and garbage shall be received in separate vessels, there was a creditable effort made in many quarters to comply with the law, until it was observed that both receptacles were dumped into the same cart.

It seems to me that the garbage question is as difficult to solve now as it ever could have been. In spite of the laws, the police, the Board of Health, and such considerations as wholesome air and pleasant streets present, thousands of women at this moment are throwing their filth into the gutter with entire composure and satisfaction.

In endeavoring to arrive at the causes of the present apathy upon this subject, in the minds of those it most concerns, I have availed myself of the opinions of a number of our most experienced Inspectors.

They agree in attributing it largely to the want of regularity and promptness in the collection and removal of ashes and garbage. The carts are required by law to give adequate notice of their approach, but this is seldom done. If the tub reaches the sidewalk after the passage of the cart, it must receive a double load before it is emptied, and its decomposing contents will be spilled into the gutter. It is charged that the drivers are often unaccommodating, that they often neglect to sweep up what they have spilled, and often refuse to take above a certain quantity without being paid. The Inspectors believe that if the occupants of tenements could feel certain that the cart would be at the door at a specified

time, their tubs or buckets would be ready, and having been emptied could be returned to the house, thus avoiding their destruction by mischievous boys.

The proper kind of receptacle is another important subject. The law recognizes the fact that permanent garbage-boxes soon become a nuisance in themselves, and orders portable boxes to be provided. Owners, tenants, lessees, and occupants, are required by law "to provide and cause to be provided, and at all times thereafter to keep and cause to be kept," suitable and sufficient receptacles. These should be selected with some regard to their size. They should not be too large for the driver to handle, and they should be of sufficient capacity and number to receive without overflow.

The law orders that they shall not remain on any sidewalk longer than may be needful for the removal of their contents. They must then be kept either in the house or yard. Proprietors should be required to provide a room for them when necessary, on the lower floor, or the law, which is now a dead letter, should be changed.

I think the Code should be amended to require the owners of tenement-houses to appoint a house-keeper, living on the first floor front, if possible, who should be responsible to the police and Inspectors for any irregularity on the part of the occupants.

The proper filling of these receptacles and their daily and regular emptying comprise the whole question, so far as the condition of the streets is concerned. If it is designed to separate the ashes from the garbage, which it is desirable to do on account of the value of ashes for filling in our up-town sunken lots, two carts should go together; if not, the law directing such separation should be changed.

I would respectfully ask the attention of the committee to this most important subject: I would recommend that, when permanent boxes have been provided and are working to the satisfaction of the Inspectors, they be allowed to remain at present, but that a persistent effort be made to gradually introduce portable receptacles of such a pattern as the Board may approve. A practicable course being thus laid down, and the ash-man, the police, the courts, and the Inspectors working together, the tenement-house population would very soon, I think, become educated to habits of carefulness.

SEWERAGE AND DRAINAGE.

As in previous years, the attention of the officers of this Bureau has been constantly directed to these important subjects. The interesting points in sewerage and house-drainage will be found in the following report of Assistant-Inspector Thomas J. Nealis :

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent.*

SIR: I have the honor to submit the following report on house-drainage in this city, as the same came under my observation during the past year, together with the means adopted for abating the evils arising therefrom :

House Sewers or Drains.—Houses are generally connected with the street-sewer by earthenware pipes, iron pipes, brick and stone drains and wooden drains. These pipes and drains are used to conduct the contents of privies and water-closets, the rain and surface water from the yards, areas and roofs, and the waste-water from the sinks and wash-bowls in the houses, to the street-sewer. The imperfect manner in which the sewer pipes and drains referred to are often constructed, and the ease with which they convey the poisonous gases generated in the main sewer into dwellings, are frequently the source of disease and danger to the occupants of such dwellings. Many of the sewers which I have been called upon to inspect were laid directly beneath the basement-floors, which on being taken up disclosed the fact that the cement had become loosened from where the pipes were joined, or that the

pipes had settled or were broken, thus permitting a leakage which saturated the ground, and also favoring a constant discharge of sewer-gas into such basements or cellars, whence it was conveyed up by means of the heated rooms through recesses in the walls, which acted as flues, and diffused throughout the house, and by this means often made perceptible in rooms quite remote from the point of discharge. Earthen-ware pipe sewers are laid below the cellar surface, and, if properly put together and well cemented, do very well; but I have found that this portion of the work is frequently overlooked or improperly done by careless or incompetent workmen. Where iron pipes are used for making a sewer connection, they are most generally laid above the surface of the cellar, and the joints calked with lead. Such pipes answer very well until an obstruction occurs in the pipe, when it often happens that in trying to clear the same one or more holes are broken in the pipe and left without properly closing, thereby permitting a constant escape of the sewer-gas into the premises. Houses connected with the main sewer by a brick or stone drain, and frequently several houses are connected in common by a drain of this description, are almost invariably subject to offensive odors from many causes, principal among which may be mentioned the absorption and retention of offensive matter through the porous material of which they are composed, and their liability to get out of repair from the bricks and cement working loose, thereby allowing the sewer-gas to enter the dwelling, and the liquid contents to escape and saturate the surrounding soil; and also from the facilities it affords rats to enter and colonize under the cellar surfaces. Even the trapping of the soil-pipe at its junction with such drains does not mitigate the evil, as there is a constant escape of the foul odors through the brickwork and from the soil on which they are laid. Such sewers contain a greater amount of deposit and are more liable to obstruction than the ordinary pipe-sewer, and occupants of dwellings which are sewer-connected in this manner have been known to suffer from offensive sewer-odors without knowing their source, until relieved by an order from this Department. When these sewers begin to give out, they should be removed immediately and pipe-sewers substituted; and whenever houses have been found connected by such defective sewers or by the wooden drains before referred to, a complaint has been forwarded, with the recommendation that a separate and independent connection be made with the street-sewer by means of an earthen-ware pipe. In the best class of dwellings the sewers are frequently so imperfectly laid as to be at all times charged with sewer-gas. This would make very little difference, if the sewers and the many waste-pipe arteries connecting therewith were air and water tight; but it has been found that the best laid and connected pipes get out of repair and leak from minute places and at points often beyond control. From the foregoing observations it will be seen that, to keep sewer-gas out of houses, it is necessary to construct the drains so as to prevent sewer-gas from entering.

This can be effected by means of an efficient water seal or trap in the house-sewer, which, together with proper ventilation of the soil and waste pipes, will be ample protection from sewer-gas. If foul odors are perceptible afterward, they will be found to proceed from local causes.

Soil and Waste Pipes.—Next to the sewer-pipe, the soil and waste pipes of houses are most important, and frequently furnish good cause of complaint. This is mainly due to the materials of which they are composed, to defective joints and want of ventilation. It often happens that the lead soil-pipe is dropped into an iron pipe connecting with the sewer in the cellar, and a joint made by means of cement. Such joints are seldom sufficiently tight, as the cement is continually working loose and leaving openings for the escape of sewer-gas. In many houses the iron soil-pipe, set in a recess in the wall, has been found only partially calked with lead, the portion set in the back of the recess being loosely covered with cement, through which the foul odors escaped and were conveyed, by means of the recess, into the rooms above.

These pipes in the better class of dwellings, besides connecting with the water-closets, receive the waste-water from the wash-bowls and bath-tubs, and, if not well ventilated, cause

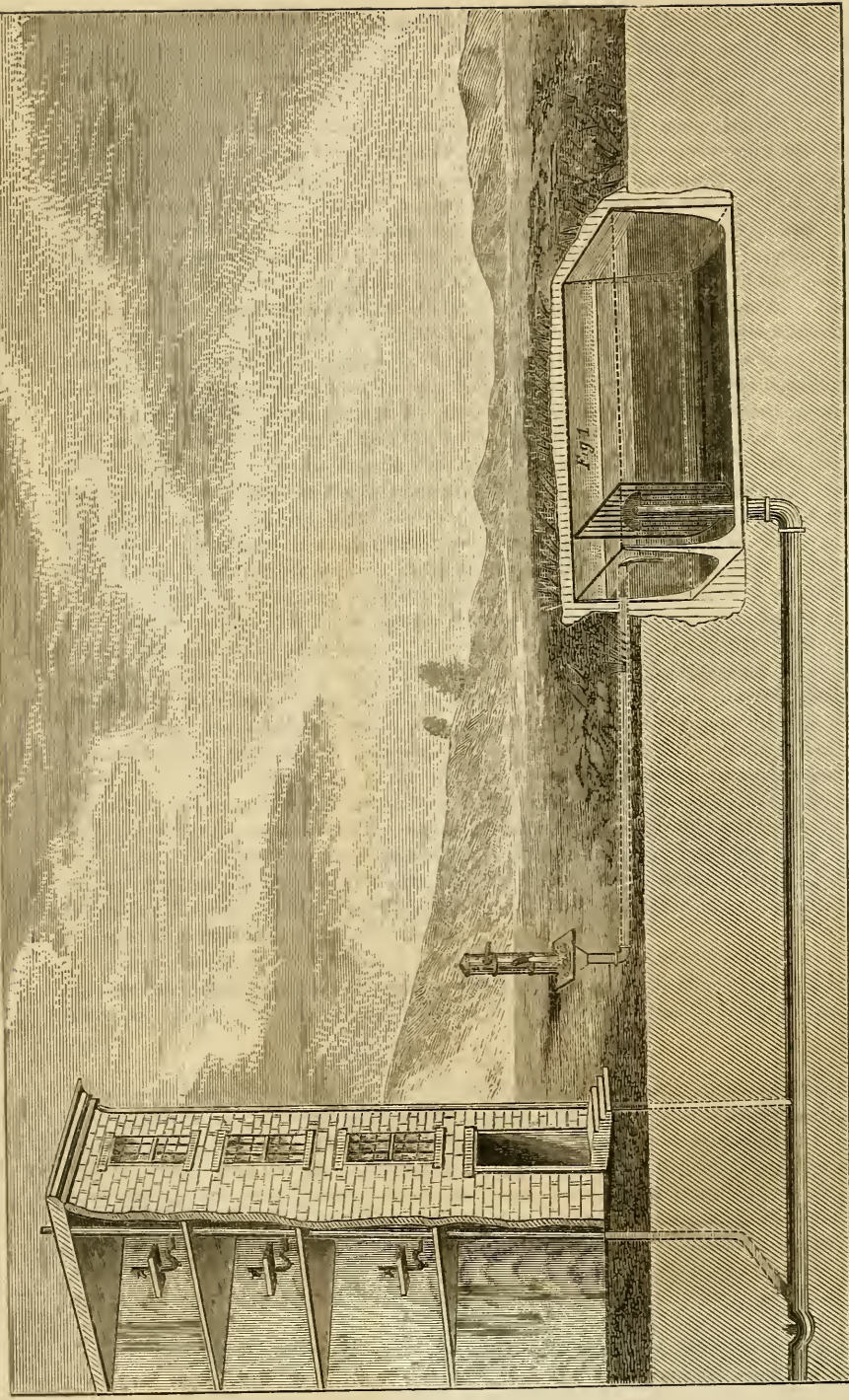
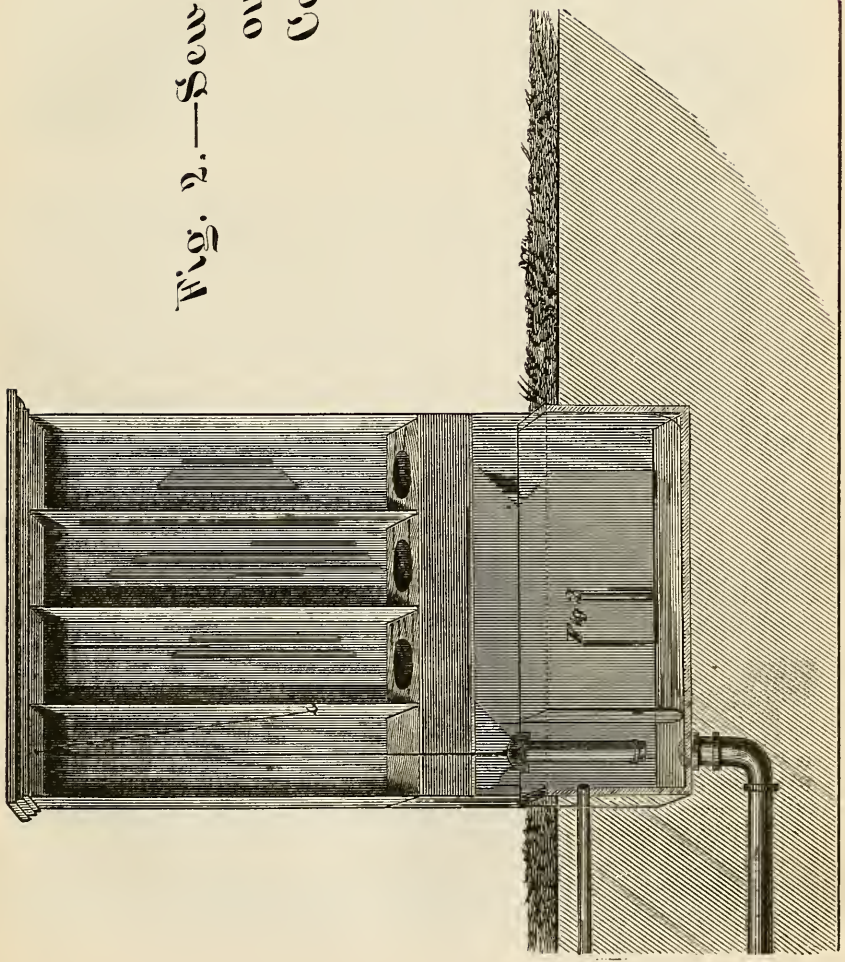


Fig. 1.—Privy flushed and trapped by means of Plug set in Discharge-Pipe.

Fig. 2.—Sewer-Pipe open, with Plug
out for the Discharge of
Contents of Privy.



the sewer-gas escaping therein to be absorbed by the water in the trap of the water-closet, and thence given out under the pan and through the waste-pipe of the bath-tub and wash-bowls, which are frequently not independently trapped.

In all cases where such defects have been found, ventilation has been recommended by extending the pipes above the roof, and, where properly done, this has always been followed by very beneficial results. But it frequently happens that, when owners of buildings receive an order requiring such pipes to be extended for ventilating purposes, they practise a false economy by making the extension by means of pipes, the dimensions of which are totally inadequate for the purpose intended; that is, to save expense, a pipe of an inch or an inch and a half diameter is often connected with a six-inch soil-pipe. Although a pipe of this size relieves the traps from all danger of water being drawn from them by means of suction or a vacuum in the pipe, it does not effectually prevent the absorption of sewer-gas by water in the traps of the water-closets, to be given off at points beyond.

Therefore, ventilating pipes to be effective should be as near the diameter of the pipes intended to be ventilated as possible, and should never be less than one half such diameter.

Yards and Arcas.—Yards and areas are sometimes connected with the sewer-pipe for the purpose of drainage, and it often happens that the openings leading therefrom to the sewer are not protected from escape of sewer-gas, and occupants of houses have frequently noticed a fetid odor about their basement doors and windows, without being able to account for it. Whenever areas have been found in this condition, complaints have been forwarded, with the recommendation that a proper trap be provided, and an order to that effect has been issued by the Board, a compliance with which usually cured the evil.

Damp and Wet Cellars.—Damp and wet cellars are continually complained of both by citizens and sanitary officers. Many of these have been traced to local causes, such as defective drainage, leaky hydrants and privies, and improperly-graded yards; but in many cases the water in cellars was found to be caused by the buildings being constructed on made ground, below the original water-level. Such cellars can never be dry without being thoroughly concreted. At other times cellars have been found damp and wet from being constructed below the level of the adjoining lots. Where cellars are built in this way, the outside wall should be cemented from the cellar-floor to at least one foot above the surface of the adjoining ground, so as to prevent dampness or water from striking through.

Where the ground has been found saturated from springs, a drain has been recommended to be constructed below the surface of the cellar, and connected with the street sewer, where such a recommendation was feasible.

Where the trouble arose from defective drainage or any local cause above referred to, it has generally been abated on an order from this Board.

Privies.—A large number of privy-vaults have been examined and found constantly offensive, which was mainly attributable to their imperfect construction. Some of these vaults were found built of rough stones without cement, permitting a constant discharge of their liquid contents into the grounds adjoining, and frequently into the cellars and areas of adjoining houses. Many privies were found connected with the street-sewer without any provision to prevent their being the medium for conveying sewer-gas into the surrounding space. If this class of privies must be retained, and they seem to be a necessary evil, they should be rendered as far as possible inoffensive and harmless to the occupants of surrounding buildings. This can be done by connecting a water-tight vault with the street-sewer, by a discharge-pipe which is provided with a movable plug, so arranged that the vault can at all times be properly flushed when the plug is set in the discharge-pipe. The vault can be kept free from sewer-odors by means of a cap set over this plug, and dipping into the water in the vault. An iron grating should be provided in the vault to prevent large substances thrown therein from escaping into and obstructing the sewer. The contents of a privy-vault

constructed in this way can at all times be readily discharged, and fresh water supplied for flushing the same as often as necessary. In connection with the subject of privy-vaults, I beg leave to submit the annexed plan of a privy-vault as above described.

The subject of *Subsoil-drainage* is especially noticed in the annual report of Inspector Viele, and in a report made to the Board by Stevenson Towle, Esq., its Consulting Sanitary Engineer. From these it will be seen that during the year a very considerable area of the city has been made salubrious by work which has been for the most part done by the Department of Public Works on the certificate of the City Sanitary Inspector, and by direction of the Board of Health.

The district recently annexed greatly needs extensive sewerage and drainage on a wise and comprehensive plan. I have within the year made numerous certificates of the necessity of drainage there, but a difference of opinion as to jurisdiction between the Departments of Parks and Public Works has, thus far, delayed the necessary improvement.

Sunken and Vacant Lots.—Some 728 complaints have been made on these; many have been filled or graded or connected with the street sewer, and where they have been dangerous from being excavated, or have invited the commission of nuisances, they have in every case been fenced.

PUBLIC MARKETS.

The sanitary condition of the public markets naturally attracted the attention of the Board immediately on its organization—since the question of wholesome food, always important, was made doubly so by the prevalence and progress of choleraic diseases in the Southwest. An inspection was therefore ordered of the several markets, including the adjacent booths and those in their vicinity. This service devolved upon Dr. E. H. Janes, Assistant Sanitary Superintendent, from whose report I quote:

The first of these inspections was made on the 25th of June, and was confined to the sidewalk booths, not adjacent to, but in the vicinity of Washington Market, and located principally in Vesey and West Streets. These booths were found to occupy a space extending from the curbstone to a distance of from six to ten feet toward the middle of the public roadway, and were occupied by private parties as market-stands for the sale of meats, fish, vegetables, and fruits. Thus situated, they encroached largely upon the public thoroughfares, and not only presented serious obstructions to the public use of streets and sidewalks, but their presence was regarded as detrimental to health, from the fact that they prevented the proper cleaning of the streets, the pavements and gutters underneath the floors being constantly filthy with organic matter in a state of decomposition, obstructing the flow of water along the gutters, thus causing the collection of filthy water in pools along the gutters, where it remained and became stagnant and offensive, filling the surrounding atmosphere with noisome and offensive exhalations. This was shown by the raising of a board from the floor of any one of the booths; and as the pavement and gutters underneath could not be cleaned without first removing these floors, which was seldom done, they were from time to time exceedingly filthy and offensive, especially in hot weather. The structures were old, many of them saturated with filth, especially the sides next to the

middle of the street, which became bespattered with street-mud and other filth, while the adjacent pavements received organic refuse of every description, portions of which, lodging in the angles formed by the pavement and the sides of the structures, were never removed by the broom of the sweeper, but remained, exercising their full influence in contaminating the atmosphere. As these booths also occupied a considerable portion of the carriage-way, and therefore caused a very serious obstruction to business and travel, it was recommended that for this as well as for sanitary reasons they be removed—a recommendation which was by resolution adopted by the Board, and accordingly referred to the Department of Public Works for execution.

On the 2d of July I made an inspection of the booths immediately adjacent to Washington Market. These had long been a source of complaint, not only as exerting a baneful influence upon the sanitary condition of the market and the neighborhood, but occupying as they did no small portion of the public streets, extending to a distance of from ten to fifteen feet beyond the outer line of the sidewalk, they were regarded as serious obstructions to business and travel. This was especially apparent on West Street, where there is a double rail-track, the cars of which were often detained by the crowds of carts, wagons, and teams of every description, struggling to make their way step by step along this crowded thoroughfare. So crowded with vehicles was this street from Vesey to Fulton,—being reduced in width by fifteen feet—that pedestrians in attempting to cross the street did so at the imminent risk of their lives, and passengers were often obliged to leave the cars and betake themselves to more expeditious means of progress on foot in order to meet a certain train, or to be on time at some business engagement. These booths were occupied by market-men, for the sale of meats, fruits, and vegetables; the floors covering the street gutters and pavements obstructed the flow along the gutters, and interfered with the proper cleaning of the streets; while the external wood-work became filthy and offensive, bespattered with street-mud and the refuse of the particular branches of trade to which they were devoted. A report was accordingly made on the condition of these booths, recommending their removal, which report and recommendation were also adopted by the Board, and, as in the previous case, referred to the Department of Public Works for execution.

In addition to these inspections and reports of the Assistant Sanitary Superintendent, the attention of the President of the Board and the chairman of the Sanitary Committee, as well as my own, was repeatedly turned in this direction. On the 18th of July, Dr. Janes made the following report:

My attention has been called to a recent communication from the Superintendent of Markets addressed to the Controller and published in the daily papers, and to the subsequent appearance of an editorial paragraph in *The New York Times*, both reflecting on a report I had previously made on the condition of certain booths around Washington Market, but which is erroneously interpreted as an attack on the market itself. The Superintendent probably had not seen my report, but must have received his convictions from the perusal of an imperfect copy, for, by consulting the original paper now on file in the office of the secretary, it will be seen that nothing is said against the condition of the market proper, by which I mean the area bounded by the sidewalks of the four streets adjacent thereto.

The report refers only to the booths located on the sidewalks extending to a greater or less distance toward the middle of the street and occupying so much of the public roadway, thus presenting serious obstructions to the legitimate use of the street, besides interfering with the thorough and frequent cleansing of the pavements and gutters over which they stand.

On the 17th inst., I made a reinspection of these booths, in company with the President of the Board and the chairman of the Sanitary Committee, and, although an apparent effort had been made to improve their condition as to cleanliness, the appearance of the gutters

and pavement beneath the floors, of the external surface of the standing wood-work saturated with filth, of the adjacent pavement, with its pools of filthy liquid and its adherent masses of decomposing organic matter, all emitting their noxious exhalation and their disgustingly-offensive odors, was enough to convince the most casual observer that they constitute an unmitigated nuisance, detrimental to the public health.

The Superintendent proposes as a compromise to remove a portion of each booth by cutting away a certain number of feet next to the middle of the street and giving up that portion of the street for the public use. He also proposes to readjust the floors so that the gutters and pavement underneath may be more readily cleaned. These alterations will remove a portion only of the obstructions, but I cannot see how they will improve the sanitary condition of the locality, for as long as they occupy their present position these booths will continue to present the same impediment to proper street-cleaning that they do now, and will inevitably become again so saturated with filth as to constitute their presence a serious sanitary evil. Could we admit, however, the possibility of overcoming this objection, there is still another strong sanitary reason for their removal—I allude to the serious obstruction they present to the necessary light and ventilation of the markets.

A building extending over so much area as does Washington Market—a place resorted to by so many of our citizens for the purchase of their daily provisions—should have every facility for adequate light and ventilation, which cannot be afforded so long as it is inclosed by rows of booths connected by an extended roof with the main building, and so constructed as to cut off the approach of every current of fresh air.

I must, therefore, adhere to the statements and recommendations made in my previous report, that in a sanitary point of view the presence of these booths is a serious evil, and that the public interests and the public health require their immediate removal.

In adopting this report, the Board declared by resolution that in its opinion “there is eminent danger from impending pestilence, and this Board hereby declares that the aforesaid booths, stalls, and stands around Washington Market, and in the neighboring streets, constitute a public nuisance dangerous to life and health, which, in view of impending pestilence, should be immediately removed; also—

“That, whereas, due notice has already been given to the owners and occupants of the said booths, stalls, and stands; and, whereas, the Department of Public Works has not been enabled to obey the previous order of this Board to remove the said booths, stalls, and stands; and, whereas, the plans of the Superintendent of Public Markets have been considered, and in the opinion of this Board will not remedy the evil, nor improve the position of the owners and occupants of said booths, stalls, and stands; and, whereas, any delay in the removal thereof is declared by this Board dangerous to life and detrimental to the public health: therefore, resolved—

“That the Board of Police be requested and directed to remove, and, on or before the 21st of July, 1873, to cause the removal of the booths, stalls, and stands, around Washington Market, viz.: On the northerly side of said market, from Washington Street to West Street; on the westerly side thereof, from Vesey Street to Fulton Street; on the southerly side thereof, from Washington Street to West; and also, on the easterly side thereof, near the corner of Vesey Street; and to clean the sidewalks, street-pavement, and gutters, in the neighboring streets above the said market.”

The Police Department failed to comply with these directions, and it be-

came evident that the Board of Health would be compelled to execute its own orders. How this was done is best shown in the following report of Special Inspector John V. Gridley, made to me July 25th :

In accordance with resolutions adopted by the Board of Health, July 22, 1873, I have the honor to report that on the night of July 23d, in company with Sanitary Commissioners Drs. Chandler and Smith, the Sanitary Superintendent, the Assistant Sanitary Superintendent, ten Sanitary Inspectors, the Sanitary Squad under Captain Yule, the Disinfecting Corps under Dr. H. Endermann, twelve trucks, and about one hundred and fifty workmen, I proceeded to Washington Market, arriving there about 8.30 p. m.

The market and surrounding streets were in possession of two hundred policemen under Inspector Walling, who had so stationed them that order was fully preserved. We then commenced taking down all the booths or stands outside the curb surrounding the market on West, Vesey, Fulton, and Washington Streets, which work was continued until they were all removed, occupying our time until 1 p. m. the following day. The material was removed by the trucks to the Corporation Yard, at the foot of Gansevoort Street, leaving the streets unobstructed by 1 p. m., July 24th. I am pleased to report that during this work no accident occurred.

Many of the owners of the upper tier of stalls on Washington Street, not believing that the resolutions of the Board would be carried out, or having a temporary security from the injunction so suddenly removed, had allowed their books, and in some cases their money, to remain in their desks. I directed the Disinfecting Corps to take charge of these, while the Inspectors were assigned positions where they could best render surgical assistance in case of accident ; fortunately such services were not required.

The condition of Washington Market proper, as regards its light and ventilation, was soon afterward considered in special reports, by Mr. Carl Pfeiffer, Consulting Architect to the Board, and Inspector A. B. Judson, M. D., and their recommendations were promptly carried out by the Superintendent of Markets, to the very manifest improvement of the market building.

On the 29th of July, Dr. Janes submitted the following report on the booths and stalls around Fulton Market and its vicinity :

Said premises are bounded by Beekman, South, Front, and Fulton Streets, are known as Fulton Market, and constitute one of the public markets of the city of New York. The said market originally occupied the area bounded by the sidewalks of the four adjacent streets mentioned above, and was wholly within the inside edge of said adjacent sidewalks respectively. At present there is on Fulton Street a line of booths extending the entire distance from Front to South Street—said booths standing partly on the sidewalk, and partly on the carriage-way, occupying of the latter a space at least ten feet in width for the entire length of the market front. On South Street there is a similar line of booths occupying a space on the sidewalk, about twelve feet in width for the entire distance from Fulton to Beekman Street, said sidewalk having been widened about eight feet beyond its proper line, and by this widening encroaching upon so much of the carriage-way. On Beekman street there is a line of booths extending from the corner of South Street to a distance of about fifty feet toward Front Street, standing partly on the sidewalk and partly on the carriage-way, occupying of said carriage-way a space about eight feet in width for the entire distance. These several booths are connected with the market proper by means of a roof extending from the main building, over the sidewalk, and each booth respectively, and are occupied by market-men for the sale of foreign and domestic fruits, vegetables, refreshments,

etc. At the time of this inspection many of the booths on Fulton Street were undergoing certain alterations by order of the Superintendent of Markets, the floors had been taken up, and the gutter and pavement underneath cleaned. The pavement outside the booths also bore evidence of having recently been cleaned, but there was a sour and offensive odor mingled with an odor of urine, indicating not only the recent want of cleanliness, but that the external surface of the standing wood-work of these booths was to some extent saturated with liquid filth.

On South Street there was the same offensive odor, and the external sides of the booths bore evidence of a similar filthy saturation, the condition enhanced by the presence of a filthy garbage-box standing against one of the booths. Although these booths on South Street do not stand over and obstruct the street-gutter, yet the widened sidewalk on which they stand—encroaching at least eight feet on the original carriage-way of a street having the double track of a horse-railroad passing through it—and being close by the terminus of another railroad, and also of a stage-line, in the immediate vicinity of the most-frequented ferry between New York and Brooklyn, forms a serious obstruction to travel along that crowded thoroughfare, and at times renders an attempt to cross the street both difficult and dangerous to life.

On Beekman Street, the work of raising the floors of the booths, and of cleaning the pavement underneath them, has been commenced; but considerable filth remained in the gutter, and the same offensive odor was apparent.

I cannot believe that alterations proposed by the Superintendent of Markets will be sufficient to place the locality in a proper sanitary condition, as these booths, in whatever manner they may be altered, will always be an obstruction to the light and ventilation necessary for the market, and thus be detrimental to health. A public market, where meat and other articles of food are sold, and where the atmosphere is for a great portion of the time contaminated by the respiration of and the effete exhalations from the crowds of human beings who frequent it, should at all times be provided with facilities for unobstructed ventilation, in order that the wholesome condition of its stores, as well as the health of its occupants and their customers, may be preserved. And this is especially needed at Fulton Market, a portion of which is occupied as restaurants, where the atmosphere is more or less affected by the odors arising from the cooking of meats and vegetables, and where the temperature is increased by the artificial heat necessary for these operations. For reasons above stated, it is my opinion that these booths, in their present location, are detrimental to health; that they have for a long time interfered with thorough cleaning of the streets, and have served as obstructions to public travel, rendering efforts to cross the streets at times both difficult and dangerous to life. With a view of improving the sanitary condition of this locality, it is recommended that these booths be removed, and that a portion of the sidewalk flagging on South Street be taken up, and the carriage-way between Beekman and Fulton Streets be restored to its original width.

This report was adopted by the Board, together with resolutions declaring the booths, stalls, and stands a nuisance, and ordering their removal by their owners before 12 o'clock *m.*, August 2d, failing in which it was resolved "that the Sanitary Superintendent and Inspector Gridley be charged with their removal." In consequence of the failure of a considerable part of the owners to comply with the orders of the Board, Special Inspector John V. Gridley, in company with five Sanitary Inspectors, about one hundred workmen, and eight trucks, at 12 o'clock Saturday evening, August 2d, proceeded to Fulton Market and took down all the booths, stalls, and stands in Fulton, South, and Beekman Streets. The work was finished and the material carted to the Corporation Yard foot of Stanton Street by 10.30 *a. m.* of the following day.

Inspector Charles F. Roberts, who with four others was detailed to this duty, the next morning submitted to me the following report :

The workmen, under the charge of Inspector Gridley, began the demolition on the Fulton Street side of the market, and, as the floors of the booths were removed, the street-gutters beneath them were all found in a very filthy condition, the gutter under the stand occupied by Mr. Fitzpatrick (about 150 feet east of Front Street) as an oyster and coffee saloon being extremely filthy, the black mud and slime deposited to the depth of six to eight inches, and masses of decomposing animal matter emitting a frightful stench.

Under the floors on this side of the market, the deposits accumulated were mostly decaying animal matter, and on the Beekman Street side decaying vegetable matter seemed to predominate.

On the South Street side the booths had from one to four layers, and also the beams on which they rested were so decomposed and rotten that they crumbled to pieces at the slightest touch. Between the floors of the booths and the sidewalk, in many cases, the space had been filled in with sawdust, and in some instances this had become saturated with liquid filth so as to present a very offensive accumulation.

The odors given off from these places, as they were exposed by the workmen, were so intensely foul and disgusting, that I deemed it necessary to have disinfectants applied at once, and at 4.45 A. M. telegraphed to the corps at the laboratory in Worth Street, and had one hundred and fifty gallons of the street disinfecting fluid sprinkled over it.

In the morning I telegraphed the Police Inspector in charge at the Central Office, asking if a gang of street-sweepers could not be sent, and informed him of the condition of the street. I also called at the Central Office at 10.30 A. M., and saw Inspector Walling, who telegraphed Inspector Thorne, and requested him to have it cleaned at once.

The work was completed and the lumber removed by 10 A. M.

This was followed by the removal by their owners of a number of sheds and stands on South Street between Beekman Street and Peck Slip. Similar inspections were made of Centre and Catharine Street Markets, with reports containing recommendations, which were promptly carried out by the occupants.

The result of the action of the Board in regard to the public markets mentioned above has been, that they are more attractive, better lighted and ventilated than they previously were, and the adjoining street-pavements have been relieved of incumbrances, the entire area being restored to its legitimate use for business and travel. This latter improvement is especially noticeable in the crowded streets around Washington and Fulton Markets, where not only are the great impediments to travel removed, but the streets are more readily cleaned and their sanitary condition thus improved. I append extracts from a report on the subject of the public markets, made by Dr. Janes, with which I heartily concur :

The condition of most of our public markets is, after all, far from being satisfactory. The old, dilapidated structure known as Washington Market, though improved in condition, is a disgrace to a civilized community. Those in charge of it doubtless do their best to enforce order and cleanliness, and I believe keep it in as good condition as the nature of the building admits ; but the entire structure being saturated from its long use with organic exhalations, the atmosphere within contaminated from the respiration of the thousands who daily congregate there for the purchase of their daily supplies, the imperfect supply of natural light rendering necessary the combustion of gas much of the time, which still further deteriorates the atmosphere in a poorly-ventilated building, all combine to render the

atmosphere not only detrimental to the health of those who breathe it, but we have good authority for regarding it as injurious to the meat which is exposed to it.

Public markets should be constructed as much as possible of material that will not absorb animal juices, and the means of affording ventilation and light should be perfect. The stalls should not be too much contracted, but sufficient space should be afforded to allow the dealer to display his merchandise, and the purchaser to make his selections. The removal of all refuse should be reduced to a perfect system of regularity; the floors should be so arranged as to be readily flushed, and the drainage should be faultless.

Our public buildings (markets excepted) are generally constructed with at least some regard to the comfort and convenience of their occupants; and why should not the greatest care be bestowed on the construction of those buildings which are to serve as the store-houses of our daily food, articles susceptible to early decomposition, especially when exposed to an atmosphere impregnated with effete exhalations?

Another objection to some of our market-buildings is, that too much space is appropriated to business not legitimately theirs, which in its broadest sense means a place where provisions are exposed for sale; yet we find portions of them devoted to the sale of ordinary articles in trade, such as tin and hardware, cutlery, jewelry, wearing-apparel, books, stationery, etc. We also find portions of a market-building occupied as drinking-saloons, and still other portions as restaurants. This latter feature is in my opinion especially detrimental to the sanitary condition of a market, as the artificial heat necessary for carrying on the ordinary operations, the odors and vapors escaping from the different articles of food while undergoing the process of being cooked, and the combustion of the amount of fuel required for this purpose, are all agents which either contaminate the atmosphere or deprive it of its life-sustaining element. Yet we find large portions of Fulton Market devoted to the various uses above mentioned; and several of the other public markets, though perhaps in a less degree, have similar objectionable features.

SLAUGHTER-HOUSES.

The slaughter-houses on the east and west side have been kept under as close observation as was possible with the means at my disposal, and weekly reports as to their sanitary condition have been forwarded to the Board. Whenever there has been persistent negligence in the observance of sanitary rules, the owners have been prosecuted for violation of the Code. This action has naturally secured a greater degree of cleanliness than had previously existed, but it is not pretended that the condition of most of these establishments, especially the smaller ones, is satisfactory in a sanitary point of view, or is in any way creditable to the city.

FAT AND TALLOW RENDERING.

At the beginning of the year all permits were revoked, and each application was referred to the Inspector of the district, and by him carefully investigated and reported on.

The melting of fresh lard, whether in the hog-slaughtering establishments or in the pork-packing shops scattered through the city, is less offensive than the rendering of tallow. Lard must be melted when fresh, or it sours and is unfit for use, and this will generally insure its prompt and cleanly handling. When melted in steam-tight tanks, with proper condensers, by means of which the

offensive gases are carried into the sewer in a watery form, or where these gases are consumed by combustion or are conducted, as on the river-sides, below low-water mark, the nuisance is comparatively unimportant, so long as the apparatus is kept in repair, and is intrusted to careful, conscientious supervision. The rendering of tallow, however, which, as an article of commerce, does not depreciate so materially if tainted, offers great temptation to neglect. So far, the appliances for removing offensive odors are for the most part imperfect.

SCAVENGING.

At the beginning of the present year the licensing of scavengers was taken from the Board of Health and intrusted to his Honor the Mayor, the Board, however, retaining the granting of permits.

There are twenty of the "old style" scavengers with their tubs and carts, and one company known as the "Manhattan Odorless Excavating Company." The latter, when the contents of the vault permit its use, has been allowed to work during the day. Often, however, the presence in the vault of such articles as bricks, hoop-skirts, and wearing apparel, has necessitated the use of tubs. During the month of August I ordered an inspection of the manner in which Scavenging was being performed, the results of which inspection were embodied in the following report to the Board on August 15th :

SANITARY BUREAU, NEW YORK, *August 15, 1873.*

To the Commissioners of the Board of Health.

In pursuance of the following resolution, viz. :

"Resolved, That the Sanitary Superintendent be, and that he hereby is requested to investigate the manner in which privies are now emptied, and to report to this Board," I have the honor to submit the following.

The emptying of privies is performed by twenty scavengers, and by a company known as the Manhattan Odorless Excavating Company. These scavengers are licensed by his Honor the Mayor, and received their permits from this Bureau. The law compels those relying on the common tubs and carts to work between the hours of 10 P. M. and 4 A. M. The Odorless Excavating Company, when using their peculiar process, are allowed to work in the daytime.

In order to ascertain the manner in which privies are now emptied, I detailed, on the 7th instant, a number of Inspectors to watch the operation, with the following result: Inspector Post visited 471 Sixth Avenue—scavenger Peter Hays. "The whole process was conducted in a careless and disgusting manner. The tubs had no covers, and the carts stood with the covers up, with the night-soil exposed to the air, until, the stench becoming so unbearable that passers-by retched, gagged, and crossed the street to avoid it, I ordered Hays to keep the cover down. Very little disinfectant was used, so little indeed as to be entirely imperceptible to the smell. The offensive odors were readily detected more than a block away. The dumping from tub to cart was so carelessly done that the sidewalk and gutters were sprinkled with liquid filth."

Now, one of the rules laid down by the Mayor for the guidance of scavengers reads as follows: "No tub must be used in carrying the contents of privies to the street without a tight cover. The lid of each cart must be kept constantly shut, except when actually receiving the contents of tubs."

Inspector Morris witnessed the emptying of a privy at 411 East Eighteenth Street, and at 292 First Avenue. At the first locality the work was done by Peter Schreiber, carts 59-61. The covers of carts were kept open, the buckets were without covers, and no disinfectants were used until the Inspector asked for them. At 292 First Avenue the work was done by Peter Damsler, carts 1, 2, and 3. The covers to carts were kept open, but the buckets were kept covered. Disinfectants were used, and there was no nuisance.

Inspector Roberts, on the 6th inst., witnessed the emptying of the joint privy-vault, in rear of Nos. 326 and 328 East Thirty-fourth Street, by C. Dick, cart No. 19. The cover of cart was open during the whole work; no odor of disinfectants was observable, and he does not believe they were used. At the same time and date the vault in yard of 330 East Thirty-fourth Street was emptied by C. Dick, cart No. 17. The cover was constantly open. No odor of any disinfectant was observed. The tubs were covered by a barrel-cover, such as grocers use, and was thrown upon the sidewalk when the night-soil was being dumped into the cart. The vile stench from these two carts filled the air for a distance of 300 feet to the leeward, and it undoubtedly was a nuisance. On August 7th, at 11 P. M., Inspector Roberts inspected the emptying of a privy-vault at 648 Third Avenue, by Charles Froman, cart No. 83. The cart was open all the time, no covers were used on the tubs until they saw him looking at them, when they placed an old pasteboard-box over one of them. The odor of carbolic acid was observed until some six tubs were removed, and after that the stench was very offensive.

Assistant-Inspector Hall, on 7th inst., was present at 656 Third Avenue, where a privy was emptied by John Schriener, carts 9, 11, and 13, which remained uncovered while being filled, and gave off an insufferable odor, which pervaded the neighborhood. They were at work when he arrived. They said they had disinfected the vault, but the jug containing the disinfectant was almost full, and the contents of the vault were not disinfected. The tubs were uncovered. After they found a health officer was present, the disinfectant was used quite freely, but the process was a nuisance, and the privy was offensive next morning.

Assistant-Inspector Ewing, on 8th inst., inspected a scavenging at 728 Ninth Avenue, by F. Breivogle. The tubs and carts were uncovered. The stench was horrible, and people passing held their noses as they hurried by.

Assistant-Inspector Walker, on 7th inst., was present at 613 and 716 Washington Street, and 621 Greenwich street. At 613 Washington Street the work was done by J. D. Hussing, as it was also at 621 Greenwich Street. The carts were not covered, the privies were not disinfected, the tubs were not covered, but they were thoroughly disinfected (the Inspector says, but adds), the smell from the yards and carts was terrible. At 716, carts 10 and 12, owned by Schriener, were used. The tubs were covered and disinfected, as were also the carts, but not the privy; the smell was very strong and offensive.

Assistant-Inspector Munde visited the premises 525 and 527 West 46th Street, on 7th inst.; the work was done by H. Smith, cart 22. The tubs were disinfected and covered.

I have myself been present on several occasions when privies were emptied. In all cases the tubs were uncovered, and the cart-covers were kept up, but the tubs were disinfected. In the case of Peter Schreiber, who emptied a vault at 708 Broadway in the night of August 5th, there was absolutely no offense, though the tubs were uncovered.

The result of these inspections entirely justifies the bitter complaints which constantly reach this Bureau as to the pestiferous odors produced by careless scavenging, and on the other hand it shows that it is possible to do this work in an inoffensive manner. The Manhattan Odorless Excavating Company have not been inspected under this resolution, as the Board is sufficiently acquainted with their mode of operating. Under certain circumstances, this company are likewise compelled to resort to the use of buckets, but these are new, in perfect order, and have air-tight covers.

The system of scavenging now in vogue in this city is utterly unworthy of the age. Although it is undoubtedly possible, by great care and neatness, to empty vaults without offense by it, the temptation of darkness, which prevents surveillance, and the character of

the employés, to whom ordure is not a nuisance, will insure the work being often done in a slovenly manner, "allowing the air of densely-populated blocks to be nightly filled with the most poisonous and disgusting emanations, by which low forms of fever, diarrhœa, and dysentery, are created or seriously aggravated." Every possible precaution should be thrown around this business, and any well-sustained complaint should cause the scavenger to lose his license.

I forward with this report a complaint of a number of citizens against an annoyance occasioned by an aggregation of scavengers' carts in an unusually populous part of the city, with the report of Assistant-Inspector Munde thereupon. While the report does not confirm the statements as to the offensive odors arising from the carts, the noise of thirty carts and horses, with about ninety men, disturbs the slumbers of the neighborhood every night between the hours of 9 P. M. and 4 A. M. There is no reason which justifies this serious annoyance which is detrimental to health and dangerous to life, and I would respectfully recommend that the Board, if it be possible, require a portion of these carts to be kept in other places.

This nuisance is, in its spirit, a violation of that part of section 106 of the Sanitary Code which says that "carts for carrying the contents of any privy, etc., shall not gather in needless numbers before or near any building, place of business, or other premises where any person may be, and when not in use all such carts shall be stored in some place where no needless offense shall be given to any of the people of said city."

Immediately thereafter, August 20th, L. T. Brennan and Robert Sheehan were appointed Special Inspectors, and assigned to the duty of observing and reporting upon the work of scavenging. Where the rules were violated, affidavits giving names and facts were forwarded to the Board by this Bureau, and referred to his Honor the Mayor.

At first this inspection was made at night, while the emptying of the vaults was going on. Afterward the employés of the scavengers having become conversant with the proper mode of working, the vaults themselves were examined the next day, to see if they had been thoroughly disinfected and emptied. This inspection was discontinued on the approach of winter, and the Inspectors discharged.

The experience of the year has shown that scavenging in the old way may be performed inoffensively if disinfectants are freely used, and the men are careful. This being the case, there is no excuse whatever for the creation of one nuisance during the abatement of another; but it has been also found as a matter of fact, that the slovenly character of tub-work, and the necessity of working in the night, give a great advantage to the machine.

The following are the

RULES FOR REGULATING NIGHT-SCAVENGERS.

PERMITS REQUIRED.

1. Permits will be granted by the Health Department to remove the contents of sinks, privies, etc., and no scavenger will be allowed to empty a privy or sink without such permit being first obtained. No work must be performed on Sunday night before twelve o'clock, except by special permit.

HOURS OF OBTAINING PERMITS.

The hours for obtaining permits shall be from nine to three o'clock each day (except Sundays and the usual holidays), and at no other time.

Scavengers must wait for their turn when applying for their permits. Every sink, vault, privy, or cesspool, shall be emptied thoroughly during the night, except when special permit shall be given.

DISINFECTING.

2. No scavenger shall empty or remove the contents of any sink, vault, privy, or cesspool, before the contents thereof shall have been thoroughly disinfected.

EMPTYING SINKS TO THE BOTTOM.

3. No scavenger shall remove part of the contents of a sink or privy, and not clean the same to the bottom.

HOURS OF WORKING.

The working hours for the removal of the contents of sinks, privies, tubs, and cesspools, are those named in the permit therefor.

ROUTES TO BE TAKEN BY DRIVERS.

4. Drivers shall take the nearest direct route from the places where their loads are obtained. If above Twenty-third Street, east to First Avenue; if between East Twenty-third and East Fourteenth Streets, east to Avenue C; if between East Fourteenth and East Eleventh Streets, east to Avenue D; if between East Eleventh and East Houston Streets, east to Mangin Street; if between East Houston and Grand Streets, east to East Street; if above West Thirteenth Street, west to Tenth Avenue; and if between West Thirteenth and Canal Streets, west to West Street. And drivers shall proceed up or down said streets, as the case may be, to the dumping-docks. In that part of the city lying south of Canal Street, south of East Broadway, between its intersection with Canal and Grand Streets, and south of Grand Street, between the East River and its intersection with East Broadway, drivers may proceed by such routes as may be to them most convenient, including East Broadway and Grand Street, east of its intersection with East Broadway. This rule shall not apply to scavengers who employ air-tight apparatus.

PRICE TO BE CHARGED BY SCAVENGERS.

5. No scavenger shall charge, for disinfecting and removing, any greater price than twelve cents per cubic foot.

DUMPING-PLACES.

6. The contents of any sink, privy, or cesspool, shall not be laid, cast, thrown, or dumped, in or upon any street, wharf, or pier, or in any slip or dock (except at the regular dumping-places), or in any lane, alley, lot, or vacant place.

Scavengers will dump the night-soil on board the vessels furnished by the contractor for removing the same from the city, and will not be permitted to use any other dumping-places than those assigned for the purpose.

Orders which may be given by the Board of Health or its officers shall receive prompt and strict compliance on the part of scavengers and persons employed by them.

OF CARTS, LANTERNS, ETC.

7. Every box shall have, on both sides, its number painted with black figures, twelve inches in length, and at least three in breadth, upon a white ground of at least eighteen inches in diameter.

Every box shall carry a lighted lamp or lantern. No scavenger shall fill his box so full as to overflow or spill, nor allow it to leak, nor shall he drive his horse at a faster gait than a quick walk.

The lid of each box must be kept constantly shut, except when actually receiving the contents of tubs, and be fastened down tight when the cart is in motion. No tub must be used in carrying the contents of privies to the streets without a tight cover.

With every cart a tub or pail must be carried, which shall be used only for the purpose of carrying water to wash off the sidewalks, alley-ways, etc., upon which filth may have been accidentally spilt.

Every scavenger is strictly enjoined to proceed with all reasonable expedition, and to avoid spilling or strewing any of the contents of tubs in conveying the contents from the privy to the cart, or upon any wharf or pier to which the same shall be conveyed for the purpose of dumping.

LEAKING CART.

8. Whenever the officer on the dumping-dock, or any officer of the Health or Police Department, shall call the attention of the driver of any cart to its leaking or want of repair, such cart must not be again used until properly repaired.

REFUSING TO OBEY DIRECTIONS, BEING INSOLENT, ETC.

9. Any driver, who may or shall refuse to obey the directions given by any officer at a dumping-dock, or any officer of the Health or Police Department, or who shall be insolent or abusive to such officer, shall not receive permits, or be permitted to work, the owner of the cart being held responsible in all cases for the good conduct of the persons in his employ.

OF ACCIDENTS, BREAKING DOWN, ETC.

10. If any cart should break down when loaded, in or on any street, avenue, alley, lane, wharf, dock, or other place, it shall be the duty of the scavenger, and of the driver of such cart, to cause the same to be reported immediately to the inspector at the nearest dumping-dock and to cause the removal of the nuisance *forthwith*.

The officer on any dumping-dock, or any officer of the Health or Police Department, shall have power to direct any scavenger or driver of any cart to remove a nuisance immediately when caused by a break-down of cart; and a reasonable compensation shall be paid by the owner of the broken-down cart to the owner of the cart used for the removal of the nuisance; and if any scavenger, or the driver employed by any scavenger, shall refuse or neglect to comply with the requirements and directions given by such officer or inspector, the scavenger owning the cart so refusing or neglecting shall be liable to have his license revoked and permits to work refused, or to a fine, or both.

CARE OF CARTS, IMPLEMENTS, ETC.

11. No scavengers' carts or implements shall be kept in any vacant or open lot or place, unless under cover of an inclosed shed, or in a house, and every cart and all working implements must be cleaned and disinfected immediately, and be kept in proper condition.

PENALTIES, ETC.

12. No license will be granted to any scavenger who does not own at least one horse and cart, and every license shall specify for how many carts it is granted and their number. If any one shall, after his license is granted, dispose of his carts, his license will be revoked.

Every violation of any of the above rules, or of the Sanitary Code of the Health Department of the City of New York, may be punished by fine or by revocation of license, and this license is accepted upon such conditions.

Removal of Night-soil.—The boats for this purpose are at the foot of Rivington and East Ninety-fifth Streets, and West Twenty-eighth Street. They have been constantly under the supervision of the Sanitary Police, who have reported to me whenever cause for complaint has arisen. Several anonymous letters in regard to them have been received, but a careful investigation has shown them to have been unfounded, and their source was probably not an entirely disinterested one.

Removal of Offal and Dead Animals.—Early in the summer this service was given to Swift & White. The offal from the west side slaughter-houses, and the dead animals and refuse collected from all parts of the city, have been taken to Barren Island by a steamer leaving the offal-dock at West Thirty-eighth Street, every morning about 10.30. The Board on the 1st of August, 1873, passed the following ordinance, viz.:

SEC. 180. "That no offal, blood, scrap, guts, gut-fat, or refuse of slaughter-houses, shall be transported through, brought in, or allowed to be between Second Avenue and Tenth Avenue in the city of New York, without a special written permit from this Department."

In consequence of its enforcement, the east side butchers have since then removed their offal by boat at their own expense. This is no hardship. Every business should take care of its own refuse.

The offal-dock is inspected every day by an officer of this Bureau, and a weekly statement made of the condition of the dock, with the amount and character of the material received. A summary of these reports I insert as interesting information, but it will be remembered that the offal from the east side is not to be included after August.

The east side butchers claim to kill yearly 233,000 cattle, 1,000,000 sheep, and 250,000 calves.

The system for the collection of dead animals is as follows: A dead animal with its locality is reported at a police-station by an officer or a citizen. The complaint is entered and telegraphed to police headquarters, the date of its reception being noted. It is then sent by wire directly to the office on the offal-dock, whose operator is a policeman, and as often as necessary the foreman of the dock sends out collecting-carts especially adapted to the purpose. By this plan the blame of unusual delay is easily brought home to the delinquent.

TABULATED STATEMENT OF RECEIPTS AT THE OFFAL-DOCK,
FOOT OF WEST THIRTY-EIGHTH STREET, DURING THE YEAR ENDING APRIL 30, 1874.

| | |
|---------------------------|------------------------|
| 138,712 barrels of offal. | 3,244 dead cats. |
| 7,067 " blood. | 43 " colts. |
| 2,455 " eggs. | 1,731 " rabbits. |
| 2,847 " fish. | 2 " mules. |
| 26 " scraps. | 79 " squirrels. |
| 3 " pigeons. | 5 " deer. |
| 889 " condemned. | 52,399 pounds of veal. |
| 3 tierces of fat. | 35,729 " beef. |
| 1 carcass of beef. | 16,791 " poultry. |
| 4,900 dead horses. | 9,813 " mutton. |
| 143 " cows. | 4,800 " cheese. |
| 633 " calves. | 2,000 " turtles. |
| 94 " sheep. | 1,348 " rabbits. |
| 121 " goats. | 1,000 " ham. |
| 47 " hogs. | 975 " meats. |
| 3,011 " dogs. | 300 " pork. |

Inspection of Fruits.—On the 5th of August, the Board, in view of an unusual mortality among the young from diarrhœal diseases, directed me to “superintend the inspection of fruits of every description, with instructions to seize, condemn, and cause the destruction of all unripe, decayed, and unwholesome fruit offered for sale, as provided by the ordinances of this Board.”

The season was unfavorable for fruit, and large quantities totally unfit for human consumption were thrown upon the market, and were hawked about among the poor and ignorant.

On the 11th of August, I detailed special Inspectors Whollahan and Frank to inspect the groceries, huckster-stands, and the carts of licensed venders. On the 26th of August, special Inspectors Ashman and Conroy were assigned to duty among the fruit commission-stores, the markets, and the vessels bringing fruit into the city.

Police-Inspector Thorne, of the Street-cleaning Bureau, kindly provided the necessary police-carts, and the Inspectors were accompanied by Officers Rhodes and Sherwood. Cautions were frequently given them to discriminate between unripe fruit designed for cooking, and unwholesome fruit intended to be eaten in its crude state, and considering the amount of the seizures, sometimes consisting of an entire sloop-load, and the necessarily summary nature of the service, it is believed to have been prudently conducted. Cards containing the ordinances of the Sanitary Code relating to unwholesome fruit were distributed to the commission-merchants, and by them circulated among the farmers. This prevented much bad fruit from finding its way to the city, and the effect of the inspection was soon evident in the improved condition of the fruit, on every hand. I append a summary of the seizures :

The Inspectors, with the aid of the Sanitary Police, seized, condemned, and caused to be removed or destroyed, fruit decayed, unripe, or unwholesome, from 2,584 stores, 243 street-stands, and from the carts of 67 licensed venders. From and after the 22d day of August, until the discontinuance of the inspection of fruits on the 1st day of October, the attention of the special Inspectors was particularly directed to the wholesale dealers in fruit, and during the period above named they seized and condemned on steamers, at markets, and in commission-houses, the following-named quantities of unwholesome fruits and vegetables: 592 barrels of melons, 10 baskets of melons, two loads of melons, 2,090 water-melons, 1,451 baskets of peaches, 1,440 crates of peaches, 19 boxes of peaches, one load of peaches, 37 barrels of pears, 61 baskets of pears, 49 crates and 12 boxes of pears, 172 barrels, nine baskets, 34 crates, and 10 boxes of apples, 14,000 ears of corn, 96 barrels of potatoes, 18 crates and 37 boxes of grapes, seven barrels and three baskets of squashes, one barrel of egg-plants, 79 crates of cranberries, four barrels of turnips, 60 dozen of eggs, and 12 barrels of peas.

Dwellings vacated.—Of the twenty-four uninhabitable buildings vacated by the Board during the year, the most unhealthful were Nos. 5, 7, and 9 Mulberry Street rear, a tenement-house which had formerly been a church. This had been vacated by the Board in 1871, on account of its high mortality, and the same reason existing in 1873, the death-rate being 96.7 per 1,000, it was declared a nuisance, and after a hearing from the owner and after the tenants had been duly notified, they moved out without forcible expulsion.

The complaint of Inspector Roger S. Tracy, M. D., sets forth that said house is occupied by twenty-one families, consisting of over forty adults and about forty children; that the walls and floors are saturated with offensive effluvia, the accumulation of years, to such a degree that the air is poisoned by them, and the inmates who are continually exposed to their noxious influence are all pallid, thin, and delicate in appearance, with the exception of those who work out during the day; that underneath the wooden flooring which connects the front and rear building is a flagged area or cellar in which are two privies. The sewer connection is clogged, they are full of night-soil and very offensive, the floor of this place is covered continually with excrement, urine, and rubbish, and is continually wet from the deluge of water used in attempts to keep it clean. The combined effects of heat and moisture produce a constant supply of offensive gases so sickening in their character that one not acclimatized can remain below the said flooring but a short time without being nauseated. These gases are diffused through the house to swell the number of deleterious influences to which the unfortunate tenants are exposed. That the areas on the easterly side and in the rear are exceedingly offensive with excrement, urine, garbage, and rubbish thrown there by the inmates.

In accordance with the recommendation of Carl Pfeiffer, consulting architect to the Board, I would also recommend that the five stories into which the interior of the building is divided be converted into four, of at least eight feet each from floor to ceiling, that the present stairway, flooring, and plastering be replaced by new, that the halls and side passages be made double their present width, with openings to the external air at each end to the full size of the passage or hall; that in the centre of the building and at each intersection of the side or cross passages with the hall a well-hole be constructed from top to bottom of the building, at least six feet in diameter, furnished at the top with proper skylights and ventilators; and that the corners abutting upon or toward the well-holes be cut off or truncated to the depth of at least two feet; and that the ends of all passages and said well-holes be properly protected by iron railings.

The order based on these recommendations of Inspector Tracy and Mr. Pfeiffer was somewhat modified by the Board, and, after the building had been repaired, cleaned, and disinfected, permits to occupy some of the least objectionable rooms were granted.

Manure-Dumps.—The immense accumulation of stable-manure, belonging to Kane & Ryan, located between Forty-fifth and Forty-seventh Streets, east of First Avenue, and amounting to many thousand loads, had for several years been a great annoyance to the neighborhood and the occasion of repeated complaints. Early in the year I was directed to place special inspectors on the ground, supported by sanitary policemen who were ordered to arrest the drivers of all manure-carts found dumping on these premises in violation of the Sanitary Code. These officers, who were on duty day and night, made frequent arrests, and after the lots had been inclosed by high fences on the orders of the Board, additions to these mounds were practically prevented. The owners were afterward directed to remove the manure and stable-straw, but as it was a work of considerable magnitude progress was slow, and when cold weather set in making the nuisance comparatively inoffensive, permission was accorded to store manure during the winter months, bonds being given for its entire removal in the early spring. The same may be said of the dumps on the west side between Thirty-seventh and Thirty-eighth Streets, North River, in what is

unfortunately too familiarly known to the Board as the "*Thirty-eighth Street District.*" The locality thus designated lies between Thirty-seventh and Forty-second Streets, Eleventh Avenue and the Hudson River, and was occupied almost exclusively by offensive trades and nuisances.

Between Thirty-seventh and Thirty-eighth Streets the sunken lots contained thousands of loads of stable-manure rivaling in quantity and offensiveness those of Messrs. Kane & Ryan at East Forty-fifth and Forty-seventh Streets. At the offal-dock, foot of West Thirty-eighth Street, lay the boat of the New York Rendering Company, where all the dead animals collected from the streets and all the offal from the slaughter-houses were rendered. At the foot of Fortieth Street the steamer Algonquin was engaged in transforming blood and offal into fertilizing material, and the rest of the area was mainly filled by slaughter-houses with their progeny of lard and tallow renderers, gut-cleaners, and hog and cattle yards. Besides these, the Metropolitan Gas-Works, perhaps the most objectionable of the city gas-works, located on Forty-second Street, added its occasional sickening blast to an atmosphere already surcharged with offensive odors from these various sources. A westerly wind or a damp day was the occasion for the most bitter complaints from those residing within the circumference of a mile to the eastward of this centre. In the closest nights of summer windows could not be kept open, and invalids and delicate persons were often nauseated and caused to vomit by this compound, pestilential stench.

On the 25th of July, by the direction of the Board, I placed an inspector on the rendering boat in order to ascertain when and where the rendering was conducted. Reports resulting from this and other inspections served as a basis of a warrant for the arrest of the officers of the Rendering Company for violation of the Sanitary Code.

On the same day I was directed to cause the Thirty-eighth Street District to be patrolled hourly day and night by Inspectors who were instructed to cause the immediate arrest of all persons found violating the Sanitary Code, and to report to the Attorney of the Board the circumstances of every violation as the basis of a warrant for the arrest of the proprietors or other persons under whose orders such violation took place. The Inspectors were also directed to pay special attention to the manure dumping-grounds, the factory of Wm. H. McNeil, the different slaughter-houses, the hog and sheep yards, and the works of the Metropolitan Gas-Light Company. The special Inspectors assigned to this duty were placed under the supervision of Special Inspector S. A. Goldschmidt, who reported to me every day in person. Added to this patrol were several Sanitary Police-men, who were also on duty day and night, and who rendered efficient service.

At the same date (July 25th), Inspector Gridley was directed to remove and destroy by combustion certain sheds used for the storage and handling of offal upon premises occupied by Wm. H. McNeil, which were so saturated with decomposed animal matter as to make their disinfection out of the question. I had the honor to forward to the Board, at its meeting on the 5th of August, a report of the successful execution of this order.

On the 8th of August I was directed to keep an Inspector on duty in Mc-

Neil's building day and night, supported by two members of the Sanitary Squad, with orders to arrest every person in the factory directly or indirectly engaged in rendering, and also to arrest any one who persisted in unloading fat at the factory.

On the same date Inspector Gridley was directed to remove the Algonquin beyond the city limits, at an expense not to exceed one hundred dollars. A report upon the execution of this order was forwarded to the Board from this Bureau, September 2d. On the 12th of August the Board directed me to cause a survey to be made of the five blocks between Thirty-seventh and Forty-first Streets, and Eleventh and Twelfth Avenues, and a map to be prepared showing the boundaries of each lot, with the names of the owners, agents, and occupants, and the character of the business conducted upon it. The necessary survey was made by Inspector Goldschmidt, who obtained the names of the respective owners from the tax-office, and the map resulting from the survey was afterward indispensable in bringing the recalcitrant manure-men to terms.

On the 19th of August the Board passed the following resolution, viz. : "That the President of the Rendering Company be notified to remove all property pertaining to his company from the pier foot of Thirty-eighth Street, North River; and further, if not complied with in forty-eight hours after notification, that the Sanitary Superintendent be directed to carry out the orders of the Board." On September 2d, I forwarded a report from Inspector Gridley to the effect that the two boats belonging to the Rendering Company were anchored in the Hudson River, opposite West Fortieth Street, having their coal, trucks, wagons, and carts, on board.

When the special Inspectors assigned to this district were discharged at the end of September, the rendering-boat and the Algonquin had been removed from the city; the rendering of dead animals and offal was being conducted at Barren Island, far beyond the city limits. The manure-men were under bonds to remove all manure and stable-straw in the early spring. The work of the fat-melting factories had been so far modified by carefulness and improved apparatus as to be comparatively inoffensive, and for the first time in several years the inhabitants of the neighborhood had pure air to breathe.

All of which is respectfully submitted :

WALTER DE F. DAY, M. D.,
Sanitary Superintendent and City Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Canal Street, Broadway, Liberty Street, the East and Hudson Rivers.

SANITARY INSPECTOR, A. B. JUDSON, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, M. D., *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report of services performed by me during the last ten months in my district:

Cellar-Vacations.—The housing of the laboring class has occupied my attention to some extent during the past year. It is gratifying to know that twenty more of the unwholesome cellars in the lower part of Washington and Greenwich Streets have, during the latter part of the year, been vacated by the orders of this Department.

Tenements.—In the case of a tenement-house at No. 31 Washington Street, an order of the Board to vacate the rear extension, on the ground of its being dangerous to life from the want of repairs, was followed by the vacation and demolition of the entire building, occupied by twenty families, and the erection of a new building. A large proportion of the buildings in my district are used for business purposes. Many of these buildings could with profit be converted into dwellings, and I have advised with and assisted those who are interested in securing the alteration of some of these buildings into improved tenement and lodging houses.

The following is a summary of the work performed by me during the time I have been in charge of this district:

TOTAL NUMBER OF INSPECTIONS.

| | | | |
|--|-----|----------------------------|-------|
| Tenement-houses..... | 631 | Vessels..... | 3 |
| Private dwellings and boarding-houses..... | 60 | Stables..... | 24 |
| Public dwellings..... | 24 | Cellars and basements..... | 311 |
| Stores and markets..... | 374 | Vacant lots..... | 7 |
| Factories and workshops..... | 17 | | |
| Streets, river-walks, piers, and alleys..... | 750 | Total..... | 2,301 |

COMPLAINTS MADE UPON THE ABOVE INSPECTIONS.

| | | | |
|--|----|--|-----|
| Tenement-houses..... | 46 | Stables..... | 1 |
| Private dwellings and boarding-houses..... | 12 | Streets, river-walks, piers, and alleys..... | 40 |
| Cellars and basements..... | 60 | | |
| Stores and markets..... | 47 | Total..... | 208 |
| Factories and workshops..... | 2 | | |

Four cases of small-pox have occurred in my district. In each case the patient was removed to the hospital, and no other cases followed in the neighborhood.

I have performed 38 vaccinations and 98 revaccinations.

In addition to the sanitary work of my district, I have made special reports, at your request, on the following subjects:

| | | | |
|---|----|--|---|
| The condition of the streets..... | 25 | The cholera reported at 504 Greenwich Street.. | 1 |
| The progress of cholera in the Southwest..... | 14 | The case of yellow fever at 73 Washington St.. | 1 |
| The disposal of ashes and garbage..... | 1 | The number of the unvaccinated..... | 2 |
| The cholera reported on steamer Lapland.... | 1 | The damaged provisions in bonded warehouse.. | 1 |
| “ “ “ Thuringia.. | 1 | The dumping-ground at Vesey-Street pier.... | 1 |
| The small-pox “ “ Colon..... | 1 | The ventilation of Washington Market..... | 1 |

A portion of my time during the summer months was spent in obtaining from the newspapers of the Southwest a current history of the cholera which, appearing in Louisiana in

February, visited the cities of Memphis and Nashville in Tennessee with terrible severity in May and June. As the disease was evidently advancing up the valleys of the Mississippi and Ohio Rivers, the possibility that it would reach New York made it important that the progress and characteristics of the disease should be studied in advance, especially in view of the rapid and frequent communication by railroad and steamboat between this city and the infected localities.

The ease with which cases of epidemic disease can be imported into New York from the Southwest was shown by a fatal case of yellow fever which occurred under my observation in the past year.

The patient had been a resident of Memphis, Tennessee, for three years, and left that city on October 17th, at a time when yellow fever was prevailing. He arrived in New York October 21st, and was received in a lodging-cellar in the lower part of Washington Street, the sickness and vomiting under which he was suffering being supposed to be the results of intemperance. He grew rapidly worse, and was attended by Dr. J. N. Merrill. The vomiting proved to be the "black vomit," and the patient died October 22d, with unquestioned symptoms of yellow fever. The patient was on his way to his home in Wales, and, if the violence of his disease had been delayed a few hours, he would have died in the steerage of a home-ward-bound emigrant steamer.

A summary of the facts obtained by my study of the progress of the cholera of last year is contained in a report which I herewith present on "The Cholera in the Mississippi Valley in 1873," with an accompanying map.

Very respectfully, your obedient servant,

A. B. JUDSON, M. D.,

Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Catherine and Chatham Streets, Park Row, Broadway, Liberty Street, Maiden Lane, and East River.

ASSISTANT SANITARY INSPECTOR, C. E. LOCKWOOD, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of services performed by me in the capacity of Assistant Sanitary Inspector from April 15, 1873, to April 30, 1874:

From April 15, 1873, to June 15, 1873, my time was mostly occupied in the special inspection of privy-vaults in the First, Third, and Fifth Wards, together with attention to all complaints of citizens in the district west of the Central Park, and north of Fifty-ninth Street, so that it was not until about July 1, 1873, that I was assigned to the Second and Fourth Wards, in place of Inspector Henry R. Stiles.

I have endeavored during the last year to fitly supplement the labors of my predecessor, and, notwithstanding the presence of many insuperable obstacles, I have labored to improve the hygienic surroundings of the inhabitants of the district, as far as existing circumstances and conditions would allow, recognizing well the truth of the saying that "cleanliness is next to godliness," and also that filth, and the absence of fresh air and light, attended as they are with a supply of vitiated blood to all the organs of the body, are closely allied to moral debauchery and wickedness.

In the area of my district there are between 400 and 500 tenement-houses and other dwellings, many buildings occupied as places of business, and many of the lowest and vilest rum-shops and dens of vice in the city.

Topography.—The topography of this district and the character of its inhabitants have been so well described by Dr. Stiles in his report to the Board of Health for the year 1870, that it is hardly necessary to enter into details on this head. I will merely mention the fact that a very large portion of the district consists of made land, and is frequently saturated by tide-water, resulting in wet and damp cellars, with their attendant evils.

Sanitary Improvements.—The following sanitary improvements I have especially aimed to introduce during the past year :

1. Thorough surface drainage of streets, street-gutters, sidewalks, yards, courts, and areas.

2. The thorough and permanent vacation of all inhabited cellars condemned by the Board of Health as unfit for human habitation.

3. The ventilation of all privy-vaults, wherever located, within a distance of fifteen feet from any inhabited dwelling, by means of a proper ventilating-shaft extending two feet above the roof of the building of the greatest altitude upon the premises.

4. The placing of proper traps in the waste-pipes of all slop-sinks and water-closets in tenement-houses and other dwellings, thus preventing the escape of offensive and deleterious odors and gases from the street-sewers into said houses.

5. The keeping in a good state of repair and cleanliness all tenement-houses and other dwellings in my district.

So much have I aimed to accomplish during the past year, while I was not unmindful of other gross sanitary evils which I was powerless to correct, but to whose deleterious and destructive influence I now wish to add my testimony, in common with those who have preceded me, that we may feel that we have so far discharged our duty, in pointing out to the public those evils for which at present there seems to be no adequate remedy through the power delegated to the Honorable Board of Health; but as "continual dropping wears the stone," so we may hope finally to accomplish something by our unanimity and persistency. I refer particularly to the wretched cobble-stone pavements of my district, the want of a good system of sewerage and drainage, and the filthy and dilapidated condition of the docks and piers which line the water-front of the district.

Streets, Street-Gutters, and Sidewalks.—Most of the street-pavements in the Fourth Ward, composed of cobble-stones, uneven and sunken in places, allowing of accumulation of offensive collections of filth and stagnant water, are very difficult to keep clean, and here I cannot do better than to quote the words of Inspector Stiles on this subject, in his report to the Board for the year 1870 :

"No population can maintain its self-respect in the face of foul and noisome streets, and no streets can, by any amount of human ingenuity, be kept properly cleaned, unless decently graded, paved, and curbed."

I have endeavored as far as lay in my power to improve this condition, by making over 300 complaints in the Second and Fourth Wards, against street gutter-stones, which were swollen, broken, and out of grade, and invited offensive collections of filth and stagnant water. The result has been that, in some streets, surface-water is discharged by the street-gutters thoroughly, and no longer accumulates; while in other streets it has been very difficult to get the owners of different premises to lay the stones on a common grade. This measure has been of particular importance in the Fourth Ward, as the tenants of many houses empty all their waste-water and slops into the street-gutters.

Through the orders issued by the Board on complaints made by me, the smooth and highly-polished covers over the coal-shutes in the Second and Fourth Wards (highly dan-

gerous to the lives and limbs of pedestrians when sprinkled over with a layer of snow) were replaced during the winter by covers roughened on their upper surfaces.

I have also made frequent complaints in regard to the condition of the street-pavements, with the result of seeing the old pavements patched up, soon to be in as bad a condition as ever; and finally, I am sure that the proper grading, paving, and curbing of the streets in the Second and Fourth Wards would not only tend to the great improvement of the health of the citizens of this portion of the city, and their moral and social condition, but would also tend to encourage the erection of a better class of buildings in the place of the filthy and tumble-down structures which are at present so numerous.

Sewerage and Drainage.—Many of the sewers in the Second and Fourth Wards empty into the East River under bulkheads or between piers, where there is very little force to the current, and consequently a filthy and offensive deposit takes place along our water-front, which emits the most offensive and deleterious odors and gases during the hot months of the year, blackening the paint of buildings and ships in the immediate neighborhood, and making it necessary for the inhabitants in the vicinity during the summer season to close their windows at night, to keep out the horrible stench. This gas can be seen bubbling on the surface of the water where the sewer opens, and it is impossible to stand over it for any length of time without feeling evil effects; and I am given to understand that sailors in the vessels lying in the vicinity are often attacked with low fevers in consequence.

The only way of abating this nuisance is, by the adoption of some system of piers which shall allow of the emptying of the sewerage into the river, where the strong current may carry away all such refuse matter.

Finally, there is urgent need of some system of sewerage which shall efficiently drain all those portions of the Second and Fourth Wards which are saturated by tide-water.

Cellars.—All of the cellars condemned by the Board of Health as unfit for human habitation have been vacated, either with or without the aid of the police, but I am obliged to constantly keep watch of these cellars, as they are no sooner vacated by one tenant than they are again let by the owner to some one else.

However, most of the overcrowded underground lodging-houses which flourished in former days are no longer in existence, and most of those cellars which are at present used as places of sleeping and lodging, contrary to the express order of the Board of Health, belong to the class of houses of prostitution, and I am of the opinion that they will soon get tired of paying the heavy fines imposed upon them for their violation of the law.

I have endeavored to make this measure as impartial as possible, and have, therefore, added many cellars to the original list, as received by me on taking charge of the district, wherever I thought the circumstances justified me in so doing, and it now only remains to secure permanent results and equal justice to all, by constant supervision, and stern enforcement of the law.

Ashes and Garbage.—The problem of the disposal of ashes and garbage is still unsolved, and the providing of separate receptacles for ashes and garbage not uniformly carried out, especially as, even when the ashes and garbage are carefully separated, they are both placed in the same cart.

In view of this condition of affairs, I have found that a carefully-constructed wooden box, lined with metal, and provided with a tight-fitting cover, placed on the sidewalk, answers the best purpose, and is the most practicable in the great majority of cases in my district, and I have consequently encouraged this plan as the least of many evils.

Markets.—The sanitary condition of the markets in my district has been greatly improved by the strong measures instituted by the Board of Health last summer.

Street-cleaning.—The streets have been kept in a comparatively cleanly condition this

spring, and during the summer of 1873, and will, I think, compare favorably in point of cleanness, at the present time, with those of any ward in the city.

Contagious Diseases.—There have been very few cases of contagious diseases in my district during the past year.

Changes in Character and Occupation.—There have been some changes in the character of the buildings in the district during the past year. Two first-class tenement-houses, with rear buildings, have been erected at Nos. 334 and 336 Pearl Street; also two fine tenement-houses at Nos. 311 and 313 Water Street, and at Nos. 288 and 288½ Front Street; taking the places of old tumble-down structures, which were a constant nuisance; also a new building at No. 54 James Street, and No. 54 Roosevelt Street, which are great improvements. Thus the character of the buildings in the district is gradually improving. The orders of the Board have been, in most cases, promptly obeyed, and I have universally met with the greatest kindness and courtesy at the hands of the citizens of the district, in dealing with whom my aim has been to so combine kindness and indulgence with firmness as to impress them with our deep interest in their welfare.

I append a tabulated statement of the labor performed by me during the period to which this report refers :

SUMMARY.

INSPECTIONS AND REINSECTIONS.

| | | | |
|-----------------------------------|-------|---|-------|
| Tenement-houses..... | 3,159 | Stables..... | 58 |
| Private dwellings..... | 12 | Privies..... | 667 |
| Other dwellings..... | 212 | Sunken and vacant lots..... | 10 |
| Cellars and basements..... | 566 | Streets, street-gutters, and sidewalks..... | 760 |
| Public buildings..... | 6 | Piers and bulkheads..... | 4 |
| Stores and warehouses..... | 89 | Slaughter-houses..... | 46 |
| Factories and workshops..... | 54 | Gut-cleaning establishments..... | 3 |
| Fat-rendering establishments..... | 8 | Manure-dumps..... | 3 |
| | | | <hr/> |
| Total..... | | | 5,657 |

CONTAGIOUS DISEASES.

| | |
|-------------------|----------|
| Variola..... | 10 |
| Varicella..... | 1 |
| Total..... | <hr/> 11 |
| Vaccinations..... | 79 |

The following *complaints* have been forwarded to the Board :

| | | | |
|------------------------------|-----|---|-------|
| Tenement-houses..... | 430 | Fat-rendering establishments..... | 2 |
| Private dwellings..... | 3 | Stables..... | 5 |
| Other dwellings..... | 57 | Privies..... | 264 |
| Cellars and basements..... | 43 | Sunken and vacant lots..... | 10 |
| Public buildings..... | 1 | Streets, street-gutters, and sidewalks..... | 352 |
| Stores and warehouses..... | 81 | Piers and bulkheads..... | 3 |
| Factories and workshops..... | 17 | | <hr/> |
| Total..... | | | 1,213 |

Respectfully submitted,

C. E. LOCKWOOD, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Canal and Houston Streets, Broadway and Hudson River.

ASSISTANT SANITARY INSPECTOR, BERNARD HUGHES, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: In accordance with your instructions, I herewith transmit the following report of the sanitary condition of my district, the labor performed therein, and the general improvements that have taken place from April 1, 1873, to April 30, 1874.

Tenement-Houses.—When I entered upon my duties in this district in 1870, as Assistant Health Inspector, I had many difficulties to contend with. The tenements were, generally speaking, in an unsanitary condition, little attention having been given in their construction to light and ventilation. The occupants themselves seemed indifferent with respect to the health laws. The owners or lessees of some of these, desirous of expending as little money as possible, showed but little inclination to comply with the orders of the Board, and not until severe measures were resorted to were they willing to do as required. By constant visitation and careful inspection I succeeded in having the rules of the Department strictly enforced.

The tenants, fully impressed with the necessity of good sanitary regulations in a house containing a large number of families, were always ready and eager to complain of any nuisance, and thus, step by step, the needed change was made.

There is a number of old dilapidated tenement-houses that I have to complain of constantly. When reported, there is difficulty in finding who should be held responsible, and some time usually elapses before the nuisance is completely abated, such dwellings being in the hands of agents or lessees. In the majority of cases, respecting tenements, no complaints are necessary, inasmuch as the owners or agents comply with the suggestions of the Inspector, and wish to have their houses in such a condition as to meet the approval of the Inspector on his visits.

Vacation of Cellars.—Some time ago, special attention was given to cellars used for human habitations. A careful inspection of many cellars was made, and those found unfit, on account of their imperfect ventilation and continued dampness, were vacated by order of the Board. I find that some of them have been reoccupied, thus necessitating a new complaint in order to have them again vacated. The owners in some cases have very little regard for sanitary regulations, as their cellars will, if occupied, bring them a large rental.

Privies.—Privies are a prolific source of complaint, owing to faulty construction in their sewer connection and the insufficient supply of flushing water. Foreign matter is deposited at times in the privy-vault and causes obstructions in the sewer-pipe. Numerous privy-vaults have been disinfected, emptied, and cleaned, and several old and leaky ones have been reconstructed and lined with brick, well laid in cement. A number of old and dilapidated privy-houses have been repaired, and in some few instances new and substantial ones have been substituted.

There has been considerable diminution during the past year in the number of complaints against yards, alleys, and areas. They have been kept in a remarkably clean condition, and consequently required but little of the Inspector's attention.

Streets.—In comparison with former years, the streets of the district, with few exceptions, were kept, during the past summer, in a very fair state of cleanliness.

Stables.—Owing to the great number of small stables, constant supervision is necessary in order to have them kept in a good sanitary condition.

Contagious Diseases.—The strict sanitary measures enforced have no doubt resulted in preventing the spread of contagious diseases. But a few cases of small-pox have occurred during the year, and these in different parts of the district. The improvements have been chiefly confined to the eastern section. In the neighborhood contiguous to Broadway, the demand for houses for business purposes has induced many of the house-owners to convert their dwellings into ware-rooms, and it is probable that at no distant day the whole section will be covered with substantial structures, showing the prosperity and increasing wealth of the Empire City.

SUMMARY

Of inspections and complaints made in my district from April 1, 1873, to April 30, 1874.

INSPECTIONS AND REINSPECTIONS.

| | | | |
|--------------------------------------|-------|------------------------------------|-------|
| Tenement-houses | 3,270 | Sewers, drains, and cesspools..... | 113 |
| Private dwellings..... | 352 | Markets..... | 7 |
| Boarding-houses..... | 29 | Chicken-butcheries..... | 3 |
| Cellars and basements..... | 857 | Piers..... | 10 |
| Privies and water-closets..... | 1,206 | Smoke-nuisances..... | 5 |
| Yards, alleys, and areas..... | 125 | Chimneys..... | 8 |
| Stables..... | 383 | Unoccupied buildings..... | 4 |
| Streets, gutters, and sidewalks..... | 89 | Public buildings..... | 2 |
| Stores and manufactories..... | 147 | Vacant lots..... | 29 |
| Fat-rendering establishments..... | 17 | | |
| Total..... | | | 6,656 |

COMPLAINTS.

| | | | |
|--------------------------------|-----|--------------------------------------|-----|
| Tenement-houses | 145 | Streets, gutters, and sidewalks..... | 38 |
| Private dwellings..... | 21 | Stores and manufactories..... | 10 |
| Boarding-houses..... | 3 | Sewers, drains, and cesspools..... | 45 |
| Cellars and basements..... | 40 | Vacant lots..... | 7 |
| Privies and water-closets..... | 219 | Chimneys..... | 4 |
| Yards, alleys, and areas..... | 29 | | |
| Stables..... | 13 | Total..... | 574 |

CONTAGIOUS DISEASES.

| | | | |
|--------------------|----|------------------|----|
| Small-pox..... | 10 | Chicken-pox..... | 2 |
| Measles..... | 3 | | |
| Scarlet fever..... | 2 | Total..... | 17 |

VACCINATIONS.

| | |
|----------------|----|
| Primary..... | 21 |
| Secondary..... | 48 |
| Total..... | 69 |

Respectfully submitted:

BERNARD HUGHES, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Division and Catharine Streets, and East River.

ASSISTANT SANITARY INSPECTOR, NATHANIEL B. EMERSON, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district, during the portion of the year it has been under my care, from June 17, 1873, to April 30, 1874, and of the work done by me during the same period:

Topography and Sewerage.—The situation and topography of my district are generally favorable to health, though it comprises within its limits a considerable portion of what was formerly marsh-land, and has a border of reclaimed land along its entire East River front. Much of this made land is unprovided with sewers, save, of course, as it is crossed by the terminal sections of mains.

But it is questionable whether the construction of sewers throughout such streets as Water and Front, which, with the exception of a short section of Water Street, are now unsewered, would not prove a curse rather than a sanitary blessing, owing to the effects of the tide.

During the year, in accordance with my recommendation, the sewerage of the ward has been improved by the laying of sewer-pipes through the section of Montgomery Street between East Broadway and Henry Street, a measure of relief specially called for by the unsewered condition of No. 11 Montgomery Street.

Street-Pavements.—With but few exceptions, the streets of the Seventh Ward are paved with cobble-stones. When well laid and properly graded, this kind of pavement, though vastly inferior to the Belgian, may easily be kept clean.

At present the condition of the streets and gutters, as to cleanliness, shows a marked improvement over that at any previous time in the year.

During the year some much-needed repairs have been done to the pavements of the streets by the Department of Public Works. At the present time no extensive repairs in street-pavements, but many small ones, are needed. And this must continue to be the case, with increasing frequency, until there has been made a proper substitution for cobble-stone pavement. The principal cause of filthy streets, however, is to be found in the mismanagement of the

Ashes and Garbage.—These materials are often flung into the streets immediately after the street-sweepers have made their rounds; they are spilled by the carelessness of the chiffonier, or the receptacles are tipped over and their contents spilled into the gutter by mischievous boys. I do not see how this can be prevented until ash and garbage receptacles are strictly forbidden to be put on the sidewalk, save when immediately about to be emptied. In the large number of cases the ashes and garbage are mixed together in the same receptacles.

Tenement-Houses.—The principal change in the ward is in the increase of tenement-houses, sometimes built on vacant lots, but oftener at the expense of dilapidated tenement-houses, dwellings, or stores, that have been torn down to give place to the new structures. A considerable number of such changes are at the present time in progress, principally in the middle and western part of the ward. The new buildings, in all cases, rise to a far higher sanitary standard than those they have supplanted.

Care will be needed in the near future, however, lest the benefits from the improved con-

struction of tenement-houses be offset by the increased crowding of population, an evil which, as yet, has not affected the Seventh Ward in any marked degree.

Lard-Rendering.—There are four establishments in the district in which lard is rendered in considerable quantity. One of these is situated at 118 Monroe Street, another at 135 Division Street, another at 56 Gouverneur Street, and the fourth at 45 Jackson Street. In that on Monroe Street the lard is rendered in a tight boiler by means of steam.

The waste-steam and vapors are condensed in a cold-water tank, and thence are discharged into the street sewer.

The apparatus is all that could be desired, enabling the manufacturer to render over a ton of lard in a day without the production of offensive odors. The apparatus in the other three establishments, in which the amount of lard rendered is much less, is not of the most approved kind, consisting simply of a hood covering the kettle and communicating by means of a pipe with the chimney, or smoke-flue; yet it has answered fairly well.

Waste-Steam Pipes.—The near proximity to human habitations of numerous manufacturing establishments, in which steam is used as a motive power, or generated incidentally, has frequently given rise to complaints, owing to the steam from the waste-pipes entering the open windows and doors of the habitations. In one case the steam from the waste-pipes of the plaster-mill at No. 461 Cherry Street held in suspension finely-powdered plaster, which fell like snow upon the dwelling-houses in the neighborhood, entering them through the crannies by the side of the doors and windows even when they were closed. But in all these cases, as in that last mentioned, the proprietors of the establishments have evinced the greatest solicitude to remove the cause of the complaint, and have complied with the orders of the Board.

Fowls.—The keeping of fowls, especially ducks and geese, on premises occupied as dwellings, is very productive of nuisance and uncleanness, and is a matter difficult to manage. The number of those in the district who desire to keep fowls, and who persist in doing so at certain seasons in spite of every thing, is great. I have adopted the rule of recommending permits for this purpose only when the fowls are kept in coops, and the premises are invariably found in a perfectly clean condition.

Contagious diseases have not prevailed in my district during any part of the period under consideration to any considerable degree. The only contagious diseases that have come under my observation have been small-pox, measles, and varicella.

The number of persons vaccinated represents but a small portion of those to whom it has been offered. The unwillingness to receive this simple prophylactic is surprising, and is a strong argument in favor of compulsory vaccination.

The following is a tabular statement of the inspections and reinspections made, of the complaints forwarded, of the contagious diseases inspected, and of the vaccinations done from June 17, 1873, to April 30, 1874 :

INSPECTIONS AND REINSPECTIONS.

| | | | |
|-----------------------------------|-----|---|-------|
| Tenement-houses..... | 783 | Buildings in process of erection..... | 10 |
| Private dwellings..... | 234 | Privies..... | 195 |
| Other dwellings..... | 304 | Sunken and vacant lots..... | 5 |
| Cellars and basements..... | 153 | Roofs, eaves' gutters and leaders..... | 65 |
| Public buildings..... | 5 | Sinks, waste-pipes, and drains..... | 21 |
| Stores and warehouses..... | 38 | Sidewalks, street-gutters, and streets..... | 327 |
| Factories and workshops..... | 41 | Yards, areas, and alleys..... | 56 |
| Fat-rendering establishments..... | 18 | Carts..... | 4 |
| Markets and market-places..... | 15 | | |
| Stables..... | 87 | Total..... | 2,361 |

COMPLAINTS.

| | | | |
|-----------------------------------|-----|---|-----|
| Tenement-houses..... | 149 | Sunken and vacant lots..... | 1 |
| Private dwellings..... | 53 | Roofs, eaves' gutters, and leaders..... | 4 |
| Other dwellings..... | 94 | Sinks, waste-pipes and drains..... | 2 |
| Cellars and basements..... | 5 | Sidewalks, street-gutters, and streets..... | 75 |
| Stores and warehouses..... | 5 | Yards, areas, and alleys..... | 7 |
| Factories and workshops..... | 7 | Public squares..... | 1 |
| Fat-rendering establishments..... | 1 | Violations of the Sanitary Code..... | 8 |
| Stables..... | 12 | | |
| Privies and water-closets..... | 40 | Total..... | 466 |

CONTAGIOUS DISEASES INSPECTED.

| | |
|----------------|---|
| Variola..... | 4 |
| Rubeola..... | 1 |
| Varicella..... | 1 |
| Total..... | 6 |

VACCINATIONS.

| | |
|---------------------------|----|
| Primary vaccinations..... | 11 |
| Revaccinations..... | 20 |
| Total..... | 31 |

All of which is respectfully submitted:

NATHANIEL B. EMERSON, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Canal Street, Bowery, Park Row, and Chatham Street and Broadway.

SANITARY INSPECTOR ROGER S. TRACY, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report upon the condition of the Sixth Ward for the period extending from April 1, 1873, to May 1, 1874.

This ward is not now as densely populated as formerly, and shows a corresponding difference in the death-rate. The widening of Worth Street, and the repairing of the "Five Points," will materially alter the aspect of that portion of the city, and tend to still further diminish the number of residents. In expectation of the changes which will soon take place in that locality, many old wooden houses have already been vacated and pulled down, the owners only waiting for the final settlement for the street-grade, to erect stores and large warehouses upon the lots, which are now vacant. I have recently submitted a special report upon this subject, which embraced all I had to say regarding it.

Tenement-Houses.—The tenement-houses of the ward have mostly been kept in fair condition, though there are very notable exceptions. Those which are occupied exclusively, or nearly so, by Italian rag-pickers and organ-grinders are, as a rule, filthy beyond the power of one to imagine, who has not actually seen them. This class of immigrants, coming mostly from Naples, have no ideas of personal cleanliness whatever; they are very

poor, and crowd together in large numbers, in small apartments, on account of exorbitant rents. Their floors are always black and sticky with incrustated filth, the clothing on their persons and beds grimy with dirt and crawling with vermin, and, from what I can gather, their mental condition somewhat corresponds to their physical. Ignorant of our laws, language, and customs, they live the life here in New York which they have always lived at home, a life of poverty, misery, and worse than all, filth—passing their days in a manner and under circumstances as alien to American nature as are their swarthy skins and passionate dispositions.

The condition of these unfortunate people furnishes one of the greatest and most difficult problems in my district, and I am daily more and more convinced that the first step toward the remedying of these evils is, to prevent overcrowding of the poor. Some way must be found to provide more rooms and enable the poorer classes of the community to enjoy more breathing-space, at a more moderate rent.

A number of dilapidated tenements have been demolished, to make room for newer ones. Such buildings are now in process of erection at No. 83 Bayard Street, Nos. 5 and 7 Franklin Street, Nos. 83 and 85 Baxter Street. Nos. 68 to 74 Mott Street have been recently torn down, whether to make room for tenements or not I have not learned.

The practice of having house-keepers in tenement-houses, who are held responsible to the owner or agent for the cleanliness of the premises, is, I am glad to see, becoming more and more general. A large number of tenements, in the Sixth Ward, by the constant watchfulness of these women, are kept in admirable condition, and serve as bright examples of what can be accomplished by educating the people in the art of cleanliness. One of the most important results of the way in which the business of the New York Health Department is managed is, that the owners and agents of tenement-house property continually feel as if they were under an inquisitive and perhaps hypercritical supervision, and that the old business of squeezing out rent from poor tenants cannot now be carried on, without affording such tenants some conveniences in return. All such houses are now, therefore, in much better condition than formerly, for agents have a mortal dread of the sanitary policeman with an order to serve.

Privies.—Closely connected with the former subject is that of the privy-vaults, which are usually in the yards to the rear of the houses. In my opinion, the sewer-connected privy-vault is not a good one, however perfect it may be theoretically. If properly used and regularly flushed, it should be inodorous, for in theory the newly-fashioned privy-vaults are a school-sink on a large scale, and should contain nothing but fresh water. But, in reality, the sewer connection is almost always more or less obstructed, and the contents of the vault decompose more readily because of the profuse supply of water. The leaders from the house roofs always empty themselves into the vault, and during a rain the rush of water stirs up the contents of the vault, and releases large volumes of gas, which otherwise would have remained in solution in the water. The question of the proper privy for a crowded tenement-house is not yet at all near a solution, but, with a proper person to manage it, I think the school-sink, by all means, the most perfect.

Several large tenements in the Sixth Ward, built many years ago, cover the whole of the lot or lots upon which they are placed, and the owner, in his quandary as to where to locate the privy, has put it in the cellar, or under the sidewalk. In such houses, water-closets are usually out of the question, as they are not properly used, and very soon get out of order. But underground privies, in my experience, are always filthy and offensive, mainly, I believe, because they are always dark. Darkness breeds negligence and filth. It is still an open problem with me how to deal with these nuisances—a problem which is apparently just as far from a solution as the others I have mentioned above.

Streets.—The streets in the Sixth Ward, during the summer and fall, were generally very clean. During the winter, however, they became, gradually, very dirty, and have not yet regained the appearance which they presented a year ago.

Contagious Diseases.—This district remained free from small-pox until last November, when two cases were imported into Pearl Street from Newark, New Jersey, where it was quite prevalent at the time. Both cases were immediately removed to the hospital, but other cases followed, and the epidemic appears to have culminated in April, about fifty persons in all having been attacked. The spread of the disease is due solely to the indisposition of the neighbors to allow themselves or their children to be vaccinated—the Italians, because they were afraid, and the Germans because they were superstitious. As they began to be alarmed, they submitted to the operation, and I have performed, during the past six weeks, about seventy primary and one hundred and eighty secondary vaccinations. Large numbers have also availed themselves of the opportunity afforded by the New York Dispensary, and what promised to be an epidemic appears to have died out, or perhaps to have been strangled.

The following is a summary of the work performed by me from April 1, 1873, to May 1, 1874:

INSPECTIONS AND REINSPECTIONS.

| | | | |
|------------------------------------|-------|------------------------------|-------|
| Tenement-houses | 1,690 | Garbage-boxes | 3 |
| Yards and areas | 903 | Markets | 1 |
| Alleys | 6 | Gutters | 2 |
| Private dwellings | 30 | Stables | 135 |
| Other dwellings | 21 | Chicken-yards | 8 |
| Cellars and basements | 697 | Streets | 330 |
| New buildings | 8 | Privies | 616 |
| Public buildings | 13 | Other buildings | 6 |
| Stores and warehouses | 49 | Sunken and vacant lots | 110 |
| Factories and workshops | 52 | Sidewalks | 120 |
| Fat-rendering establishments | 3 | Hydrants | 1 |
| Total | | | 4,803 |

COMPLAINTS.

| | | | |
|-----------------------------|-----|---------------------------------|-----|
| Stables | 1 | Vacant lots | 9 |
| Leaders | 1 | Street gutters | 2 |
| Tenement-houses | 129 | Stores and warehouses | 6 |
| Alleys | 4 | Sidewalks | 38 |
| Private dwellings | 5 | Factories and workshops | 5 |
| Chicken-yards | 8 | Streets | 5 |
| Public buildings | 2 | Privies and water-closets | 79 |
| Other dwellings | 7 | Yards and areas | 92 |
| Hydrants | 2 | New buildings | 1 |
| Cellars and basements | 36 | | |
| Total | | | 432 |
| Special reports | | | 4 |

CONTAGIOUS DISEASES.

| | |
|-----------------|----|
| Variola | 23 |
| Varioloid | 30 |
| Varicella | 7 |
| Rubeola | 2 |
| Total | 62 |

VACCINATIONS.

| | |
|----------------------------------|-----|
| Number of families visited | 528 |
| Primary vaccinations | 70 |
| Secondary vaccinations | 181 |

All of which is respectfully submitted:

ROGER S. TRACY, M. D.,

Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Houston and Canal Streets, Bowery and Broadway.

SANITARY INSPECTOR, W. E. HALL, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the work performed in my district for the year ending April 30, 1874:

Within the bounds of my district great changes have occurred during the past year. Many fine business buildings have been erected, some taking the place of inferior structures previously used for like purposes, others occupying ground before covered by tenement-houses or other dwellings.

The store is pressing hard upon the tenement-house in the Fourteenth Ward, this encroachment being principally at the outlying portions of the district, the more central points being entirely given up to tenement-houses. To counterbalance improvements, the tenements are becoming more and more crowded by an inferior class of people moving up from the lower wards.

New Buildings.—The rebuilding with first-class tenement-houses of Nos. 211, 213, and 215 Mott Street was a great improvement to the neighborhood, and in many parts of the district a better class of tenements has sprung up. The tumble-down shanties 142 and 144 Baxter Street have been removed, and their sites are now occupied by first-class brick tenement-houses. The old wooden buildings and stables, southeast corner of Prince and Elizabeth Streets, have been removed, and the entire lot, 46 x 120 feet, is to be covered with first-class tenement-houses. The rookeries 144 and 146 Hester Street have recently been torn down. Broome Street has been particularly favored in the direction of new buildings.

Tenement-Houses.—Some eight or ten of these have been built during the year. Although numerous and extensive improvements, such as repairing, cleaning, ventilating sleeping-rooms, grading and paving yards, and ventilating privy-vaults, have been made during the year, still, many of them I have found it impossible to keep up to the standard of cleanliness of a year ago. This is the result of the advance into the district of Italians from the lower wards. They are particularly filthy. They crowd from ten to thirty into a room, and sleep on a pile of disgusting rags. No room they occupy can pass inspection satisfactorily. Several houses in the district have been vacated for want of repairs. I wish they could be vacated for filth and overcrowding.

Privies.—The ventilation of privy-vaults has been pushed forward during the year, and at the present time over 200 vaults are ventilated by metallic flues.

Yards.—A large number of yards in this district are unpaved either partially or entirely, or are paved with cobble-stones. The smallest portion of bare or badly-paved ground in a tenement-yard is sure to become the depository of slops and garbage, and I am now requiring many filthy yards to be properly flagged.

Hydrants.—Many of these, instead of connecting directly with the sewer through a sink, discharge over the surface of the yard, the water being conducted thence through the alley-way to the street-gutter. Many sidewalks were covered with ice last winter from this cause, the water being dammed back, flooding the yards and alley-ways, and sometimes entering cellars.

Cellars.—At the time of the cellar-inspection, in the winter of 1872-'73, but five cellars were found inhabited, but their number is on the increase. The Italians now flocking into this district are the principal occupants of these death-traps. These cellars are being vacated as fast as discovered.

Streets.—The streets have been kept in much better condition during the past year than heretofore. I would again urge the necessity of doing away with the cobble-stone pavement.

Waste-Pipes and Traps.—In many houses the waste-pipes communicating with the sinks are untrapped, allowing the entrance of sewer-gas to the rooms. In all such cases traps have been ordered, but I do not consider traps sufficient of themselves. The pressure of the gas will ultimately force itself through the trap. The main waste or soil pipe, therefore, should extend two feet above the roof, and, as the gas follows the direction of least resistance, it will then escape into the upper air.

Summary of work done from April 1, 1873, to April 30, 1874.

SUMMARY.

INSPECTIONS AND REINSPECTIONS.

| | | | |
|---------------------------|-------|-----------------------------------|-------|
| Tenement-houses..... | 2,364 | Stores..... | 1,735 |
| Private dwellings..... | 2 | Cellars and basements..... | 16 |
| Other dwellings..... | 575 | Factories..... | 93 |
| Boarding-houses..... | 60 | Workshops..... | 43 |
| Stores and dwellings..... | 6 | Privies..... | 835 |
| Hotels..... | 2 | Streets..... | 16 |
| Theatres..... | 2 | Fat-rendering establishments..... | 1 |
| Lodging-houses..... | 9 | Vacant lots..... | 8 |
| Public buildings..... | 1 | Water-closets..... | 1 |
| Schools..... | 3 | Stables..... | 34 |
| Total..... | | | 5,819 |

COMPLAINTS.

| | | | |
|----------------------------|-----|--------------------|-----|
| Tenement-houses..... | 317 | Factories..... | 4 |
| Private dwellings..... | 1 | Workshops..... | 4 |
| Other dwellings..... | 25 | Theatres..... | 1 |
| Stores and dwellings..... | 3 | Stables..... | 5 |
| Boarding-houses..... | 5 | Vacant lots..... | 1 |
| Cellars and basements..... | 2 | Streets..... | 3 |
| Public buildings..... | 1 | Water-closets..... | 1 |
| Stores..... | 25 | Privies..... | 134 |
| Total..... | | | 582 |

CONTAGIOUS DISEASES.

| | |
|-------------------|-----|
| Variola..... | 9 |
| Varioloid..... | 3 |
| Total..... | 12 |
| Vaccinations..... | 133 |

All of which is respectfully submitted :

WILLIAM E. HALL, M. D.,
Sanitary Inspector

SANITARY INSPECTION DISTRICT

Bounded by One Hundred and Tenth and Fifty-ninth Streets, Eighth Avenue and Hudson River.

ASSISTANT SANITARY INSPECTOR, ALEXANDER STRONG, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following record of my labors since my appointment on June 18, 1873, to April 30, 1874, a period of ten months and twelve days. I was chiefly occupied in the upper part of the Twenty-second Ward, and the lower part of the Twelfth.

For a period of four or five weeks I was called upon to do additional work in the district running north of mine, and extending as far as Spuyten-Duyvil Creek. My labors here were confined to the inspection of citizens' complaints, and their record is on file among the papers of the Board.

The graphic accounts given of the topography, geology, and other features of the district, by some of my predecessors, preclude the necessity of any further description of these points here, except that I might refer to the surface as being extremely irregular, presenting alternate elevations and depressions, which have been largely instrumental in creating those malarial plague-spots so productive of disease, and so much dreaded by the public.

Happily for the reputation of the Health Department, the powers conferred upon it by the drainage-act of 1871 have already shown their effect in wiping out most of these plague-spots, and thereby lowering the death-rate.

Sunken parcels of land have been ramified with underground drains, and filled in with fresh earth to such an extent and level, that all surface-water is discharged into drains.

Old water-courses have been and are being supplanted by the most perfectly-constructed stone drains, which connect with the street-sewers. In this way, some of the worst ponds on the west side of Eighth Avenue have been completely drained. The few ponds still remaining which require attention are located as follows: one on south side of Seventy-first Street, 125 feet west of Eighth Avenue; a second on southeast corner of Ninety-second Street and Ninth Avenue; a third, east side of Ninth Avenue, extending from Ninety-sixth to One Hundredth Street; and a fourth, on southwest corner of Eighth Avenue and One Hundred and Tenth Street, which receives the drainage of the Lion brewery, and which has long since acquired the reputation of an historic nuisance.

The first and second could be easily drained if the sewer-connections were made which I recommended. The third, with the lots adjoining, should be under-drained, while the fourth must remain *in statu quo* till the sewer in Morningside Park is completed.

The sanitary condition of the various dwellings is eminently satisfactory, and this fact, taken in connection with the slight appearance of contagious diseases in the district, goes to show what sanitary measures can accomplish when rightly directed and efficiently carried out. First-class dwellings seldom need the attention of the Inspector. Occasionally, it was necessary to complain of cellars that adjoined vacant lots not excavated or connected with the sewer. In those instances the owner of the lot was notified by the Board to make a sewer-connection; the order was at once complied with, while the cellar was cleaned, and thereafter protected from inundation.

The tenement-dwellings in this district are not very numerous, and, owing to the almost complete absence of rear tenements, there is less crowding, and consequently better ventilation.

The internal structure of the brick tenements is very fair, but that of the wooden is disreputable. The latter class of tenements having served its day, is always a source of

complaint. The roofs are always leaky, the wood-work old and rotten, and the stairs rickety and dangerous. When decay shows itself in these structures, it is a work of toil to keep them clean or in repair; so that, hereafter, the erection of such houses as tenement-dwellings should be discountenanced.

The cellars of all the tenements were closely inspected, and with few exceptions were found dry and airy. In many instances the privy-vaults were found full to the floor with night-soil and liquid filth; in a few cases the soil-pipes were obstructed, while others were defective in ventilation. The proper orders were made out against such vaults, and in nearly every instance the recommendations contained therein were complied with by the property-owners.

Since the drainage-act took effect, the condition of the shanties in a sanitary point of view is not quite so deplorable as has been heretofore represented, and, were it not for the piggeries and stables associated with them, they are healthier, and in some respects more desirable as habitations, than some of the crowded tenements down-town. This latter statement receives corroboration from the fact that since my appointment, in June, 1873, I was not called upon to visit a single case of contagious disease among the shanty population. This remarkable exemption from disease is explicable on the following grounds:

The stagnant ponds now no longer exist, having been completely removed by drainage; the privy-vaults and manure-vaults containing garbage and slops have been frequently emptied and cleaned. Invariably semi-weekly visits were made to the more thickly-settled parts, with the object of having the more trivial nuisances removed without making formal complaints, and at the same time impressing upon the inhabitants the necessity for cleanliness in their general habits and surroundings, and the advantages of better ventilation.

The good results following these frequent visits were really amazing; and although such a plan as this would be unnecessary in other districts, because of the absence of shanties, yet in mine it has succeeded so well, that I respectfully recommend it to be adopted, or at least as eminently worthy of trial before it should be cast aside as useless or impracticable.

In addition to all those efforts, the piggeries were completely cleared, and then disinfected and cleaned, so that, with the removal of all these varied nuisances, there was little left that was offensive, or that would encourage the spread of any contagious disease.

The few public institutions in my district are in excellent sanitary condition, especially the New York Orphan Asylum, which has been thoroughly overhauled and partially reconstructed.

Although a good many streets are sadly in need of sewers, yet a considerable number have been furnished with them recently. The Boulevard is being sewerred between several streets up to Ninety-sixth Street; other streets sewerred since June, 1873, as follows: Sixty-seventh Street, between Ninth and Tenth Avenues; Ninety-sixth Street, between Tenth Avenue and the Boulevard; Eighty-eighth Street, between Eighth and Ninth Avenues; Ninth Avenue, between Eighty-eighth and Ninety-second Streets; Tenth Avenue, between Ninety-third and One Hundred and Seventh Streets; and Eighty-first Street, between Tenth Avenue and the Boulevard. These sewers afford drainage to several sunken lots, and many dwellings along the Boulevard have already made connections.

Scarlet fever has prevailed to a slight extent, and proved fatal in three cases—the entire number affected having been six. I was not called upon to visit a single case of variola in my district.

In the early part of last autumn there were three or four cases of cholera morbus at One Hundred and Ninth and One Hundred and Tenth Streets, which were probably caused by the drinking of well-water in a state of impurity. Since that occurrence the Croton water has been brought near to these streets for drinking purposes, so that henceforth there may be no fears entertained of the same disease arising from the cause which was supposed to produce it last autumn. Some of the wells still open at One Hundred and Tenth Street ought to be closed to avoid further danger.

The following table exhibits a summary of inspections, reinspections, and complaints made from June 18, 1873, to April 30, 1874 :

SUMMARY.

INSPECTIONS AND REINSPCTIONS.

| | | | |
|------------------------------|-------|-----------------------------------|-------|
| Tenement-dwellings..... | 558 | Breweries..... | 18 |
| Private dwellings..... | 1,283 | Cellars..... | 6 |
| Other dwellings..... | 2,855 | Fat-rendering establishments..... | 1 |
| Sunken and vacant lots..... | 217 | Privies..... | 15 |
| Public buildings..... | 34 | Drains..... | 8 |
| Stores and warehouses..... | 25 | Public sewers..... | 1 |
| Factories and workshops..... | 52 | Burial-grounds..... | 1 |
| Street-gutters, etc..... | 222 | Ponded water..... | 1 |
| Stables..... | 83 | Squares..... | 52 |
| Total..... | | | 4,984 |

COMPLAINTS.

| | | | |
|-----------------------------|----|----------------------------------|-----|
| Tenement-dwellings..... | 43 | Drains..... | 1 |
| Private dwellings..... | 45 | Public buildings..... | 6 |
| Other dwellings..... | 36 | Ponded water..... | 1 |
| Sunken and vacant lots..... | 9 | Violations of Sanitary Code..... | 4 |
| Stables..... | 8 | | |
| Total..... | | | 153 |

CONTAGIOUS DISEASES.

Scarlatina..... 6

All of which is respectfully submitted :

ALEXANDER STRONG, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Fourteenth and Houston Streets, Fourth Avenue and Hudson River.

SANITARY INSPECTOR, S. F. MORRIS, M. D.,

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district for the past year :

No changes of importance have taken place in the district. The number of tenement-houses being constructed is constantly increasing. Their general condition has been very good. The owners fully realize that it is for their own interests to take care of their property. The consequence is, that the number of complaints I forward against these houses is steadily decreasing, and most of these complaints are against temporary nuisances, such as accumulations of garbage which collect rapidly unless great care is exercised for their removal.

It is very gratifying to notice the readiness with which *most* of the orders of the Board are complied with. Whether this is due to an improved standard of sanitary necessities, or the submissive recognition of the powers of the Board, I cannot say.

The condition of the streets has been about as usual. During last summer the streets of the Ninth Ward were kept reasonably clean, considering the condition of the street-pavement; but the irregular, careless, and inefficient removal of garbage and ashes, made it almost impossible to have clean streets. I have seen a street rendered filthy with garbage and ashes, strewed by a so-called collector almost immediately after it had been swept, thus making its condition infinitely dirtier than before.

Recently, since house-owners have been compelled to provide separate receptacles for ashes and garbage, I have seen the contents of the two receptacles emptied into the one cart; thus not only negating any good effects which might be derived from the order, but setting them an example which they are only too willing to follow, of utterly neglecting to care for the condition of the streets in front of their premises. Until some method and system are exercised in the removal of ashes and garbage, the streets *cannot* be kept clean.

The "floating bath," to which I have alluded in previous reports, is still as much frequented as ever. I cannot say it is more used, as its capacity is very limited, while the demand to use it is almost unlimited.

What a satire is it upon this city that with its million of inhabitants there are but two small public baths! Still, as this seems to be the era of reform, retrenchment is of far more importance than cleanliness and health. So the great unwashed must remain unwashed, to the great detriment of their health, and consequently that of the city.

I trust, before another year passes, you will show forth the great need for the multiplication of these sanitaria.

The lime-kiln, to which I have so often called your attention in special reports, is still a frequent source of complaint from those compelled to inhale its dust and stench. I would respectfully urge upon you the necessity of prompt action for the abatement of this great nuisance.

The district has been remarkably free from small-pox. The few cases that have occurred have been isolated ones. Prompt removal to hospital, or complete isolation and vaccination, have controlled its spread. As far as I know, no second case has occurred in any house from which a patient has been removed, or where a patient has been isolated.

Appended is a tabular statement of inspections, reinspections, etc.

| | | | |
|----------------------------|-------|-----------------------------------|-------|
| Tenement-houses..... | 2,945 | Factories and workshops..... | 59 |
| Private dwellings..... | 240 | Fat-rendering establishments..... | 20 |
| Other dwellings..... | 105 | Markets..... | 2 |
| Cellars and basements..... | 30 | Stables..... | 301 |
| Public buildings..... | 19 | Privies, etc..... | 34 |
| Stores and warehouses..... | 80 | Sunken and vacant lots..... | 166 |
| Total..... | | | 4,001 |

COMPLAINTS FORWARDED.

| | | | |
|------------------------------|-----|----------------------------------|-----|
| Tenement-houses..... | 203 | Stables..... | 19 |
| Private dwellings..... | 54 | Vacant lots..... | 7 |
| Other dwellings..... | 33 | Privies, etc..... | 47 |
| Cellars and basements..... | 5 | Streets, sidewalks, etc..... | 59 |
| Stores and warehouses..... | 7 | Violations of Sanitary Code..... | 19 |
| Factories and workshops..... | 7 | | |
| Total..... | | | 457 |

CONTAGIOUS DISEASES.

| | |
|---------------------------------------|----|
| Small-pox..... | 17 |
| Scarlatina ¹ | 1 |
| Varicella ¹ | 1 |
| Erythema papilloma ¹ | 1 |
| Total..... | 20 |

VACCINATIONS PERFORMED.

| | |
|----------------|----|
| Primary..... | 11 |
| Secondary..... | 9 |
| Total..... | 20 |

Respectfully,

S. F. MORRIS, M. D.,

Sanitary Inspector.

¹ Reported as small-pox.

SANITARY INSPECTION DISTRICT

Bounded by Fourteenth and Rivington Streets, the Bowery, Fourth Avenue and Avenue B.

ASSISTANT SANITARY INSPECTOR, C. H. ATWATER, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of labor performed by me in the Health Department during the year ending May 1, 1874, and of the present sanitary condition of my district.

My district is occupied mainly by tenement-houses, though there are a considerable number of private houses and of small three-story dwellings containing from two to three families. The tenement-houses, as a rule, are of the better sort, and are occupied by a frugal and cleanly population. Exceptions to this rule exist, however, in many localities, and especially in that portion of the district lying north of Tenth Street and east of Second Avenue. Here the houses are more or less dilapidated, and their tenants generally of a class among whom it is difficult to enforce sanitary measures. To these localities I have mostly confined my labors. A number of new tenement-houses have been erected during the year, with improved facilities for obtaining light and ventilation in sleeping-apartments and to make room for buildings of this description. A dozen or more old and ruined tenements are at the present time being torn down.

Drainage.—Along the eastern border of my district, many of the cellars are wet, owing to the low grade and to the ingress of tidal water. In remaining portions of the district the drainage is good. House-drainage is often very defective by reason of the small size of the pipes, which occasions their frequent obstruction and a consequent overflow of filth from sinks and closet-basins. Sewer-gases escaping into dwellings from waste-pipes, which are unprovided with stench-traps, are a constant source of discomfort to tenants and in many cases the cause of disease. A large proportion of the complaints made against tenement and private houses have been for the removal of this nuisance, requiring traps beneath sinks and the adjustment of ventilating tubes to the pipes. I think there should always be in addition to the above a trap in the main waste-pipe.

Streets.—The numerous repairs effected by order of the Board upon sidewalks and street-gutters have materially improved the sanitary condition of many of the streets; these repairs have consisted in taking up and relaying to a uniform grade the stones which had become broken and displaced.

Similar work is required upon street pavements which are of cobble-stone, and in places are so broken and furnish so many points of lodgment for filth that it is impossible to keep them clean.

The general condition of the streets, however, at the present time is better than at any previous period of the year. Ashes and garbage have during the past month been removed more systematically than heretofore, though tenants do not as yet comply with the ordinance requiring the separation of these substances, and the receptacles in use are generally of the same miscellaneous and unsuitable character.

Privies.—Privy-vaults are a source of frequent complaint. The labor performed upon these has consisted in emptying, cleaning, disinfecting, and in repairing the walls when defective. It has occasionally been necessary with old stone vaults to tear them down and to construct in their places new ones of brick. When, by reason of their close proximity to dwellings, privies are especially offensive, they have been ventilated by means of the metallic

shaft extending from within the vault to a height of two feet above the roof of the highest building on the premises.

Stables.—The stables in my district are with few exceptions sewered and provided with proper receptacles for manure; water-tight vaults have in many cases taken the place of dilapidated wooden boxes from which liquid filth and offensive exhalations were continually escaping.

Cellars and Basements.—There are comparatively few inhabited cellars within my district. Of those inspected and reported upon, three have been vacated during the winter.

Lard-Rendering.—The places within the district where this occupation is carried on are eight in number, and are at the present time in full operation. The efforts made during the summer to render these places inoffensive by enforcing greater care in the disposal of refuse matter, and by introducing improved mechanical appliances, were attended with only partial success.

Contagious Diseases.—Many of the cases of small-pox visited have been among infants, a result of the general aversion among mothers to early vaccination. All of the cases occurring within tenement-houses have been removed to the hospital, except in two instances, when the condition of the patient would not warrant this measure. The houses of the infected neighborhood are always visited and gratuitous vaccination offered to their inmates.

The following is a tabulated statement of inspections and complaints made, and of contagious diseases visited during the year :

INSPECTIONS AND REINSPECTIONS.

| | | | |
|----------------------------|-------|-----------------------------|-------|
| Tenement-houses..... | 2,684 | Lard-rendering..... | 10 |
| Private dwellings..... | 539 | Stables..... | 121 |
| Other dwellings..... | 39 | Privies (special)..... | 326 |
| Cellars and basements..... | 414 | Vacant lots..... | 10 |
| Public buildings..... | 11 | Yards, courts, areas..... | 144 |
| Stores and warehouses..... | 19 | Gutters and sidewalks..... | 217 |
| Factories..... | 101 | Waste-pipes and drains..... | 81 |
| Total..... | | | 4,695 |

COMPLAINTS.

| | | | |
|----------------------------|-----|-------------------------------|-----|
| Tenement-houses..... | 290 | Waste-pipes and drains..... | 26 |
| Private dwellings..... | 67 | Stables..... | 23 |
| Other dwellings..... | 15 | Gutters and sidewalks..... | 103 |
| Cellars and basements..... | 78 | Courts and areas..... | 3 |
| Public buildings..... | 2 | Vacant lots..... | 1 |
| Stores and warehouses..... | 4 | Lard-rendering nuisances..... | 9 |
| Factories..... | 10 | Special reports..... | |
| Privies..... | 99 | | |
| Total..... | | | 740 |

CONTAGIOUS DISEASES.

| | |
|--------------------|----|
| Variola..... | 24 |
| Varioloid..... | 6 |
| Typhoid fever..... | 2 |
| Total..... | 32 |

Respectfully submitted:

C. H. ATWATER, M. D.,

Assistant Sanitary Inspector.

NOTE.—My experience of the past year testifies to an increasing promptness and apparent willingness on the part of owners of property to comply with the orders of the Health Board.

SANITARY INSPECTION DISTRICT

Bounded by East Fourteenth Street, Rivington Street, Avenue B and East River.

ASSISTANT SANITARY INSPECTOR, EUGENE B. SANBORN, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district, and of the work performed by me since my appointment on the 3d of February of the present year (1873). From the time of my appointment until the 24th of the same month, I was assigned to duty in the Eighteenth District. At the latter date I was transferred to this. This district, with the exception of several large iron-founderies, and some manufacturing establishments on the eastern side, is composed almost entirely of tenement-houses, and for the most part they are of the lower grade. The sanitary condition of these varies according to the liberality or avarice of the landlord, and the personal habits of the tenants. Many of these houses, originally constructed for private dwellings, and re-constructed for tenement-houses, are poorly adapted to the wants of a tenement population.

There is another class, and the number is quite large, consisting of wretched shanties which, but for the kindly support of their more substantial neighbors, would fall of old age and decay; filled with filth and dirt, they are wholly unfit for human habitation, and their removal would be a wise sanitary measure.

Ventilation.—A free supply of pure, fresh air is absolutely necessary to health at all times, but especially is this the case in sleeping-apartments, and this, as tenement-houses are now constructed, it is impossible to obtain. During the day, the opening and shutting of doors and windows serve to keep the air of the rooms tolerably good, but it is at night, when the doors and windows are closed, that we need free ventilation; and it is here that the windows communicating with the hall, so good in theory, fail so completely in practice in the majority of cases. Through fear of a burglar or of the very draft we wish to establish, they are closed, curtained, and frequently hidden behind a pile of clothing. With these windows, to be used if the tenants desired, I would recommend a ventilating-flue, constructed in the wall, and extending to a height of four feet above the roof of the house.

House-Drainage, etc.—The drainage of the houses west of Avenue D is very good, most of the houses being properly connected with the street-sewer, and where no such connection exists I have recommended that one be made. East of Avenue D, great difficulty is experienced in properly draining the cellars. It being "made land" and raised but little above high-water mark, at the time of "high tides" the water is backed up the sewer and overflows these cellars, rendering them useless to the tenants and a constant source of disease. One of the most common causes for complaint by the tenants is, the escape of foul odors from the waste-pipe connected with the sinks; this in some cases is almost unbearable. An order to provide a stench-trap in the pipe directly beneath each sink, and to extend the pipe to a height of two feet above the roof of the house, has, when complied with, entirely abated the nuisance.

Privy-Vaults.—The proper construction of privy-vaults is a subject that has received a good deal of attention, and various forms of water-closets and vaults have been devised and constructed to modify or abate the nuisance inseparably connected with it. The water-closet, especially when in the tenement-house, is decidedly objectionable. I have found them almost invariably out of order. The soil-pipe becomes choked, or the flushing apparatus is disarranged, and it becomes offensive in the highest degree, and a prolific source of disease. Vaults with sewer-connections would appear to be the best that could be used, but,

as they are now constructed, they are in many cases extremely offensive. The sewer is often obstructed by rags, ashes, garbage, etc., thrown into the vault, which, receiving a larger quantity of water from the roof and surface of the yard, frequently overflows, spreading filth over the yard and carrying it into neighboring cellars. I would prefer a vault without sewer connections, of sufficient capacity, cemented so as to be water-tight, and ventilated by means of an eight-inch metallic shaft, extending four feet above the roof of the highest neighboring house. If the inspector goes over his district twice in the year, it need not become full enough to be offensive.

Garbage and Ashes.—Notwithstanding the rules and regulations in regard to the separation of ashes from garbage, they still are mixed, even where two receptacles are provided, and deposited in about equal proportions between the two vessels and the street-gutter.

Streets.—The streets are well sewered except Lewis Street, and a sewer is very much needed here. Many of the yards on either side of the street are lower than the street-gutter, and consequently cannot be drained into it, and all surface-water in the yards and waste-water thrown therein percolates into the cellars, rendering them offensive and unhealthy.

In regard to pavements, the most of the streets are yet afflicted with the cobble-stone, which in a sanitary, as in every other point of view, is the worst kind of pavement that could be devised. From the nature of the surface it presents, it is impossible to keep it clean, and in many of the streets large holes and ruts have been worn, which become filled with all kinds of street-filth and with ashes, garbage, and slops, thrown into the street by careless and filthy tenants of the houses. The result is, the streets are very dirty, and, when warmed by the sun, the air is filled with vile stenches and poisonous gases, which act as powerful causes and propagators of disease. I trust that, for the sake of the sanitary effect it would have, this will soon be replaced by the Belgian pavement.

Contagious Diseases.—I have been called to but ten cases of contagious disease, all small-pox; of these, two were treated at home, a third died before it could be removed, and the remainder were sent to the hospital. The dread this class of patients has of a hospital causes them to keep the cases secreted as long as possible, frequently until the eruption has matured, and then, though promptly ordered to be removed, they have left the poison behind, and others have followed them. Another cause of the spread of this disease is the refusal of parents to have their children vaccinated. In one house two families each had a young child; in one of the families the father was sick with small-pox; I offered vaccination, they refused because their doctor said the "weather was too cold." The child contracted the disease and died. In the other family the child "was too young" (eleven months); it also died of the same disease. And so I presume it will be until vaccination is made compulsory.

The following is a statement of the inspections and reinspections made, complaints forwarded, and contagious diseases visited, since February 3, 1874:

INSPECTIONS AND REINSECTIONS.

| | | | |
|------------------------|-----|----------------|-------|
| Tenement-houses..... | 913 | Yards..... | 19 |
| Private dwellings..... | 380 | Cellars..... | 18 |
| Other buildings..... | 7 | Stables..... | 5 |
| Privies..... | 62 | Sidewalks..... | 2 |
| Total..... | | | 1,406 |

COMPLAINTS.

| | | | |
|------------------------|-----|--------------------|-----|
| Tenement-houses..... | 235 | Yards..... | 13 |
| Private dwellings..... | 48 | Cellars..... | 10 |
| Other buildings..... | 3 | Manufactories..... | 3 |
| Privies..... | 60 | | |
| Total..... | | | 372 |

CONTAGIOUS DISEASES.

| | |
|------------------|----|
| Small-pox..... | 10 |
| Vaccination..... | 14 |
| Total..... | 24 |

Respectfully submitted :

EUGENE B. SANBORN, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Fourteenth and Twenty-sixth Streets, Sixth Avenue and North River.

ASSISTANT SANITARY INSPECTOR, ALLAN McLANE HAMILTON, M. D.

NEW YORK, *May 1, 1874.*DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report of duties performed as Assistant Sanitary Inspector during the year beginning April 1, 1873, and ending April 30, 1874.

The growing interest of the community in sanitary matters has extended lately even among the owners of property; and the coöperation of these individuals with the Sanitary Inspector renders his work much less arduous than in former years, and spares the Department many of the lawsuits which were formerly so common.

My district is perhaps not so interesting in regard to the opportunities for reform as some others which are peopled more densely by the lower classes, as, for two-thirds of its area, it is covered by respectable houses and stores of the better class. There are dwellings, however, which could well bear renovation and reconstruction, built as they were before practical hygienic experiences were learned from the important relations of the improper construction of buildings to the propagation of disease.

Tenement-Houses.—I referred in my last annual report to the condition of tenement-houses in general, and at that time suggested reforms in light and air supply, and the disposal of garbage. I am happy to say that, though perfect ventilation has not yet been obtained, many new houses have been built with greatly improved means of ventilation. There is yet much to be desired in lighting tenement-houses properly. The long dark halls are an extremely bad feature, both on account of their effect upon health, and their degrading moral influence—for crime is an offspring of darkness, and sunshine and light are indispensable to cheerfulness and virtue.

In place of the small scuttle-holes that now admit but a few rays of light into the darkness of the halls of most of the tenement-houses of New York, a skylight should occupy a space equal to the area of the floor of the hallway.

There are always strata of foul air in the halls of this species of building rarely agitated, particularly in the upper halls. The front and back doors occasionally admit a draught of fresh air, which only makes the halls cold in winter, and in summer produces very little change at all. Inclosed as these halls are by side-rooms, and back and front hall bedrooms, there is no ventilation above, as the skylights are closed, and the cleanly-whitewashed walls and ceilings of the halls of a tenement-house very soon become coated by a deposit of animal matter.

In particularizing improvements in my district, I would refer to the new block of tenement-houses built in West Sixteenth Street, on the site of several rickety buildings between Ninth and Tenth Avenues.

The construction of ventilating-shafts has been of great service, and, instead of foul odors arising from the privy-vaults and entering the rooms of the tenants, the yards and houses are now free from these emanations.

The necessity for some authorized house-keeper to take charge intelligently of the house in which she resides, to prevent the tenants who are lawless and careless from destroying the sanitary arrangements of the house, from throwing ashes and garbage into the street-gutters and privy-vaults, is very great. It should be the duty of this person to enforce the tenants to cleanly habits, to regulate ventilation and disinfection, and supervise the cleaning of the premises.

Dwelling-Houses.—This class of habitations are for the most part in very good condition, and there is very little to say except it be that the trapping in many of them is defective, there being an evident "shiftlessness" in the plumbing, many joints being calked with cement or very sandy mortar instead of lead.

Manufactories, etc.—The ammonia-works have been the cause of complaint recently, and though the nuisance was not so grave in my district as on the east side of the town, where the gas-liquid was thrown into the sewer, and the fumes escaped into the houses in the vicinity, it was bad enough to attract the attention of Prof. Chandler and myself, as well as to provoke several complaints from the people who lived in this region of the city (West Eighteenth Street). At the suggestion of Prof. Chandler, the process of volatilization was conducted in a wooden hood, and the introduction of a jet of cold water effected the condensation of all the ammonia in the steam, so that none escaped into the air. The great amount of sulphuretted hydrogen which passes out with the gas-liquor is, in my opinion, most prejudicial to health, and if it could be absorbed by some base the nuisance would be abated.

The factories of all kinds are for the most part in a cleanly condition, and, conducted as they are by intelligent men who look after the health of the workmen, there is very rarely cause for complaint.

Miscellaneous.—I have performed a great many varied inspections during the past year, and among them a report upon the diseases which are common among car-drivers, presented lately, embodies the results of my labors. The exposure connected with car-driving, as it is now conducted, is conducive of several serious diseases of the circulatory and nervous system. The ventilation of street-cars was a subject which also attracted my attention, and a report was forwarded on the subject.

Contagious Diseases.—Small-pox has existed to a small extent. Scarletina and other exanthemata prevailed to a great extent, and during January, February, and March, of the present year, there was an alarming outbreak of these diseases. At the same time diphtheria appeared, and carried off a great number of children. It was confined for the most part to a tract bounded by Seventh and Tenth Avenues, and Fifteenth and Seventy-sixth Streets. It appeared almost simultaneously in several parts of this district, with a week's interval between the attacks; that is to say, one or two children would be taken sick and after a week others would succumb, and after these last died or recovered there seemed to be a cessation of the epidemic. It came with fearful malignity, and death occurred in most cases at the end of a week. Tumefaction of the fauces was marked, and all the symptoms increased in violence.

Most of the cases occurred in houses with damp cellars or walls, and in every instance some gross sanitary defect was apparent either in the construction of the tenement-house or the drainage or sewerage of the same.

I ascribe the immunity from small-pox to the perfect vaccination of the summer before. Although there is no perfect or systematic mode of vaccination in existence, even the irregular process of past years has shown us how thoroughly the people may be protected

by a well-organized corps of vaccinators. Tabulated records would enable us by experience to restrict the advances of this fearful scourge.

The following is a table of inspections, reinspections, and complaints, made in the year beginning April 1, 1873, and ending April 4, 1874:

SUMMARY.

INSPECTIONS AND REINSPCTIONS.

| | | | |
|-----------------------------------|-------|----------------------------|-------|
| Tenement-houses..... | 2,257 | Streets..... | 211 |
| Private dwellings..... | 396 | Sewers and drains..... | 6 |
| Other dwellings..... | 140 | Theatres..... | 3 |
| Stables..... | 30 | Markets..... | 2 |
| Privies..... | 400 | Stores and warehouses..... | 15 |
| Fat-rendering establishments..... | 9 | Gas-works..... | 2 |
| Factories..... | 19 | Cars..... | 4 |
| Cellars and basements..... | 88 | School..... | 1 |
| Total..... | | | 3,613 |

COMPLAINTS.

| | | | |
|----------------------------------|-----|----------------------------|-----|
| Tenement-houses..... | 246 | Cellars and basements..... | 8 |
| Private dwellings..... | 37 | Streets..... | 26 |
| Stables..... | 18 | Sewers and drains..... | 4 |
| Privies..... | 37 | Theatres..... | 1 |
| Fat-rendering establishment..... | 1 | Stores and warehouses..... | 9 |
| Factories..... | 15 | Cars..... | 4 |
| Total..... | | | 856 |

CONTAGIOUS DISEASES.

| | |
|----------------|---|
| Variola..... | 2 |
| Varioloid..... | 3 |
| Varicella..... | 3 |
| Total..... | 8 |

Respectfully submitted:

ALLAN McLANE HAMILTON, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Fourteenth and Twenty-sixth Streets, Sixth Avenue and East River.

SANITARY INSPECTOR, CHARLES P. RUSSEL, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report of the results of my observations and sanitary labors in my district, from June 17, 1873, the date of my appointment as Sanitary Inspector, to May 1st of the present year:

It embraces four parks, viz., Madison, Union, Gramercy, and Stuyvesant, the last being intersected by Second Avenue, and 110 squares, of which 102 are wholly or partially inhabited. In the year ending June, 1870, the United States census gave the population of this ward as 59,593, of whom 32,318 were native, and 27,275 foreign; 544 colored persons were

also included in this enumeration. According to the same census, the Eighteenth Ward contained 11,156 families, and 3,919 dwellings, there being an average of 5.34 persons in each family, and 15.2 persons in each habitation.

These figures exhibited a very fair condition of the ward as to aggregation of inhabitants, for in the Fourth Ward there appeared an average of 24.6 people to each dwelling; in the Seventeenth Ward, 24; in the First, Sixth, and Tenth Wards, over 21; in the Eleventh Ward, 20.8; in the Thirteenth Ward, 19.9; in the Seventh Ward, 18.8; and in the Fourteenth Ward, 17.9.

About the same period it was shown, by the sanitary survey conducted by the Metropolitan Board of Health, that the Eighteenth Ward contained 874 tenement-houses, in which dwelt a population of 38,253; an average of about 44 persons in each house. Within four years the number of tenement-houses in the ward has increased to nearly 900, nine-tenths of which are situated east of the Second Avenue, a district to which my attention has necessarily been almost exclusively devoted. The remainder of the ward is occupied by business establishments and dwellings mostly of a superior class. These last, according to a comparison between the United States census and the sanitary survey, would amount to some 3,000, with a population of 21,344, or, on an average, about seven persons in each habitation.

The highest ground elevation in this ward is to be found on Broadway between Seventeenth and Twenty-first Streets, at an altitude of 41 feet above high water, and the principal sewer-outfall extends thence toward the East River.

During my brief term of service no marked change has taken place in the sanitary character of the ward. In the period between 1866 and 1873 the Board of Health had effected so radical a reconstruction of old tenement-houses, particularly in regard to ventilation and drainage, that little improvement in such respects has been found requisite. Allusion, however, may be made to a few points of special interest.

In the autumn and early winter we received from citizens of the ward numerous complaints alleging the existence, during easterly winds and especially at night, of an insufferable stench permeating the whole atmosphere. After much trouble this nuisance was traced to its source in the ammonia-works, corner of Nineteenth Street and Avenue B. In this place ammonia is extracted from the refuse water of the New York Gas Company. The process there employed was found so defective that most dangerous gases escaped in large volumes into the surrounding air, and were thence carried for long distances in whatever direction the wind happened to blow. After considerable delay the method of manufacture was improved by the condensation of such gases into water pumped from the river, which again received the contaminated water through a private sewer.

Whenever a privy-vault has been found situated in a contracted yard bounded by tall buildings, it has seemed advisable to require that it should be supplied with a ventilating shaft extending several feet above the roofs of the adjacent houses. This contrivance has been very effectual in diffusing excremental odors into the upper air.

In the better portions of the ward the streets have almost invariably been kept in good condition as regards repairs and cleanliness. The same statement, however, will not apply to the tenement-house district where such conditions are most imperatively needed. Spasmodic efforts in various directions were made during the summer by the Street-Cleaning Department, but at no one time was the entire ward creditably clean. During the winter and early spring the condition of the streets east of Third avenue was filthy in the extreme.

Many of the street-pavements of that portion of the ward have not been repaired for years, and their state of utter neglect has been disgraceful.

The Eighteenth Ward has participated in the general good health of the city during the past year, and has been notably free from small-pox and other grave contagious affections. Its death-rate for the year was equal to 23.44 in each thousand inhabitants, that of the entire city being 29.

The following is a tabular statement of the inspections and reinspections made by me during the period embraced in this report:

INSPECTIONS AND REINSPECTIONS.

| | | | |
|----------------------|-------|------------------------|-------|
| Tenement-houses..... | 1,956 | Stables..... | 290 |
| Other dwellings..... | 463 | General nuisances..... | 364 |
| Total..... | | | 3,073 |

COMPLAINTS MADE UPON ABOVE INSPECTIONS.

| | | | |
|----------------------------|-----|--------------------------------------|-----|
| Tenement-houses..... | 483 | Factories and workshops..... | 10 |
| Other dwellings..... | 80 | Sidewalks..... | 65 |
| Stables..... | 48 | Violations of the Sanitary Code..... | 31 |
| Cellars and basements..... | 48 | Other nuisances..... | 50 |
| Stores and warehouses..... | 20 | | |
| Total complaints..... | | | 835 |

CASES OF CONTAGIOUS DISEASES VISITED.

| | |
|----------------|---|
| Small-pox..... | 2 |
| In houses..... | 2 |

VACCINATIONS PERFORMED.

| | |
|----------------|---|
| Primary..... | 5 |
| Secondary..... | 2 |
| Total..... | 7 |

Respectfully submitted:

CHARLES P. RUSSEL, M. D.,

Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Twenty-sixth and Fortieth Streets, Sixth Avenue and Hudson River.

SANITARY INSPECTOR, J. D. BRYANT, M. D.

NEW YORK, *May 1, 1874.*DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit for your consideration the following report of the work performed by me, during the ten and a half months I have been connected with your Department, together with a consideration of the condition and contour of my sanitary district:

During the months of June, July, and August, my labors were confined to the Tenth and Thirteenth Wards; since then I have been located in my present district. This district comprises at least three hundred square acres, and contains 2,058 tenement-houses. Its drainage enters the Hudson River, and it is traversed by several old water-courses. The nature of the soil varies; at the easterly and middle portions it is sandy and comparatively dry, while the westerly portion, bordering upon and some distance from the Hudson River, gives an extremely rocky, wet, and shallow soil. Much "made land" exists along the Hudson.

Tenement-Houses.—The tenement-houses of this district are generally of a medium class. They are mostly built of brick, and the majority of them contain from six to ten families. There are comparatively few of the five-story-and-basement variety. The greater number of the tenement-houses are situated between Ninth Avenue and the Hudson River, and are in a good sanitary condition, the exceptions being when they are of the old pattern, and worn by time and usage. These are principally located in the vicinity of Twenty-sixth and Twenty-eighth Streets, and especially upon the western side of the district.

Private Dwellings.—There are a large number of this class of dwellings in my district, situated principally between the Sixth and Eighth Avenues below Thirty-sixth Street, many of which justly indicate the wealth and social standing of their occupants.

The great majority of the private dwellings are of the medium class, built of brick and occupied by two or three families. There are also to be seen a goodly number of the "old landmarks" in the shape of white cottage-houses, usually occupied by the owners.

Cellars and Basements.—The number of cellars occupied as places for "living and sleeping" is small, as compared with some other portions of the city; the reason being that the number of cellars is actually much less, and the pressure of business has not as yet disturbed the occupants of the rooms above. All those found illegally occupied are made subject to the orders of the Board.

Factories and Workshops.—An unusually large number of this class of buildings pervades the district.

The features which have especially attracted my attention in the inspection of these premises are as follows: The stairways are often without suitable railing, and too often insufficient in number and apt to be rickety, and the presence of fire-escapes is the exception.

A nuisance quite often seen in the basements of these buildings is filthy and often non-flushed water-closets.

Fat-rendering Places.—In this district there are, generally speaking, the same as elsewhere, two classes of fat-renderers: one who devote themselves to it, a large building being used for the purpose; the other, who "try once a week a small amount," or only during the "winter and fall."

Of the first class there are but two. The chief source of offense in these and the principal problem to settle is, how to destroy the offensive gases arising therefrom. The owners of the respective buildings have of late adopted what seemed to them the easiest and most feasible means. The proprietors of this branch of industry are too often apt to consult their pockets rather than sanitary interests. Often much unnecessary expense is incurred in the construction of inefficient apparatus, the owners not seeking the aid of competent authorities. I would respectfully suggest that this matter be given especial attention by the Board, either by the application of their own scientific knowledge to the discovery of a suitable method or encouraging by a liberal reward the ingenuity of others.

Markets and Market-places.—The only market of prominence in this district is the Manhattan, which, as a model of architecture, for the purpose for which it is intended, is perfect; it only lacks in not being suitably situated, and in having something of the marketing tradition which its formidable antagonists possess. The lesser markets (in size, but legion in number) are extremely apt to be associated with nuisances, in that they too often contain unsalable meats, and have their cellars and yards used for storing living fowls.

The keeping of fowls upon premises is an unmitigated nuisance, and the circumstances are few that admit of such a liberty.

Stables.—The stables for horses and cows are numerous in my district; their manure-boxes and vaults, of which a goodly number is found, are usually without suitable covers, due to ignorance and carelessness upon the part of the owners. The principal objectionable features noticed in stables apply more particularly to cow-stables. They are too small, are apt to be imperfectly sewer-connected (if at all), and are too near dwellings. The cows kept in this district are in great part for "family use." Consequently the "slop-feed" diet is not given to "stump-tailed-cows;" hence all the animals present a healthy appearance. The limited space within my sanitary district does not admit of any feasible plan for obviating the nuisances arising from the keeping of cows. The number kept should therefore be as few as possible, and the defects remedied by stringent orders and permits.

Other Buildings and their Uses.—Under this head should be classed such “other buildings” as by the business in them conducted jeopardize health.

Those demanding especial attention are houses of prostitution and retail liquor-stores. The former are numerous in this district, and pertain to the better order of houses of that class. It has been thought advisable by some municipalities to regulate human commerce by law, thus limiting the immediate and remote evils which its inevitable existence inflicts. To advance the idea of its medical supervision, and consequently legal recognition in the present state of public prejudice and education, would subject its originators and supporters to a social and general “cremation.” Yet, if the present laws or their executors are helpless to stop or even mitigate the evil, and the self-inflicted punishment or fear of it, dealt to those indulging unlawfully in this human passion, if these and the love of purity, health, and eternal welfare, fail to command it, what human agency can?

Without admitting that it cannot be abolished or mitigated, if it be present, it should be rendered as innocuous as possible; and this can only be accomplished by medical supervision.

Retail Liquor-Stores.—That the indiscriminate retailing of spirituous liquors is a great source of crime, misery, destitution, ill-health, and death, is undeniable. The instances are numerous where agents having far less potency in the destruction of public health are strictly proscribed by the Board. If their sale cannot be regulated by the Health Board, it can at least give a strict scrutiny to the purity of the liquors.

Privies and Water-Closets.—Exactly what is the best plan to dispose properly of human excrement is a sanitary puzzle of no small magnitude. That its presence is inevitable and that it should collect in some proper receptacle is undoubted, the only question being *what is the proper receptacle, and how can it be arranged?* Shall it be a privy-vault or a water-closet? If a privy-vault, shall it be sewer-connected? The principal objections against the sewer-connected privy-vaults appear to me to be—1. It allows the escape of sewer-gases, the virulence and volume of which are multiplied by such sewer-connections. 2. More than ordinary care is necessary to overcome the acquired odors of the vault itself. 3. The excrement is washed away and the earth robbed of her just due—the loss of its fertilizing influence—besides which, the water carrying it is tainted, and the water-bed varied by its deposit. If the refuse is to be wasted, it would seem that well-flushed water-closets with properly trapped sewer-connections should supersede the present sewer-connected privy-vault. They in my observation are less offensive in every respect, the objections to them being (and they are pertinent ones) that the waste-pipes become easily obstructed, and the flushing apparatus inefficient. If the excrement is to be collected, then only the non-sewer-connected, ventilated, and water-tight privy-vaults should be adopted. If the sewer-connected privy-vault system be adhered to, I would respectfully submit the following suggestions:

1. That the sewer-connection be trapped.
2. That such sewer-connection be placed on a level with the vault-bottom, and itself having an inclination sufficient to produce a considerable current toward the street-sewer.
3. That the bottom of the vault incline toward the sewer-connection.
4. That all waste-water from dwellings, yards, hydrants, etc., be discharged into the privy-vaults, thus insuring a constant and invariable flushing.

If a sewer exist in the street, and the grade is such as to admit of a proper sewer-connection, this plan can but present some practical bearings.

Sunken and Vacant Lots.—These in my district are few in number, and consist chiefly of those which have been used as “dumping-grounds;” these have been abandoned for that purpose, and are being filled in.

Streets, Street-Paving, etc.—Many of the streets in my district are “Belgian” paved, but the principal portion is paved with “cobble.” Those which are “cobble” paved are in

each instance filthy and sadly in need of repairs. No cobble-paved street can be kept properly cleaned without extraordinary efforts. The gutters associated with this variety of pavement become easily broken and depressed, and the paving itself is a ready receptacle for all kinds of street-filth against which the broom of the ordinary street-sweeper is helpless.

A noticeable nuisance in many of the streets is the crowding of it by wagons, carts, etc., which not only obstruct the thoroughfare, but interfere with proper sweeping, dam up street-gutters, becoming offensive to sight and smell by the opportunity which they afford for depositing beneath and propelling against them of all forms of human excrements. If some plan can be formed whereby suitable places can be provided for the stalling of vehicles, an undeniable nuisance would be abated.

Waste-Pipes.—A large number of the waste-pipes to the sinks in both the tenement and private dwellings in my district are untrapped, and the odor of sewer-gases in such dwellings is common. Too often the waste-pipes of private dwellings of the first-class and occupied by intelligent owners are untrapped. Especial attention has been directed to this fact. The only proper remedy to prevent this escape of sewer-gases is the trapping of the waste-pipes and their ventilation. I do not consider the trapping of the main waste-pipe in the cellar sufficient, since, if it gets out of repair, the whole house becomes permeated with the gases. And, again, the pipes leading to the main one and that portion of the pipe not commanded by the trap generate offensive odors.

Cellars, Areas, and Yards, are especially subject to dirt, rubbish, and filth accumulations, the odors from which are most noisome and offensive to the tenants; so much so, that "Have you seen the awful condition the cellar is in?" has become a stereotyped expression. This can only be remedied by elevating the standard of cleanliness of the tenement-house population, and keeping the premises under the supervision of a competent housekeeper.

The Garbage and Ashes problem is a most perplexing one, due principally to a lack of proper coöperation or understanding between the tenants, landlords, and garbage-gatherers; the landlords and garbage-gatherers being the most to blame, the landlords for not providing separate suitable receptacles, and the garbage-gatherers for want of promptness in collecting it. Nearly all tenants seem only too willing to pile their garbage and ashes upon the sidewalk, and in the street-gutters, in pails, boxes, etc., the limited capacity of which causes the refuse to fall upon the sidewalk and into the street-gutters.

Stationary garbage-boxes should be abolished; they are an obstruction to locomotion, offensive to sight and smell; by their location they become a common public receptacle, into and against which all manner of filth is thrown.

The plan which succeeds must have: 1. Promptness in collecting garbage and ashes—this established, let each family be supplied with receptacles of a size to suit the demand of the family, which shall be kept in their rooms till the time of collection. This should be announced in advance of the cart, by the ringing of a bell in the hall-ways and at the front of the houses. This has the pertinent objection of becoming a nuisance in the rooms in question, either from its offensive nature or lack of attention to its proper removal. This can be remedied by each house being provided with a "house-keeper," whose duty it shall be to see that proper attention be paid to cleanliness and the emptying. If the present system of separate portable receptacles could be sustained by such a supervision on the part of the house-keeper, the system would be as perfect as is possible to render it.

Small-Pox and Vaccination.—The number of cases of small-pox in my district has been comparatively few, considering the large number of children of two years of age and under who require vaccination. The material for a small-pox epidemic is ample, and, unless a rigorous system of vaccination is soon established, a severe epidemic may be expected.

Public Baths.—Although the tenement population of my district is large, and their habits of life require bathing accommodations, no public bathing arrangements have been as yet

located in this district. The number of public baths should be largely increased in all parts of the city.

Street-Sweeping.—More thorough and frequent sweeping should be done. If the same attention were shown to the tenement-streets as is bestowed upon Fifth and Madison Avenues, a very decided improvement would be noticed.

The following statement comprises a summary of inspections and reinspections made during the last ten and a half months :

INSPECTIONS.

| | | | |
|------------------------------|-------|---|-------|
| Tenement-houses..... | 2,272 | Sidewalks..... | 89 |
| Private dwellings..... | 977 | Other buildings..... | 47 |
| Cellars and basements..... | 7423 | Other nuisances..... | 150 |
| Factories and workshops..... | 175 | Vacant lots..... | 39 |
| Privies..... | 217 | Public buildings..... | 54 |
| Stores and warehouses..... | 144 | Street inspections and reinspections..... | 28 |
| Stables..... | 399 | Fat-rendering..... | 42 |
| Yard..... | 122 | Waste-pipes..... | 34 |
| Markets..... | 6 | | |
| Total..... | | | 5,218 |

COMPLAINTS.

| | | | |
|--------------------------|-----|------------------------------|-------|
| Tenement-houses..... | 345 | Waste-pipes..... | 165 |
| Private dwellings..... | 110 | Streets..... | 52 |
| Privies..... | 126 | Other nuisances..... | 15 |
| Stables..... | 73 | Public buildings..... | 3 |
| Sidewalks..... | 21 | Vacant lots..... | 1 |
| Cellars..... | 125 | Factories and workshops..... | 2 |
| Yards..... | 84 | Stores and warehouses..... | 6 |
| Garbage-receptacles..... | 19 | Lodging-houses..... | 1 |
| Other buildings..... | 7 | Roof-gutters..... | 8 |
| Total..... | | | 1,163 |

CONTAGIOUS DISEASES.

| | |
|------------------|-----|
| Small-pox..... | 19 |
| Vaccination..... | 101 |
| Families..... | 127 |
| Varicella..... | 2 |
| Total..... | 249 |

Respectfully submitted :

JOSEPH D. BRYANT, M. D.,

Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Twenty-sixth and Fortieth Streets, Sixth Avenue and East River.

SANITARY INSPECTOR, CHARLES F. ROBERTS, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit, as follows, a report of my official duties in the Health Department for the year ending April 30, 1874 :

The district under my charge comprises the Twenty-first Ward of the city.

Sewerage.—The sewerage of the entire district is very good, nearly all the streets having sewers in them, a new one being in course of construction in East Fortieth Street, east of

Second Avenue, and nearly every house or lot in the district is sewer-connected. The practice of connecting two or more houses with the street-sewer by the same pipe has been a prolific source of complaint in this section of the city, and in most of these cases the construction is such that the flow of the waste-water, liquid filth, etc., under or through the adjoining premises, sooner or later becomes offensive to the occupants. It has become my habit in all such cases to order a free and independent sewer-connection for each house.

The practice of ventilating waste-pipes of the houses, by extending them above the roof, is one of the greatest sanitary improvements that of late it has been the practice of the Board to order, as the waste-pipe of the house is in truth the continuation of the sewer in the house, and, as heretofore existing, served to conduct the sewer-odors into the rooms of our houses, but by means of the ventilator this is overcome, and the evil effects of sewer-gas prevented.

Street-Paving.—The condition of the street-pavement in most of the streets of the district is good, with a few notable exceptions, and in these cases I regret I can report no improvement since the date of my last annual report.

The following-named streets and avenues, to wit: First Avenue, from East Twenty-sixth to East Thirty-sixth Street; Second Avenue, from East Twenty-sixth to East Fortieth Street; East Thirty-third and East Thirty-sixth Streets, from Lexington Avenue to the river, are all in very bad condition, having been originally paved with the old cobble-stone pavement, and, not having been kept in a proper state of repair, they offer in their present condition a series of elevations and depressions, the latter being, in the tenement-house portion of the district, a receptacle of street-filth and stagnant water, which it is almost impossible to properly remove, even with the most strenuous efforts on the part of the Street-Cleaning Department.

Complaints in due form have been forwarded from this Bureau on each one of the streets here mentioned, but thus far have been of no avail in removing this great source of disease.

Tenement-Houses.—The number of tenement-houses in the district has not materially increased since the date of my last annual report. In all, about thirty new buildings of this character have been added to 1,700 which existed at that time.

The new ones are mostly all erected with the latest sanitary improvements, as recommended by our Board, with the exception of the requirements of the latter portion of section 15 of the Tenement-House Law (chapter 908, Laws 1867, S. N. Y.), to wit: "The halls on each floor shall open directly to the external air with suitable windows, and shall have no room or other obstruction at the end." And this seems to be completely ignored by the Department of Buildings having charge of the approval of the plans of these houses.

Although I am fully aware of the advantage accruing to the owners of the same, from a financial point of view, in having one room additional on every floor of a house, still it is my firm conviction that the sanitary advantages to be derived by the occupants of the dwellings in the densely-packed tenement-house portion of the city, if this important provision of the law were strictly enforced, would more than compensate for the loss of the money to the owner.

The following is a tabular statement of the inspections and reinspections performed by me during the year ending April 30, 1874:

| | | | |
|------------------------------|-------|-----------------------------------|-------|
| Tenement-houses..... | 2,945 | Sunken and vacant lots..... | 51 |
| Private dwellings..... | 535 | Streets and gutters..... | 99 |
| Stables..... | 599 | Roofs and leaders..... | 20 |
| Privies..... | 483 | Markets..... | 41 |
| Cellars..... | 22 | Sewers..... | 26 |
| Yards..... | 23 | Fat-rendering establishments..... | 4 |
| Sidewalks..... | 273 | Other nuisances..... | 85 |
| Factories and workshops..... | 123 | | |
| Stores and warehouses..... | 43 | Total..... | 5,372 |

CONTAGIOUS DISEASES VISITED.

| | | | |
|----------------|----|--------------------|----|
| Small-pox..... | 38 | Typhoid fever..... | 5 |
| Measles..... | 8 | | — |
| | | Total..... | 51 |

Vaccinations and revaccinations..... 165

Complaints, and reports on orders, forwarded to the Board, were as follows :

| | | | |
|------------------------------|-----|-------------------------------|-------|
| Tenement-houses..... | 459 | Yards, courts, and areas..... | 97 |
| Private dwellings..... | 107 | Drains and wastes..... | 80 |
| Privies..... | 249 | Sewers..... | 49 |
| Cellars..... | 38 | Vacant lots..... | 10 |
| Factories and workshops..... | 12 | Roofs and leaders..... | 37 |
| Stores and warehouses..... | 7 | Other nuisances..... | 46 |
| Stables..... | 112 | | — |
| Sidewalks..... | 218 | Total..... | 1,527 |
| Streets and gutters..... | 56 | | |

All of which is respectfully submitted :

CHARLES F. ROBERTS, M. D.,

Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Fortieth and Fifty-ninth Streets, Sixth Avenue and Hudson River.

ASSISTANT SANITARY INSPECTOR, W. A. EWING, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district, and of my duties as Assistant Sanitary Inspector, from June 18, 1873, to April 30, 1874:

Tenement-Houses.—The tenement-houses of this district embrace every variety, from the really elegant “French flat” to the dilapidated wooden structure, where are huddled the “poorest of the poor.” In this latter class of houses I have sought to introduce improvements, which, in many cases, have proved of value.

Three hundred and sixty-six (366) complaints of the condition of tenement-houses have been made and forwarded, upon which orders have been issued, directed mainly against internal and external filthiness, defective waste and sewer pipes, imperfectly-drained cellars, areas, and yards; filthy and poorly-ventilated water-closets and privy-vaults, leaky roofs and skylights, and faulty ventilation.

The improvements introduced in recently-constructed tenement-houses are marked, giving abundant evidence that the labors of the Board have not been lost, but have succeeded in impressing upon the minds of architects and builders the importance of proper construction of houses as regards ventilation, light, and protection from the deadly sewer-gases, in order that the better class of tenants may be secured, and to avoid subsequent alterations at the suggestion of the Inspector.

Cellars.—It has not been found necessary to order the vacation of any cellar in the district, comparatively few being occupied as sleeping-apartments, and these few not unfit for human habitation.

Shanties.—The “squatters” are being rapidly driven northward by the quarrymen’s drill, which is having its effect in improving the sanitary condition of the district, as they take with them their noisy and uncleanly companions—the dogs, goats, and fowls.

Slaughter-Houses.—There are thirty-one (31) slaughter-houses in the district, scattered from Fortieth to Fiftieth Street. Each establishment has underground connection with the

street-sewer, and the proprietors have, with few exceptions, shown a ready willingness to comply with suggestions from the Inspector, and yet it has been impossible to render them any thing but nuisances, with the exception of those occupying positions directly upon the river's bank. I am strongly in favor of centralizing them into a properly-constructed abattoir, or at least I would confine their location to some eligible point in close proximity to the river, where they may be under the constant supervision of a proper officer.

Fat-Rendering.—The establishments for fat-melting have been made the subject of special inspection, and permits have been recommended only to those conducting their business properly, and, as a result, no complaints have been received from citizens.

Cow-Stables.—Cow-stables are quite numerous in the upper portions of the district. Some of them have been vacated by order of the Board; while others, less offensive, have been given opportunity to improve their condition, after which permits have been granted.

Piers and Slips.—The river-front is in fair condition, with the exception of the slips between the piers from West Thirty-eighth to Forty-second Street, where have accumulated immense quantities of manure and offal from the neighboring slaughter-houses, which, at low tide, are exposed to the direct rays of the sun and emit most offensive odors. This nuisance may be remedied in one of three ways: 1. The removal of the business to a location where continued dredging will not be needed, as in a properly-arranged abattoir, in which all refuse can be utilized or disposed of inoffensively; 2. The extension of the sewer to the end of the bulk-head, allowing refuse to be discharged into deep water beyond the slip; or, 3. The filling in of the slips, and furnishing them with sewers extending to the proper river-front.

Lime and Shell Burning.—The only establishment in the district for shell-lime burning is located at Eleventh Avenue and Fifty-fifth Street, and this one should soon cease operations on account of its proximity to large tenement-houses now building or already occupied. The dust and gases arising from the kilns compel windows to be closed, thus interfering with necessary ventilation.

Street-Pavement.—With few exceptions, the pavement of the district is good. The dilapidated and decaying wooden pavement of Sixth Avenue should be taken up and replaced by something more durable. Eleventh Avenue, throughout its entire extent, is in a most filthy condition, owing to defects in pavement.

Contagious Diseases.—The district has been remarkably free from contagious diseases. But six (6) cases of small-pox were reported, and all of these were at once transferred to hospital.

The following is a tabulated statement of inspections, reinspections, and complaints made, and of contagious diseases visited, from May 18, 1873, to April 30, 1874:

INSPECTIONS AND REINSPECTIONS.

| | | | |
|------------------------------|-------|-----------------------------------|-------|
| Tenement-houses..... | 2,845 | Fat-rendering establishments..... | 50 |
| Private dwellings..... | 309 | Stables..... | 276 |
| Other dwellings..... | 859 | Privies..... | 327 |
| Public buildings..... | 25 | Vacant and sunken lots..... | 176 |
| Stores and warehouses..... | 40 | Slaughter-houses..... | 897 |
| Factories and workshops..... | 66 | Other nuisances..... | 220 |
| Total..... | | | 6,000 |

COMPLAINTS FORWARDED.

| | | | |
|------------------------------|-----|-----------------------------|-----|
| Tenement-houses..... | 366 | Stables..... | 29 |
| Private dwellings..... | 25 | Privies..... | 65 |
| Other dwellings..... | 71 | Vacant and sunken lots..... | 25 |
| Public buildings..... | 1 | Slaughter-houses..... | 3 |
| Stores and warehouses..... | 8 | Other nuisances..... | 36 |
| Factories and workshops..... | 4 | | |
| Total..... | | | 623 |

CONTAGIOUS DISEASES VISITED AND VACCINATIONS PERFORMED.

| | |
|--|-----|
| Small-pox..... | 6 |
| Measles (reported small-pox)..... | 3 |
| Erysipelas (reported small-pox)..... | 1 |
| Number of vaccinations..... | 108 |
| Number of families visited for the purpose of vaccination..... | 262 |
| Total..... | 380 |

All of which is respectfully submitted:

W. A. EWING, M. D.,

Assistant Sanitary Inspector

SANITARY INSPECTION DISTRICT

Bounded by Fortieth Street, Fifty-ninth Street, Sixth Avenue and East River.

SANITARY INSPECTOR, W. H. B. POST, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district, and the labor performed by me therein during the past year.

The principal sanitary work is among the tenement-houses and their immediate surroundings, and, as a rule, there has been a steady improvement in their condition. But I still find neglected stables, full and offensive privies, leaky roofs, dirty yards, courts, and areas, broken sidewalks, grimy walls and ceilings, foul cellars, etc., etc., in abundance, and constant vigilance in remedying these evils is still called for. Very many important structural alterations have been made, principally with reference to improved ventilation, house-sewage, and house-drainage. The Board of Health is now a familiar authority in the tenement-houses, whose mandates are obeyed much more promptly and readily than in former years. A large number of new tenement-houses has been built in the district during the past year, and I have suggested from time to time, during their construction, many points in relation to their sanitary necessities, and in every instance my suggestions have been cheerfully adopted by the owners and builders.

Privies and Water-Closets.—Another year's inspectorial experience confirms my preference for the privy-vault over the water-closet for ordinary tenement-house use. My observation has also led me to recommend, as a rule, that the tenement-house privy-vault should not be connected with the sewer. I regard it as a much simpler thing to empty a privy-vault when full than to keep a sewer-pipe unobstructed and free from leakage, when we consider the endless variety of rubbish and foreign material of which the tenement privy-vault is the constant recipient. Ventilating-shafts have been recommended in every privy-vault in my district where the vault is situated within twenty feet from any building occupied for dwelling purposes. Several hundreds of these shafts have been constructed during the year, and their practical working has fully justified my expectations. They should extend from a distance of a foot or eighteen inches below the top of the vault to a height of at least two feet above the roof of the tenement-house, and should be capped with a rotating flue. About thirty "school-sinks," or shallow metallic troughs, have been substituted for the ordinary privy-vaults, and they are by far the best variety of vault, being apparently entirely devoid of offensiveness.

House-Drainage and House-Sewerage.—There is no more important or frequently-neglected branch of sanitary science than house sewerage and drainage. I find defective drain-

age quite as frequently in the better class of private dwellings as in the most crowded tenement-houses. It is an exceedingly rare thing, for instance, to find a soil-pipe carried above the roof of a private dwelling, or with any means of ventilation in any portion thereof. I have frequently been called upon to investigate the source of exceedingly offensive odors in different parts of private dwellings, where the several pipes were apparently in perfect order throughout their entire course, and where each separate pipe has been as thoroughly trapped as it was possible to make it. Notwithstanding these precautions, sewer-gases will often escape into the rooms from the water-closets, bath-tubs, and wash-sinks. In all such cases I recommend that the soil-pipe be extended vertically at least two feet above the roof of the dwelling, and be permanently opened at the free extremity, and always find the result satisfactory. I now insist, where I find offensive sewer-gases in a house, whether the building be a tenement-house or the most costly and elaborately constructed private dwelling, upon the following plan of drainage: 1. That the main waste-pipe, soil-pipe, and sewer-pipe, be provided with traps; 2. That separate traps be made in the waste-pipe beneath the wash-sinks or slop-sinks, and in the soil-pipe connecting the hoppers of the water-closets on each floor; 3. That the soil-pipe be extended uninterruptedly at least two feet above the roof of the house, with the free end either altogether open at the top or perforated with several openings. In order to properly appreciate the practical working of this method of ventilating a soil-pipe, it is only necessary to apply the nose to the upper extremity thereof.

Public Sewers.—Several street-sewers in my district have been obstructed at different times, both at the mouths of the catch-basins and within the interiors of the main pipes. These obstructions have led to extensive floodings of adjacent streets and gutters, and to overflowing and leakage of privies, yards, and cellars, in individual houses in their vicinity. In every such instance I have reported the conditions to the Board of Health, and the matter has been referred to the Department of Public Works, and has invariably received prompt attention by that department.

Street-Cleanliness and Condition of Streets.—The condition of the paved streets has been, as a rule, very fair during the past year—at all events, very much better than ever before under the contract system. Street-cleaning has been altogether under the charge of the Police Department, and the Board of Health has simply used advisory measures. I have found that the suggestions offered by our Board from time to time have received prompt attention by the Police Department. Individual streets which I have reported as being in a filthy condition during any particular week have very rarely been neglected in the succeeding weeks. Very many old and dilapidated street-pavements have been repaired by the Department of Public Works, and numerous holes have been filled in and paved and graded to a level with the adjacent pavements. A few of the streets are still unpaved, and in a constantly filthy condition with dirt, garbage, and rubbish of every conceivable kind. It is next to impossible to properly clean these unpaved streets, and they consequently remain, as they probably always will until paved, centres of filth and noxious emanations. Reports have been referred against their insalubrious condition to the Department of Public Works, but thus far without effect. Forty-third Street, between Second and Third Avenues, is only partially cut through, and the immense hill (properly known as "Dutch Hill") lying between the two avenues is occupied by some fifty or sixty shanties, containing the filthiest and vilest of the squatter population of the city. In this connection I beg leave to refer to the very dangerous condition of the intersections of Forty-first, Forty-second, and Forty-third Streets with First Avenue. The streets terminate abruptly at these points at the brows of three several hills varying in altitude from twenty to forty feet, and are utterly unprotected by guard, barrier, or railing, of any kind. These conditions have also vainly been reported to the Department of Public Works.

Vacant Lots and Shanties.—In the northern portions of the district there are many vacant and sunken lots, whose condition requires constant supervision. The two principal points

which seem to call for attention with reference to these lots are their proper drainage and their fencing in. Very many of them, during the year, have been filled in with fresh earth and ashes to a level with the sewers in their respective streets, and thoroughly drained by means of separate connections therewith. To obviate the nuisance attendant upon the dumping of ashes and garbage into these lots, I have required them, in all instances, to be securely inclosed with fences not less than six feet in height. Many of these lots are thickly studded with wooden shanties. The population of these shanties is almost invariably a very wretched, dirty, ignorant, and degraded class, and they live in squalor and filth, regardless of the ordinary decencies of life.

Central and Hudson River Railroad.—The engineering works of the Central and Hudson River Railroad have been carried on uninterruptedly and with astonishing expedition in Fourth Avenue during the year, and are rapidly approaching completion. During the progress of these works an immense amount of blasting and excavating has been done, which has necessarily been attended with temporary obstruction of the streets and street-crossings, and in some instances with partial obliteration of the public thoroughfares. The inhabitants and property-owners generally in the vicinity of these works have complained often and bitterly against the nuisance attendant upon these operations, and with some show of reason, for the avenue has very generally presented an exceedingly chaotic appearance. I have carefully watched the manner and progress of these operations, and am convinced that they have been carried on as expeditiously and with as much regard to the public safety and convenience as has been possible, consistent with the prodigious extent and nature of the work. Strong, substantial bridges have been erected at various points, and secure barriers have been made wherever the public necessities demanded them.

Manure-Dumps.—The immense mounds of manure on the dumping-grounds at the foot of Forty-fifth, Forty-sixth, and Forty-seventh Streets, and the East River, which contained several hundred thousand loads for many months consecutively, and which were during the past summer and fall constantly increasing in size and offensiveness each day, have almost altogether disappeared. This has only been accomplished as the result of the most strenuous and persevering efforts of the Board of Health, and after the repeated arrest and prosecution of the parties engaged in dumping. I have recently advised the issuing of orders against Messrs. Kane & Ryan, the contractors, compelling them to remove every remaining vestige of manure from these grounds, to fill them in to a height of several feet above their present level with fresh earth and ashes, and to connect them with the East River by a drain. Only when these measures shall have been adopted can I regard as complete the abatement of a nuisance which, for audacity, magnitude, and offensiveness, has never had a parallel in the sanitary history of our city.

Slaughter-Houses.—The slaughter-houses on the east side are twenty-two in number; are connected with the East River by drains; are situated between First Avenue and the river; and are built of brick and iron (with the exception of four, all in East Forty-fifth Street). They are cleaned and flushed with water every day. The walls and wood-work are white-washed more frequently than formerly; and whenever the Sanitary Code has not been observed I have made complaints, and the offenders have been prosecuted. Many of the yards, with respect to drainage and uniformity of grading and paving, show a great improvement over former years. In some of them disinfectants are used in summer. The offal and refuse are daily removed by the proprietors to the "offal-boat" lying at the foot of Forty-second Street and the East River, whence they are taken to "Barren Island," in the Lower Bay, and there properly disposed of by Mr. Frank Swift, the contractor. The former nuisance (which was a very serious one) of conveying the offal from these houses to the Rendering-Dock, at the foot of West Twenty-eighth Street, was abated in 1873 by the passage and enforcement of an ordinance by the Board of Health, prohibiting the carting or otherwise conveying of offal or other slaughter-house refuse, at any time or under any circumstances, between the Second and the Tenth Avenues or south of Fortieth Street. The only resource

left to the slaughter-house proprietors was the transporting of their refuse by water; and the enforcing of the ordinance resulted in the employment of the offal-boat, which daily receives all the offal from the east side, the reception and disposal of the offal being in the nature of a contract between Mr. Swift and the slaughterers, a contract into which the latter have entered without an exception. The change for the better, in the condition and management of the slaughter-houses and in the disposal of the offal, is quite observable.

Fat-Rendering.—Beyond a few fresh-lard rendering-kettles in connection with retail butcher-shops, which are entirely devoid of offensiveness, there are but two rendering establishments in my district. These are located within a few feet of the East River, one in East Forty-fifth Street, the other at the foot of that street and the river. Each of these is provided with a complete and nominally steam-tight apparatus, consisting of boilers, steam-coils, condensers, cooling-tanks, etc. Each discharges the refuse and offensive gases evolved during the melting of fat into the East River by means of a discharge-pipe, which enters the river below the level of the water at low tide. Yet, with all the elaborate apparatus employed, and with all the care exercised in the various stages of the rendering, noxious and exceedingly offensive odors do escape, and are occasionally perceptible at a distance of many thousand feet from the buildings. I cannot but regard the melting of fat, even with the costly and improved appliances now in use, as a nuisance of a very grave character, and one which should not be tolerated within the city limits.

Gut-Cleaning, etc.—There are four or five small establishments in the district in which gut-cleaning, head-scalding, sausage-making, bladder-drying, and rennet-curing, are done. The location of all of these is within a few hundred feet of the East River, and in the immediate vicinity of the slaughter-houses. Their operations are conducted on a small scale, and are kept under constant supervision, any unhealthy or filthy conditions being promptly noted and reported, and the appropriate remedies as promptly enforced. I do not think it advisable, considering all the circumstances, to interfere with these operations beyond compelling them to comply with certain sanitary requirements, as they are not of sufficient magnitude to constitute nuisances which cannot be readily kept within proper control.

Contagious Diseases.—It is hardly necessary for me to refer at length to the subject of contagious diseases. Their management and the special circumstances influencing me with reference to isolation or removal to hospital have been fully detailed in former reports. I have seen no reason to alter my repeatedly-expressed views in any essential particular. I still recommend removal to hospital from a tenement-house as a rule from which I hardly ever depart, especially in small-pox. I beg leave respectfully to urge the establishment of a permanent vaccinating corps, not only as an urgent sanitary necessity, but as a means of materially simplifying the labors of the District Inspector.

I append a tabulated statement of labor performed during the year :

INSPECTIONS AND REINSPECTIONS.

| | | | |
|--|-------|---------------------------|-------|
| Tenement-houses..... | 4,244 | Hospital..... | 1 |
| Dwellings..... | 571 | Unfinished buildings..... | 20 |
| Streets, gutters, sidewalks, etc..... | 410 | Public buildings..... | 5 |
| Stables..... | 197 | Shanties..... | 46 |
| Vacant lots..... | 166 | School-houses..... | 3 |
| Slaughter-houses..... | 876 | Public sewers..... | 5 |
| Fat-boiling houses..... | 89 | Markets..... | 4 |
| Gut-cleaning houses..... | 92 | Night-soil boat..... | 1 |
| Mannre-dumps..... | 113 | Garbage-dump..... | 1 |
| Hotels..... | 7 | Engine-house..... | 1 |
| Stores, factories, etc..... | 73 | Laundry..... | 1 |
| Privies and water-closets (special)..... | 17 | Ship..... | 1 |
| Cellars and basements (special)..... | 618 | | |
| Breweries and distilleries..... | 21 | Total..... | 7,621 |
| Yards, courts, and areas.. . | 33 | | |

CONTAGIOUS DISEASES VISITED AND VACCINATIONS PERFORMED.

| | |
|-------------------|----|
| Small-pox..... | 36 |
| Diphtheria..... | 1 |
| Vaccinations..... | 42 |

REPORTS FORWARDED TO THE BOARD.

| | | | |
|--|-------|---------------------------------|-------|
| Tenement-houses..... | 2,285 | Breweries and distilleries..... | 10 |
| Dwellings..... | 202 | Yards, courts, and areas..... | 13 |
| Streets, gutters, sidewalks, etc..... | 410 | Hospital..... | 1 |
| Stables..... | 123 | Unfinished buildings..... | 4 |
| Vacant lots..... | 136 | Public buildings..... | 1 |
| Slaughter-houses..... | 119 | Shanties..... | 31 |
| Fat-boiling houses..... | 15 | School-houses..... | 3 |
| Gut-cleaning houses..... | 13 | Public sewers..... | 4 |
| Manure-dumps..... | 3 | Markets..... | 2 |
| Hotels..... | 6 | Laundry..... | 1 |
| Stores, factories, etc..... | 35 | Ship..... | 1 |
| Privies and water-closets (special)..... | 17 | | |
| Cellars and basements (special)..... | 175 | Total..... | 3,610 |

Respectfully submitted :

W. H. B. POST, M. D., *Sanitary Inspector.*

SANITARY INSPECTION DISTRICT

Bounded by Fifty-ninth and One Hundred and Tenth Streets, Fifth Avenue and East River.

SANITARY INSPECTOR, AUGUSTUS VIELE, M. D.

NEW YORK, *May 1, 1874.*DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor of submitting the following annual report of the sanitary condition of my district, with a statement of work performed by me; and a summary of inspections and reinspections, from the 10th day of April, 1873, to the 30th day of April, 1874 :

Topography.—The topographical peculiarities of my district were the subject of general description and delineation in the Annual Report for the year 1870. I recur to it simply to note some marked changes and decided sanitary improvements.

Drainage.—In 1870 the section extending from Fifth Avenue to the East River, between Seventy-fourth and Seventy-sixth Streets, was one vast plague-spot, covered with stagnant water, and receiving the drainage of numerous cow-stables and surface-privies of the shanty settlers. At present this section, having been subjected to a thorough and effective system of "subsoil drainage" and proper grading, has become as salubrious and healthy as any portion of the island. And many substantial buildings and other desirable residences have been erected upon and along the borders of this once-dreaded section. The section known as "Hamilton Park" and "Jones's Wood," portions of which were ten and fifteen feet above the grade of the avenues, has been leveled to proper grade; streets opened, and public buildings have been erected thereon west of Third Avenue between Sixty-sixth and Seventieth Streets. The work of grading east of Third Avenue is progressing and extending to the eastern Boulevard. Doubtless the opening and grading of so many new streets, and the removal and exposure of so much earth by the excavations which have been found necessary not only in this improvement, but in the Fourth Avenue Railroad excavation for "sinking the track," have contributed to the development of the malignant type of diphtheria which has prevailed in this particular locality.

Sewers.—The outlet-sewer now in process of construction in One Hundred and Sixth Street, extending from Fifth Avenue to the East River, will, with the lateral extensions along

Fourth Avenue, relieve all the sunken lands west of Third Avenue, which are now covered with stagnant water from Ninety-sixth to One Hundred and Eighth Street. This was a much-needed improvement, as the never-failing supply of water from springs rising in the Park and the water-shed of so large a section had no outlet, the lands being below tidal level.

The completion of these sewers will afford a permanent outlet, accompanied as they are to be with lateral subsoil drains communicating with the sewers, and the surface to be properly graded. It may be proper to repeat the fact that the Department of Works, in the construction of sewers through sunken lands with a saturated soil, combine subsoil drainage, thus affording a more thorough system and effectual means for relieving malarial sections.

Harlem Flats.—The section known as the "Harlem Flats," or Tidal Lands, whose evil effects have been increasing in magnitude for years from the accumulated and continuous deposits from the tidal overflow upon its surface, is now in process of being filled, graded, drained, and sewered, changing very materially the topography of this section. The natural and exposed surfaces of these tidal lands were so offensive, and the emanations arising therefrom so deleterious, that no material used as filling, not even ashes and street dirt, could render them more obnoxious to the public. The Health Department, with the knowledge of this fact, and with the view of correcting the evil, permitted the use of street-sweepings, cellar excavations, and ashes, for the purpose of covering and filling these lands (extending from Ninety-second to One Hundred and Fourth Street, Third Avenue to the East River) to the level of the street-sewers (now being constructed), the whole to be covered with fresh earth to the depth of two feet. The contractors are complying with the requirements of the permit, and within the coming year the work will be completed, and will prove a wise sanitary measure. The crowding out and prevention of the tidal overflow will allow by evaporation this section to become dry, and enable the owners to improve and develop the property. The plan that has been adopted and is being carried to completion was apparently the only feasible method for relieving this portion of the city.

Fourth Avenue Improvements.—Necessarily the excavations made for the Fourth Avenue Railroad improvement interfered with and disturbed many sewers, the contents of which were discharged into the deep cutting, and was of course a just cause for complaint. Attention was given them in every instance, and as soon as practicable new sewers with other outlets were constructed, and the evils have been remedied. In a work of such magnitude as the one in question, requiring so much deep excavation, and varied as to the nature and qualities of soil exposed, and retained in large embankments upon vacant lots for the purpose of covering the arches and regrading the avenue, it will not be surprising if the inhabitants of the district should suffer from malarial diseases during the present year from the effects of the exposure of so much new earth, and the changes consequent upon the improvement. It will probably require one year more to complete the work, during which period the public health will be jeopardized and public conveniences will suffer annoyance. It is proper to state that the contractors and employés do not intentionally aggravate or produce the evils, but on the contrary display a disposition to remedy and obviate the causes for complaint in every instance where their attention has been directed to them. With the completion of the improvements and changes alluded to, the sanitary condition of the district will be also enhanced, as this "highway of the nation" had become a terror to all that were obliged to cross its tracks, and proved fatal to a large number.

Tenement-Houses.—The tenement-houses in this district demand the repetition of the remark that they are of the "better sort," and are in a good sanitary condition, well ventilated, and kept cleanly, with rare exceptions.

Privy-Vaults.—Privy-vaults, where it has been found necessary, have had ventilating-shafts constructed, contributing largely to the salubrity of the dwellings.

Shanties.—Shanties and squatter-settlements abound in some localities, with the usual accompaniment of a cow-stable, goat and chicken shed, and yarding for three dogs, evils to

be endured, while industrious trespassers continue to find opportunities of appropriating other people's property to their own uses. These localities are kept in a proper condition of cleanliness only by monthly visits of the Inspector, and the issuing of a threat of complaint and expulsion unless the existing nuisances are removed.

Fat-Rendering.—The fat-rendering establishments, of which there are three in the district, are located on One Hundred and Sixth Street, near the East River, are kept in as good and cleanly condition, and managed with as much care for the public health, as it is possible to do.

Manure-Dumps.—Manure-dumping is done at two points, Sixty-sixth and Ninety-sixth Streets, on the East River. At both docks the manure is dumped upon boats and removed. At no time has there been any accumulation upon the docks, thus demonstrating the feasibility of having all manure removed weekly from the city, and avoiding a recurrence of that formidable nuisance, the "manure-dump," which has contributed largely to the discomfort and annoyance of so many citizens living in the vicinity.

Manure-Vaults.—The location of private manure-vaults is a subject worthy of attention I think that in all cases vaults should be located within the stables, and in no instance ought they to be permitted or allowed on the sidewalk; they are too offensive and filthy to require any justification, and should be removed.

Upon several occasions during the past year I have been assigned to duty in the district north of Fifty-ninth Street, west of the Park, with special reference to the drainage and sewerage of that district, and can report a great sanitary improvement by the construction of a number of "subsoil-drains," as well as sewers, on each side of the Boulevard, and a large outlet-sewer in Mauhattan and One Hundred and Twenty-fifth Streets, which receives the drainage and sewerage west of Eighth Avenue and north of One Hundredth Street.

Contagious Diseases.—With the exception of diphtheria and scarlet fever, the district has been remarkably exempt from contagious diseases. Very few cases of small-pox have occurred, neither has typhoid been malignant. And it may be safely said that the sanitary condition of the district will compare favorably with previous years.

Annexed I submit the tabulated statement of the inspectorial labor performed :

SUMMARY.

INSPECTIONS AND REINSPECTIONS.

| | | | |
|-----------------------------------|-----|--------------------------------|-------|
| Tenement-houses | 508 | Stables..... | 284 |
| Private dwellings | 240 | Privies and water-closets..... | 375 |
| Shanties and other dwellings..... | 130 | Sunken and vacant lots..... | 309 |
| Cellars and basements..... | 99 | Streets..... | 328 |
| Public buildings..... | 18 | Sewers and drains..... | 43 |
| Dumping-grounds..... | 105 | Yards and docks..... | 48 |
| Factories and workshops..... | 9 | Horse-cars..... | 70 |
| Fat-rendering places..... | 178 | | |
| Slaughter-houses..... | 128 | Total..... | 3,082 |

REPORTS AND COMPLAINTS.

| | | | |
|-----------------------------------|----|--------------------------------|-----|
| Tenement-houses..... | 51 | Privies and water-closets..... | 75 |
| Private dwellings..... | 47 | Sunken and vacant lots..... | 50 |
| Shanties and other dwellings..... | 19 | Streets..... | 27 |
| Cellars and basements..... | 3 | Reports..... | 511 |
| Stables..... | 18 | | |
| Total..... | | Total..... | 761 |
| Cases of small-pox..... | 14 | | |
| Vaccinations..... | 56 | | |
| Total..... | 70 | | |

Respectfully submitted :

AUGUSTUS VIELE, M. D., *Sanitary Inspector.*

SANITARY INSPECTION DISTRICT

*Bounded by One Hundred and Tenth Street, One Hundred and Twenty-fifth Street,
Harlem and Hudson Rivers.*

ASSISTANT SANITARY INSPECTOR, G. B. FOWLER, M. D.

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I herewith beg to submit an account of the work performed by me as Assistant Sanitary Inspector since my appointment, June 17, 1873, to May 1, 1874.

From Sixth Avenue to the Hudson River it is little else than open country. On the Grand Boulevard there are a few wooden structures used as stores and dwellings, and scattered along the rocks between Eighth Avenue and the Hudson River are a number of shanties which are rapidly disappearing before the approach of the several broad Boulevards and Avenues now being opened in that quarter.

Harlem itself presents a very different field to the Inspector from any other sanitary district in the city. Here we have no crowding; the tenement-houses are few, small, and generally well taken care of. There are a great number of houses classed as "other dwellings," in which two or three families reside—families of a much higher grade than the general tenement-house population.

The property-owners as a class are desirous of improving the sanitary condition of the district, and in many instances anticipate the Inspector's suggestions.

Tenement-Houses.—Most of these are situated on First, Third, and Fourth Avenues. The majority are built of brick or brown-stone, a few of wood. They are generally three stories in height, and are as well kept as such habitations very well can be. A number of very handsome and commodious tenements have recently been erected here, and the style having once been inaugurated, bids fair to be imitated.

Other Dwellings.—This is a class of houses with which I have had most to do. They are frame buildings of two or three stories, and, as before stated, are inhabited by two or more families several grades above the usual occupants of tenement-houses. It is here that we find leaky roofs, neglected privy-vaults, broken leaders and gutters, and overflowing cesspools. This last nuisance is much less frequent than formerly, on account of the many sewer-connections which have recently been made.

Vacant and Sunken Lots.—This is preëminently the district of vacant and sunken lots. This is owing to two facts: first, the blocks are sparsely built upon; and, second, the land on the east side below One Hundred and Sixteenth Street was originally low, and the streets being extended and filled in have left the lots some distance below their grade. Upon these sunken lots the neighboring population have been accustomed to deposit their garbage and ashes, and the rain-water accumulating and stagnating upon these heaps of matter rendered the summer wind any thing but refreshing to inhale, and the locality far from desirable as a place of residence. But few nuisances of this character now remain, as they have been filled in with fresh earth, and either connected with the street-sewer or so graded as to discharge all surface-water, by orders from the Board of Health.

Privies.—The privies attached to the tenements are generally connected with the street-sewers, and many houses on the side-streets have lately connected them also. But in many streets there are no sewers, and here it is that the vaults are apt to become full and offensive.

Drains and Waste-Pipes.—Under this head I would state that I have had every waste-pipe in the district trapped beneath the sinks in the tenement-houses, and likewise in many private

and other dwellings. If this provision prevents the escape of sewer-gases into the dwelling-rooms, we should expect to find hereafter a marked improvement in the health of the inhabitants.

Sewers.—A majority of the streets are sewered, and the drainage is quite effectual. Malarial fever, so common in Harlem, has notably decreased since the streets were sewered.

Streets.—One of the characteristics of this district is its unpaved streets. This leads to a difficulty in cleaning them, and these unpaved streets are generally filthy.

Fat-Boiling Establishments.—There are several, but all handle fresh, clean fat, and employ the most approved apparatus for consuming the fumes.

Stables.—These are well kept, the manure being boxed, and frequently removed.

Contagious Diseases.—There have been only a few cases of contagious diseases, and nothing in the way of an epidemic.

Appended is a tabulated statement of the work for the past year:

SUMMARY.

INSPECTIONS AND REINSPECTIONS.

| | | | |
|-----------------------------|-------|-----------------------------------|--------------|
| Tenements..... | 1,901 | Public buildings..... | 9 |
| Private dwellings..... | 715 | Gutters and sidewalks..... | 292 |
| Other dwellings..... | 2,024 | Factories..... | 12 |
| Stables..... | 96 | Drains and waste-pipes..... | 87 |
| Stores..... | 183 | Wharves..... | 1 |
| Streets..... | 54 | Bone-cleaning establishments..... | 1 |
| Yards and areas..... | 175 | Fat-boiling establishments..... | 2 |
| Sunken and vacant lots..... | 122 | Hotels..... | 2 |
| Privies..... | 78 | Other nuisances..... | 11 |
| Total..... | | | <u>5,715</u> |

COMPLAINTS.

| | | | |
|-----------------------------|-----|-----------------------|------------|
| Tenements..... | 150 | Factories..... | 2 |
| Private dwellings..... | 31 | Public buildings..... | 3 |
| Other dwellings..... | 53 | Privies..... | 15 |
| Stores..... | 10 | Bone-cleaning..... | 1 |
| Stables..... | 10 | Sidewalks..... | 2 |
| Vacant and sunken lots..... | 24 | Railroads..... | 2 |
| Streets..... | 7 | Goats..... | 1 |
| Yards..... | 2 | Other nuisances..... | 6 |
| Total..... | | | <u>319</u> |

CONTAGIOUS DISEASES.

| | |
|--------------------|-----------|
| Small-pox..... | 7 |
| Scarlet fever..... | 11 |
| Varicella..... | 4 |
| Diphtheria..... | 1 |
| Typhoid fever..... | 2 |
| Total..... | <u>25</u> |
| Vaccinations..... | 180 |

All of which is respectfully submitted:

GEORGE B. FOWLER, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

*Bounded by One Hundred and Twenty-fifth Street, Northern Boundary of Twenty-third Ward,
Harlem Railroad, Bronx and Harlem Rivers.*

ASSISTANT SANITARY INSPECTOR, JOHN E. COMFORT, M. D.,

NEW YORK, May 1, 1874.

DR. WALTER DE F. DAY, M. D., *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report of the sanitary condition of my district, together with a summary of the inspections and other duties performed by me from January 1, 1874, until April 30, 1874.

The larger portion of this district was, until the annexation of the lower portion of Westchester County to the city of New York, comprised in the town of Morrisania, and was under the jurisdiction of the local Board of Health of said town.

In consequence of the short space of time since the creation of this district and the want of many of the conveniences belonging to the older and better regulated portion of the city, I shall be unable to present so favorable an account of the work accomplished, or of the improvement in the sanitary condition of the district, as I could have desired.

The village of Morrisania, as previously organized, is of rapid growth, having been founded in 1848 by an association, which purchased a farm of two hundred acres from Gouverneur Morris, and divided it into building-lots of an acre each. In a few years these lots were divided and subdivided and adjoining farming districts were encroached upon. As the population increased, numerous hamlets sprung up along and near the "Old Boston Post-Road," until a continuous village extended from Harlem Bridge to One Hundred and Seventieth Street. Other portions of the town have rapidly developed, as at Port Morris, West Morrisania, and Highbridgeville. The main avenues were originally laid out with reference to the then existing roads and the intersecting streets, in many instances where they could be best cut through. The whole was planned with little or no reference to the ultimate needs of a densely-populated district, as this is evidently destined to become. The sanitary surroundings were comparatively ignored, and undrained lands and large areas of water-saturated soil are the consequence, with the attendant insidious malarial influence, that will be felt and exerted until the old water-courses are revived and proper means are devised and carried into effect to relieve the soil of superabundant moisture, and to secure perfect sewerage. During the past few years many of the leading avenues and streets have been filled in and graded upon a systematized and approved plan; but these so-called improvements have produced deleterious rather than beneficial results, inasmuch as such filling has obstructed the natural escape of surface-water, thus increasing the number of sunken lots and the area of water-saturated soil, while only in isolated instances has any attempt been made to secure drainage or sewerage. The present condition of Morrisania, therefore, offers a fertile field for the sanitary engineer, as many houses, sufficiently healthy in locality before this system of grading was attempted, are now subject to the pernicious influence of damp cellars, and many old drains are stopped, all tending to produce malarious evils, which affect to a greater or less extent the whole surrounding vicinage.

The district north of Harlem River is gently undulating. A slope of parallel hills runs north and south, with intervening valleys, whose natural drainage was effected by Millbrook and several smaller streams. The area of salt-marsh is very limited, but there is a large section bordering on these streams which is but a few feet above high water. Millbrook in its

natural condition was clear spring-water flowing into Harlem Kills, but, as the adjacent district has been built up and its shores lined with manufactories, breweries, etc., its once limpid tides have degenerated into a mere filth-freighted sewer, slowly creeping between its banks ; and, were it not that in the plentiful rains its volume is so much increased as to wash out many of its impurities, the whole surrounding atmosphere would be pervaded with pestilence. Notwithstanding all these existing disadvantages, Millbrook presents every natural advantage for the construction of a large outlet sewer and drain into which various intersecting drains and sewers may be made to empty, thus relieving the district so drained of superabundant water, and increasing more than any other means that could be devised the healthfulness of the ward. It remains, therefore, as the one *great* desideratum, for the guardians of the public health to utilize what has now become an abomination, especially in the summer months, and convert this stream into a grand discharge-sewer, thus providing for the construction of tributary sewers and drains, as occasion may require and necessity demand. The sanitary value of such a procedure is incalculable and its necessity imperative. It has been demonstrated by competent engineers that such a plan is feasible and could be carried into effect at an expense disproportionally small, compared to the public benefit that would immediately accrue.

Tenement-Houses.—The tenement-houses in this district are generally small and accommodate only from four to six families. They are mostly situated on Third and Cortlandt Avenues. As there are no sewers in these avenues, except for a short distance on Third Avenue north of Harlem Bridge, it is quite impossible to keep their surroundings in a good sanitary condition. Many of these houses have cesspools either under the sidewalk or in the yard, but the use of these is very objectionable, as their proximity to the wells and cisterns must affect the quality of the water on which the families of these houses mainly rely.

Private Dwellings.—Of these I have made the greatest number of inspections, as, up to the annexation of this district, no systematic attempt at inspection or sanitary supervision had ever been made. As in every suburban locality, they comprise all grades, from the elegant abodes of wealthy residents to the humble cottage of the laborer. In regard to the better class I have found very little of which to complain. The great need with these is a thorough system of drainage. I have often been called upon for a remedy for damp basements and wet cellars, but have had no remedy to suggest, save to impress upon the minds of the owners the urgent necessity of their making application to the proper department for sewers in the streets. All this I feel confident will be accomplished in process of time, but not sufficiently soon to prevent a malarious influence being felt by the occupants of such houses for years to come. Of the poorer class of houses, I have found, even when the occupants were the owners, that little attention had ever been paid to health or comfort, especially in the matter of out-buildings.

Privies.—The privy system in all its objectional features is present in a large majority of cases. In the lower portions of the district, where the soil is saturated in the spring and fall with water, there is generally a small vault laid up with loose stones, and, as the water drains away from the soil, the water in the wells must become contaminated, and will be ultimately rendered unfit for use. When the privy and well are in the same yard, and not more than fifteen or twenty feet distant, as is often the case, I have recommended that the vaults be laid up with brick and cement. To eradicate this evil effectively will be a task that will take years to accomplish. On account of this close proximity in the more densely populated portions, the introduction of Croton or other water would be a blessing second only to sewerage and drainage for the residents of Morrisania.

Vacant and Sunken Lots.—Of these there are a great number, and the securing of deep

soil drainage, before they are filled in and improved by the construction of residences thereon, is of paramount importance to the future health of their occupants. At the present time many of the streets and avenues in various parts of the district are being filled in and graded, which will greatly increase the number of the lots and materially augment the necessity for proper action to be taken for their drainage.

Sewers and Drains.—These having been incidentally touched upon in previous parts of this report, perhaps little more need be stated here. I have made several recommendations to the Board to secure drainage in various localities where there was the greatest need. As yet no beginning has been made, partly perhaps from the short space of time since such reports were made, and partly from the want of proper legislation on the subject. With such authority vested in the department having the annexed district in charge, I trust that important progress will soon be made in relieving it of its present greatest drawback.

The following statement comprises a summary of inspections, reinspections, and complaints made, and of contagious diseases visited by me, since January 1st:

INSPECTIONS AND REINSECTIONS.

| | | | |
|------------------------------|-----|--------------------------|-----|
| Tenement-houses | 203 | Stables..... | 18 |
| Private dwellings | 542 | Dock..... | 1 |
| Slaughter-houses..... | 21 | Cemetery..... | 1 |
| Privies..... | 24 | Streets and gutters..... | 4 |
| Vacant lots..... | 12 | Unsafe building..... | 1 |
| Public-school buildings..... | 7 | Small-pox hospital..... | 1 |
| Butcher-shops..... | 12 | Sewers and drains..... | 5 |
| Breweries..... | 5 | | |
| Total..... | | | 862 |

COMPLAINTS.

| | | | |
|--------------------------|----|----------------------|----|
| Tenement-houses..... | 12 | Yards..... | 3 |
| Private dwellings..... | 23 | Unsafe building..... | 1 |
| Sewers and drains..... | 4 | Vacant lots..... | 5 |
| Streets and gutters..... | 3 | Privies..... | 9 |
| Total..... | | | 60 |

CONTAGIOUS DISEASES.

| | |
|------------------------------|----|
| Variola..... | 5 |
| Scarlatina..... | 1 |
| Rubeola ¹ | 2 |
| Varicella ¹ | 2 |
| Vaccinations..... | 60 |

Respectfully submitted :

JOHN E. COMFORT, M. D.,

Assistant Sanitary Inspector.

¹ Reported as small-pox.

SANITARY INSPECTION DISTRICT

Bounded by One Hundred and Twenty-fifth Street, Fourth Avenue, High Bridge, Croton Aqueduct, City of Yonkers, and Hudson River.

ASSISTANT SANITARY INSPECTOR, PALUEL DE MARMON, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to submit the following report of the sanitary condition of my district, and of the duties performed by me, beginning January 1, 1874, and ending April 30, 1874:

The largest portion of my district of Westchester County, presenting a very large area, is in an unsatisfactory sanitary condition, nothing having been done as yet in the way of drainage or sewerage. There are a great many swampy places in the valleys, and even on the high grounds, and it will probably be a long time yet before such improvements are made.

In the lower part of my district, between Spuyten Duyvil Creek and One Hundred and Twenty-fifth Street, improvements are progressing slowly, but there is also very much to be done in the way of drainage and sewerage. The construction and filling up of new boulevards, avenues, and streets, have in many instances caused the stoppage of natural water-courses or drains, and great nuisances have resulted in the shape of stagnant water.

At Carmansville, many of the thickly-populated streets on the west side of Tenth Avenue are not legally open, although much traveled on, and are in a very unsafe and dirty condition, there being neither sidewalks, curbs, nor culverts. In One Hundred and Fifty-sixth, One Hundred and Fifty-seventh, and One Hundred and Fifty-eighth Streets, on that side of the avenue, there are deep and uneven ditches filled with rubbish and garbage; these ditches receive the sewerage and refuse liquids of the houses on the east side of Tenth Avenue, through culverts under that avenue, and the smell emanating therefrom is very offensive. In all such cases, complaints have been forwarded, which have been referred to the Department of Public Works.

Tenement-Houses.—There are in my district comparatively few tenement-houses, but they are generally well kept, and whenever I have made complaints, and orders have been issued for any improvements to be made, they have, in all cases but one, been attended to immediately.

Public Schools.—There are in my district seven public schools, and it is painful to state that it is precisely those places which ought to be sanitary models which, on the contrary, are in the most wretched condition, and are the most miserly and miserably-managed in a sanitary point of view. Heating, drainage, and ventilation, are in the most primitive condition; cast-iron stoves, with leaky pipes to allow the gas to escape in the class-rooms, are in this time of progress the only heating-apparatus employed, as doors and windows are the only means of ventilation. According to calculations made of the number of cubic feet of air allowed to each inmate of these overcrowded institutions, I found class-rooms where the ratio of air, when divided among the inmates, amounted to fifty-one, fifty-six, and eighty cubic feet for each pupil, when it should have been at least seven hundred cubic feet, renewed every hour.

The difficulty in finding owners of property in my district is a prime cause of delay in the execution of the orders of the Board. Nuisances which ought to be abated immediately, and which could be abated sometimes with very little expense of time and money, had the

Board of Health the power so to do, remain as they are until they have been referred to the various departments to which they properly belong, or until the owner or owners have been found; in the mean time disease is propagated, complaints are made and remade by citizens, and the Board censured for not attending to their business. I think that when there is immediate danger, and that, to prevent it, a nuisance should be abated immediately, the Board of Health should have the power to have the necessary work done, and a lien taken on the property.

The following is a summary of the inspections and reinspections made from January 2, to April 30, 1874:

| | | | |
|--------------------------------|-----|----------------------------|-------|
| Tenement-houses..... | 184 | Drains and sewers..... | 7 |
| Dwellings and shanties..... | 408 | Culverts and gutters..... | 5 |
| Vacant lots..... | 50 | Public roads..... | 2 |
| Stables..... | 60 | Railroad-tracks..... | 3 |
| Privies and water-closets..... | 271 | Streets and sidewalks..... | 15 |
| Public schools..... | 7 | Cesspools..... | 10 |
| Public institutions..... | 6 | Bridges..... | 2 |
| Cellars and basements..... | 68 | Lakes..... | 1 |
| Breweries..... | 1 | | |
| Factories and workshops..... | 4 | Total..... | 1,104 |

COMPLAINTS.

| | | | |
|--------------------------------|----|----------------------------|----|
| Tenement-houses..... | 9 | Public roads..... | 4 |
| Dwellings..... | 4 | Railroad-tracks..... | 2 |
| Vacant lots..... | 9 | Streets and sidewalks..... | 6 |
| Stables..... | 1 | Cesspools..... | 7 |
| Privies and water-closets..... | 26 | Manure-heaps..... | 1 |
| Public schools..... | 5 | Bridges..... | 2 |
| Cellars and basements..... | 1 | | |
| Drains and sewers..... | 2 | Total..... | 84 |
| Culverts and gutters..... | 5 | | |

CONTAGIOUS DISEASES INSPECTED.

| | |
|--------------------|----|
| Scarlet fever..... | 11 |
| Typhoid fever..... | 2 |
| Total..... | 13 |

VACCINATIONS PERFORMED.

| | |
|----------------|----|
| Primary..... | 15 |
| Secondary..... | 5 |
| Total..... | 20 |

All of which is respectfully submitted:

PALUEL DE MARMON, M. D.,

Assistant Sanitary Inspector.

SANITARY INSPECTION DISTRICT

Bounded by Line running from Bronx River to Croton Aqueduct, Northern Part of City; Croton Aqueduct to Harlem River; along Harlem River to Harlem Railroad; thence following Harlem Railroad to Eighth Street, Morrisania; then in straight Line to Bronx River, up the River to Northern Boundary of the City.

ASSISTANT SANITARY INSPECTOR, C. F. RODENSTEIN, M. D.

NEW YORK, *May 1, 1874.*

DR. WALTER DE F. DAY, *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report of the sanitary condition of my district:

This district differs essentially from the other sanitary districts of the city. The substrata of public health are modified by other conditions than those which in the older and more densely-populated portions of New York produce sickness and control the death-rate. It is still essentially "country." It enjoys the advantages and suffers from the defects of a rural district.

There are no tenement-houses in this district; and the few houses which contain "more than three families separately" have none of the characteristics which make this class of dwellings a source of disease. The churches and public schools are the only buildings which afford an opportunity for overcrowding and carbonic-acid poisoning.

The danger from privy-vaults is reduced to a minimum. The privies are almost always built some distance from the dwelling-houses. The vaults are simply holes dug in the earth. They are shallow; and, when full, they are covered with fresh earth, and the privy-house removed and placed over a newly-dug hole. It is essentially the earth-closet system. This disposal of the night-soil is more economical—more effective—earth being the best disinfectant, and in every way preferable to its removal by the noisome trains of scavengers.

There are no slaughter-houses in this district. The markets where meats are sold are small and clean.

There was one small fat-rendering and animal-skinning establishment; but this nuisance has been abated.

Our "sunken and vacant lots" can only be counted on the map. They are either the natural depressions in the surface of an undulating country, or they are larger tracts of land whose natural drainage has been interfered with by the building of railroads and boulevards.

The country is not exposed to the danger of poisoning from sewage-gases, for the country is innocent of sewers.

Basements are few; and the cellars are generally damp, and occasionally filled with water.

The chief complaints of citizens are against the accumulation of manure in dairy-yards and stables, and against swamps and inundated cellars.

To give relief from defective drainage can rarely be done by orders on property-owners. The natural conformations of the country are such that the whole district can easily and thoroughly be drained either into the Bronx River or Millbrook Valley; but we must first obtain from the public departments a general system of drains before private parties can drain their ponds and cellars.

From the foregoing statements it will be seen that the field for the exercise of that part of the duties of the Health Department which consists in sanitary police is unexceptionally limited, while the widest possible sphere is opened for its more scientific activity in the study of the causes of disease and the means of public prophylaxis.

The origin and spread of epidemics can be more easily traced in country districts than

in those thickly populated. The dependence of endemic diseases upon saturated soil, drinking-water, or the constituents of atmospheric air, can be more readily determined by actual statistics. For here the topographical conditions and social influences are less complicated; and the location and grouping of individual cases are more feasible than in the built-up portions of the city; while the relationship of one to the other is more readily demonstrated upon sanitary maps. And thus valuable information may be obtained with regard to the nature and propagation of contagion and miasma, and the means to guard the city of the future—which this district is destined to be—against the prevalence of public diseases.

Matters of more immediate practical importance claim the attention of the sanitary authorities of this district and its adjoining neighborhood. In watching "the movement of mortality" we can not only collect valuable statistical material for charts of mortality and morbidity, but also correct prevalent abuses.

There are a number of small cemeteries which have and may again give room to unauthorized burials. They can now be more easily closed than in after-years.

The mortality of new-born infants is notoriously larger than that reported, and is in a measure due to the practice of midwives without knowledge and without authority.

There are small hospitals managed by private parties with the least possible medical superintendence, and where the interests of the public and of the patients would be subserved if these institutions were under the eye of the Board of Health.

During the ensuing year I hope to present special reports on a limited epidemic of scarlet fever; on the cemeteries of the newly-annexed district; on the etiology of intermittent fever; and on the drainage and sewerage of my district.

I subjoin the usual summary of inspections made during the four months ending on the 30th of April:

INSPECTIONS AND REINSPECTIONS.

| | | | |
|----------------------------|-----|-----------------------------------|-----|
| Private dwellings | 675 | Fat-rendering establishments..... | 3 |
| Tenement-houses..... | 5 | Ponds and drains..... | 7 |
| Markets..... | 6 | Privies..... | 93 |
| Public buildings..... | 10 | Hospitals | 1 |
| Basements and cellars..... | 40 | Cemeteries | 3 |
| Workshops..... | 1 | Stables | 23 |
| Lots..... | 12 | | |
| Total..... | | | 878 |

COMPLAINTS MADE.

| | | | |
|-------------------------|---|------------------------------|----|
| Defective drainage..... | 5 | Manure-piles..... | 3 |
| Privies..... | 7 | Pools of stagnant water..... | 2 |
| Total..... | | | 17 |

CONTAGIOUS DISEASES.

| | |
|------------------|----|
| Small-pox | 3 |
| Scarlatina | 24 |
| Total..... | 27 |

Respectfully submitted:

C. F. RODENSTEIN, M. D.,

Assistant Sanitary Inspector.

REPORT OF H. ENDEMANN, PH. D., IN CHARGE OF DISINFECTING CORPS.

NEW YORK, May 1, 1874.

WALTER DE F. DAY, M. D., *Sanitary Superintendent, etc.*

SIR: I have the honor to submit my annual report on the work performed by the Disinfecting Corps, in the disinfection of premises infected with contagious disease, and the disinfection of street-gutters, cellars, yards, and privies, together with the removal of small-pox cases to the Reception Hospital.

DISINFECTANTS AND DISINFECTION.

For the purpose of proper disinfection we must aim at a twofold end:

1. We must destroy the source of contagion; that is, the germ and animalcules which cause fermentation and putrefaction.
2. We must destroy or make inert the products of fermentation already formed.

The first is done by either coagulating or combining the albuminous substances, which are an important source for the sustenance of germs and animalcules.

The second is done by either neutralizing such products as sulphuretted hydrogen by forming insoluble chemical compounds, or by destroying them with the aid of some oxidizing material.

There are other substances, also, which are formed during the process of fermentation. Among them is an acid of very unstable character, which is formed by the process of decaying animal matter and night-soil, and to which the latter is indebted for its peculiar odor. This acid is said to reduce silver-salt. We know, however, but little of this compound regarding its physiological effects, and its destruction can easily be secured by the employment of oxidizing agents, as sesquisulphate of iron or copperas partly oxidized.

So much is certain, that any decaying substance, in which the process of fermentation has been arrested by the addition of some substance or a mixture of substances which will make sulphuretted hydrogen inert, has lost much of its disgusting odor. The remaining acid odor is no longer so repugnant as it would be if none of these substances were present. Chemistry acquaints us with many substances which can be used as disinfectants, and we could select many more effective substances if it were not for their price.

I give a list of such chemicals as are either used by us as disinfectants, or which deserve attention:

DISINFECTANTS.

1. *Metallic Salts: Sulphate of Zinc.*—A diluted solution is used for the disinfection of infected clothing and bedding. Copperas in solution is used for the disinfection of street-gutters, garbage-boxes, and privy-vaults. It is prepared by Frusner & Co., No. 197 William Street, at eight cents per gallon, 25° B. specific gravity.

Chloride of Manganese Solution is a product of the manufacture of chlorine. It can be obtained only in limited quantities from a New York firm, who use chlorine as an agent to free tin-scrap from tin. This disinfectant is largely used in Europe, and would doubtless become of importance here if it could be supplied in quantities.

This substance contains always sesquichloride of iron, and from five to seven per cent. of free chlorine and free muriatic acid, as the safety of the apparatus in which the chlorine is produced does not permit such heating as is required for the thorough expulsion of it. The presence of this substance prevents its being used in connection with carbolic acid unless they are used successively—the manganese solution first.

On trying this disinfectant on night-soil it was found to be a less perfect deodorizer than

the zinc-iron liquor owing to the large amount of free acid present; neutralization with quick-lime, however, will without doubt remedy this.

Zinc and Iron Chloride Solution.—This solution is obtained in a process for the recovery of tin from tin-scrap. The latter is treated for this purpose with muriatic acid, which dissolves first the tin and then considerable of the iron. The tin-iron chloride solution is treated with zinc, when the zinc dissolves and an equivalent quantity of tin is precipitated. The solution thus obtained is generally of a specific gravity of 35° B. Latterly the process has been considerably modified; owing to the higher price of muriatic acid, and to the inconvenience caused by the vapors of this substance, part of it has been substituted by sulphuric acid. This process has been introduced by Mr. Oestriker, the inventor in the establishment of Messrs. Bredt & Co., who supplied the Board during the latter part of the summer, and it is, I believe, now substantially the process followed by all establishments. The solution thus obtained contains more or less sulphates, according to whether the solution is delivered as obtained, or has been evaporated to allow the sulphates to crystallize. This disinfectant which we now use in the second year has gained considerable popularity, both on account of its cheapness and effectiveness. Chlorides are far preferable to sulphates, the sulphates not unfrequently giving rise to a nuisance which they are intended to abate. Besides, it has been proved that the effect of chlorides is more immediate and lasting; any free sulphuretted hydrogen is easily removed by the zinc. The New Orleans Board of Health have endeavored to improve this disinfectant by converting the protochlorides of iron into the sesquichloride by treating the original fluid with muriatic acid and nitrate of soda. The necessity for such an expense I cannot understand. Night-soil rarely contains sulphuretted hydrogen, but, if it should, the presence of zinc-salts is sufficient to prevent its escape. We have used this solution for the disinfection of privies, yards, cellars, and street-gutters, either alone or diluted with water or carbolic-acid solution.

2. *Carbolic and Cresylic Acids* of various grades have been used, from the crude or dead oil containing from 10 to 15 per cent. of carbolic acid, to carbolic acid of 85 per cent. The lower-grade acids are employed for the disinfection of privies, street-gutters, etc., while the higher grades are used in the sick-room, and for the disinfection of infected clothing, etc.

3. *Quick-lime.*—This disinfectant is very effective, and has been used formerly extensively for the disinfection of street-gutters. A small quantity is always on hand for special work. Its general use, however, has been discontinued, as it has been ascertained that the disinfection with lime will cost three times as much as the disinfection with other chemicals.

Sulphur produces by combustion sulphurous acids, which are commonly used for the fumigation and final disinfection of sick-rooms.

DISINFECTION OF HOUSES INFECTED WITH CONTAGIOUS DISEASES.

The following is a tabulated statement of the amount of work performed by the Disinfecting Corps in houses infected with contagious diseases:

| Whole No. of Visits. | Contagious Diseases. | Thorough Disinfection. | Partial Disinfection. | Privies Disinfected. | Bodies Removed to Morgue. | Patients to Hospital. |
|----------------------|----------------------|------------------------|-----------------------|----------------------|---------------------------|-----------------------|
| 2,490 | 2,474 | 276 | 2,148 | 2,438 | 6 | 222 |

In explanation of the nature of the work performed by the Disinfecting Corps, I annex a copy of our printed sanitary regulations against small-pox, scarlatina, and diphtheria:

Care of Patients.—The patients should be placed in a separate room, and no person except the physician, nurse, or mother, allowed to enter the room, or to touch the bedding or clothing used in the sick-room, until they have been thoroughly disinfected.

“Infected Articles.—All clothing, bedding, or other articles, not absolutely necessary for the use of the patient, should be removed from the sick-room. Articles used about the patient, such as sheets, pillow-cases, blankets, or clothes, must not be removed from the sick-room until they have been disinfected, by placing them in a tub with the following disinfecting fluid: eight ounces of sulphate of zinc, one ounce of carbolic acid, three gallons of water.

“They should be soaked in this fluid for at least one hour, and then placed in boiling water for washing.

“A piece of muslin, one foot square, should be dipped in the same solution and suspended in the sick-room constantly, and the same should be done in the hall-way adjoining the sick-room.

“Feather beds and pillows, hair pillows and mattresses, and flannels or woolen goods, require fumigation and should not be removed from the sick-room until after this has been done. Whenever the patient is removed from the sick-room, notify the Bureau of Sanitary Inspection, when the Disinfecting Corps will as soon as possible thereafter perform the work of fumigation.

“All vessels used for receiving the discharges of patients should have some of the same disinfecting fluid constantly therein, and immediately after use by the patient be emptied and cleansed with boiling water. Water-closets and privies should also be disinfected daily with the same fluid, or a solution of chloride of iron, one pound to a gallon of water, adding one or two ounces of carbolic acid.

“All straw beds should be burned, but must not be removed from the sick-room without a permit from this department. They will be removed by the Disinfecting Corps.

“It is advised not to use handkerchiefs about the patient, but rather soft rags for cleansing the nostrils and mouth, which should be immediately thereafter burned.

“The ceilings and side-walls of the sick-room, after removal of patient, should be thoroughly cleaned and lime-washed, and the wood-work and floor thoroughly scrubbed with soap-and-water.”

“The procedure of disinfection in case of other diseases, as cholera morbus, typhoid and typhus fever, etc., is much the same, only that more particular care is needed in thoroughly disinfecting privy-vaults, cellars, yards, and grounds adjoining the building; this latter work is performed with the same disinfectants which are used for the disinfection of street-gutters (see below). If the sick-rooms are vacated by either death or convalescence, they are fumigated by the burning from two to three pounds of sulphur for ordinary floor tenements after the windows and flues leading from the infected rooms have been tightly closed. The furniture remains under the influence of the sulphur-fumes from two to three hours.

Disinfection of Privies.—On July 9th, this year, I commenced a systematic disinfection of privies in parts of the city where diarrhœal diseases prevailed. For this purpose a cart was prepared with two barrels laid on the hind-end, with sufficient room in front for one or two extra supply-barrels.

One of the barrels holds dead oil (containing about 15 per cent. carbolic acid), the other either a saturated solution of copperas, or zinc-iron disinfectant (30 to 35° B.). The laborers draw one-half gallon of dead oil, then one gallon of the disinfecting solution, diluted to make three gallons, and use this amount for an ordinary privy-vault, taking particular care that not only the surface of the night-soil, but also the exposed parts of the side-walls of the vault, are well covered with the disinfectant. Yards and cellars found in a filthy condition are also attended to.

The solution used is composed as follows: one-half llon dead oil, one gallon copperas solution, diluted with water to make three gallons.

From July 9th to October 1st, 7,749 privies, 732 yards, and 500 cellars, were disinfected by two men, at a cost of \$1,284.60.

| | |
|---|------------------|
| 2,679 gallons of dead oil, at 10 cents per gallon. | \$267 90 |
| 2,305 " " copperas solution, 8 cents per gallon. | 184 40 |
| 3,415 " " zinc and iron disinfectants, 10 cents per gallon. | 341 50 |
| Labor. | 490 80 |
| | <hr/> \$1,284 60 |

Disinfection of Street-Gutters.—For this disinfection we have used during this year only solutions.

They are variously-composed according to the raw material on hand.
The following are some of the preparations employed:

- A.—15 gallons concentrated copperas solution, 4 pounds copperas (1 gallon solution).
1 gallon carbolic acid, 60 to 70 per cent.
Diluted to 75 gallons.
- B.—12 gallons zinc and iron disinfectant, 30 to 35° B.
1 gallon carbolic acid, 60 to 70 per cent.
Diluted to 75 gallons.
- C.—12 gallons of zinc-iron disinfectant.
2 " carbolic acid, 30 per cent.
Diluted to 75 gallons.

The carts used for the distribution of disinfectants are of two patterns.

The old carts are merely 75 gallon casks fastened to a cart and provided with a faucet on the end.

From these the copper hand-sprinkling cans are filled, and by means of these the fluids distributed to the gutters and garbage-boxes.

The new trucks run on four wheels. The tanks contain 300 gallons, and from these the solution is distributed by means of rubber hose connected with the tank, and provided with a faucet and sprinklers at the outer end. Two pieces of such rubber hose, each fifteen feet long, are carried by two men, who follow the cart, which passes through the middle of the street, one man disinfecting the gutters to the right hand, and the other those to the left. On passing spots where disinfection is not necessary, the disinfecters turn off the supply.

| Week ending | Mlbs. | Copperas, 2 cents per pound. | Solution Copperas, 8 cents, | Zinc and Iron Disinfectant, 10 cents, | Zinc and Iron Disinfectant, 11 $\frac{1}{4}$ cents, | Carbolic Acid, 75 cents, | Carbolic Acid, \$1.50, | Carbolic Acid, \$1.75, | Cost of Disinfectant. | Cost of Labor. | Total Cost for Week. |
|-----------------|-------|---------------------------------|--------------------------------|--|--|-----------------------------|---------------------------|---------------------------|-----------------------|----------------|----------------------|
| 1873. | | | | | | | | | | | |
| June 7. | 35 | .... | .... | 420 | ... | .. | 28 | ... | \$84 00 | \$35 00 | \$119 00 |
| " 14. | 52 | .... | .... | ... | 735 | .. | 49 | ... | 156 20 | 60 31 | 216 51 |
| " 21. | 35 | .... | .... | ... | 690 | 47 | 10 | ... | 127 89 | 71 89 | 199 78 |
| " 28. | 41 | ... | .... | ... | 432 | 72 | .. | ... | 102 60 | 54 12 | 156 72 |
| July 5. | 25 | .... | .... | ... | 360 | 60 | .. | ... | 85 50 | 66 00 | 151 50 |
| " 12. | 116 | 828 | .... | ... | 884 | 59 | .. | 57 | 260 01 | 133 50 | 393 51 |
| " 19. | 156 | 2400 | 881 | ... | ... | .. | .. | 141 | 381 23 | 181 00 | 562 23 |
| " 26. | 163 | .... | 1700 | ... | ... | .. | .. | 122 | 349 50 | 196 00 | 545 50 |
| " 31. | 100 | .... | 990 | ... | ... | .. | .. | 71 | 203 45 | 132 66 | 336 11 |
| Total. | 743 | 3228 | 3571 | 420 | 3101 | 233 | 87 | 391 | \$1,750 38 | \$930 48 | \$2,680 86 |

| Week ending | Miles. | Copperas Solution, 8 cents per gallon. | Zinc and Iron Solution, 10 cents per gallon. | Carbolic Acid, \$1.75 per gallon. | Cost of Disinfectant. | Cost of Labor. | Total Cost. |
|------------------------|--------|---|---|--------------------------------------|-----------------------|----------------|-------------|
| 1873, August 2..... | 52 | 480 | .... | 107 | \$101 40 | \$65 09 | \$166 49 |
| " 9..... | 172 | 1245 | 360 | 115 | 336 85 | 192 25 | 529 10 |
| " 16..... | 154 | 260 | 1120 | 99 | 306 05 | 168 50 | 474 55 |
| " 23..... | 140 | .... | 1170 | 83 | 262 25 | 154 74 | 416 99 |
| " 30..... | 190 | .... | 1680 | 120 | 378 00 | 198 00 | 576 00 |
| Total..... | 708 | 1985 | 4330 | 524 | \$1,384 55 | \$778 58 | \$2,163 13 |
| September 6..... | 219 | .... | 1844 | 114 | \$383 90 | \$196 00 | \$579 90 |
| " 13..... | 203 | .... | 1565 | 113 | 354 25 | 201 00 | 555 25 |
| " 20..... | 201 | .... | 1310 | 91 | 290 25 | 175 25 | 465 50 |
| " 27..... | 203 | .... | 1440 | 102 | 322 50 | 209 00 | 531 50 |
| Total..... | 826 | .... | 6159 | 420 | \$1,350 90 | \$781 25 | \$2,132 15 |

Total Number of Miles of Street-Gutter disinfected, with the Cost of Disinfection for the Summer of 1873:

| Miles. | Cost of Disinfectants. | Cost of Labor. | Total Cost for 1873. |
|--------|------------------------|----------------|----------------------|
| 2,277 | \$4,485 83 | \$2,490 31 | \$6,976 14 |

I here submit an abstract of my report on this subject, showing the decided advantage of these large trucks with the present hose-distributing arrangement.

While the statement for lime-cart and small sprinkling-carts was an average of work and cost as performed in former years, the statement relating to the large sprinkling-trucks was an estimate in which I came very near to the figures afterward reached in reality.

The disinfection of sixteen miles of street-gutter will cost:

1.—Using lime.

| | |
|---|----------|
| 52 barrels quick-lime at \$1.25 per barrel..... | \$65 00 |
| 2 laborers 6 days, \$2.50 per day..... | 30 00 |
| 1 horse " " " | 15 00 |
| | <hr/> |
| | \$110 00 |

2.—Using zinc-iron disinfectant, old plan.

| | |
|-------------------------------------|---------|
| 144 gallons disinfecting fluid..... | \$14 40 |
| 12 " carbolic acid. | 18 00 |
| 2 laborers 4 days..... | 20 00 |
| 1 horse " | 10 00 |
| | <hr/> |
| | \$62 40 |

3.—Using zinc-iron disinfectant, new plan.

| | |
|-------------------------------------|---------|
| 144 gallons disinfecting fluid..... | \$14 40 |
| 12 " carbolic acid..... | 18 00 |
| 1 driver 1 day..... | 3 00 |
| 2 laborers 1 day..... | 5 00 |
| 2 horses 1 day..... | 5 00 |
| | <hr/> |
| | \$45 40 |

We have been using during this season two carts with barrels of 75 gallons capacity each, and since July 9th also two trucks of 300 gallons capacity each.

Respectfully submitted:

H. ENDEMANN, PH. D

BUREAU OF VITAL STATISTICS.

REPORT OF THE REGISTER.

To the Secretary of the Board of Health.

THE registration of Vital Statistics in the city of New York during the year 1873 has been maintained with all the care and thoroughness the Health Department could command. The records of 29,084 deaths, 22,683 births, and of 17,744 persons married during the year, have been registered in this Bureau.

The good degree of completeness and punctuality with which the causes and circumstances of the individual deaths are reported, the dependence of these records upon medical certification, and the designation of the particular locality and kind of domicile in which each death occurs, impart to this branch of service a practical importance which is generally appreciated by sanitary officers. The practical value of accuracy in the certificates of the causes of death is so well known to the medical profession in this city that an increasing degree of studious accuracy and completeness in the certificates of death is noticed. These individual certificates are more and more trustworthy as vouchers of actual causes rather than as statements of opinion.

The individual records of birth and of marriage are, with few exceptions, perfect in all details, and therefore as valuable as it is possible for the registration of them to be to the families immediately interested therein; but the total number of these records falls short of the actual number that should be registered, and thereby some of the most important uses of a complete registry of births and marriages are needlessly impaired or prevented, the ratio of natural increase of population, the social state of the people and the development of the new family stock from the various races and nationalities in our midst fail to have a perfect record, the study of the expectation or insurance value of life is deprived of an essential aid, and the social interests and inherited rights of the most innocent and dependent members of the community are exposed to reckless and wicked violation.

That the accurate registration of the three signal epochs of human life

—the birth, marriage, and death—of each individual, is an obligation due alike from the citizen to the State, and from the State to the individual inhabitants, is an admitted truth. Therefore, we no longer discuss the nature and force of this obligation, but, with the conviction that the registry of vital statistics should be, characterized by numerical completeness and by perfection in the essential particulars of all individual records, we beg leave to present the results of the operations of this Bureau for the year 1873.

DISTRIBUTION AND CENSUS OF THE POPULATION OF NEW YORK.

The 14,502 acres (22.65 square miles) comprised upon Manhattan Island, have a capacity for the healthful distribution of a vastly larger population than now dwell in this city. There were 942,292 inhabitants enumerated in the city at the last census, 497,289 or 52.77 per centum of this total population were found residing upon the 2,408 acres south of Fourteenth Street, and the dwellings divided that crowded district about equally with the commercial and other business warehouses and structures.

Upon that portion most densely peopled, namely, the district lying eastward from the Bowery and south of Fourteenth Street, the census found 285,445 inhabitants between Fourteenth and Catharine Streets. The crowding of nearly 300,000 inhabitants upon that narrow area of only 942 acres presents at a glance that peculiar characteristic of concentration and packing of the tenement population which distinguishes the city of New York, and causes great insecurity to life and health in this densely-crowded portion of the population.

POPULATION AND MORTALITY IN THE EASTERN DISTRICT.

| Ward. | Area, acres. | What fraction of a square mile. | Total population. | Population per square mile. | Percentage of total population found in tenement-houses in the winter of 1870. | Average population per tenement-house. | No. of square yards of area to each person. |
|-------|--------------|---------------------------------|-------------------|-----------------------------|--|--|---|
| 7 | 195 | .31 | 44,519 | 144,577 | 84.01 | 34.01 | 21.8 |
| 10 | 110 | .17 | 47,667 | 248,594 | 55.59 | 37.31 | 12.8 |
| 11 | 196 | .30 | 64,230 | 214,100 | 83.60 | 33.39 | 14.7 |
| 13 | 107 | .17 | 33,364 | 196,264 | 72.28 | 30.23 | 15.5 |
| 17 | 331 | .52 | 95,365 | 183,483 | 75.32 | 38.65 | 16.7 |
| | 942 | 1.47 | 285,445 | 194,180 | 65.26 | 34.72 | 16.2 |

Though the annexation of eighteen square miles of territory north of the Harlem River has transferred the geographical centre of the city to the open grounds north of the Central Park, and has doubled the dwelling area within the city limits, the concentration of population still goes on in the district south of the park, and most notably so in the three square miles of which Union Square is the centre. The census of 1870, as before remarked, found 497,289 inhabitants in the district between Fourteenth Street and the Battery; or 25,043 more than half of the total city population.

Viewing the habitations and dwelling areas of the city with reference to the peculiarities that largely influence the sanitary condition of the inhabitants, and that also affect their social state, the city of New York may be considered as having reached an excessive degree of imprudent concentration and overcrowding of its laboring classes; and it is in these classes,—conspicuously the “tenement-house” population,—that the ratios of marriage, birth, and death are greatest. Among these classes—now constituting nearly half the city population, and being not less than half a million in number—the marriage-rate exceeds 20 in the 1,000 inhabitants annually, the birth-rate exceeds that of the more healthful quarters of the city, and is greater than that in country towns, while the death-rate is twice as great as that of the most healthful rural districts, and nearly twice as great as that in the more favored quarters of the city. Pernicious influences from such overcrowded and insalubrious regions are extended outward to the favored classes, so that the sanitary wants of these particular classes and their unhealthful habitations become matters of vital importance and concern to all. Amid these disadvantages and surroundings by destructive influences that war against life and health, the inhabitants of the city need the safeguards which sanitary regulations can give, and the carefully registered vital statistics of the people will indicate.

In its account current with human life in this great city, the Health Department possesses only a portion of the records and information which are requisite for such book-keeping of vital statistics as the interests of the public health and progressive civilization demand. The records of death are indeed complete in most respects beyond those of any other large city in the world, for every death is medically certified, and the personal record of the decedent is carefully reviewed. But there is no adequate registration of the living, and of the increase and social state of the population. The public registration of birth and marriage at last comprises between 65 and 75 per centum of the numbers that should be registered. Statistical and logical evidence from census enumerations and other sources of information warrants the conclusion that the ratio of marriage in the city of New York is not much less than 21 to the 1,000 of the population annually, and that the ratio of births is not less than 34 to the 1,000 in this city. The ratio of deaths during the year 1873 was 29 per 1,000, if the population were estimated at 1,000,000 in July of that year.

The Register begs leave, at this point in the report for the Bureau, to call attention to the contribution of several sections of important information upon matters in detail relating to the records of birth and marriage, the burial of the dead, the state of the cemeteries, etc., as credited to the hand of the faithful Deputy Register, John T. Nagle, M. D., and placed in a separate chapter of this report of the Bureau. Important items of information concerning the records of births and marriages are given in the Deputy Register's contributions, and this opportunity is embraced to mention his devoted attention to duty as being worthy of special commendation.

VITAL STATISTICS OF THE CITY IN 1873.

Census and Distribution of Population.—The census of 1870, as verified by reenumeration in the winter of 1871, found 942,292 inhabitants in the city of New York. The annual ratio of increase of the city population is reasonably believed to be equal to 2.1 per centum upon the total number of inhabitants. Whether this be the actual ratio of increase of our population or not, let the next census decide; but assuming that the average number of our city inhabitants, strangers and residents, in the year 1873, was one million, then its death-rate was equal to 29 per 1,000. This ratio of mortality is one of the sanitary landmarks in the city; and the value of the various indications which death-rates give, to be correctly estimated, must be read in connection with the facts relating to the ages, distribution, housing, habits, and physical state of the inhabitants.

The physical disadvantages of human life where the inhabitants of entire square miles are herded together at the rate of twenty persons in each dwelling, and upward of 300 to the acre, or nearly 200,000 persons to a square mile, including the area covered by warehouses, manufactories, and streets, present at once the complex problems and most essential requirements with which public health authorities of the city have to deal. Experience proves that definite knowledge of the inhabitants of such dense and commingled tenements and crowded districts is indispensably necessary to the most judicious and useful exercise of sanitary authority among them. Unfortunately, the enumerations of the census, the records of the municipal police, and the inspections of tenement-houses and other buildings, fail to produce such a complete registration of the inhabitants, and their dwellings and their ways of daily life, as the interests of the public health require. Incompleteness of the public registration of marriages and births in such a population, and with the primary return of all these records depending upon the voluntary faithfulness of persons who may professionally be present at the events which thus are subject to registration, is only one of the numerous defects which exist in relation to exact kinds of knowledge of the social state of all classes of the inhabitants.

In the densely-populated quarters of the city we witness the greatest excess of mortality, the largest fluctuations of death-rates, the most preventable waste of infant life, and the greatest necessity for exact applications of sanitary knowledge to defined and localized conditions of sanitary insecurity.

AGES, NATIONALITIES, SOCIAL STATE, AND DOMICILIARY DISTRIBUTION OF THE CITY POPULATION.

In the tabulated abstract, in a note on the following page, the fact appears that 111,205 of the inhabitants, or 11.8 per centum of the total population, at the date of the last census, were under 5 years of age; also that 38.37 per

cent. is under 18 years, and 61.63 per cent. is 18 years old and upward. That portion of the population which claimed the United States as their native land amounted to 523,198, and of the foreign born amounted to 419,694. The females numbered 485,175, and the males 457,117. The child population under 5 years of age bears a vastly larger ratio to the total than is commonly believed, but not as high as is found in certain cities of Great Britain. New York has 118 such young children in every 1,000 inhabitants, London has 129; the entire State of New York has 119, and the States of Massachusetts and Maine have less than 108 children of these ages to every 1,000 inhabitants.¹ The number of infants enumerated in the city at each successive census conclusively shows that, notwithstanding the vast aggregation of homeless and transient adults and youths in this city, the socially abandoned life of many, and the childless state of thousands of families whose wealth and gayety are substituted for the higher riches and joys of homes with children, yet this great city presents one-ninth of its total population as infants under five years of age.

¹ By the kindness of Prof. FRANCIS A. WALKER, the Superintendent of the Ninth Census, the following analysis of the child population of this city has been supplied for the use of this Bureau. The figures for the infant ages, for the city of New York, are as follows:

| | |
|--|---------|
| Under 1 year of age..... | 24,960 |
| 1 and under 2 years of age..... | 21,381 |
| 2 " " 3 " " | 22,417 |
| 3 " " 4 " " | 21,487 |
| 4 " " 5 " " | 21,010 |
| Total number of children under 5 years of age..... | 111,205 |

"The above yields as the per cent. of total population in New York City found under the age of 5 years 11.8" (cf the total population).

"For the United States the per cent. is 14.3; for the State of New York, 11.9, and for the State of New Hampshire, 9.3."

The following table exhibits the

Percentage of the Population under 5 Years of Age in each State, as ascertained in the Census of 1870.

| Percentage under 5 yrs. old. | Percentage under 5 yrs. old. |
|------------------------------|------------------------------|
| Alabama..... | 15.69 |
| Arizona..... | 7.75 |
| Arkansas..... | 16.95 |
| California..... | 12.18 |
| Colorado..... | 13.75 |
| Connecticut..... | 10.91 |
| Dakota..... | 14.46 |
| Delaware..... | 13.36 |
| District of Columbia..... | 13.49 |
| Florida..... | 16.24 |
| Georgia..... | 15.99 |
| Idaho..... | 7.16 |
| Illinois..... | 15.38 |
| Indiana..... | 15.07 |
| Iowa..... | 15.97 |
| Kansas..... | 16.31 |
| Kentucky..... | 15.66 |
| Louisiana..... | 15.21 |
| Maine..... | 10.80 |
| Maryland..... | 13.89 |
| Massachusetts..... | 10.76 |
| Michigan..... | 13.86 |
| Minnesota..... | 16.14 |
| Mississippi..... | 16.58 |
| Missouri..... | 16.05 |
| Montana..... | 7.13 |
| Nebraska..... | 15.86 |
| Nevada..... | 7.75 |
| New Hampshire..... | 9.32 |
| New Jersey..... | 13.20 |
| New Mexico..... | 14.50 |
| New York..... | 11.87 |
| North Carolina..... | 15.24 |
| Ohio..... | 14.05 |
| Oregon..... | 15.18 |
| Pennsylvania..... | 13.97 |
| Rhode Island..... | 10.71 |
| South Carolina..... | 15.49 |
| Tennessee..... | 15.93 |
| Texas..... | 16.44 |
| Utah..... | 19.23 |
| Vermont..... | 11.30 |
| Virginia..... | 14.97 |
| Washington..... | 15.06 |
| West Virginia..... | 16.45 |
| Wisconsin..... | 14.89 |
| Wyoming..... | 7.21 |

The high death-rate in this city holds close relations to this high percentage of infant life, and still more important are the unhygienic agencies of the domestic and physical circumstances which surround the greater portion of this infantile population.

The actual birth-rate and the ratio of marriages yearly, to the population in this city, cannot be stated with entire accuracy, because of incompleteness in the returns in these two branches of records; but as each of the census enumerations in 1865, taken by order of the State Legislature, found that nearly as large a percentage of the inhabitants of this city were living in matrimony as was found in the rest of the State the fact is obvious that the ratio of marriage annually in this city is not below that of the average marriage-rate in the State generally. The last national census found 185,789 families living in this city. These are the chief statistical records we possess concerning the social condition of the inhabitants indicated by conjugal and family life. But the ratio of marriages in the city the past two years plainly shows that a greater number of persons each year enter upon matrimony in New York than in any equally large city in Great Britain, *one per cent.* more than in England and Wales;¹ and a still greater percentage than in Ireland and Scotland. Though, if judged by the truest standard of prosperous family-life and separate homes, the civilization of great cities may be degenerating, still it is true, even in New York, that the struggle against exorbitant rents and prices has not yet produced such checks upon the institution of conjugal ties as are witnessed in some of the great cities of Europe.

The infant population (under five years of age) in the city of New York at the last census, as we have mentioned, is within one-tenth of one per cent. of that in the State at large. It is from the young children of the city that Death reaps an excessive harvest every year; yet, with all the excess of infant mortality in our city, the average proportion of child-life to adult-life continues to be maintained, thus proving that the annual birth-rate is higher than in the rural districts.

The high proportionate number of living children under five years of age, enumerated in each successive census in this city, is one of the fixed facts that may justly concern sanitary authorities, for not less than 80 per cent. of infant life is found in the tenements of the poor. In numerous tenement-districts scarcely half the infants survive to their second birthday, and in the entire city scarcely 60 in 100 of the total number born survive to their fourth natal anniversary. The statistical statement which we may properly present to illustrate this subject, without referring to the registered records of birth, reads as follows:

¹ The marriage-rate in England and Wales in the year 1871, an exceptionally prosperous year, was 16.7 to the 1,000 inhabitants living. The ratio in 34 years, consecutively, ending January 1, 1872, was 16.4 per 1,000.

| YEARS OF THESE RECORDS. | 1866. | 1867. | 1868. | 1869. | 1870. | Total. |
|---|-------|--------|--------|--------|--------|--------|
| Deaths under 1 year of age..... | 7,769 | 7,464 | 8,157 | 7,405 | 8,383 | 89,173 |
| “ from 1 to 2 years of age..... | ..... | 2,794 | 2,888 | 2,906 | 2,703 | 11,291 |
| “ “ 2 “ 3 “ “ “..... | ..... | ..... | 1,059 | 1,295 | 1,151 | 3,496 |
| “ “ 3 “ 4 “ “ “..... | ..... | ..... | ..... | 733 | 664 | 1,397 |
| “ “ 4 “ 5 “ “ “..... | ..... | ..... | ..... | ..... | 432 | 432 |
| Yearly totals, and the grand total of deaths of the { children born in that quinquennial.....} | 7,769 | 10,258 | 12,095 | 12,339 | 13,333 | 55,794 |

| | |
|--|----------|
| Total living under 5 years of age January 1, 1871..... | 111,025 |
| “ living and dead that were born during the 5 years ending January 1, 1871..... | 166,999 |
| Average number added to the population by birth each year..... | 33,399.9 |
| Average number lost annually under 5 years of age, by death, from those children whose birth occurred subsequent to December 31, 1865..... | 11,159 |

In the above summary, 33,399.9 (33,400) is given as the equivalent of the total annual number of births occurring in the city during the five years just preceding the reënumeration in the last national census. In this abstract the unquestioned fact is assumed that as many infants and children are conveyed away from the city as are brought into it from other places. This statistical abstract presents the proof that a little more than 33 per cent. of all infant life perishes before attaining the age of five years. The following facts, therefore, are clearly before us:

That a high birth-rate and a large percentage of infant population in this city have important relations to the sanitary history of the different localities and classes in the city, and to the death-rate in each season of the year; that the statistics of mortality, and the fluctuations of the death-rate in the different wards of the city, and at different periods of the year, are more largely determined by that portion of the population under five years of age, in the various wards, than by all other portions (ages) of the inhabitants; and that the urgency of sanitary wants, and the necessity of improved facilities for healthful home-life may be correctly determined by carefully understanding the causes of the fluctuating death-rate in the different wards, streets, blocks, and houses of the city. In the succeeding chapters, relating to mortality in the year 1873, some evidence will appear which throws a practical light upon these points. The circumstances of daily life, the domestic condition of the inhabitants, the vast number of inmates of hospitals and asylums, the great number of immigrants undergoing acclimatization in our midst, the pressure of ceaseless excitement and anxiety which in the great city no affluence or advantages of position prevent, and chiefly the defectiveness of homes for the common people in this city, give to some of the causes of death an excessive preponderance, and also impart other features which are strikingly characteristic of the mortality records of this great centre of population.

The Suburban New York.—The outer circle of New York, within which are already settled in homes several hundred thousand people, whose estate or business interests are in this city, has an important relation to

the vital statistics of the city itself, for, while a large number of the most affluent and healthful families have sought such suburban homes, the hospitals and other public charities of our city receive the sick and invalid classes from all the environs, and the deaths of all such persons in these institutions are charged in our city lists of mortality. The outer rim of the metropolis, if measured by a radius extending fifteen miles in circuit from the Central Depot, Forty-second Street, measures an area upon which dwell nearly 2,000,000 people. Upon the outer rim of this metropolitan area, and even for miles beyond it, thousands of families are found that have transferred their residence from crowded tenements in New York to separate home-like dwellings, where the chance of saving their young children is greater than in the city tenements.

With vast numbers of thrifty families thus withdrawn from the city, with the representatives of this outer population busy in its affairs by day, and with its hospitals, asylums, and other charitable institutions, open to nearly all the inhabitants of the State, the vital statistics of this city are necessarily characterized by peculiarities corresponding with these conditions which prevail in the movement and distribution of the metropolitan and suburban population. The rates of mortality, of birth and of marriage, are so largely affected by these conditions that these ratios in our city population cannot be presumed to fix the standards for the populations of the suburban districts nor for the State generally. No other city in the United States, excepting Boston, lodges so large a proportion of its active population in homes beyond its own limits; and in no other great city, excepting Paris and Vienna, can be seen so large a percentage of hospital and asylum inmates that have come from suburban and more distant places. We shall devote a brief statistical abstract and section to this class of our population and decedents in a subsequent part of this report. The sanitary state of the foreign immigrant portion of our city population, and the death-rates in it and in the young children of immigrants, will also claim our notice. In regard to the particulars here mentioned, as well as to many others, there must be a correct and somewhat comprehensive knowledge concerning the peculiar state and qualities of the inhabitants of this cosmopolitan and crowded city. In so great a degree has New York ceased to be a city of homes and of natural and healthful modes of life, and so great are the perils to infants and young children from these circumstances, that each branch of vital statistics must be studied with due regard to these circumstances of the physical and social state of the people.

SUMMARY OF THE QUARTERLY STATISTICS.

State of the Public Health during the Winter Quarter ending March 29, 1873.—The unusually high rate of mortality which prevailed throughout the year 1872 continued into the winter of 1873. Small-pox, scarlatina, and croup, were charged with 546 deaths, and the zymotic diseases alto-

gether were charged with 1,644. The total number of deaths during the quarter was 6,815. The following abstract presents in comparison the total mortality of the first quarter in the year for six successive years :

| COMPARATIVE MORTALITY OF THE WINTER QUARTER | | | | | | | |
|---|--------------|--------------|--------------|--------------|--------------|--------------|---------------------|
| IN SIX CONSECUTIVE YEARS. | | | | | | | |
| DISEASES. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Average 6 Years. |
| Zymotic diseases..... | 1,243 | 1,347 | 1,526 | 1,606 | 2,010 | 1,644 | 1562.7 |
| Constitutional diseases..... | 1,502 | 1,380 | 1,551 | 1,671 | 1,653 | 1,628 | 1564.1 |
| Local diseases..... | 2,643 | 2,628 | 2,833 | 2,647 | 2,963 | 2,790 | 2750.7 |
| Developmental diseases..... | 394 | 387 | 404 | 457 | 517 | 514 | 445.5 |
| Deaths by violence..... | 171 | 177 | 203 | 241 | 263 | 239 | 215.7 |
| Total deaths..... | 5,953 | 5,919 | 6,517 | 6,622 | 7,406 | 6,815 | 6538.7 |
| Small-pox..... | 2 | 17 | 201 | 205 | 320 | 67 | 135.8 |
| Measles..... | 56 | 83 | 23 | 241 | 106 | 73 | 102.8 |
| Scarlatina..... | 818 | 299 | 413 | 274 | 301 | 242 | 808.7 |
| Diphtheria..... | 92 | 87 | 94 | 89 | 93 | 169 | 104.0 |
| Croup..... | 115 | 163 | 120 | 133 | 201 | 237 | 161.5 |
| Whooping-cough..... | 35 | 85 | 43 | 54 | 247 | 67 | 89.3 |
| Typhus fever..... | 48 | 33 | 31 | 12 | 37 | 7 | 25.0 |
| Typhoid fever..... | 74 | 102 | 100 | 47 | 59 | 55 | 72.8 |
| Cerebro-spinal fever..... | 18 | 8 | 12 | 9 | 108 | 87 | 89.5 |
| Diarrhoeal diseases..... | 150 | 196 | 130 | 255 | 228 | 267 | 204.3 |
| Erysipelas..... | 31 | 54 | 50 | 54 | 64 | 83 | 56.0 |
| Gout..... | 2 | ..... | ..... | ..... | 1 | 10 | 2.2 |
| Rheumatism..... | 19 | 12 | 19 | 32 | 29 | 50 | 26.3 |
| Cancer..... | 81 | 83 | 79 | 84 | 98 | 99 | 86.5 |
| Phthisis..... | 939 | 892 | 974 | 1,195 | 1,155 | 1,126 | 1055.2 |
| Diseases of nervous system..... | 895 | 816 | 825 | 655 | 809 | 720 | 791.7 |
| Heart-diseases..... | 201 | 205 | 240 | 211 | 256 | 230 | 223.8 |
| Pneumonia..... | 534 | 649 | 650 | 642 | 772 | 705 | 659.2 |
| Bronchitis..... | 279 | 255 | 254 | 253 | 326 | 343 | 290.0 |
| Bright's disease and nephritis..... | 143 | 165 | 252 | 267 | 243 | 247 | 220.3 |
| Puerperal diseases..... | 55 | 72 | 69 | 103 | 136 | 157 | 67.2 |
| Suicides..... | 29 | 18 | 23 | 22 | 33 | 28 | 26.3 |
| Deaths in institutions..... | 1,005 | 1,016 | 1,334 | 1,229 | 1,464 | 1,288 | 1222.7 |
| Persons 70 years old and over..... | 295 | 297 | 340 | 344 | 392 | 390 | 343.0 |
| Children under 5 years of age..... | 2,518 | 2,800 | 2,926 | 2,934 | 3,253 | 2,910 | 2953.5 |

The decrease of infant mortality during the quarter was a favorable result, chiefly due to the decrease of small-pox and a few other causes of death that had prevailed conspicuously during the preceding two years.

Inflammatory diseases of the lungs and tubercular phthisis during the quarter destroyed their usual quota, as shown by the following abstract of records of the first quarter in seven successive years :

| DISEASES | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
|-------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Bronchitis and Pneumonia..... | 663 | 613 | 904 | 904 | 925 | 1,098 | 1,051 |
| Phthisis Pulmonalis. | 908 | 980 | 802 | 974 | 1,195 | 1,155 | 1,126 |

DEATHS OCCURRING EACH WEEK, BY CLASSES.

FOR THE FIRST QUARTER, ENDING MARCH 29, 1878.

| CLASSES. | WEEKS. | | | | | | | | | | | | | Total each Class. |
|---------------------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|-------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| | Week ending January 4. | Week ending January 11. | Week ending January 18. | Week ending January 25. | Week ending February 1. | Week ending February 8. | Week ending February 15. | Week ending February 22. | Week ending March 1. | Week ending March 8. | Week ending March 15. | Week ending March 22. | Week ending March 29. | |
| Zymotic | 86 | 122 | 126 | 143 | 189 | 142 | 186 | 187 | 119 | 181 | 128 | 125 | 110 | 1,644 |
| Constitutional..... | 68 | 119 | 142 | 129 | 186 | 145 | 118 | 180 | 128 | 189 | 185 | 114 | 180 | 1,628 |
| Local | 150 | 192 | 289 | 191 | 221 | 218 | 228 | 204 | 206 | 220 | 233 | 266 | 227 | 2,790 |
| Developmental..... | 27 | 89 | 44 | 32 | 43 | 49 | 44 | 46 | 84 | 40 | 83 | 32 | 51 | 514 |
| Violence..... | 12 | 19 | 13 | 16 | 18 | 21 | 17 | 28 | 21 | 15 | 24 | 21 | 14 | 289 |
| Total..... | 848 | 491 | 564 | 511 | 557 | 575 | 538 | 545 | 508 | 545 | 558 | 558 | 532 | 6,515 |

The distribution of the total mortality, and of that which was caused by the various zymotic diseases, is shown upon the opposite page.

TABLE I.—SHOWING THE DISTRIBUTION OF THE TOTAL MORTALITY, AND THE DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, DIARRHOICAL MALADIES, AND OTHER ZYMOTIC DISEASES, DURING THE THIRTEEN WEEKS ENDING SATURDAY, MARCH 29, 1873. (FIRST QUARTER.)

| WARDS. | MORTALITY IN HOSPITALS AND INSTITUTIONS. (FIRST QUARTER OF THE YEAR.) | | | | | | | | | | | | | Total Deaths from all Causes. | Total Population (in Wards), Census of 1870. |
|---------------------|--|----------|-------------|-------------|--------|-----------------|---------------|----------------|----------|--------------------------|----------------------------|-------------------------|-------------------------------------|-------------------------------|---|
| | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | Cholera. | All Diarrhoeal Diseases. | Cerebro-Spinal Meningitis. | Other Zymotic Diseases. | Total Deaths from Zymotic Diseases. | | |
| First | .. | 1 | 2 | 2 | 5 | .. | 1 | .. | 1 | 2 | 12 | 27 | 115 | 14,463 | |
| Second | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 18 | 1,312 | |
| Third | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 11 | 8,719 | |
| Fourth | 1 | 3 | 6 | 5 | 5 | .. | 3 | .. | .. | .. | 8 | 35 | 137 | 23,743 | |
| Fifth | .. | 3 | 3 | 16 | 6 | .. | 2 | .. | 2 | 3 | 10 | 43 | 120 | 17,160 | |
| Sixth | .. | 7 | 4 | 11 | 13 | 6 | .. | .. | 7 | .. | 23 | 71 | 228 | 21,153 | |
| Seventh | 3 | 1 | 7 | 4 | 10 | 6 | .. | .. | 6 | 7 | 16 | 53 | 273 | 44,518 | |
| Eighth | 1 | 1 | 7 | 7 | 7 | 4 | .. | .. | 6 | 3 | 12 | 49 | 255 | 34,918 | |
| Ninth | .. | .. | 6 | 13 | 14 | 2 | 1 | 3 | 7 | 8 | 11 | 60 | 286 | 47,609 | |
| Tenth | .. | 1 | 8 | 13 | 14 | 1 | .. | .. | 11 | 2 | 7 | 69 | 260 | 41,431 | |
| Eleventh | .. | 4 | 35 | 6 | 20 | 5 | 3 | .. | 16 | 4 | 23 | 121 | 461 | 61,230 | |
| Twelfth | 2 | 28 | 22 | 8 | 15 | 5 | 3 | .. | 24 | 4 | 53 | 167 | 503 | 47,497 | |
| Thirteenth | 1 | .. | 4 | 5 | 8 | 2 | .. | .. | 3 | 3 | 7 | 34 | 171 | 33,364 | |
| Fourteenth | .. | .. | 1 | 5 | 7 | 1 | 3 | .. | 2 | 4 | 5 | 28 | 177 | 26,436 | |
| Fifteenth | .. | 3 | 1 | 3 | 4 | 2 | .. | .. | 92 | 1 | 20 | 128 | 281 | 27,587 | |
| Sixteenth | 1 | 4 | 4 | 9 | 12 | 5 | .. | .. | 5 | 4 | 19 | 54 | 250 | 48,359 | |
| Seventeenth | 2 | 1 | 17 | 15 | 21 | 5 | .. | .. | 18 | 2 | 19 | 101 | 633 | 95,865 | |
| Eighteenth | 1 | 3 | 11 | 7 | 11 | 7 | .. | .. | 8 | 2 | 20 | 74 | 346 | 59,593 | |
| Nineteenth | 53 | 1 | 20 | 12 | 17 | 5 | 1 | .. | 32 | 12 | 45 | 207 | 935 | 86,090 | |
| Twentieth | .. | 7 | 32 | 9 | 20 | 5 | 4 | .. | 14 | 10 | 20 | 121 | 475 | 75,407 | |
| Twenty-first | 1 | 3 | 12 | 4 | 16 | 4 | .. | .. | 6 | 1 | 24 | 72 | 439 | 56,703 | |
| Twenty-second | 1 | 4 | 40 | 14 | 12 | 2 | 3 | .. | 8 | 13 | 21 | 122 | 466 | 71,349 | |
| Totals | 67 | 73 | 242 | 169 | 237 | 67 | 55 | .. | 207 | 87 | 373 | 1,614 | 6,315 | 942,292 | |

Castle Garden and Emigrant Depot, 2.
 Fourth Precinct Station, 2.
 { City Prison, 12; Home of Industry, 2; Centre Street Hospital, 26; Sixth Precinct Station, 2.
 Eighth Precinct Station, 1.
 { St. Vincent's Hospital, 26; Jefferson Market Prison, 1; St. Joseph's Home for the Aged, 2.
 Essex Street Prison, 2; Tenth Precinct Station, 3.
 St. Francis's Hospital, 65; Eleventh Precinct Station, 3.
 { House of Good Shepherd, 10; Deaf and Dumb Asylum, 2; St. Joseph's Asylum, 1; E. L. Idiot Asylum, 7; Ward's Island, 152; Kamall's Island, 9; Bloom-bridge Lunatic Asylum, 6; Reception Hospital, 5; Shepherd's Fold, 1; Infants' Hospital, 36; Soldiers' Retreat, 2; N. Y. City Asylum for the Insane, 30; Colored Orphan Asylum, 2; House of Mercy, 1.
 { Fourteenth Precinct Station, 1; Convent, Houston Street, 1.
 Foundling Asylum, 159; N. Y. Infant Asylum, 7.
 Seventeenth Precinct Station, 1.
 { St. Elizabeth's Hospital, 1.
 City Lunatic Asylum, 31; Almshouse, 19; Peniten- tiary, 2; Small-pox Hospital, 51; Charity Hospital, 175; Workhouse, 7; Epileptic and Paralytic Hos- pital, 7; German Hospital, 15; Fever Hospital, 6; Habemann, 2; Colored Home, 44; Nursery and Child's Hospital, 29; St. Luke's Hospital, 28; E. C. Orphan Asylum, 3; Women's Hospital, 1; Hospital for Ruptured and Crippled, 1; Mount Sinai Hospital, 14; Presbyterian Home, 10.
 Home for Aged, 6; St. Vincent de Paul's, 1.
 Bellevue Hospital, 230.
 Roosevelt Hospital, 26.

The ratio of the zymotic causes of mortality was conspicuously excessive in the Fifth, Sixth, Eleventh, Fourteenth, and Twenty-second Wards. In those five wards, with a total population amounting to 200,318 at the last census, there were 6,098 deaths during this quarter of the year, and 2,093 of these, or 34.32 per cent., were certified from the zymotic diseases. Scarletina and diphtheria were especially prevalent in those wards.

In the general abstract, by ages and sexes, following, the ratio of infant mortality is seen at its minimum for the year, and a little lower than the mean of the preceding three years. The mean percentage of the deaths of infants under one year of age in the corresponding quarter of the last eight years, was of the total mortality at all ages; and the percentage this year was 24.66. Children under five years of age suffered 42.69 per centum of the total mortality. The mean percentage of the mortality of children under five upon the total number of deaths in the past eight years is 49.94. Slight as this gain may seem, it is worthy of notice, for it is believed to be one of the results of sanitary improvement in city tenements. While the tenement population has been growing more and more dense, and the perils which such domestic crowding implies to infant life have necessarily increased, there has been, as the records of the Health Department show, in the past seven years, a vast amount of structural improvement and supervisory work for sanitary purposes in the tenement-houses by direction of the Health Department. This clearly-defined decrease in the total infant mortality in the winter quarter appears to be in the same line of evidence as that of the decreasing ratio of mortality from diseases of the lungs, as shown in the abstract upon a preceding page, only that any agencies which for the whole infant population diminish the probabilities of early death, constitute the most sensitive test of the efficiency of sanitary improvements. While stating this conclusion in the presence of the fact that there is ample evidence that the birth-rate in the successive years of the past decade is undiminished, and with our knowledge of the fact that the overcrowding of tenements is steadily increasing, there is one circumstance concerning the homeless and the foundling class of infants which should be mentioned as bearing upon the diminished death-rate of infancy in the cold season; namely, that during the past five years the public institutions which give shelter and care to these classes have developed their resources to a degree never before equaled in the city, and have so successfully applied their beneficent means as to reduce in some measure the rate of mortality in such infants. In the winter quarter, such beneficent care produces conspicuously good results, and in summer such results are measured by the means afforded for the transfer of the infants to the rural districts.

The total mortality in the hospitals and other public institutions amounted to 1,288 deaths, of which 230 occurred in Bellevue Hospital, 298 in the institutions on Blackwell's Island, and 152 at Emigrant Refuge and Hospital on Ward's Island. There were 231 deaths in the four great public

charities for homeless infants, and the constant number under care in these four infant hospitals and homes was between 1,500 and 1,600. The constant or daily population of the entire group of public institutions in which the 1,288 deaths occurred was about 10,000 persons, and, including penitentiary, workhouse, and almshouse, and the Emigrant Refuge, the total number of persons in which these deaths occurred was about 36,000.

The rate of mortality in the whole population of the city during this quarter was equivalent to a yearly death-rate of 27.26 in 1,000 inhabitants, the city population being estimated at 1,000,000, the number fully warranted by the last census. The month of February had the greatest number of deaths. The days of greatest mortality during the quarter, and the meteorological conditions which were observed in those days, are shown in the following:

| ABSTRACT OF OBSERVATIONS | | | | | | | |
|--|-------------------------|-----------------------|--|-----------------------|-------------------|-------------------|---------------------------------------|
| DURING THE DAYS OF GREATEST MORTALITY IN THE WINTER OF 1873. | | | | | | | |
| DATES. | Total Number of Deaths. | Deaths under 5 Years. | Deaths of Persons 70 Years and upward. | Deaths from Phthisis. | Mean Temperature. | Average Humidity. | Mean Temperature of the Previous Day. |
| January 2..... | 94 | 43 | 3 | 18 | 27.66 | 83.48 | 26.00 |
| “ 14..... | 93 | 39 | 4 | 18 | 41.53 | 59.90 | 36.40 |
| February 4..... | 92 | 49 | 1 | 15 | 44.10 | 87.03 | 23.00 |
| “ 12..... | 90 | 50 | 6 | 10 | 34.00 | 64.10 | 35.40 |
| “ 26..... | 99 | 43 | 9 | 19 | 32.33 | 59.20 | 29.75 |

| ABSTRACT OF OBSERVATIONS | | | | | | | |
|-------------------------------------|-------------------------|-----------------------|--|-----------------------|-------------------|-------------------|---------------------------------------|
| DURING THE DAYS OF LEAST MORTALITY. | | | | | | | |
| DATES. | Total Number of Deaths. | Deaths under 5 Years. | Deaths of Persons 70 Years and upward. | Deaths from Phthisis. | Mean Temperature. | Average Humidity. | Mean Temperature of the Previous Day. |
| January 10..... | 59 | 25 | 2 | 11 | 22.96 | 33.46 | 31.16 |
| “ 11..... | 65 | 29 | 11 | 7 | 11.73 | 54.43 | 22.96 |
| “ 22..... | 60 | 25 | 5 | 8 | 37.00 | 55.30 | 36.66 |
| February 27..... | 61 | 27 | 2 | 8 | 30.50 | 90.73 | 32.33 |
| March 20..... | 66 | 24 | 3 | 10 | 36.50 | 85.40 | 46.66 |

Though it is true that during protracted periods of winter, inclemency, extreme cold, and the excessive alternations of temperature rule the death-rates, the foregoing abstract shows that the daily temperature alone does not directly rule these varying rates.

TABLE No. II.
DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,
 IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, MARCH 29, 1873.

| MONTHS. | NATIVITY. | | | | Colored. | | Under One Year. | |
|--|----------------|-------|----------|-------|----------|------|-----------------|-------|
| | United States. | | Foreign. | | M. | F. | M. | F. |
| | M. | F. | M. | F. | | | | |
| Four weeks ending January 25..... | 595 | 575 | 402 | 334 | 12 | 26 | 235 | 226 |
| Four " " February 22..... | 739 | 646 | 469 | 361 | 31 | 29 | 295 | 250 |
| Five " " March 29..... | 916 | 785 | 546 | 491 | 30 | 31 | 397 | 274 |
| Total..... | 2,253 | 1,959 | 1,417 | 1,186 | 73 | 86 | 980 | 750 |
| Percentage of deaths in each period of life on total mortality of quarter... | 83.06 | 28.74 | 20.79 | 17.40 | 1.07 | 1.26 | 13.66 | 11.00 |
| Total of both sexes..... | 4,212 | | 2,603 | | 159 | | 1,650 | |
| Percentage (both sexes) on total mortality of quarter..... | 61.80 | | 33.19 | | 2.33 | | 24.66 | |

TABLE No. II.—Continued.

| MONTHS. | 35 | | 40 | | 45 | | 50 | | 55 | |
|--|------|------|------|------|------|------|------|------|------|------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| Four weeks ending January 25..... | 65 | 44 | 67 | 34 | 59 | 40 | 46 | 26 | 23 | 21 |
| Four " " February 22..... | 61 | 63 | 62 | 50 | 57 | 37 | 51 | 24 | 43 | 27 |
| Five " " March 29..... | 69 | 62 | 80 | 66 | 88 | 62 | 75 | 36 | 42 | 28 |
| Total..... | 195 | 174 | 209 | 150 | 204 | 139 | 172 | 86 | 118 | 76 |
| Percentage of deaths in each period of life on total mortality of quarter... | 2.86 | 2.55 | 3.07 | 2.20 | 2.99 | 2.04 | 2.52 | 1.26 | 167 | 1.12 |
| Total of both sexes..... | 369 | | 359 | | 343 | | 258 | | 189 | |
| Percentage (both sexes) on total mortality of quarter..... | 5.41 | | 5.27 | | 5.03 | | 3.78 | | 2.79 | |

TABLE No. II.—Continued.

DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,

IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, MARCH 29, 1973.

| 1 | | 2 | | 3 | | 4 | | Total under 5 Years. | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | |
|------|------|------|------|------|------|------|-----|----------------------|-------|------|------|------|-----|------|------|------|------|------|------|------|------|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 75 | 74 | 47 | 42 | 37 | 25 | 29 | 20 | 423 | 357 | 33 | 39 | 15 | 13 | 13 | 23 | 34 | 52 | 54 | 53 | 52 | 56 |
| 104 | 74 | 51 | 63 | 40 | 45 | 23 | 13 | 516 | 450 | 44 | 33 | 17 | 14 | 36 | 35 | 59 | 60 | 68 | 55 | 71 | 37 |
| 113 | 82 | 69 | 56 | 45 | 33 | 32 | 23 | 656 | 473 | 53 | 49 | 18 | 20 | 31 | 35 | 62 | 62 | 66 | 102 | 81 | 67 |
| 292 | 280 | 167 | 161 | 122 | 103 | 84 | 66 | 1,595 | 1,315 | 137 | 126 | 50 | 52 | 85 | 93 | 155 | 174 | 183 | 210 | 204 | 169 |
| 4.23 | 3.38 | 2.45 | 2.36 | 1.79 | 1.58 | 1.23 | .97 | 23.40 | 19.29 | 2.01 | 1.85 | .73 | .76 | 1.25 | 1.36 | 2.27 | 2.55 | 2.76 | 3.03 | 2.99 | 2.35 |
| 522 | | 323 | | 230 | | 150 | | 2,910 | | 263 | | 102 | | 173 | | 349 | | 393 | | 364 | |
| 7.66 | | 4.81 | | 3.87 | | 2.20 | | 42.69 | | 3.86 | | 1.49 | | 2.61 | | 4.32 | | 5.34 | | 5.34 | |

TABLE No. II.—Continued.

| 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. |
|------|------|------|------|------|------|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----------------|-----|-----------------|-------|-------------------|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| 17 | 33 | 33 | 27 | 29 | 15 | 16 | 13 | 4 | 22 | 1 | 4 | 2 | 2 | 2 | .. | .. | .. | 1,000 | 909 | 1,909 |
| 37 | 28 | 25 | 21 | 25 | 25 | 16 | 15 | 11 | 17 | 5 | 2 | 3 | 3 | 1 | 1 | .. | .. | 1,208 | 1,007 | 2,215 |
| 38 | 35 | 37 | 32 | 22 | 36 | 19 | 25 | 12 | 15 | 7 | 9 | 1 | 5 | .. | 3 | .. | 2 | 1,462 | 1,229 | 2,691 |
| 92 | 96 | 95 | 80 | 76 | 76 | 51 | 53 | 27 | 54 | 13 | 15 | 6 | 10 | 3 | 4 | .. | 2 | 3,670 | 3,145 | 6,815 |
| 1.35 | 1.41 | 1.39 | 1.17 | 1.11 | 1.11 | .75 | .73 | .40 | .79 | .19 | .22 | .03 | .14 | .04 | .06 | .. | .03 | 53.85 | 46.15 | .... |
| 133 | | 175 | | 152 | | 104 | | 81 | | 23 | | 16 | | 7 | | 2 | | 6,515 |  | .... |
| 2.76 | | 2.56 | | 2.22 | | 1.53 | | 1.19 | | .41 | | .23 | | .10 | | .03 | | 100.00 |  | .... |

State of the Public Health during the Spring Quarter, ending June 28, 1873.—After twelve months of unusually high rates of mortality, the total number of deaths in the second quarter of 1873 was only 6,583 against 8,737 in the corresponding thirteen weeks of 1872. The deaths of children under five years of age amounted to 2,828, whereas, in the corresponding weeks of the previous year there were 4,253 deaths at the same ages. The mean temperature in April, 1873, was 46.69° Fahr.; in May, 58.80°; in June, 70.33°. The rainfall was equal to 9.15 inches depth of water. The prevailing winds were from the west in April and from the southeast in May and June, moving at an average velocity a little less than 180 miles a day.

The causes which served to reduce the mortality in this quarter 2,154 below the number of deaths that occurred in the second quarter of the previous year are found chiefly in the group of zymotic diseases and in the infantile deaths, as shown in the following abstract:

| SECOND QUARTER. | Deaths by small-pox. | Measles. | Scarlatina. | Whooping-cough. | Diarrhœal diseases. | Cerebro-spinal meningitis. | Number of deaths of infants under a year old. |
|-----------------|----------------------|----------|-------------|-----------------|---------------------|----------------------------|---|
| 1873. | 36 | 90 | 275 | 61 | 396 | 97 | 1,721 |
| 1872. | 459 | 187 | 367 | 190 | 567 | 492 | 2,448 |

**COMPARATIVE MORTALITY OF THE SPRING QUARTER,
IN SIX CONSECUTIVE YEARS.**

| DISEASES. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Average 6 years. |
|-------------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|------------------|
| Zymotic diseases..... | 1,358 | 1,776 | 1,679 | 1,970 | 3,150 | 1,654 | 1936.1 |
| Constitutional diseases..... | 1,374 | 1,293 | 1,468 | 1,506 | 1,657 | 1,588 | 1477.7 |
| Local diseases..... | 2,196 | 2,410 | 2,479 | 2,358 | 3,014 | 2,604 | 2510.2 |
| Developmental diseases..... | 380 | 312 | 406 | 472 | 500 | 482 | 417.0 |
| Deaths by violence..... | 265 | 274 | 261 | 315 | 356 | 305 | 296.0 |
| Total deaths..... | 5,523 | 6,065 | 6,298 | 6,621 | 8,737 | 6,583 | 6637.0 |
| Small-pox..... | 10 | 45 | 74 | 304 | 459 | 86 | 154.7 |
| Measles..... | 53 | 298 | 44 | 106 | 187 | 90 | 129.7 |
| Scarlatina..... | 351 | 255 | 258 | 196 | 367 | 275 | 288.7 |
| Diphtheria..... | 86 | 89 | 69 | 49 | 86 | 184 | 98.8 |
| Croup..... | 69 | 132 | 89 | 105 | 114 | 154 | 110.5 |
| Whooping-cough..... | 35 | 106 | 49 | 65 | 190 | 61 | 84.3 |
| Typhus fever..... | 40 | 33 | 30 | 21 | 17 | 14 | 25.8 |
| Typhoid fever..... | 58 | 50 | 71 | 39 | 62 | 56 | 56.0 |
| Cerebro-spinal fever..... | 7 | 13 | 6 | 19 | 492 | 97 | 105.7 |
| Diarrhœal diseases..... | 271 | 438 | 622 | 746 | 867 | 396 | 556.7 |
| Erysipelas..... | 45 | 55 | 42 | 50 | 73 | 60 | 54.2 |
| Gout..... | 2 | 1 | 1 | 1 | 1 | 1 | 1.0 |
| Rheumatism..... | 11 | 15 | 13 | 32 | 46 | 63 | 30.8 |
| Cancer..... | 93 | 69 | 95 | 83 | 107 | 92 | 89.8 |
| Phthisis..... | 867 | 764 | 905 | 1,006 | 1,048 | 1,055 | 940.8 |
| Diseases of nervous system..... | 743 | 738 | 862 | 706 | 970 | 608 | 751.2 |
| Heart-diseases..... | 174 | 207 | 185 | 215 | 236 | 345 | 227.0 |
| Pneumonia..... | 407 | 595 | 438 | 447 | 621 | 655 | 532.2 |
| Bronchitis..... | 210 | 232 | 187 | 246 | 257 | 263 | 237.5 |
| Bright's disease and nephritis..... | 150 | 138 | 217 | 291 | 292 | 257 | 231.7 |
| Puerperal diseases..... | 45 | 54 | 79 | 90 | 131 | 130 | 88.2 |
| Suicides..... | 27 | 27 | 22 | 29 | 34 | 33 | 28.7 |
| Deaths in institutions..... | 1,143 | 1,067 | 1,336 | 1,465 | 1,672 | 1,175 | 1309.7 |
| Persons 70 years old and over..... | 265 | 298 | 338 | 326 | 392 | 355 | 328.2 |
| Children under 5 years of age..... | 2,602 | 3,078 | 2,951 | 3,054 | 4,253 | 2,828 | 3126.8 |

DEATHS OCCURRING EACH WEEK, BY CLASSES,

FOR THE SECOND QUARTER, ENDING JUNE 23, 1873.

| CLASSES. | WEEKS. | | | | | | | | | | | | Total each Class. | |
|---------------------|-------------------------|--------------------------|--------------------------|--------------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|-------------------------|-------------------------|-------------------------|-------|
| | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | | 26 |
| | Week ending April 5. | Week ending April 12. | Week ending April 19. | Week ending April 26. | Week ending May 3. | Week ending May 10. | Week ending May 17. | Week ending May 24. | Week ending May 31. | Week ending June 7. | Week ending June 14. | Week ending June 21. | Week ending June 28. | |
| Zymotic..... | 116 | 132 | 114 | 100 | 110 | 136 | 128 | 126 | 123 | 121 | 127 | 160 | 161 | 1,654 |
| Constitutional..... | 122 | 140 | 133 | 132 | 121 | 133 | 130 | 110 | 109 | 99 | 108 | 111 | 90 | 1,588 |
| Local..... | 242 | 206 | 206 | 212 | 196 | 207 | 219 | 239 | 185 | 179 | 185 | 161 | 167 | 2,604 |
| Developmental..... | 46 | 28 | 48 | 45 | 31 | 44 | 37 | 44 | 29 | 34 | 30 | 37 | 29 | 452 |
| Violence..... | 17 | 23 | 13 | 20 | 20 | 29 | 23 | 23 | 39 | 32 | 21 | 22 | 23 | 305 |
| Total..... | 543 | 529 | 514 | 509 | 478 | 549 | 537 | 542 | 485 | 465 | 471 | 491 | 470 | 6,583 |

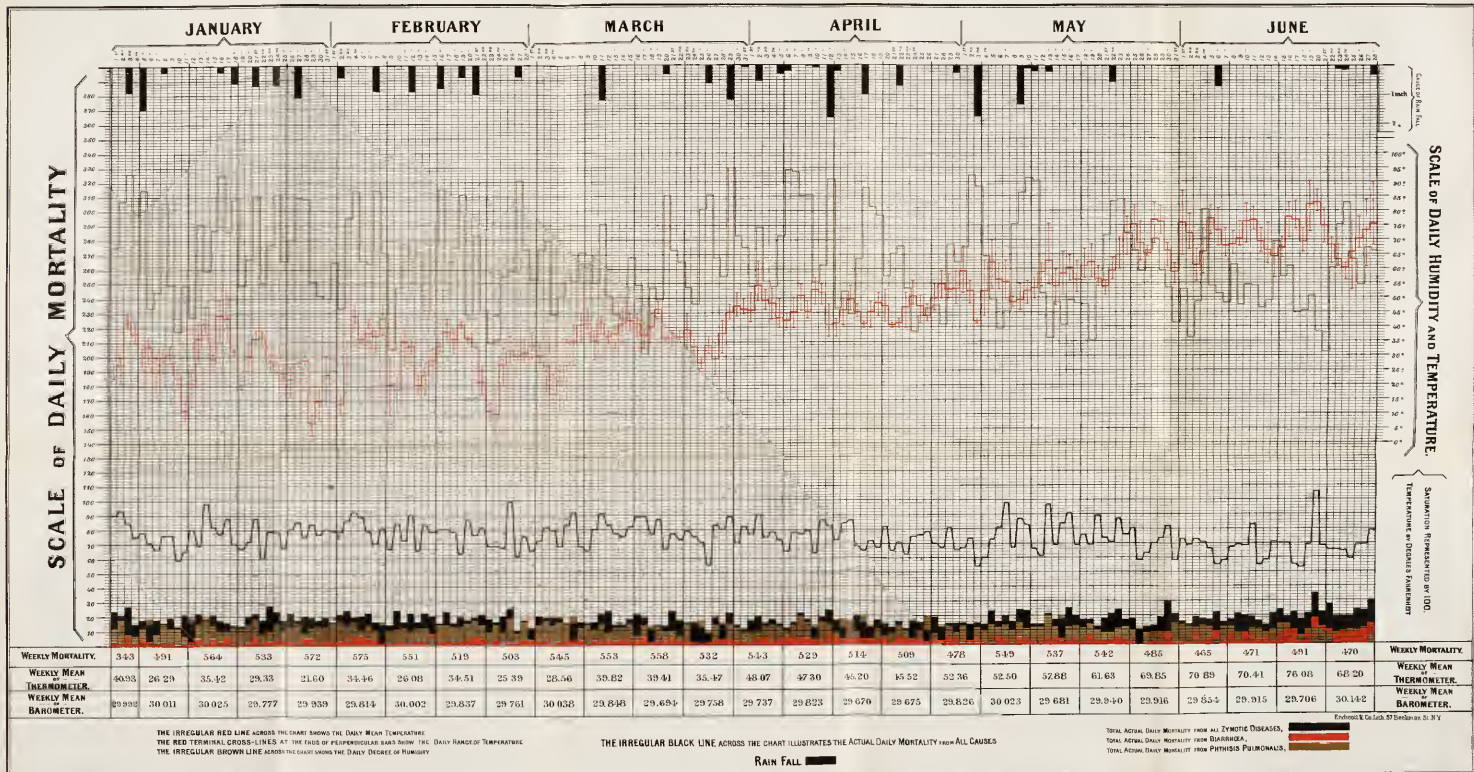
While other zymotic diseases had greatly decreased in their extent and fatality, scarlatina and diphtheria began to increase. The former was charged with 275 deaths in the second quarter, or 33 more than in the winter quarter; and the latter disease was charged with 184 deaths, or 15 more than the winter. There were 1,175 deaths in the public institutions, or 113 less than in the winter quarter. No unusual prevalence of diarrhoeal diseases was noticeable. The total number of deaths charged to such maladies amounted to only 396, whereas in the spring quarter of 1872 there were 867 deaths charged to these disorders.

The temperature marked 90° Fahr. on the 19th, 28th, and 30th of June, the mean temperature of the month being 70.33° Fahr. The actual number of deaths in the city on the 18th of June was 53, when the mean temperature was at 69°, after a week that had scarcely varied from that mean of temperature, but on the 20th, or next day following, the first rise of temperature to 90°, there were 106 deaths in the city, and on the 29th there were 99. During the first 27 days of June there was an average of six deaths daily attributed to diarrhoeal diseases, and in the same time the average daily number of deaths of children under 5 years of age was between 29 and 30, in an average total mortality equal to 66 deaths daily. The month of June, like the month of November, in New York, is conspicuously the most healthy month of the half-year to which it pertains. Mean temperatures of from 68° to 70° Fahr. in June, and of from 42° to 44° in November, seem to be almost equally favorable to life and health, so far as immediate results are concerned among the inhabitants of this city.

CHART

ILLUSTRATING THE ACTUAL DAILY MORTALITY DURING THE SIX MONTHS ENDING JUNE 28TH 1873.

(With the Meteorological Observations for the same Period)



DECEMBER.

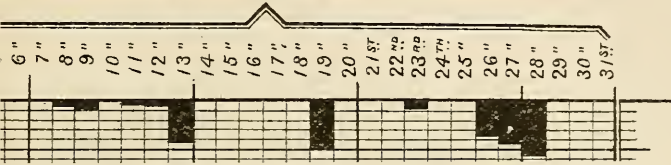
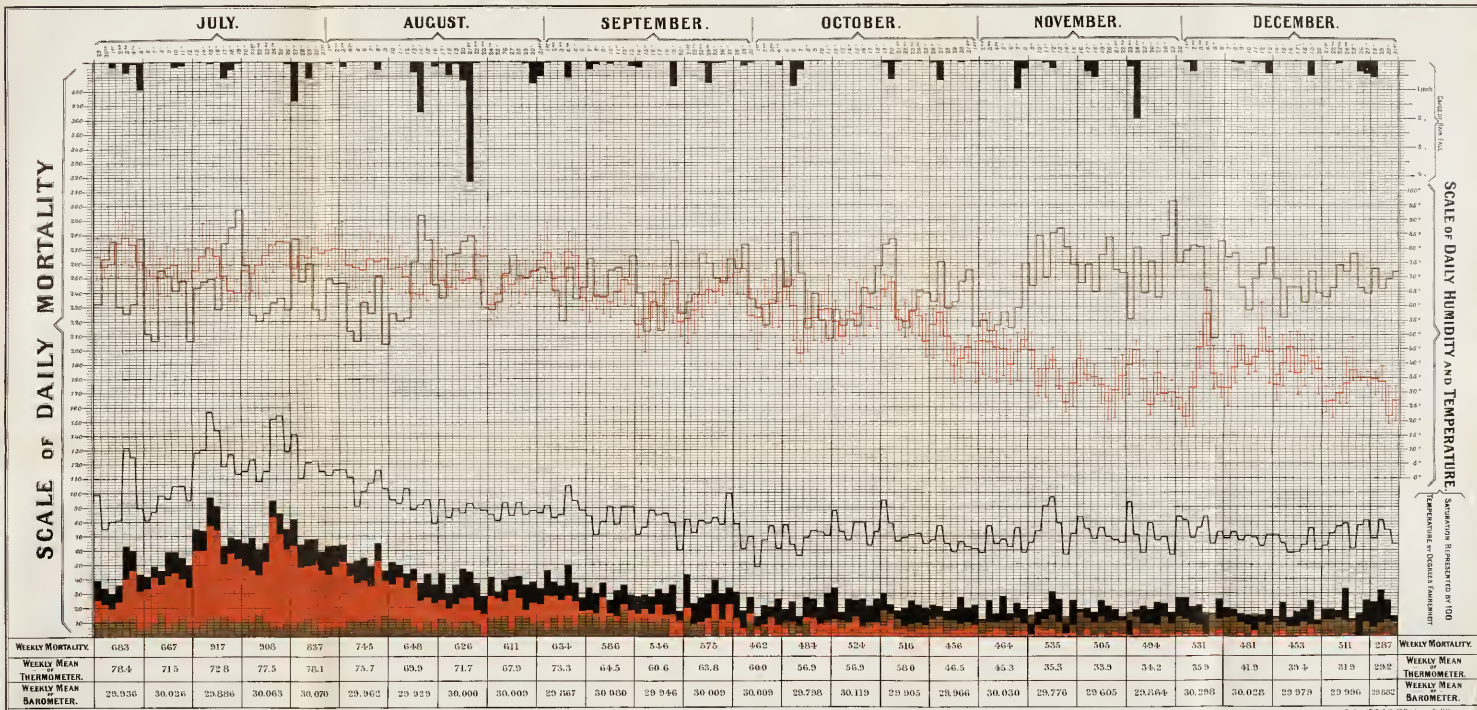


CHART
 ILLUSTRATING THE ACTUAL DAILY MORTALITY DURING THE SIX MONTHS ENDING DECEMBER 31ST 1873.
 (With the Meteorological Observations for the same Period.)



THE IRREGULAR RED LINE ACROSS THE CHART SHOWS THE DAILY MEAN TEMPERATURE.
 THE RED TERMINAL CROSS-LINES AT THE ENDS OF PERPENDICULAR BARS SHOW THE DAILY RANGE OF TEMPERATURE.
 THE IRREGULAR BROWN LINE ACROSSING THE CHART SHOWS THE DAILY DEGREE OF HUMIDITY.

THE IRREGULAR BLACK LINE ACROSS THE CHART ILLUSTRATES THE ACTUAL DAILY MORTALITY FROM ALL CAUSES

TOTAL ACTUAL DAILY MORTALITY FROM ALL ZYMOTIC DISEASES.
 TOTAL ACTUAL DAILY MORTALITY FROM DIARRHOEA.
 TOTAL ACTUAL DAILY MORTALITY FROM PHTHISIS PULMONALIS.

Published by Dr. G. S. Thompson & Co., N. Y.

MORTALITY IN HOSPITALS AND INSTITUTIONS.
(SECOND QUARTER OF THE YEAR.)

TABLE No. III.—SHOWING THE DISTRIBUTION OF THE TOTAL MORTALITY AND THE DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, DIARRHOEAL MALADIES, AND OTHER ZYMOTIC DISEASES, DURING THE THIRTEEN WEEKS ENDING SATURDAY, JUNE 23, 1873.

| WARDS. | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | All Diarrheal | Cerebro-Spinal | Yellow Fever. | Other Zymotic | Total Deaths from | Total Deaths from all Causes. | Total Population (in Wards), Census of 1870. | Total Population (in Wards), Census of 1870. | Total Deaths from all Causes. |
|--------------------|------------|-----------|-------------|-------------|------------|-----------------|---------------|----------------|---------------|----------------|---------------|-------------------|-------------------|-------------------------------|---|---|-------------------------------|
| | | | | | | | | | | | | Zymotic Diseases. | | | | | |
| First..... | .. | 2 | .. | 5 | 2 | .. | .. | .. | 8 | .. | .. | 2 | 19 | 123 | 14,463 | 123 | |
| Second..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 9 | 9 | 1,312 | 9 | |
| Third..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 19 | 3,715 | 19 | |
| Fourth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3715 | 28,748 | 3715 | |
| Fifth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 160 | 17,150 | 160 | |
| Sixth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 130 | 17,150 | 130 | |
| Seventh..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 172 | 21,158 | 172 | |
| Eighth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 246 | 44,818 | 246 | |
| Ninth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 246 | 44,818 | 246 | |
| Tenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 237 | 41,431 | 237 | |
| Eleventh..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 244 | 41,431 | 244 | |
| Twelfth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 418 | 64,230 | 418 | |
| Thirteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 403 | 47,497 | 403 | |
| Fourteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 196 | 38,364 | 196 | |
| Fifteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 201 | 26,430 | 201 | |
| Sixteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 259 | 27,587 | 259 | |
| Seventeenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 223 | 45,359 | 223 | |
| Eighteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 501 | 95,565 | 501 | |
| Nineteenth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 322 | 53,293 | 322 | |
| Twentieth..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 442 | 75,407 | 442 | |
| Twenty-first..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 506 | 56,763 | 506 | |
| Twenty-second..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 475 | 71,349 | 475 | |
| Totals..... | 86 | 90 | 275 | 184 | 154 | 61 | 14 | 56 | 396 | 97 | 1 | 290 | 1,654 | 6,583 | 942,292 | 6,583 | |

1,175

TABLE No. IV.

DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,

IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, JUNE 25, 1873.

| MONTHS. | NATIVITY. | | | | Colored. | | Under One Year. | |
|---|----------------|-------|----------|-------|----------|-----|-----------------|-------|
| | United States. | | Foreign. | | M. | F. | M. | F. |
| | M. | F. | M. | F. | | | | |
| Four weeks ending April 26..... | 694 | 593 | 428 | 350 | 26 | 11 | 300 | 243 |
| Five " " May 31..... | 829 | 743 | 548 | 471 | 15 | 12 | 347 | 287 |
| Four " " June 25..... | 669 | 534 | 355 | 309 | 11 | 14 | 313 | 231 |
| Total..... | 2,192 | 1,870 | 1,361 | 1,160 | 52 | 37 | 960 | 761 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 33.29 | 28.41 | 20.67 | 17.62 | .79 | .56 | 14.58 | 11.56 |
| Total of both sexes..... | 4,062 | | 2,521 | | 89 | | 1,721 | |
| Percentage of both sexes on total mortality of quarter..... | 61.70 | | 38.29 | | 1.35 | | 26.14 | |

TABLE No. IV.—Continued.

| MONTHS. | 35 | | 40 | | 45 | | 50 | | 55 | |
|---|------|------|------|------|------|------|------|------|------|------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| Four weeks ending April 26..... | 68 | 56 | 58 | 49 | 47 | 37 | 46 | 28 | 34 | 25 |
| Five " " May 31..... | 85 | 69 | 80 | 57 | 67 | 54 | 63 | 32 | 46 | 36 |
| Four " " June 25..... | 54 | 47 | 61 | 36 | 39 | 33 | 39 | 31 | 33 | 24 |
| Total..... | 207 | 172 | 199 | 142 | 153 | 124 | 148 | 91 | 118 | 65 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 3.14 | 2.61 | 3.02 | 2.16 | 2.32 | 1.88 | 2.25 | 1.38 | 1.72 | 1.29 |
| Total of both sexes..... | 379 | | 341 | | 277 | | 239 | | 193 | |
| Percentage of both sexes on total mortality of quarter..... | 5.75 | | 5.18 | | 4.20 | | 3.63 | | 3.01 | |

TABLE No. IV.—Continued.

DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,

IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, JUNE 23, 1873.

| 1 | | 2 | | 3 | | 4 | | Total under 5 Years. | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | |
|------|------|------|------|-------|------|------|-----|----------------------|-------|------|------|------|------|------|-------|------|------|------|------|------|------|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 97 | 73 | 45 | 36 | 44 | 23 | 23 | 17 | 509 | 392 | 29 | 46 | 6 | 13 | 20 | 31 | 51 | 63 | 62 | 56 | 55 | 55 |
| 103 | 96 | 53 | 51 | 38 | 35 | 27 | 31 | 563 | 500 | 64 | 60 | 25 | 16 | 28 | 42 | 65 | 59 | 67 | 80 | 87 | 63 |
| 74 | 66 | 41 | 39 | 29 | 22 | 27 | 17 | 484 | 375 | 55 | 41 | 19 | 9 | 21 | 23 | 49 | 42 | 53 | 46 | 50 | 33 |
| 274 | 235 | 139 | 126 | 111 | 80 | 77 | 65 | 1561 | 1267 | 143 | 147 | 50 | 33 | 69 | 96 | 165 | 164 | 182 | 182 | 192 | 156 |
| 4.16 | 3.57 | 2.11 | 1.91 | 1.69 | 1.21 | 1.17 | .99 | 23.71 | 19.25 | 2.25 | 2.23 | .76 | .58 | 1.05 | 1.46 | 2.51 | 2.49 | 2.76 | 2.76 | 2.92 | 2.37 |
| 509 | 265 | 191 | 142 | 2,823 | 295 | 88 | 165 | 329 | 364 | 243 | 7.73 | 4.02 | 2.90 | 2.16 | 42.96 | 4.43 | 1.34 | 2.51 | 5.00 | 5.52 | 5.29 |

TABLE No. IV.—Continued.

| 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. |
|------|------|------|------|------|------|-----|-----|-----|-------|--------|------|------|------|------|-----|-----------------|-----|-----------------|-------|-------------------|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| 56 | 37 | 21 | 29 | 33 | 27 | 13 | 13 | 8 | 11 | 4 | 2 | 1 | 2 | .. | .. | 1 | 1 | 1,122 | 973 | 2,095 |
| 32 | 35 | 32 | 36 | 30 | 33 | 17 | 16 | 11 | 16 | 7 | 4 | 2 | .. | 1 | 1 | .. | .. | 1,377 | 12,14 | 2,591 |
| 32 | 19 | 24 | 24 | 20 | 25 | 10 | 14 | 6 | 12 | 3 | 3 | 1 | 1 | 1 | .. | .. | .. | 1,054 | 843 | 1,897 |
| 120 | 91 | 77 | 89 | 83 | 90 | 40 | 43 | 25 | 39 | 14 | 9 | 4 | 3 | 2 | 1 | 1 | 1 | 3,553 | 3,080 | 6,583 |
| 1.82 | 1.38 | 1.17 | 1.35 | 1.26 | 1.37 | .61 | .65 | .33 | .59 | .21 | .14 | .06 | .05 | .03 | .01 | .01 | .01 | 53.97 | 46.03 | .. |
| 211 | 166 | 173 | 83 | 64 | 28 | 7 | 3 | 2 | 6,583 | 100.00 | 3.20 | 2.52 | 2.63 | 1.26 | .97 | .35 | .11 | .04 | .02 | |

State of the Public Health during the Summer Quarter, ending September 27, 1873.—The mortality records of the thirteen weeks of summer in New York exhibit great uniformity, year after year. The points in which they occasionally present marked differences are invariably associated with extraordinary heat and humidity, or with some epidemic disease. Taking one year with another, the fact has been observed, these twenty years past, that about 60 per cent. of the total mortality in the summer quarter consists in the death of children under five years of age. The summer cholera of infants, during the few weeks of tropical heat in New York, has its local sources and concomitants as truly as the Ganges pestilence; but here the similitude of the infantile and the Asiatic cholera ceases. The former is a self-propagating epidemic, while the latter seems to be a destruction of child-life at its most frail and susceptible period, by the various personal, domestic, and immediately local causes which may be singly and together implied by weeks of tropical heat, defective and unsuitable diet and personal care-taking of infants, overcrowded tenements, domestic uncleanness, the neglect of populous premises—within doors and without—and the absence of open and healthful airing-places convenient to the densely-populated quarters and treeless streets of the city. From the earliest records of this city, infant-life in the crowded water-side districts, and upon all the badly-drained streets, has suffered perils more than double those which inevitably attend the same classes of children in rural towns.

COMPARATIVE MORTALITY OF THE SUMMER QUARTER

IN SIX CONSECUTIVE YEARS.

| DISEASES. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Average 6 years. |
|-------------------------------------|-------|-------|-------|-------|--------|-------|---------------------|
| Zymotic diseases..... | 3,570 | 3,158 | 3,654 | 3,302 | 4,584 | 4,280 | 3,553.0 |
| Constitutional diseases..... | 1,577 | 1,546 | 1,748 | 1,601 | 1,730 | 1,636 | 1,639.7 |
| Local diseases..... | 2,536 | 2,088 | 2,297 | 2,033 | 2,545 | 2,236 | 2,230.8 |
| Developmental diseases..... | 432 | 396 | 424 | 445 | 507 | 459 | 443.8 |
| Deaths by violence..... | 243 | 252 | 293 | 452 | 409 | 322 | 325.5 |
| Total deaths..... | 8,658 | 7,890 | 8,416 | 7,533 | 10,025 | 8,953 | 8,550.8 |
| Small-pox..... | 1 | 32 | 6 | 164 | 74 | 4 | 46.8 |
| Measles..... | 45 | 125 | 59 | 49 | 135 | 57 | 89.3 |
| Scarlatina..... | 102 | 159 | 106 | 133 | 132 | 202 | 139.3 |
| Diphtheria..... | 43 | 66 | 67 | 46 | 87 | 316 | 104.2 |
| Croup..... | 37 | 53 | 69 | 58 | 57 | 99 | 65.7 |
| Whooping-cough..... | 102 | 119 | 65 | 160 | 86 | 76 | 101.3 |
| Typhus fever..... | 34 | 27 | 17 | 16 | 19 | 8 | 20.2 |
| Typhoid fever..... | 107 | 57 | 132 | 70 | 140 | 100 | 106.0 |
| Cerebro-spinal fever..... | 9 | 10 | 10 | 12 | 135 | 67 | 40.5 |
| Diarrhoeal diseases..... | 3,076 | 2,205 | 2,759 | 2,291 | 3,575 | 3,645 | 2,830.2 |
| Erysipelas..... | 13 | 14 | 4 | 18 | 23 | 30 | 17.0 |
| Gout..... | ..... | ..... | ..... | 1 | ..... | 3 | 0.7 |
| Rheumatism..... | 11 | 15 | 12 | 14 | 40 | 29 | 20.2 |
| Cancer..... | 69 | 72 | 91 | 78 | 93 | 136 | 59.8 |
| Phthisis..... | 771 | 762 | 1,017 | 973 | 1,004 | 530 | 909.5 |
| Diseases of nervous system..... | 1,274 | 739 | 970 | 694 | 1,096 | 722 | 915.3 |
| Heart-diseases..... | 143 | 150 | 164 | 163 | 133 | 203 | 165.5 |
| Pneumonia..... | 300 | 355 | 277 | 243 | 256 | 323 | 294.0 |
| Bronchitis..... | 143 | 139 | 132 | 172 | 152 | 157 | 150.0 |
| Bright's disease and nephritis..... | 133 | 140 | 200 | 243 | 244 | 235 | 199.2 |
| Puerperal diseases..... | 83 | 44 | 72 | 67 | 33 | 70 | 62.3 |
| Suicides..... | 27 | 24 | 39 | 33 | 45 | 28 | 31.7 |
| Deaths in institutions..... | 1,284 | 1,041 | 1,182 | 1,330 | 1,536 | 1,209 | 1,255.3 |
| Persons 70 years old and over..... | 275 | 254 | 343 | 305 | 355 | 355 | 319.5 |
| Children under 5 years of age..... | 5,590 | 4,533 | 4,940 | 4,436 | 5,943 | 5,433 | 5,159.2 |

DEATHS OCCURRING EACH WEEK, BY CLASSES,

FOR THE THIRD QUARTER, ENDING SEPTEMBER 27, 1873.

| CLASSES. | WEEKS. | | | | | | | | | | | | | Total each Class. |
|---------------------|------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|---------------------------|---------------------------|---------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|-------------------|
| | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | |
| | Week ending July 5. | Week ending July 12. | Week ending July 19. | Week ending July 26. | Week ending August 2. | Week ending August 9. | Week ending August 16. | Week ending August 23. | Week ending August 30. | Week ending September 6. | Week ending September 13. | Week ending September 20. | Week ending September 27. | |
| Zymotic..... | 305 | 360 | 537 | 517 | 467 | 383 | 310 | 267 | 263 | 206 | 223 | 202 | 225 | 4,330 |
| Constitutional..... | 131 | 110 | 124 | 139 | 110 | 127 | 122 | 114 | 129 | 126 | 135 | 137 | 132 | 1,636 |
| Local..... | 191 | 149 | 196 | 175 | 201 | 174 | 159 | 176 | 155 | 150 | 163 | 162 | 155 | 2,236 |
| Developmental..... | 33 | 22 | 39 | 45 | 34 | 44 | 36 | 33 | 40 | 36 | 34 | 20 | 33 | 450 |
| Violence..... | 23 | 26 | 21 | 32 | 25 | 17 | 21 | 31 | 19 | 26 | 31 | 25 | 25 | 322 |
| Total..... | 653 | 667 | 917 | 908 | 587 | 745 | 648 | 626 | 611 | 634 | 586 | 546 | 575 | 5,953 |

The chief excess in the death-rate of the summer quarter over that of the second or all other seasons, in this city, has uniformly been due to the increased infant mortality, except in the presence of rare epidemics that have struck down inhabitants of mature age, and in the summer quarter of 1873 not only was the usual increase in the death-rate of that portion of the year wholly due to the child mortality, but the records show that had there been no greater number of deaths of children under five years of age than occurred in the spring quarter, the death-rate would have been actually lower in this city during the thirteen weeks of summer in 1873 than it was in the preceding spring and winter quarters. There were 2,400 more deaths in the city during the three months ending September 27th than there were in the quarter ending June 28th; but there were 2,660 more deaths of children under five years of age than in the spring quarter, or 240 above the entire excess of the third over the second quarter. In the first quarter of the year there were 2,168 less deaths than in the third quarter, but the number of children that perished under five years of age was 2,578. This statement concerning infant mortality shows that, by excluding its vernal excess, we find proof of an actual enhancement in the security of human life in New York during the summer months above that which is enjoyed in the winter and spring months by the entire population over five years of age.

These statistical abstracts present the records of the quarter. Upon the subsequent pages the records of zymotic and other causes of death in the several wards of the city are presented.

TABLE No. V.—SHOWING THE DISTRIBUTION OF THE TOTAL MORTALITY AND THE DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHEAL MALADIES, AND OTHER ZYMOTIC DISEASES, DURING THE THIRTIEN WEEKS ENDING SATURDAY, SEPTEMBER 27, 1873.

| WARDS. | MORTALITY IN HOSPITALS AND INSTITUTIONS. (THIRD QUARTER OF THE YEAR.) | | | | | | | | | | | | | Total Deaths from all Causes. | Total Population (in Wards), (Census of 1870). | |
|--------------------|--|----------|-------------|-------------|--------|-----------------|---------------|----------------|----------|-------------------|-----------------|---------------------------|-----------------------|-------------------------------|---|-------------------------|
| | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | Cholera. | Cholera Infantum. | Cholera Morbus. | Other Diarrheal Diseases. | Cerebro-Spinal Fever. | | | Other Zymotic Diseases. |
| First..... | .. | 2 | .. | 11 | 6 | .. | .. | .. | .. | .. | 30 | 1 | 4 | 59 | 149 | 14,463 |
| Second..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 10 | 10 | 1,312 |
| Third..... | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 14 | 8,715 |
| Fourth..... | .. | 1 | 3 | 5 | 2 | 1 | .. | .. | .. | .. | 65 | .. | 7 | 86 | 213 | 28,748 |
| Fifth..... | .. | 1 | 7 | 21 | 5 | 2 | .. | .. | .. | .. | 59 | 1 | 7 | 104 | 168 | 17,150 |
| Sixth..... | .. | 2 | 1 | 10 | 5 | 2 | .. | .. | .. | .. | 60 | 3 | 8 | 91 | 228 | 21,153 |
| Seventh..... | .. | 4 | 6 | 13 | 5 | 8 | .. | .. | .. | .. | 120 | 2 | 11 | 178 | 376 | 41,818 |
| Eighth..... | .. | 6 | 6 | 22 | 4 | 2 | .. | .. | .. | .. | 49 | 10 | 10 | 168 | 320 | 34,913 |
| Ninth..... | .. | 8 | 6 | 19 | 3 | 2 | .. | .. | .. | .. | 50 | 3 | 9 | 148 | 352 | 47,009 |
| Tenth..... | .. | 3 | 5 | 9 | 5 | 2 | .. | .. | .. | .. | 170 | 3 | 9 | 209 | 396 | 41,451 |
| Eleventh..... | .. | 9 | 13 | 19 | 12 | 7 | .. | .. | .. | .. | 203 | 2 | 14 | 298 | 611 | 64,280 |
| Twelfth..... | .. | 10 | 17 | 7 | 2 | .. | .. | .. | .. | .. | 287 | 9 | 59 | 407 | 749 | 47,497 |
| Thirteenth..... | .. | 8 | 8 | 8 | 7 | 1 | .. | .. | .. | .. | 114 | .. | 9 | 152 | 297 | 33,364 |
| Fourteenth..... | .. | 6 | 6 | 21 | 5 | 2 | .. | .. | .. | .. | 73 | 1 | 10 | 136 | 244 | 26,356 |
| Fifteenth..... | .. | 1 | 3 | 7 | 4 | 1 | .. | .. | .. | .. | 89 | .. | 11 | 116 | 208 | 27,587 |
| Sixteenth..... | .. | 5 | 11 | 37 | 6 | 1 | .. | .. | .. | .. | 84 | 2 | 13 | 157 | 332 | 48,359 |
| Seventeenth..... | .. | 5 | 17 | 9 | 9 | 13 | .. | .. | .. | .. | 275 | 5 | 15 | 338 | 735 | 95,365 |
| Eighteenth..... | .. | 5 | 12 | 12 | 5 | 8 | .. | .. | .. | .. | 149 | 3 | 10 | 214 | 416 | 59,593 |
| Nineteenth..... | 4 | 5 | 31 | 33 | 9 | 7 | .. | .. | .. | .. | 413 | 11 | 51 | 594 | 1,251 | 86,090 |
| Twentieth..... | .. | 7 | 17 | 27 | 4 | 7 | .. | .. | .. | .. | 245 | 8 | 26 | 343 | 661 | 75,407 |
| Twenty-first..... | .. | 2 | 8 | 5 | 3 | 4 | .. | .. | .. | .. | 131 | 5 | 33 | 198 | 561 | 56,703 |
| Twenty-second..... | .. | 3 | 25 | 14 | 2 | 5 | .. | .. | .. | .. | 274 | 8 | 19 | 354 | 697 | 71,349 |
| Totals..... | 4 | 87 | 292 | 316 | 99 | 76 | 8 | 100 | 1 | .. | 3,044 | 67 | 326 | 4,330 | 8,983 | 942,292 |

1,909

Castle Garden and Emigrant Depot, 5.
Third Precinct Station, 1.
Fifth Precinct Station, 1.
City Prison, 2; Centre Street Hospital, 23; Home of Industry, 2; Howard Mission, 2.
Seventh Precinct Station, 1; Sailors' Home, 1.
Eighth Precinct Station, 1.
St. Vincent's Hosp., 31; on way to Ninth Prec. Sta., 1.
Bessex Street Prison, 1.
St. Francis's Hospital, 74.
House of Mercy, 1; Colored Orphan A., 1; St. Luke's Home, 2; 31st Prec. St., 1; Ward's L., 124; Randall's L., 3; Bloomingdale Lunatic A., 1; 12th Prec. St., 1; Infants' Hosp., 109; Reception Hosp., 10; Soldiers' Retreat, 2; N. Y. City A. for Insane, 27; House of Good Shepherd, 3; House of Refuge, 1.
Thirteenth Precinct Station, 1.
R. C. Orphan Asylum, 1.
Foundling Asylum, 98; Fifteenth Precinct Station, 1.
Home for Aged, 2; Juvenile Asylum, 1.
Central Office of Charities and Correction, 1.
Workhouse, 5; German Hosp., 26; R. C. Orphan A., 1; Mt. Sinai Hosp., 6; Freshwater Home 8; 19th Prec. St., 1; Home for the Poor, 1; City Lunatic A., 32; Almshouse, 20; Penitentiary, 1; Small-Pox, 6; Charity Hosp., 203; Epileptic and Paralytic Hosp., 12; Fever Hosp., 6; Colored Home Hosp., 32; Nursery and Child's Hosp., 19; St. Luke's Hosp., 25; Home for Ruptured and Crippled, 1; Women's Hosp., 3.
St. Vincent's do Paul, 1; St. Mary's Hospital, 1; St. Elizabeth's Hospital, 2.
Bellevue Hospital, 204; in Ambulance, 2; Home for the Little Sisters of the Poor.
Roosevelt Hosp., 36; St. Elizabeth's Hosp., 1; N. Y. Infants' A., 10; N. Y. Orphan A., 1; 22d Prec. St., 1.

There were only 34 more deaths in the hospitals and public institutions than occurred in the previous or spring quarter, and less by 79 than in the winter quarter. By comparing the detailed specifications in this abstract of mortality from zymotic diseases with those of the first and second quarters (*see* the pages), instructive facts will be noticed in regard to some of the causes and localities concerned in the increased mortality in the hot season. First, it appears that while there were, by all causes, 2,400 more deaths during the third than during the second quarter, the total number of persons who died from zymotic diseases was 2,676 greater than in the second quarter, a number greater than the total excess of the summer mortality. A graphic illustration of fluctuations of the death-rate is shown upon a lithographed page in a subsequent part of this report.

| DATES. | Mean Temperature. | Average Humidity. | Deaths of Infants under 1 Year old. | Deaths of Children under 2 Years old. | Deaths of Children under 5 Years old. | Total Mortality. | Deaths by Diseases of Brain and Nervous System. | Deaths by Phtisis Pulmonalis. | Deaths of Persons 70 Years old and over. | Deaths of Persons over 5 Years of Age. |
|------------------|-------------------|-------------------|-------------------------------------|---------------------------------------|---------------------------------------|------------------|---|-------------------------------|--|--|
| July 3..... | 84.10 | 57.50 | 62 | 73 | 84 | 132 | 17 | 11 | 6 | 43 |
| " 4..... | 81.3 | 61.1 | 54 | 65 | 79 | 126 | 14 | 12 | 3 | 47 |
| " 6..... | 73.0 | 50.7 | 37 | 44 | 51 | 81 | 3 | 5 | 3 | 80 |
| " 7..... | 70.8 | 43.0 | 43 | 55 | 59 | 87 | 7 | 9 | 1 | 23 |
| " 14..... | 77.4 | 68.5 | 69 | 81 | 86 | 130 | 3 | 8 | 1 | 44 |
| " 15..... | 80.5 | 69.7 | 93 | 111 | 122 | 157 | 3 | 12 | 4 | 35 |
| " 19..... | 65.0 | 93.3 | 55 | 65 | 75 | 113 | 9 | 10 | 3 | 35 |
| " 22..... | 74.9 | 55.2 | 48 | 57 | 71 | 103 | 5 | 15 | 3 | 37 |
| " 24..... | 81.5 | 61.8 | 83 | 103 | 110 | 152 | 9 | 7 | 3 | 42 |
| " 25..... | 82.5 | 61.8 | 84 | 101 | 105 | 156 | 10 | 7 | 3 | 51 |
| " 26..... | 83.4 | 59.1 | 64 | 84 | 96 | 139 | 8 | 9 | 3 | 43 |
| " 27..... | 73.6 | 81.3 | 71 | 85 | 104 | 141 | 17 | 8 | 3 | 37 |
| " 28..... | 77.7 | 68.6 | 45 | 59 | 66 | 100 | 5 | 9 | 3 | 84 |
| " 31..... | 73.7 | 55.3 | 61 | 73 | 85 | 115 | 9 | 4 | 1 | 30 |
| August 2..... | 80.0 | 69.8 | 61 | 78 | 85 | 116 | 13 | 6 | 4 | 31 |
| " 3..... | 80.0 | 68.0 | 56 | 72 | 83 | 116 | 8 | 6 | 2 | 33 |
| " 5..... | 73.7 | 48.0 | 49 | 56 | 65 | 91 | 7 | 10 | 1 | 26 |
| " 13..... | 64.8 | 75.3 | 35 | 51 | 57 | 89 | 3 | 8 | 2 | 32 |
| September 4..... | 75.6 | 73.3 | 35 | 47 | 55 | 105 | 11 | 18 | 3 | 50 |
| " 7..... | 61.5 | 76.6 | 17 | 34 | 41 | 84 | 7 | 16 | 4 | 43 |
| " 8..... | 63.9 | 63.6 | 27 | 36 | 40 | 71 | 4 | 13 | 3 | 31 |

The above abstract from the records of mortality, on and immediately preceding and succeeding the days of highest temperature during the summer, serves to illustrate some of the facts respecting the first consequences of a sudden onset of a tropical temperature in this city. The days of highest temperature here mentioned were June 20, July 3, 4, 14, 15, 24, 25, 26, 27; August 2, 3, and September 4. The last day of moderate temperature previous to the several respective days of high temperature, and the first cool days following each one of them, are likewise brought in with the records pertaining to them.

TABLE No. VI.

DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,

IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, SEPTEMBER 27, 1873.

| MONTHS. | NATIVITY. | | | | Colored. | | Under One Year. | |
|---|----------------|-------|----------|-------|----------|-----|-----------------|-------|
| | United States. | | Foreign. | | | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. |
| Four weeks ending July 26..... | 1,266 | 1,106 | 390 | 853 | 14 | 16 | 610 | 735 |
| Five " " August 30..... | 1,305 | 1,253 | 455 | 419 | 22 | 22 | 735 | 699 |
| Four " " September 27.... | 621 | 726 | 400 | 394 | 7 | 10 | 839 | 357 |
| Total..... | 3,892 | 3,150 | 1,275 | 1,166 | 43 | 48 | 1,934 | 1,791 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 37.76 | 35.07 | 14.19 | 12.93 | .43 | .53 | 21.53 | 19.94 |
| Total of both sexes..... | 6,542 | | 2,441 | | 91 | | 3,725 | |
| Percentage of both sexes on total mortality of quarter..... | 72.83 | | 27.17 | | 1.01 | | 41.47 | |

TABLE No. VI.—Continued.

| MONTHS. | 35 | | 40 | | 45 | | 50 | | 55 | |
|---|------|------|------|------|------|------|------|------|------|-----|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| Four weeks ending July 26..... | 60 | 56 | 46 | 32 | 51 | 29 | 38 | 29 | 27 | 27 |
| Five " " August 30..... | 63 | 39 | 56 | 48 | 53 | 47 | 53 | 39 | 36 | 31 |
| Four " " September 27.... | 51 | 45 | 56 | 45 | 53 | 40 | 43 | 40 | 32 | 18 |
| Total..... | 200 | 140 | 158 | 125 | 167 | 116 | 134 | 108 | 95 | 76 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 2.23 | 1.56 | 1.76 | 1.39 | 1.86 | 1.29 | 1.50 | 1.20 | 1.06 | .85 |
| Total of both sexes..... | 340 | | 283 | | 283 | | 242 | | 171 | |
| Percentage of both sexes on total mortality of quarter..... | 3.79 | | 3.15 | | 3.15 | | 2.70 | | 1.91 | |

TABLE No. VI.—Continued.

DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,

IN QUINQUENNIAL PERIODS, DURING THE THIRTEEN WEEKS ENDING SATURDAY, SEPTEMBER 27, 1873.

| 1 | | 2 | | 3 | | 4 | | Total under 5 Years. | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | |
|-------|------|------|------|------|------|------|-----|----------------------|-------|------|------|------|-----|------|-----|------|------|------|------|------|------|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| 177 | 156 | 46 | 47 | 44 | 46 | 31 | 20 | 1,108 | 1,004 | 58 | 52 | 14 | 14 | 15 | 23 | 33 | 44 | 46 | 51 | 50 | 42 |
| 232 | 219 | 50 | 73 | 35 | 43 | 32 | 24 | 1,087 | 1,058 | 58 | 51 | 28 | 17 | 32 | 29 | 57 | 51 | 55 | 68 | 65 | 64 |
| 183 | 154 | 39 | 43 | 36 | 21 | 24 | 15 | 641 | 590 | 57 | 37 | 25 | 12 | 21 | 21 | 38 | 43 | 51 | 58 | 52 | 50 |
| 502 | 529 | 135 | 163 | 118 | 110 | 87 | 59 | 2,836 | 2,652 | 173 | 140 | 67 | 49 | 68 | 73 | 128 | 188 | 152 | 177 | 167 | 156 |
| 6.26 | 5.89 | 1.50 | 1.81 | 1.31 | 1.22 | .97 | .66 | 31.57 | 29.52 | 1.93 | 1.56 | .74 | .48 | .76 | .81 | 1.42 | 1.54 | 1.69 | 1.97 | 1.86 | 1.74 |
| 1,091 | | 293 | | 228 | | 146 | | 5,488 | | 313 | | 110 | | 141 | | 266 | | 329 | | 323 | |
| 12.15 | | 3.31 | | 2.53 | | 1.63 | | 61.09 | | 3.49 | | 1.22 | | 1.57 | | 2.96 | | 3.66 | | 3.60 | |

TABLE No. VI.—Continued.

| 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. | |
|------|-----|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|-----------------|-------|-------------------|--|
| M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| 37 | 29 | 20 | 23 | 29 | 24 | 11 | 18 | 7 | 12 | 3 | 3 | .. | 3 | 3 | 4 | .... | .... | 1,656 | 1,519 | 3,175 | |
| 36 | 28 | 26 | 27 | 25 | 30 | 11 | 25 | 14 | 14 | 2 | 8 | 1 | 1 | 1 | 2 | .... | .... | 1,790 | 1,677 | 3,467 | |
| 34 | 32 | 20 | 27 | 20 | 31 | 9 | 14 | 4 | 11 | 8 | 2 | .. | 2 | 1 | 2 | .... | .... | 1,221 | 1,120 | 2,341 | |
| 107 | 89 | 66 | 77 | 74 | 85 | 31 | 57 | 25 | 37 | 13 | 13 | 1 | 6 | 5 | 8 | .... | .... | 4,667 | 4,316 | 8,983 | |
| 1.19 | .99 | .73 | .86 | .82 | .95 | .84 | .64 | .23 | .41 | .14 | .14 | .01 | .07 | .06 | .09 | .... | .... | ..... | ..... | ..... |  |
| 196 | | 143 | | 159 | | 88 | | 62 | | 26 | | 7 | | 13 | | | | 8,983 | | | |
| 2.18 | | 1.59 | | 1.77 | | .98 | | .69 | | .23 | | .08 | | .15 | | | | | | | |

Having now incidentally presented evidence which conclusively shows that the ordinary New York summer is not a season of peculiar peril to human life, excepting as regards young children, the question recurs on every hand, Are the causes of excessive infant mortality in this city preventable? This inquiry has been repeated every year, and by successive generations from colonial days, more than a century past, until now. To discriminate correctly between the preventable and the inevitable causes of the excessive mortality of young children in this city, would be equivalent to a discovery of the difference between city and country air; the morbid effects of tenement crowding and filthy outflowings in open sewers; the influences, chemical and devitalizing, which spring up with great activity in populous and high-walled blocks of dwellings and treeless streets; and, most important of all, to discover how faulty and unnatural is the maternal care, the nursing of the infants in common city homes during the summer season. The excessively high death-rate in the infant portion of the population so strongly affects the average death-rate of the total population, and that for the whole year, that whatever circumstances of season and locality contribute to it should be noticed.

State of the Public Health in the Three Months (Fourth Quarter) ending December 31, 1873.—The total number of deaths during this quarter of the year was greater by 376 than in the last quarter of the year 1872; 899 more than in the corresponding three months in 1868, and 430 more than in the last three months of 1866, terminating the cholera season. This increased death-rate in the last quarter in 1873 did not extend to inhabitants at all ages, but it was chiefly caused by the prevalence of diphtheria, scarlatina, and croup, three diseases which were charged with 1,050 deaths in the quarter, or 433 more than were charged to them in the summer quarter, and 407 more than in the corresponding quarter of 1872.

| COMPARATIVE MORTALITY OF THE AUTUMNAL QUARTER | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|---------------------|
| IN SIX CONSECUTIVE YEARS. | | | | | | | |
| DISEASES. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Average 6 years. |
| Zymotic diseases..... | 981 | 1,395 | 1,450 | 1,486 | 1,791 | 1,965 | 1511.3 |
| Constitutional diseases..... | 1,211 | 1,501 | 1,558 | 1,485 | 1,534 | 1,491 | 1463.3 |
| Local diseases..... | 1,991 | 2,311 | 2,296 | 2,242 | 2,331 | 2,524 | 2290.8 |
| Developmental diseases..... | 367 | 340 | 402 | 391 | 450 | 423 | 401.3 |
| Deaths by violence..... | 205 | 246 | 243 | 296 | 293 | 295 | 263.0 |
| Total deaths..... | 4,755 | 5,793 | 5,949 | 5,900 | 6,479 | 6,703 | 5929.3 |
| Small-pox..... | 11 | 109 | 12 | 129 | 76 | 10 | 57.8 |
| Measles..... | 13 | 17 | 137 | 13 | 35 | 56 | 45.2 |
| Scarlatina..... | 90 | 223 | 193 | 183 | 190 | 326 | 200.3 |
| Diphtheria..... | 55 | 56 | 78 | 54 | 150 | 452 | 155.8 |
| Croup..... | 121 | 135 | 152 | 170 | 273 | 242 | 182.2 |
| Whooping-cough..... | 45 | 43 | 39 | 186 | 42 | 64 | 70.7 |
| Typhus fever..... | 17 | 32 | 13 | 16 | 13 | 10 | 17.7 |
| Typhoid fever..... | 87 | 139 | 119 | 83 | 103 | 83 | 102.3 |
| Cerebro-spinal fever..... | 5 | 11 | 4 | 8 | 47 | 39 | 19.0 |
| Diarrheal diseases..... | 341 | 295 | 415 | 361 | 527 | 389 | 388.0 |
| Erysipelas..... | 13 | 29 | 25 | 23 | 25 | 31 | 24.8 |
| Gout..... | ..... | ..... | ..... | 2 | 2 | ..... | .6 |
| Rheumatism..... | 14 | 15 | 13 | 25 | 37 | 33 | 24.5 |
| Cancer..... | 72 | 80 | 87 | 89 | 99 | 93 | 87.5 |
| Phthisis..... | 787 | 946 | 1,134 | 1,012 | 1,067 | 1,023 | 994.8 |
| Diseases of nervous system..... | 643 | 681 | 620 | 592 | 606 | 598 | 623.3 |
| Heart-diseases..... | 152 | 199 | 196 | 217 | 219 | 260 | 207.2 |
| Pneumonia..... | 427 | 501 | 471 | 497 | 501 | 607 | 500.7 |
| Bronchitis..... | 166 | 251 | 232 | 263 | 275 | 303 | 256.7 |
| Bright's disease and nephritis..... | 163 | 149 | 221 | 229 | 250 | 246 | 209.7 |
| Puerperal diseases..... | 39 | 54 | 72 | 102 | 104 | 73 | 74.0 |
| Suicides..... | 15 | 33 | 23 | 30 | 27 | 23 | 26.0 |
| Deaths in institutions..... | 809 | 941 | 1,106 | 1,131 | 1,123 | 1,053 | 1033.0 |
| Persons 70 years old and over..... | 277 | 333 | 349 | 321 | 384 | 335 | 343.2 |
| Children under 5 years of age..... | 2,057 | 2,453 | 2,516 | 2,477 | 2,704 | 2,960 | 2527.8 |

The mean temperature in October was 55.8° Fahr.; in November, 35.9°; and in December, 36.5°; the mean for the quarter being 43.1°, and the average measure of humidity being $\frac{6.7}{10.0}$ of total saturation. The total quantity of rainfall in this quarter was equal to 10.32 inches depth of water. The prevailing winds were from the west-southwest and northwest, and the average rate of their movement was equal to 165 miles traveled daily.

The days of least mortality occurred October 1st and November 14th. After an unusually warm week, for the season, the mean temperature for seven days having been a little above 67° Fahr., and the daily mortality at an average of 76 deaths, the 1st day of October had a mean temperature of 56° Fahr., and only 48 deaths. The number of deaths on the 14th day of November was 57, and of these, only 21 were in children, and only 2

from diarrhoeal disease. The mean temperature that day was 26.4° Fahr., and the mean temperature of the preceding seven days was 40°.

DEATHS OCCURRING EACH WEEK, BY CLASSES,

FOR THE FOURTH QUARTER, ENDING DECEMBER 31, 1873.

| CLASSES. | WEEKS. | | | | | | | | | | | | Total each Class. | |
|----------------------|---------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|-----------------------------|-----------------------------|---------------------------------------|-------|
| | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | | 52 |
| | Week ending October 4. | Week ending October 11. | Week ending October 18. | Week ending October 26. | Week ending November 1. | Week ending November 8. | Week ending November 15. | Week ending November 22. | Week ending November 29. | Week ending December 6. | Week ending December 13. | Week ending December 20. | Week and 4 days ending Dec. 31. | |
| Zymotic | 157 | 158 | 175 | 155 | 149 | 139 | 134 | 125 | 134 | 154 | 118 | 123 | 234 | 1,965 |
| Constitutional | 91 | 105 | 107 | 131 | 104 | 122 | 128 | 106 | 112 | 114 | 110 | 94 | 167 | 1,401 |
| Local | 157 | 164 | 158 | 172 | 144 | 165 | 204 | 217 | 191 | 223 | 198 | 101 | 315 | 2,524 |
| Developmental | 30 | 36 | 38 | 28 | 29 | 28 | 40 | 33 | 27 | 28 | 35 | 26 | 53 | 428 |
| Violence | 27 | 21 | 21 | 30 | 30 | 10 | 29 | 14 | 30 | 15 | 20 | 19 | 29 | 295 |
| Total | 462 | 484 | 524 | 516 | 456 | 404 | 535 | 505 | 494 | 531 | 481 | 453 | 798 | 6,703 |

The mortality in hospitals and all other public institutions during the year amounted to 4,755. These institutions, numbering at the present time 104, receive their beneficiaries chiefly from other wards than those in which they are located. Therefore, the mortality which occurs in them increases disproportionately the death-rate in the wards wherein they are located, and in a like degree diminishes the rate in the wards whence their inmates are derived. In the abstract upon the opposite page we view a ward distribution of the mortality exclusive of deaths in hospitals and other public institutions. The 4,755 deaths in public charities being thus deducted from the general mortality tables, the mean death-rate in the city for the year is reduced to 25.82 per 1,000 inhabitants, or 4.26 per 1,000 less than the mean ratio for the actual sum of the city mortality. This proportion of deaths in institutions, large as it is in our city, falls far short of the institutional proportion which occurs in the great cities of Europe. Hospitals and asylums are not yet so largely frequented in New York as they are in London, Paris, and Vienna. Yet it is true that, from the First, Ninth, Eighth, and some other wards of this city, so large a proportion of the sick and hurt are transferred to hospitals that the death-rate of the localities whence they have been removed appears much more favorably in these tabulated abstracts than would be justified when mentioning their comparative healthfulness. It is to be hoped that, as the hospitals of the city become the centres and schools of sanitary study, a system of records will be adopted which shall enable the Board of Health to be informed every week in regard to the number of patients admitted, and the number that terminate fatally, from each ward of the city. [See pages 220-221.]

TABLE VII.—SHOWING THE DISTRIBUTION OF THE TOTAL MORTALITY, AND THE DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHTHERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHOEAL MALARIAS, AND OTHER ZYMOTIC DISEASES, REGISTERED DURING THE THIRTEEN WEEKS AND FOUR DAYS ENDING WEDNESDAY, DECEMBER 31, 1873.

| WARDS. | MORTALITY IN HOSPITALS AND INSTITUTIONS. (FOURTH QUARTER OF THE YEAR.) | | | | | | | | | | | Total Deaths from all Causes. | Total Population (in Wards), (Census of 1870.) | | | | |
|--------------------|---|----------|-------------|-------------|--------|-----------------|---------------|----------------|---------------|-------------------|-----------------|-------------------------------|---|----------------------------|-----------------------|-------------------------|-------------------------------------|
| | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | Yellow Fever. | Cholera Infantum. | Cholera Morbus. | | | Other Diarrhoeal Diseases. | Cerebro-Spinal Fever. | Other Zymotic Diseases. | Total Deaths from Zymotic Diseases. |
| First..... | .. | .. | 1 | 9 | 4 | 2 | 1 | 1 | 1 | .. | 5 | .. | 1 | 4 | 29 | 121 | 14,463 |
| Second..... | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 7 | 7 | 1,342 |
| Third..... | .. | .. | 5 | 3 | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | 7 | 23 | 23 | 8,715 |
| Fourth..... | .. | .. | 7 | 7 | 9 | 1 | 1 | .. | .. | .. | 6 | .. | .. | 4 | 33 | 157 | 23,748 |
| Fifth..... | .. | .. | 2 | 6 | 5 | .. | .. | .. | .. | .. | 6 | .. | .. | 3 | 26 | 102 | 17,150 |
| Sixth..... | .. | .. | 7 | .. | 14 | .. | .. | .. | .. | .. | 7 | .. | .. | 9 | 50 | 177 | 21,153 |
| Seventh..... | .. | .. | 29 | 27 | 7 | 2 | .. | .. | .. | .. | 13 | 1 | 8 | 87 | 302 | 44,818 | |
| Eighth..... | .. | 1 | 22 | 15 | 10 | 2 | .. | .. | .. | .. | 15 | 2 | 5 | 72 | 233 | 34,913 | |
| Ninth..... | .. | 17 | 30 | 8 | 8 | 2 | .. | .. | .. | .. | 16 | .. | 15 | 98 | 323 | 47,609 | |
| Tenth..... | .. | 8 | 15 | 13 | 15 | 1 | .. | .. | .. | .. | 11 | 1 | 5 | 68 | 248 | 41,431 | |
| Eleventh..... | .. | 2 | 9 | 30 | 26 | 3 | .. | .. | .. | .. | 25 | 1 | 8 | 116 | 388 | 64,230 | |
| Twelfth..... | .. | 18 | 46 | 8 | 5 | 6 | .. | .. | .. | 40 | .. | 1 | 70 | 204 | 527 | 47,497 | |
| Thirteenth..... | .. | .. | 22 | 13 | 15 | .. | .. | .. | .. | 11 | .. | 2 | 4 | 88 | 208 | 33,364 | |
| Fourteenth..... | .. | 1 | 12 | 21 | 4 | 1 | .. | .. | .. | 7 | .. | 1 | 9 | 57 | 187 | 26,486 | |
| Fifteenth..... | .. | 1 | 5 | 11 | 6 | 1 | .. | .. | .. | 21 | .. | 1 | 7 | 63 | 138 | 27,587 | |
| Sixteenth..... | .. | 2 | 10 | 35 | 13 | 5 | .. | .. | .. | 30 | .. | 2 | 13 | 88 | 263 | 48,359 | |
| Seventeenth..... | .. | 2 | 23 | 36 | 29 | 4 | .. | .. | .. | 30 | .. | .. | 6 | 147 | 533 | 95,365 | |
| Eighteenth..... | .. | 6 | 18 | 20 | 8 | 2 | .. | .. | .. | 16 | .. | 4 | 6 | 81 | 313 | 59,593 | |
| Nineteenth..... | 7 | 9 | 31 | 86 | 25 | 14 | 2 | 1 | .. | 67 | 8 | 32 | 299 | 999 | 999 | 86,090 | |
| Twentieth..... | 1 | 8 | 12 | 55 | 17 | 7 | 1 | 3 | .. | 30 | 8 | 14 | 151 | 498 | 498 | 75,407 | |
| Twenty-first..... | 2 | 1 | 19 | 16 | 6 | 4 | 1 | 3 | .. | 17 | 1 | 16 | 86 | 503 | 503 | 56,703 | |
| Twenty-second..... | .. | 2 | 17 | 33 | 16 | 6 | .. | 7 | .. | 33 | 10 | 20 | 144 | 453 | 453 | 71,349 | |
| Totals..... | 10 | 56 | 326 | 482 | 242 | 64 | 10 | 83 | 2 | 889 | 39 | 262 | 1,965 | 6,763 | 6,763 | 942,292 | |

Castle Gar. Emigrant Depot, 8; 1st Prec. Sta., 1.

Fifth Precinct Station, 3.

City Prison, 5; Contro St. Hosp. 25; 6th Prec. Sta., 2; House of Industry, 3; way to Park H., 1; N.Y. Disp., 1.

Eighth Precinct Station, 2.

St. Vincent's Hospital, 35; Baptist Home, 1.

Essex Street Prison, 2.

St. Francis's Hospital, 70.

Ward's L., 64; Randall's L., 11; Bloomingdale Lun. A., 8; N. Y. Juvenile A., 1; Infants' Hosp., 70; Reception Hosp., 8; N. Y. City A. for Insane, 27; House of Good Shepherd, 5; Soldiers' Retreat, 3; Deaf and Dumb A., 1; R. I. Idiot A., 1; Shepherd's Fold, 1; House of Mercy, 1; House of Refuge, 1.

R. C. Orphan A., 1; Lying-in A., 1; 14th Prec. Sta., 1.

Sixteenth Precinct Station, 1.

Office of Commissioners of Charities and Correction, 1.

Home for Respectable Aged and Indigent Women, 1.

City Laundry, 27; Alms-houses, 12; Penitentiary, 2; Small-Pox Hosp., 1; Charity Hosp., 115; Workhouse, 2; Epileptic and Paralytic Hosp., 5; R. C. Orphan A., 1; Foundling Hosp., 87; Colored Home Hosp., 30; Nursery and Child's Hosp., 19; St. Luke's Hosp., 24; St. Joseph's Ind. School, 1; Presbyterian Home, 2; Fever Hosp., 3; Chapin Home, 1; M. S. Nat. Hosp., 20; Hosp. for Captured and Crippled, 1; Inebriate A., 1; German Hosp., 17; Women's Hosp., 6; Old Ladies' Home, 1; Fever Hosp., 4.

Hopper's Home, 1; St. Vincent de Paul's, 1; St. Mary's Hospital, 3; Mrs. Starr's Institute for benevolent Children, 1.

Bellevue Hospital, 232; in Amulance, 4; Morgue, 1.

Roosevelt Hospital, 25; N. Y. Foundling Asylum, 1; St. Elizabeth's Hospital, 3; St. Mary's Hospital, 1.

TABLE No. VIII.
 DEATHS IN THE CITY OF NEW YORK FROM ALL CAUSES,
 IN QUINQUENNIAL PERIODS DURING THE THIRTEEN WEEKS AND FOUR DAYS ENDING WEDNESDAY,
 DECEMBER 31, 1873.

| MONTHS. | NATIVITY. | | | | Colored. | | Under One Year. | |
|---|----------------|-------|----------|-------|----------|-----|-----------------|-------|
| | United States. | | Foreign. | | M. | F. | M. | F. |
| | M. | F. | M. | F. | | | | |
| Four weeks ending October..... | 652 | 649 | 350 | 835 | 12 | 23 | 263 | 260 |
| Five " " November..... | 804 | 757 | 440 | 453 | 15 | 22 | 259 | 237 |
| Four § " " December..... | 750 | 707 | 427 | 379 | 10 | 11 | 273 | 230 |
| Total..... | 2,206 | 2,113 | 1,217 | 1,167 | 37 | 56 | 825 | 727 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 32.91 | 31.52 | 18.16 | 17.41 | .55 | .63 | 12.31 | 10.84 |
| Total of both sexes..... | 4,319 | | 2,384 | | 93 | | 1,552 | |
| Percentage of both sexes on total mortality..... | 64.43 | | 35.57 | | 1.35 | | 23.15 | |

TABLE No. VIII.—(Continued.)

| MONTHS. | 85 | | 40 | | 45 | | 50 | | 55 | |
|---|------|------|------|------|------|------|------|------|------|------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| Four weeks ending October..... | 56 | 54 | 50 | 40 | 40 | 30 | 39 | 30 | 25 | 21 |
| Five " " November..... | 50 | 50 | 62 | 62 | 55 | 35 | 50 | 43 | 40 | 40 |
| Four § " " December..... | 70 | 50 | 61 | 47 | 54 | 41 | 59 | 41 | 25 | 23 |
| Total..... | 176 | 154 | 173 | 149 | 149 | 106 | 143 | 114 | 90 | 89 |
| Percentage of deaths in each period of life on total mortality of quarter.... | 2.63 | 2.29 | 2.58 | 2.22 | 2.22 | 1.55 | 2.31 | 1.70 | 1.84 | 1.33 |
| Total of both sexes..... | 330 | | 322 | | 255 | | 262 | | 179 | |
| Percentage of both sexes on total mortality of quarter..... | 4.92 | | 4.80 | | 3.80 | | 3.01 | | 2.67 | |

TABLE No. IX.—DEATHS FROM ZYMOTIC DISEASES.

NEW YORK.—DEATHS FROM SMALL-POX, MEASLES, SCARLATINA, DIPHThERIA, WHOOPING-COUGH, TYPHOID FEVER, TYPHUS FEVER, CHOLERA, CHOLERA INFANTUM, DIARRHEAL MALADIES, AND OTHER ZYMOTIC DISEASES, REGISTERED DURING THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| WARDS. | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | Yellow Fever. |
|---------------------|------------|----------|-------------|-------------|--------|-----------------|---------------|----------------|---------------|
| First | .. | 5 | 3 | 27 | 17 | 2 | 2 | 7 | 1 |
| Second | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Third | .. | 1 | .. | 9 | .. | 3 | .. | 1 | .. |
| Fourth | 1 | 8 | 17 | 19 | 24 | 2 | 1 | 4 | .. |
| Fifth | .. | 7 | 14 | 55 | 26 | 4 | .. | 5 | .. |
| Sixth | .. | 11 | 16 | 36 | 36 | 9 | .. | 6 | .. |
| Seventh | 3 | 11 | 49 | 50 | 29 | 14 | .. | 3 | .. |
| Eighth | 1 | 15 | 39 | 43 | 32 | 16 | .. | 6 | .. |
| Ninth | .. | 11 | 35 | 77 | 30 | 7 | 1 | 26 | .. |
| Tenth | 1 | 8 | 39 | 46 | 33 | 7 | .. | 21 | 1 |
| Eleventh | 1 | 13 | 76 | 59 | 73 | 23 | 2 | 31 | .. |
| Twelfth | 6 | 64 | 111 | 25 | 30 | 12 | 11 | 37 | .. |
| Thirteenth | 1 | 3 | 44 | 23 | 36 | 4 | 1 | 4 | .. |
| Fourteenth | .. | 7 | 22 | 62 | 23 | 5 | .. | 8 | .. |
| Fifteenth | .. | 6 | 11 | 25 | 12 | 8 | 2 | 6 | .. |
| Sixteenth | 1 | 11 | 33 | 97 | 34 | 15 | .. | 11 | .. |
| Seventeenth | 4 | 9 | 79 | 74 | 73 | 25 | 4 | 13 | .. |
| Eighteenth | 1 | 19 | 54 | 51 | 31 | 23 | 1 | 11 | .. |
| Nineteenth | 39 | 26 | 134 | 159 | 72 | 27 | 5 | 54 | 1 |
| Twentieth | 1 | 37 | 36 | 109 | 49 | 31 | 2 | 12 | .. |
| Twenty-first | 4 | 13 | 53 | 26 | 31 | 15 | 4 | 13 | .. |
| Twenty-second | 3 | 16 | 129 | 69 | 36 | 16 | 3 | 15 | .. |
| Total | 117 | 306 | 1,045 | 1,151 | 732 | 263 | 39 | 294 | 3 |

MORTALITY IN HOSPITALS AND INSTITUTIONS
(IN THE YEAR 1873).

| Cholera. | Cholera Morbus. Other Diarrhœal Diseases. | Cerebro-Spinal Fever. | Other Zymotic Diseases. | Total Deaths from Zymotic Diseases. | Total Deaths exclusive of Causes in Institutions. | Total Deaths from all Causes. | Total Population (in Wards), Census of 1870. | |
|----------|---|-----------------------|-------------------------|-------------------------------------|---|-------------------------------|--|--|
| .. | 44 | 4 | 22 | 184 | 473 | 508 | 14,463 | { Castle Garden and Emigrant Depot, 33; First Precinct Station, 2. |
| .. | .... | 1 | .... | 2 | 39 | 39 | 1,312 | |
| .. | 3 | 1 | 3 | 21 | 64 | 67 | 3,715 | |
| 1 | 80 | 8 | 27 | 192 | 633 | 637 | 23,743 | { Twenty-seventh Precinct, 2; Third Precinct, 1. Fourth Precinct Station, 4. |
| .. | 76 | 7 | 25 | 219 | 515 | 520 | 17,150 | { Fifth Precinct Station, 5. |
| .. | 82 | 3 | 49 | 243 | 666 | 800 | 21,153 | { City Prison, 25; Sixth Precinct Station, 4; Home of Industry, 8; Centre Street Hospital, 93; New York Dispensary, 2; Howard Mission, 2. |
| .. | 152 | 13 | 46 | 370 | 1,195 | 1,197 | 44,818 | { Seventh Precinct, 1; Sailors' Home, 1. |
| .. | 139 | 5 | 36 | 337 | 1,041 | 1,045 | 34,913 | { Eighth Precinct Station, 4. |
| .. | 123 | 10 | 43 | 363 | 1,037 | 1,205 | 47,609 | { St. Vincent's Hospital, 109; St. Joseph's Home for Aged, 2; Jefferson Market Prison, 3; Northern Dispensary, 1; Ninth Precinct, 1; Twenty-eighth Precinct, 1; Baptist Home, 1. |
| .. | 204 | 12 | 27 | 404 | 1,132 | 1,141 | 41,431 | { Tenth Precinct, 3; Essex Street Prison, 6. |
| .. | 273 | 14 | 53 | 623 | 1,066 | 1,378 | 64,230 | { St. Francis's Hospital, 269; Eleventh Precinct Station, 3. |
| .. | 356 | 24 | 223 | 934 | 1,317 | 2,272 | 47,497 | { House of Good Shepherd's, 21; Shepherd's Fold, 2; Deaf and Dumb Asylum, 4; St. Joseph's Asylum, 4; House of Refuge, 2; House of Mercy, 3; Ward's Island, 443; Randall's Island, 35; Bloomingdale Lunatic Asylum, 12; Reception Hospital, 34; Twelfth Precinct 2; New York City Asylum for Insane, 109; Randall's Island Idiots' Asylum, 12; Infants' Asylum, 253; Soldiers' Retreat, 10; Colored Orphan Asylum, 3; St. Luke's Home, 2; Thirty-first Precinct, 1; New York Juvenile Asylum, 1. |
| .. | 139 | 7 | 26 | 293 | 871 | 872 | 33,364 | { Thirteenth Precinct Station, 1. |
| .. | 86 | 6 | 31 | 250 | 803 | 809 | 26,436 | { Roman Catholic Orphan Asylum, 2; Fourteenth Precinct Station, 3; Lying-in Asylum, 1. |
| .. | 305 | 1 | 52 | 423 | 491 | 916 | 27,587 | { New York Infants' Asylum, 11; Foundling Asylum, 313; Fifteenth Precinct, 1. |
| .. | 105 | 8 | 43 | 363 | 1,070 | 1,073 | 43,359 | { Home for Aged, 4; Samaritan Home, 1; St. Joseph's Home for Aged, 1; Juvenile Asylum, 1; Sixteenth Precinct, 1. |
| .. | 347 | 10 | 43 | 636 | 2,295 | 2,302 | 95,365 | { Seventeenth Precinct Station, 1; New York Infirmary, 1; Central Office Charities and Correction, 2. |
| .. | 185 | 22 | 45 | 443 | 1,394 | 1,397 | 59,593 | { Home for Respectable Aged and Indigent Females, 2; Homeopathic Hospital, 1. |
| .. | 557 | 47 | 177 | 1,343 | 2,401 | 4,115 | 86,090 | { Workhouse, 22; German Hospital, 69; Fever Hospital, 27; Roman Catholic Asylum, 8; Women's Hospital, 15; Hospital for Ruptured and Crippled, 7; Mount Sinai, 43; City Lunatic Asylum, 113; Almshouse, 31; Penitentiary, 8; Small-Pox, 89; Charity Hospital, 736; Presbyterian, 25; Epileptic and Paralytic Hospital, 27; Total Blackwell's Island, 1,109; Hebrew Home for Aged, 1; Hahnemann's, 2; Colored Home Hospital, 147; Nursery and Child's Hospital, 96; St. Luke's Hospital, 94; Home for the Poor, 2; St. Joseph's Industrial School, 1; Chapin Home, 1; Nineteenth Precinct Station, 1; Inebriate Asylum, 1; Old Ladies' Home, 1; Foundling, 87. |
| .. | 308 | 29 | 76 | 740 | 2,063 | 2,076 | 75,407 | { Home for the Aged, 7; St. Vincent's de Paul, 3; Twenty-ninth Precinct Station, 1; Hopper's Home, 1; Institution for befriending Children, 1. |
| .. | 164 | 16 | 98 | 437 | 1,179 | 2,069 | 56,703 | { Bellevue Hospital, 376; in ambulance, 7; Morgue, 4; Steamer Bellevue on way to hospital, 1; Home for Little Sisters of the Poor, 2. |
| .. | 333 | 42 | 81 | 745 | 1,941 | 2,001 | 71,349 | { Roosevelt, 116; St. Elizabeth's, 10; St. Mary's, 5; New York Infants' Asylum, 17; New York Orphan Asylum, 1; Twenty-second Precinct, 1. |
| 1 | 4,096 | 290 | 1,251 | 9,533 | 24,329 | 29,084 | 942,292 | 4,755 |

TABLE No. X.—(Continued.)
CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,

REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | Total both Sexes. | Percentage of each Cause on Total. | |
|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-----|-----------------|-------------------|------------------------------------|-------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CLASS I.—ZYMOTIC DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 1.— <i>Miasmatic.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Small-pox and Varioloid..... | 5 | 3 | 4 | 1 | 2 | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | | 117 | .40 | |
| Variola..... | | | | | | | | | | | | | 1 | | | | | | | | | | | | | | | | | 4 | .01 | |
| Measles..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 141 | 306 | 1.95 | |
| Scarlatina..... | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | 510 | 475 | 1045 | 3.39 |
| Diphtheria..... | 4 | 1 | 2 | | 1 | | 1 | 2 | 1 | | 1 | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | 573 | 578 | 1151 | 3.96 |
| Group..... | | | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 376 | 356 | 732 | 2.32 |
| Quincy (Tonsillitis)..... | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 20 | 27 | 47 | .16 |
| Whooping-Cough..... | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 8 | 1 | 9 | .03 |
| Erysipelas..... | 7 | 3 | 5 | 6 | 5 | 7 | 4 | 7 | 4 | 1 | 5 | 1 | 5 | 8 | 1 | 2 | 3 | 3 | 2 | 1 | | | | | | | | | 117 | 151 | 268 | .92 |
| Typhoid..... | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | 109 | 95 | 204 | .70 |
| Carbuncle..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 7 | 5 | 12 | .04 |
| Dysentery..... | 7 | 3 | 4 | 5 | 12 | 3 | 3 | 6 | 3 | 8 | 6 | 5 | 4 | 3 | 3 | 3 | 1 | 3 | 4 | 1 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 193 | 108 | 301 | .97 |
| Diarrhœa..... | 9 | 5 | 8 | 5 | 11 | 6 | 10 | 6 | 8 | 7 | 8 | 10 | 9 | 12 | 11 | 10 | 6 | 18 | 7 | 6 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1572 | 1734 | 3306 | 12.40 |
| Cholera..... | 4 | 5 | 5 | 4 | 5 | 3 | 3 | 4 | 4 | 5 | 4 | 4 | 5 | 1 | 5 | 2 | 2 | 3 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 47 | 49 | 96 | .33 |
| Cholera (Morbus)..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 75 | 58 | 133 | .56 |
| Enterocolitis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 170 | 120 | 290 | 1.00 |
| Cerebro-Spinal Fever..... | 1 | 1 | 5 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 28 | 11 | 39 | .13 | |
| Typhus Fever..... | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 172 | 122 | 294 | 1.01 | |
| Typhoid Fever..... | 12 | 7 | 8 | 3 | 9 | 8 | 10 | 6 | 2 | 4 | 3 | 6 | 4 | 4 | 3 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 86 | 78 | 164 | .56 |
| Remittent Fever..... | 5 | 5 | 3 | 4 | 2 | 3 | 9 | 4 | 4 | 4 | 4 | 4 | 4 | 2 | 3 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 42 | 44 | 86 | .29 | |
| Intermittent Fever..... | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 9 | 10 | 19 | .07 | |
| Typho-Malarial Fever..... | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 6 | 14 | .04 | |
| Congestivo (Malignant) Fever..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 3 | 6 | .02 |
| Yellow Fever..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 |
| Relapsing Fever..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 |
| Gonorrhœa..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 |
| Influenza..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 |
| Total Miasmatic Diseases..... | 62 | 41 | 49 | 24 | 55 | 37 | 47 | 33 | 30 | 38 | 39 | 35 | 32 | 22 | 25 | 11 | 33 | 9 | 13 | 2 | 6 | 3 | 2 | 1 | 1 | 1 | 1 | 1 | 4630 | 4275 | 8905 | 30.63 |

TABLE NO. X.—(Continued.)
CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,
 REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. | Percentage of each Cause on Total. | | | | | | | |
|---|------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|-----------|----------|----------|-----------|----------|----------|----------|-----------------|-------------|-----------------|-------------|-------------------|------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | | | | | | | | |
| CLASS I.—ZYMOTIC DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 1.—Ethereal and Inoculable | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Syphilis..... | 7 | 3 | 5 | 6 | 1 | | 4 | 2 | | | 1 | | 1 | | 1 | | | | | | | | | | | | | 93 | 67 | 160 | .55 | | | | | | | | |
| Malignant Pustule..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | .0093 | | | | | | | |
| Total Euthetic Diseases..... | 7 | 3 | 5 | 6 | 1 | | 4 | 2 | | | 1 | | 1 | | 1 | | | | | | | | | | | | 94 | 67 | 161 | .55 | | | | | | | | | |
| Order 3.—Dietic. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inanition (Privation, etc.)..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Scurvy..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Purpura..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Intemperance..... | 20 | 8 | 22 | 7 | 13 | 8 | 17 | 3 | 8 | 6 | 2 | 1 | 2 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Alcoholism { Delirium Tremens..... | 13 | 2 | 13 | 4 | 15 | 1 | 9 | | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Dietic Diseases..... | 33 | 10 | 37 | 12 | 29 | 10 | 26 | 3 | 5 | | 8 | 2 | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 4.—Parasitic. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aphthe..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydatids of Liver..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Worms..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Parasitic Diseases..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Zymotic Class..... | 102 | 51 | 91 | 42 | 85 | 47 | 77 | 38 | 42 | 31 | 42 | 42 | 36 | 35 | 25 | 26 | 12 | 34 | 9 | 13 | 2 | 6 | .. | 3 | 2 | 1 | | 5062 | 4531 | 9593 | 32.98 | | | | | | | | |

TABLE No. X.—(Continued.)
 CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,
 REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. | Percentage of each Cause on Total. | |
|-----------------------------------|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-----------------|------|-----------------|------|-------------------|------------------------------------|--|
| | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. F. | | M. | F. | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | | | | |
| CLASS III.—LOCAL DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 1.—Nervous. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Apoplexy..... | 19 | 13 | 18 | 15 | 12 | 29 | 18 | 31 | 23 | 29 | 21 | 17 | 25 | 19 | 30 | 26 | 12 | 18 | 5 | 7 | 4 | 2 | 4 | 2 | 2 | 1 | 248 | 207 | 455 | 1.56 | | | |
| Abscess of Brain..... | | | 1 | | | | | | | | 1 | | 1 | | | | | | | | | | | | | | 7 | 1 | 8 | .03 | | | |
| Atrophy of Brain..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 381 | 363 | 744 | 2.45 | | | |
| Convulsions..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 3 | 4 | 7 | .02 | | | |
| Clebsia..... | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 91 | 76 | 167 | .57 | | | |
| Congestion of Brain..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 25 | 9 | 34 | .12 | | | |
| Entecephaly..... | 5 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | 1 | 1 | | | | | | | | | | | 55 | 55 | 110 | .38 | | | |
| Direct Effect of Solar Heat..... | 1 | 2 | 3 | 1 | 3 | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | 3 | .01 | | | |
| Embolism of Cerebral Artery..... | 3 | 1 | 3 | 3 | 1 | 3 | 2 | 3 | 1 | 3 | 3 | 3 | 1 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 38 | 31 | 69 | .24 | | | |
| Epilepsy..... | 1 | 1 | 1 | 2 | 2 | 2 | 2 | 4 | 3 | 1 | 5 | 2 | 3 | 1 | 1 | 5 | 1 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 32 | 23 | 55 | .19 | | | |
| Insanity..... | 3 | 1 | 6 | 1 | 2 | 2 | 4 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 1 | 3 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 14 | 13 | 27 | .09 | | | |
| Laryngismus Stridulus..... | 13 | 4 | 6 | 1 | 6 | 5 | 2 | 2 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 400 | 266 | 666 | 2.29 | | | |
| Meningitis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 3 | 7 | .02 | | | |
| Myelitis..... | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 4 | 8 | .02 | | | |
| Neuralgia..... | 6 | 1 | 6 | 5 | 4 | 6 | 6 | 6 | 1 | 1 | 2 | 4 | 7 | 4 | 8 | 7 | 3 | 3 | 1 | 8 | 2 | 2 | 2 | 1 | 2 | 1 | 56 | 47 | 103 | .35 | | | |
| Paralysis..... | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 9 | 8 | 17 | .06 | | | |
| Paraplegia..... | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 9 | .03 | | | |
| Progressive Locomotor Ataxia..... | 5 | 2 | 3 | 1 | 9 | 3 | 8 | 3 | 9 | 3 | 7 | 5 | 8 | 6 | 12 | 8 | 4 | 2 | 3 | 1 | 2 | 2 | 1 | 1 | 2 | 2 | 79 | 40 | 119 | .41 | | | |
| Softening of Brain..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 4 | .01 | | | |
| Softening of the Spinal Cord..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 2 | 4 | .01 | | | |
| Sclerosis of Spine..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 | | | |
| Sciatica..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .007 | | | |
| Tetanus..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 4 | 8 | .03 | | | |
| Tremulous Nascentium..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 37 | 22 | 59 | .20 | | | |
| Tumor of Brain..... | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 7 | 6 | 13 | .04 | | | |
| Tubes Dorsalis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | 2 | .003 | | | |
| Total Nervous Diseases..... | 58 | 28 | 53 | 30 | 63 | 83 | 68 | 63 | 41 | 40 | 49 | 32 | 54 | 41 | 56 | 55 | 21 | 27 | 13 | 18 | 9 | 5 | 2 | 3 | 1 | 1 | 1523 | 1179 | 2702 | 9.29 | | | |

TABLE No. X.—(Continued).
 CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,
 REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Total both Sexes. | Percentage of each Cause on Total. |
|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------|-------|-----------------|-------|-------------------|------------------------------------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| CLASS III.—LOCAL DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 2.—Circulatory. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aneurism of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aorta. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Celiac Axis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Innominate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Popliteal Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Left External Carotid Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Atheromatous Degeneration of Arteries. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Angina Pectoris. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disease of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endocarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endocarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Embolism of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Femoral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epistaxis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fatty Degeneration of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hypertrophy of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ossification of Arteries. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pericarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phlebitis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Venous Cava. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aneurism, Femoral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Syncope. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stenosis of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thrombosis of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Portal Vein. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Internal Carotid Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Middle Cerebral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valvular Disease of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aortic Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Mitral Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Tricuspid Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Pulmonary Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Circulatory Diseases..... | 44 | 39 | 66 | 38 | 63 | 37 | 40 | 29 | 33 | 23 | 36 | 31 | 23 | 34 | 29 | 21 | 15 | 15 | 6 | 11 | 3 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| Total Circulatory Diseases..... | 44 | 39 | 66 | 38 | 63 | 37 | 40 | 29 | 33 | 23 | 36 | 31 | 23 | 34 | 29 | 21 | 15 | 15 | 6 | 11 | 3 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| Total by Sexes. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M. | 4 | 1 | 10 | 2 | 10 | 4 | 4 | 4 | 5 | 1 | 6 | 1 | 1 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| F. | 5 | 1 | 10 | 2 | 10 | 4 | 4 | 4 | 5 | 1 | 6 | 1 | 1 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| Total. | 9 | 2 | 20 | 4 | 20 | 8 | 8 | 8 | 10 | 2 | 12 | 2 | 2 | 6 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| Percentage of each Cause on Total. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Aneurism of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aorta. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Celiac Axis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Innominate. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Popliteal Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Left External Carotid Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Atheromatous Degeneration of Arteries. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Angina Pectoris. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Disease of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endocarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Endocarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Embolism of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Femoral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Epistaxis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Fatty Degeneration of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hypertrophy of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ossification of Arteries. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pericarditis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phlebitis. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Venous Cava. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aneurism, Femoral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Syncope. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stenosis of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thrombosis of Pulmonary Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Portal Vein. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Internal Carotid Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Middle Cerebral Artery. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Valvular Disease of the Heart. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Aortic Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Mitral Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Tricuspid Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| " of Pulmonary Valve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Total Circulatory Diseases..... | 44 | 39 | 66 | 38 | 63 | 37 | 40 | 29 | 33 | 23 | 36 | 31 | 23 | 34 | 29 | 21 | 15 | 15 | 6 | 11 | 3 | 2 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| Total Circulatory Diseases..... | 44 | 39 | 66 | 38 | 63 | 37 | 40 | 29 | 33 | 23 | 36 | 31 | 23 | 34 | 29 | 21 | 15 | 15 | | | | | | | | | | | | | | |

TABLE No. X.—(Continued.)
CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,
 REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | NATIVITY. | | | | Colored. | 1 | | 2 | | 3 | | 4 | | Total Under 5 Yrs. | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | | |
|-------------------------------------|-------------|-----|----------|-----|----------|-----|-----|----|----|----|----|----|----|--------------------|----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|
| | Un. States. | | Foreign. | | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| | M. | F. | M. | F. | | | | | | | | | | | | | | | | | | | | | | | | |
| CLASS III.—LOCAL DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 4.— <i>Digestive.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Inflammation of Salivary Gland | 10 | 8 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Jaundice..... | 22 | 17 | 4 | | 1 | 21 | 16 | | 1 | | | | | | 1 | 22 | 16 | | | | | | | | | | | |
| Leucocythemia..... | 1 | 1 | 2 | 3 | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| Occlusion of Intestines..... | 1 | 1 | | 1 | | | | | | | | | | | | | | | | | | | | | | | | |
| Occlusion of Ductus Communis | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cholera..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Obstruction of Bowels..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Platyrrhinitis..... | 5 | 4 | 2 | 4 | | 2 | 2 | 1 | 1 | | | | | | 3 | 3 | 3 | 1 | 1 | | | | | | | | | |
| Peritonitis..... | 29 | 32 | 29 | 45 | | 11 | 2 | 2 | 1 | 2 | 2 | 1 | 1 | 17 | 5 | 4 | 4 | 7 | 5 | 5 | 2 | 2 | 4 | 5 | 11 | 5 | 5 | |
| Perforation of Verm. Appendix..... | 3 | 1 | 2 | | | 1 | 1 | | | | | | | | 1 | 1 | | 1 | 1 | | | | | | | | | |
| Pharyngeal Abscess..... | 1 | 1 | | | | 1 | 1 | | | | | | | | 1 | 1 | | 1 | 1 | | | | | | | | | |
| Protrusion Ani..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Prolapsus Ani..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Poet-Typhlitis Abscess..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Paralysis of Muscles of Deglutition | 2 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Retro-Peritoneal Tumor..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Retro-Pharyngeal Abscess..... | 1 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Strabismus..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Stenosis of Rectum..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| “ of Sigmoid Flexure..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| “ of Intestines..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| “ of Oesophagus..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Splenitis..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Tumor of Bowels..... | 6 | 4 | 4 | 4 | | 1 | 3 | | | | | | | | 1 | 3 | 1 | 1 | 3 | | | | | 1 | 3 | 1 | 1 | |
| Ulceration of Intestines..... | 1 | 1 | 3 | 4 | | 1 | 1 | | | | | | | | | | | | | | | | | | 2 | 1 | 4 | 1 |
| Ulcer of the Stomach..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Ulceration of Rectum..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Volvulus..... | 1 | 1 | | | | 1 | 1 | | | | | | | | | | | | | | | | | | | | | |
| Total Digestive Diseases..... | 357 | 342 | 251 | 298 | 4 | 208 | 179 | 39 | 24 | 8 | 12 | 7 | 5 | 4 | 3 | 257 | 223 | 19 | 11 | 17 | 12 | 10 | 8 | 8 | 18 | 22 | 33 | 30 |

TABLE No. X.—(Continued.)

CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,

REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | Total both Sexes. | Percentage of each Cause on Total. | | |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|----|-----------------|-------------------|------------------------------------|-------|------------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | | | Total | Percentage |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CLASS III.—LOCAL DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 6.— <i>Generative.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Metritis and Metro - Peritonitis (not Puerperal)..... | 4 | | 1 | | 5 | 2 | 8 | | 1 | | 2 | | | | | | | | | | | | | | | | | | 13 | 18 | .64 | | |
| Ovarian Tumor..... | 2 | | 1 | | 2 | 3 | | 1 | | | | | | | | | | | | | | | | | | | 7 | 29 | .40 | | | | |
| " Dropsy..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 7 | .02 | | | | |
| Oorchitis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | |
| Polypos of Uterus..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Prolapsus of Uterus..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Rupture of Ovarian Sac..... | | | | | | | 1 | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Retro-Uterine Hematocèle..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Retroflexion of Uterus..... | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Ulcer of Uterus..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 2 | .007 | | | | |
| Vaginitis and Vulvitis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Total Generative Diseases..... | 8 | | 11 | | 12 | 7 | 4 | 2 | 3 | 1 | 3 | 2 | 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 71 | 73 | .25 | | | |
| Order 7.—Locomotorory & Osseous. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Abscess of Antrum..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | |
| " of Axilla..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | |
| " of Arm..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | |
| " of Ankle..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | |
| " of Foot..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | 2 | 4 | .01 | | | | |
| " of Hip..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| " of Knee..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| " of Thigh..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| Arthritis (not rheumatic)..... | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 2 | 3 | .02 | | | | |
| Caries of Mastoid Process..... | | | | | | | | 1 | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| " of Ibanur..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |
| " of Spine..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 10 | 11 | .07 | | | | |
| " of Temporal Bone..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .007 | | | | |
| " of Joints..... | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 1 | .003 | | | | |

TABLE No. X.—(Continued.)

CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,

REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH. | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | 100 and upward. | | Total by Sexes. | | Percentage of each Cause on Total. |
|--|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|----|-------------------|------|------------------------------------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | Total both Sexes. | | |
| | CLASS III.—LOCAL DISEASES. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Order 7.— <i>Locomotorv & Osseous.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Caries of Tibia..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 |
| " of Bones of Ear..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Cystic Sarcoma of Humerus | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Shoulder..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Cellulitis of Leg..... | | | 1 | | | | | | | | | | | 1 | | | | | | | | | | | | | | 1 | | .003 | |
| " of Leg and Thigh..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Gangrene of Hand..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Feet..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Leg..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Toe..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Hip-Disease..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Iliac Abscess..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Necrosis of Cranial & Facial Bones | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Femur..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Head and Leg..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Hip..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Ilium..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Inferior Maxilla..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Mastoid Bone..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Nasal Bone..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Sacrum and Ilium..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Spine..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Tibia..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " of Wrist..... | | | 1 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Osteo-Mycetis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Osteo-Mycetis of Humerus and | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Scapula..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Pelvic Abscess..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| " Cellulitis..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Periostitis of Femur..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |
| Caries of Elbow..... | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | | .003 | |

TABLE No. X.—RECAPITULATION.

CONSOLIDATED ABSTRACTS OF DEATHS IN NEW YORK FROM ALL CAUSES,

REGISTERED IN THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| CAUSES OF DEATH.—CLASSES. | NATIVITY. | | | | | | Colored. | | Under 1 Year. | | 1 | | 2 | | 3 | | 4 | | Total Under 5 Years. | | 5 | | 10 | | 15 | | 20 | | 25 | | 30 | |
|--|-------------|-------|------|----------|------|------|----------|------|---------------|------|------|------|-------|-------|-------|------|------|------|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|--|
| | Un. States. | | | Foreign. | | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| | M. | F. | | M. | F. | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| ZYMOTIC..... | 4275 | 3935 | 804 | 596 | 80 | 42 | 2021 | 1847 | 774 | 723 | 363 | 372 | 334 | 310 | 236 | 191 | 3733 | 3443 | 401 | 406 | 67 | 64 | 65 | 48 | 84 | 73 | 98 | 72 | 89 | 53 | | |
| CONSTITUTIONAL..... | 1533 | 1536 | 1601 | 1573 | 65 | 57 | 520 | 446 | 199 | 161 | 58 | 62 | 42 | 81 | 26 | 22 | 845 | 722 | 48 | 53 | 30 | 42 | 95 | 163 | 269 | 281 | 306 | 353 | 302 | 239 | | |
| LOCAL..... | 3265 | 2796 | 2230 | 1863 | 95 | 100 | 1514 | 1230 | 450 | 392 | 165 | 161 | 98 | 84 | 64 | 50 | 2221 | 1926 | 108 | 152 | 89 | 71 | 87 | 92 | 156 | 135 | 195 | 193 | 253 | 191 | | |
| DEVELOPMENTAL..... | 596 | 632 | 103 | 502 | 8 | 24 | 562 | 436 | 2 | 3 | 1 | 1 | ..... | ..... | ..... | 1 | 565 | 491 | 3 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |  |  |
| VIOLENCE..... | 341 | 143 | 532 | 145 | 7 | 4 | 32 | 20 | 19 | 10 | 13 | 12 | 16 | 14 | 13 | 12 | 98 | 68 | 53 | 21 | 58 | 7 | 40 | 14 | 73 | 15 | 88 | 17 | 77 | 24 | | |
| Grand Total from all Causes..... | 10043 | 9092 | 5270 | 4679 | 295 | 227 | 4649 | 4029 | 1444 | 1289 | 610 | 608 | 490 | 439 | 339 | 235 | 7532 | 6650 | 676 | 632 | 244 | 187 | 287 | 350 | 532 | 620 | 659 | 745 | 722 | 614 | | |
| Total of both Sexes..... | 19135 | 9919 | 432 | 8678 | 2733 | 1218 | 929 | 621 | 14182 | 1310 | 431 | 637 | 1202 | 1336 | 4.93 | 4.13 | 4.59 | 1.48 | 2.19 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | | |
| Percentage on Total Mortality of both Sexes in each Period of Life.... | 65.79 | 34.21 | 1.48 | 29.84 | 9.40 | 4.19 | 3.19 | 2.14 | 48.76 | 4.59 | 1.48 | 2.19 | 4.13 | 4.93 | 4.58 | 4.13 | 4.59 | 1.48 | 2.19 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | 4.58 | 4.13 | 4.93 | | |

TABLE No. X a.

CONDENSED SUMMARY OF THE MORTALITY RECORDS IN THE EIGHT SUCCESSIVE YEARS FROM 1866 TO 1873, BY CLASSES OF CAUSES, AT THE DIFFERENT AGES, WITH PERCENTAGES OF THE SAME.

| CAUSES OF DEATH. | NATIVITY. | | Under 1 year. | 1- | 2- | 3- | 4- | Total under 5 years. | 5- | 10- | 15- | 20- | 25- | 30- | 35- | 40- | 45- | 50- | 55- | 60- | 65- | 70- | 75- | 80- | 85- | 90- | 95- | 100 and upward. | Total of both Sexes. | Percentage of each Class on Total. | | | | |
|------------------|-----------------|----------|---------------|-------|-------|-------|-----|----------------------|-------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|-------|-----------------|----------------------|------------------------------------|-------|--------|--------|-------|
| | U. S. | Foreign. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Zymotic. | 1866 | ..... | 2,614 | 1,265 | 528 | 384 | 257 | 4,998 | 408 | 171 | 196 | 400 | 421 | 377 | 342 | 297 | 248 | 217 | 189 | 158 | 131 | 64 | 40 | 30 | 6 | 1 | 2 | 1 | 7,788 | 32.77 | | | | |
| | 1867 | ..... | 2,656 | 1,281 | 565 | 294 | 181 | 4,917 | 306 | 71 | 85 | 152 | 163 | 170 | 159 | 100 | 104 | 80 | 70 | 69 | 52 | 40 | 22 | 10 | 3 | ..... | ..... | ..... | 6,588 | 28.41 | | | | |
| | 1868 | ..... | 8,394 | 1,236 | 478 | 310 | 188 | 5,706 | 396 | 72 | 103 | 146 | 178 | 154 | 137 | 80 | 115 | 90 | 48 | 75 | 69 | 69 | 35 | 28 | 14 | 6 | 2 | 1 | ..... | ..... | 7,456 | 29.96 | | |
| | 1869 | ..... | 1,497 | 1,249 | 1,400 | 632 | 424 | 801 | 5,700 | 419 | 92 | 108 | 178 | 177 | 173 | 163 | 150 | 101 | 112 | 82 | 75 | 60 | 31 | 30 | 13 | 5 | 4 | 2 | 1 | ..... | ..... | 7,676 | 30.50 | |
| | 1870 | ..... | 6,614 | 1,700 | 3,406 | 1,389 | 698 | 370 | 6,001 | 401 | 96 | 118 | 187 | 232 | 215 | 213 | 185 | 134 | 136 | 100 | 89 | 68 | 69 | 48 | 20 | 6 | 1 | ..... | ..... | 8,314 | 30.60 | | | |
| | 1871 | ..... | 6,928 | 1,436 | 3,549 | 1,333 | 682 | 371 | 6,191 | 408 | 117 | 143 | 223 | 245 | 199 | 164 | 130 | 120 | 98 | 68 | 60 | 62 | 67 | 33 | 22 | 10 | 1 | ..... | ..... | 8,364 | 31.01 | | | |
| | 1872 | ..... | 9,760 | 2,055 | 4,862 | 1,805 | 909 | 612 | 8,637 | 743 | 243 | 183 | 323 | 278 | 243 | 228 | 200 | 154 | 142 | 84 | 102 | 68 | 73 | 44 | 19 | 5 | 3 | ..... | ..... | 11,845 | 36.19 | | | |
| | 1873 | ..... | 8,193 | 1,400 | 3,806 | 1,497 | 740 | 644 | 427 | 1,176 | 307 | 108 | 157 | 170 | 147 | 136 | 133 | 132 | 115 | 73 | 84 | 71 | 51 | 46 | 22 | 8 | 3 | ..... | ..... | 9,583 | 32.98 | | | |
| | Constitutional. | 1866 | ..... | 1,358 | 517 | 184 | 84 | 48 | 2,191 | 131 | 81 | 223 | 491 | 482 | 451 | 458 | 361 | 296 | 235 | 205 | 170 | 147 | 86 | 51 | 31 | 9 | 1 | ..... | ..... | 6,121 | 22.83 | | | |
| | | 1867 | ..... | 1,042 | 488 | 165 | 75 | 50 | 1,815 | 108 | 71 | 188 | 444 | 430 | 412 | 470 | 367 | 311 | 237 | 166 | 157 | 141 | 69 | 49 | 21 | 7 | ..... | ..... | ..... | ..... | 5,618 | 23.80 | | |
| 1868 |  | ..... | 2,984 | 1,231 | 513 | 142 | 66 | 3,977 | 1,059 | 60 | 158 | 483 | 521 | 468 | 544 | 355 | 329 | 229 | 211 | 181 | 151 | 92 | 53 | 21 | 8 | 4 | ..... | ..... | ..... | ..... | 5,664 | 22.76 | | |
| 1869 |  | ..... | 2,900 | 2,820 | 4,74 | 190 | 65 | 4,457 | 1,116 | 57 | 177 | 450 | 503 | 550 | 405 | 408 | 324 | 261 | 196 | 189 | 160 | 104 | 61 | 19 | 10 | 2 | 1 | ..... | ..... | ..... | ..... | 4,720 | 22.73 | |
| 1870 |  | ..... | 3,154 | 3,175 | 4,228 | 173 | 78 | 51 | 1,792 | 94 | 84 | 223 | 501 | 551 | 465 | 430 | 387 | 345 | 243 | 212 | 153 | 100 | 65 | 25 | 14 | 3 | 1 | ..... | ..... | ..... | ..... | 6,329 | 23.28 | |
| 1871 |  | ..... | 3,126 | 3,837 | 448 | 148 | 78 | 44 | 1,706 | 99 | 76 | 222 | 498 | 684 | 580 | 591 | 433 | 372 | 305 | 227 | 178 | 130 | 91 | 45 | 18 | 6 | 1 | ..... | ..... | ..... | ..... | 6,268 | 23.22 | |
| 1872 |  | ..... | 3,331 | 3,273 | 1,063 | 461 | 158 | 84 | 59 | 1,825 | 124 | 79 | 247 | 538 | 657 | 563 | 570 | 509 | 387 | 315 | 195 | 214 | 119 | 105 | 58 | 27 | 3 | ..... | ..... | ..... | ..... | 6,604 | 20.23 | |
| 1873 | | | 3,119 | 3,660 | 360 | 120 | 73 | 48 | 1,567 | 101 | 72 | 263 | 550 | 659 | 561 | 533 | 464 | 394 | 320 | 222 | 207 | 157 | 109 | 55 | 25 | 9 | 4 | 1 | | | | | 6,293 | 21.64 |
| Local. | | 1866 | | 2,752 | 821 | 337 | 177 | 124 | 4,911 | 305 | 131 | 184 | 334 | 393 | 498 | 461 | 411 | 359 | 400 | 324 | 299 | 316 | 212 | 122 | 67 | 24 | 6 | 4 | | | | | 9,061 | 33.79 |
| | | 1867 | | 2,631 | 953 | 361 | 199 | 128 | 4,292 | 284 | 157 | 146 | 302 | 346 | 368 | 400 | 348 | 370 | 321 | 272 | 200 | 245 | 194 | 115 | 54 | 27 | 5 | 1 | | | | | 8,547 | 36.91 |
| | 1868 | ..... | 3,263 | 6,119 | 986 | 396 | 139 | 126 | 4,471 | 269 | 136 | 115 | 330 | 412 | 482 | 457 | 421 | 348 | 309 | 319 | 239 | 138 | 52 | 36 | 5 | ..... | ..... | ..... | ..... | ..... | ..... | 9,362 | 37.61 | |
| | 1869 | ..... | 3,343 | 4,530 | 995 | 432 | 218 | 157 | 4,342 | 343 | 158 | 166 | 251 | 363 | 412 | 490 | 418 | 493 | 398 | 333 | 250 | 165 | 91 | 46 | 7 | 2 | 1 | ..... | ..... | ..... | ..... | 9,380 | 37.31 | |
| | 1870 | ..... | 2,840 | 842 | 347 | 187 | 123 | 4,399 | 270 | 141 | 175 | 331 | 370 | 439 | 536 | 392 | 473 | 428 | 376 | 426 | 360 | 289 | 187 | 106 | 68 | 11 | 4 | ..... | ..... | ..... | ..... | 9,889 | 36.43 | |
| | 1871 | ..... | 2,336 | 815 | 363 | 169 | 131 | 3,814 | 289 | 157 | 175 | 275 | 375 | 415 | 449 | 492 | 501 | 460 | 411 | 413 | 367 | 326 | 164 | 116 | 41 | 4 | 3 | ..... | ..... | ..... | ..... | 9,289 | 34.40 | |
| | 1872 | | 2,713 | 947 | 403 | 215 | 161 | 4,439 | 371 | 186 | 204 | 323 | 424 | 492 | 605 | 580 | 601 | 541 | 452 | 475 | 391 | 375 | 241 | 118 | 54 | 15 | 13 | 3 | | | | | 10,903 | 33.40 |
| | 1873 | ..... | 4,093 | 6,061 | 826 | 182 | 123 | 4,217 | 320 | 160 | 179 | 291 | 358 | 444 | 512 | 569 | 541 | 509 | 395 | 436 | 352 | 390 | 205 | 137 | 62 | 19 | 8 | ..... | ..... | ..... | ..... | 10,154 | 34.91 | |

| Year | Developmental | Total | Violence |
|------|---------------|-------|----------|
| 1866 | 1,008 | 64 | 12 |
| 1867 | 1,016 | 69 | 5 |
| 1868 | 1,045 | 81 | 4 |
| 1869 | 1,045 | 81 | 2 |
| 1870 | 1,117 | 111 | 2 |
| 1871 | 1,191 | 142 | 1 |
| 1872 | 1,251 | 154 | 1 |
| 1873 | 1,285 | 163 | 2 |
| 1866 | 1,048 | 605 | 5 |
| 1867 | 1,048 | 605 | 5 |
| 1868 | 1,048 | 605 | 5 |
| 1869 | 1,048 | 605 | 5 |
| 1870 | 1,048 | 605 | 5 |
| 1871 | 1,048 | 605 | 5 |
| 1872 | 1,048 | 605 | 5 |
| 1873 | 1,048 | 605 | 5 |
| 1866 | 104 | 21 | 29 |
| 1867 | 104 | 17 | 20 |
| 1868 | 104 | 17 | 15 |
| 1869 | 104 | 17 | 10 |
| 1870 | 104 | 17 | 10 |
| 1871 | 104 | 17 | 10 |
| 1872 | 104 | 17 | 10 |
| 1873 | 104 | 17 | 10 |
| 1866 | 7,836 | 2,688 | 1,090 |
| 1867 | 7,464 | 2,794 | 1,056 |
| 1868 | 8,157 | 2,888 | 1,050 |
| 1869 | 7,405 | 2,906 | 1,205 |
| 1870 | 8,383 | 2,703 | 1,151 |
| 1871 | 9,394 | 2,704 | 1,119 |
| 1872 | 9,791 | 3,342 | 1,514 |
| 1873 | 8,678 | 2,733 | 1,215 |
| 1866 | 1,008 | 64 | 12 |
| 1867 | 1,016 | 69 | 5 |
| 1868 | 1,045 | 81 | 4 |
| 1869 | 1,045 | 81 | 2 |
| 1870 | 1,117 | 111 | 2 |
| 1871 | 1,191 | 142 | 1 |
| 1872 | 1,251 | 154 | 1 |
| 1873 | 1,285 | 163 | 2 |
| 1866 | 104 | 21 | 29 |
| 1867 | 104 | 17 | 20 |
| 1868 | 104 | 17 | 15 |
| 1869 | 104 | 17 | 10 |
| 1870 | 104 | 17 | 10 |
| 1871 | 104 | 17 | 10 |
| 1872 | 104 | 17 | 10 |
| 1873 | 104 | 17 | 10 |
| 1866 | 7,836 | 2,688 | 1,090 |
| 1867 | 7,464 | 2,794 | 1,056 |
| 1868 | 8,157 | 2,888 | 1,050 |
| 1869 | 7,405 | 2,906 | 1,205 |
| 1870 | 8,383 | 2,703 | 1,151 |
| 1871 | 9,394 | 2,704 | 1,119 |
| 1872 | 9,791 | 3,342 | 1,514 |
| 1873 | 8,678 | 2,733 | 1,215 |

Percentage on total
Mortality given by the
deaths of both sexes
in each period of life.

| Year | Developmental | Total | Violence |
|------|---------------|-------|----------|
| 1866 | 1,008 | 64 | 12 |
| 1867 | 1,016 | 69 | 5 |
| 1868 | 1,045 | 81 | 4 |
| 1869 | 1,045 | 81 | 2 |
| 1870 | 1,117 | 111 | 2 |
| 1871 | 1,191 | 142 | 1 |
| 1872 | 1,251 | 154 | 1 |
| 1873 | 1,285 | 163 | 2 |
| 1866 | 104 | 21 | 29 |
| 1867 | 104 | 17 | 20 |
| 1868 | 104 | 17 | 15 |
| 1869 | 104 | 17 | 10 |
| 1870 | 104 | 17 | 10 |
| 1871 | 104 | 17 | 10 |
| 1872 | 104 | 17 | 10 |
| 1873 | 104 | 17 | 10 |
| 1866 | 7,836 | 2,688 | 1,090 |
| 1867 | 7,464 | 2,794 | 1,056 |
| 1868 | 8,157 | 2,888 | 1,050 |
| 1869 | 7,405 | 2,906 | 1,205 |
| 1870 | 8,383 | 2,703 | 1,151 |
| 1871 | 9,394 | 2,704 | 1,119 |
| 1872 | 9,791 | 3,342 | 1,514 |
| 1873 | 8,678 | 2,733 | 1,215 |

| Year | Developmental | Total | Violence |
|------|---------------|-------|----------|
| 1866 | 1,008 | 64 | 12 |
| 1867 | 1,016 | 69 | 5 |
| 1868 | 1,045 | 81 | 4 |
| 1869 | 1,045 | 81 | 2 |
| 1870 | 1,117 | 111 | 2 |
| 1871 | 1,191 | 142 | 1 |
| 1872 | 1,251 | 154 | 1 |
| 1873 | 1,285 | 163 | 2 |
| 1866 | 104 | 21 | 29 |
| 1867 | 104 | 17 | 20 |
| 1868 | 104 | 17 | 15 |
| 1869 | 104 | 17 | 10 |
| 1870 | 104 | 17 | 10 |
| 1871 | 104 | 17 | 10 |
| 1872 | 104 | 17 | 10 |
| 1873 | 104 | 17 | 10 |
| 1866 | 7,836 | 2,688 | 1,090 |
| 1867 | 7,464 | 2,794 | 1,056 |
| 1868 | 8,157 | 2,888 | 1,050 |
| 1869 | 7,405 | 2,906 | 1,205 |
| 1870 | 8,383 | 2,703 | 1,151 |
| 1871 | 9,394 | 2,704 | 1,119 |
| 1872 | 9,791 | 3,342 | 1,514 |
| 1873 | 8,678 | 2,733 | 1,215 |

| Year | Developmental | Total | Violence |
|------|---------------|-------|----------|
| 1866 | 1,008 | 64 | 12 |
| 1867 | 1,016 | 69 | 5 |
| 1868 | 1,045 | 81 | 4 |
| 1869 | 1,045 | 81 | 2 |
| 1870 | 1,117 | 111 | 2 |
| 1871 | 1,191 | 142 | 1 |
| 1872 | 1,251 | 154 | 1 |
| 1873 | 1,285 | 163 | 2 |
| 1866 | 104 | 21 | 29 |
| 1867 | 104 | 17 | 20 |
| 1868 | 104 | 17 | 15 |
| 1869 | 104 | 17 | 10 |
| 1870 | 104 | 17 | 10 |
| 1871 | 104 | 17 | 10 |
| 1872 | 104 | 17 | 10 |
| 1873 | 104 | 17 | 10 |
| 1866 | 7,836 | 2,688 | 1,090 |
| 1867 | 7,464 | 2,794 | 1,056 |
| 1868 | 8,157 | 2,888 | 1,050 |
| 1869 | 7,405 | 2,906 | 1,205 |
| 1870 | 8,383 | 2,703 | 1,151 |
| 1871 | 9,394 | 2,704 | 1,119 |
| 1872 | 9,791 | 3,342 | 1,514 |
| 1873 | 8,678 | 2,733 | 1,215 |

TABLE No. XI.—TABLE SHOWING THE DISTRIBUTION OF THE TOTAL MORTALITY, AND THE DEATHS FROM ZYMOTIC DISEASES, ALSO SHOWING MORTALITY IN THE SEVERAL WARDS OF THE CITY, WITH DISTRIBUTION OF HOSPITAL MORTALITY PRO RATA TO POPULATION. [See page 172.]

REGISTERED DURING THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| WARDS. | Small-Pox. | Measles. | Scarlatina. | Diphtheria. | Croup. | Whooping-Cough. | Typhus Fever. | Typhoid Fever. | Yellow Fever. | Cholera. | Cholera Morbus. | Other Diarrhoeal Diseases. | Cerebro-Spinal Fever. | Other Zymotic Diseases. | Total Deaths from Zymotic Diseases. | Total Deaths exclusive of Cases in Institutions. | Total Deaths from all Causes. | Total Population (in Wards), Census of 1870. | Death-rate in 1,000 Inhabitants in Wards, exclusive of Hospitals and other Institutions. | Death-rates with the total number of Deaths in Hospitals and Institutions, distributed to the Wards pro rata to their Population. |
|--------------------|------------|----------|-------------|-------------|--------|-----------------|---------------|----------------|---------------|----------|-----------------|----------------------------|-----------------------|-------------------------|-------------------------------------|--|-------------------------------|--|--|---|
| | | | | | | | | | | | | | | | | | | | | |
| First..... | .. | 5 | 3 | 27 | 17 | 2 | 2 | 7 | 1 | .. | 44 | 4 | 4 | 22 | 134 | 473 | 507 | 14,463 | 32.70 | 37.75 |
| Second..... | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 39 | 39 | 39 | 1,312 | 29.73 | 35.06 |
| Third..... | .. | 1 | .. | 9 | .. | 3 | .. | 1 | .. | .. | 3 | 3 | 21 | .. | 64 | 67 | 67 | 3,715 | 17.23 | 22.34 |
| Fourth..... | 1 | 8 | 16 | 19 | 21 | 2 | .. | 5 | .. | 1 | 81 | 9 | 9 | 27 | 192 | 683 | 687 | 23,748 | 23.76 | 33.81 |
| Fifth..... | .. | 7 | 14 | 55 | 26 | 4 | .. | 5 | .. | .. | 76 | 7 | 7 | 25 | 219 | 515 | 520 | 17,150 | 30.03 | 35.04 |
| Sixth..... | .. | 11 | 16 | 36 | 36 | 9 | .. | 6 | .. | .. | 82 | 3 | 3 | 49 | 248 | 666 | 800 | 21,458 | 31.48 | 36.54 |
| Seventh..... | 3 | 11 | 49 | 56 | 29 | 14 | .. | 3 | .. | .. | 152 | 13 | 13 | 46 | 370 | 1,195 | 1,197 | 44,818 | 26.66 | 31.70 |
| Eighth..... | 1 | 15 | 39 | 48 | 32 | 16 | .. | 6 | .. | .. | 139 | 5 | 5 | 36 | 337 | 1,041 | 1,045 | 34,913 | 29.82 | 34.86 |
| Ninth..... | .. | 11 | 35 | 77 | 30 | 7 | 1 | 26 | .. | .. | 123 | 10 | 10 | 48 | 368 | 1,087 | 1,065 | 47,609 | 22.53 | 27.87 |
| Tenth..... | 1 | 8 | 39 | 46 | 38 | 7 | .. | 31 | 1 | .. | 204 | 12 | 12 | 27 | 404 | 1,432 | 1,441 | 41,431 | 27.32 | 32.58 |
| Eleventh..... | 1 | 18 | 76 | 69 | 73 | 23 | 2 | 31 | .. | .. | 273 | 14 | 14 | 58 | 628 | 1,666 | 1,875 | 64,280 | 25.00 | 30.05 |
| Twelfth..... | 6 | 64 | 111 | 25 | 30 | 12 | 11 | 37 | .. | .. | 386 | 24 | 24 | 228 | 934 | 1,817 | 2,272 | 47,497 | 27.73 | 32.78 |
| Thirteenth..... | 1 | 3 | 44 | 25 | 36 | 4 | 1 | 4 | .. | .. | 139 | 7 | 7 | 26 | 293 | 871 | 872 | 33,344 | 26.10 | 31.14 |
| Fourteenth..... | .. | 7 | 22 | 62 | 23 | 5 | .. | 8 | .. | .. | 86 | 6 | 6 | 31 | 250 | 863 | 869 | 26,456 | 30.37 | 35.40 |
| Fifteenth..... | .. | 6 | 11 | 25 | 12 | 8 | 2 | 6 | .. | .. | 305 | 1 | 1 | 52 | 428 | 1,070 | 916 | 27,587 | 17.80 | 22.83 |
| Sixteenth..... | 1 | 11 | 33 | 97 | 84 | 15 | .. | 11 | .. | .. | 105 | 8 | 8 | 48 | 363 | 1,070 | 1,078 | 48,569 | 22.13 | 27.17 |
| Seventeenth..... | 4 | 9 | 74 | 73 | 25 | 4 | 13 | .. | .. | .. | 347 | 10 | 10 | 48 | 656 | 2,298 | 2,302 | 95,365 | 24.10 | 29.06 |
| Eighteenth..... | 1 | 19 | 54 | 61 | 81 | 23 | 1 | 11 | .. | .. | 185 | 22 | 22 | 45 | 448 | 1,394 | 1,397 | 59,598 | 23.89 | 28.44 |
| Nineteenth..... | 89 | 26 | 134 | 159 | 72 | 2 | 5 | 54 | 1 | .. | 537 | 47 | 47 | 177 | 1,348 | 2,401 | 4,115 | 86,090 | 27.87 | 32.93 |
| Twentieth..... | 1 | 37 | 86 | 109 | 49 | 31 | 2 | 12 | .. | .. | 308 | 29 | 29 | 76 | 740 | 2,063 | 2,076 | 75,407 | 27.36 | 32.89 |
| Twenty-first..... | 4 | 13 | 53 | 26 | 31 | 15 | 4 | 13 | .. | .. | 164 | 16 | 16 | 98 | 437 | 1,179 | 2,069 | 56,703 | 20.79 | 25.83 |
| Twenty-second..... | 3 | 16 | 129 | 69 | 36 | 16 | 3 | 15 | .. | .. | 338 | 42 | 42 | 81 | 748 | 1,941 | 2,091 | 71,319 | 27.20 | 32.25 |
| Totals..... | 117 | 306 | 1,044 | 1,151 | 782 | 268 | 38 | 295 | 3 | 1 | 4,697 | 290 | 1,251 | 9,593 | 24,329 | 23,084 | 942,392 | 25.82 | ..... |  |

TABLE No. XIII.
ANNUAL COMPARATIVE MORTALITY
IN SIX CONSECUTIVE YEARS.

| DISEASES. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Average 6 Years. |
|--------------------------------------|--------|--------|--------|--------|--------|--------|---------------------|
| Zymotic diseases..... | 7,456 | 7,676 | 8,814 | 8,864 | 11,815 | 9,598 | 8869.7 |
| Constitutional diseases..... | 5,664 | 5,720 | 6,329 | 6,263 | 6,604 | 6,293 | 6145.5 |
| Local diseases..... | 9,362 | 9,889 | 9,899 | 9,250 | 10,903 | 10,154 | 9881.2 |
| Developmental diseases..... | 1,523 | 1,435 | 1,633 | 1,765 | 2,004 | 1,883 | 1707.2 |
| Deaths by violence..... | 884 | 947 | 1,000 | 1,304 | 1,321 | 1,161 | 1102.8 |
| Total deaths..... | 24,889 | 25,167 | 27,175 | 26,976 | 32,647 | 29,084 | 27656.3 |
| Small-pox..... | 24 | 203 | 293 | 805 | 929 | 117 | 895.2 |
| Measles..... | 200 | 526 | 298 | 409 | 463 | 306 | 367.0 |
| Scarlatina..... | 861 | 966 | 975 | 791 | 990 | 1,045 | 988.0 |
| Diphtheria..... | 276 | 328 | 308 | 298 | 446 | 1,151 | 457.8 |
| Croup..... | 342 | 483 | 421 | 466 | 675 | 782 | 519.8 |
| Whooping-cough..... | 217 | 353 | 201 | 465 | 565 | 263 | 345.7 |
| Typhus fever..... | 139 | 125 | 98 | 65 | 86 | 89 | 91.7 |
| Typhoid fever..... | 326 | 378 | 422 | 289 | 364 | 294 | 337.2 |
| Cerebro-spinal fever..... | 84 | 42 | 82 | 43 | 782 | 290 | 204.7 |
| Diarrhœal diseases..... | 3,837 | 3,184 | 3,956 | 3,653 | 5,197 | 4,097 | 3979.0 |
| Erysipelas..... | 102 | 152 | 121 | 145 | 185 | 204 | 151.5 |
| Gout..... | 4 | 1 | 2 | 4 | 4 | 14 | 4.8 |
| Rheumatism..... | 55 | 57 | 67 | 103 | 152 | 180 | 102.8 |
| Cancer..... | 315 | 803 | 355 | 395 | 392 | 425 | 354.2 |
| Phthisis..... | 3,414 | 3,864 | 4,030 | 4,181 | 4,274 | 4,134 | 3899.5 |
| Diseases of nervous system..... | 3,560 | 2,976 | 3,275 | 2,677 | 3,450 | 2,702 | 3111.7 |
| Heart-diseases..... | 660 | 760 | 785 | 811 | 914 | 940 | 811.7 |
| Pneumonia..... | 1,668 | 2,100 | 1,836 | 1,894 | 2,150 | 2,328 | 1986.0 |
| Bronchitis..... | 803 | 877 | 855 | 964 | 1,040 | 1,068 | 934.5 |
| Bright's diseases and nephritis..... | 594 | 637 | 690 | 1,030 | 1,029 | 985 | 860.3 |
| Puerperal diseases..... | 177 | 224 | 281 | 362 | 454 | 430 | 321.3 |
| Suicides..... | 98 | 102 | 101 | 114 | 144 | 118 | 112.8 |
| Deaths in institutions..... | 4,218 | 4,065 | 4,945 | 5,155 | 5,800 | 4,755 | 4828.0 |
| Persons 70 years old and over..... | 1,112 | 1,177 | 1,370 | 1,296 | 1,553 | 1,495 | 1333.5 |
| Children under 5 years of age..... | 13,067 | 12,859 | 13,333 | 12,971 | 16,183 | 14,182 | 13766.7 |

DEATH-RATES AND SICKNESS-RATES.

The death-rate in the city of New York has for several years ranged from 27 to 33 in the 1,000 inhabitants. In 1854 the ratio went up to the enormous figures of 44.51 in the 1,000; while in 1867, 1868, and 1869, it fell to a minimum rarely, if ever before, reached in this city, the mean ratio for those three years being equivalent to about 26 in the 1,000, annually, in an average total population of 935,100. The death-rate in 1873 was 29 in the 1,000, estimated on a population of 1,000,000.

The fact that in so great numbers of human beings, at all ages, there is always some proportionate ratio of sickness and disability to the total number of deaths, makes it important to take notice of the relation of this ratio of sickness to mortality. We notice, yearly, that just about 50 per cent. of the total numbers that die in this city are under five years of age, and that the death-rate in the total number of the children to be found in the city under five years old, exceeds 100 in the 1,000. The number of children constantly sick, and the number of days' duration in each attack of child-sickness, may not be readily estimated; but among adults, engaged in active pursuits of life, the ratios of sickness to mortality, and of the number of days and number of separate periods or attacks of sickness and disability, are susceptible of estimation.

We will here attempt to glean from the records of the Metropolitan and Municipal Police force of New York a fairly accurate body of statistics relating to this subject:

SICKNESS-RATES AND DEATH-RATES IN THE METROPOLITAN AND MUNICIPAL POLICE IN THE TEN YEARS FROM 1864 TO 1873, INCLUSIVE.

| YEARS. | Total number of men. | Total days sick or disabled. | Average number of days of sickness per man. | Average number of men constantly sick per 1,000 men. | Total number of deaths. | Death-rate per 1,000 men. |
|-----------|----------------------|------------------------------|---|--|-------------------------|---------------------------|
| 1864..... | 2,014 | 24,455 | 12.14 | { 33.26 or 3 $\frac{1}{4}$ per cent. } | 31 | 15.39 |
| 1865..... | 2,369 | 27,546 | 11.62 | { 31.56 or 3 $\frac{1}{8}$ per cent. } | 24 | 10.13 |
| 1866..... | 2,401 | 30,859 | 12.82 | { 35.20 or 3 $\frac{3}{4}$ per cent. } | 24 | 9.99 |
| 1867..... | 2,543 | 25,527 | 10.03 | { 27.40 or 2 $\frac{3}{4}$ per cent. } | 24 | 9.44 |
| 1868..... | 2,663 | 26,661 | 9.99 | { 27.37 or 2 $\frac{3}{4}$ per cent. } | 33 | 12.36 |
| 1869..... | 2,416 | 22,764 | 9.42 | { 25.81 or 2 $\frac{1}{2}$ per cent. } | 30 | 12.41 |
| 1870..... | 2,325 | 18,709 | 8.08 | { 22.15 or 2 $\frac{1}{8}$ per cent. } | 23 | 9.59 |
| 1871..... | 2,236 | 22,714 | 10.15 | { 27.53 or 2 $\frac{3}{4}$ per cent. } | 27 | 12.07 |
| 1872..... | 2,338 | 17,362 | 7.45 | { 20.34 or 2 $\frac{1}{8}$ per cent. } | 20 | 8.55 |
| 1873..... | 2,433 | 18,124 | 7.44 | { 20.40 or 2 $\frac{1}{8}$ per cent. } | 25 | 10.27 |

In this summary, of 2,400 men, renowned for their remarkable bodily vigor, and who are under constant medical surveillance, and a kind of official influence which promotes health and gives increased security to life, we have a fair average result in respect of sickness and mortality. That great portion of the city population which comprises all the living who have passed the fifth birthday (estimated in 1873 at 882,000 souls), suffered a death-rate, as shown upon our registers, equal to 16.89 in the 1,000. This, of course, is a higher rate of mortality than that in the police force, because the city population, past the fifth year of life, comprises children, invalids, and the aged, as well as the vigorous men and women of middle age. Were the sickness-rate in this portion of the population (the 882,000) simply the same as that of the police in 1873, then the 20+ who are constantly sick in every 1,000 would present an account of 17,640 years of individual loss of time by sickness during this one year.

There seems to be good reason to balance infancy against old age, and for the round statement of the actual ratios of sickness and mortality to say, as the most extended researches by Mr. Finlaison, Mr. Ansell, and Mr. Neison, in his "Contributions to the Vital Statistics of Provident Societies and the People of England," have shown, that for every death there will *be found two persons constantly sick*, and that for the 29,084 deaths in New York during the year 1873, there probably were 58,168 persons, young and old, constantly upon the sickness-roll or disabled list.

The foregoing statements comport very well with the most accurate tests which have been applied, in a larger way, to given populations, for the purpose of ascertaining the present sick and disabled list in an instantaneous census. This test, as applied under direction of Sir William Wilde, in taking the census of Dublin in a single night, has given a trustworthy result. Though, in this particular instance, the ratio of sick and disabled in total population was as favorable as ever has been found, it showed that 22.22 in every 1,000 were seriously sick or disabled. This is a more favorable exhibit than is made in standing armies in time of peace, though the United States military forces in the Northern States posts give about 25 men constantly sick in every 1,000 living. The British soldiers at home give about 20 constantly sick and disabled in the 1,000; the French army, in peace, in France, give 50 per 1,000 men; and Prussia, in peace, has about 44 men constantly sick in every 1,000 of total force. The death-rates in armies, in times of peace, fluctuate greatly, in the influences of locality, and of epidemics, etc. The 2,433 policemen of New York, in 1873, suffered only the average death-rate of other inhabitants at their ages. Their ratios of sickness and disability are unquestionably less than the average in other classes of city inhabitants at their ages.

The sickness-rate in the average population in the city cannot have been more favorable throughout the year than that which Sir Wm. Wilde found in Dublin on the night of the census, namely, 22.22 in the 1,000 living inhabitants found to be sick or disabled. In a voluntary sanitary sur-

vey in 1864-'65, the Citizens' Council of Hygiene, in this city, found 125 to 250 persons, in every 1,000 occupants of certain tenement-houses, on the invalid and sick list; and, between the worst and the best classes of the tenement-dwellings, the difference between 2 or 3 and 20 or 25, in the 100 of their occupants respectively.

Within certain limits of fluctuation, the reduction or the increase of death-rate may justifiably be regarded as indicating corresponding changes in the ratios of the sick to the well; but when the fluctuations are read for the ages which represent the most active and vigorous periods of adult life, or for the later periods of adolescence, every fraction and factor of the increase or the decrease will be found to count at the highest rate of importance, when the corresponding sickness-rate is found. This fact has been strikingly illustrated in Mr. Neison's researches into the relation of sickness-rates, death-rates, and ages. In the statement which will be found on p. 218, concerning the death-rate and ages of all who have died in this city in the past eight years, the fact appears that the chief gain to life, noticed in the ratios of mortality at the different ages of the population, is from the later years of adolescence to the beginning of old age—or from 15 to 55—that gain has most decidedly appeared. Whatever has been so gained from premature death implies vast gains in the effective lifetime of the classes of inhabitants whose years, and days of health and vigor, are counted at the highest value of any portion of the entire life.

In the last preceding abstract of records of mortality in the different wards, we have presented the death-rates for the respective wards with the hospital-deaths uncounted—in one column—and in a parallel column have caused the entire hospital and asylum mortality, amounting to 4,755 deaths, to be distributed and charged *pro rata to population* in the several wards. These 4,755 deaths represent a vast amount of sickness and disability, which was suffered by the nearly 60,000 patients, among whom, in the public institutions, these fatal cases occurred. It will be noticed, in the abstract here mentioned, that the zymotic diseases alone are charged with 9,598 deaths in the city and its institutions. This is equal to 32.98 per cent. of the total mortality, and as these zymotic causes of death are believed, in all countries, to represent quite correctly, though not identically, the equivalent of the total preventable mortality, it cannot be denied that the death-rates, as well as the ratios of the sick to the healthy, may, with the largest applications of sanitary science and medical skill, be reduced 30 per cent. below the present rates.

TABLE No. XIV.

STATISTICAL ABSTRACT OF WEEKLY MORTALITY IN THE CITY OF NEW YORK,

SHOWING THE TOTAL NUMBER OF DEATHS AT ALL AGES AND IN THE FIRST FIVE YEARS OF CHILDHOOD, WEEK BY WEEK, IN EIGHT YEARS, BEGINNING IN THE FIRST WEEK OF JUNE, 1866, AND ENDING IN THE LAST WEEK OF MAY, 1874.

| NUMBER OF THE WEEK IN THE YEAR, COMMENCING WITH THE FIRST WEEK IN JUNE, EACH YEAR. | 1866 and 1867. | | Corresponding Weeks of 1867 and 1868. | | 1868 and 1869. | | 1870 and 1871. | | 1871 and 1872. | | 1872 and 1873. | | 1873 and 1874. | | |
|--|----------------|--|---------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|
| | Total Deaths | Deaths of Children under 5 Yrs. of Age | Total | Under 5 Years. | Total | Under 5 Years. | Total | Under 5 Years. | Total | Under 5 Years. | Total | Under 5 Years. | Total | Under 5 Years. | |
| | | | | | | | | | | | | | | | 1866. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
| 1st week..... | 393 | 175 | 568 | 180 | 348 | 161 | 509 | 435 | 191 | 400 | 200 | 548 | 252 | 465 | 180 |
| 2d "..... | 363 | 169 | 532 | 372 | 392 | 184 | 576 | 494 | 259 | 412 | 245 | 615 | 309 | 471 | 213 |
| 3d "..... | 434 | 209 | 643 | 339 | 387 | 189 | 576 | 463 | 247 | 506 | 281 | 677 | 400 | 491 | 239 |
| 4th "..... | 523 | 274 | 797 | 409 | 417 | 210 | 624 | 534 | 304 | 578 | 373 | 507 | 559 | 470 | 227 |
| 5th "..... | 493 | 255 | 748 | 284 | 413 | 223 | 637 | 612 | 414 | 766 | 416 | 1,591 | 1,047 | 683 | 418 |
| 6th "..... | 827 | 478 | 1,305 | 559 | 614 | 381 | 1,001 | 726 | 501 | 1,222 | 705 | 1,922 | 1,265 | 1,007 | 441 |
| 7th "..... | 1,362 | 794 | 2,156 | 582 | 1,142 | 706 | 1,848 | 1,010 | 616 | 1,640 | 640 | 2,280 | 1,618 | 1,317 | 668 |
| 8th "..... | 771 | 464 | 1,235 | 477 | 781 | 548 | 1,329 | 427 | 578 | 545 | 306 | 768 | 496 | 908 | 565 |
| 9th "..... | 946 | 424 | 1,370 | 458 | 730 | 521 | 1,251 | 491 | 355 | 681 | 323 | 1,004 | 407 | 837 | 582 |
| 10th "..... | 946 | 418 | 1,364 | 457 | 751 | 538 | 1,289 | 373 | 635 | 644 | 337 | 1,021 | 382 | 745 | 484 |
| 11th "..... | 748 | 348 | 1,096 | 443 | 643 | 438 | 1,081 | 592 | 360 | 584 | 324 | 773 | 446 | 648 | 384 |
| 12th "..... | 714 | 357 | 1,071 | 396 | 732 | 486 | 1,218 | 571 | 343 | 552 | 308 | 745 | 422 | 626 | 354 |
| 13th "..... | 647 | 309 | 956 | 390 | 656 | 425 | 1,081 | 504 | 299 | 429 | 316 | 629 | 347 | 611 | 345 |
| Total, 13 Weeks (Summer Quarter). | 9,467 | 4,614 | 14,081 | 4,397 | 8,016 | 5,017 | 13,033 | 7,497 | 5,230 | 7,712 | 4,401 | 10,430 | 6,341 | 8,539 | 5,120 |
| 14th week..... | 656 | 339 | 995 | 363 | 509 | 376 | 885 | 480 | 263 | 492 | 345 | 591 | 326 | 634 | 349 |
| 15th "..... | 620 | 305 | 925 | 369 | 519 | 365 | 884 | 451 | 234 | 471 | 224 | 525 | 285 | 586 | 315 |
| 16th "..... | 564 | 275 | 839 | 350 | 454 | 309 | 763 | 454 | 214 | 415 | 254 | 420 | 258 | 546 | 273 |
| 17th "..... | 487 | 256 | 743 | 249 | 454 | 255 | 709 | 437 | 236 | 506 | 251 | 520 | 233 | 528 | 296 |
| 18th "..... | 449 | 202 | 651 | 263 | 472 | 241 | 713 | 467 | 223 | 427 | 199 | 474 | 214 | 462 | 213 |
| 19th "..... | 428 | 204 | 632 | 239 | 434 | 214 | 648 | 415 | 195 | 427 | 198 | 482 | 217 | 402 | 213 |
| 20th "..... | 475 | 213 | 688 | 225 | 424 | 213 | 637 | 414 | 195 | 427 | 198 | 482 | 222 | 484 | 224 |
| 21st "..... | 409 | 187 | 596 | 183 | 369 | 177 | 546 | 408 | 210 | 405 | 200 | 474 | 215 | 524 | 236 |
| 22d "..... | 839 | 194 | 1,033 | 357 | 630 | 171 | 801 | 420 | 153 | 422 | 172 | 400 | 163 | 566 | 293 |
| 23d "..... | 394 | 169 | 563 | 357 | 516 | 337 | 853 | 446 | 155 | 422 | 177 | 442 | 185 | 464 | 203 |
| 24th "..... | 372 | 169 | 541 | 353 | 534 | 136 | 670 | 425 | 161 | 473 | 184 | 423 | 163 | 585 | 282 |
| 25th "..... | 397 | 162 | 559 | 382 | 536 | 131 | 667 | 466 | 169 | 469 | 187 | 440 | 167 | 505 | 244 |
| 26th "..... | 452 | 201 | 653 | 462 | 658 | 134 | 792 | 466 | 199 | 480 | 177 | 443 | 185 | 484 | 210 |
| Total, 13 Weeks (Autumnal Quarter). | 6,069 | 2,849 | 8,918 | 2,973 | 5,569 | 2,559 | 8,128 | 5,816 | 2,634 | 5,957 | 2,626 | 6,122 | 2,946 | 6,478 | 3,206 |
| Total for 26 Weeks..... | 15,536 | 7,463 | 22,999 | 7,370 | 13,685 | 7,576 | 21,161 | 13,313 | 7,864 | 11,700 | 7,056 | 16,908 | 9,359 | 15,020 | 8,326 |

TABLE No. XV.
TABLE SHOWING TOTAL MORTALITY, ALSO THAT OF CHILDREN UNDER FIVE YEARS OF AGE,
 EACH DAY IN THE YEAR ENDING DECEMBER 31, 1873.

| DAY of MONTH. | January. | | February. | | March. | | April. | | May. | | June. | | July. | | August. | | September. | | October. | | November. | | December. | |
|---------------|------------------|-----------------------|-----------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|----------------|---------|----------------|------------|----------------|----------|----------------|-----------|----------------|-----------|----------------|
| | Total mortality. | Deaths under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. | Under 5 years. | Total. |
| 1 | 66 | 36 | 69 | 44 | 69 | 48 | 70 | 45 | 67 | 46 | 62 | 42 | 68 | 47 | 112 | 60 | 69 | 46 | 67 | 49 | 61 | 38 | 54 | 25 |
| 2 | 84 | 46 | 86 | 55 | 89 | 58 | 90 | 60 | 74 | 50 | 69 | 46 | 81 | 51 | 116 | 50 | 69 | 46 | 67 | 47 | 63 | 35 | 69 | 38 |
| 3 | 75 | 34 | 92 | 49 | 89 | 39 | 84 | 25 | 69 | 40 | 66 | 31 | 79 | 41 | 111 | 58 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 4 | 82 | 29 | 89 | 36 | 85 | 25 | 83 | 39 | 69 | 40 | 66 | 31 | 79 | 41 | 111 | 58 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 5 | 71 | 22 | 79 | 41 | 83 | 30 | 84 | 22 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 6 | 66 | 27 | 70 | 31 | 77 | 25 | 74 | 22 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 7 | 76 | 22 | 84 | 35 | 82 | 27 | 77 | 22 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 8 | 76 | 22 | 84 | 35 | 82 | 27 | 77 | 22 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 9 | 76 | 22 | 84 | 35 | 82 | 27 | 77 | 22 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 10 | 65 | 25 | 72 | 33 | 78 | 25 | 83 | 32 | 68 | 42 | 69 | 42 | 81 | 51 | 101 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 11 | 68 | 33 | 76 | 33 | 83 | 31 | 81 | 27 | 77 | 46 | 55 | 41 | 84 | 54 | 103 | 54 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 12 | 68 | 33 | 76 | 33 | 83 | 31 | 81 | 27 | 77 | 46 | 55 | 41 | 84 | 54 | 103 | 54 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 13 | 69 | 38 | 83 | 31 | 84 | 35 | 84 | 37 | 69 | 46 | 69 | 46 | 84 | 54 | 123 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 14 | 69 | 38 | 83 | 31 | 84 | 35 | 84 | 37 | 69 | 46 | 69 | 46 | 84 | 54 | 123 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 15 | 72 | 32 | 86 | 33 | 84 | 35 | 84 | 37 | 69 | 46 | 69 | 46 | 84 | 54 | 123 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 16 | 77 | 32 | 86 | 33 | 84 | 35 | 84 | 37 | 69 | 46 | 69 | 46 | 84 | 54 | 123 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 17 | 84 | 41 | 88 | 41 | 88 | 41 | 88 | 41 | 74 | 46 | 70 | 47 | 84 | 54 | 118 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 18 | 70 | 40 | 88 | 41 | 88 | 41 | 88 | 41 | 74 | 46 | 70 | 47 | 84 | 54 | 118 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 19 | 67 | 39 | 83 | 35 | 84 | 35 | 84 | 35 | 69 | 46 | 69 | 46 | 84 | 54 | 113 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 20 | 72 | 21 | 88 | 24 | 82 | 16 | 82 | 16 | 69 | 46 | 69 | 46 | 84 | 54 | 113 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 21 | 60 | 25 | 84 | 24 | 82 | 16 | 82 | 16 | 69 | 46 | 69 | 46 | 84 | 54 | 113 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 22 | 60 | 25 | 84 | 24 | 82 | 16 | 82 | 16 | 69 | 46 | 69 | 46 | 84 | 54 | 113 | 63 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 23 | 79 | 39 | 88 | 33 | 82 | 22 | 82 | 22 | 74 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 24 | 78 | 31 | 84 | 28 | 82 | 22 | 82 | 22 | 74 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 25 | 67 | 31 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 26 | 68 | 34 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 27 | 68 | 34 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 28 | 63 | 33 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 29 | 61 | 33 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 30 | 64 | 33 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |
| 31 | 76 | 33 | 81 | 28 | 76 | 22 | 76 | 22 | 69 | 46 | 69 | 46 | 84 | 54 | 108 | 60 | 69 | 46 | 67 | 49 | 64 | 35 | 76 | 35 |

TABLE No. XVI.

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH,

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Phthisis Pulmonalis. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity (total Saturation being 100). | Mean Barometer. |
|-----------------|------------------|-------------------|----------------------|----------------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|---|-----------------|
| January 1..... | 90 | 24 | 3 | 12 | 6 | 3 | 30 | 26.00 | 29. | 23. | 6.0 | 67.63 | 30.243 |
| " 2..... | 94 | 21 | 3 | 18 | 6 | 3 | 43 | 27.66 | 30. | 21. | 9.0 | 53.43 | 30.202 |
| " 3..... | 24 | 27 | 3 | 6 | 9 | 1 | 45 | 41.83 | 45.5 | 40. | 5.5 | 93.03 | 29.586 |
| " 4..... | 75 | 15 | 3 | 7 | 3 | 1 | 34 | 38.23 | 41.7 | 35. | 6.7 | 60.03 | 29.988 |
| " 5..... | 73 | 18 | 4 | 11 | 2 | 1 | 29 | 30.00 | 32.5 | 27. | 5.5 | 87.36 | 29.958 |
| " 6..... | 71 | 15 | 3 | 13 | 3 | 3 | 32 | 33.06 | 37.0 | 28.0 | 9.0 | 46.50 | 29.963 |
| " 7..... | 66 | 18 | 3 | 4 | 4 | 1 | 27 | 25.00 | 30.0 | 18.0 | 12.0 | 52.06 | 30.229 |
| " 8..... | 76 | 16 | 3 | 5 | 3 | 3 | 23 | 30.16 | 33.0 | 25.0 | 8.0 | 53.13 | 29.922 |
| " 9..... | 76 | 19 | 4 | 11 | 9 | 1 | 32 | 31.16 | 33.5 | 28.0 | 5.5 | 54.73 | 29.789 |
| " 10..... | 59 | 13 | 1 | 11 | 3 | 1 | 25 | 22.96 | 25.4 | 21.5 | 3.9 | 38.46 | 29.909 |
| " 11..... | 65 | 21 | 2 | 7 | 6 | 2 | 29 | 11.73 | 14.0 | 8.0 | 6.0 | 54.43 | 30.214 |
| " 12..... | 80 | 16 | 3 | 19 | 5 | 2 | 39 | 21.00 | 26.0 | 13.0 | 13.0 | 43.70 | 30.320 |
| " 13..... | 69 | 22 | 4 | 15 | 9 | 4 | 31 | 36.40 | 41.2 | 23.0 | 13.2 | 75.53 | 30.118 |
| " 14..... | 98 | 18 | 2 | 18 | 3 | 1 | 39 | 41.53 | 47.6 | 33.0 | 9.6 | 59.90 | 29.989 |
| " 15..... | 82 | 21 | 4 | 12 | 7 | 2 | 29 | 29.33 | 31.0 | 27.0 | 4.0 | 73.80 | 30.441 |
| " 16..... | 77 | 17 | 3 | 10 | 4 | 3 | 34 | 44.33 | 50.0 | 35.0 | 15.0 | 92.70 | 29.952 |
| " 17..... | 88 | 16 | 6 | 11 | 2 | 2 | 41 | 43.33 | 52.0 | 36.0 | 16.0 | 79.13 | 29.600 |
| " 18..... | 70 | 14 | 3 | 13 | 3 | 3 | 20 | 32.00 | 33.0 | 31.0 | 2.0 | 84.13 | 29.669 |
| " 19..... | 67 | 13 | 3 | 12 | 6 | 3 | 35 | 20.33 | 22.0 | 19.0 | 3.0 | 55.93 | 29.795 |
| " 20..... | 72 | 22 | 2 | 15 | 7 | 2 | 21 | 30.33 | 35.0 | 21.0 | 14.0 | 63.66 | 29.875 |
| " 21..... | 83 | 22 | 3 | 19 | 3 | 4 | 32 | 36.66 | 39.0 | 34.0 | 5.0 | 55.26 | 29.500 |
| " 22..... | 60 | 17 | 3 | 8 | 7 | 7 | 25 | 37.00 | 39.0 | 34.0 | 5.0 | 55.30 | 29.766 |
| " 23..... | 79 | 27 | 3 | 10 | 6 | 3 | 39 | 28.66 | 31.0 | 25.0 | 6.0 | 63.83 | 30.003 |
| " 24..... | 73 | 23 | 4 | 15 | 6 | 3 | 31 | 27.33 | 29.6 | 25.0 | 4.6 | 58.50 | 29.580 |
| " 25..... | 67 | 17 | 3 | 10 | 5 | 3 | 31 | 24.33 | 27.6 | 22.0 | 5.6 | 63.06 | 29.581 |
| " 26..... | 80 | 22 | 3 | 13 | 4 | 5 | 39 | 22.66 | 26.5 | 16.0 | 10.5 | 70.16 | 29.994 |
| " 27..... | 85 | 17 | 3 | 18 | 6 | 1 | 33 | 28.26 | 29.8 | 27.0 | 2.8 | 84.93 | 29.610 |
| " 28..... | 73 | 20 | 5 | 8 | 2 | 2 | 30 | 28.33 | 32.0 | 26.0 | 6.0 | 84.83 | 30.866 |
| " 29..... | 84 | 19 | 5 | 12 | 2 | 2 | 33 | 7.56 | 10.0 | 3.0 | 7.0 | 55.83 | 29.173 |
| " 30..... | 76 | 17 | 1 | 13 | 5 | 3 | 31 | 14.33 | 19.5 | 8.0 | 11.5 | 51.16 | 30.043 |
| " 31..... | 80 | 19 | 3 | 13 | 5 | 4 | 32 | 23.90 | 30.2 | 17.0 | 17.2 | 50.10 | 29.992 |
| February 1..... | 79 | 16 | 1 | 16 | 4 | 4 | 44 | 25.66 | 29.0 | 22.0 | 7.0 | 62.26 | 29.915 |
| " 2..... | 73 | 21 | 3 | 16 | 9 | 2 | 25 | 14.00 | 17.0 | 10.0 | 7.0 | 46.90 | 30.034 |
| " 3..... | 86 | 24 | 4 | 13 | 5 | .. | 40 | 23.00 | 36.0 | 19.0 | 17.0 | 77.43 | 29.890 |
| " 4..... | 92 | 19 | 5 | 15 | 7 | 1 | 49 | 44.10 | 47.5 | 39.8 | 7.7 | 87.03 | 29.562 |
| " 5..... | 89 | 20 | 6 | 9 | 6 | .. | 36 | 36.66 | 37.0 | 35.0 | 1.0 | 63.06 | 30.036 |
| " 6..... | 79 | 22 | 4 | 15 | 2 | .. | 41 | 38.33 | 43.0 | 32.0 | 11.0 | 62.06 | 29.859 |
| " 7..... | 70 | 16 | 3 | 9 | 2 | 2 | 31 | 37.66 | 39.2 | 32.0 | 7.2 | 87.23 | 29.666 |
| " 8..... | 81 | 14 | 1 | 16 | 3 | .. | 25 | 43.50 | 48.0 | 37.5 | 10.5 | 65.93 | 29.522 |
| " 9..... | 66 | 14 | 1 | 9 | 4 | 3 | 26 | 20.66 | 30.0 | 10.0 | 20.0 | 32.96 | 29.880 |
| " 10..... | 84 | 24 | 2 | 11 | 11 | 3 | 42 | 19.00 | 23.0 | 11.0 | 12.0 | 52.93 | 30.114 |
| " 11..... | 72 | 16 | 2 | 12 | 5 | 3 | 33 | 35.40 | 41.0 | 27.0 | 14.0 | 69.16 | 29.716 |
| " 12..... | 90 | 22 | 1 | 10 | 3 | 5 | 50 | 34.00 | 36.0 | 31.0 | 5.0 | 64.10 | 29.700 |
| " 13..... | 65 | 16 | 2 | 11 | 4 | 5 | 24 | 20.33 | 24.0 | 17.0 | 7.0 | 66.10 | 29.955 |
| " 14..... | 83 | 22 | 2 | 11 | 8 | 3 | 31 | 24.00 | 28.0 | 17.0 | 11.0 | 46.06 | 30.269 |
| " 15..... | 73 | 20 | 3 | 7 | 4 | 3 | 41 | 49.16 | 33.0 | 22.0 | 11.0 | 69.10 | 30.331 |
| " 16..... | 80 | 15 | 2 | 16 | 4 | .. | 32 | 34.00 | 35.0 | 32.0 | 3.0 | 87.96 | 30.052 |
| " 17..... | 80 | 23 | 3 | 15 | 8 | 5 | 34 | 38.56 | 43.0 | 36.0 | 7.0 | 62.56 | 29.812 |
| " 18..... | 78 | 15 | 2 | 12 | 5 | 3 | 27 | 36.23 | 39.5 | 31.0 | 8.5 | 67.63 | 30.202 |
| " 19..... | 68 | 19 | 2 | 12 | 7 | .. | 25 | 41.00 | 42.0 | 40.0 | 2.0 | 85.43 | 29.863 |
| " 20..... | 87 | 17 | 3 | 15 | 7 | 3 | 23 | 36.20 | 37.0 | 34.6 | 2.4 | 44.76 | 30.023 |
| " 21..... | 76 | 19 | 6 | 16 | 6 | 4 | 36 | 33.66 | 35.0 | 33.0 | 2.0 | 71.66 | 29.857 |
| " 22..... | 81 | 21 | 5 | 13 | 4 | 6 | 43 | 21.66 | 26.0 | 17.0 | 9.0 | 46.03 | 29.553 |
| " 23..... | 63 | 18 | 1 | 9 | 4 | 4 | 38 | 11.33 | 14.0 | 8.0 | 6.0 | 34.40 | 29.611 |
| " 24..... | 68 | 16 | 3 | 14 | 5 | 4 | 33 | 10.50 | 19.0 | 0.5 | 18.5 | 35.96 | 29.626 |
| " 25..... | 67 | 20 | 1 | 9 | 4 | 4 | 30 | 27.66 | 33.0 | 20.0 | 13.0 | 57.70 | 29.755 |
| " 26..... | 99 | 25 | 2 | 19 | 9 | 2 | 43 | 32.33 | 37.0 | 25.0 | 9.0 | 59.20 | 29.867 |
| " 27..... | 61 | 10 | 2 | 8 | 1 | .. | 27 | 30.50 | 32.5 | 29.0 | 3.5 | 90.73 | 29.583 |
| " 28..... | 75 | 17 | 4 | 16 | 3 | 3 | 37 | 31.33 | 36.0 | 25.0 | 8.0 | 66.43 | 29.651 |
| March 1..... | 65 | 11 | 4 | 12 | 3 | 1 | 35 | 34.06 | 38.2 | 29.5 | 8.7 | 56.40 | 30.037 |
| " 2..... | 72 | 20 | 3 | 14 | 4 | 2 | 29 | 30.33 | 34.0 | 28.0 | 6.0 | 66.46 | 29.856 |
| " 3..... | 82 | 19 | 4 | 17 | 5 | 1 | 38 | 27.00 | 34.0 | 18.0 | 16.0 | 69.73 | 29.561 |
| " 4..... | 80 | 19 | 1 | 13 | 8 | 2 | 39 | 17.33 | 24.0 | 14.0 | 10.0 | 44.23 | 29.956 |
| " 5..... | 68 | 19 | 3 | 15 | 4 | 1 | 25 | 21.50 | 27.0 | 11.5 | 15.5 | 50.63 | 30.434 |

TABLE No. XVI.—(Continued.)

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH,

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Phthisis Pulmonalis. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity. | Mean Barometer. |
|--------------|------------------|-------------------|----------------------|----------------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|----------------|-----------------|
| March 6..... | 58 | 15 | 4 | 15 | 1 | 1 | 30 | 27.00 | 36.0 | 15.0 | 21.0 | 57.43 | 30.506 |
| " 7..... | 92 | 15 | 3 | 20 | 4 | 1 | 35 | 35.73 | 40.2 | 27.0 | 13.2 | 55.53 | 30.282 |
| " 8..... | 63 | 16 | 4 | 12 | 3 | 1 | 27 | 41.00 | 45.0 | 35.0 | 10.0 | 65.80 | 29.665 |
| " 9..... | 65 | 15 | 1 | 15 | 6 | 1 | 27 | 41.83 | 47.0 | 38.0 | 9.0 | 65.36 | 29.542 |
| " 10..... | 80 | 16 | 3 | 11 | 4 | 2 | 25 | 35.60 | 39.0 | 29.0 | 10.0 | 55.06 | 29.776 |
| " 11..... | 91 | 21 | 2 | 15 | 6 | 3 | 41 | 41.83 | 44.0 | 38.0 | 6.0 | 75.70 | 29.661 |
| " 12..... | 83 | 23 | 4 | 9 | 9 | 2 | 37 | 37.16 | 39.0 | 34.5 | 4.5 | 51.63 | 29.627 |
| " 13..... | 77 | 14 | 3 | 12 | 8 | 3 | 30 | 38.00 | 49.5 | 23.0 | 7.5 | 44.76 | 30.014 |
| " 14..... | 75 | 14 | 4 | 12 | 8 | 3 | 35 | 41.66 | 47.0 | 35.5 | 11.5 | 43.13 | 30.212 |
| " 15..... | 82 | 13 | 3 | 15 | 4 | 2 | 40 | 42.66 | 45.0 | 39.0 | 6.0 | 64.00 | 29.903 |
| " 16..... | 89 | 21 | 3 | 7 | 2 | 5 | 41 | 41.33 | 45.0 | 37.0 | 8.0 | 54.56 | 29.501 |
| " 17..... | 89 | 19 | 6 | 14 | 1 | 5 | 23 | 37.83 | 42.0 | 33.0 | 9.0 | 31.00 | 30.032 |
| " 18..... | 87 | 11 | 2 | 13 | 4 | 2 | 30 | 40.66 | 45.0 | 35.0 | 10.0 | 53.66 | 29.777 |
| " 19..... | 87 | 14 | 3 | 14 | 1 | 4 | 37 | 46.66 | 49.0 | 45.0 | 4.0 | 49.66 | 29.736 |
| " 20..... | 66 | 13 | 3 | 10 | 3 | 1 | 24 | 36.50 | 37.0 | 35.5 | 1.5 | 65.40 | 29.514 |
| " 21..... | 77 | 23 | 5 | 10 | 4 | 3 | 35 | 36.50 | 38.5 | 34.0 | 4.5 | 66.90 | 29.395 |
| " 22..... | 73 | 17 | 4 | 7 | 1 | 5 | 31 | 36.90 | 39.0 | 35.7 | 3.3 | 62.56 | 29.608 |
| " 23..... | 79 | 15 | 2 | 15 | 3 | 2 | 26 | 39.16 | 45. | 32.5 | 12.5 | 53.96 | 29.545 |
| " 24..... | 75 | 15 | 2 | 16 | 2 | 5 | 32 | 33.66 | 36.0 | 29.0 | 7.0 | 48.00 | 29.955 |
| " 25..... | 71 | 12 | 1 | 17 | 3 | 1 | 22 | 28.00 | 30.0 | 29.0 | 4.0 | 80.56 | 29.555 |
| " 26..... | 55 | 8 | 2 | 9 | 2 | 1 | 22 | 34.16 | 37.0 | 31.5 | 5.5 | 85.56 | 29.857 |
| " 27..... | 83 | 19 | 4 | 14 | 6 | 4 | 31 | 29.66 | 35.0 | 24.0 | 11.0 | 64.00 | 29.888 |
| " 28..... | 80 | 14 | 4 | 16 | 4 | 1 | 31 | 38.00 | 42.5 | 31.5 | 11.0 | 57.60 | 30.122 |
| " 29..... | 82 | 22 | 4 | 15 | 4 | 5 | 43 | 45.66 | 48.0 | 43.0 | 5.0 | 95.00 | 29.226 |
| " 30..... | 70 | 14 | 3 | 12 | 3 | 1 | 27 | 47.66 | 52.0 | 44.0 | 8.0 | 71.83 | 29.138 |
| " 31..... | 82 | 11 | 3 | 9 | 1 | 1 | 38 | 46.73 | 50.2 | 45.0 | 5.2 | 69.60 | 29.532 |
| April 1..... | 76 | 17 | 1 | 9 | 8 | 5 | 31 | 46. | 52.0 | 42.0 | 10.0 | 54.33 | 29.598 |
| " 2..... | 90 | 20 | 5 | 9 | 6 | 3 | 47 | 54.50 | 62.5 | 49.5 | 13.0 | 74.73 | 29.614 |
| " 3..... | 74 | 15 | 5 | 13 | 4 | 1 | 29 | 49.83 | 53.0 | 46.5 | 6.5 | 56.13 | 29.550 |
| " 4..... | 78 | 18 | 2 | 14 | 4 | 3 | 28 | 48.26 | 53.3 | 43.0 | 10.3 | 53.90 | 30.029 |
| " 5..... | 73 | 15 | 3 | 13 | 3 | 3 | 30 | 43.50 | 49.5 | 40.0 | 9.5 | 71.63 | 30.108 |
| " 6..... | 64 | 12 | 5 | 10 | 3 | 1 | 22 | 42.33 | 45.0 | 40.0 | 5.0 | 94.33 | 29.916 |
| " 7..... | 78 | 16 | 5 | 14 | 3 | 4 | 33 | 45.60 | 50.6 | 40.2 | 10.4 | 98.66 | 29.826 |
| " 8..... | 77 | 22 | 5 | 10 | 5 | 3 | 36 | 51.00 | 55.0 | 46.0 | 9.0 | 85.46 | 29.695 |
| " 9..... | 79 | 18 | 5 | 16 | 5 | 2 | 32 | 45.83 | 49.0 | 43.5 | 5.5 | 85.60 | 29.895 |
| " 10..... | 63 | 12 | 4 | 13 | 3 | 2 | 28 | 53.00 | 57.0 | 45.0 | 9.0 | 58.50 | 29.978 |
| " 11..... | 86 | 19 | 1 | 16 | 10 | 2 | 39 | 52.33 | 55.0 | 45.0 | 7.0 | 61.76 | 29.994 |
| " 12..... | 82 | 24 | 7 | 13 | 6 | 6 | 37 | 41.00 | 48.0 | 37.0 | 11.0 | 91.10 | 29.497 |
| " 13..... | 72 | 17 | 6 | 9 | 6 | 1 | 35 | 41.33 | 43.0 | 37.0 | 6.0 | 46.56 | 29.572 |
| " 14..... | 84 | 12 | 3 | 13 | 3 | 2 | 37 | 46.00 | 50.0 | 42.0 | 8.0 | 52.33 | 29.642 |
| " 15..... | 86 | 16 | 3 | 16 | 3 | 4 | 32 | 49.33 | 54.5 | 46.0 | 8.5 | 44.33 | 29.515 |
| " 16..... | 63 | 20 | 3 | 9 | 3 | 2 | 31 | 45.33 | 48.0 | 44.0 | 4.0 | 68.50 | 30.046 |
| " 17..... | 65 | 15 | 3 | 20 | 4 | 4 | 27 | 41.23 | 42.0 | 40.2 | 1.8 | 85.10 | 29.634 |
| " 18..... | 72 | 12 | 3 | 13 | 4 | 1 | 23 | 45.33 | 49.0 | 40.0 | 9.0 | 81.40 | 29.510 |
| " 19..... | 87 | 17 | 2 | 11 | 6 | 4 | 29 | 47.33 | 52.0 | 44.0 | 8.0 | 75.63 | 29.560 |
| " 20..... | 82 | 14 | 6 | 15 | 2 | 2 | 34 | 47.33 | 53.0 | 42.0 | 11.0 | 57.66 | 29.647 |
| " 21..... | 65 | 12 | 2 | 8 | 3 | 2 | 29 | 40.98 | 41.5 | 40.3 | 1.2 | 65.33 | 29.691 |
| " 22..... | 71 | 14 | 5 | 13 | 1 | 2 | 24 | 41.16 | 43.0 | 40.0 | 3.0 | 68.23 | 29.740 |
| " 23..... | 62 | 11 | 5 | 9 | 1 | 2 | 31 | 47.00 | 52.0 | 40.0 | 12.0 | 53.20 | 29.715 |
| " 24..... | 75 | 16 | 4 | 17 | 2 | 3 | 34 | 50.33 | 56.0 | 45.0 | 8.0 | 88.56 | 29.720 |
| " 25..... | 76 | 16 | 4 | 15 | 3 | 1 | 40 | 47.43 | 51.2 | 41.6 | 9.6 | 44.00 | 29.559 |
| " 26..... | 78 | 10 | 1 | 20 | 4 | 1 | 29 | 44.00 | 43.0 | 42.0 | 6.0 | 46.00 | 29.624 |
| " 27..... | 70 | 19 | 4 | 7 | 4 | 1 | 38 | 50.00 | 55.0 | 46.0 | 9.0 | 47.56 | 29.798 |
| " 28..... | 67 | 12 | 3 | 14 | 4 | 3 | 30 | 55.06 | 59.2 | 50.0 | 9.2 | 41.00 | 29.923 |
| " 29..... | 81 | 15 | 5 | 13 | 2 | 1 | 35 | 53.50 | 58.5 | 50.0 | 8.5 | 63.60 | 29.530 |
| " 30..... | 65 | 15 | 4 | 8 | 1 | 4 | 29 | 53.33 | 59.5 | 45.0 | 11.5 | 62.46 | 30.016 |
| May 1..... | 67 | 15 | 1 | 13 | 1 | 2 | 28 | 59.50 | 67.5 | 52.0 | 15.5 | 67.53 | 30.050 |
| " 2..... | 74 | 18 | 3 | 14 | 3 | 3 | 21 | 52.50 | 56.0 | 48.5 | 7.5 | 92.50 | 29.634 |
| " 3..... | 54 | 15 | 4 | 12 | 4 | 1 | 20 | 42.16 | 43.0 | 41.5 | 1.5 | 85.46 | 29.530 |
| " 4..... | 60 | 14 | 2 | 10 | 2 | 2 | 20 | 52.33 | 63.0 | 44.0 | 19.0 | 64.73 | 29.793 |
| " 5..... | 73 | 23 | 1 | 14 | 6 | 5 | 28 | 62.33 | 70.0 | 53.0 | 17.0 | 49.73 | 29.985 |
| " 6..... | 81 | 16 | 5 | 12 | 2 | 7 | 34 | 56.33 | 62.0 | 53.0 | 9.0 | 39.56 | 30.211 |
| " 7..... | 93 | 20 | 4 | 13 | 5 | 3 | 40 | 55.66 | 63.0 | 50.5 | 12.5 | 45.96 | 30.266 |
| " 8..... | 67 | 16 | 1 | 9 | 2 | 2 | 32 | 48.83 | 50.5 | 47.0 | 3.5 | 75.76 | 30.133 |

TABLE No. XVI.—(Continued.)

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH,

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Phthisis Pulmonalis. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity. | Mean Barometer. |
|-------|----|------------------|-------------------|----------------------|----------------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|----------------|-----------------|
| May | 9 | 87 | 24 | 5 | 15 | 3 | 5 | 37 | 49.33 | 55.0 | 46.0 | 9.0 | 85.66 | 29.551 |
| " | 10 | 83 | 23 | 4 | 11 | 5 | 3 | 32 | 52.66 | 56.0 | 45.0 | 8.0 | 91.30 | 29.915 |
| " | 11 | 68 | 14 | 2 | 12 | 4 | 4 | 26 | 53.33 | 57.0 | 50.0 | 7.0 | 90.90 | 29.739 |
| " | 12 | 61 | 14 | 1 | 12 | 2 | 2 | 21 | 59.16 | 62.0 | 54.0 | 8.0 | 51.80 | 29.657 |
| " | 13 | 97 | 21 | 5 | 20 | 3 | 3 | 40 | 63.00 | 76.0 | 55.0 | 21.0 | 36.20 | 29.513 |
| " | 14 | 69 | 17 | 4 | 11 | 2 | 3 | 30 | 54.16 | 60.0 | 47.5 | 12.5 | 45.43 | 29.677 |
| " | 15 | 84 | 17 | 4 | 20 | 2 | 4 | 34 | 55.50 | 66.0 | 51.0 | 15.0 | 40.76 | 29.658 |
| " | 16 | 91 | 25 | 2 | 12 | 3 | 2 | 46 | 60.33 | 65.0 | 56.0 | 9.0 | 49.43 | 29.733 |
| " | 17 | 69 | 20 | 4 | 13 | 2 | 6 | 26 | 56.66 | 63.0 | 52.0 | 11.0 | 45.16 | 29.794 |
| " | 18 | 76 | 17 | 2 | 11 | 1 | 5 | 23 | 61.00 | 67.0 | 57.0 | 10.0 | 43.06 | 29.871 |
| " | 19 | 69 | 17 | 6 | 13 | 2 | 1 | 23 | 62.26 | 68.8 | 57.0 | 11.8 | 85.63 | 29.891 |
| " | 20 | 89 | 12 | 3 | 10 | 2 | 4 | 40 | 56.33 | 61.0 | 54.5 | 6.5 | 55.70 | 30.187 |
| " | 21 | 74 | 15 | 3 | 8 | 5 | 2 | 31 | 53.93 | 56.0 | 51.0 | 5.0 | 71.50 | 30.162 |
| " | 22 | 71 | 21 | 3 | 8 | 3 | 7 | 32 | 59.50 | 64.0 | 56.5 | 7.5 | 83.56 | 30.025 |
| " | 23 | 87 | 24 | 5 | 11 | 6 | 1 | 34 | 65.06 | 71.0 | 60.2 | 10.8 | 84.06 | 29.837 |
| " | 24 | 76 | 17 | 4 | 12 | 1 | 3 | 35 | 72.86 | 77.8 | 64.8 | 13.0 | 72.06 | 29.553 |
| " | 25 | 80 | 13 | 3 | 10 | 5 | 4 | 29 | 75.33 | 82.0 | 65.0 | 14.0 | 66.70 | 29.765 |
| " | 26 | 58 | 10 | .. | 11 | 4 | 4 | 15 | 69.16 | 76.5 | 68.0 | 13.5 | 59.96 | 30.033 |
| " | 27 | 63 | 12 | 1 | 8 | 3 | 3 | 23 | 65.33 | 63.0 | 64.5 | 8.5 | 66.73 | 29.869 |
| " | 28 | 70 | 13 | 2 | 9 | 2 | 4 | 31 | 77.16 | 83.0 | 69.0 | 14.0 | 70.43 | 29.697 |
| " | 29 | 84 | 19 | 2 | 9 | 7 | 4 | 33 | 76.33 | 82.0 | 72.0 | 10.0 | 59.56 | 29.534 |
| " | 30 | 72 | 30 | 3 | 9 | 6 | 4 | 35 | 66.16 | 69.0 | 61.0 | 8.0 | 53.40 | 29.962 |
| " | 31 | 58 | 21 | 2 | 15 | 6 | 7 | 19 | 59.00 | 62.0 | 55.0 | 7.0 | 41.40 | 30.250 |
| June | 1 | 73 | 16 | 2 | 13 | 4 | 5 | 24 | 76.00 | 87.0 | 65.0 | 22.0 | 53.13 | 30.198 |
| " | 2 | 69 | 14 | 1 | 12 | 4 | 1 | 26 | 72.66 | 79.0 | 67.0 | 12.0 | 36.66 | 30.050 |
| " | 3 | 73 | 19 | 6 | 11 | 2 | 1 | 29 | 61.33 | 67.0 | 56.0 | 11.0 | 43.90 | 30.073 |
| " | 4 | 71 | 13 | 1 | 13 | 2 | 4 | 31 | 66.90 | 74.0 | 58.5 | 15.5 | 80.93 | 29.701 |
| " | 5 | 66 | 17 | 4 | 12 | 2 | 1 | 23 | 77.33 | 82.0 | 72.0 | 10.0 | 54.00 | 29.512 |
| " | 6 | 55 | 22 | 3 | 3 | 3 | 3 | 28 | 73.83 | 81.0 | 63.0 | 18.0 | 51.20 | 29.659 |
| " | 7 | 58 | 15 | 2 | 12 | 1 | 4 | 19 | 68.16 | 74.0 | 64.5 | 9.5 | 43.26 | 29.758 |
| " | 8 | 67 | 17 | 6 | 12 | 6 | 1 | 28 | 68.33 | 73.0 | 65.0 | 8.0 | 61.43 | 29.973 |
| " | 9 | 69 | 21 | 3 | 8 | 4 | 6 | 37 | 70.50 | 76.5 | 63.0 | 13.5 | 47.90 | 29.970 |
| " | 10 | 68 | 20 | 8 | 5 | 3 | 3 | 33 | 76.33 | 83.0 | 69.0 | 14.0 | 59.30 | 29.811 |
| " | 11 | 83 | 19 | 6 | 11 | 3 | 2 | 40 | 76.66 | 82.0 | 74.0 | 8.0 | 59.16 | 29.757 |
| " | 12 | 55 | 16 | 3 | 10 | 3 | 3 | 24 | 69.53 | 74.0 | 66.0 | 8.0 | 46.56 | 29.974 |
| " | 13 | 58 | 13 | 4 | 8 | 3 | 2 | 22 | 66.83 | 76.0 | 62.0 | 14.0 | 49.10 | 30.045 |
| " | 14 | 71 | 21 | 4 | 10 | 5 | 3 | 29 | 64.43 | 68.5 | 57.0 | 11.5 | 69.43 | 29.846 |
| " | 15 | 70 | 24 | 5 | 13 | 7 | 3 | 27 | 67.50 | 71.0 | 64.0 | 7.0 | 57.60 | 29.750 |
| " | 16 | 70 | 19 | 9 | 14 | 4 | 2 | 25 | 73.00 | 83.0 | 71.0 | 12.0 | 61.00 | 29.695 |
| " | 17 | 55 | 22 | 10 | 10 | 2 | 7 | 27 | 77.16 | 83.5 | 74.0 | 9.5 | 45.06 | 29.789 |
| " | 18 | 53 | 17 | 2 | 6 | 4 | 3 | 26 | 69.33 | 74.0 | 66.0 | 8.0 | 45.33 | 29.789 |
| " | 19 | 69 | 21 | 6 | 10 | 6 | 4 | 35 | 82.00 | 90.8 | 73.0 | 17.8 | 50.86 | 29.619 |
| " | 20 | 106 | 35 | 15 | 11 | 6 | 1 | 56 | 83.00 | 87.5 | 80.0 | 7.5 | 38.66 | 29.573 |
| " | 21 | 63 | 22 | 11 | 11 | 1 | 3 | 43 | 75.00 | 81.0 | 69.0 | 12.0 | 31.76 | 29.747 |
| " | 22 | 65 | 27 | 9 | 9 | 5 | 4 | 33 | 67.80 | 71.0 | 62.0 | 9.0 | 60.90 | 30.046 |
| " | 23 | 65 | 19 | 5 | 7 | 5 | 1 | 29 | 63.30 | 69.0 | 61.0 | 8.0 | 75.10 | 30.202 |
| " | 24 | 64 | 19 | 8 | 9 | 6 | 1 | 34 | 60.50 | 62.2 | 56.5 | 5.7 | 83.10 | 30.184 |
| " | 25 | 59 | 19 | 7 | 10 | 3 | 2 | 27 | 66.00 | 76.5 | 53.0 | 23.5 | 63.60 | 30.386 |
| " | 26 | 69 | 24 | 9 | 9 | 6 | 4 | 36 | 70.50 | 78.0 | 57.5 | 20.5 | 54.60 | 30.378 |
| " | 27 | 69 | 23 | 10 | 11 | 7 | 3 | 27 | 73.60 | 84.5 | 60.5 | 24.0 | 67.30 | 29.980 |
| " | 28 | 79 | 30 | 14 | 5 | 1 | 3 | 41 | 76.10 | 90.0 | 68.5 | 21.5 | 66.30 | 29.814 |
| " | 29 | 99 | 39 | 25 | 10 | 4 | 3 | 57 | 77.4 | 84.0 | 69.2 | 14.8 | 61.20 | 29.848 |
| " | 30 | 75 | 34 | 22 | 12 | 2 | 3 | 42 | 73.9 | 80.0 | 70.0 | 10.0 | 76.40 | 29.878 |
| July | 1 | 80 | 30 | 19 | 10 | 2 | .. | 47 | 74.8 | 83.5 | 71.0 | 12.5 | 82.9 | 29.570 |
| " | 2 | 81 | 36 | 23 | 11 | 4 | .. | 47 | 81.9 | 90.0 | 70.0 | 20.0 | 60.1 | 30.106 |
| " | 3 | 132 | 63 | 40 | 11 | 4 | 1 | 84 | 84.1 | 93.0 | 75.5 | 17.5 | 57.5 | 30.046 |
| " | 4 | 126 | 60 | 46 | 12 | 4 | .. | 79 | 81.3 | 83.5 | 74.0 | 14.5 | 61.1 | 29.957 |
| " | 5 | 90 | 43 | 31 | 5 | 4 | .. | 62 | 75.8 | 83.0 | 73.0 | 10.0 | 84.5 | 29.847 |
| " | 6 | 51 | 42 | 33 | 5 | 4 | 1 | 51 | 73.0 | 74.0 | 66.0 | 8.0 | 50.7 | 29.907 |
| " | 7 | 49 | 41 | 9 | 5 | 2 | .. | 59 | 70.3 | 83.0 | 59.5 | 23.5 | 48.0 | 30.024 |
| " | 8 | 95 | 48 | 36 | 16 | 4 | 3 | 59 | 70.4 | 77.0 | 64.5 | 12.5 | 72.6 | 29.984 |
| " | 9 | 96 | 59 | 42 | 6 | 3 | 5 | 64 | 73.5 | 81.0 | 64.0 | 17.0 | 70.4 | 30.008 |
| " | 10 | 195 | 59 | 43 | 9 | 4 | 4 | 74 | 74.5 | 80.5 | 69.5 | 11.3 | 65.5 | 30.038 |
| " | 11 | 105 | 55 | 40 | 12 | 3 | 5 | 72 | 68.5 | 75.0 | 64.0 | 14.0 | 69.0 | 30.010 |

TABLE No. XVI.—(Continued.)

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH.

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Phtisis Pulmonalis. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity. | Mean Barometer. |
|------------------|------------------|-------------------|----------------------|---------------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|----------------|-----------------|
| July 12..... | 95 | 50 | 33 | 7 | 5 | 4 | 62 | 70.0 | 80.5 | 69.5 | 11.0 | 48.2 | 30.210 |
| " 13..... | 128 | 75 | 60 | 6 | 5 | 4 | 93 | 72.8 | 80.2 | 64.5 | 15.7 | 66.5 | 30.169 |
| " 14..... | 130 | 74 | 60 | 8 | 1 | 2 | 86 | 71.4 | 89.0 | 67.5 | 21.5 | 65.5 | 29.976 |
| " 15..... | 157 | 97 | 77 | 12 | 5 | 5 | 122 | 80.5 | 90.0 | 72.5 | 17.5 | 69.7 | 29.825 |
| " 16..... | 144 | 91 | 74 | 11 | 5 | 6 | 112 | 77.6 | 83.0 | 70. | 13.0 | 54.4 | 29.589 |
| " 17..... | 118 | 63 | 50 | 13 | 3 | 1 | 79 | 70.7 | 74.0 | 69. | 5.0 | 82.0 | 29.758 |
| " 18..... | 127 | 69 | 58 | 11 | 4 | 2 | 88 | 65.5 | 74.2 | 62. | 12.2 | 87.7 | 29.778 |
| " 19..... | 113 | 68 | 54 | 10 | 2 | 5 | 78 | 65.0 | 69.5 | 62. | 7.5 | 93.3 | 29.809 |
| " 20..... | 115 | 65 | 49 | 12 | 3 | 2 | 68 | 72.3 | 79. | 62. | 17.0 | 74.3 | 29.861 |
| " 21..... | 123 | 69 | 46 | 10 | 10 | 2 | 76 | 71.2 | 80.0 | 65.5 | 14.5 | 57.1 | 29.888 |
| " 22..... | 103 | 61 | 42 | 15 | 5 | 2 | 71 | 74.9 | 84. | 63. | 21.0 | 55.2 | 30.067 |
| " 23..... | 115 | 66 | 52 | 10 | 2 | 1 | 69 | 78.0 | 87. | 65.5 | 13.5 | 57.5 | 30.118 |
| " 24..... | 152 | 95 | 83 | 7 | 1 | 2 | 110 | 81.5 | 90. | 72. | 18.0 | 61.8 | 29.500 |
| " 25..... | 156 | 86 | 71 | 7 | 3 | 4 | 105 | 82.5 | 94.2 | 75.2 | 19.0 | 63.3 | 29.807 |
| " 26..... | 139 | 75 | 60 | 9 | 4 | 6 | 96 | 82.4 | 92. | 74.5 | 17.5 | 59.1 | 29.873 |
| " 27..... | 141 | 82 | 63 | 8 | 4 | 1 | 104 | 73.6 | 81. | 71. | 10.0 | 81.3 | 30.024 |
| " 28..... | 110 | 64 | 47 | 9 | 4 | 2 | 66 | 77.7 | 83.5 | 73.5 | 10.0 | 65.6 | 30.019 |
| " 29..... | 121 | 68 | 49 | 12 | 6 | 6 | 79 | 77.2 | 84.5 | 73. | 11.5 | 75.0 | 29.888 |
| " 30..... | 122 | 68 | 50 | 8 | 7 | 4 | 86 | 80.5 | 89. | 69. | 20.0 | 59.0 | 29.921 |
| " 31..... | 115 | 59 | 46 | 4 | 4 | 4 | 85 | 78.7 | 87. | 69.5 | 17.5 | 55.3 | 29.997 |
| August 1..... | 112 | 63 | 43 | 6 | 4 | 3 | 77 | 79.4 | 88.7 | 74.2 | 14.7 | 69.3 | 29.885 |
| " 2..... | 116 | 63 | 43 | 6 | 2 | 2 | 85 | 80.0 | 87.2 | 72.7 | 14.5 | 69.3 | 29.825 |
| " 3..... | 116 | 64 | 52 | 6 | 1 | 2 | 83 | 80.0 | 89.5 | 71.5 | 18.0 | 68.0 | 29.992 |
| " 4..... | 111 | 51 | 42 | 11 | 3 | 1 | 65 | 74.5 | 80. | 66.7 | 13.3 | 51.3 | 30.023 |
| " 5..... | 91 | 53 | 37 | 10 | 4 | 4 | 65 | 73.7 | 79.5 | 66.2 | 12.8 | 45.0 | 30.158 |
| " 6..... | 101 | 55 | 39 | 10 | 8 | .. | 64 | 72.9 | 82. | 63. | 20.0 | 61.3 | 30.108 |
| " 7..... | 107 | 49 | 35 | 11 | 1 | 2 | 62 | 76.4 | 86.0 | 65.2 | 20.8 | 57.6 | 29.910 |
| " 8..... | 116 | 65 | 53 | 8 | 5 | 1 | 76 | 75.3 | 82.2 | 70. | 12.2 | 70.3 | 29.812 |
| " 9..... | 103 | 46 | 29 | 14 | 1 | 1 | 69 | 76.5 | 85. | 68. | 17.0 | 47.0 | 29.981 |
| " 10..... | 96 | 52 | 35 | 12 | 7 | 2 | 59 | 72.9 | 85. | 66.2 | 18.8 | 57.3 | 30.046 |
| " 11..... | 93 | 50 | 41 | 11 | 4 | 1 | 60 | 73.6 | 81. | 64. | 17.0 | 55.0 | 30.056 |
| " 12..... | 103 | 44 | 33 | 12 | 4 | 1 | 54 | 70.2 | 77.5 | 64.7 | 12.8 | 56.0 | 30.045 |
| " 13..... | 89 | 47 | 39 | 8 | 5 | 2 | 57 | 64.8 | 68. | 62.5 | 5.5 | 75.3 | 29.964 |
| " 14..... | 92 | 37 | 25 | 5 | 4 | 1 | 54 | 64.2 | 66. | 62.5 | 3.5 | 91.6 | 29.775 |
| " 15..... | 96 | 44 | 27 | 9 | 6 | 4 | 55 | 67.4 | 72. | 62. | 10.0 | 83.0 | 29.824 |
| " 16..... | 79 | 36 | 23 | 5 | 5 | .. | 45 | 76.0 | 83.7 | 69. | 14.7 | 67.3 | 29.799 |
| " 17..... | 96 | 44 | 25 | 12 | 4 | 1 | 54 | 69.0 | 80. | 63.5 | 16.5 | 69.0 | 30.064 |
| " 18..... | 83 | 30 | 19 | 9 | 1 | .. | 45 | 66.8 | 68. | 63.2 | 4.8 | 78.0 | 30.066 |
| " 19..... | 90 | 36 | 22 | 7 | 5 | .. | 60 | 72.2 | 77.2 | 66.2 | 11.0 | 75.3 | 29.950 |
| " 20..... | 86 | 47 | 25 | 10 | 4 | 4 | 51 | 69.1 | 72.5 | 68.2 | 4.3 | 82.3 | 30.028 |
| " 21..... | 93 | 45 | 27 | 10 | 3 | 1 | 51 | 69.7 | 71.7 | 63. | 3.7 | 84.6 | 30.046 |
| " 22..... | 90 | 37 | 18 | 8 | 6 | 1 | 47 | 78.0 | 83. | 70.2 | 12.8 | 69.6 | 29.974 |
| " 23..... | 88 | 25 | 15 | 16 | 4 | 5 | 46 | 77.3 | 87.5 | 65. | 22.5 | 53.6 | 29.985 |
| " 24..... | 85 | 41 | 23 | 13 | 3 | .. | 44 | 60.3 | 69.5 | 55.5 | 14.0 | 59.0 | 29.973 |
| " 25..... | 81 | 31 | 25 | 13 | 5 | .. | 49 | 66.4 | 64. | 56. | 8.0 | 61.6 | 29.857 |
| " 26..... | 94 | 39 | 24 | 14 | 3 | 5 | 55 | 70.4 | 75. | 65. | 10.0 | 71.3 | 29.779 |
| " 27..... | 84 | 41 | 31 | 5 | 2 | 4 | 56 | 67.3 | 74. | 69. | 14.0 | 75.0 | 30.008 |
| " 28..... | 94 | 42 | 26 | 14 | 3 | 4 | 52 | 69.2 | 76. | 61. | 15.0 | 70.3 | 30.188 |
| " 29..... | 85 | 36 | 18 | 13 | 4 | 2 | 39 | 69.8 | 76. | 64. | 12.0 | 70.0 | 30.217 |
| " 30..... | 83 | 38 | 23 | 9 | 7 | 1 | 50 | 71.9 | 79. | 66. | 13.0 | 72.3 | 30.045 |
| " 31..... | 86 | 33 | 22 | 10 | 3 | 2 | 43 | 76.0 | 84.2 | 68. | 16.2 | 73.6 | 29.865 |
| September 1..... | 92 | 46 | 28 | 6 | 6 | 2 | 60 | 78.6 | 89. | 70. | 19.0 | 72.0 | 29.697 |
| " 2..... | 83 | 35 | 23 | 13 | 1 | .. | 43 | 69.5 | 75.5 | 63.5 | 12.0 | 65.6 | 29.849 |
| " 3..... | 85 | 35 | 25 | 8 | 7 | .. | 50 | 70.0 | 78. | 60. | 18.0 | 55.0 | 29.999 |
| " 4..... | 105 | 50 | 28 | 13 | 6 | 2 | 55 | 75.6 | 86.2 | 68.7 | 17.5 | 73.9 | 29.753 |
| " 5..... | 95 | 37 | 24 | 8 | 5 | .. | 53 | 77.7 | 87. | 67. | 20.0 | 62.6 | 29.801 |
| " 6..... | 88 | 27 | 17 | 16 | 5 | 1 | 45 | 63.0 | 68. | 58.5 | 9.5 | 66.6 | 30.104 |
| " 7..... | 84 | 34 | 18 | 16 | 7 | 1 | 41 | 61.5 | 66. | 54.5 | 11.5 | 76.6 | 30.157 |
| " 8..... | 71 | 30 | 16 | 13 | 8 | 2 | 40 | 63.9 | 68.5 | 59.5 | 9.0 | 63.6 | 30.223 |
| " 9..... | 80 | 37 | 27 | 8 | 6 | .. | 46 | 63.1 | 70.7 | 57. | 13.7 | 69.6 | 30.285 |
| " 10..... | 91 | 25 | 15 | 14 | 5 | 1 | 44 | 61.6 | 64.5 | 56. | 8.5 | 72.6 | 30.165 |
| " 11..... | 78 | 32 | 14 | 11 | 10 | 2 | 44 | 65.0 | 72. | 60. | 12.0 | 74.0 | 30.089 |
| " 12..... | 91 | 36 | 22 | 15 | 6 | 2 | 49 | 69.0 | 78.2 | 60.7 | 17.5 | 70.0 | 27.932 |
| " 13..... | 91 | 29 | 18 | 9 | 3 | 3 | 51 | 67.5 | 76 | 60. | 16.0 | 77.3 | 29.760 |

TABLE No. XVI.—(Continued.)

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH,

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Pneumonia. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity. | Mean Barometer. |
|-----------------|------------------|-------------------|----------------------|------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|----------------|-----------------|
| Sept. 14..... | 71 | 28 | 16 | 10 | 7 | 7 | 40 | 53.6 | 60. | 49.2 | 10.8 | 64.3 | 29.912 |
| " 15..... | 76 | 29 | 19 | 15 | 2 | 4 | 33 | 55.5 | 64.5 | 44. | 20.5 | 51.8 | 30.057 |
| " 16..... | 83 | 23 | 16 | 10 | 1 | 47 | 65.1 | 75. | 56. | 19.0 | 61.6 | 29.958 | |
| " 17..... | 85 | 33 | 22 | 9 | 6 | .. | 42 | 69.0 | 71. | 52. | 19.0 | 51.6 | 30.147 |
| " 18..... | 86 | 30 | 15 | 12 | 6 | 3 | 43 | 67.7 | 77. | 56. | 21.0 | 69.6 | 30.038 |
| " 19..... | 80 | 36 | 14 | 16 | 7 | 2 | 49 | 68.2 | 70. | 54. | 16.0 | 83.0 | 29.668 |
| " 20..... | 60 | 18 | 10 | 11 | 3 | 1 | 23 | 54.6 | 61. | 49.7 | 11.3 | 57.3 | 29.816 |
| " 21..... | 82 | 43 | 19 | 12 | 3 | 3 | 41 | 55.3 | 64. | 47. | 17.0 | 61.6 | 30.200 |
| " 22..... | 72 | 38 | 8 | 8 | 5 | .. | 29 | 58.8 | 65.5 | 50.5 | 15.0 | 64.3 | 30.198 |
| " 23..... | 81 | 27 | 10 | 8 | 6 | 4 | 49 | 63.9 | 79. | 56. | 14.0 | 78.6 | 29.948 |
| " 24..... | 79 | 30 | 18 | 13 | 5 | 2 | 37 | 65.6 | 70. | 61. | 9.0 | 78.3 | 29.839 |
| " 25..... | 83 | 39 | 22 | 11 | 3 | 3 | 47 | 65.1 | 70. | 61. | 9.0 | 70.0 | 29.972 |
| " 26..... | 78 | 30 | 11 | 12 | 12 | 1 | 41 | 68.7 | 78. | 63.5 | 14.5 | 68.0 | 30.092 |
| " 27..... | 34 | 22 | 6 | 6 | 6 | 1 | 52 | 69.5 | 80. | 60.5 | 19.5 | 76.3 | 30.128 |
| " 28..... | 75 | 31 | 11 | 13 | 7 | 4 | 32 | 71.4 | 79.2 | 64. | 15.2 | 78.0 | 30.024 |
| " 29..... | 61 | 18 | 5 | 5 | 1 | 1 | 28 | 72.8 | 80. | 64. | 16.0 | 81.6 | 29.778 |
| " 30..... | 70 | 27 | 16 | 9 | 6 | 2 | 35 | 56.6 | 66. | 51.5 | 14.5 | 62.3 | 29.994 |
| October 1..... | 48 | 14 | 5 | 7 | 5 | .. | 26 | 56.2 | 66. | 45. | 21.0 | 60.6 | 30.054 |
| " 2..... | 67 | 21 | 8 | 7 | 8 | 3 | 34 | 60.6 | 69. | 52.2 | 16.8 | 53.3 | 30.187 |
| " 3..... | 77 | 20 | 11 | 13 | 4 | 1 | 29 | 62.0 | 71. | 52.5 | 18.5 | 61.0 | 30.185 |
| " 4..... | 61 | 26 | 7 | 7 | 7 | 4 | 31 | 61.7 | 64.2 | 52.5 | 11.7 | 76.6 | 30.000 |
| " 5..... | 78 | 19 | 6 | 11 | 10 | .. | 35 | 66.7 | 72. | 62.2 | 9.8 | 67.0 | 29.668 |
| " 6..... | 64 | 24 | 10 | 8 | 6 | 1 | 31 | 60.2 | 69. | 48. | 21.0 | 85.3 | 29.512 |
| " 7..... | 56 | 14 | 2 | 7 | 4 | 2 | 26 | 49.8 | 48. | 40.5 | 7.5 | 71.6 | 29.597 |
| " 8..... | 69 | 26 | 18 | 9 | 2 | 3 | 28 | 55.8 | 65.2 | 44. | 21.2 | 52.6 | 29.777 |
| " 9..... | 74 | 25 | 11 | 13 | 7 | 2 | 34 | 55.5 | 63. | 48. | 15.0 | 64.3 | 30.069 |
| " 10..... | 73 | 20 | 8 | 9 | 4 | .. | 35 | 58.5 | 64. | 47. | 17.0 | 55.3 | 30.090 |
| " 11..... | 70 | 30 | 8 | 11 | 11 | 3 | 35 | 59.0 | 70.5 | 48. | 22.5 | 49.0 | 29.578 |
| " 12..... | 88 | 34 | 10 | 12 | 13 | .. | 40 | 54.9 | 61.2 | 48. | 13.2 | 59.0 | 29.745 |
| " 13..... | 73 | 17 | 5 | 11 | 5 | 3 | 30 | 49.5 | 55.5 | 48.5 | 12.0 | 53.3 | 30.049 |
| " 14..... | 67 | 26 | 8 | 9 | 9 | 1 | 30 | 57.8 | 69. | 46.2 | 22.8 | 55.6 | 30.159 |
| " 15..... | 80 | 25 | 11 | 14 | 6 | 3 | 34 | 58.1 | 68. | 49.7 | 18.8 | 53.3 | 30.404 |
| " 16..... | 80 | 26 | 5 | 7 | 5 | 5 | 37 | 59.7 | 70. | 49.7 | 20.8 | 66.3 | 30.221 |
| " 17..... | 63 | 21 | 5 | 10 | 8 | 2 | 28 | 59.6 | 64. | 53.2 | 10.8 | 64.6 | 30.164 |
| " 18..... | 73 | 27 | 9 | 10 | 9 | 2 | 37 | 58.8 | 63. | 52. | 11.0 | 74.0 | 30.092 |
| " 19..... | 95 | 30 | 7 | 18 | 9 | 3 | 41 | 65.8 | 70.2 | 63. | 7.2 | 81.6 | 29.822 |
| " 20..... | 99 | 22 | 11 | 16 | 3 | 2 | 31 | 68.1 | 70. | 58. | 12.0 | 83.6 | 29.816 |
| " 21..... | 66 | 18 | 5 | 12 | 8 | 2 | 31 | 55.6 | 58.7 | 51.7 | 7.0 | 55.3 | 29.739 |
| " 22..... | 69 | 20 | 5 | 6 | 6 | 2 | 35 | 54.5 | 62. | 49.2 | 12.8 | 52.3 | 30.089 |
| " 23..... | 71 | 25 | 3 | 9 | 11 | 5 | 32 | 58.1 | 65.2 | 50.5 | 14.7 | 58.6 | 30.129 |
| " 24..... | 72 | 22 | 5 | 10 | 9 | .. | 34 | 56.8 | 63. | 49.5 | 13.5 | 65.3 | 30.112 |
| " 25..... | 64 | 18 | 5 | 8 | 7 | 1 | 34 | 47.6 | 57. | 42. | 15.0 | 64.6 | 30.150 |
| " 26..... | 67 | 22 | 5 | 12 | 10 | 3 | 30 | 53.3 | 59. | 41.5 | 17.5 | 61.3 | 30.002 |
| " 27..... | 77 | 21 | 7 | 14 | 4 | 3 | 27 | 57.3 | 64. | 49.2 | 14.8 | 75.6 | 29.485 |
| " 28..... | 64 | 18 | 2 | 11 | 6 | 4 | 25 | 49.2 | 59. | 40.5 | 18.5 | 59.6 | 29.703 |
| " 29..... | 59 | 19 | 4 | 11 | 11 | 2 | 30 | 39.0 | 47. | 33. | 14.0 | 61.3 | 30.077 |
| " 30..... | 66 | 27 | 4 | 9 | 9 | 3 | 32 | 41.5 | 46. | 35. | 11.0 | 68.6 | 30.290 |
| " 31..... | 62 | 20 | 6 | 10 | 5 | 6 | 28 | 45.8 | 49.5 | 40. | 9.5 | 72.3 | 30.014 |
| November 1..... | 61 | 22 | 7 | 8 | 5 | 3 | 31 | 40.0 | 47. | 33.2 | 13.8 | 51.2 | 30.192 |
| " 2..... | 59 | 12 | 2 | 11 | 5 | 3 | 26 | 47.7 | 57. | 36. | 21.0 | 55.0 | 30.202 |
| " 3..... | 77 | 25 | 3 | 10 | 7 | 4 | 35 | 47.3 | 57.5 | 35. | 22.5 | 51.6 | 30.203 |
| " 4..... | 64 | 16 | 4 | 10 | 4 | 4 | 29 | 45.7 | 51.2 | 33. | 18.2 | 59.3 | 30.079 |
| " 5..... | 68 | 28 | 4 | 11 | 10 | 6 | 31 | 45.0 | 52. | 35.5 | 18.5 | 58.0 | 30.060 |
| " 6..... | 62 | 16 | 1 | 17 | 6 | .. | 29 | 39.8 | 48. | 32.7 | 15.2 | 52.6 | 30.221 |
| " 7..... | 76 | 23 | 4 | 13 | 11 | 1 | 34 | 48.8 | 50.5 | 34. | 16.5 | 59.6 | 30.088 |
| " 8..... | 58 | 19 | 3 | 9 | 8 | 2 | 19 | 48.2 | 52. | 45.2 | 6.8 | 75.0 | 29.557 |
| " 9..... | 65 | 9 | 1 | 15 | 5 | .. | 24 | 44.8 | 51. | 38. | 13.0 | 67.0 | 29.690 |
| " 10..... | 74 | 17 | 6 | 8 | 6 | 3 | 33 | 32.0 | 38. | 28.5 | 9.5 | 84.6 | 29.906 |
| " 11..... | 91 | 19 | 3 | 12 | 10 | .. | 38 | 38.1 | 42.5 | 28. | 14.5 | 70.0 | 29.930 |
| " 12..... | 97 | 31 | 5 | 15 | 9 | 8 | 39 | 41.2 | 45.7 | 38.2 | 7.5 | 85.3 | 29.468 |
| " 13..... | 79 | 26 | 2 | 10 | 12 | 3 | 41 | 32.0 | 38. | 31.5 | 6.5 | 87.0 | 29.651 |
| " 14..... | 57 | 9 | 2 | 14 | 2 | 3 | 21 | 26.4 | 29.2 | 23. | 6.2 | 80.6 | 29.978 |
| " 15..... | 72 | 23 | 3 | 8 | 9 | 8 | 36 | 33.1 | 40. | 25. | 15.0 | 74.6 | 29.812 |
| " 16..... | 84 | 19 | 1 | 17 | 12 | .. | 31 | 41.3 | 43. | 32. | 16. | 65.0 | 29.886 |

TABLE No. XVI.—(Continued.)

COURSE OF MORTALITY FROM PREDOMINANT CAUSES OF DEATH,

DAY BY DAY, IN THE YEAR 1873, WITH THE DAILY RECORD OF MEAN TEMPERATURE AND MEAN BAROMETRIC PRESSURE.

| DATE. | Total Mortality. | Zymotic Diseases. | Diarrhoeal Diseases. | Pulchris Pneumoniae. | Diphtheria and Croup. | Scarlatina. | Children under 5 Years of Age. | Mean Temperature. | Maximum Temperature. | Minimum Temperature. | Range of Temperature. | Mean Humidity. | Mean Barometer. | |
|------------------|------------------|-------------------|----------------------|----------------------|-----------------------|-------------|--------------------------------|-------------------|----------------------|----------------------|-----------------------|----------------|-----------------|--------|
| November 17..... | 75 | 20 | 5 | 13 | 7 | 2 | 24 | 85.7 | 41.5 | 24. | 7.5 | 74.6 | 29.223 | |
| " 18..... | 68 | 17 | 1 | 10 | 9 | 4 | 29 | 85.1 | 39.5 | 32.2 | 7.3 | 65.0 | 28.931 | |
| " 19..... | 76 | 25 | 2 | 12 | 8 | 5 | 34 | 82.2 | 34.5 | 26. | 8.5 | 78.0 | 29.470 | |
| " 20..... | 70 | 21 | 1 | 10 | 13 | 1 | 27 | 26.8 | 32. | 20.5 | 11.5 | 84.0 | 29.864 | |
| " 21..... | 67 | 19 | 3 | 11 | 5 | 5 | 33 | 30.7 | 42. | 21. | 21.0 | 72.3 | 30.129 | |
| " 22..... | 65 | 14 | 2 | 11 | 6 | 4 | 26 | 85.8 | 43. | 27.5 | 15.5 | 71.3 | 30.230 | |
| " 23..... | 92 | 11 | 1 | 17 | 7 | 2 | 35 | 89.2 | 45. | 29. | 16.0 | 55.6 | 30.246 | |
| " 24..... | 71 | 19 | 5 | 14 | 6 | 3 | 34 | 44.6 | 48. | 40. | 8.0 | 80.6 | 29.890 | |
| " 25..... | 58 | 21 | 2 | 9 | 10 | 3 | 22 | 34.7 | 41. | 27. | 14.0 | 64.6 | 29.809 | |
| " 26..... | 79 | 19 | 2 | 9 | 11 | 4 | 33 | 25.3 | 30. | 22. | 8.0 | 75.6 | 29.826 | |
| " 27..... | 67 | 24 | 5 | 8 | 11 | 3 | 29 | 36.3 | 44. | 29. | 15.0 | 63.0 | 29.769 | |
| " 28..... | 70 | 23 | 2 | 14 | 10 | 7 | 29 | 29.3 | 35. | 27. | 8.0 | 84.6 | 30.013 | |
| " 29..... | 57 | 17 | 2 | 9 | 6 | 4 | 23 | 30.0 | 34. | 25. | 9.0 | 96.3 | 30.355 | |
| " 30..... | 54 | 27 | 3 | 14 | 11 | 7 | 39 | 23.0 | 32. | 24. | 8.0 | 75.0 | 30.456 | |
| December 1..... | 81 | 27 | 2 | 12 | 11 | 3 | 25 | 21.3 | 26. | 18. | 8.0 | 79.6 | 30.549 | |
| " 2..... | 69 | 21 | 4 | 9 | 9 | 5 | 33 | 31.3 | 37. | 18. | 19.0 | 74.3 | 30.454 | |
| " 3..... | 76 | 22 | 3 | 8 | 8 | 5 | 35 | 45.6 | 51. | 38. | 13.0 | 80.6 | 30.164 | |
| " 4..... | 84 | 15 | 1 | 17 | 7 | 4 | 35 | 57.0 | 66. | 46. | 20.0 | 63.3 | 29.502 | |
| " 5..... | 64 | 16 | 3 | 15 | 6 | 2 | 26 | 36.3 | 46. | 31. | 15.0 | 49.0 | 30.244 | |
| " 6..... | 73 | 26 | 4 | 12 | 13 | 3 | 33 | 31.6 | 36. | 25. | 8.0 | 82.3 | 30.406 | |
| " 7..... | 65 | 20 | .. | 13 | 9 | 5 | 23 | 31.3 | 44. | 25. | 19.0 | 77.0 | 30.517 | |
| " 8..... | 73 | 19 | 1 | 14 | 4 | 5 | 23 | 38.3 | 50. | 33. | 17.0 | 75.3 | 30.449 | |
| " 9..... | 67 | 16 | 3 | 10 | 6 | 4 | 29 | 46.0 | 50. | 41. | 9.0 | 66.3 | 30.244 | |
| " 10..... | 70 | 15 | .. | 8 | 3 | 6 | 32 | 39.3 | 43. | 36. | 7.0 | 58.6 | 30.151 | |
| " 11..... | 69 | 14 | 3 | 16 | 6 | 2 | 25 | 42.3 | 45. | 37. | 8.0 | 69.6 | 30.000 | |
| " 12..... | 63 | 15 | .. | 10 | 5 | 5 | 25 | 52.3 | 61. | 44. | 17.0 | 74.3 | 29.624 | |
| " 13..... | 71 | 19 | .. | 8 | 5 | 10 | 5 | 33 | 44.0 | 49. | 37. | 16.0 | 80.6 | 29.428 |
| " 14..... | 71 | 14 | 3 | 13 | 5 | 2 | 25 | 32.3 | 36. | 27. | 9.0 | 69.6 | 29.896 | |
| " 15..... | 65 | 24 | 4 | 10 | 11 | 3 | 31 | 40.3 | 50. | 32. | 18.0 | 56.0 | 30.176 | |
| " 16..... | 58 | 13 | .. | 7 | 5 | 3 | 29 | 45.6 | 51. | 37. | 14.0 | 66.6 | 30.186 | |
| " 17..... | 59 | 17 | 2 | 7 | 6 | 3 | 25 | 36.6 | 51. | 29. | 22.0 | 66.6 | 30.071 | |
| " 18..... | 64 | 19 | 2 | 10 | 9 | 4 | 22 | 42.3 | 50. | 32. | 13.0 | 61.3 | 29.925 | |
| " 19..... | 75 | 25 | 6 | 8 | 10 | 7 | 35 | 40.6 | 43. | 36. | 12.0 | 72.0 | 29.705 | |
| " 20..... | 60 | 11 | 2 | 8 | 4 | 1 | 30 | 35.0 | 42. | 29. | 13.0 | 64.6 | 29.892 | |
| " 21..... | 63 | 19 | 1 | 11 | 6 | 7 | 27 | 26.6 | 32. | 23. | 9.0 | 63.3 | 30.254 | |
| " 22..... | 72 | 19 | 2 | 11 | 9 | 4 | 34 | 27.0 | 35. | 21. | 14.0 | 66.3 | 30.851 | |
| " 23..... | 77 | 18 | .. | 13 | 10 | 3 | 39 | 29.6 | 32. | 26. | 6.0 | 74.3 | 30.204 | |
| " 24..... | 79 | 33 | 2 | 11 | 15 | 9 | 35 | 33.0 | 42. | 26. | 16.0 | 72.0 | 30.061 | |
| " 25..... | 61 | 12 | 1 | 11 | 5 | 2 | 24 | 37.6 | 49. | 34. | 15.0 | 75.3 | 29.992 | |
| " 26..... | 78 | 15 | .. | 16 | 4 | 6 | 29 | 35.0 | 37. | 34. | 3.0 | 66.3 | 29.524 | |
| " 27..... | 81 | 25 | .. | 10 | 7 | 8 | 33 | 35.0 | 37. | 32. | 5.0 | 64.6 | 29.526 | |
| " 28..... | 65 | 24 | 1 | 6 | 12 | 3 | 31 | 24.6 | 37. | 29. | 8.0 | 73.0 | 29.548 | |
| " 29..... | 81 | 31 | 1 | 9 | 12 | 12 | 41 | 33.6 | 39. | 27. | 12.0 | 66.0 | 29.711 | |
| " 30..... | 74 | 25 | 2 | 11 | 8 | 3 | 33 | 21.6 | 32. | 19. | 13.0 | 69.6 | 30.000 | |
| " 31..... | 64 | 14 | .. | 10 | 6 | 4 | 23 | 27.0 | 32. | 20. | 12.0 | 72.0 | 30.272 | |

CONSOLIDATED ABSTRACTS OF MORTALITY FOR THE
YEAR 1873.

In the foregoing table is presented an abstract of the daily record of total mortality at all ages, together with that for the first quinquennial period of childhood. Convenient for reference, and requiring no explanation, it will present various points of interest to persons who have occasion to refer to it for any fact. This compend of daily death-records exhibits two facts in a striking light, more so than the like records in preceding

years: first, there were no great and sudden fluctuations in the daily mortality; second, in the fluctuations which occurred weekly and day by day the line of such rise and fall in the total number of deaths was conspicuously in the list of children who died under five years of age.

The average number of deaths daily, for the year, fell a fraction short of 80. The average number of deaths of children under five years of age was a fraction over 39 daily. Exceptions to the apparent rule that the fluctuation in the number of infantile deaths constituted the chief of the total fluctuations occurred in January and December, when, upon days of very inclement weather, unusual numbers of consumptives and old people died.

In each of the most marked excesses of mortality, as upon the 3d, 11th, 13th, 16th, 24th, and 27th of July, and the 2d, 3d, and 19th of August, the ratio of the number of deaths of children under five years of age rose from its usual point to 60, 70, and even 72.36 in 100 of the total deaths. By referring to the statigraphic chart that precedes this daily table there will be found a clearer definition than can be given in words concerning relations of this mortality of young children, the fluctuating and chief causes of death, and the influences of temperature upon the daily course of the total mortuary line in ceaseless progress through the year.

NOTES ON THE CHIEF CAUSES OF DEATH.

Comparison of Death-Rates in 1873 and the Seven Preceding Years, 1866 to 1873.—The eight years that have elapsed since the new sanitary laws and the present system of vital statistics were adopted, have presented opportunities for observing a great number of facts and interdependent circumstances which bear upon the prevailing causes of mortality and upon the ever-fluctuating death-rates. The annual death-rate for the year 1873 was 29.08 per 1,000; the total population of the city being estimated, at the middle of the year (July 1, 1873), at 1,000,000.¹

The last census (that of 1870) found that 11.8 per cent. of the total population was, at the date of the census, under five years of age, and that 88.2 per cent. was five years old and upward. These may be regarded as constant ratios for the totals of these two special groups of the city inhabitants. We next notice that more than half of the total population which is over five years of age is of foreign birth, and that families the heads of which are of foreign birth constitute the chief portion of the tenement population, as shown by the returns of census-takers in the different wards. The relative proportion of the classes that are utterly ignorant of letters (one of the equivalents of debased and improvident life in this city), and the classes that are not, is rudely approximated by the number 62,238 over

¹ The present rate of increase of the population being assumed to be 2.1 (two and one-tenth) per cent., the total at the close of the year 1873, it is believed, did not vary more than 5,000 from 1,011,000 inhabitants.

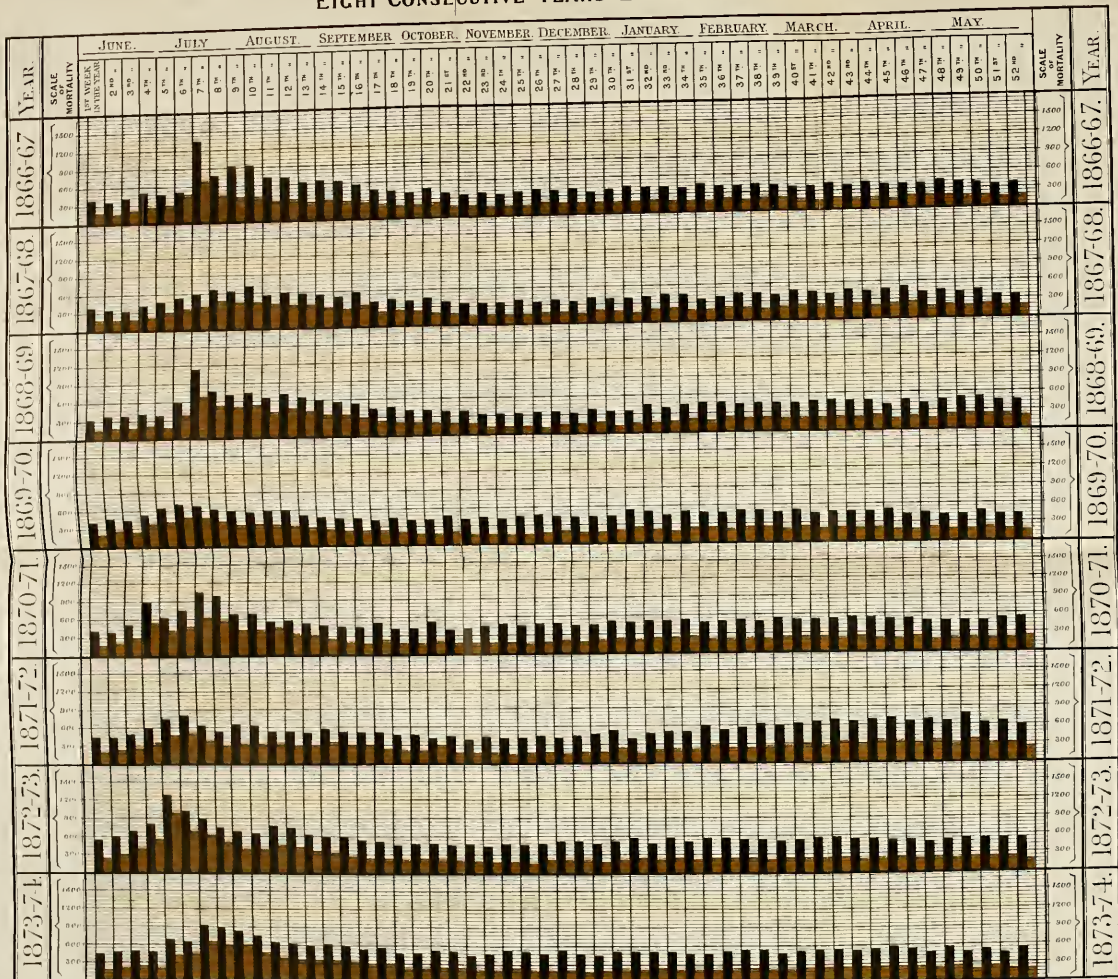
ten years of age who cannot read and write. The 53,791 foreigners in this class present the fact that the grossly ignorant are chiefly of foreign birth. The prolific progeny of the ignorant portion of the population, in the crowded and unhealthful tenement districts, yield the highest death-rates of any classes in the city. Vigorous as the better portions of the foreign residents are, the rate of mortality in their children is excessive. These facts have a direct bearing upon the death-rates in this city, and especially upon the peculiar fluctuations and occasionally great excesses in these rates and in the mortality in the particular districts where the poor classes chiefly dwell.

The course of mortality in eight successive years in this city has shown that the physical circumstances or immediate domestic environment of the different classes of the population, as already alluded to in this report, are intimately concerned in the fluctuation of the death-rates. If the course of mortality by wards is examined, it is found that in the most favorable months, namely, June and November, the death-rates in the most healthful and the most unhealthful wards—the Fifteenth and the Eleventh, for example—approach most nearly to the same rate; but when midsummer comes, or the pinching cold shuts up all doors and windows, then while the rate of mortality in the healthful old Fifteenth Ward continues unchanged at its usual low average of less than 18 deaths in 1,000 inhabitants (annual rate), the Eleventh Ward with its population densely packed, 214,000 to the square mile, and nearly 90 per cent. being in tenement-houses, suffers a mortality equal to 35, 37, and even 40 per 1,000 (yearly rate) during the hot weeks, and, for the winter and first month of spring, the rate seldom falls below 26 or 28 per 1,000, except that in December the lowest rate in the year is reached. The deaths in hospitals and asylums are excluded in this comparison.

More than half of the inhabitants are living at such a disadvantage as respects their domicile and their social state that they are comparatively incapable of resistance to the local causes of disease, and during the hottest and the coldest periods of the year, the more unhealthful quarters become excessively perilous to great numbers of their residents. The special insalubrity of these limited districts of uncleanness and overcrowding is shown by the fact that children under five years of age perish at the rate of 250 to 300 per 1,000 of the living at that age (annual rate), during the ten or twelve hot weeks. Herein are found important explanations of the fluctuations of the city death-rates as presented in these statistical charts and abstracts.

The first chart illustrates various co-related statistical facts respecting the fluctuating daily totals of mortality by pulmonary phthisis, by diarrhoeal maladies, by the zymotic class of diseases, and by all the causes of death, considered in connection with the daily mean extremes of temperature and of humidity, together with records of the barometer and the rainfall. That chart conveys its own explanations.

CHART TO EXHIBIT THE PROPORTIONATE MORTALITY IN THE SUCCESSIVE WEEKS IN EIGHT CONSECUTIVE YEARS ENDING JUNE 1ST 1874.



■ Total Weekly Mortality from All Causes

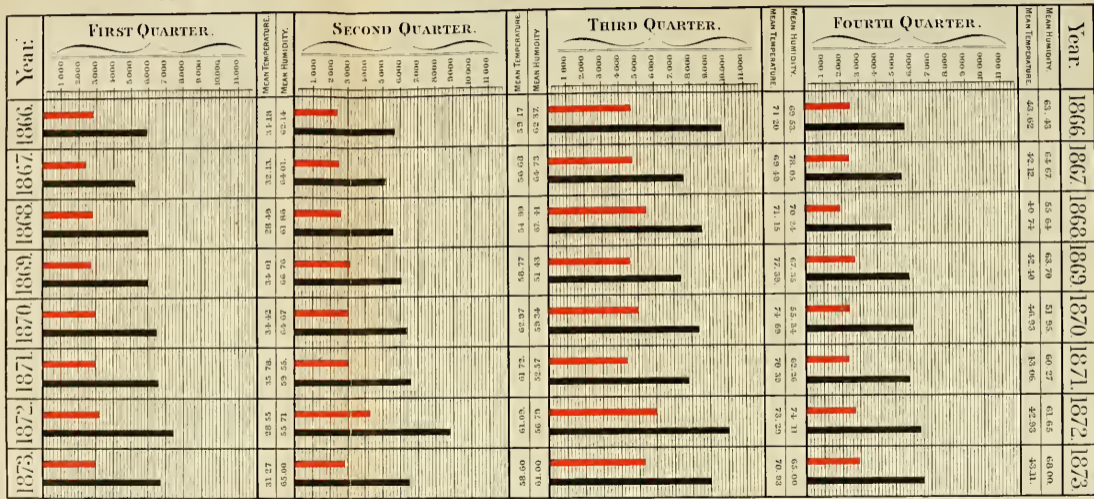
■ Total Weekly Mortality of Children under 5 Years

AGES AND IN CHILDREN SUCCESSIVE YEARS.

| Year. | 1866. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|
| MEAN HUMIDITY. | 63.43 | 64.67. | 55.64. | 63.70. | 51.95. | 60.27. | 61.65. | 63.00. |
| MEAN TEMPERATURE. | 43.62 | 42.12. | 40.74. | 42.40. | 46.93. | 43.06. | 42.93. | 43.11. |
| FOURTH QUARTER. | | | | | | | | |
| MEAN HUMIDITY. | 69.53. | 73.05. | 70.24. | 67.35. | 55.34. | 62.26. | 74.11. | 65.00. |
| MEAN TEMPERATURE. | 71.20. | 69.49. | 71.15. | 77.39. | 74.69. | 70.39. | 73.29. | 70.93. |

n each Quarter.

CHART ILLUSTRATING THE VARIATIONS OF TOTAL MORTALITY AT ALL AGES AND IN CHILDREN UNDER 5 YEARS OF AGE, AT DIFFERENT SEASONS AND IN EIGHT SUCCESSIVE YEARS.



Shows the proportionate amount of Mortality in Children, under 5 years of age in each Quarter.
 Shows the proportionate Totals of Mortality in each Quarter at all Ages.

The chart which faces this page presents, for the special comparison of the total and the infantile mortality, week by week in successive years, a series of graphic lines to delineate the proportionate relations of these two classes of records through eight successive years, each year dating from the first week in June.¹

A close inspection of these two column-charts, for the past eight years, will show—

(1.) That usually in the fourth, sometimes in the third, week of June, the death-rate begins to increase, and that in whatever week the rate (the black column) of mortality begins to rise, in the summer, the entire increase in the total number of deaths is due to the increased number of children under five years of age.

(2.) That the exceptions to this rule are witnessed only when epidemics or other very unusual conditions prevail, as in the cholera of 1866 and the brief period of excessive heat and humidity in the first two weeks of July, 1872.

(3.) That the fluctuations in the general death-rate which occur during the later autumn and in winter and spring do not depend so largely upon variable infant mortality as upon the varying prevalence of certain fatal diseases among the inhabitants who are five years of age and upward.

(4.) That from the third or fourth week in June until the third or fourth week in September, the deaths of children under five years of age usually comprise from 55 to 75 per cent. of the total mortality at all ages in the city; and that from the first week in October to the second week in the following June the mortality among children under five years varies, in the different weeks, from 35 to 50 per cent. of the total deaths at all ages, weekly.

(5.) That in the First Quarter in each successive year (from the beginning of January to the end of March: see the second and smaller of the column-charts), the excess in the mortality was most marked in the winters of 1870, 1871, 1872, and 1873, when small-pox and scarlatina were unusually prevalent.

(6.) That in the Second Quarter, in the eight successive years, the extraordinary excess occurred, as will be noticed by referring to the succeeding chart, when small-pox, scarlatina, cerebro-spinal fever, and diphtheria, were excessively prevalent. To these combined causes of unusual mortality was added a fortnight of tropical heat in June, during which there were upward of 1,600 deaths, or more than double the usual number for those last two weeks.

¹ The months of May and June are characterized by the lowest mortality of any period of the year in New York. The 1st of June may justly be regarded a most suitable point of time for beginning any series of statistical and hygienic observations upon causes of sickness or death. The reader will notice, upon an inspection of the chart which faces this page, that the eight superimposed diagrams which delineate the mortality records of the eight successive years are found to be most naturally arranged for accurate and ready comparison.

(7.) The excessive mortality which marked the Third or Summer Quarter in 1866 was caused by cholera, and the still greater excess in July and August, 1872, was associated with extremes of solar heat and an almost saturated condition of the atmosphere.

(8.) The Fourth or Autumnal Quarter in each successive year presented no great fluctuations from the usual death-rate for that most favorable of the four seasons until 1872, and yet greater mortality in the last thirteen weeks of 1873. This excess was caused by the unusual fatality of diphtheria, scarlatina, and inflammatory diseases of the respiratory organs.

The foregoing remarks upon the experience in eight consecutive years may readily be illustrated by the detailed records of particular causes of death, and the ages of the decedents, year by year. But for the present purpose we conclude by calling attention to the series of facts which appear in the two pages (pp. 218, 219) of the summary of the records of mortality in the different ages of life and by classes of causes; also to the abstract of total weekly mortality at all ages and in the first five years of life in corresponding weeks, year by year, in parallel columns, week by week, for each of the fifty-two weeks of the year, ending with the last week in May each year. [See tables on pp. 226, 227.]

The summary of eight years' mortality at the different ages shows that it is only between the ages of fifteen and forty years, and between the first birthday and the third; that is, the gain has been noticeable in the chances of life, or in the first, fourth, fifth, sixth, seventh, and eighth quinquennial periods of human life in this city, there has been a steady and decided increase of security to health.

Turning now to the different classes of causes of death, we find that the merely statistical account of the five classes into which the causes of death are grouped reads as follows for the year 1873 :

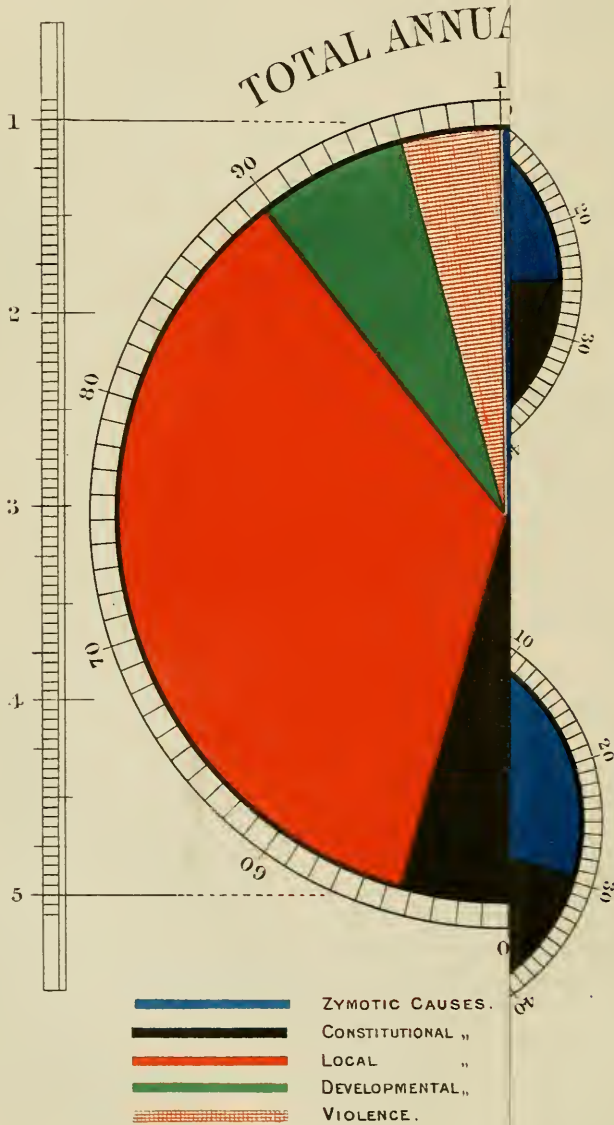
Course of Mortality by the Five Classes of Causes, in the Four Quarters of the Year 1873 :

| CLASSES. | In the First Quarter. | Second Quarter. | Third Quarter. | Fourth Quarter. | Total Deaths | Percentage of Each Class on Total. |
|----------------------------------|-----------------------|-----------------|----------------|-----------------|--------------|------------------------------------|
| Zymotic..... | 1,644 | 1,654 | 4,390 | 1,965 | 9,593 | 32.93 |
| Constitutional..... | 1,623 | 1,583 | 1,636 | 1,491 | 6,293 | 21.64 |
| Local (mostly inflammatory)..... | 2,790 | 2,604 | 2,236 | 2,524 | 10,154 | 34.91 |
| Developmental..... | 514 | 482 | 459 | 423 | 1,858 | 6.43 |
| Violence..... | 239 | 305 | 322 | 295 | 1,161 | 3.99 |
| Total..... | 6,815 | 6,538 | 8,983 | 6,703 | 29,054 | 100.00 |

The graphic delineation of these statistical records concerning the five

TO EXHIBIT THE TOTAL QUARTER 1873

ZYMOTIC, CON



NOTE.. The scales on left of circles refer to diameters in inch each period.

classes of causes of death (*see* diagram facing this page), shows with a kind of mathematical accuracy, upon the fractional segments of circular areas, the visible proportions of each of the five grand divisions or classes of causes of death.

The preponderance of the zymotic group of causes which appears so conspicuously in the summer quarter is not maintained throughout the other seasons, yet the autumnal quarter has this class largely projected upon it. Diarrhœal maladies prevail during the first month in that quarter. It is the vast group of local diseases—chiefly of an inflammatory character—which in this city greatly predominates in the total sum of mortality. The number of the various diseases grouped in this class exceeds the total number of all the other causes of death in the four other classes of causes, and the names of them recite again and again the common name of almost every organ in the human body and its tissues. Only in the presence of great epidemics and of special causes that destroy infant life, as in our New York summers, can the local class of diseases fail to exceed any other class in its fatality. Whoever will critically examine the preceding consolidated abstract of the classified causes of death, or closely inspect this statiographic illustration for ascertaining the proportionate share which each class of causes has in the total roll of the dead in the four seasons or quarters of the year, will not fail to notice that the excess of the deaths in the zymotic and in the local classes of diseases, over the total mortality from these causes, during the periods of their least fatality (zymotic causes being at their minimum activity in winter and spring, and the local causes at their minimum during the summer and autumn), is so great that, if the excess which is thus indicated should be declared to be equivalent to the quantities of human lives that could be saved by a perfect compliance with the laws of hygiene, this wide margin of excessive mortality of these two classes of diseases would appear as a proof that 12.5 per cent. of all who died during the year might have been saved.

Though a great proportion of the mortality thus marked as an *excess* above the *minimum*, in the zymotic and the local causes of death at particular seasons or in the alternating half years, certainly may and should be prevented by the resources of hygiene, it will never be possible to prevent all which thus appears excessive. The heat and humidity of the summer season, breeding zymotic causes of death and impairing the vigor of the nervous and muscular organism, the sudden fluctuations of the spring and late autumnal weather, and the depressing cold and ever-changing temperature of winter, which induce and render fatal a great variety of local inflammatory maladies, are like the storms which imperil the mariner, and which strain and often wreck the ships at sea. Some are inevitably destroyed, and others may be so damaged as to founder at a later period, or be defective and insecure during the lifetime, however prolonged. Like pilots and great captains, hygiene and medical skill save and bring safely through all these storms as many lives as possible. The class of constitutional dis-

cases presents in this chromo-graphic diagram a correct view of the fact that, during the intemperature of the midsummer and the winter seasons, such persons as are suffering from chronic maladies and any marked enfeeblement of their constitutional health perish in greater numbers than at other periods of the year. It is in the last three months of the year, the autumnal quarter, that persons of this class enjoy greatest security, but in the single month of June they have a special degree of immunity which is more marked than in any other entire month.

The excessive ratio of deaths by violent causes during the summer quarter is chiefly due to accidents by the water-sides. With nearly thirty miles of tidal water-fronts, drowning is so frequent an occurrence, that increased safeguards are necessary. The decided decrease in the number of deaths by drowning along our water-fronts, after the rescue apparatus and stations were provided in 1868-'69, fully justifies the recently renewed attention of the Health Department to this subject.

In the foregoing diagrams the fact may be noticed that the ratio of the developmental class of causes of death in the successive quarters follows next to that of the constitutional causes. The winter quarter has the largest number of deaths by these classes of causes respectively, and the autumn quarter has the smallest. The physical circumstances and the individual conditions under which the victims of pulmonary phthisis and other constitutional maladies are hastened to their death operate in a larger way upon what are termed the Developmental causes of death, especially in those of infantile malformation and senile debility and disintegration. Arbitrary as this older method of classifying the various causes of deaths is, these groupings have very convenient uses, as shown in these diagrams and the tabulated abstracts. These several class-groupings are largely the incidents of the acceptance of certain doctrines of causation either of the diseases or of the modes of death. But such expedients as these general groupings must never prevent the yet closer study of causation. The contagious virus of small-pox and the paludal emanations that cause malarial poisoning, destroying blood-globules, and impairing the nervous system, cause death by dissimilar means. So, too, the carcinomatous tumors which destroy life by excessive dyscrasia and error of nutrition, or by slough and disintegration, differ widely from the tubercular infiltration of the arachnoid tissue of the brain, which causes quickly fatal inflammation and hydrocephalus; but these localized diseases have a constitutional or general cause which within the sufferer tend to a fatal result, as well as to an entailed transmission in offspring.

Such grouping certainly is not wholly arbitrary. Even before the phenomena of zymosis or fermentation could be satisfactorily explained, and before the theories of germ-infection and germinal matter had assumed a rational basis, Dr. Farr, who gave us this classification, said of the zymotic diseases, "They distinguish one country from another, one year from another, have formed epochs in chronology, have decimated armies and dis-

abled fleets, and have influenced the fate of cities—nay, of empires.” This destructive and dreaded power may become self-propagating or epidemic.

However exact the nomenclature of diseases and causes of death may yet become, there will ever be this reason for some degree of classification and grouping of causes and circumstances that terminate human life.

ZYMOTIC DISEASES.

The deaths which were registered under the four orders into which these diseases are grouped, presented a noticeable decrease from the previous years. Small-pox, diarrhœal diseases, and the typh-fevers, produced the least mortality that has been caused by them since 1869. Cholera and yellow fever, which scourged numerous cities and towns in the South-western States, made no sign of their presence in New York, except that some persons who fled in terror from Memphis arrived in our city suffering from the fever, and, in one instance, such a refugee from that fever was in the advanced stage of it, suffering from black-vomit. No harm resulted from the presence of these persons.

MORTALITY BY EPIDEMIC DISEASES.

The chart upon the opposite page shows the course pursued by cerebro-spinal fever, scarlatina, small-pox, and diphtheria, during the years 1872 and 1873, and in the corresponding weeks of the respective years. Each of these maladies became so prevalent at different periods that the term epidemic was popularly applied to them, though their extraordinary prevalence actually depended upon circumstances which seem hardly to answer as definitions of the term epidemic :

Cerebro-spinal Fever.—This disease had scarcely been recognized as a specific type of inflammatory fever in this city during the present generation until 1866 ; and it was not until February, 1872, that it manifested any tendencies to become widely prevalent. During the months of January and February, 1872, fatal cases of this fever occurred in nearly every ward, but it was in the Nineteenth, Twentieth, and Twenty-second Wards that its presence was chiefly felt. There were 45 fatal cases of it in those three wards during the winter quarter, the total from it in the city during that period being 108 deaths. During the spring quarter (1872) there were 492 deaths from it, and of these there were 148 in the three wards just mentioned. It subsided during the hot season, so that only 135 deaths from it were reported, of which 41 occurred in the three wards here referred to ; and in the autumn quarter only 47 deaths from it were reported, 16 of them being within the limits of those three wards.

In the midwinter weeks of 1873 this malady again sprung into activity, and caused 87 deaths during the winter quarter, 97 during the spring quarter, 67 in the summer, and 39 in the autumn quarter, its greatest fatality being reached the last of July and first week in August. This malady

increased most rapidly and steadily in 1873, in the very period (same weeks) in which during the year 1872 it most steadily and rapidly decreased. Temperature seemed to have little to do in the causation, nor had the crowding of tenements. Its preference for particular localities seemed to be evinced in the record it made of fatality in the elevated and defectively drained Twenty-second Ward, in which there were 42 deaths; in the Nineteenth, in which 47 died; in the Twentieth, in which 29 died; and in the Twelfth, where 24 died. These four wards comprise the most open and semi-rural district of the city, a portion of the Twentieth and Twenty-second Wards also adding a large number of tenement-houses; and this entire district may be described as less afflicted by sewer-gases and accumulated sewerage than the other portions of the city: while, on the other hand, its surface-drainage, the dampness of much of its building-ground, and various other local conditions incident to grounds undergoing the processes of grading and improvement, conspicuously characterized the four wards here named during the existence of this epidemic in 1872 and 1873. That the preference thus evinced for a special district of the city may be connected with that factor in the causation of this fever, which depends on dampness of building-grounds and defectiveness of surface-drainage, certainly appears to be probable. As regards the causes of this fever, both proximate and exciting, the conclusions upon the subject in the learned report of Dr. J. Baxter Upham, in the Fifth Report of the Massachusetts State Board of Health, are as applicable in the experience of the malady in this city as they seem to have been in New England. Dr. Upham says: "The cases are distributed among all classes and grades of society, the high and the low, the rich and the poor, locations unexceptionable for situation, open to light and air, and the pent-up hovels of the lowly and wretched, have all contributed to the material of the epidemic. We believe, therefore, that the *primal* origin of the disease is atmospheric, and, for the present, beyond our ken. It would seem, however, from the multitude of facts that have hitherto been collected, that, in times of epidemic influence, any defect of known hygienic sanitary conditions in and about the patient's residence may, if his system be otherwise made ready or predisposed through want, deprivation, mental or physical exhaustion, anxiety or other depressing cause, tend to precipitate an attack; while under other circumstances he might be able to withstand the general epidemic tendency and ward off the disease."¹

There is much reason to believe that certain conditions pertaining to the soil and soil-moisture are directly concerned in determining the endemic or local phenomena of this remarkable fever, and, as respects the special meteorological conditions and climate of the localities in which this disease has appeared, endemically or epidemically, the fact seems to be established that dampness and chilling winds, and apparently the most drying, windy periods, as well malarial or mephitic local states of the atmosphere in dis-

¹ "Fifth Annual Report of the State Board of Health of Massachusetts," pp. 311, 312.

tricts already invaded by this malady, seem to sustain important relations to the causation of the epidemic and excessive fatality of this fever. The essential factor of causation of this, however, still evades an accurate definition, and, by virtue of its terribly rapid or fatal mode of attack upon the centres of the nervous organism, ranks as a most insidious pestilence.

Diphtheria.—The course of diphtheria in the city of New York presents, in epitome, an instructive view of its history and habits in the entire country. Being one of the epidemic forms of diseases which by some means reproduce their like by undiscovered methods of propagation from the places, and probably from the persons of the sick, the persistence of it and its unaccounted-for fluctuations of prevalence and fatality in the towns and districts in which it appears constitute the debatable grounds upon which all observers of it hesitate to assert that sanitary measures will extinguish its prevalence, or that any degrees of medical or hygienic care can exterminate even that factor of the propagating attribute of this malady which depends upon the sick themselves.

The following abstract presents the bare records of the mortality which has been charged to diphtheria since its presence was first recognized as a cause of death in this city. Let this abstract be prefaced by the memorandum that the first death from diphtheria in the city was certified as that of a German woman, aged twenty-four, residing at No. 638 Hudson Street, who died on the 15th of February, 1852; and that 2 other fatal cases occurred in 1857, 5 occurred in 1858, and 53 were registered in 1859; and that in February, 1860, the disease evinced a decidedly epidemic character.

DEATHS FROM DIPHTHERIA

DISTRIBUTED IN THE SEVERAL WARDS, BY QUARTERS, 1873.

| WARDS. | First Quarter. | Second Quarter. | Third Quarter. | Fourth Quarter. | Total for Year. |
|--------------------|----------------|-----------------|----------------|-----------------|-----------------|
| First..... | 2 | 5 | 11 | 9 | 27 |
| Second..... | .. | .. | .. | .. | .. |
| Third..... | 1 | 3 | 2 | 3 | 9 |
| Fourth..... | 5 | 2 | 5 | 7 | 19 |
| Fifth..... | 16 | 12 | 21 | 6 | 55 |
| Sixth..... | 11 | 7 | 10 | 8 | 36 |
| Seventh..... | 4 | 6 | 18 | 27 | 50 |
| Eighth..... | 7 | 4 | 22 | 15 | 48 |
| Ninth..... | 13 | 15 | 19 | 30 | 77 |
| Tenth..... | 13 | 11 | 9 | 13 | 46 |
| Eleventh..... | 6 | 4 | 19 | 30 | 59 |
| Twelfth..... | 8 | 2 | 7 | 8 | 25 |
| Thirteenth..... | 5 | 2 | 8 | 13 | 28 |
| Fourteenth..... | 5 | 15 | 21 | 21 | 62 |
| Fifteenth..... | 3 | 4 | 7 | 11 | 25 |
| Sixteenth..... | 9 | 16 | 37 | 35 | 97 |
| Seventeenth..... | 15 | 14 | 9 | 36 | 74 |
| Eighteenth..... | 7 | 12 | 12 | 20 | 51 |
| Nineteenth..... | 12 | 23 | 33 | 36 | 109 |
| Twentieth..... | 9 | 18 | 27 | 55 | 109 |
| Twenty-first..... | 4 | 1 | 5 | 16 | 26 |
| Twenty-second..... | 14 | 8 | 14 | 33 | 69 |
| | 169 | 184 | 316 | 432 | 1,151 |

DEATHS BY DIPHTHERIA

IN EACH QUARTER, FROM 1860 TO 1873, INCLUSIVE.

| YEAR. | 1860. | 1861. | 1862. | 1863. | 1864. | 1865. | 1866. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
|-----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| First Quarter..... | 120 | 159 | 145 | 318 | 250 | 174 | 162 | 79 | 92 | 87 | 94 | 89 | 93 | 169 |
| Second " | 96 | 108 | 108 | 222 | 205 | 134 | 102 | 56 | 86 | 89 | 69 | 49 | 86 | 184 |
| Third " | 81 | 68 | 137 | 142 | 175 | 83 | 73 | 53 | 43 | 66 | 67 | 46 | 87 | 316 |
| Fourth " | 118 | 94 | 196 | 262 | 175 | 121 | 93 | 63 | 55 | 86 | 78 | 54 | 180 | 482 |
| Total in each Year .. | 415 | 429 | 586 | 944 | 805 | 512 | 435 | 251 | 276 | 323 | 303 | 235 | 446 | 1,151 |

In the fourteen years, from 1860 to 1873, inclusive, 7,124 deaths have been charged to diphtheria, and in previous years there had been 61 deaths thus designated, making the total mortality charged to this disease in the city, to the end of 1873, no less than 7,185. Its fatality during the last year far exceeded that of any previous one; but during the four years 1862, 1863, 1864, and 1865, the mortality from it was steadily very great, the total number of deaths in that period being 2,852, and having varied but little in the degree of its prevalence in the different quarters of the four successive years.

In 1873 this disease steadily increased in the number whom it fatally attacked, so that during the last quarter of the year the number was 482. The year 1874 began, as the last year approached the end, with this malady increasing in the extent and fatality of its prevalence. With its chief centres of persistence and excessive mortality in the Nineteenth and Twentieth Wards, in 1873, its presence in every ward, and in almost every street and avenue in the city, has continued to be a cause of anxiety to physicians, and of sanitary inquiry into the various tributary sources of its causation and fatality. Diphtheria has not steadily elected the same wards and streets for its greatest prevalence in these fifteen successive years. In the earlier period of its presence among us, it was more prevalent in the Fourth, Eleventh, Seventeenth, and Eighteenth Wards; but during the past six or more years, the Nineteenth, Twentieth, and Twenty-second Wards, have suffered most persistently and fatally from it. Precisely what are the conditions of locality, and of surroundings of dwellings, or of the atmosphere and the seasons which most facilitate the propagation of diphtheria, may not be readily defined, but its continued prevalence for months in any locality certainly seems to augment the fatality of its operations. Years ago, when persistently present in the Fourth and Seventeenth Wards, the convalescents from scarlatina, croup, and measles, and great numbers of other children, became readily affected by diphtheria; and now for many months—more than a year—this fact has been observed in the wards which we have here mentioned farther north. Whatever may be the local causes which

induce the long-continued persistence of this malady in particular localities, the fact has been noticeable in this city that such places are especially defective in their superficial and subsoil drainage. But this fact respecting the persistence in localities does not apply to house-epidemics, nor to the separate sufferers by the disease, for these are scattered in every variety of dwellings, and in all localities. In all these particulars, and in all that has been ascertained concerning diphtheria, its propagation seems to conform to the laws that govern the specific fevers, which have an infectious attribute that is diffused and favored by the atmosphere, and rendered operative by local or individual conditions of unhealthfulness, which together determine both individual and epidemic phenomena of the malady. The fifteen years of experience of this subtle and destructive malady in the city, like the records of its progress and fatality in all portions of our country, and like all that is known of repeated ravages in European countries, seem to warrant the conclusion that this terrible destroyer is self-propagating and persistent by means of a specific germinal attribute.

Unlike influenza and many other ephemeral epidemics, diphtheria evinces a tenacity of existence in its propagating principle or factor which, from the very uncertainty and complex relations of the agencies of causation, requires the most effective resources of hygienic care in whatever cleansings and disinfections, and by whatever renovations, the purification of domiciles can be most effectually accomplished.

The Intercurrent and Relative Prevalence of Diphtheria, Croup, and Scarletina.—The special characteristic of diphtheria, which gave to the disease the appellation by which it is known, namely, the false membrane or exudation-patches (*διφθέρα*), has always tended to become readily implanted upon each of the two other maladies here named. Even in feeble patients recovering from measles, this disease readily implants itself. The first group of cases of diphtheria reported in this city were child-patients, who were feebly convalescing from measles, and in one of those patients, then suffering from conjunctivitis of measles, the diphtheritic membrane appeared upon the eyeballs and about the eyes, and resulted in death from diphtheritic poisoning and asthenia.

From the first appearance of diphtheria during the present century in this city (1852 or 1855) until now, both scarlatina and croup have been so inextricably associated with the former, or at least with diphtheritic membrane and patches in the throat of the sufferers, that there has been an increasing tendency on the part of practising physicians to mention diphtheritic exudation and the diphtheritic asthenia as the complicating cause of death in numerous instances.

The following table presents the statistics of mortality from croup, diphtheria, and scarlatina, respectively, year by year, for the entire period in which diphtheria has been prevalent in this city, beginning in 1858. The course pursued by the several maladies here mentioned is delineated

upon this chart facing the tabulated statistics. In the tabulated abstract (No. XVII.), and in the chart, the fact is noticeable that in whichever year there has been an increase of mortality from diphtheria there has been a marked increase in that from croup; also, that with the exception of certain extraordinary excesses of fatal scarlatina in particular years—as in 1860 and 1870—there has been a striking correspondence in the fluctuating degrees of prevalence and mortality in these three maladies. By referring to Table XVII., it will be observed that both croup and scarlatina were quite as prevalent in 1858 and 1859, when diphtheria began to be recognized, as they were ten years afterward. When the latter disease became epidemic, in the five years from 1860 to 1864, croup and scarlatina were also excessively fatal. This correspondence of increase in these three diseases has been particularly noticeable in 1873, when they together destroyed 2,928 lives, 1,151 of which were by diphtheria. There were 2,950 deaths charged to these three diseases in 1860, scarlatina then causing nearly five times as many as diphtheria :

TABLE No. XVII.
DEATHS FROM CROUP, DIPHTHERIA, SCARLATINA, AND MEASLES,
IN THE CITY, IN SIXTEEN SUCCESSIVE YEARS, 1858 TO 1873, INCLUSIVE.

| CAUSES OF DEATH. | 1858. | 1859. | 1860. | 1861. | 1862. | 1863. | 1864. | 1865. | 1866. |
|----------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Croup..... | 473 | 622 | 599 | 460 | 655 | 908 | 754 | 449 | 363 |
| Diphtheria..... | 5 | 53 | 422 | 453 | 594 | 951 | 751 | 534 | 485 |
| Scarlatina | 663 | 840 | 1,929 | 1,273 | 928 | 903 | 899 | 557 | 806 |
| Measles | 392 | 261 | 197 | 376 | 123 | 215 | 263 | 146 | 158 |
| Total each Year..... | 1,543 | 1,776 | 3,147 | 2,567 | 2,385 | 3,007 | 2,697 | 1,686 | 1,762 |

TABLE No. XVII.—(Continued.)

| CAUSES OF DEATH. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | Total. |
|----------------------|-------|-------|-------|-------|-------|-------|-------|--------|
| Croup..... | 333 | 342 | 483 | 421 | 466 | 675 | 732 | 3,750 |
| Diphtheria | 251 | 276 | 323 | 303 | 233 | 446 | 1,151 | 7,256 |
| Scarlatina | 650 | 861 | 966 | 975 | 791 | 990 | 1,045 | 15,056 |
| Measles..... | 506 | 200 | 526 | 293 | 409 | 463 | 306 | 4,339 |
| Total each Year..... | 1,745 | 1,679 | 2,303 | 2,002 | 1,904 | 2,574 | 3,234 | 35,961 |

AND

AND

CHART SHOWING THE WEEKLY FATALITY AND RELATIVE COURSE OF DIPHTHERIA AND CROUP, SCARLATINA, SMALL POX AND CEREBRO-SPINAL MENINGITIS, TOGETHER WITH THE RAIN FALL, ATMOSPHERIC HUMIDITY AND TEMPERATURE IN THE YEARS 1872 AND 1873.

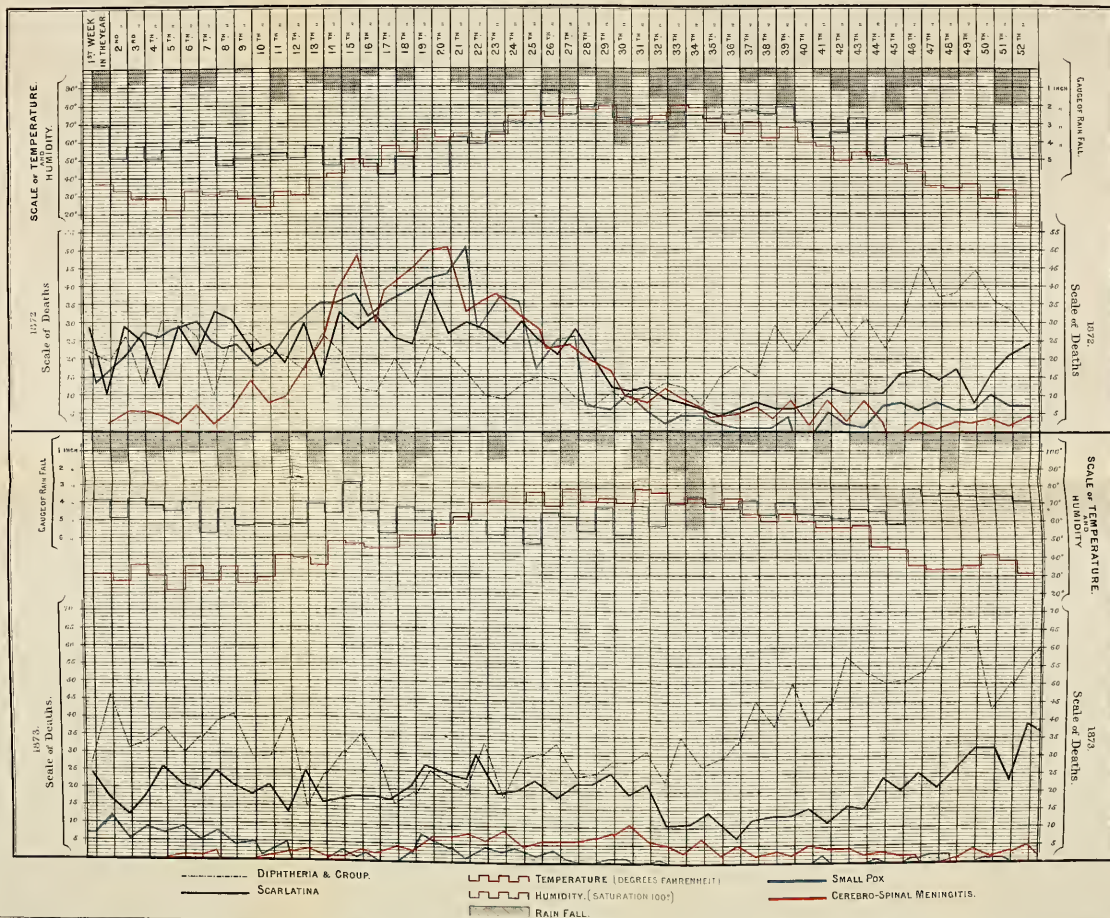


TABLE NO. XVII.

DEATHS FROM SCARLATINA, DIPHTHERIA, AND CROUP, THROUGHOUT THE SEVERAL WARDS, DURING
A PERIOD OF SIX YEARS, ENDING DECEMBER 31, 1873.

| WARDS. | 1868. | | | 1869. | | | 1870. | | | 1871. | | | 1872. | | | 1873. | | |
|--------------------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|--------|-------------|-------------|--------|
| | Scarlatina. | Diphtheria. | Croup. | Scarlatina. | Diphtheria. | Croup. | Scarlatina. | Diphtheria. | Croup. | Scarlatina. | Diphtheria. | Croup. | Scarlatina. | Diphtheria. | Croup. | Scarlatina. | Diphtheria. | Croup. |
| First..... | 15 | 2 | 3 | 12 | 3 | 14 | 4 | 7 | 9 | 16 | 2 | 8 | 20 | 13 | 11 | 3 | 27 | 17 |
| Second..... | .. | .. | .. | 3 | .. | .. | .. | 1 | .. | .. | 1 | 2 | .. | .. | 1 | 1 | .. | .. |
| Third..... | .. | .. | 2 | 1 | 1 | 1 | 2 | .. | 2 | .. | .. | 2 | 3 | 1 | 3 | .. | 9 | .. |
| Fourth..... | 19 | 8 | 13 | 21 | 3 | 20 | 20 | 10 | 14 | 6 | 11 | 21 | 20 | 7 | 22 | 17 | 19 | 24 |
| Fifth..... | 9 | 3 | 6 | 17 | 3 | 12 | 28 | 9 | 12 | 19 | 10 | 16 | 21 | 20 | 11 | 14 | 55 | 26 |
| Sixth..... | 20 | 9 | 13 | 36 | 19 | 14 | 18 | 4 | 21 | 23 | 8 | 25 | 14 | 31 | 43 | 16 | 36 | 36 |
| Seventh..... | 46 | 7 | 27 | 55 | 18 | 12 | 59 | 14 | 21 | 40 | 16 | 31 | 38 | 33 | 37 | 49 | 50 | 29 |
| Eighth..... | 17 | 16 | 12 | 57 | 18 | 21 | 26 | 7 | 14 | 20 | 4 | 15 | 31 | 20 | 33 | 39 | 48 | 32 |
| Ninth..... | 48 | 4 | 16 | 48 | 10 | 25 | 51 | 15 | 20 | 36 | 7 | 18 | 51 | 18 | 37 | 85 | 77 | 30 |
| Tenth..... | 51 | 15 | 20 | 43 | 16 | 23 | 50 | 16 | 22 | 27 | 13 | 10 | 35 | 23 | 37 | 39 | 46 | 38 |
| Eleventh..... | 67 | 26 | 26 | 76 | 25 | 52 | 65 | 30 | 36 | 42 | 19 | 32 | 61 | 28 | 53 | 76 | 59 | 73 |
| Twelfth..... | 33 | 12 | 9 | 27 | 22 | 21 | 68 | 19 | 22 | 39 | 18 | 21 | 55 | 14 | 23 | 111 | 25 | 30 |
| Thirteenth..... | 40 | 6 | 20 | 26 | 17 | 21 | 37 | 10 | 19 | 24 | 6 | 23 | 26 | 11 | 24 | 44 | 23 | 36 |
| Fourteenth..... | 33 | 9 | 7 | 38 | 10 | 22 | 29 | 8 | 22 | 17 | 10 | 19 | 25 | 20 | 27 | 22 | 62 | 23 |
| Fifteenth..... | 22 | 5 | 5 | 14 | 3 | 9 | 5 | 5 | 9 | 5 | 6 | 8 | 9 | 10 | 12 | 11 | 25 | 12 |
| Sixteenth..... | 37 | 12 | 9 | 42 | 16 | 17 | 33 | 21 | 14 | 71 | 13 | 16 | 52 | 23 | 19 | 33 | 37 | 34 |
| Seventeenth..... | 101 | 45 | 42 | 100 | 37 | 63 | 111 | 30 | 38 | 84 | 22 | 34 | 89 | 35 | 65 | 79 | 74 | 73 |
| Eighteenth..... | 36 | 13 | 22 | 50 | 18 | 43 | 69 | 16 | 21 | 48 | 15 | 24 | 70 | 27 | 27 | 54 | 51 | 31 |
| Nineteenth..... | 44 | 16 | 23 | 69 | 22 | 24 | 120 | 22 | 24 | 98 | 17 | 36 | 92 | 17 | 61 | 131 | 159 | 72 |
| Twentieth..... | 104 | 26 | 19 | 73 | 25 | 24 | 69 | 19 | 28 | 73 | 13 | 49 | 97 | 44 | 50 | 86 | 109 | 49 |
| Twenty-first..... | 57 | 21 | 18 | 60 | 14 | 23 | 28 | 9 | 17 | 18 | 11 | 17 | 53 | 15 | 31 | 53 | 26 | 31 |
| Twenty-second..... | 61 | 21 | 30 | 33 | 28 | 22 | 33 | 36 | 36 | 55 | 16 | 39 | 123 | 36 | 43 | 119 | 69 | 36 |
| Total..... | 861 | 276 | 342 | 966 | 323 | 453 | 975 | 303 | 421 | 791 | 238 | 466 | 990 | 446 | 675 | 1,045 | 1,151 | 732 |

The prevalence of scarlatina and croup, without any apparent relations to each other, is evident in the registered records of these two diseases for half a century before diphtheritis was known as a cause of death in this city. They were neither intercurrent nor consecutive upon each other, so far as their history was known. But after diphtheria began to prevail, and at the earliest appearances and descriptions of it (separately from the diphtheritic appearance of wounds), the occurrence of diphtheritic exudations and fatal effects of diphtheria, as a disease supervening upon scarlatina and croup, gave to the physicians no small difficulty in determining which of the two maladies—the primary, or the supervening—should be charged with the fatal result. The longer diphtheria has prevailed, the more certain it is that it supervenes so readily upon scarlatina and croup and even upon the earlier stages of them, that the attending physicians have come to certify more and more frequently that their patients die from diphtheritic croup, or with scarlatina, rendered fatal by diphtheria. And these are not fallacious opinions, for the best medical discrimination and experience pronounce this judgment, and it has become quite noticeable, as shown in the records of these three diseases, that they bear such important relations to the newly-introduced agent of fatality, which is not only fatal when operating as simple diphtheria, but is more certainly so when it supervenes on either scarlatina or croup. The chart (opposite page 247) traces the statistical records of these three diseases as causes of death in two consecutive years.

ENTERIC OR TYPHOID FEVER.

The 295 deaths which were charged to this fever during the year 1873, and the 38 other deaths certified as caused by typhus fever, mark a very limited prevalence of the fever-pests in this city. In no previous year, since the registration has been reasonably trustworthy, have the continued fever or type poisons had so small a share in the causes of mortality, except in 1871. While it is to be expected that the petechial typhus will nearly disappear wherever there is efficiency in the local sanitary government, it has not been so easy to predict the extinction of the enteric fever, because the latter claims the sewers, drains, and the excremental matters of the dwelling and the populous town and city as the secret hiding-places of the infectious factor of this destructive malady. In the year preceding the organization of the Metropolitan Board of Health, 501 and 573 deaths were charged to these two forms of the typh-fevers respectively. In the twenty years from 1854 to 1873 the records of mortality from these two kinds of fever are as follows:

| YEAR. | Total Number of Deaths from all Causes. | Total Deaths from Typhoid Fever. | Total Deaths from Typhus. | YEAR. | Total Number of Deaths from all Causes. | Total Deaths from Typhoid Fever. | Total Deaths from Typhus. |
|-------|---|----------------------------------|---------------------------|-------|---|----------------------------------|---------------------------|
| 1854 | 28,568 | 136 | 390 | 1864 | 25,645 | 661 | 764 |
| 1855 | 23,402 | 139 | 439 | 1865 | 24,843 | 573 | 501 |
| 1856 | 21,102 | 133 | 237 | 1866 | 26,815 | 514 | 422 |
| 1857 | 21,775 | 141 | 171 | 1867 | 23,159 | 345 | 185 |
| 1858 | 22,196 | 176 | 126 | 1868 | 24,889 | 326 | 139 |
| 1859 | 21,645 | 205 | 169 | 1869 | 25,167 | 378 | 125 |
| 1860 | 22,710 | 212 | 198 | 1870 | 27,175 | 422 | 96 |
| 1861 | 22,117 | 234 | 190 | 1871 | 26,976 | 239 | 65 |
| 1862 | 21,244 | 404 | 136 | 1872 | 32,647 | 364 | 86 |
| 1863 | 25,196 | 531 | 420 | 1873 | 29,084 | 295 | 38 |

It is worthy of notice that previous to the year 1848 the discrimination between typhoid and typhus fevers was seldom made, and as the distinctions between these two forms of disease, as defined by the European physicians who witnessed their widest difference, were slowly adopted in New York, where the true typhus, or ship fever, had long been predominant, it remained for the practitioners in this city to see the enteric typhoid malady, when uninfluenced by the coincidence or interference of typhus ere it could be generally believed that these two fevers are distinct diseases.

It continues to be the habit of some of the practitioners in the city to certify that typhoid fever supervened upon certain and various fatal diseases, and caused death, but the specific inflammatory or local disease, which is certified as the antecedent and chief cause, is registered as the true cause of death in nearly every case of such ambiguous use of the term typhoid fever. Yet, with all reasonable precaution, the Bureau reports more rather than fewer deaths than are actually chargeable to enteric typhoid fever. The 295 deaths thus registered in 1873 undoubtedly cover the full number from this fever. The same is true of typhus in the registered causes of mortality. The distribution of enteric fever in the city, during the past six years, is shown in the following summary :

| WARD. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | WARD. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
|----------------------------|-------|-------|-------|-------|-------|-------|-------------------------------|-------|-------|-------|-------|-------|-------|
| First..... | 5 | 4 | 3 | 5 | 9 | 7 | Thirteenth..... | 6 | 7 | 6 | 5 | 9 | 4 |
| Second..... | | | 1 | | | | Fourteenth..... | 7 | 6 | 8 | 4 | 8 | 8 |
| Third..... | 1 | | | 1 | 2 | 1 | Fifteenth..... | 5 | 8 | 8 | 1 | 7 | 6 |
| Fourth..... | 3 | 14 | 4 | 3 | 2 | 5 | Sixteenth..... | 7 | 4 | 17 | 13 | 15 | 11 |
| Fifth..... | 14 | 14 | 11 | 2 | 7 | 5 | Seventeenth..... | 11 | 26 | 31 | 17 | 25 | 13 |
| Sixth..... | 5 | 13 | 7 | 4 | 3 | 6 | Eighteenth..... | 6 | 14 | 11 | 5 | 9 | 11 |
| Seventh..... | 3 | 10 | 11 | 7 | 12 | 3 | Nineteenth ² | 41 | 51 | 68 | 41 | 71 | 54 |
| Eighth..... | 11 | 11 | 14 | 8 | 13 | 6 | Twentieth..... | 21 | 24 | 24 | 13 | 25 | 12 |
| Ninth..... | 9 | 19 | 22 | 15 | 23 | 26 | Twenty-first..... | 19 | 13 | 19 | 18 | 25 | 13 |
| Tenth..... | 12 | 11 | 13 | 2 | 17 | 21 | Twenty-second..... | 12 | 16 | 26 | 14 | 20 | 15 |
| Eleventh..... | 19 | 19 | 29 | 21 | 24 | 31 | Totals (Typhoid fever). | 326 | 373 | 422 | 239 | 364 | 295 |
| Twelfth ¹ | 111 | 94 | 89 | 40 | 33 | 37 | " (Typhus fever). | 139 | 125 | 96 | 65 | 86 | 33 |

Nothing is more clearly to be inferred from the foregoing table than that the very small number and widely-distributed location of the fatal cases render it improbable that there was as great a tendency in this disease to spread and also to prevail as an endemic as used to be noticed when earth-pit privies were in common use in particular quarters of every ward. To understand how vast is the sanitary value of the 100,000,000 gallons of Croton water which, after the common uses it serves, makes up the outflowing river Croton that is continually flushing the house-drains and sewers of the city, we need to consider what would almost certainly be the history and fatality of the enteric fever and other bowel-diseases of the city if unsewered and its excremental filth not thus washed away. The fact that 295 deaths, and not less than about 3,000 cases, of enteric typhoid fever occurred in this city, and were widely distributed in the several wards, may assure us that the germinal element for propagating this disease was not absent.

To the profuse supply of Croton water, to the improvement and extension of the city sewers, to the drainage of grounds, the evacuation and disinfection of cellars, and especially to the sanitary care of the sick, and the treatment of most of the sick poor for fever in secluded pavilion hospitals, the city owes the good providence of the steady decrease and near extinction of typhoid fever. It is in evidence that with more than six times greater population in 1873 than in 1825 and 1826, there were more deaths from fever in each of those years a half-century ago than now. With such a fact on record, the economy, the public utility, and the improved sanitary measures, which give immunity from the typh-fevers, will not be disputed. The many ways by which the typhoid fever-germs may find access to the people who least suspect such dangers have recently been illustrated in an

¹ Emigrant State Hospitals, and three large Asylums.

² Charity Hospital Fever Pavilions and Institutions with five thousand inmates.

unusual manner by the introduction of the fever from a dairy farm-house by milk delivered to families in London, the milk being contaminated with infected well-water, or by other means, on the premises where the dairy-farmer's family was suffering fatally from the fever.¹ Thus the enteric typhoid malady of a distant farm-house may be spread to the city. In view of the facility with which the typhoid infection seems to be conveyed and planted by the aid of water and other fluids, it certainly is a reciprocal good fortune that the entire dairy region from which New York is supplied with milk is, at present, remarkably exempt from enteric fever, while the city also is exempt to a degree rarely before known. Though the city has its afflictions in various ways from filth, the excremental matter in which the typhoid poison makes its way from place to place and to person unquestionably is more readily washed away to the sea than in other great cities. The fatal consequences of any degree of infections of the common filth of gutters, courts, and alleys, with the typhoid poison were witnessed in 1864-'65 in this city, when, in two years, 1,273 deaths were registered from this disease in New York.

DISEASES OF THE LOCAL CLASS.

Diseases of the Brain and Nervous System.—Apoplexy, encephalitis, congestion of the brain, meningitis, and the various kinds of paralysis which result from disease of brain and nerve substance, destroy every year a full quota in this city. But the registered causes of death in this Bureau the past sixty years do not indicate any marked increase in the relative proportion of the several causes here referred to, though there is evidence that fatal congestion of the brain and convulsions in infancy may be of more frequent occurrence in the present than in the previous generations. Greatly-increased accuracy and definiteness of diagnosis of the actual seat and nature of the various diseases which fatally affect the brain and nervous system, will limit our comparisons of the statistics of mortality to the few names of causes of death in this group that are applied to diseases which still remain comparatively unchanged in the statistical nomenclature.

Mortality from Diseases of the Brain and Nervous System.—Apoplexy, softening of the brain, congestion of the brain, meningitis, encephalitis, chorea, epilepsy, and tetanus, cause about 6 per cent. of the total number of deaths in the city annually. Convulsions as an unexplained cause of death in young children only, are credited with nearly 4 per cent. also; and tubercular meningitis and hydrocephalus cause nearly 3 per cent. more of the total mortality. Alcoholism and intemperance are accredited as the direct causes of death in 254 instances, besides nearly twice this number that died from causes induced and complicated by alco-

¹ See Privy Council Local Government Medical Report, Supplementary, No. II.

holism. The deaths from the latter cause are classed with those termed *dietic* (by a temporary concession in an unsettled state of nosological and statistical nomenclature), though among the 254 victims of alcoholism—acute and chronic—a certain number were simply poisoned to death by overdosing with it, a certain number of others died from diseases of the brain and nervous system, produced by it; and others, by diseased conditions of the stomach and functions of assimilation. The deaths which are so described and certified as to be justly accredited directly to alcoholism, as the chief and direct cause, or to tubercular meningitis, or the hydrocephalus which such meningeal disease induces, are classified with other groups of diseases than those of the brain and nervous system.

The question has recently been much discussed, whether apoplexy, palsies, and the directly fatal effects of intemperance, have for years past been increasing. The following summary of the registered facts relating to this subject will be useful to persons who seek information on this subject :

DEATHS BY APOPLECTIC AND PARALYTIC CAUSES IN 1873.

| CAUSES OF DEATH. | Under 15 Years of Age. | Between 15 and 20. | Between 20 and 25. | Between 25 and 70. | 70 and upward. | Total at all Ages. |
|--------------------------|------------------------|--------------------|--------------------|--------------------|----------------|---------------------|
| Apoplexy..... | 17 | 2 | 8 | 321 | 107 | 455 |
| Congestion of Brain..... | 130 | 5 | 1 | 23 | 8 | 167 |
| Hemiplegia..... | 1 | | 3 | 23 | 11 | } 168 Paralytic. |
| Paraplegia..... | 3 | | | 13 | 1 | |
| Paralysis..... | 3 | | | 65 | 35 | |
| Progressive Ataxia..... | | | | 5 | | |
| Softening of Brain..... | 5 | 2 | 1 | 79 | 32 | 119 |
| Intemperance..... | | 2 | 11 | 237 | 4 | 254 |

**ABSTRACT OF RECORDS OF APOPLEXY AND PARALYTIC DISEASES
FOR THE SEVEN DECADES ENDING DECEMBER 31, 1873.**

| TEN YEARS PERIODS. | Estimated Mean Pop- ulation of each Decade. | Apoplexy. | Paralytic Diseases. | Congestion of Brain. | Intemperance. |
|---------------------------|---|-----------|---------------------|----------------------|---------------|
| 1804-1813, inclusive..... | 95,000 | 313 | 212 | .... | 176 |
| 1814-1823..... | 130,000 | 523 | 319 | 7 | 341 |
| 1824-1833..... | 250,000 | 969 | 389 | 30 | 806 |
| 1834-1843..... | 350,000 | 1,145 | 523 | 364 | 544 |
| 1844-1853..... | 560,000 | 4,529 | 1,000 | 651 | 557 |
| 1854-1863..... | 720,000 | 2,719 | 1,756 | 4,248 | 911 |
| 1864-1873..... | 1,000,000 | 3,753 | 1,501 | 2,110 | 1,829 |
| Total..... | ..... | 13,956 | 5,760 | 7,405 | 5,164 |

Diseases of the Circulatory System.—In this group of causes of death the most frequent one is that which, under various descriptions, is certified as valvular disease, without prominent mention of hypertrophy or of dilatation of the cardiac cavities. The number of deaths thus attributed to valvular disease solely, in 1873, was 408. Next in order is hypertrophy of the muscular structures of the organ itself, and which in a former period was more frequently the final definition of the cause of death than valvular diseases were. Of this disease 161 persons are certified to have died in 1873. Fatty degeneration of the heart was certified as causing death in 71 cases, pericarditis in 50, endocarditis in 16; embolism and thrombosis without certified gangrene, apoplexy, or paralysis, caused 10 deaths, and aneurisms caused 76 deaths, 67 of these cases being aneurisms of the aorta. Thus, year by year, about 3 per cent. of the total mortality from all causes in this city is attributed to diseases of the heart and blood-vessels. Though this group of causes takes only about one life out of every 1,000 inhabitants yearly, many of these are most valuable lives.

The prevalent opinion that this group of diseases is increasing in fatality is sustained by the registers of death; but so great a part of this supposed and apparent increase is due to the greatly increased knowledge of the precise nature and consequences of cardiac diseases, and consequent accuracy of diagnosis of them, that it is quite doubtful whether the actual number of fatal maladies of the heart and blood-vessels is much greater in the present than in former generations. The increasing indulgence in certain gymnastic exercises, especially in boat-club training and trials, need not be so greatly chargeable as it is for inducing cardiac and aortic disease. Rationally conducted, by persons who are instructed

in the anatomy and physiology of their bodies, the benefits of such modes of physical training should far more than counterbalance the occasionally evil consequences of indiscreet over-exertion.

Diseases of the Respiratory System.—The various inflammatory and congestive diseases of the lungs and accessory parts of the respiratory system seem to be either increasing in fatality or in their relative prevalence. Pneumonia and pleuro-pneumonia, fatal bronchitis, and pulmonary congestion, present the following record in the bills of mortality in the past six years. The increase is in bronchitis and pneumonia:

| CAUSES OF DEATH. | NUMBER OF DEATHS. | | | | | |
|--|-------------------|--------|--------|--------|--------|--------|
| | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
| Pneumonia..... | 1,668 | 2,100 | 1,836 | 1,834 | 2,150 | 2,328 |
| Bronchitis..... | 803 | 877 | 855 | 964 | 1,040 | 1,068 |
| Pleuritis and diseases of the pleuritic cavity..... | 94 | 111 | 121 | 98 | 99 | 82 |
| All diseases of respiratory organs in local class..... | 3,045 | 3,494 | 3,168 | 3,248 | 3,649 | 3,836 |
| Total mortality from all causes. | 24,889 | 25,167 | 27,175 | 26,976 | 32,647 | 29,084 |

NATIVITY, COLOR, SEX, AND AGES, AND THE NUMBERS OF EACH, OF PERSONS WHO DIED OF PNEUMONIA AND BRONCHITIS IN 1873.

| DISEASE. | NATIVITY. | | Colored. | Under 1 Year | 1 | | 2 | | 3 | | 4 | | Total under 5 Years. | | 5 | | 10 | | 15 | | 20 | | 25 | | | | | |
|-------------|-----------|-----|----------|--------------|----|----|-----|-----|-----|-----|----|----|----------------------|----|----|----|-----|-----|----|----|----|----|----|----|----|----|----|----|
| | U. S. | | | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| | M. | F. | M. | F. | | | | | | | | | | | | | | | | | | | | | | | M. | F. |
| Pneumonia. | 809 | 639 | 548 | 332 | 20 | 13 | 367 | 295 | 170 | 123 | 56 | 49 | 29 | 28 | 15 | 23 | 637 | 518 | 31 | 29 | 10 | 13 | 21 | 19 | 51 | 25 | 59 | 83 |
| Bronchitis. | 437 | 390 | 98 | 153 | 8 | 5 | 295 | 258 | 79 | 75 | 18 | 25 | 9 | 11 | 6 | 6 | 407 | 375 | 6 | 11 | 2 | .. | 3 | 3 | 1 | 3 | 2 | 2 |

| DISEASE. | 80 | | 85 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | 95 | | Total by Sexes. | | Total both Sexes. | |
|--------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-------|-------------------|-------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | |
| Pneumonia. | 73 | 34 | 74 | 34 | 72 | 38 | 69 | 33 | 69 | 31 | 52 | 27 | 38 | 37 | 41 | 30 | 27 | 44 | 15 | 16 | 8 | 9 | 9 | 1 | 1 | 1 | 1 | 1 | 1 | 1,357 | 971 | 2,328 |
| Bronchitis.. | 5 | 3 | 5 | 3 | 7 | 8 | 7 | 6 | 9 | 6 | 9 | 4 | 9 | 22 | 9 | 22 | 13 | 23 | 14 | 17 | 11 | 20 | 3 | 6 | 2 | 7 | 1 | 2 | 525 | 543 | 1,068 | |

Diseases of the Digestive System.—About $4\frac{1}{4}$ per cent. of the total mortality is caused directly by diseases of the digestive organs. Of the 1,247 deaths charged under this head in the year, cirrhosis of the liver—chiefly as the least offensive of the inebriates' diseases—was charged with 165 deaths. Gastritis caused 103 deaths, gastro-enteritis 160, enteritis not diarrhoeal caused 200, and peritonitis, not puerperal, caused 145 deaths. Hepatitis caused 92 deaths, and hypertrophy of the liver caused 92. Were it practicable to place on record the true causation of these fatal diseases, the fact would be better understood that indiscretion in food and indulgence in strong drinks, equally share the causes.

Urinary Diseases.—As the maladies in this group are not wholly dependent upon primary disease and alteration of structure in the renal and other urinary organs, it is not presumed that those which are not primarily so dependent upon anatomical changes or degeneration, will long continue to be regarded as *local* diseases. Nephritis in every variety, calculous obstructions of the urinary passages, cystitis, and some other disorders of these organs may never cease to be regarded as local in their pathological history and therapeutic treatment, yet the origin and fatal progress of urinary calculi depend upon constitutional and diathetic causes chiefly, so much so indeed, that the fatal local injury which calculi in the urinary passages produce is more frequently certified than the actual presence of the calculi as the cause of death.

Nephritis, of the acute kind, causes only a small proportion of the deaths which are charged against the group of renal diseases; but besides the small number thus registered, there is a much greater number of cases, mostly following scarlatina, in which the nephritis or attendant uræmia are the direct cause of death, and in many instances they are so certified. The obstructive, inflammatory, or degenerative diseases which are produced in the kidneys by various kinds of overtasking of these organs in specially depurative processes, whether in the suppurative, septic, or recuperative conditions of the body, have much to do with a great number of cases of nephritis and of nephria or Bright's disease.

There were 876 deaths certified as having been caused by nephria or Bright's disease in 1873. It will be observed that the terms albuminuria, anasarca, granular kidney, fatty, lardaceous, and amyloid disease or degeneration of the kidneys, are terms rarely certified or registered in this city during the past few years. The convenience rather than any degree of pathological and etiological accuracy of the term "morbus Brightii," has induced such an indiscriminate employment of this term that it will probably become obsolete by giving place to more exact and truly pathological definitions. The Royal College of Physicians have retained in the revised statistical nomenclature each one of the pathological names, as well as this which casually attached the name of Dr. Bright to the (various) diseases of which albuminuria is a marked symptom. Though the terms of the re-

vised nomenclature will be followed in this Bureau of Records, the habit of certifying all forms and causes of degeneration or functional affections of the kidneys under the convenient name morbus Brightii bids fair to be continued in this city until the medical world demands the reasons and proof of the unparalleled excess of this cause of death among us.

While there is undoubted evidence that albuminuria and degenerative diseases of the kidneys in New York, or in this latitude, are greatly in excess of the ratio of their prevalence in the Southern and the extreme Northern regions of the United States, every question relating to such presumed excess, and to the supersedure of almost all synonymous and associated names of renal maladies by this too general term, invites inquiry and a rational adjustment. Without presenting in this place the list of secondary or complicating causes of death in the cases in which "Bright's disease" is certified to be the chief cause, it is noticeable that the terms albuminuria or anasarca have very properly disappeared from the primary catalogue of causes of death. It is also to be noticed that the term "Bright's disease" comprises more than 70 per cent. of all the registered deaths from urinary diseases. The following table presents a summary of the records of death from urinary diseases during the past ten years :

| MORTALITY FROM URINARY DISEASES. | | | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| YEARS. | 1864. | 1865. | 1866. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
| Deaths from nephria (Bright's disease) | 293 | 300 | 412 | 403 | 534 | 557 | 737 | 947 | 947 | 876 |
| Total deaths from urinary diseases | 394 | 400 | 549 | 585 | 740 | 771 | 1,038 | 1,163 | 1,174 | 1,112 |

Close discrimination in diagnosis seems, at present, to be diminishing rather than increasing the number of certificates of Bright's disease as the chief cause of death. In the years 1871 and 1872 the occurrence of 947 deaths from this disease in less than 1,000,000 inhabitants seems to be unprecedented in the vital statistics of any great city. In England, in the years 1870 and 1871, the deaths charged to this disease were just equal to 117 in the 1,000,000 living inhabitants. In the five years preceding, the same disease had a ratio of 110.6 in the 1,000,000; 78.4 per 1,000,000 in the previous five years, and 53.6 per 1,000,000 in the five preceding years, viz., from 1855 to 1859; and in London, in 1873, only 642 deaths from this cause were registered in a total of 76,634 deaths, and in a population of nearly 3,500,000. While, therefore, it may not be reasonably doubted that nephria and other diseases of the urinary system are really more prevalent in New York than in England, it is probable that more deaths are attributed to the degenerative disease here in question than would be certified by English physicians, unless, indeed, this disease is so vastly more prevalent here than in London.

TABLE No. XVIII.

ABSTRACT OF DEATHS CERTIFIED AS DEPENDENT UPON NEPHRIA OR BRIGHT'S DISEASE OF THE KIDNEYS, WITH COMPLICATING CAUSES, AGE, SEX, CONDITION, AND OCCUPATIONS OF DECEDENTS.

| | <i>No. of Cases.</i> | | <i>No. of Cases.</i> |
|--|----------------------|------------------------------|----------------------|
| NEPHRIA OF BRIGHT'S DISEASE (no complicating disease certified)..... | 447 | Hydro-Pneumothorax..... | 1 |
| NEPHRIA OF BRIGHT'S DISEASE, complicated with— | | Inanition..... | 2 |
| Abscess of Peritoneum..... | 1 | Intemperance..... | 82 |
| Albuminuria..... | 2 | Hæmorrhage from Kidneys..... | 1 |
| Anæmia..... | 2 | Lead-poisoning..... | 2 |
| Anasarca..... | 6 | Liver, Cirrhosis of..... | 7 |
| Apoplexy..... | 5 | “ Fatty..... | 8 |
| Ascites..... | 5 | “ Hypertrophy of..... | 3 |
| Brain, Œdema of..... | 2 | “ Waxy..... | 2 |
| “ Softening of..... | 3 | “ Disease of..... | 1 |
| Bronchitis..... | 11 | Lungs, Congestion of..... | 8 |
| Childbirth..... | 1 | “ Œdema of..... | 51 |
| Cholera Morbus..... | 1 | Marasmus..... | 2 |
| Colic..... | 1 | Meningitis..... | 7 |
| Convulsions..... | 18 | Myelitis..... | 1 |
| Diarrhœa..... | 7 | Nephritis..... | 6 |
| Dropsy..... | 58 | Old Age..... | 9 |
| Dysentery..... | 2 | Paralysis..... | 2 |
| Emphysema..... | 2 | Pericarditis..... | 10 |
| Endocarditis..... | 1 | Peritonitis..... | 1 |
| Enteritis..... | 1 | Phthisis Pulmonalis..... | 7 |
| Epilepsy..... | 1 | Pleurisy..... | 6 |
| Erysipelas..... | 3 | Pneumonia..... | 20 |
| Fracture of Skull by a Fall..... | 1 | Purpura Hæmorrhagica..... | 1 |
| Gastritis..... | 3 | Pyæmia..... | 1 |
| Gastro-Enteritis..... | 1 | Rectum, Stricture of..... | 1 |
| Gout..... | 1 | Rheumatism..... | 6 |
| Hæmatemesis..... | 2 | Senile Gangrene..... | 1 |
| Hæmaturia..... | 1 | Scarlatina..... | 1 |
| Heart Disease..... | 15 | Scrofula..... | 2 |
| “ Clot..... | 1 | Spine, Caries of..... | 1 |
| “ Fatty Degeneration of..... | 3 | “ Disease of..... | 2 |
| “ Hypertrophy of..... | 10 | Suppression of Urine..... | 1 |
| Hepatitis..... | 2 | Vomiting..... | 1 |
| | | Total..... | 876 |

| SEXES. | | No. | CONDITION. | | No. |
|--------------|--|-----|--------------|--|-----|
| Males..... | | 431 | Single..... | | 196 |
| Females..... | | 445 | Married..... | | 381 |
| | | | Widowed..... | | 186 |
| | | | Unknown..... | | 113 |
| Total..... | | 876 | Total..... | | 876 |

TABLE No. XVIII.—(Continued.)

NATIVITY, AGE, AND SEX OF THE DECEDENTS FROM BRIGHT'S DISEASE, IN 1873.

| NEPHRIA (BRIGHT'S DISEASE). | NATIVITY. | | | | Colored. | | 1 | 2 | 3 | 4 | Total under 5 Years. | 5 | 10 | 15 | 20 | 25 | | | | | | | | | | |
|--------------------------------|-----------|-----|---------|-----|----------|----|---|---|---|---|----------------------|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | U. S. | | Foreign | | | | | | | | | | | | | | | | | | | | | | | |
| | M. | F. | M. | F. | M. | F. | | | | | | | | | | | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. |
| | 141 | 149 | 290 | 296 | 22 | 18 | 2 | 1 | 1 | 6 | 3 | 4 | 2 | 1 | 8 | 12 | 9 | 4 | 4 | 5 | 7 | 10 | 20 | 26 | 26 | 39 |

| NEPHRIA (BRIGHT'S DISEASE). | 30 | | 35 | | 40 | | 45 | | 50 | | 55 | | 60 | | 65 | | 70 | | 75 | | 80 | | 85 | | 90 | | Total by Sexes. | Total both Sexes. | |
|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------|-------------------|-----|
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | | M. | F. |
| | 26 | 41 | 56 | 54 | 50 | 48 | 54 | 39 | 49 | 41 | 33 | 25 | 37 | 41 | 22 | 23 | 19 | 15 | 4 | 11 | 3 | 5 | 3 | 3 | 1 | .. | 431 | 445 | 876 |

NATIVITY.

| United States. | Ireland. | Germany. | Bohemia. | Canada. | Denmark. | England. | France. | Holland. | Hungary. | Italy. | Norway. | Poland. | Russia. | Scotland. | Sweden. | Switzerland. | West Indies. | Unknown. | Total. |
|----------------|----------|----------|----------|---------|----------|----------|---------|----------|----------|--------|---------|---------|---------|-----------|---------|--------------|--------------|----------|--------|
| 295 | 371 | 118 | 1 | 5 | 1 | 47 | 8 | 1 | 1 | 2 | 1 | 4 | 1 | 16 | 2 | 2 | 2 | 8 | 876 |

OCCUPATIONS.

| | | | | | | | |
|------------------------------|----|-----------------------------|----|--------------------------------|----|--|-----|
| Agents | 4 | Coopers | 1 | Machinists | 1 | Sail-Makers | 1 |
| Bakers | 3 | Curriers | 1 | Marble-Cutters | 1 | Saloon-Keepers | 3 |
| Bar-Tenders | 2 | Domestics (female) | 73 | Masons | 2 | Seamen and Sailors | 3 |
| Blacksmiths | 7 | Dress-Makers | 2 | Matrons | 1 | Seamstresses | 8 |
| Boarding-House-keepers | 1 | Drivers & Carmen | 11 | Merchants | 24 | Ship-Carpenters | 1 |
| Boiler-Makers | 8 | Druggists | 2 | Messengers | 1 | Shoe-Fitters | 1 |
| Brass-Moulders | 1 | Dyers | 1 | Millers | 1 | Shoemakers | 3 |
| Brewers | 2 | Engineers | 12 | Musicians | 1 | Soldiers | 1 |
| Bricklayers | 1 | Farmers and Gardeners | 6 | Opticians | 1 | Stavedorea | 1 |
| Butchers | 5 | Firemen | 2 | Painters | 10 | Stone-Cutters | 1 |
| Butlers | 1 | Fish and Oystermen | 4 | Parasol-Makers | 1 | Tailors | 7 |
| Carpenters | 12 | Grocers | 4 | Peddlers | 6 | Teachers (female) | 1 |
| Carvers | 1 | Hat-Pressers | 1 | Physicians | 3 | Tinsmiths | 4 |
| Calkers | 2 | House-Cleaners | 2 | Piano-Makers | 1 | Upholsterers | 2 |
| Chandelier-Makers | 1 | House-Keepers | 47 | Plane-Makers | 1 | Varnishers | 1 |
| Cigar-Makers | 2 | Janitors | 1 | Plasterers | 1 | Veterinary Surgeons | 1 |
| Clerks & Salesmen | 20 | Japanners | 1 | Plumbers and Gas-Fitters | 8 | Waiters | 4 |
| Clergymen | 1 | Laborers | 65 | Police-men & Watchmen | 9 | Washer-Women | 5 |
| Coachmen | 1 | Laundresses | 1 | Porters | 9 | Whitewasher | 1 |
| Conductors | 2 | Lawyers | 1 | Printers | 2 | Children and no occupation given | 416 |
| Confectioners | 1 | Liquor-dealers | 9 | Proof-Readers | 1 | | |
| Contractors | 1 | Livery-Stable Keepers | 1 | Ragpickers | 1 | | |
| Cooks (male) | 8 | Longshoremen | 2 | Saddlers | 1 | | |
| " (female) | 8 | | | | | | |
| | | | | | | Total | 876 |

These statistical abstracts from the records of 876 deaths that were charged to Bright's disease in the year show that at least 70 of the cases were dropsical; also that 51 other cases were attended with an œdematous condition of the lungs; while 40 others were attended by fatal congestion and inflammatory conditions of the same organs, 21 others suffered from organic disorders of the liver, and 82 others were certified inebriates.

In these associated pathological conditions we may read some of the most essential facts concerning the causation and the concomitants of the diseases and deaths here charged to the urinary system. Further observation of these records shows that 119 of the 876 deaths occurred in domestic female servants and house-keepers, 65 others in common laborers, 44 in merchants, salesmen, and clerks, 12 in engineers, 12 in carpenters, 11 in drivers and carmen, and 10 in painters.

There is so large a number of deaths from Bright's disease reported in connection with surgical and suppurative diseases, and the presence of this renal malady is so very frequently certified as the complicating or secondary cause of death in so many instances in which the latter diseases and accidents are correctly reported, also as the chief causes of death, that the relation of degenerative disease of the kidney to its own proper function of depuration has special significance in the experience of hospitals and of surgery. Facts warrant the conclusion that to minimize and to prevent suppurative conditions, and to promote the most speedy and conservative convalescence in surgical patients and in surgical wards, is to diminish very greatly the fatal intercurrent and supervention of renal diseases.

DISEASES OF EBRIETY.

Convenience in the order of presenting the record of related causes of mortality enables us to introduce, after the abstracts of local maladies, the following records relating to

Deaths from Intemperance.—The 621 deaths which have been charged upon the public registers, in 1873, as having been caused directly or remotely, yet chiefly, to ebriety or intemperance, do not reveal all that should be known concerning those who are destroyed by intoxicating drinks. The foregoing abstracts are presented in full from the registers for the year, screened from the dishonor of any mention of ebriety by their medical attendants; few of the wealthy and favored classes are certified to have died of it and the maladies induced by intoxicating drinks. The 45 persons who perished by delirium tremens, and the 88 others whose deaths were charged directly to intemperance or ebriety, were in a majority of instances too poor and friendless to be screened from the registration of the calamity that destroyed them. The actual number of deaths that are wholly attributable to intemperance will never be correctly known except in countries or cities that base the records of mortality upon an exact system of corpse-viewing by verifiers of the causes of death. Even with such means of obtaining

complete records of death by intemperance, the moral necessity for treating the records of ebriety with some degree of concealment would be confessed; but for the humane and socially beneficent purposes of sanitary science and medical duty, the whole truth should be understood. The pathological causes of death—the fatal injuries to vital organs—may properly be certified as they now are for registration, while the relation of inebriety to such diseases is fully certified for beneficent ends. This principle will be found as applicable in the official studies of relations of syphilis to mortality as in these fatal relations of intemperance.

The 621 cases mentioned in the foregoing abstract of deaths from intemperance show precisely what the medical attendants deemed necessary to place on record in their certificates. The 97 instances of nephria or Bright's disease, the 33 of apoplexy, the 41 of congestion of the brain, the 25 of gastritis, the 22 of cirrhosis of the liver, the 14 of meningitis, the 18 deaths by uræmia, and the 65 fatal falls, which in the course of the year had to be explained by the certifying medical witnesses as being dependent upon and caused by intemperance, gave these records upon which some of the fatal effects of alcoholism and its protean bodily evils may be studied. But it is to be observed that final conclusions cannot be predicated upon comparisons in the list of the vocations or the sexes and ages of these persons certified to have died thus from effects of intemperance, for the lists fail to comprise as many as would correctly represent certain classes of the unfortunate persons who perished during the year in consequence of their intemperance.

The share which intemperance has in the causation of disease and premature or excessive mortality is not to be estimated by the numbers of certified deaths from delirium tremens and alcoholism, for the total numbers of such deaths fluctuate year by year far more widely than the numbers of deaths from the chief organic and functional diseases which are indisputably produced by intemperance.

The causes which lead to greatest excesses and madness of ebriety, and which wreck the largest number of the intemperate. The total number of certified deaths from alcoholism, in the form of delirium tremens and intemperance in a direct way, in the past seven years, reads as follows: viz., in the year 1867, 107 in 1868, 278 in 1869, 302 in 1870, 220 in 1871, 314 in 1872, and 254 in 1873. During all these years the organic and complicated diseases, whose fatal course has been due to alcoholic intemperance, certainly have neither increased nor fluctuated in any such proportions as these records of delirium tremens and overt intemperance have. The greatest number of deaths from this cause, in the city of London, occurred in 1865, when 243 decedents were so certified, while in 1873 there were only 153 such deaths reported in that city, which, by its vast population of three and a quarter millions and upward, is proportionately entitled to three and a quarter times as many deaths as New York. Certainly we are not prepared to believe that this cause of death is thrice as active in our city as in London, but the registered facts deserve close study. The chief question

in respect of the whole matter will be found to relate to the general and specific influence of gross intemperance on the death-rates which its victims actually suffer; and the answer which medical experience and hospital records give concerning the comparative death-rates in the temperate and the inebriate classes of sufferers in various diseases, seems to be harmonious to the statistical deductions which Mr. Neison¹ made when studying this question upon the basis of English experiences and the records of all the provident societies of that country. His full deductions read as follows:

The table below shows the period of years which there is an equal chance or probability of living in persons who have already reached certain ages, viz., 20 years of age, 30, 40, 50, and 60 years, respectively, in the general population, also in the intemperate :

| Having reached the age of | Has an average chance of still surviving | But the intemperate have an average chance of surviving only | | | | | |
|---------------------------|--|---|---|----|---|---|---|
| 20 | 44.21 years. | 15.53 years, or 35 per cent. of the duration of life of the general population. | | | | | |
| 30 | 36.43 " | 18.80 | " | 38 | " | " | " |
| 40 | 28.79 " | 11.62 | " | 40 | " | " | " |
| 50 | 21.25 " | 10.86 | " | 51 | " | " | " |
| 60 | 14.28 " | 8.94 | " | 63 | " | " | " |

Mr. Neison concludes that at the period of his investigations the ratio of drunkards to the total population in England and Wales was 1 to 145 persons, both sexes. Dr. Farr, in recent reports, shows that the ratio of deaths attributed to delirium tremens and intemperance has been steadily decreasing in that country since 1865. It may be hoped that such a decrease will be noticeable ere long in New York, for even in a commercial sense the money value of a human life must conform to the inexorable law of the Life Tables, while the social balance presents its still greater weight of interests.

¹ As Mr. Neison's investigations were undertaken for the purpose of ascertaining the commercial or assurance values of the lives of different classes of persons, and were based upon the total experience in England and Wales when ebriety and its diseases were quite as prevalent as they now are in the United States, the following conclusions, which he reached, will apply to the population of New York as a reasonable statement of the influence of ebriety upon the chance of human lives in this city. His conclusions are that for the male population, between 21 and 30 years of age, there is one drunkard in every 176 persons; between 31 and 40 years, one in 80; between 41 and 50 years, one in 57; between 51 and 60 years, one in 52; between 61 and 70 years, one in 64; between 71 and 80 years, one in 253. He justly remarks, in concluding his masterly inquiries into the facts of intemperance, that, "while they point out to assurance offices, and other companies trading in pecuniary adventures on life, the perilous nature of such risks when connected with the lives of intemperate persons, and the urgent necessity for a high rate of premium, they will also not be without valuable influence on the social, political, and religious condition of society."

TABLE No. XIX.—(Continued.)

TABLE OF DEATHS DUE DIRECTLY OR REMOTELY TO INTEMPERANCE,

SHOWING THE ORGANIC DISEASES CONNECTED THEREWITH, WITH NATIVITY, AGE, ETC., OF EACH VICTIM.

| CAUSES OF DEATH (CERTIFIED AND REGISTERED). | AGE. | | | | | | | | | | | | | | Unk ⁿ . M. F. | | | | | | |
|--|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-------|----|-----------------------------|-------|----|-------|----|-------|----|
| | 30-35 | | 35-40 | | 40-45 | | 45-50 | | 50-55 | | 55-60 | | 60-65 | | | 65-70 | | 70-75 | | 75-80 | |
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | M. | F. | M. | F. | M. | F. |
| Meningitis..... | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 4 | 1 | | | | | | | | | | | | |
| Miscarriage..... | | | | | | | | | | | | | | | | | | | | | |
| Nephritis..... | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| Old Age..... | | | | | | | | | | | | | | | | | | | | | |
| Old Wounds from War..... | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| Opium-poisoning, Chronic..... | | | | | | | | | | | | | | | | | | | | | |
| Pericarditis..... | | | | | | | | | | | | | | | | | | | | | |
| Phthisis Pulmonalis..... | 7 | 2 | 4 | 1 | 3 | 1 | 1 | 2 | 3 | | | | | | | | | | | | |
| Bright's Disease..... | | | | | | | | | | | | | | | | | | | | | |
| " Hematemesis..... | | | | | | | | | | | | | | | | | | | | | |
| Pleuritis..... | 1 | 1 | 1 | 1 | | | | | | | | | | | | | | | | | |
| " Pneumonia..... | 9 | 1 | 5 | 1 | 10 | 1 | 8 | 1 | 6 | 3 | | | | | | | | | | | |
| " " Fall..... | | | 1 | 1 | | | | | | | | | | | | | | | | | |
| Rheumatism, Hemiplegia, Bright's Disease..... | | | | | | | | | | | | | | | | | | | | | |
| " " Meningitis, Heart-Clot..... | | | | | | | | | | | | | | | | | | | | | |
| Rupture of Thoracic Aorta..... | | | | | | | | | | | | | | | | | | | | | |
| Scarlatina..... | | | | | | | | | | | | | | | | | | | | | |
| Softening of Brain..... | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1* | | | | | | | | | | | | | |
| Strangulated Inguinal Hernia..... | | | | | | | | | | | | | | | | | | | | | |
| Suicide by Hanging..... | | | | | | | | | | | | | | | | | | | | | |
| " " Jump from Roof..... | | | | | | | | | | | | | | | | | | | | | |
| " " Poison..... | 1 | | | | | | | | | | | | | | | | | | | | |
| " " Striking his Head against Wall..... | | | | | | | | | | | | | | | | | | | | | |
| Syphilis..... | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| Tuberculosis..... | | | | | | | | | | | | | | | | | | | | | |
| Typhoid Fever..... | 1 | 1 | | | | | | | | | | | | | | | | | | | |
| Typho-Malarial Fever..... | | | | | | | | | | | | | | | | | | | | | |
| Uremia..... | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Total..... | 52 | 84 | 67 | 85 | 74 | 29 | 56 | 25 | 54 | 16 | 31 | 2 | 24 | 3 | 10 | 3 | 8 | 1 | 1 | 1 | 2 |

Males, 431; Females, 190; Total, 621.

TABLE No. XIX.—(Continued.)

OCCUPATION OF INEBRIATES.

| | | | |
|------------------------|----|-------------------------------|-----|
| Agents..... | 5 | Mechanics..... | 1 |
| Bakers..... | 6 | Merchants..... | 18 |
| Bar-tenders..... | 7 | Milkmen..... | 1 |
| Blacksmiths..... | 8 | Moulders..... | 1 |
| Boatmen..... | 3 | Oystermen..... | 1 |
| Barbers..... | 1 | Painters..... | 4 |
| Brewers..... | 2 | Pattern-makers..... | 1 |
| Bricklayers..... | 3 | Peddlers..... | 4 |
| Brokers..... | 1 | Piano-makers..... | 3 |
| Book-keepers..... | 1 | Physicians..... | 2 |
| Butchers..... | 9 | Plasterers..... | 3 |
| Builders..... | 1 | Planters..... | 1 |
| Carmen..... | 9 | Plumbers and Gas-fitters..... | 3 |
| Carpenters..... | 6 | Policemen..... | 2 |
| Cigar-packers..... | 1 | Porters..... | 6 |
| Clergymen..... | 1 | Printers..... | 7 |
| Clerks..... | 17 | Prostitutes..... | 2 |
| Confectioners..... | 1 | Publishers..... | 1 |
| Contractors..... | 1 | Rag-pickers..... | 1 |
| Cooks—female..... | 2 | Reporters..... | 2 |
| “ —male..... | 2 | Restaurant-keepers..... | 1 |
| Dentists..... | 1 | Sailors and Seamen..... | 4 |
| Domestics—female..... | 25 | Salesmen..... | 2 |
| Dress-makers..... | 1 | Saloon-keepers..... | 4 |
| Drivers..... | 8 | Scrubbers..... | 1 |
| Druggists..... | 2 | Seamstresses..... | 1 |
| Engineers..... | 2 | Shoe-fitters..... | 1 |
| Farmers..... | 1 | Shoemakers..... | 13 |
| Firemen..... | 1 | Soldiers..... | 2 |
| Flower-makers..... | 1 | Stablemen..... | 2 |
| Gardeners..... | 1 | Street-sweepers..... | 1 |
| Glass-cutters..... | 1 | Stone-cutters..... | 2 |
| Grocers..... | 4 | Stone-polishers..... | 1 |
| House-keepers..... | 37 | Tailors..... | 8 |
| Harness-makers..... | 1 | Teachers—male..... | 1 |
| Hatters..... | 2 | Tinsmiths..... | 1 |
| Health Inspectors..... | 1 | Upholsterers..... | 2 |
| Hotel-keepers..... | 1 | Vagrants..... | 2 |
| Iron-moulders..... | 1 | Veterinary Surgeons..... | 1 |
| Janitors..... | 1 | Waiters..... | 4 |
| Junkmen..... | 3 | Washer-women..... | 4 |
| Laborers..... | 83 | Watch-makers..... | 1 |
| Laundresses..... | 1 | Watchmen..... | 2 |
| Liquor-dealers..... | 7 | Weighers..... | 1 |
| Longshoremen..... | 1 | Wheelwrights..... | 1 |
| Machinists..... | 2 | Not stated ¹ | 215 |
| Masons..... | 2 | | |
| | | TOTAL..... | 621 |

¹ Mostly paupers and women without occupation.

PHTHISIS PULMONALIS.

The 4,134 persons who perished by pulmonary phthisis in this city during the year 1873, represented in their ages, sex, race, nationality, vocation, and whatever else was known and certified concerning them, the chief facts which find any place in public records relating to this destructive disease. Though these constitute only a small portion of the facts which are most intimately concerned in the causation and natural history of phthisis, no other facts respecting the genesis of phthisis are recited in the certificates of death. These few points of personal description and record serve to direct attention and inquiry into the causes of preventable circumstances that enter into the causation and fatal development of this malady. Such inquiry is being incited and guided by the registry of these few facts.

In 1862, Dr. Henry I. Bowditch, of Boston, enunciated certain new propositions concerning the causation of phthisis, which from their novelty and vital importance aroused the attention of physicians and all classes of enlightened citizens. Dr. Bowditch's investigations had been in progress several years, and his propositions related so directly to the question of healthful homes and healthful building-grounds, that every thoughtful householder and every parent had, or ought to have, a practical interest in the subject. The interest thus awakened is continually increasing as the evidence relating to the chief propositions announced by Dr. Bowditch accumulates in all quarters. Already the chief of those propositions, namely, that "a residence on or near a damp soil, whether that dampness be inherent in the soil itself, or caused by percolation, is one of the primal causes of consumption," has, after much investigation, and a discovery of methods of the morbid agency, come to be equivalent to one of the natural laws of this malady. The fact that pulmonary tuberculosis was ever regarded as an outcome of faulty nutrition, constitutional and entailed tendencies unfortunately complicated with unhealthful inflammation of the pulmonary structure, acquires fresh importance, and loses a part of its terror as a fate inevitable, when we accept the broad and hopeful conclusion of the best observers, namely, that dryness of the soil about dwelling-places and in towns is "the prominent characteristic of places comparatively free from consumption, . . . while dampness of the soil characterizes consumption-breeding districts."

The enormous share which phthisis claims in the bills of mortality in New York and throughout the United States, is shown in its most favorable light by the following summary of the yearly records of death in this city from this cause, and from all causes, compared, in the past fifty-five consecutive years. The annexed table exhibits the registered records of annual mortality by phthisis pulmonalis in New York, for the last fifty-five years :

TABLE No. XX.

| YEARS. | 1820. | 1821. | 1822. | 1823. | 1824. | 1825. | 1826. | 1827. | 1828. | 1829. | 1830. | 1831. | 1832. | 1833. | 1834. | 1835. | 1836. | 1837. | 1838. |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|-----------------|--------|--------|--------|--------|--------|--------|--------|---------|--------|
| Total Mortality from all Causes..... | 3,522 | 3,422 | 3,212 | 3,551 | 4,224 | 4,920 | 4,061 | 5,139 | 4,818 | 4,501 | 5,822 | 6,347 | 10,257 | 5,689 | 8,907 | 7,006 | 8,068 | 8,626 | 7,911 |
| Deaths by Pulmonary Consumption..... | 625 | 715 | 624 | 683 | 736 | 843 | 820 | 829 | 906 | 880 | 974 | 1,033 | 1,415 | 1,251 | 1,471 | 1,437 | 1,514 | 1,458 | 1,225 |
| Percentage of Deaths from Phthisis Pulmonalis on Total Mortality from all Causes each Year. | 17.74 | 20.89 | 19.42 | 19.23 | 17.42 | 17.13 | 16.53 | 16.13 | 18.80 | 17.33 | 17.64 | 16.27 | 13.79 | 21.99 | 16.51 | 20.25 | 18.76 | 16.90 | 15.48 |
| YEARS. | 1839. | 1840. | 1841. | 1842. | 1843. | 1844. | 1845. | 1846. | 1847. | 1848. | 1849. | 1850. | 1851. | 1852. | 1853. | 1854. | 1855. | 1856. | 1857. |
| Total Mortality from all Causes..... | 7,910 | 8,469 | 9,093 | 9,154 | 8,659 | 8,890 | 9,652 | 11,411 | 11,273 | 11,280 | 16,072 | 10,332 | 14,029 | 15,490 | 21,979 | 28,473 | 24,448 | 21,748 | 22,811 |
| Deaths by Pulmonary Consumption..... | 1,318 | 1,296 | 1,470 | 1,339 | 1,503 | 1,428 | 1,659 | 1,698 | 1,926 | 1,869 | 2,056 | 1,922 | 2,374 | 2,487 | 2,739 | 3,032 | 2,685 | 2,478 | 2,814 |
| Percentage of Deaths from Phthisis Pulmonalis on Total Mortality from all Causes each Year. | 16.66 | 15.30 | 16.16 | 14.62 | 17.35 | 16.06 | 17.18 | 14.88 | 17.08 | 16.57 | 12.29 | 18.60 | 16.92 | 16.05 | 12.46 | 10.65 | 10.78 | 11.39 | 12.33 |
| YEARS. | 1858. | 1859. | 1860. | 1861. | 1862. | 1863. | 1864. | 1865. | 1866. | 1867. | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. | 1874. | Total. | |
| Total Mortality from all Causes..... | 23,269 | 22,745 | 24,760 | 24,525 | 23,150 | 26,617 | 25,792 | 25,767 | 26,815 | 23,159 | 24,889 | 25,167 | 27,175 | 26,976 | 32,647 | 29,084 | 28,727 | 824,030 | |
| Deaths by Pulmonary Consumption..... | 3,046 | 3,239 | 3,156 | 3,025 | 3,170 | 3,455 | 3,615 | 3,394 | 3,402 | 3,286 | 3,414 | 3,364 | 4,030 | 4,186 | 4,274 | 4,194 | 4,063 | 117,795 | |
| Percentage of Deaths from Phthisis Pulmonalis on Total Mortality from all Causes each Year. | 13.09 | 14.24 | 12.87 | 12.33 | 13.69 | 13.09 | 14.02 | 13.17 | 12.68 | 14.19 | 13.72 | 13.37 | 14.82 | 15.52 | 13.09 | 14.21 | 14.04 | 14.29 | |
| MORTALITY IN THE UNITED STATES. | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | CENSUS OF 1860. | | | | | | | | | |
| | | | | | | | | | | CENSUS OF 1870. | | | | | | | | | |
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| | | | | | | | | | | CENSUS OF 1940. | | | | | | | | | |
| | | | | | | | | | | CENSUS OF 1950. | | | | | | | | | |
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It appears that 117,795 deaths have been charged to this disease, in this city, in the last fifty-five years. The total number of deaths by all causes in this period was 824,030. Hence it appears that phthisis is charged with 14.29 per centum of the total mortality. But our records show that in the last eight years the totals of deaths by this disease have been as follows :

| In 1867, 3,286 deaths, or 14.19 per centum of the total mortality from all causes. | | | | | | | |
|--|-----|-------|---|---|---|---|---|
| " 1863, 3,414 | " " | 13.72 | " | " | " | " | " |
| " 1869, 3,364 | " " | 13.37 | " | " | " | " | " |
| " 1870, 4,030 | " " | 14.82 | " | " | " | " | " |
| " 1871, 4,186 | " " | 15.52 | " | " | " | " | " |
| " 1872, 4,274 | " " | 13.09 | " | " | " | " | " |
| " 1873, 4,134 | " " | 14.21 | " | " | " | " | " |
| " 1874, 4,033 | " " | 14.04 | " | " | " | " | " |

This view of the statistical statement of more than a half-century's experience in regard to phthisis in New York is instructive in many respects, but in none perhaps so greatly as in the fact that, during the first quarter of a century of this long period, the annual ratio which phthisis sustained to the total mortality, and the actual death-rate from this disease in the total population of the city, were enormously high. In numerous years, this cause of death was charged with more than 19 per cent. of the total mortality. The changes that have from time to time occurred in medical views concerning the intimate pathology of tuberculosis, and the relations of inflammatory diseases in the development and fatal issue of phthisis, have not, in any considerable degree, increased or diminished the numbers which year by year have been certified as deaths from pulmonary consumption or tubercular phthisis.¹ From these facts the conclusion seems to be fully warranted that the death-rate from this disease is gradually decreasing, and that as a special element of the general death-rate it is decreasing more rapidly than the latter :

¹ In the Twenty-fourth Registration Report of Massachusetts, Dr. George Derby presented the following statement, showing that in that State phthisis is becoming less destructive :

| | 1851-'55. | 1856-'60. | 1861-'65. |
|-------------------------------|-----------|-----------|-----------|
| Whole Number..... | 22,091 | 23,161 | 22,852 |
| Percentage to all Deaths..... | 22.62 | 21.46 | 17.54 |

The following statement in the same report is significant in regard to the two great classes of causes of any excessive prevalence or extraordinary absence of phthisis in districts of country, or in different portions of a town or city: "Consumption is very unequally distributed throughout Massachusetts. . . . An examination of the reported deaths from consumption in Massachusetts, in three periods of five years, shows that this disease is becoming less destructive. . . . The cause of this diminished mortality is to be found chiefly in the advance of medical science. The intimate nature of the disease is better understood."

TABLE No. XXI.

ABSTRACT OF THE RECORD OF DEATHS BY PHTHISIS PULMONALIS IN THE CITY OF NEW YORK, FOR
THE TWELVE MONTHS ENDING DECEMBER 31, 1873,

SHOWING NATIVITY, COLOR, AGE, SEX, CLASS OF OCCUPATION, LENGTH OF RESIDENCE IN THE CITY; ALSO THE MONTH AND WARD IN WHICH THESE DEATHS OCCURRED;
ALSO THE NUMBER OF SUCH DEATHS IN VARIOUS PUBLIC INSTITUTIONS.

| MONTHS. | NATIVE. | | | | | | NATIVITY. | | | | | | LENGTH OF RESIDENCE IN THE CITY. | | | | | COLOR. | | TOTAL. | | GRAND TOTAL. |
|----------------|---------|-----|-------|-----|--------|-------|-----------|--------|---------|-----|--------------------------|-----|----------------------------------|---------------------|----------------------|----------------------|--------|----------|--------|----------|-------|--------------|
| | M. | | F. | | Total. | | Irish. | | German. | | Other Foreign Countries. | | Less Than 5 Years. | From 5 to 10 Years. | From 10 to 20 Years. | 20 Years and Upward. | White. | Colored. | Males. | Females. | | |
| | M. | F. | M. | F. | Total. | M. | F. | Total. | M. | F. | Total. | | | | | | | | | | | |
| January..... | 60 | 74 | 134 | 62 | 82 | 144 | 31 | 23 | 54 | 27 | 17 | 44 | 34 | 37 | 166 | 139 | 364 | 9 | 180 | 193 | 373 | |
| February..... | 72 | 51 | 123 | 65 | 72 | 137 | 43 | 22 | 70 | 18 | 16 | 34 | 35 | 41 | 160 | 128 | 354 | 10 | 203 | 161 | 364 | |
| March..... | 63 | 77 | 140 | 73 | 85 | 158 | 45 | 20 | 65 | 20 | 13 | 42 | 42 | 42 | 184 | 140 | 392 | 43 | 210 | 195 | 405 | |
| April..... | 76 | 63 | 139 | 65 | 74 | 139 | 35 | 33 | 68 | 27 | 12 | 39 | 39 | 34 | 164 | 148 | 374 | 11 | 203 | 182 | 385 | |
| May..... | 63 | 69 | 137 | 62 | 79 | 141 | 35 | 23 | 58 | 29 | 12 | 41 | 40 | 49 | 188 | 150 | 367 | 10 | 194 | 183 | 377 | |
| June..... | 55 | 49 | 104 | 51 | 69 | 120 | 33 | 22 | 55 | 12 | 10 | 22 | 30 | 40 | 118 | 123 | 299 | 2 | 154 | 150 | 301 | |
| July..... | 61 | 56 | 111 | 58 | 57 | 115 | 30 | 16 | 46 | 11 | 11 | 22 | 28 | 31 | 131 | 104 | 285 | 9 | 160 | 134 | 294 | |
| August..... | 43 | 57 | 100 | 63 | 71 | 134 | 30 | 24 | 54 | 14 | 10 | 24 | 23 | 30 | 135 | 118 | 298 | 8 | 147 | 159 | 306 | |
| September..... | 60 | 51 | 111 | 46 | 80 | 126 | 39 | 20 | 59 | 24 | 10 | 34 | 25 | 29 | 146 | 130 | 328 | 2 | 169 | 161 | 330 | |
| October..... | 50 | 65 | 115 | 61 | 68 | 129 | 29 | 19 | 48 | 21 | 11 | 32 | 20 | 27 | 107 | 170 | 317 | 7 | 161 | 163 | 324 | |
| November..... | 60 | 59 | 110 | 53 | 79 | 137 | 40 | 18 | 64 | 16 | 9 | 25 | 48 | 30 | 162 | 106 | 327 | 9 | 180 | 156 | 336 | |
| December..... | 55 | 67 | 122 | 60 | 71 | 131 | 31 | 26 | 57 | 17 | 12 | 29 | 41 | 40 | 128 | 130 | 334 | 5 | 163 | 176 | 339 | |
| Total..... | 723 | 730 | 1,443 | 724 | 887 | 1,611 | 432 | 263 | 695 | 242 | 143 | 385 | 392 | 420 | 1,796 | 1,586 | 4,039 | 65 | 2,121 | 2,013 | 4,134 | |

TABLE No. XXI.—(Continued.)

ABSTRACT OF THE RECORD OF DEATHS BY PHTHISIS PULMONALIS IN THE CITY OF NEW YORK, Etc.

| MONTHS. | Under 1 Year. | | From 1 to 2 Years. | | From 2 to 3 Years. | | From 3 to 4 Years. | | From 4 to 5 Years. | | From 5 to 10 Years. | | From 10 to 15 Years. | | From 15 to 20 Years. | | From 20 to 25 Years. | | From 25 to 30 Years. | | From 30 to 35 Years. | | From 35 to 40 Years. | | From 40 to 45 Years. | | | | |
|--------------------------|---------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|--------------------|-------|---------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|----------------------|-------|-------|-------|-------|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| | January..... | 2 | 1 | 1 | 4 | 2 | 3 | | 1 | | 1 | 2 | 2 | 6 | 8 | 16 | 14 | 20 | 33 | 34 | 20 | 28 | 24 | 20 | 28 | 24 | 21 | 17 | 17 |
| February..... | 1 | ..... | 2 | 2 | ..... | 3 | 2 | 1 | 1 | ..... | 1 | ..... | 1 | 3 | 9 | 13 | 39 | 21 | 32 | 21 | 23 | 17 | 22 | 31 | 13 | 16 | ..... | ..... |  |
| March..... | 1 | 4 | 2 | 1 | 1 | 2 | ..... | 1 | ..... | 1 | 1 | 2 | 2 | 10 | 16 | 24 | 29 | 31 | 43 | 29 | 20 | 23 | 12 | 22 | 21 | ..... | ..... | ..... |  |
| April..... | 4 | 5 | 3 | 3 | 1 | 2 | ..... | 1 | ..... | 1 | 2 | ..... | 7 | 7 | 13 | 26 | 21 | 33 | 32 | 27 | 20 | 27 | 17 | 14 | 18 | ..... | ..... | ..... |  |
| May..... | 4 | 1 | 1 | 1 | 2 | 2 | ..... | 1 | ..... | 1 | 1 | 4 | 1 | 2 | 10 | 17 | 18 | 24 | 20 | 23 | 28 | 29 | 19 | 16 | 15 | ..... | ..... | ..... |  |
| June..... | 3 | ..... | 1 | 1 | 1 | ..... | 2 | 1 | 1 | 1 | 3 | 2 | 1 | 6 | 10 | 21 | 25 | 27 | 25 | 16 | 18 | 15 | 17 | 19 | 10 | ..... | ..... | ..... |  |
| July..... | 4 | 3 | 1 | 4 | ..... | 1 | ..... | 1 | ..... | 1 | 1 | 2 | 1 | 7 | 9 | 14 | 16 | 22 | 22 | 23 | 18 | 17 | 20 | 12 | 11 | ..... | ..... | ..... |  |
| August..... | 2 | 1 | 1 | 1 | ..... | ..... | 1 | 2 | ..... | 4 | 2 | 1 | 3 | 9 | 10 | 20 | 21 | 8 | 31 | 22 | 16 | 18 | 11 | 9 | 20 | ..... | ..... | ..... |  |
| September..... | 4 | 2 | ..... | 1 | 1 | ..... | ..... | ..... | ..... | 1 | 1 | 1 | 1 | 5 | 10 | 14 | 22 | 33 | 33 | 25 | 13 | 17 | 18 | 17 | 15 | ..... | ..... | ..... |  |
| October..... | 1 | 2 | ..... | 3 | 2 | 1 | ..... | ..... | ..... | 4 | 1 | 1 | 1 | 11 | 14 | 22 | 21 | 20 | 27 | 20 | 21 | 23 | 15 | 12 | 18 | ..... | ..... | ..... |  |
| November..... | ..... | ..... | 2 | ..... | 2 | ..... | 1 | ..... | ..... | ..... | ..... | 1 | 1 | 7 | 9 | 25 | 19 | 20 | 21 | 23 | 15 | 22 | 27 | 20 | 16 | ..... | ..... | ..... |  |
| December..... | 2 | ..... | 1 | 2 | 3 | 2 | ..... | 2 | ..... | 1 | ..... | 3 | ..... | 4 | 1 | 16 | 21 | 26 | 17 | 22 | 24 | 22 | 19 | 19 | 25 | 19 | ..... | ..... |  |
| Total..... | 28 | 19 | 15 | 23 | 15 | 16 | 8 | 8 | 7 | 8 | 12 | 20 | 14 | 32 | 90 | 153 | 258 | 245 | 291 | 388 | 288 | 288 | 240 | 280 | 290 | 290 | 196 | | |
| Total of both Sexes..... | 47 | 38 | 31 | 16 | 15 | 32 | 46 | 243 | 523 | 629 | 516 | 490 | 396 | | | | | | | | | | | | | | | | |

TABLE No. XXI.—(Continued.)

ABSTRACT OF THE RECORD OF DEATHS BY PHTHISIS PULMONALIS IN THE CITY OF NEW YORK, ETC.

| MONTHS. | From 45 to 50 Years. | | From 50 to 55 Years. | | From 55 to 60 Years. | | From 60 to 65 Years. | | From 65 to 70 Years. | | From 70 to 75 Years. | | From 75 to 80 Years. | | From 80 to 85 Years. | | From 85 to 90 Years. | | From 90 to 95 Years. | | From 95 to 100 Years. | | Total by Sexes. | | GRAND TOTAL. | | |
|-----------------------|----------------------|-----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|----------------------|----|-----------------------|----|-----------------|-------|--------------|-------|----|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | | M. | F. |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| January..... | 17 | 15 | 10 | 11 | 8 | 4 | 4 | 4 | 4 | 4 | 3 | 1 | 2 | 3 | 1 | 1 | | | | | | | | 180 | 103 | 373 | |
| February..... | 16 | 13 | 13 | 4 | 9 | 4 | 11 | 7 | 2 | 2 | 4 | 2 | 1 | | | | 1 | | | | | | | 203 | 161 | 364 | |
| March..... | 23 | 18 | 22 | 8 | 3 | 5 | 7 | 6 | 4 | 3 | 3 | 3 | 1 | | | | | | | | | | | 210 | 195 | 405 | |
| April..... | 14 | 13 | 14 | 7 | 6 | 9 | 12 | 7 | 4 | 2 | 6 | 2 | 3 | 1 | | | | | | | | | | 203 | 182 | 385 | |
| May..... | 12 | 14 | 14 | 6 | 12 | 5 | 9 | 2 | 5 | 9 | 3 | 4 | 3 | | 1 | 1 | | | | | | | | 194 | 183 | 377 | |
| June..... | 5 | 10 | 12 | 6 | 8 | 6 | 6 | 6 | 5 | 2 | | | | 2 | | | | | | | | | | 151 | 150 | 301 | |
| July..... | 20 | 10 | 11 | 4 | 7 | 5 | 8 | 4 | 4 | | 5 | 1 | 1 | 2 | 1 | | | | | | | | | 160 | 134 | 294 | |
| August..... | 14 | 14 | 12 | 7 | 7 | 3 | 5 | 4 | 9 | 8 | 3 | 2 | 1 | 1 | | | 2 | | | 1 | | | | 147 | 159 | 306 | |
| September..... | 13 | 12 | 11 | 11 | 10 | 4 | 9 | 6 | 3 | 6 | | 4 | 2 | | | | | | | 1 | | | | 169 | 161 | 330 | |
| October..... | 15 | 10 | 14 | 5 | 5 | 6 | 7 | 4 | 2 | 4 | 4 | 3 | 1 | 1 | | | 2 | | | | | | | 161 | 163 | 324 | |
| November..... | 13 | 4 | 11 | 11 | 7 | 8 | 9 | 4 | 6 | 10 | 3 | 7 | 2 | 3 | 3 | 1 | | | | | | | | 180 | 156 | 336 | |
| December..... | 12 | 8 | 11 | 12 | 3 | 6 | 6 | 4 | 7 | 4 | 5 | 3 | 2 | 3 | 1 | 1 | | | | | | | | 163 | 176 | 339 | |
| Total..... | 174 | 140 | 155 | 92 | 85 | 65 | 93 | 60 | 53 | 54 | 39 | 35 | 19 | 16 | 8 | 11 | 4 | 3 | 1 | 1 | 1 | 1 | 1 | 2,121 | 2,013 | 4,134 | |
| Total of both Sexes.. | 314 | | 247 | | 150 | | 153 | | 110 | | 74 | | 35 | | 19 | | 7 | | 2 | | 1 | | 4,134 |  | .... |  |  |

TABLE No. XXI.—(Continued.)

ABSTRACT OF THE RECORD OF DEATHS BY PHTHISIS PULMONALIS.

| OCCUPATION. | N ^o ber. | OCCUPATION. | N ^o ber. |
|--|---------------------|--|---------------------|
| Actors .. | 2 | Laundresses..... | 5 |
| Agents..... | 7 | Lawyers..... | 5 |
| Architect..... | 1 | Lithographers, Engravers, Electrotypers. etc..... | 10 |
| Artists (including Sculptors, Photogra- phers, etc.)..... | 3 | Machinists, Engineers, Blacksmiths, Tin- smiths, etc..... | 110 |
| Authors (Literary Men and Translators)... | 1 | Marble-polishers and Cutters..... | 10 |
| Bakers..... | 25 | Masons, Stone-cutters, Bricklayers, etc.... | 43 |
| Barbers..... | 16 | Merchants, Manufacturers, etc..... | 77 |
| Bar-tenders and Saloon-keepers..... | 50 | Miller..... | 1 |
| Bill-poster..... | 1 | Moulders..... | 4 |
| Bookbinders..... | 19 | Musicians..... | 10 |
| Brewers..... | 4 | Optician..... | 1 |
| Brokers..... | 9 | Painters..... | 34 |
| Brush-makers..... | 3 | Peddlers..... | 11 |
| Builders and Contractors..... | 9 | Physicians..... | 6 |
| Butchers..... | 26 | Plumbers and Gas-fitters..... | 15 |
| Carmen (inclu. Coachmen, Drivers, etc.)... | 45 | Police and Watchmen..... | 15 |
| Carpenters (Cabinet and Piano-makers)... | 59 | Porters..... | 19 |
| Carriage-makers..... | 6 | Printers..... | 29 |
| Carvers (Wood)..... | 5 | Prostitute..... | 1 |
| Cigar-makers..... | 42 | Riggers, Sail-makers, and Calkers..... | 4 |
| Clergymen..... | 2 | Seamen and Watermen..... | 27 |
| Clerks (incl. Book-keepers, Salesmen, etc.).. | 125 | Shoemakers..... | 40 |
| Compositors..... | 3 | Sisters of Charity..... | 2 |
| Conductors and Railroad-men..... | 12 | Soldiers..... | 4 |
| Confectioners..... | 5 | Stablemen..... | 9 |
| Cooks..... | 12 | Stenographers..... | 2 |
| Coopers..... | 7 | Students..... | 2 |
| Domestics (not specified)..... | 217 | Tailors..... | 46 |
| Dress-makers and Seamstresses..... | 103 | Teachers (Male)..... | 7 |
| Druggists..... | 2 | “ (Female)..... | 7 |
| Expressmen..... | 4 | Turners..... | 2 |
| Farmers and Gardeners..... | 16 | Upholsterers..... | 7 |
| Firemen..... | 4 | Undertakers..... | 2 |
| Fish and Oystermen..... | 4 | Waiters..... | 31 |
| Furriers..... | 2 | Washer-women..... | 6 |
| Gilders, Silver-platers, and Gold-beaters... | 3 | Watch-makers..... | 3 |
| Glass-cutters..... | 2 | Weavers..... | 6 |
| Grocers..... | 12 | Other occupations..... | 242 |
| Harness-makers..... | 3 | Children, and no occupations given..... | 2,102 |
| Hatters..... | 3 | | |
| Instrument-makers..... | 3 | | |
| Jewelers..... | 10 | | |
| Laborers..... | 259 | Total..... | 4,134 |

| Location by Wards. | PUBLIC INSTITUTIONS. | Number of Deaths. | Location by Wards. | PUBLIC INSTITUTIONS. | Number of Deaths. |
|--------------------------|--|-------------------------|--------------------------|---|-------------------------|
| I. | Castle Garden (Emigrant Depot)..... | 1 | XIX. | Charity Hospital, Blackwell's Island.. | 227 |
| VI. | Centre Street Reception Hospital..... | 3 | “ | Alms-house, Blackwell's Island..... | 12 |
| “ | House of Industry..... | 1 | “ | Lunatic Asylum, Blackwell's Island.. | 35 |
| IX. | Baptist Home..... | 1 | “ | Penitentiary Hosp., Blackwell's Island | 3 |
| “ | St. Vincent's Hospital..... | 50 | “ | Epileptic and Paralytic Hosp., Black- well's Island..... | 4 |
| X. | Essex Market Prison..... | 1 | “ | Workhouse, Blackwell's Island..... | 2 |
| XI. | St. Francis Hospital..... | 123 | “ | German Hospital..... | 23 |
| XII. | Ward's Island Emigrant Refuge..... | 46 | “ | Colored Home Hospital..... | 45 |
| “ | Soldiers' Retreat, Ward's Island..... | 7 | “ | Mt. Sinai Hospital..... | 7 |
| “ | Randall's Island Nursery Hospital..... | 4 | “ | Presbyterian Home..... | 5 |
| “ | Randall's Island Idiot Hospital..... | 3 | “ | St. Luke's Hospital..... | 37 |
| “ | N. Y. City Asylum for the Insane..... | 15 | “ | Nursery and Children's Hospital..... | 2 |
| “ | New York Juvenile Asylum..... | 1 | “ | Roman Catholic Orphan Asylum..... | 2 |
| “ | House of Refuge..... | 1 | XX. | St. Elizabeth's Hospital..... | 6 |
| “ | Ninety-ninth Street Reception Hospital | 2 | “ | St. Mary's Hospital..... | 1 |
| “ | Colored Orphan Asylum..... | 2 | “ | St. Vincent de Paul's Hospital..... | 1 |
| “ | House of Good Shepherd..... | 15 | XXI. | Bellevue Hospital..... | 153 |
| “ | House of Mercy..... | 1 | “ | Home of the Little Sisters of the Poor. | 1 |
| “ | St. Joseph's Home..... | 6 | XXII. | Roosevelt Hospital..... | 42 |
| XIV. | Prince St. Roman Cath. Orphan Asylum | 1 | | | |
| XV. | New York Infant Asylum..... | 2 | | | |
| “ | Foundling Hospital..... | 1 | | | |
| | | | | Total..... | 935 |

From the foregoing abstract the following facts are shown, namely :

1. That the female portion of the population of New York, though nearly 30,000 more numerous than the male sex, suffers a less number of deaths from pulmonary phthisis than the latter;¹ and also suffers a less mortality from all causes.

2. That in both sexes, and in the entire population, from the twentieth to the seventieth years of life, and largely indeed in the five years preceding, and in a decade following that period of five decades, phthisis is steadily the great destroyer.

3. That the greatest mortality from phthisis in this city is experienced in the month of March; December, January, and February, dividing a three months' total about equally; and that the mortality from this disease gradually diminishes until the full summer season arrives.

4. That of the foreign-born residents of the city, those from Ireland suffer far the heaviest rate of mortality from phthisis.

5. That the colored race, as represented in this city (estimated to be 13,800 in number), suffered a rate of mortality from phthisis *about 50 per cent.* greater than that given by the whites; and that as this increased death-rate from phthisis alone makes an increase in the total rate of mortality among the colored people of the city equal to the difference between the rate for the whites and the rate for the blacks, the inference seems to be warranted that the chance of life among the latter class of inhabitants is as good and as favorable as among the whites, except as respects phthisis.

The table on next page presents a record of the relative course of phthisis as a cause of death at each age, and in the two sexes separately, in connection with the total mortality from all causes at the same ages, in the year 1873.

¹ The census of the city in 1870-'71 found in the population of all ages 28,057 more females than males. There were 419,094 foreign-born inhabitants, against 523,198 native-born. Of the foreign-born there were 201,199 from Ireland, and 151,216 from Germany.

TABLE No. XXII.

**SUMMARY SHOWING THE PERCENTAGE OF MORTALITY FROM PHTHISIS AT THE DIFFERENT PERIODS
OF LIFE IN NEW YORK IN 1873.**

| AGES. | Under 5 Years. | | 5-10 | | 10-15 | | 15-20 | | 20-25 | | 25-30 | | 30-35 | | 35-40 | | 40-45 | | 45-50 | | 50-55 | | 55-60 | | |
|--|----------------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| | | | | | | | | | | | | | | | | | | | | | | | | | |
| Deaths by Phthisis Pulmonalis at the Different Ages..... | 73 | 74 | 12 | 20 | 14 | 32 | 90 | 133 | 258 | 265 | 291 | 338 | 258 | 298 | 260 | 230 | 200 | 196 | 174 | 140 | 155 | 92 | 85 | 65 | |
| Deaths by all Causes..... | 7,532 | 6,650 | 678 | 632 | 244 | 187 | 287 | 350 | 582 | 620 | 689 | 745 | 722 | 614 | 775 | 640 | 739 | 566 | 673 | 485 | 602 | 399 | 411 | 326 | |
| Percentage of Deaths by Phthisis on Total Mortality..... | .97 | 1.11 | 1.77 | 3.16 | 5.74 | 17.11 | 31.36 | 43.71 | 44.33 | 42.74 | 42.23 | 45.37 | 39.89 | 37.13 | 33.42 | 36.00 | 27.06 | 34.51 | 23.85 | 23.86 | 23.74 | 23.06 | 20.68 | 19.94 | |

| AGES. | 60-65 | | 65-70 | | 70-75 | | 75-80 | | 80-85 | | 85-90 | | 90-95 | | 95-100 | | 100 and Upward. | | Total by Sexes. | | Total of both Sexes. | | |
|--|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|--------|-----|-----------------|-----|-----------------|--------|----------------------|-------|--|
| | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | M. | F. | |
| | | | | | | | | | | | | | | | | | | | | | | | |
| Deaths by Phthisis Pulmonalis at the Different Ages..... | 83 | 60 | 56 | 54 | 39 | 35 | 19 | 16 | 8 | 11 | 4 | 3 | 1 | 1 | 1 | ... | ... | ... | ... | 2,121 | 2,013 | 4,134 | |
| Deaths by all Causes..... | 407 | 370 | 324 | 337 | 310 | 337 | 160 | 226 | 95 | 179 | 52 | 52 | 14 | 31 | 12 | 22 | 2 | 8 | 15,313 | 13,771 | 29,084 | | |
| Percentage of Deaths by Phthisis on Total Mortality..... | 22.85 | 16.22 | 17.28 | 16.02 | 12.53 | 10.38 | 11.87 | 7.07 | 8.42 | 6.14 | 7.69 | 5.77 | 7.14 | 8.22 | 8.33 | ... | ... | ... | ... | 13.85 | 14.02 | 14.21 | |

The excessive mortality from phthisis in males begins a little later in life than in females. In 1873 there were 1,097 deaths charged to phthisis in 2,771 deaths by all causes in males who died, being between the ages of twenty and forty years; or only a decimal less than 40 per centum of the total mortality was from this disease; while in the next succeeding twenty years' period, namely, from twenty to sixty, there were 614 deaths from phthisis in a total of 2,425 deaths of males by all causes, or 25.31 per centum of the whole was charged to this disease.

The mortality from phthisis in this city in 1873 was equal to 4.13 persons in every 1,000 in the estimated population (1,000,000), or 14.21 per cent. of the total mortality from all causes. The census of 1870 returns the deaths by consumption in the United States as being equal to 14.19 per cent. of the total mortality. The course of this most destructive of all diseases during the past fifty years in this city has exhibited a slight decrease since about 1840, and yet the apparent decrease is not fully demonstrated, for, in recent years, there has been a much closer discrimination in regard to the precise nature of chronic and wasting diseases, so that now there is a degree of accuracy which thirty years ago was not witnessed in the records of causes of death. It certainly appears in the records of mortality in this city, from 1820 to 1840, that the death-rate from consumption estimated on the total living population, given in the successive censuses, was equal to about 5 in the 1,000 inhabitants, while this disease was charged with from 17 to 21 per cent. of the total mortality annually. At the present time the death-rate by phthisis is equal to 4.13 per 1,000 inhabitants, and is charged with only 14.21 per cent. of the total yearly mortality in the city.

The sanitary improvements which have been in progress the past seven years are not without results in their tendency to diminish some of the causes of phthisis among the masses of inhabitants. The duty and methods of ventilation of habitations, workshops, factories, school-rooms, and counting-rooms, have been taught, and in some degrees have been enforced; the thorough drainage, cleansing, and drying of building-grounds, and the areas about dwellings, have become common evidence of the purpose and means of securing sanitary protection among the people. Healthfulness of habits and of habitations, when aided by a vigorously developed physical constitution in early life, may in some future time exterminate this destroyer. Much has already been ascertained concerning the conditions under which immunity from phthisis may be attained, and recently the knowledge of the agencies and morbid alterations that enter into the causation of this malady has become so definite and suggestive that the means of applying preventive care are becoming clearly understood.

The enormous share which phthisis claims in the bills of mortality in the great cities and throughout the greater part of North America and Europe, may justly incite the most thorough researches concerning the vital statistics, the causation, and all the available means of preventing its ravages.

The records of mortality from this disease in various cities in the year 1873 compare as follows:

| CITIES. | Deaths from Phthisis in 1,000 Inhabitants. | Per cent. of Deaths from Phthisis to the Total Mortality from all Causes. | CITIES. | Deaths from Phthisis in 1,000 Inhabitants. | Per cent. of Deaths from Phthisis to the Total Mortality from all Causes. |
|--|--|---|-----------------------|--|---|
| New York..... | 4.13 | 14.22 | Cincinnati..... | 2.66 | 11.64 |
| Boston..... | 3.67 | 15.17 | Louisville..... | 2.15 | 12.71 |
| Brooklyn, N. Y..... | 3.16 | 12.55 | Buffalo..... | 1.62 | 10.40 |
| Philadelphia..... | 3.05 | 14.28 | Cleveland..... | 1.59 | 7.76 |
| Baltimore..... | 3.65 | 14.55 | Milwaukee..... | 1.93 | 7.23 |
| Washington and District of Columbia..... | 1.94 | 12.54 | Keokuk..... | 2.06 | 17.12 |
| New Haven..... | 2.97 | 11.52 | St. Paul..... | 2.22 | 13.42 |
| Hartford..... | 1.53 | 8.92 | Dayton, Ohio..... | 2.51 | 12.77 |
| Providence, R. I..... | 2.31 | 13.43 | Chicago..... | 1.59 | 6.68 |
| Springfield, Mass..... | 2.03 | 10.55 | St. Louis..... | 1.66 | 8.73 |
| Worcester..... | 3.76 | 15. | Memphis..... | 2.52 | 5. |
| Bangor..... | 2.42 | 16.72 | Nashville..... | | |
| Portland, Me..... | 5.40 | 25.03 | Augusta, Ga..... | 1.90 | 5.08 |
| Paterson, N. J..... | 3.66 | 13.65 | Mobile..... | 4.15 | 11.69 |
| Elmira, N. Y..... | 1.52 | 9.96 | Charleston, S. C..... | 3.94 | 12.73 |
| Richmond..... | 3.93 | 11.73 | Galveston..... | | |
| Norfolk..... | 3.20 | 11.23 | San Antonio..... | 2.01 | 12.55 |
| Wheeling..... | 1.42 | 9.02 | New Orleans..... | 4.25 | 11.32 |
| Pittsburg..... | 2.45 | 9.26 | San Francisco..... | 2.72 | 14.11 |

In the foregoing summary the fact appears that there certainly is a very wide difference in the rates of mortality from phthisis pulmonalis in certain of the large cities in the United States; and this difference is so great between some of the cities which lie in nearly the same latitude and have nearly the same extremes and means of temperature that the great degree of their differences in phthisis mortality would seem to require elucidations. We need only cite the vital statistics of Chicago, in Illinois, and Portland, in Maine, as an example of this kind.

The phthisis mortality in the city of New York compares favorably with that of the State of New York as a whole:

This city registers 4.13 deaths from consumption annually in every 1,000 of its population, and the ratio of these deaths to the total mortality from all causes is 14.21:

The census of 1870 returned 2.64 deaths from consumption in every 1,000 of the population of the State, and the ratio of this cause of death in the total list of deaths from all causes was 16.74 per cent. In the United States, taken altogether, the census returned the number of deaths from consumption in the year ending June 1, 1870, as equal to 1.81 in every 1,000 of the population, and as being equal to 14.19 per cent. of the total mortality from all causes in that year.

In the last census year, 1871, in England and Wales, phthisis mortality is reported as being equal to 2.36 deaths from this cause in every 1,000 of the population, and as being 10.36 per centum of the total mortality from all causes; while the death-rate from this malady in the metropolitan population of London in the same year was equal to 2.59 in every 1,000 living,

and was 10.54 per centum of the total mortality from all causes. These death-rates from phthisis in England and in London may be taken as representing fairly the average rates in the chief cities and different countries of Europe. Yet the very wide variations in the phthisis mortality in regions and even in cities at widely different altitudes, in Europe, seem to be facts particularly worthy of further study.

The momentous importance of the lives which are wasted by pulmonary phthisis throughout most of the civilized world, and especially in the great cities, gives very great value to every inquiry and advancement of preventive medicine that tends to diminish frequency of its occurrence. The inquiries of our countryman, Dr. Bowditch, and the analysis of sanitary results in fifty of the drained and regulated towns and cities in England, pointed to the comprehensive sanitary works by which human health and happiness, in a larger way, are certainly improved; but they specifically show that the very largest benefit to the public health from such drainage and general improvement about common habitations and surrounding grounds is noticeable in the decreased mortality from phthisis. And in pursuing official studies upon this subject, the medical officer of the Privy Council of England is at present employing the very large resources of physiological and pathological science with the purpose to ascertain in what manner tuberculous disease becomes established and by what physical agencies, both within and without, the lung-tubercle has its beginning and progress. Aided by results hoped for in such researches, that masterly sanitarian and public health-officer, Dr. Simon, hopes to lay a foundation for comprehensive agencies which shall be understood and applied by all enlightened classes for the repression and measurable prevention of phthisis. In 1867-'68 we had occasion to notice and recite some of the first steps in this line of scientific sanitary research, by the gentlemen here mentioned, and by others,¹ and it seems proper to quote a significant remark on this subject,

¹ See *Annual Reports of Metropolitan Board of Health, 1867 and 1868*

Inquiries that are prosecuted upon so broad a basis as that which Mr. Simon and his assistants have laid, and for the purpose of contributing directly to enlarge the resources of preventive measures against disease, will not fail to promote sanitary knowledge and comprehensive hygienic and social improvement throughout the civilized world. Such researches as the English Privy Council has thus encouraged and maintained under Mr. Simon, concern the sanitary authorities in all countries; and if, on the one hand, the highest resources of advancing science are invoked at every step of these researches, so, too, at every step the hygienic condition and experience of every class of the people are investigated, and in many ways improved. The first practical application of a fact unexpectedly discovered in a survey of salutary results of drainage, and general improvement in the sanitary service in English towns, was one of vast magnitude and importance; namely, that "*dampness of soil is an important cause of phthisis to the population living on the soil.*" In his tenth report to the Privy Council, Mr. Simon goes on to state that, in previous reports, he has shown it to be a disease which undergoes development in proportion as men are unwholesomely gathered in in-door industries, and now it is shown to be a disease which also develops itself in proportion as men are dwelling upon a humid soil. These two conditions, he says, "are very great

contained in Dr. Simon's report to the British Parliament in July 1874, showing the exact steps by which he conceives that pathological and sanitary knowledge advances to certain conclusions which will promote the adoption of preventive measures. Dr. Simon remarks: . . . "The broad results of modern discovery in regard of ordinary tubercular disease tend to represent it as a chronic locally originated zymotic process, which, starting

etiological fragments; but even when taken together they do not pretend to exhaust, or nearly to exhaust, the subject of the causation of phthisis."

With upward of 4,000 deaths from pulmonary phthisis every year in the city of New York, with more than 40 per cent. of the total mortality of adult manhood charged to it on our death-registers, with upward of 40,000 deaths caused by this destroyer every year in the United States, and with its habitual wasting of the most intellectual and cultivated classes, and the utter overthrow and desolation of families by its blighting entailments, what study and sanitary works can be too painstaking or too costly which shall discover and prevent the causation and ravages of this fatal scourge? It is justly declared by hygienists and statesmen to be to the honor of the sanitary and registration departments of the government of England that their highest resources of inquiry and analysis are subordinated to the discovery of causes of avoidable diseases and mortality, and to their prevention. Mr. Simon says very truly that there are some exceedingly important studies for which the ordinary professional practice supplies neither opportunity nor immediate stimulus; studies, namely, of elaborate and purely scientific research, in aid of the development of medical knowledge; studies never immediately convertible to pecuniary profit, but perhaps, on the contrary, involving heavy cost; studies, too, which, from their nature, cannot promise rapid results, nor be conducted in fragments of leisure, but require systematic and continuous labor. In this spirit has the chief medical officer guided an elaborate scheme of researches by Dr. Burdon-Sanderson, Dr. Klein, Dr. Thudichum, Dr. Creighton, and other assistants. These researches began some ten years ago, with enumerations of carefully-observed facts and results of experience relating to the chief diseases and avoidable causes of mortality, and, at first, they were chiefly occupied with the zymotic diseases, their causation, localization, and phenomena; at present the respective contagia which excite the various communicable and self-propagating diseases are under investigation; and while Dr. Burdon-Sanderson, Dr. Klein, and Dr. Thudichum are searching the hidden ways in which the contagious diseases are propagated, Dr. Creighton is employed upon an investigation of the chronic self-propagation process which is at the root of the diseases called cancerous, as Mr. Simon defines these inquiries. The results which are sought, or which already begin to appear, are of the most definite kind; for while on the one hand the discovery and observed propagation of the "*microphytes of contagion*" in the enteric fever, and the variola of animals, are announced by these investigators, and while they illustrate the general doctrine of the vitality of contagion, Mr. Simon says concerning the experimental feeding with the milk of tubercular animals: "It having been found that in the subjects of such experiments the contagion (of tubercle) penetrates by the absorbent organs of the alimentary canal, and so diffuses from them its influence to other organs of the body as to produce general tubercular disease, it has from the first been a necessary part of the researches into the processes of tubercular infection in the animal body that very exact study should be made of the intricate anatomical constitutions which determine the sequence of its phenomena, and make different organs differently susceptible to it." And in respect of a parallel method of investigation concerning cancerous disease, the same leader in sanitary inquiry says that, within limits, "it will, I think, be generally admitted that cancer and tubercle are morbid processes so nearly parallel as probably to throw light on one another, and that methods of investigation which have led to an immensely improved knowledge of the one disease, can hardly not lead to instructive results concerning the other."

under certain conditions in one first spot of the (predisposed) animal body, advances by successive steps, in definite anatomical lines, to infect the entire system: a process which by means of its characteristic products is inoculable from part to part, and from subject to subject; but of which in certain other cases the locally originating cause or contagium appears to be common septic ferment or a ferment not yet separable from the septic. This being the tendency of recent knowledge in regard to tubercle, evidently there must arise from it very important suggestions both as to further like studies of the same disease, and as to tentative applications of the knowledge in the province of preventive medicine.¹ Already the experience of physicians in respect of tuberculosis, once regarded as hopelessly incurable as well as generally an entailed disease, seems to forecast the most hopeful promises of such advancing knowledge. For not only do the comprehensive means of actual prevention of tuberculosis begin to be defined in a hygienic and anatomical sense, but the arrest and curative management of the early stages of the disease are believed to be practicable in a great proportion of cases, by sanitary means, for, as remarked by the eminent Dr. H. C. Lombard, of Switzerland, after forty years' study of tuberculous disease, as witnessed in the various countries of Europe, the practising physician of our day is not so unprepared to resist the ravages of a disease, which has more victims than any other, as were our ancestors."

To have ascertained, as sanitary and medical researches have, that it is possible, in a very large degree, to prevent and also in a certain measure to arrest tubercular disease, may certainly be regarded as one of the most promising achievements in hygiene; and all the more promising and important is it that such prevention of the disease and such a measurable arrest of its early stages appear not as some exceptional discovery, but as one of the beneficent results in the general outcome from the most comprehensive application of sanitary knowledge and the works by which the public health in general, and domestic and youthful health especially, are protected and improved.

The comprehensiveness and sufficiency of the method of investigation into the causation and phenomena of destructive diseases being thus adapted to reach conclusions and give exact definition to hygienic measures of momentous importance, the promoters of sanitary improvement and human welfare everywhere may justly share the interest and the patient inquiry which is now inspiring these profound researches which promise vast benefits to mankind. The relations of complex and interdependent elements of causation, and the exact definition of the essential factors of the most destructive diseases, may, in the not far-off future, give to hygiene an absolute dominion over them.

¹ Public Health Reports of the Medical Officer of the Privy Council. New Series, No. III, pp. 728.

TABLE No. XXIII.
ABSTRACT OF DEATHS FROM CANCEROUS AFFECTIONS,
 DURING THE PAST FIVE YEARS.

| CAUSES OF DEATH. | NATIVITY. | | | | | | Colored. | Under 1 Year. | | 1 | 2 | | 3 | 4 | | Total under 5 Years. | 5 | | 10 | 15 | | 20 | 25 | | 30 | | | | |
|-----------------------------|-------------|----|----|----------|----|---|----------|---------------|----|---|----|----|---|----|----|----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|
| | Un. States. | | | Foreign. | | | | M. | F. | | M. | F. | | M. | F. | | M. | F. | | M. | F. | | M. | F. | | M. | F. | M. | F. |
| | M. | F. | | M. | F. | | | | | | | | | | | | | | | | | | | | | | | | |
| 1869. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cancer of breast..... | 13 | | | 36 | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cancer of stomach..... | 3 | 11 | 19 | 25 | | 4 | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Cancer of liver..... | 2 | | 11 | 17 | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Cancer of uterus..... | | 22 | | 70 | | 1 | | | | | | | | | | | | | | | | | | 2 | | 6 | | | |
| Cancer of ovaries..... | 16 | 11 | 27 | 21 | | 1 | | | | 1 | | | | | | | | | | | | | 1 | | | 1 | | | |
| Cancer of other organs..... | | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | | |
| Total cancers for 1869..... | 21 | 57 | 57 | 169 | | 6 | | | | 1 | | | | | | | | | | | | | 1 | 4 | 7 | 9 | | | |
| 1870. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cancer of breast..... | 13 | | 1 | 28 | | 1 | | | | | | | | | | | | | | | | | | | | 5 | | | |
| Cancer of stomach..... | 8 | 12 | 28 | 39 | | | | | | | | | | | | | | | | | | | | | 1 | | | | |
| Cancer of liver..... | 1 | 6 | 24 | 24 | | | | | | | | | | | | | | | | | | | | | 2 | 2 | | | |
| Cancer of uterus..... | | 27 | | 53 | | 1 | | | | | | | | | | | | | | | | | | | 4 | 9 | | | |
| Cancer of ovaries..... | 12 | 19 | 36 | 22 | | 2 | | | | | | | | | | | | | | | | | | 1 | 1 | 3 | | | |
| Cancer of other organs..... | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 5 | | | |
| Total cancers for 1870..... | 21 | 77 | 89 | 168 | | 3 | | | | | | | | | | | | | | | | | 2 | 1 | 3 | 9 | | | |
| 1871. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cancer of breast..... | | 9 | | 26 | | 1 | | | | | | | | | | | | | | | | | | | | | 1 | | |
| Cancer of stomach..... | 2 | 3 | 33 | 28 | | 1 | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Cancer of liver..... | 4 | 4 | 16 | 31 | | | | | | | | | | | | | | | | | | | | | 1 | 1 | | | |
| Cancer of uterus..... | 28 | | | 69 | | | | | | | | | | | | | | | | | | | | | 2 | 4 | | | |
| Cancer of ovaries..... | 1 | | | 4 | | | | | | | | | | | | | | | | | | | | | | 1 | | | |
| Cancer of other organs..... | 5 | 19 | 33 | 20 | | 4 | | | | | | | | | | | | | | | | | | 1 | 1 | 3 | | | |
| Total cancers for 1871..... | 11 | 64 | 82 | 178 | | 1 | 5 | | | | | | | | | | | | | | | | 2 | 6 | 8 | 15 | | | |

MORTALITY OF THE NEWLY-BORN, AND OF CHILDREN UNDER ONE YEAR OF AGE.

The tabulated summary upon the opposite page shows that 8,678 infants perished in this city in 1873 before they reached their first birthday. This enormous number of infant deaths indicates the fact that the infant population in the city considerably exceeds the number registered in the public records of birth, while the 29.84 per centum of the total number of deaths (at all ages), in which these are counted for the year, proves how seriously the foes of infant life invade all classes of homes in the city.

The fact is readily shown that the actual ratio of infant mortality to the total is not so excessive in New York as in numerous small cities and manufacturing towns, where the ratio of births is higher than in this metropolis. Such excess of infant mortality is witnessed in Jersey City, Newark, and Pittsburg, for example, while in Hartford, Conn., Rochester and Poughkeepsie, N. Y., and in New Orleans, La., and San Antonio, Tex., the ratios of infant mortality are much less than in New York. These points are fairly shown in the Reports from Cities, in a subsequent section of this report.

Certain essential questions that underlie the correct statement of the problem of infant death-rates must be distinctly understood and correctly stated in order to give any thing like a truthful expression to such ratios of mortality :

First.—The actual number of infants under the specified age (one year, or whatever periods are mentioned), living at the time of the latest census and at date of the statements.

Second.—The number of infants born during the current year.

Third.—The respective ratios of the total infant mortality to the total number living at like age, and to the total number of deaths in the community from all causes.

Fourth.—The stage of infant life in the first months after birth and the seasons of the year in which proportionate numbers of the infants perish.

The actual number of children found in the city, under a year old, at the time of the census in 1870-'71, was 24,960. The total number that might have been found alive at the same age, at the beginning of the year 1873, was probably 6 per cent. more than this, and in the middle of the year 7 per cent., if the total population at all ages increases at the rate of 2 per cent. per annum.

The 8,678 deaths of infants under a year of age, in 1873, occurred in a constant total number of living infants equal to about 26,700. This gives the death-rate in that average, or census of total number of infants under a year old, equal to 325 in the 1,000 living, or 32.5 per cent. of them.

The foregoing estimation harmonizes with the statements derived from

the last census of the city population. General Walker, the Superintendent of the Census, has kindly furnished the following facts from the enumerators' summaries of the infant ages in this city:

Enumeration of the Infant Population in the City of New York, Census of 1870-'71.

| | | | | | |
|----------------------------------|--------|---|---|---------|-------------------------|
| Under one year of age..... | 24,960 | } | = | 46,291 | under two years of age. |
| Between one and two years of age | 21,336 | | | | |
| Between two and three " " " | 22,417 | | = | 68,703 | three " " " |
| Between three and four " " " | 21,487 | | = | 90,195 | four " " " |
| Between four and five " " " | 21,010 | | = | 111,205 | five " " " |

The import of these figures is correct though the precise distribution to the separate ages, especially from one to two, two to three, and three to four years, may not be so trustworthy as those two divisions which are made "under five," and "under one." The first and fifth natal days are usually remembered and enumerated with a special degree of accuracy. In a former part of this report we have seen that the mortality records for the five years preceding the last enumeration of population harmonize with the statistics of the living children under five years of age.¹

The import of the high ratio of births to population (35 per 1,000) is largely indicative of constitutional vigor in both parents and offspring; but the enormous death-rate of infants implies that the care of the newly-born requires a kind and amount of skill and of maternal intelligence which fail to be given to the offspring of the lower classes of our city population. It will be noticed in the preceding summary of infant deaths, that 2,211 died within a month from birth. This is 1 in 15, nearly, of all the children born in the year, and only 5 out of 6 infants survive six months, and only 3 out of 4 reach their first birthday. Ninety died from measles; 31 from small-pox; 76 from scarlatina; 2,800 from diarrhoeal disorders; 562 from convulsions; 207 from want of breast-milk, or inanition; and 1,287 from inflammatory diseases of the lungs. Truly, as one of the best students of causes of preventive mortality has said: "This question of the treatment of infancy is much larger than it looks, at first sight. . . . In England, about 800,000 children are born annually, and by the Life-Tables, 119,594 of them die in the first year, and from congenital weakness and blight, but great numbers, not, I conceive, from the cruelty of their parents, but either from the necessities of their condition in life or from their ignorance of the best mode of nursing children. . . . Cookery, the preparation of food for adults, is worthy of study, but to the child it is of paramount importance; Nature supplies milk for the first months, then art intervenes, takes the nursing in hand, and gradually prepares it for the years of childhood."²

¹ See page 149.

² "Letter to the Registrar-General on the Causes of Death in England." By William Farr, M. D.; in the Thirty-fourth Report of the Registrar, p. 224.

TABLE No. XXIV.—(Continued).
MORTALITY OF CHILDREN ONE YEAR OLD AND UNDER IN THE YEAR 1873,
 IN THE INFANTS' HOSPITALS, AND IN THE ENTIRE CITY.

| MONTH. | From 6 to 7 MONTHS. | | | | | | From 7 to 8 MONTHS. | | | | | | From 8 to 9 MONTHS. | | | | | | From 9 to 10 MONTHS. | | | | | | From 10 to 11 MONTHS. | | | | | | From 11 to 12 MONTHS. | | | | | | TOTAL BY MONTHS. | | | | |
|--------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|--------------------------------------|-------------------------|-------------------------------|--------------------|---------------|-------------|------------------|----|----|----|----|
| | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | Infants' Hospital, Randall's Island. | Ward's Island Hospital. | Nursery and Child's Hospital. | Founding Hospital. | Rest of City. | Whole City. | | | | | |
| January... | 1 | 2 | 1 | 1 | 23 | 25 | 1 | 1 | 1 | 1 | 23 | 24 | 1 | 1 | 1 | 1 | 22 | 23 | 1 | 1 | 1 | 1 | 15 | 18 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 26 | 29 | | |
| February... | 1 | 1 | 1 | 1 | 22 | 23 | 1 | 1 | 1 | 1 | 13 | 17 | 1 | 1 | 1 | 1 | 1 | 21 | 23 | 1 | 1 | 1 | 15 | 17 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 25 | 26 |
| March... | 1 | 1 | 1 | 1 | 25 | 28 | 1 | 1 | 1 | 1 | 33 | 37 | 1 | 1 | 1 | 1 | 1 | 27 | 28 | 1 | 1 | 1 | 17 | 19 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 20 | 20 |
| April... | 1 | 1 | 1 | 1 | 34 | 37 | 1 | 1 | 1 | 1 | 33 | 34 | 2 | 1 | 1 | 1 | 1 | 29 | 28 | 1 | 1 | 1 | 28 | 28 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 14 | 14 |
| May... | 1 | 1 | 1 | 1 | 32 | 33 | 1 | 1 | 1 | 1 | 19 | 21 | 1 | 1 | 1 | 1 | 1 | 38 | 41 | 1 | 1 | 1 | 31 | 32 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 23 | 22 |
| June... | 1 | 1 | 1 | 1 | 33 | 37 | 1 | 1 | 1 | 1 | 28 | 29 | 1 | 1 | 1 | 1 | 1 | 37 | 40 | 1 | 1 | 1 | 19 | 21 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 23 | 22 |
| July... | 1 | 1 | 1 | 1 | 134 | 144 | 1 | 1 | 1 | 1 | 136 | 140 | 2 | 1 | 1 | 1 | 1 | 119 | 124 | 1 | 1 | 1 | 113 | 116 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 33 | 31 | |
| August... | 1 | 1 | 1 | 1 | 58 | 61 | 1 | 1 | 1 | 1 | 55 | 58 | 2 | 1 | 1 | 1 | 1 | 87 | 91 | 1 | 1 | 1 | 82 | 85 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 71 | 75 | |
| September... | 1 | 1 | 1 | 1 | 45 | 48 | 1 | 1 | 1 | 1 | 45 | 44 | 2 | 1 | 1 | 1 | 1 | 45 | 49 | 1 | 1 | 1 | 39 | 42 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 32 | 31 | |
| October... | 1 | 1 | 1 | 1 | 28 | 30 | 1 | 1 | 1 | 1 | 24 | 24 | 1 | 1 | 1 | 1 | 1 | 28 | 31 | 1 | 1 | 1 | 31 | 32 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 26 | 26 | |
| November... | 1 | 1 | 1 | 1 | 22 | 24 | 1 | 1 | 1 | 1 | 14 | 15 | 1 | 1 | 1 | 1 | 1 | 12 | 14 | 1 | 1 | 1 | 15 | 19 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 18 | 21 | |
| December... | 1 | 1 | 1 | 1 | 22 | 22 | 1 | 1 | 1 | 1 | 13 | 13 | 1 | 1 | 1 | 1 | 1 | 16 | 17 | 1 | 1 | 1 | 17 | 20 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 24 | 24 | |
| Grand total. | 11 | 9 | 8 | 22 | 490 | 543 | 9 | 7 | 2 | 14 | 465 | 478 | 11 | 11 | 2 | 8 | 481 | 513 | 10 | 5 | 8 | 9 | 422 | 440 | 5 | 2 | 4 | 8 | 412 | 426 | 2907 | | | | | | | | | | |

Total deaths of children, one year old and under, in above hospitals, 875. Total deaths of children, one year old and under, in 1873, 8,078.

We think it must be conceded that several of the causes which contribute largely to the excessive mortality among infants in New York can be brought under preventive treatment; and certainly it must be quite justifiable for the sanitary authorities of the city to concern themselves in regard to this matter. A committee of the Obstetrical Society, of London, has for some time past pursued a series of inquiries relating to preventable causes of infant mortality in that city. The points of inquiry, as prepared by Dr. William Farr, relate to—

1. The kind of attendance—skilled or unskilled—at the births, the competence of the attendants, and particularly as to what kind and amount of care are given by midwives, and the special treatment given to the newly-born.

2. The maternal nursing, and the quality, quantity, and reasons of any artificial nursing.

3. The daily treatment of infants through the first six months, and the residue of the first twelve months from birth, through the twenty-four hours.

4. The accumulation of infants in hospitals or asylums, and such matters relating to the housing and care of destitute infants as influence life unfavorably.

5. The desertion of infants, and the consigning of them to asylums, or to ill-treatment.

These inquiries need to be carefully pursued throughout the city of New York and all other cities in our country. The preventable loss or destruction of infant life is evidence of serious sanitary wants, and it implies something more than unhygienic domestic conditions, and more indeed than the mere waste or sacrificing of human life, for such waste of infant lives associates itself with faulty social circumstances and with deterioration and harm to the health of mothers—harm, indeed, to the vigor of the race.

DEVELOPMENTAL DISEASES.

The interruption, the diseased modification, and the accidents of the development and the decay of human beings, have given rise to this class of causes of death. There were 1,883 deaths attributed to these causes in the year. The most important of them occurred in connection with foetal life and childbirth. In 1873 there were registered 72 deaths from malformations in newly-born, and 576 deaths from prematurity of birth. Cyanosis, as disorder of function rather than a lesion, and atelectasis of the lungs as an accidentally fatal condition—these two causes were charged with 95 and 106 deaths respectively. (Pulmonary mechanism and function are not included in the list of malformations.) The simple asthenia of old age was charged with 362 deaths, and similar conditions in young children (not including ordinary marasmus) were charged with 116 deaths. The developmental

diseases and accidents of mothers in childbirth were charged with 299 deaths, exclusive of infectious puerperal fever, which, for the sake of consistency in the classification of ascertained causes of diseases, is allowed to retain the place which has long been assigned to it among the infectious diseases.¹ The registration of causes of death in the chief cities is in harmony with this view of the truly infectious zymosis of the puerperal fever, and the medical profession in New York hold this fever to be a domestic pestilence, the contagious and infectious character of which requires all the sanitary precaution that would be employed against small-pox or typhus. But this is not the whole record of peril to the mother in child-bearing, for numerous other causes—causes that, so far as known, depended on no zymotic infection—were charged by physicians with 160 deaths. No small proportion of these unfortunate cases, and no small proportion of all the mothers in the city, were attended by midwives poorly skilled in their duties. The thorough education and training of intelligent women in the obstetric art and in all its sanitary as well as mechanical relations and duties, would considerably enhance the security of life in the maternity chambers of this city. Already the perils of large lying-in wards are inducing a general desire to secure all the benefits which such hospital wards can offer, by securing in special cottages and in home tenements the skillful attendance which distinguishes the best maternity hospitals.

DEATHS BY VIOLENT CAUSES.

The abstract upon the following page presents renewed evidence that in New York the ratio of mortality from violent causes to the total number of deaths from all causes is unreasonably excessive. The records in 1873 and in the past eight years show that this ratio exceeds that of the same causes in London and eighteen principal cities of England. Of the 1,161 deaths which were charged to violent causes, during the year, 166 were of children under five years of age, and only 34 were seventy years of age and upward, while between the ages of twenty-five and forty-five, inclusive, there were 448 deaths charged to violence. The fatal cases of accidents and negligence amounted to 187, and of these there were 116 charged to vehicles, and other causes in the streets; 103 deaths were caused by burns and scalds, 13 by poisons, 257 by falling from heights and otherwise, and 2 men convicted of murder were executed by hanging. There were 257 found drowned, and 118 verdicts of suicidal deaths, and 73 homicidal. Several of the persons found drowned were undoubtedly suicides, and others may have been homicidal. The coroners held

¹ The removal of *Puerperal Fever* from the Zymotic to the Developmental Class is only a temporary expedient in a prospective rearrangement in certain portions of the statistical nomenclature. It will be found, eventually, in an additional class of Diseases of Women in Pregnancy and the Puerperal Period.

inquisition upon 94 persons who died of injuries for the relief of which surgical operations had been performed.

The 118 suicides gave no evidence in support of the unreasonable statement that is sometimes made that educated and socially cultivated are more prone to suicidal acts than the less cultivated classes. Only one member of the learned professions, and scarcely an individual of the educated and favored ranks of society was found among the suicides. Only 31 out of the 118 were natives of the United States, and there were 41 Germans against 22 Irish.

Poisons were the suicidal agents in 39 cases, fire-arms in 27, and hanging was resorted to in 16 instances. The fact that arseniate of copper (Paris green) was resorted to by 21 of these suicidal maniacs, is strongly in evidence of the blind desperation of these wretched persons when overcome by their bewildering impulses to self-destruction, for they select the most nauseating and distressing agent for accomplishing their purpose.

The pressure of poverty, the miseries of persons of fickle purposes and defective mental and bodily powers, the morbid effects of overwork and still more perilous influence of idleness and of misspent time, will continue to prepare numerous candidates for suicidal acts in this great city; but it is entirely practicable, to diminish many of the causes of suicide by removing facilities, means, and thoughts of self-destruction, and especially by improving the homes and the means of happiness of the poor and unfortunate. Specific sanitary improvements and the encouragement of universal industry have direct bearings upon happiness and hopefulness by which many a suicidal impulse can be prevented. Though it is alone in man's physical and mental organization that "the same causes or equivalent causes invariably produce the same effects on the minds of men under the same conditions; but," says Dr. Farr, "it does not follow from this principle that suicide cannot be brought under any control. A certain number of lunatics destroy themselves; any thing, therefore, which prevents or cures lunacy diminishes suicide. In some in-door employments, where the conditions of health are disregarded, the tendency to suicide is developed, and by changing the conditions the tendency is diminished. Idleness as much as strain of the mind, predisposes to suicide; change the conditions and the disposition to suicide is changed. . . . In certain states the mind appears to be fascinated—as in the disposition to plunge from a height—by the *presence* of a fatal instrument, such, for example, as prussic acid, a pistol, a rope, or razor; and the withdrawal of the means of death suffices to save the life. Diminish the facilities of procuring poison, and you diminish the peculiar kind of suicide."¹

¹ Dr. William Farr, in "Twenty-sixth Annual Report of the Registrar-General of England," p. 193.

TABLE XXV.

SURGICAL OPERATIONS.

| | Duration. | | Duration. |
|--|-------------|---|------------|
| Amputation of both forearms for caries, carpal and metacarpal bones..... | 10 weeks. | Operation for strangulated inguinal hernia | 6 days. |
| Amputation (by "double Symes") for frost-bite of feet..... | — | Operation for strangulated inguinal hernia (hydrocele, asthenia)..... | — |
| Amputation of forearm for cellulitis..... | — | Operation for strangulated inguinal hernia (gangrene, Bright's disease)..... | — |
| Amputation of feet for frost-bite (gangrene, asthenia)..... | 2 months. | Operation for fistula in ano..... | — |
| Amputation for osteo-sarcoma of metatarsal bone of index-finger..... | — | Operation for imperforate anus..... | — |
| Amputation of leg for popliteal aneurism (dry gangrene, val. dis. of heart, atheroma of arteries)..... | — | Operation for lumbar colotomy..... | — |
| Amputation of leg for necrosis of tarsal bone and caries of fibro-tarsal articulation (scrofula)..... | — | Operation for occlusion of os uteri (peritonitis)..... | 4 days. |
| Amputation of penis for primary syphilis (gangrene, septicæmia)..... | 3 days. | Operation for atresia of vagina (septicæmia)..... | 3 days. |
| Amputation of thigh for white swelling..... | 12 days. | Operation for congenital phymosis (scarlatina, erysipelas, gangrene)..... | 10 days. |
| Amputation of thigh for suppurative parathritis of knee..... | — | Operation for removal of polypus of uterus (metro-peritonitis)..... | 4 weeks. |
| Amputation of thigh for osteo-sarcoma of tibia (phlebo-thrombosis, pyæmia)..... | 3 days. | Operation for lumbar colotomy for vesico-rectal fistula..... | 15 days. |
| Circumcision (hemorrhage)..... | — | Operation for osteo-sarcoma of leg (phthisis)..... | — |
| Circumcision (umbilical hemorrhage)..... | — | Operation for removal of ostcal aneurism (second hemorrhage)..... | 6 hours. |
| Circumcision (irritative fever, diarrhœa)..... | — | Operation for removal of polypus of uterus | — |
| Excision of cystic tumor of uterus (septicæmia)..... | 5 years. | Operation for removal of fistula in ano (perproctitis)..... | 1 year. |
| Excision of cancer of breast..... | — | Operation for removal of epithelial cancer of cervix uteri (abscess of broad ligament)..... | 11 days. |
| Excision of cancer of breast (pyæmia)..... | 9 months. | Operation for removal of fatty tumor of scrotum (peritonitis)..... | — |
| Excision of fibroid uterine tumor (septicæmia, peritonitis)..... | — | Operation for extra-uterine pregnancy (5-lb. child, septicæmia)..... | 15 months. |
| Excision of fibroid tumor at the base of the cranium..... | 13 minutes. | Operation of paracentesis (peritonitis, cirrhosis)..... | — |
| Excision of hip for hip-disease..... | — | Operation of paracentesis for ascites..... | — |
| Excision of hip for coxitis (spinal irritation, pyæmia)..... | 5 months. | Operation, Casarean, for childbirth (flooding)..... | — |
| Excision of melanoid tumor of antrum..... | 4 months. | Tracheotomy for croup..... | 4 days. |
| Excision of necrosed metacarpal bone..... | — | Tracheotomy for croup (diphtheria)..... | 3 days. |
| Extraction of tooth (erysipelas)..... | 4 days. | Tracheotomy for croup..... | — |
| Electro-cauterization for chronic metritis (peritonitis)..... | — | Tracheotomy for croup (pneumonia)..... | 8 days. |
| Ligation of external iliac for aneurism (gangrene of foot, septicæmia)..... | 17 days. | Tracheotomy for croup (pneumonia)..... | 39 hours. |
| Lithotomy for vesical calculus (Bright's disease, uræmia)..... | 1 year. | Tracheotomy for croup..... | 1½ day. |
| Ovariectomy (nervous asthenia)..... | 8 months. | Tracheotomy for croup..... | 3 days. |
| Ovariectomy (ovarian tumor)..... | — | Tracheotomy for croup (bronchitis)..... | — |
| Ovariectomy (ovarian tumor)..... | — | Tracheotomy for croup..... | 4 days. |
| Ovariectomy (ovarian tumor)..... | — | Tracheotomy for croup (asphyxia)..... | 4 days. |
| Ovariectomy (ovarian tumor)..... | — | Tracheotomy for croup..... | 3 days. |
| Ovariectomy (ovarian tumor)..... | 6 months. | Tracheotomy for croup (adenitis, septicæmia)..... | 36 hours. |
| Ovariectomy (ovarian cyst)..... | — | Tracheotomy for diphtheritic croup..... | — |
| Ovariectomy (ovarian cyst, septicæmia)..... | 6 years. | Tracheotomy for diphtheria..... | 4 days. |
| Ovariectomy (pericarditis)..... | 15 months. | Urethrotomy—external (septicæmia)..... | 15 days. |
| Ovariectomy (peritonitis)..... | 2 days. | Urethrotomy—external, for stricture of urethra (pyæmia)..... | 3 weeks. |
| Ovariectomy (septicæmia, pleuritis)..... | 39 days. | Urethrotomy—external, for stricture of urethra (pneumonia)..... | — |
| Ovariectomy (shock)..... | 40½ hours. | Urethrotomy—internal and external, for stricture of urethra (cystitis, abscess of scrotum)..... | — |
| Ovariectomy (septicæmia)..... | 7 years. | Urethrotomy—internal, for traumatic stricture of urethra (uræmia, abscess of kidney)..... | 30 hours. |
| Ovariectomy..... | 14 years. | Urethrotomy—perineal, for stricture of urethra (pyæmia)..... | — |
| Ovariectomy (septicæmia, access)..... | 14 years. | Urethrotomy—perineal, for traumatic stricture (pyæmia)..... | — |
| Operation for strangulated crural hernia (peritonitis)..... | 6 days. | Urethrotomy—stricture of urethra..... | — |
| Operation for strangulated inguinal hernia (peritonitis)..... | — | Total..... | 94 |
| Operation for strangulated inguinal hernia (peritonitis)..... | 8 days. | | |
| Operation for strangulated inguinal hernia (peritonitis)..... | 5 days. | | |
| Operation for strangulated inguinal hernia (peritonitis)..... | — | | |

TABLE No. XXVI.

ACCIDENTAL DEATHS.

| ACCIDENTS AND NEGLIGENCE. | | Injuries, knocked down by street railroad-car.. | |
|---|----|---|-----|
| Crushed between ferry-boat and bridge..... | 6 | “ by breaking of a tramway..... | 1 |
| “ “ tug-boat and scow..... | 1 | “ “ bursting of a beer-barrel..... | 1 |
| “ “ train of cars..... | 1 | “ from leap from a rock..... | 1 |
| “ “ stone-truck and cart..... | 1 | “ by being knocked down by dummy... 1 | |
| “ “ caving-in of tunnel..... | 1 | Knocked down by runaway horse..... | 2 |
| “ while loading iron..... | 1 | Kick by horse..... | 10 |
| Crushing of fingers by a door..... | 1 | “ “ mule..... | 1 |
| Explosion of street railroad-cars..... | 1 | Leap from a cart..... | 1 |
| “ “ “ and freight-car..... | 1 | “ “ “ street railroad-car..... | 1 |
| Caught in machinery..... | 11 | Struck by a snow-ball..... | 1 |
| “ “ tackle “hanging”..... | 1 | “ “ “ piece of iron..... | 1 |
| “ “ elevator..... | 1 | “ “ “ hawser..... | 1 |
| Dislocation of spine..... | 1 | “ “ “ chain of vessel..... | 1 |
| Explosion of boiler, Fourth Avenue improve- ments..... | 7 | “ “ “ crank of derrick..... | 2 |
| Fracture and contusion (not stated)..... | 6 | “ “ “ locomotive..... | 8 |
| “ of neck of femur..... | 1 | “ “ “ piece of wood while swinging..... | 1 |
| “ “ spine, while driving under a beam.. | 1 | “ “ “ pole of truck..... | 1 |
| “ “ thigh by discharge of a cannon..... | 1 | “ “ “ elevator..... | 2 |
| “ “ skull..... | 3 | “ “ “ sledge-hammer..... | 1 |
| “ “ leg from fall on roof..... | 1 | “ “ “ shaft of car..... | 1 |
| “ “ spine..... | 1 | “ “ “ bilge-pump brake..... | 1 |
| “ received on floating derrick..... | 1 | “ “ “ piece of falling cornice..... | 1 |
| “ to foot in a railroad-car in Europe... 1 | | Striking head against a beam..... | 1 |
| “ “ “ “..... | 1 | “ “ “ stable-door..... | 1 |
| Frost-bite (various portions)..... | 4 | “ “ “ spiles while bathing..... | 2 |
| Fall of ice from a roof..... | 1 | Thrown from buggy..... | 2 |
| “ “ a pump..... | 1 | Wounds cut with a cleaver..... | 1 |
| “ “ embankment..... | 5 | “ “ “ “ plate in arm..... | 1 |
| “ “ lumber..... | 5 | “ of hand..... | 1 |
| “ “ a carzo-hook..... | 1 | “ “ foot by a nail..... | 3 |
| “ “ bale of carpet..... | 1 | “ “ scalp..... | 1 |
| “ “ log..... | 3 | “ “ foot by glass..... | 2 |
| “ “ “ mast..... | 2 | “ by gunshot..... | 5 |
| “ “ trunk..... | 1 | “ “ stab..... | 1 |
| “ “ cask of liquor..... | 1 | “ “ circular saw..... | 1 |
| “ “ block of wood..... | 1 | “ through thigh with a hay-fork..... | 1 |
| “ “ shed..... | 1 | Total accident and negligence..... | 157 |
| “ “ shutter..... | 2 | | |
| “ “ plank..... | 1 | KILLED BY VEHICLES IN STREETS, ETC. | |
| “ on a truck..... | 1 | By street railroad-cars..... | 46 |
| “ “ piece of wood..... | 1 | “ steam “..... | 31 |
| “ under cars..... | 1 | “ other vehicles..... | 30 |
| “ of iron column..... | 4 | Total..... | 116 |
| “ “ lager-bier keg..... | 1 | | |
| “ “ horshead..... | 1 | BURNS AND SCALDS. | |
| “ “ barrel of ale..... | 1 | Burns (manner not stated)..... | 2 |
| “ “ stone arch..... | 1 | “ “ “ clothes fired by stove..... | 19 |
| “ “ stones and rocks..... | 6 | “ “ “ while lighting gas..... | 2 |
| “ “ wall..... | 2 | “ “ “ by matches..... | 6 |
| “ “ derrick..... | 1 | “ “ “ “ lighted pipe..... | 1 |
| “ “ timber..... | 1 | “ “ “ “ fire-crackers..... | 2 |
| Falling in of a floor laden with hay and oats... 3 | | “ “ “ while leaning over a fire... 1 | |
| “ “ “ building..... | 5 | “ “ “ by grate-fire..... | 2 |
| Frozen after being rescued from fall through ice.. | 1 | “ “ bed “ “ a candle..... | 1 |
| “ while intoxicated..... | 1 | | |
| Injuries while rope-jumping..... | 1 | | |
| “ from blast (premature and otherwise)..... | 9 | | |

TABLE No. XXVI.—(Continued.)

| | |
|--|-----|
| Burns, fall against red-hot boiler | 1 |
| “ “ “ stove..... | 3 |
| “ “ into lime-kiln..... | 2 |
| “ over chest and abdomen..... | 1 |
| “ by blast-furnace..... | 1 |
| “ on blacksmith-furnace..... | 1 |
| “ explosion of kerosene-oil lamp..... | 4 |
| “ “ of can “ | 1 |
| “ “ “ naphtha. “ | 1 |
| “ “ “ cartridges..... | 1 |
| “ at a fire corner Fourth Avenue and Thir- ty-second Street | 1 |
| “ at a fire 186 Henry Street..... | 1 |
| “ “ “ of stable..... | 2 |
| Scalds by hot coffee..... | 5 |
| “ “ “ fluid..... | 1 |
| “ “ melted lead..... | 1 |
| “ “ hot soup..... | 1 |
| “ “ “ starch..... | 1 |
| “ “ “ tea..... | 5 |
| “ “ “ water..... | 33 |
| Total..... | 103 |

ACCIDENTAL POISON.

| | |
|---------------------------------|----|
| Poison used not stated..... | 1 |
| “ caustic potash..... | 1 |
| “ inhalation of chloroform..... | 1 |
| “ lead..... | 2 |
| “ muriatic acid..... | 1 |
| “ overdose of colchicum..... | 2 |
| “ “ “ morphine..... | 2 |
| “ “ “ soothing syrup..... | 1 |
| “ rat-poison..... | 1 |
| “ sulphurous acid..... | 1 |
| Total..... | 13 |

ACCIDENTAL SUFFOCATION.

| | |
|--|----|
| Overlaid in bed..... | 14 |
| “ “ at birth..... | 1 |
| Fall into slop-pail at birth | 1 |
| Impaction of solid food in bronchus..... | 1 |
| Bread lodging in throat..... | 1 |
| Meat “ “ | 3 |
| By a pillow..... | 1 |
| In a steam-kiln..... | 1 |
| By illuminating-gas..... | 1 |
| Found on sidewalk..... | 1 |
| Total..... | 25 |

DROWNING.

| | |
|--|-----|
| Supposed drowning..... | 146 |
| By capsizing of row-boat..... | 1 |
| “ collision..... | 1 |
| “ being run down in row-boat by ferry-boat., | 3 |
| While swimming..... | 1 |
| In a boiler..... | 1 |
| “ “ cistern..... | 1 |
| Effect of immersion..... | 1 |
| Total..... | 155 |

MISCELLANEOUS CAUSES.

| | |
|---|----|
| Neglect and exposure..... | 13 |
| Human remains, cause unascertained..... | 5 |
| Total..... | 18 |

ACCIDENTAL FALLS.

| | |
|--|-----|
| Fall from scaffold..... | 6 |
| “ “ roof..... | 14 |
| “ “ ladder..... | 3 |
| “ “ building..... | 10 |
| “ “ windows..... | 35 |
| “ “ street railroad-car..... | 4 |
| “ “ platform of Harlem Railroad train... 1 | |
| “ “ stoop and step..... | 4 |
| “ “ tender of fire-engine..... | 1 |
| “ “ dock..... | 1 |
| “ “ chair..... | 3 |
| “ “ bed..... | 3 |
| “ “ height to flagstone..... | 1 |
| “ “ mast..... | 4 |
| “ “ ship..... | 1 |
| “ “ skylight..... | 2 |
| “ “ wagon and cart..... | 6 |
| “ “ church-tower..... | 1 |
| “ “ tower of Brooklyn Bridge..... | 1 |
| “ “ horse..... | 1 |
| “ “ table..... | 3 |
| “ “ pile of lumber..... | 2 |
| “ “ tree..... | 3 |
| “ “ rocks..... | 3 |
| “ “ ice-box..... | 1 |
| “ “ coach..... | 1 |
| “ “ awning..... | 1 |
| “ “ shed..... | 1 |
| “ “ staging..... | 1 |
| “ “ truck..... | 7 |
| “ “ wall..... | 1 |
| “ “ elevator..... | 1 |
| “ down-stairs..... | 44 |
| “ “ area..... | 3 |
| “ “ an embankment..... | 3 |
| “ through hatchway..... | 27 |
| “ in street..... | 22 |
| “ “ room..... | 5 |
| “ “ yard..... | 1 |
| “ on the ice..... | 2 |
| “ “ floor..... | 1 |
| “ “ deck of vessel..... | 1 |
| “ while wrestling..... | 1 |
| “ “ intoxicated..... | 1 |
| “ into cellar..... | 3 |
| “ upon a stone..... | 1 |
| “ over dash-board of car..... | 1 |
| “ (manner not stated)..... | 11 |
| Total..... | 257 |

SUICIDES.

| | |
|-------------------|----|
| By cut, stab..... | 13 |
| “ drowning..... | 4 |
| “ gunshot..... | 28 |
| “ hanging..... | 16 |

TABLE No. XXVI.—(Continued.)

| | |
|---|-----|
| By jump from height..... | 7 |
| “ punctured wound with a wire, producing abortion..... | 1 |
| “ striking head against wall..... | 1 |
| “ strangulation with a calico bandage..... | 1 |
| “ thrusting head through pane of glass..... | 1 |
| “ arsenic..... | 2 |
| “ aconite..... | 1 |
| “ chloroform..... | 2 |
| “ carbolic acid..... | 1 |
| “ cyanide of potassium..... | 1 |
| “ hydrocyanic acid..... | 1 |
| “ laudanum..... | 6 |
| “ opium chronic poisoning..... | 2 |
| “ oxalic acid..... | 1 |
| “ Paris green..... | 22 |
| “ sulphate of strychnine..... | 1 |
| “ subacetate of lead..... | 1 |
| <hr/> | |
| Total..... | 118 |

HOMICIDES.

| | |
|---|----|
| By blows..... | 33 |
| “ burns from lighted kerosene-oil lamp..... | 1 |
| “ abortion..... | 2 |
| “ cut, stab..... | 15 |

| | |
|--|----|
| By drowning, suffocation..... | 1 |
| “ kick..... | 2 |
| “ suffocation, burns..... | 2 |
| “ “ in water-closet..... | 1 |
| “ strangulation..... | 1 |
| “ thrown down-stairs..... | 1 |
| “ “ from window..... | 2 |
| “ gunshot..... | 10 |
| “ thrown into water by its mother..... | 1 |
| “ wound of vagina..... | 1 |
| <hr/> | |
| Total..... | 73 |

JUDICIAL EXECUTIONS.

| | |
|---------------------------------|---|
| William Foster, March 21st..... | 1 |
| Michael Nixon, May 16th..... | 1 |
| <hr/> | |
| Total..... | 2 |

Surgical operations..... 94

Certified by coroners as having died from va-
rious maladies..... 1,516

RECAPITULATION.

| | |
|-----------------------------------|-----|
| Accident and negligence..... | 187 |
| Killed by vehicles in street..... | 116 |
| Burns and scalds..... | 163 |
| Poisoning, accidental..... | 13 |
| Suffocation “..... | 25 |
| Drowning “..... | 155 |
| Falls “..... | 257 |

| | |
|---------------------------|-------|
| Surgical operations..... | 94 |
| Miscellaneous..... | 18 |
| Suicides..... | 118 |
| Homicides..... | 73 |
| Judicial executions..... | 2 |
| <hr/> | |
| Total violent deaths..... | 1,161 |

TABLE No. XXVII.
DEATHS BY SUICIDE.

| DATE, 1873. | Age | Con- dition. | Occupation. | Nativity. | Means used. | |
|-------------|-------|-----------------|-------------|------------------|--------------------------------|----------------------------------|
| January | 4... | 62 | W. | Germany | Drowning in a well. [Abortion. | |
| " | 5... | 32 | ..... | New York | Punctured wound, by attempting | |
| " | 9... | 70 | W. | Ireland | Cutting Throat. | |
| " | 15... | 32 | Porter | France | Gunshot. | |
| " | 21... | 34 | M. | Ireland | Cutting Throat. | |
| " | 21... | 34 | M. | Germany | Paris Green. | |
| " | 24... | 25 | S. | United States | Cutting Throat. | |
| " | 26... | 35 | M. | Germany | Paris Green. | |
| " | 29... | 26 | S. | New York | Gunshot. | |
| " | 29... | 20 | S. | Painter | Hanging. | |
| " | 31... | 32 | M. | England | Chloroform. | |
| February | 4... | 37 | M. | Germany | Leap from Window. | |
| " | 5... | 42 | W. | Widow Shade-Mkr. | Cutting Throat. | |
| " | 7... | 23 | S. | Domestic | Ireland | Leap from Window. |
| " | 13... | 34 | M. | Salesman | North Carolina | Chronic Opium-Poisoning. [Glass. |
| " | 16... | 21 | S. | Laborer | England | Thrusting Head through Pane of |
| " | 17... | 60 | W. | ..... | New York | Hanging. |
| " | 18... | 24 | S. | Steward | England | " |
| " | 21... | 45 | M. | Carpenter | United States | Incised wound of Leg. |
| " | 24... | 50 | M. | Policeman | Germany | Gunshot. |
| " | 24... | 20 | S. | Seamstress | New York | Paris Green. |
| March | 6... | 81 | S. | Bricklayer | Germany | Gunshot. [Razor. |
| " | 7... | 91 | W. | ..... | Germany | Severing Vessels of Arms with a |
| " | 12... | 50 | M. | Ship Carpenter | United States | Cutting Throat. |
| " | 14... | 33 | M. | Dress-Maker | England | Aconite. |
| " | 18... | 67 | M. | Agent | England | Hanging. |
| " | 24... | 20 | M. | ..... | Massachusetts | Paris Green. |
| " | 25... | 26 | S. | Bartender | Ireland | " |
| " | 27... | 65 | W. | ..... | New York | " |
| April | 2... | 44 | ..... | New York | Arsenic. | |
| " | 3... | 35 | S. | Coppersmith | Germany | Hanging. |
| " | 4... | 66 | W. | Ragpicker | Germany | " |
| " | 8... | 35 | M. | ..... | Germany | Paris Green. [of a Cell. |
| " | 9... | 35 | M. | Truck-Driver | Ireland | Knocking his Head against Wall |
| " | 12... | 26 | ..... | Druggist | Germany | Hydrocyanic Acid. |
| " | 13... | 43 | ..... | Musician | Germany | Cutting Throat. |
| " | 13... | 40 | ..... | Laborer | Ireland | Leap from Window. |
| " | 16... | 29 | S. | Druggist | Germany | Sulphate of Strychnine. |
| " | 18... | 60 | M. | Physician | United States | Cutting Throat. |
| " | 24... | 45 | M. | Tailor | Ireland | Gunshot. |
| " | 24... | 27 | M. | Book-Keeper | Germany | " |
| " | 27... | 35 | M. | Sailor | France | Leap from Height. |
| " | 27... | 40 | ..... | ..... | Unknown | Hanging. |
| May | 2... | 32 | M. | Clerk | England | Gunshot. |
| " | 6... | 39 | M. | Cigar-Maker | Germany | " |
| " | 9... | 36 | M. | ..... | England | Cutting Throat. |
| " | 13... | 38 | M. | Merchant | Ohio | Gunshot. |
| " | 14... | 29 | S. | Waiter | Switzerland | Leap from Roof. |
| " | 15... | 32 | S. | Laborer | Germany | Subacetate of Lead. |
| " | 18... | 18 | S. | Shoemaker | Switzerland | Hanging. |
| " | 21... | 45 | M. | ..... | Ireland | Drowning. |
| " | 28... | 40 | M. | ..... | Ireland | Paris Green. |
| " | 25... | 15 | S. | Dressmaker | United States | " |
| " | 25... | 29 | S. | ..... | Maine | Chronic Morphine. |
| " | 28... | 36 | M. | ..... | Ireland | Paris Green. |
| " | 29... | 27 | W. | Policeman | Ireland | Gunshot. |
| June | 2... | 53 | M. | Domestic | Germany | Paris Green. |
| " | 4... | 56 | S. | Housekeeper | Ireland | Oxalic Acid. |
| " | 5... | 46 | W. | Housekeeper | Ireland | Paris Green. |
| " | 15... | 40 | S. | Book-Keeper | Germany | Gunshot. |
| " | 20... | 75 | W. | Laborer | Germany | " |
| " | 25... | 21 | S. | Lithographer | Germany | " |
| July | 1... | 33 | S. | Book-Keeper | United States | " |
| " | 9... | 74 | W. | Housekeeper | Ireland | Paris Green. |
| " | 26... | 29 | S. | Restaurant | Germany | " |
| " | 31... | 40 | S. | Cigar-Maker | Germany | Gunshot. |
| August | 1... | 22 | M. | Clerk | England | " |
| " | 1... | 38 | M. | Saloon-Keeper | Germany | Cutting. |
| " | 2... | 31 | S. | ..... | Germany | Drowning. |
| " | 3... | 27 | S. | ..... | Germany | Gunshot. |
| " | 3... | 34 | M. | Bookbinder | Germany | Carbolic Acid. |
| " | 4... | 37 | S. | Stonecutter | Ireland | Cutting Throat. |
| " | 11... | 35 | S. | Waiter | Germany | Paris Green. |

TABLE No. XXVII.—(Continued.)
DEATHS BY SUICIDE.

| DATE, 1873. | Age | Con- dition. | Occupation. | Nativity. | Means used. | |
|-------------|-------|-----------------|-------------|---------------------|-------------------|-------------------------------------|
| August | 27... | 50 | M. | Banker | United States.... | Cutting Arteries of Arm. |
| " | 27... | 45 | S. | Sawyer | Germany | Paris Green. |
| " | 28... | 34 | S. | Musician..... | Italy..... | Gunshot. |
| " | 30... | 25 | S. | Confectioner | Germany | Paris Green. |
| September | 7... | 32 | M. | ..... | Germany | Arsenic. |
| " | 9... | 46 | M. | ..... | Ireland..... | Paris Green. |
| " | 9... | 25 | M. | Carman..... | England..... | Hanging. |
| " | 10... | 46 | M. | ..... | Bohemia..... | " |
| " | 10... | 29 | M. | Butcher..... | Germany..... | " |
| " | 13... | 22 | M. | ..... | New York..... | " |
| " | 14... | 49 | M. | ..... | Germany..... | Gunshot. |
| " | 23... | 51 | M. | ..... | Germany..... | Paris Green. |
| " | 23... | 45 | M. | ..... | Canada..... | " |
| " | 23... | 33 | S. | Baker..... | Poland..... | Gunshot. |
| " | 26... | 45 | M. | Merchant..... | Germany..... | Paris Green. |
| " | 26... | 44 | W. | Porter..... | United States.... | Gunshot. |
| " | 26... | 44 | ..... | Porter..... | Unknown..... | " |
| " | 28... | 29 | S. | Salesman..... | England..... | Laudanum. |
| October | 4... | 14 | S. | ..... | England..... | Hanging. |
| " | 6... | 30 | S. | Housekeeper..... | Michigan..... | " |
| " | 7... | 40 | M. | Cabinet-Maker..... | Germany..... | Drowning. |
| " | 11... | 52 | M. | Dentist..... | Rhode Island.... | Cutting Throat. |
| " | 12... | 43 | M. | Clerk..... | Germany..... | " |
| " | 18... | 43 | M. | Gardener..... | Germany..... | Hanging. |
| " | 22... | 36 | M. | ..... | Vermont..... | Laudanum. |
| " | 24... | 35 | M. | Agent..... | Ireland..... | Gunshot. |
| " | 27... | 15 | S. | Domestic..... | Ireland..... | Strangulat'n with a Calico Bandage. |
| " | 28... | 30 | ..... | Clerk..... | United States.... | Gunshot. |
| " | 31... | 23 | M. | ..... | New York..... | Cutting Arteries of Arm. |
| November | 9... | 26 | S. | Clerk..... | Connecticut..... | Gunshot. |
| " | 10... | 55 | M. | Block-Maker..... | United States.... | " |
| " | 12... | 57 | M. | Broker..... | New York..... | " |
| " | 19... | 35 | W. | ..... | United States.... | Leap from Window. |
| " | 20... | 40 | M. | ..... | Unknown..... | Chloroform. |
| " | 26... | 31 | M. | ..... | Ireland..... | Laudanum. |
| December | 4... | 32 | M. | Sewing Machine..... | Germany..... | Paris Green. |
| " | 5... | 27 | M. | Salesman..... | United States.... | Laudanum. |
| " | 10... | 36 | M. | Book-Keeper..... | United States.... | " |
| " | 11... | 30 | S. | Saddler..... | Germany..... | Gunshot. |
| " | 11... | 32 | M. | ..... | Ireland..... | Leap from Window. |
| " | 17... | 35 | ..... | ..... | Russia..... | Cutting Throat. |
| " | 25... | 29 | M. | Driver..... | Ireland..... | Laudanum. |
| " | 30... | 64 | S. | Painter..... | Connecticut..... | Stab through Heart. |
| " | 31... | 26 | M. | Photographer..... | Canada..... | Cyanite of Potassium. |
| " | 31... | 44 | S. | Turner..... | Germany..... | Hanging. |

| Nativity. | No. | Occupation. | No. | Occupation. | No. |
|--------------------|-----|-------------------|-----|----------------------------|-----|
| Bohemia..... | 1 | Banker..... | 1 | Merchants..... | 2 |
| Canada..... | 2 | Broker..... | 1 | Photographer..... | 1 |
| England..... | 11 | Butcher..... | 1 | Painters..... | 3 |
| France..... | 2 | Baker..... | 1 | Police and Watchmen..... | 2 |
| Germany..... | 41 | Barber..... | 1 | Physician..... | 1 |
| Ireland..... | 22 | Clerks..... | 13 | Shoemaker..... | 1 |
| Italy..... | 1 | Carpenters..... | 5 | Saloon and Bartenders..... | 3 |
| Poland..... | 1 | Domestics..... | 6 | Seamstresses..... | 3 |
| Russia..... | 1 | Dentist..... | 1 | Tailor..... | 1 |
| Switzerland..... | 2 | Druggists..... | 2 | Other occupations..... | 62 |
| Unknown..... | 3 | Lithographer..... | 1 | | |
| United States..... | 31 | Laborers..... | 4 | | |
| Total..... | 118 | Musicians..... | 2 | Total..... | 118 |

Single, 38; married, 59; widowed, 13; not stated, 8. Total, 118. Males, 82; Females, 36.

TENEMENT-HOUSE MORTALITY.

The fact that less than half of the families of New York are domiciled in separate dwelling-houses is less important than the fact that the greater portion of the laboring classes and most of the large families in the city are crowded together upon limited areas, so that, because of mere condensation or massing of these people, their own sanitary safety and the welfare of the public health are endangered.

The census in 1870 enumerated 185,989 families, in 64,944 dwellings, and found an average of 14.72 persons to the dwelling. The sanitary survey of the city, which was completed at the beginning of that year, found 113,402 families residing in 14,494 houses, of which only 11,964 front upon streets—that is, 1,440 were and still are rear-buildings. Within these limited dwelling-places there were enumerated 463,392 inhabitants. The study that was then made concerning this class of the city population showed that half of the people of the metropolis were residing upon areas so crowded that less than seven square yards of ground area was allotted each tenement-house inhabitant.

The attempt to make a special record of mortality which occurs in tenement-houses was commenced in 1867, and has been continued, with varying degrees of thoroughness, until the present time ; but in the absence of any class of officers to serve as corpse-viewers or verifiers, like the *médecins vérificateurs des décès* of the sanitary service in the cities of France, there is only an incomplete record of our tenement experience, both as respects the diseases and the mortality which afflict the tenement population. The particular and discriminating study of sickness, of biological history, or of causes of death and the ratios of mortality in the tenement, and otherwise unhealthfully conditioned classes in the city will, before long, be necessarily associated with a perpetually revised registry of the dwellings themselves. With such a system of registry of tenement-houses and all places of congregate habitation or lodgings, the verification of each death, and any needed inquiry into local or special causes of death, can be made as practicable as in Paris by the *médecins vérificateurs des décès*, and in the German cities by the *Todtenbeschauer*.

At the beginning of 1870, the registration of all dwellings which, under the laws, were ranked as tenement-houses, was completed by the Board of Health, and can henceforth be so maintained as to enable the burial-permit clerks in this Bureau to verify the deaths that occur in that class of dwellings; and it is desirable that the record of every kind of habitation in the city should be made so complete that the registry of them shall serve daily and every year to indicate important relations of lodgings and dwelling-places to causes of disease and mortality. The very thorough inspection and detailed description of the cellar and garret tenements and lodgings, which were made under the superintendence of Geo. W. Matsell, Esq., as

Chief of Police, in the years 1850 and 1851, might be advantageously maintained so long as any cellars, garrets, and rendezvous of destitute or dangerous classes continue to imperil the health and safety of the community.¹ Though a vast number of the most extremely poor, dangerously vicious as well as dangerously diseased classes of inhabitants dwell in habitations like those searched and described by the vigilant Chief of Police in 1850-'51, not all such dwellings rank as tenement-houses, under the law relating to tenements, for they are below or outside of that class of dwellings. They certainly need the closest sanitary supervision and special record of the mortality in them; but we are not at present able to present such a separate record. The following abstracts present the simple arrangement of the records which have been kept of the tenement-house mortality, year by year, since 1867.

MORTALITY IN TENEMENT-HOUSES.

The whole number of tenement-houses in the city of New York, in which deaths occurred during the year 1873 (and the deaths certified to be in a house having *four or more families*), was *eight thousand eight hundred and fifty-six*. The whole number of deaths in these houses was *fourteen thousand one hundred and nine*, distributed as follows:

| | |
|------------------------------|--------------|
| 1 death in 5,627 houses..... | Deaths 5,627 |
| 2 " " 1,989 " | " 3,978 |
| 3 " " 766 " | " 2,298 |
| 4 " " 288 " | " 1,152 |
| 5 " " 119 " | " 595 |
| 6 " " 37 " | " 222 |
| 7 " " 16 " | " 112 |
| 8 " " 5 " | " 40 |
| 9 " " 6 " | " 54 |
| 10 " " 2 " | " 20 |
| 11 " " 1 " | " 11 |
| 8,856 | 14,109 |

¹ The cellar habitations, as found in that pioneer inspection, were graphically described in a series of papers in the *New York Tribune*, under the title "Dens of Death."

TABLE No. XXVIII.
MORTALITY IN TENEMENT-HOUSES, PUBLIC INSTITUTIONS, AND PRIVATE DWELLINGS,

WITHIN THE PAST SIX YEARS.

| MORTALITY. | 1868. | | | 1869. | | | 1870. | | | 1871. | | | 1872. | | | 1873. | | | Total. | | | | |
|--|------------------------------|-------------------------------|------------------------------|--------|-----------------|------------------|-----------------|--------|-----------------|------------------|-----------------|--------|-----------------|------------------|-----------------|--------|-----------------|------------------|--------|-----------------|-------|--------|--------|
| | First District, ¹ | Second District, ² | Third District, ³ | Total. | First District. | Second District. | Third District. | Total. | First District. | Second District. | Third District. | Total. | First District. | Second District. | Third District. | Total. | First District. | Second District. | | Third District. | | | |
| In tenement-houses... | 3,645 | 5,823 | 5,082 | 14,550 | 3,359 | 5,192 | 4,724 | 13,285 | 3,017 | 5,500 | 4,525 | 3,022 | 4,892 | 12,744 | 3,544 | 6,015 | 6,191 | 15,750 | 3,113 | 5,099 | 5,897 | 14,109 | |
| In public institutions... | 338 | 91 | 3,885 | 4,314 | 311 | 90 | 3,664 | 4,065 | 753 | 111 | 4,081 | 4,945 | 1,011 | 1,521 | 1,152 | 2,265 | 4,443 | 5,800 | 154 | 288 | 3,733 | 4,755 | |
| In private dwellings... | 1,778 | 986 | 3,261 | 6,025 | 2,370 | 1,499 | 3,918 | 7,818 | 2,426 | 1,632 | 5,120 | 9,178 | 2,327 | 1,889 | 4,827 | 3,012 | 2,538 | 11,087 | 2,749 | 2,063 | 5,468 | 10,220 | |
| Total mortality..... | 5,761 | 6,900 | 12,228 | 24,889 | 6,040 | 6,781 | 12,346 | 25,167 | 6,196 | 7,243 | 13,736 | 27,175 | 6,388 | 6,873 | 13,715 | 26,976 | 7,708 | 8,578 | 16,361 | 6,596 | 7,390 | 15,098 | 29,084 |
| Percentage of deaths in tenement-houses... | 63.27 | 84.39 | 41.56 | 58.46 | 55.61 | 76.57 | 38.24 | 52.79 | 43.69 | 75.93 | 33.01 | 45.03 | 47.38 | 70.30 | 35.67 | 47.24 | 45.98 | 70.12 | 37.84 | 43.21 | 47.19 | 69.00 | 39.06 |
| Percentage of deaths in public institutions... | 5.86 | 1.32 | 31.77 | 17.33 | 5.14 | 1.32 | 29.08 | 16.15 | 12.15 | 1.53 | 29.71 | 18.19 | 16.23 | 2.21 | 29.13 | 19.21 | 14.94 | 2.39 | 27.16 | 11.77 | 11.13 | 3.90 | 24.72 |
| Percentage of deaths in private dwellings... | 30.86 | 14.29 | 26.67 | 24.21 | 39.25 | 22.11 | 31.98 | 31.06 | 39.45 | 22.53 | 37.27 | 33.37 | 36.43 | 27.49 | 35.20 | 33.52 | 39.08 | 27.49 | 25.00 | 33.99 | 41.68 | 27.10 | 36.22 |
| Percentage of deaths in tenement-houses and public institutions on total mortality... | 69.14 | 85.71 | 77.33 | 75.79 | 60.76 | 77.89 | 68.02 | 68.94 | 60.84 | 77.46 | 62.72 | 64.22 | 63.57 | 72.51 | 64.80 | 66.48 | 60.92 | 72.51 | 65.00 | 58.32 | 72.90 | 63.78 | 61.86 |
| Percentage of deaths in tenement-houses and public institutions on total population... | 2.43 | 2.53 | 2.90 | 2.60 | 1.96 | 2.26 | 2.75 | 2.39 | 1.72 | 2.00 | 1.63 | 1.90 | 1.86 | 1.79 | 2.00 | 1.90 | 2.15 | 2.23 | 2.39 | 2.29 | 1.76 | 1.93 | 2.16 |
| Percentage of total mortality on total population..... | 3.08 | 2.96 | 4.00 | 3.43 | 3.22 | 2.91 | 4.04 | 3.46 | 2.84 | 2.59 | 3.08 | 2.88 | 2.93 | 2.46 | 3.68 | 2.86 | 3.53 | 3.07 | 3.68 | 3.46 | 3.02 | 2.65 | 3.39 |

¹ The First District comprises the First, Second, Third, Fourth, Fifth, Sixth, Eighth, Ninth, Fourteenth, and Fifteenth Wards.

² The Second District comprises the Seventh, Tenth, Eleventh, Thirteenth, and Seventeenth Wards.

³ The Third District comprises the Twelfth, Sixteenth, Eighteenth, Nineteenth, Twentieth, Twenty-first, and Twenty-second Wards.

TABLE No. XXIX.

ABSTRACT SHOWING THE DISTRIBUTION OF MORTALITY IN
TENEMENT-HOUSES IN WHICH THREE OR MORE DEATHS OCCURRED IN THE YEAR 1873.

(The small numerals, not in parenthesis, at the right hand of any particular house represent the number of deaths which occurred in that house in 1872.)

| STREET. | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. (Numerals in parenthesis show the actual number of deaths in the respective house in 1873.) |
|------------------|--|--|--|---|
| | No. of House. | No. of House. | No. of House. | |
| Albany..... | 8. | | 19 ⁴ . | |
| Allen..... | 98, 108, 188. | | 104, 167 ³ . | |
| Attorney..... | 122 ³ , 124, 156, 157, 162 ³ , 168. | | | |
| Avenue A..... | 51, 53, 73, 180, 182, 220, 268, 270 ³ , 288. | 202, 237. | | |
| Avenue B..... | 44, 104, 131, 185, 249 ³ , 274. | | | |
| Avenue C..... | 40, 63, 75, 164, 174 ⁶ , 177. | 185, 199 ³ , 206. | 168 ³ , 175 ³ . | |
| Avenue D..... | 42. | | | |
| Batavia..... | | | | 5 ⁹ (60). |
| Baxter..... | 6, 153. | 31, 38 ⁶ , 90, 128 ³ | 16 ⁵ , 40 ⁸ , 119 ³ . | 14 ⁷ (9), 36 ¹⁰ (7). |
| Bethune..... | | | 36. | |
| Bowery..... | | 315. | | |
| Broome..... | 24 ³ , 105, 116, 188, 313, 317. | | | |
| Canal..... | 79, 527, 529. | 85. | | |
| Cannon..... | 15, 70. | | | |
| Carmine..... | 83. | 75 ³ . | | |
| Caroline..... | | | 8. | |
| Catherine..... | | 90. | 86. | |
| Charles..... | | | 108. | |
| Cherry..... | 28 ³ , 36 ³ , 56, 146, 148, 158 ³ , 244, 292, 324, 362 ³ , 437. | 32 ⁷ , 126 ⁵ , 144 ⁶ , 221. | 18 ⁷ , 22, 38 ³ , 174. | 26 ³ (8), 137 (6). |
| Christopher..... | 118. | | | |
| Chrystie..... | 5, 16, 3, 17, 19, 29 ⁴ , 48, 116, 128, 132, 178 ³ , 187 ³ , 198, 214, 220. | 34 ³ , 50 ³ . | | |
| City Hall Place. | 19 ³ , 24 ³ . | 17, 34. | | 15 ⁵ (7). |
| Clark..... | 7, 28 ⁴ . | | | |
| Clinton..... | 6 ⁴ , 19, 20, 23 ³ , 24 ³ , 84, 86, 91 ³ , 125, 144, 183, 185. | 80. | 57 ⁵ | 48 (8). |
| Columbia..... | 63 ⁵ , 75, 83, 113. | 127. | | |
| Cornelia..... | 15. | 18. | | |
| Crosby..... | 11 ⁴ , 32 ⁶ , 43, 90. | 45. | 37 ³ | 31 ³ (8), 35 ³ (6). |
| Delancey..... | 44, 46 ³ , 135 ³ , 139, 157, 206, 208, 261 ³ . | 137 ⁵ , 168, 272 ³ . | 239, 295. | |
| Dover..... | | | 10. | |
| Powning..... | | | | 16 ⁹ (11). |
| Duane..... | 141. | | | |
| East Broadway. | 143, 146. | | | |

TABLE No. XXIX.—(Continued.)

| STREET. | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. |
|-----------------|--|--|--|---|
| | No. of House. | No. of House. | No. of House. | (Numerals in parenthesis show the actual number of deaths in the respective house in 1873.) |
| East Houston... | 136, 177 ⁴ , 286, 310, 453. | 181, 311. | 405 ³ , 481. | ..... |
| East 4th..... | 101, 116, 117, 195. | 100 ⁵ , 173 ⁷ , 201, 209 ³ . | 377 ³. | ..... |
| East 8th..... | 105, 107, 126, 375 ³ , 376 ³ , 379. | 113, 324 ⁴. | ..... | ..... |
| East 9th..... | 317, 436 ⁴ , 440, 603, 627, 643, 709, 719. | 701. | ..... | ..... |
| East 10th..... | 379, 388, 422. | ..... | ..... | ..... |
| East 11th..... | 120, 320, 333 ³ , 418, 515 ⁵ , 532, 534, 602 ³ , 640 ³ . | 510, 513, 542, 625, 638 ⁶ . | 307, 616, 642. | ..... |
| East 12th..... | 345, 411 ³ , 423 ⁴ , 514, 522, 523, 532 ⁴ , 535, 609, 625. | 530, 531, 537, 707. | ..... | ..... |
| East 13th..... | 124, 333, 415 ⁴ , 512, 605, 649, 708. | 434, 600, 604, 632, 644. | 603, 620. | 443 (7). |
| East 14th..... | 512 ³ , 519 ⁴ , 528, 534, 538, 606 ⁴ . | 404 ³ , 419, 421, 506. | ..... | ..... |
| East 15th..... | 403, 408, 412, 422, 431, 509 ⁴ , 516, 540, 607. | 430, 436 ³ , 604 ⁴. | ..... | ..... |
| East 16th..... | 341, 402, 433, 603, 609, 631. | 414, 426. | 405, 416 ⁴ , 422, 516 ³. | ..... |
| East 17th..... | 417, 626, 632. | 420, 628. | ..... | 407 (7). |
| East 18th..... | 406, 412, 418 ³ , 435, 516. | 512, 518. | ..... | ..... |
| East 19th..... | 409. | ..... | ..... | ..... |
| East 20th..... | 414. | ..... | ..... | ..... |
| East 21st..... | 327 ³ , 339. | ..... | ..... | ..... |
| East 22d..... | 145, 230, 235, 411. | ..... | ..... | ..... |
| East 23d..... | 212, 350. | ..... | 349. | ..... |
| East 24th..... | 318. | 305 ³ , 321, 403. | ..... | ..... |
| East 25th..... | 213. | 324. | ..... | ..... |
| East 26th..... | 322, 331, 338 ³. | ..... | ..... | ..... |
| East 27th..... | 341 ⁴. | ..... | ..... | ..... |
| East 28th..... | 243, 245 ³ , 331. | ..... | ..... | ..... |
| East 29th..... | 210, 230 ³ . | 217, 227 ⁵ , 405 ⁵ , 409. | ..... | 402 (6). |
| East 30th..... | 244, 351. | 347. | ..... | ..... |
| East 31st..... | 320. | ..... | 342 ⁴. | ..... |
| East 32d..... | 318, 320, 351, 322. | ..... | ..... | ..... |
| East 33d..... | ..... | ..... | ..... | ..... |
| East 34th..... | ..... | 306, 314. | ..... | ..... |
| East 35th..... | 309, 311, 317. | ..... | 345. | ..... |
| East 36th..... | 324 ³ . | 336 ³ , 338, 342. | ..... | ..... |
| East 37th..... | 245. | ..... | ..... | ..... |
| East 38th..... | 219 ³. | ..... | ..... | 212 (6). |
| East 39th..... | 309. | 318. | ..... | ..... |
| East 41st..... | 224, 236. | ..... | ..... | ..... |
| East 45th..... | 208, 234. | ..... | ..... | ..... |
| East 46th..... | 337 ⁴ , 349, 351. | 229, 333 ⁴. | ..... | 311 (6). |
| East 47th..... | 222, 329, 325, 339, 345. | 316. | 331 ⁴. | ..... |
| East 48th..... | 309. | 340, 401 ⁵ . | 331 ³ . | 402 (6). |

TABLE No. XXIX.—(Continued.)

| STREET | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. (Numerals in pa- renthesis show the actual number of deaths in the re- spective house in 1873.) |
|----------------------------------|---|--|---|--|
| | No. of House. | No. of House. | No. of House. | |
| East 52d..... | 108 ³. | ..... | ..... | ..... |
| East 53d..... | 328. | ..... | ..... | ..... |
| East 54th..... | 232. | 330. | ..... | 241 ⁽⁶⁾ . |
| East 57th..... | ..... | 220, 222. | ..... | ..... |
| East 59th..... | 304 ⁴ , 321, 327, 331, 333. | ..... | 147. | 215 ⁽⁶⁾ , |
| East 60th..... | 306 ³ , 309, 344, 350. | ..... | 303. | 349 ⁽⁶⁾ , |
| East 66th..... | 318. | ..... | ..... | ..... |
| East 72d..... | 200. | ..... | ..... | ..... |
| East 74th..... | ..... | 217. | ..... | ..... |
| East 76th..... | ..... | ..... | 207. | ..... |
| East 78th..... | 200. | 438. | ..... | ..... |
| East 80th..... | 239. | ..... | ..... | ..... |
| East 82d..... | 101. | ..... | ..... | ..... |
| East 87th..... | 157. | ..... | ..... | ..... |
| East 92d & Madi- son Avenue.. | ..... | ..... | ..... | ..... |
| East 109th..... | 184. | ..... | ..... | ..... |
| East 111th..... | 313, 346. | ..... | ..... | ..... |
| Eighth Avenue. | 682, 764. | 734. | ..... | ..... |
| Eldridge..... | 61 ⁴ , 114, 128 ³ , 144, 153, 184, 187, 192. | 33, 45. | ..... | 73 ⁽⁶⁾ , 74 ³ ⁽⁷⁾ . |
| Eleventh Ave.. | 542, 568, 581, 608, 679, 787. | 631, 840. | ..... | ..... |
| Elizabeth..... | 8 ³ , 24, 38, 141, 152 ⁷ , 171, 172, 174, 183, 213, 214, 249 ⁴ . | 135, 151 ⁵ , 187. | 157, 230 ⁴ . | 281 ⁽⁶⁾ . |
| Elm..... | 142 ⁴ , 208 ⁴ . | 210. | ..... | ..... |
| Essex..... | 17, 47, 48, 92, 94, 98 ³ , 137 ⁸ , 152, 155, 175. | 35, 146. | ..... | ..... |
| Fifth..... | 225, 333, 341, 407, 415 ² , 422, 421, 432, 529, 642, 644. | 406, 408 ⁴ , 434 ² , 516 ⁴ , 522 ³ , 638. | 216, 315 ² . | 521 ⁽⁷⁾ . |
| First..... | 37, 50, 52. | ..... | 46. | ..... |
| First Avenue.. | 49, 111 ³ , 193, 262, 265, 292, 369, 502. 619, 827, 831, 853. 856, 857, 862 ⁴ , 944, 946, 949, 951, 971, 1023, 1093 ³ , 1481. | 265, 301, 439, 838, 1078. | 226, 441, 1101 ⁵ . | 88 ⁽⁶⁾ . |
| Forsyth..... | 15, 17 ³ , 19, 21 ⁴ , 50, 145 ⁵ , 148, 157, 191, 197. | 40, 44, 48, 76, 77, 98, 156, 203. | ..... | 23 ⁽⁷⁾ , 55 ² ⁽⁶⁾ . |
| Frankfort..... | ..... | ..... | ..... | 37 ⁴ ⁽⁷⁾ . |
| Gansevoort..... | 12, 28 ³ , 58. | ..... | ..... | ..... |
| Goerck..... | 8, 10, 103, 131. | 3 ³ , 25, 51. | ..... | ..... |
| Gouverneur..... | 62. | 4. | ..... | ..... |
| Greene..... | 197. | ..... | ..... | ..... |
| Greenwich Ave. | 127. | ..... | ..... | ..... |
| Greenwich St.. | 1, 25, 65, 67, 94, 101, 356, 412, 423, 440 ³ , 452, 535 ⁵ , 593, 595, 607. | 465 ³ . | 125 ⁵ , 345 ⁶. | ..... |
| Hague..... | ..... | ..... | ..... | 8 ⁶ ⁽⁶⁾ , |

TABLE No. XXIX.—(Continued.)

| STREET. | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. |
|------------------|--|---|---|---|
| | No. of House. | No. of House. | No. of House. | (Numerals in parentheses show the actual number of deaths in the respective house in 1873.) |
| Hamilton | 9, 30. | 38 ⁵ | ..... | 10 ⁽⁶⁾ . |
| Harrison..... | ..... | ..... | 7. | ..... |
| Henry | 27, 45, 236, 302. | 238, 296. | 42 ⁴ , 90 ³ , 95. | 125 ³ (6), 310 ³ (6). |
| Hester | 5 ⁴ , 8, 82, 104, 107, 126, 174. | ..... | ..... | ..... |
| Hubert..... | 1. | 7. | ..... | ..... |
| Hudson..... | 137, 273, 486 ³ , 535. | 143, 259. | 163 ⁴. | ..... |
| Jackson..... | 36, 44. | 16, 32, 34, 37 ⁷. | ..... | ..... |
| James | 61, 62, 77. | 24 ⁴ . | 68. | ..... |
| Jay..... | ..... | 7. | ..... | ..... |
| Jacob..... | 11. | ..... | ..... | ..... |
| Jane..... | ..... | 96. | ..... | ..... |
| Jefferson..... | ..... | 37. | ..... | ..... |
| Jones..... | ..... | 8. | ..... | ..... |
| King..... | 71 ³ , 73 ⁴ , 86, 120. | 80, 84. | ..... | 82 (6). |
| Laight..... | 30, 32. | ..... | ..... | ..... |
| Leonard..... | 23, 27, 132 ⁷ . | 33. | 147. | ..... |
| Leroy..... | 62. | 68 ⁵. | ..... | ..... |
| Lewis..... | 5 ³ , 39. | 38. | ..... | ..... |
| Liberty..... | 131. | ..... | ..... | ..... |
| Ludlow..... | 14, 16 ³ , 17 ³ , 38 ⁴ , 93, 116, 152, 165 ⁶ , 167. | 15 ³ . | 41, 151, 180. | 137 ³ (6), 163 ⁸ (6). |
| Little 12th..... | 13, 15, 24, 28. | ..... | ..... | ..... |
| Macdougall..... | 56 ³. | ..... | ..... | ..... |
| Madison..... | 28 ⁴ , 32 ⁵ , 34, 126, 172, 176 ⁶ , 198, 218, 256, 295, 349 ⁴ , 355, 352, 393, 395. | 348. | 129. | 182 ⁴ (6), 202 (6). |
| Mangin..... | ..... | ..... | 69 ³ , 71. | ..... |
| Monroe..... | 13 ³ , 17 ³ , 46, 66, 83, 96, 106, 311. | 25, 173 ⁵ , 188. | 91, 237 ⁴ . | 37 (6), 101 (7), 242 ¹¹ (6). |
| Mott..... | 21 ³ , 46, 49, 103, 196 ⁶ , 205, 217 ³ , 252. | 47 ⁷ , 57, 104, 143 ³ , 157 ³ , 159 ⁴ , 204, 229, 232, 282, 297. | ..... | 102 ³ (6), 115 ⁴ (7). |
| Mulberry..... | 20 ⁴ , 38 ³ , 39 ³ , 44, 45, 53, 54 ³ , 62, 65, 73, 79 ³ , 89, 109, 110, 113 ³ , 118, 119, 140 ⁵ , 167 ⁵ , 171, 175, 235. | 3, 35, 41 ⁷ , 47 ⁵ , 51 ³ , 86 ⁵ , 115 ⁴ , 116, 120, 166 ⁵ , 301 ⁴ . | 82, 111, 121. | 59 ⁴ (6), 55 ⁷ (7), 87 ⁴ (6). |
| Ninth Avenue.. | 631, 767. | 143, 525. | 746. | ..... |
| Norfolk..... | 5 ³ , 28, 30 ⁴ , 63, 65, 71 ³ , 121, 157 ³. | ..... | 51, 70. | ..... |
| Oak..... | 53. | 27. | ..... | ..... |
| Oliver..... | 43 ⁴ , 80, 93 ². | ..... | ..... | ..... |
| Orchard..... | 13, 24 ⁴ , 25 ³ , 33, 136, 131, 182, 190, 191, 193 ³ . | 141 ³ , 150. | ..... | ..... |
| Park..... | 39 ⁴ , 45 ⁵ . | 47 ⁵. | ..... | ..... |
| Pearl..... | 488. | 434 ⁴ . | 326 ³. | ..... |
| Pell..... | 23. | 25 ⁴. | ..... | ..... |
| Perry..... | 146. | ..... | ..... | ..... |
| Pitt..... | 31, 99 ³ , 102 ⁶ . | 63, 123 ⁷ , 135 ⁶ . | 55 ³. | ..... |
| Prince..... | ..... | 49, 163. | 156. | ..... |

TABLE No. XXIX.—(Continued.)

| STREET. | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. |
|------------------|--|--|--|---|
| | No. of House. | No. of House. | No. of House. | (Numerals in parenthesis show the actual number of deaths in the respective house in 1873.) |
| Ridge | 58, 64, 88 ¹⁰ , 102, 116, 127 ⁴. | ..... | 113 ³ . | 108 ⁵ (?). |
| Rivington | 5 ⁴ , 11 ³ , 182 ³ , 187, 223, 263 ³ . | 154, 158 ⁴ , 221. | 188, 240, 316 ⁵ . | 194 ³ (?), 207 (?). |
| Roosevelt..... | ..... | 77 ³ . | 27. | 10 ⁴ (?), 31 ³ (?). |
| Rose..... | 25. | 53. | ..... | ..... |
| Rutgers..... | 40, 60 ². | ..... | ..... | ..... |
| Second Street.. | 3, 204, 225, 240 ⁶ , 245 ⁴ , 248, 288, 290. | 1, 239. | 224, 235 ⁵ , 238, 286. | ..... |
| Second Avenue. | 570, 606, 607, 656, 866, 988, 1244, 1489, 1538, 2147. | 396, 513, 572, 812. | 804. | 873 (?), 1037 (?). |
| Seventh Avenue. | 284, 321, 370, 773. | 296. | ..... | ..... |
| Seventh Street.. | 120, 125, 128, 136, 170, 217. | 82, 127, 215. | ..... | ..... |
| Sheriff..... | 54, 80 ³ , 84 ³ , 101, 113, 115. | 88, 96. | 98 ⁵. | ..... |
| Sixth..... | 420 ⁷ , 428, 504, 510 ⁴ , 522 ⁴ , 602, 738 ³ . | 328, 404 ⁵ , 503, 530. | ..... | ..... |
| Sixth Avenue... | 87. | ..... | ..... | ..... |
| South Fifth Ave. | 197. | 124. | 26 ⁹. | ..... |
| Spring..... | 42, 60, 272. | 184, 278. | 187 ⁵. | ..... |
| Stanton..... | 42, 134. | 244, 253, 263 ³. | ..... | ..... |
| Staple..... | ..... | ..... | 6. | ..... |
| Suffolk..... | 25 ⁴ , 170 ³ , 186. | 14, 178. | ..... | ..... |
| Sullivan..... | 45 ³ , 67, 115 ³ , 213, 224 ³ . | 113. | 41 ⁵. | ..... |
| Tenth Avenue.. | 85, 252, 265, 493, 656, 758. | 246, 453, 517, 582, 734, 752, 760. | 739. | ..... |
| Thames..... | 24 ⁴. | ..... | 23. | ..... |
| Third Street.... | 81 ³ , 83, 89, 114, 133, 160 ³ , 211, 222 ⁶ , 230 ³ , 247. | 221. | 117 ³ , 234 ³ , 276. | 241 (?). |
| Third Avenue.. | 76, 100, 132, 288, 453, 583, 765, 841, 1057, 1062, 1345, 1432, 1568, 1576, 1594, 1664, 2062. | 880, 962, 1273, 1559, 1648, 1977. | 805 ⁴ , 1636. | ..... |
| Thomas..... | 22, 28. | ..... | ..... | ..... |
| Thompson..... | 12, 35, 37, 68, 74 ⁴ , 111, 145 ⁶ . | 44 ⁵ . | 46 ⁶. | ..... |
| Vandam..... | 36 ³ , 68 ⁴ , 70. | ..... | ..... | ..... |
| Vandewater..... | 8. | 1, 9. | 5 ³ . | 25 ⁶ (?). |
| Varick..... | 144, 179. | 135. | ..... | ..... |
| Washington... | 25 ³ , 29, 35 ³ , 57, 127, 135 ³ , 429 ³ , 715, 759, 781, 808. | 10 ³ , 16 ³ , 26 ⁶ , 59 ⁵ , 98, 113, 637 ⁴ . | 12, 28 ³ , 32 ⁵ , 107 ³ . | 102 ⁶ (?), 757 (?). |
| Water..... | 319, 410, 656 ³. | ..... | ..... | ..... |
| West..... | 21 ⁵. | ..... | ..... | ..... |
| Weehawken... | 11. | ..... | ..... | ..... |
| West Houston.. | 97. | ..... | 300 ⁴. | ..... |
| West 10th..... | 242 ³. | ..... | ..... | ..... |
| West 13th..... | 526. | 253. | ..... | ..... |

TABLE No. XXIX.—(Continued.)

| STREET. | Houses in which Three Deaths occurred. | Houses in which Four Deaths occurred. | Houses in which Five Deaths occurred. | Houses in which Six or more Deaths occurred. (Numerals in pa- renthesis show the actual number of deaths in the re- spective house in 1873.) |
|---|---|---|---|--|
| | No. of House. | No. of House. | No. of House. | |
| West 16th..... | 242, 340 ³ , 416, 447, 452, 454 ⁴ , 502, 508. | 310, 345 ³. | ..... | ..... |
| West 17th..... | 149 ³ , 224 ³ , 423. | 322, 425. | 443. | ..... |
| West 18th..... | 456. | 230, 252. | 154 ³ , 216. | ..... |
| West 19th..... | 217, 234. | 224. | ..... | ..... |
| West 25th..... | 317, 409. | ..... | ..... | ..... |
| West 26th..... | 329, 341, 343, 353, 404, 409, 415, 421 ³ , 433, 441, 502 ⁵ , 506 ³ , 549. | 539. | ..... | ..... |
| West 27th..... | 159, 212, 216, 223, 229. | 222. | ..... | ..... |
| West 28th..... | 158, 226. | 444, 517. | ..... | 248 (9). |
| West 29th..... | 505, 515, 533, 557. | 448 ⁴ . | 218. | ..... |
| West 30th..... | 210, 252, 255. | 504. | ..... | ..... |
| West 31st..... | 145 ³ , 251, 426. | 249, 442. | ..... | ..... |
| West 32d..... | 439, 446, 448 ³ , 505. | 252. | 425. | 443 (6). |
| West 33d..... | 437, 445, 500. | 289 ⁴ . | 441 ⁴. | ..... |
| West 35th..... | ..... | 223. | ..... | ..... |
| West 36th..... | 338, 423, 445, 554. | ..... | ..... | ..... |
| West 37th..... | ..... | 422. | ..... | ..... |
| West 38th..... | 246, 344, 434, 446, 500, 514. | 324, 346, 402, 408, 432, 441. | 448. | 329 (6). |
| West 39th..... | 321, 325, 344, 417, 429 ³ , 437 ² , 438 ⁵ , 447, 508, 510. | 348, 435, 504. | 319 ⁵ , 427, 506. | 329 (6), 445 (6). |
| West 40th..... | 200, 302 ⁴ , 420, 445 ⁵ . | 431, 553 ³. | ..... | ..... |
| West 41st..... | 322, 325, 333, 400. 445, 462, 521. | ..... | 337. | 446 (7). 252 (6), 447 (6). |
| West 42d..... | 429, 431. | 517 ³. | ..... | ..... |
| West 43d..... | 68, 474, 532 ⁴ , 543. | 345, 513. | ..... | ..... |
| West 44th..... | 326, 505 ⁵ . | 330. | 339. | ..... |
| West 45th..... | 348, 441. | 552. | 518. | 313 (7). |
| West 46th..... | 502. | 500, 556, 607. | 621. | ..... |
| West 47th..... | 242 ³ , 607. | 250. | 248. | 504 (6). |
| West 48th..... | ..... | 423. | ..... | ..... |
| West 49th..... | 406. | 124. | ..... | ..... |
| West 50th..... | 139 ³ , 429. | ..... | ..... | ..... |
| West 51st..... | 504, 537 ³ , 625. | 155, 556. | ..... | ..... |
| West 52d..... | 156, 444, 446, 454. | ..... | ..... | ..... |
| West 53d..... | 331. | 440. | ..... | ..... |
| West 54th..... | 411, 435. | ..... | ..... | 560 (6). |
| William..... | 255, 259. | ..... | ..... | ..... |
| Willett..... | 24, 40, 68 ⁵ , 82 ³ , 89, 98. | 49, 74, 92 ⁵. | ..... | 119 ¹² (10). |
| Wooster..... | 202. | ..... | ..... | ..... |
| Worth..... | ..... | 3 ³. | ..... | ..... |
| York..... | 7. | ..... | ..... | ..... |
| Total number of Houses..... | 766 | 288 | 119 | 67 |
| Total number of Deaths in these Houses..... | 2,298 | 1,152 | 595 | 459 |

TABLE No. XXX.—(Continued.)

TABLE SHOWING THE MORTALITY BY THE PRINCIPAL ZYMOTIC DISEASES IN HOSPITALS, TENEMENT-HOUSES, AND OTHER DWELLINGS, DURING THE YEAR 1873, IN NEW YORK CITY.

| DISEASES. | Fifth Precinct Station-House. | Fourth Precinct Station-House. | Randall's Island Nursery. | Randall's Island Idiot Asylum. | Ruptured and Crippled Hospitals. | Roman Catholic Orphan Asylum. | Roosevelt's Hospital. | Randall's Island. | Shepherd's Fold. | St. Vincent's Hospital. | St. Francis's Hospital. | Small-pox Hospital. | St. Luke's Hospital. | Soldiers' Retreat. | St. Mary's Hospital. | Ward's Island. | Workhouse, Blackwell's Island. | Total in Public Institutions. | TENEMENT-HOUSES. | | | Total in Tenement-Houses. | Private Residences, Boarding-Houses, etc. | GRAND TOTAL. |
|--------------------------------|-------------------------------|--------------------------------|---------------------------|--------------------------------|----------------------------------|-------------------------------|-----------------------|-------------------|------------------|-------------------------|-------------------------|---------------------|----------------------|--------------------|----------------------|----------------|--------------------------------|-------------------------------|------------------|------------------|-----------------|---------------------------|---|--------------|
| | | | | | | | | | | | | | | | | | | | First District. | Second District. | Third District. | | | |
| Small-pox..... | | | | | | | | | | | | 87 | | | | | | 88 | ..... | 5 | 7 | 12 | 17 | 117 |
| Menses..... | | | 2 | | | | | 1 | | | | | | | 1 | 20 | | 61 | 41 | 33 | 88 | 83 | 83 | 306 |
| Scarlatina..... | | | | | | | | | | | | | | | | 13 | | 30 | 85 | 211 | 335 | 384 | 384 | 1,045 |
| Diphtheria..... | | | | | | | 1 | 1 | | | 1 | | | | | 1 | | 30 | 213 | 189 | 313 | 406 | 406 | 1,151 |
| Croup..... | | | 1 | | | | | 1 | | | | | | | | 2 | | 22 | 121 | 187 | 148 | 254 | 254 | 732 |
| Whooping-Cough..... | | | | | | | | | | | | | | | | 3 | | 19 | 29 | 49 | 69 | 102 | 102 | 268 |
| Cerebro-Spinal Meningitis..... | | | 1 | | | | | 1 | 2 | 1 | | | | | | 8 | | 23 | 28 | 46 | 106 | 87 | 87 | 290 |
| Typhus Fever..... | | | | | | | | | | | | | | | | 6 | | 12 | ..... | 6 | 5 | 11 | 16 | 39 |
| Typhoid Fever..... | | | 1 | | | | | | | 3 | 21 | | 3 | | | 26 | | 83 | 28 | 36 | 52 | 65 | 65 | 294 |
| Remittent Fever..... | | | | | | | 1 | | | | | | | | | | | 4 | 14 | 18 | 35 | 93 | 93 | 164 |
| Intermittent Fever..... | | | | | | | | | | | 1 | | | | | 1 | | 8 | 3 | 6 | 14 | 23 | 55 | 86 |
| Erysipelas..... | | | | | | | | | | | | | 3 | | | 8 | | 42 | 18 | 33 | 31 | 80 | 80 | 294 |
| Puerperal Fever..... | | | | | | | | | | | | | | | | 2 | | 18 | 8 | 22 | 38 | 32 | 32 | 118 |
| Diarrhoeal Diseases..... | | | 3 | | | | | 1 | | 2 | 12 | 2 | 3 | 1 | | 57 | | 581 | 354 | 881 | 997 | 1,214 | 4,097 | |
| Intemperance..... | | 1 | | | | | | 1 | | | 1 | | | | | | | 46 | 13 | 13 | 19 | 45 | 73 | 164 |
| Delirium Tremens..... | | | | | | | | | | | | | | | | | | 39 | 5 | 4 | 8 | 34 | 34 | 90 |
| Total..... | 1 | 2 | 8 | 1 | 1 | 4 | 5 | 4 | 1 | 8 | 39 | 89 | 9 | 1 | 1 | 147 | 7 | 1,166 | 1,000 | 1,739 | 2,265 | 5,004 | 3,055 | 9,165 |

The foregoing summary of mortality in the tenement-houses indicates that there were 1,641 less deaths in them during the year 1873 than in 1872. Yet this record shows that 64.48 per cent. of the total mortality in the city in 1873 occurred in this class of dwellings and in public institutions. The patients who die in the institutions are chiefly from nominal residents of the tenement-houses. Estimating the combined mortality in tenements and the public institutions as relating to identical classes, year by year, the comparison of the last six years' mortality successively shows the following facts:

| | 1868. | 1869. | 1870. | 1871. | 1872. | 1873. |
|---|--------|--------|--------|--------|--------|--------|
| Total number of Deaths in Tenements and in Public Institutions. } | 18,864 | 17,350 | 17,997 | 17,923 | 21,550 | 18,864 |
| Percentage upon total city mortality. | 75.79 | 68.94 | 66.22 | 66.48 | 66.00 | 64.86 |

These results simply approximate the actual numbers, and are always less than the actual, because numerous tenement-houses in which deaths occur are not certified as tenements. But, taking these figures as they stand, they show that out of that grand division of the population which has its dead counted in this table, and which did not exceed half a million living in the middle of the year 1873, there were 18,864 deaths, or a death-rate equal to 37.72 in the 1,000 annually. The other half of the city population being estimated at half a million, lost 10,220 by death, or suffered a death-rate equal to 20.44 in the 1,000. Allotting only half of the total hospital deaths to the tenement-house population, and the other half to the other classes of inhabitants, the death-rate in the former class is 42.48, and in the latter classes only 25.18 per 1,000 of the living. This difference in the death-rates in the two grand divisions of our city population—the overcrowded and badly-housed, and the uncrowded and well-housed—signifies much more than mere difference in these domestic conditions, by as much as these are associated with the various other helps and coincidents of healthy living and with the enlightenment and culture, medical and sanitary protection, and greater or less degrees of security against the adversity of whatever follows in the train of poverty, ignorance, and improvidence.

TABLE No. XXXI.
METEOROLOGICAL OBSERVATIONS FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

CONDENSED FROM DAILY OBSERVATIONS OF PROF. DANIEL DRAPER, OBSERVER OF CENTRAL PARK OBSERVATORY.

| DATE, WEEK ENDING | Mean Temperature (Fahr- renheit Scale) | Greatest Daily Range of Temperature during the Week. | Average Humidity, Satu- ration being 100. | Total Rainfall (Inches of Water). | Mean Pressure of the Atmosphere. | Prevalent Winds. | REMARKS CONCERNING THE GENERAL ASPECTS OF THE WEATHER. |
|--|---|--|--|--------------------------------------|-------------------------------------|------------------|---|
| January 4 (four days ending)..... | 33.43 | 9.0 | 61.03 | .90 | 29.992 | | |
| " 11..... | 26.29 | 15.0 | 59.52 | 1.70 | 30.011 | N.E. & N.W. | Slight snow and rain on two days. Severe rain and hail storm on 6th. Snow one day. Rain three days. |
| " 18..... | 35.42 | 18.0 | 71.85 | .80 | 30.025 | W. | Snow three days. |
| " 25..... | 29.33 | 15.0 | 68.26 | 1.40 | 29.777 | W. | Snow two days. |
| February 1..... | 21.60 | 19.0 | 65.54 | 1.10 | 29.939 | | |
| For the month (31 days)..... | 28.92 | 19.0 | 67.68 | 5.90 | 29.946 | W. | Thirteen stormy days. |
| February 8..... | 34.46 | 18.0 | 69.95 | 1.25 | 29.814 | S.W. | Snow and rain one day. Rain one day. |
| " 15..... | 26.08 | 22.0 | 53.60 | .90 | 30.002 | N.W. | Two stormy days. |
| " 22..... | 34.51 | 10.0 | 66.57 | 2.20 | 29.871 | N.E. | Three stormy days. |
| March 1..... | 25.39 | 19.0 | 57.26 | .40 | 29.761 | W. | Snow one day. |
| For the month (28 days)..... | 29.81 | 22.0 | 63.95 | 4.75 | 29.849 | N. & N.W. | Eight stormy days. |
| March 8..... | 28.56 | 22.0 | 58.59 | ... | 30.088 | N.W. | Two stormy days. |
| " 15..... | 39.82 | 15.0 | 57.09 | 1.20 | 29.848 | S.W. | Three stormy days. |
| " 22..... | 39.41 | 13.0 | 57.72 | .30 | 29.694 | W. | Rain two days. Snow one day. |
| " 29..... | 35.47 | 14.0 | 69.28 | 1.80 | 29.758 | N.E. | Four stormy days. Solar halo on Sunday. |
| April 5..... | 48.07 | 20.0 | 64.31 | .90 | 29.737 | W. | Lightning and thunder-shower two days. Parhelion on Sun- day. |
| For the month (31 days)..... | 36.49 | 22.0 | 61.11 | 3.35 | 29.774 | N.W., W., S.W. | |
| For First Quarter (three calendar months)..... | 31.74 | 22.0 | 63.91 | 14.00 | 29.856 | | |

TABLE No. XXXI.—(Continued.)
METEOROLOGICAL OBSERVATIONS FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

CONDENSED FROM DAILY OBSERVATIONS OF PROF. DANIEL DRAPER, OBSERVER OF CENTRAL PARK OBSERVATORY.

| DATE, WEEK ENDING | Mean Temperature (Fahr- heit Scale). | Greatest Daily Range of Temperature during the Week. | Average Humidity, Satu- ration being 100. | Total Rainfall (Inches of Water). | Mean Pressure of the Atmosphere. | Prevalent Winds. | REMARKS CONCERNING THE GENERAL ASPECTS OF THE WEATHER. |
|---|---|--|--|--------------------------------------|--|-----------------------|---|
| | | | | | | | |
| April 12..... | 47.30 | 14.0 | 81.13 | 2.05 | 29.883 | N.E. | Five stormy days. Lunar halo on Tuesday. |
| " 19..... | 45.20 | 14.0 | 65.09 | 1.20 | 29.670 | N.W. | Three rainy days. Lunar corona on Sunday. |
| " 26..... | 45.52 | 18.0 | 53.34 | .70 | 29.675 | N.W. | Slight snow two days. |
| May 3..... | 52.36 | 24.0 | 66.89 | 2.00 | 29.826 | S.W. | Four rainy days. Parhelia and solar haloes on Thursday. |
| For the month (30 days)..... | 47.35 | 18.0 | 64.24 | 5.05 | 29.779 | N.E., N.W., & S. | |
| May 10..... | 52.50 | 20.0 | 61.67 | 1.42 | 30.023 | N.E. | Three rainy days. Lunar haloes, Parhelia, and solar haloes. |
| " 17..... | 57.88 | 26.0 | 52.24 | .40 | 29.681 | N.W. | Thunder-shower two days. |
| " 24..... | 61.63 | 26.0 | 64.36 | .56 | 29.440 | S.E. | Solar halo on Monday, and one rainy day. |
| " 31..... | 60.85 | 24.0 | 59.78 | .... | 29.916 | N.W. | Slight rain one day. |
| For the month (31 days)..... | 59.91 | 26.0 | 62.45 | 4.13 | 29.875 | N.E., S.E., & N.W. | |
| June 7..... | 70.89 | 27.0 | 53.29 | 1.30 | 29.854 | W. | Two thunder-showers and one rainy day. |
| " 14..... | 70.41 | 27.0 | 55.17 | .... | 29.915 | S.W. | Slight rain one day. |
| " 21..... | 76.03 | 26.0 | 47.18 | .... | 29.706 | S.W. | |
| " 28..... | 68.20 | 24.0 | 67.27 | .62 | 30.162 | S.E. | One thunder-shower and two rainy days. |
| July 5..... | 78.30 | 20.0 | 69.00 | 1.57 | 29.936 | S.E. | One thunder-shower and four rainy days. |
| For the month (30 days)..... | 71.69 | 27.0 | 56.83 | 1.82 | 29.898 | S.W., S.E., & W. | |
| For Second Quarter (three calendar months)..... | 59.65 | 27.0 | 61.17 | 11.00 | 29.861 | | |
| July 12..... | 71.50 | 21.3 | 60.6 | .28 | 30.025 | S.E. | One rainy day. |
| " 19..... | 72.80 | 21.5 | 67.0 | .81 | 30.005 | E. & S.W. | One thunder-shower and four rainy days. |
| " 26..... | 79.41 | 20.0 | 61.2 | .... | 29.902 | S.W. | One rainy day. |
| August 2..... | 78.10 | 20.0 | 68.0 | 1.91 | 30.070 | S.E. | Two thunder-storms and four rainy days. |
| For the month (31 days)..... | 75.41 | 21.5 | 66.5 | 4.54 | 29.951 | S.E. & S.W. | |

| | | | | | | | |
|---|--------------|-------------|--------------|--------------|---------------|------------------------|--|
| August 9..... | 75.7 | 20.8 | 57.0 | .48 | 29.962 | S.W. | Rain two days. Thunder and lightning on one day. |
| " 16..... | 69.9 | 18.8 | 63.0 | 2.27 | 29.929 | N.E. | Two rainy days. Storm on one day. |
| " 23..... | 71.7 | 22.5 | 73.0 | 5.47 | 30.000 | N.E. | Four rainy days. One showery. |
| " 30..... | 67.9 | 15.0 | 69.0 | .81 | 30.009 | W. | One rainy day. |
| September 6..... | 73.3 | 20.0 | 66.0 | 1.04 | 29.867 | S.W. | Three rainy days, with thunder and lightning on one. |
| For the month (31 days)..... | 72.0 | 22.5 | 68.6 | 9.56 | 29.995 | S.W., N.E., W. | |
| September 13..... | 64.5 | 17.5 | 71.0 | .49 | 30.080 | N.E. | Four rainy days. |
| " 20..... | 69.6 | 21.0 | 68.0 | 1.06 | 29.946 | N.W. | Two rainy days. |
| " 27..... | 63.8 | 19.5 | 70.0 | .87 | 80.053 | S.W. | Three rainy days. |
| October 4..... | 68.0 | 21.0 | 66.0 | .31 | 30.009 | S.W. | Two rainy days. |
| For the month (30 days)..... | 65.4 | 21.0 | 68.0 | 3.14 | 29.983 | S.W. & N.E. | |
| For Third Quarter (three calendar months)..... | 70.94 | 22.5 | 67.7 | 17.24 | 29.956 | | |
| October 11..... | 56.9 | 22.5 | 63.0 | 1.19 | 29.798 | N.E. & N.W. | One rainy day. Lightning on one day. |
| " 18..... | 56.9 | 22.8 | 61.0 | | 30.119 | S.W. | One rainy day. |
| " 25..... | 58.0 | 15.0 | 66.0 | .71 | 29.905 | S.E. & S.W. | Three rainy days. |
| November 1..... | 40.9 | 18.5 | 65.0 | .70 | 29.966 | W. | Two rainy days. |
| For the month (31 days)..... | 55.8 | 22.8 | 64.0 | 2.73 | 29.956 | S.W., N.E., S.E., & W. | |
| November 8..... | 45.3 | 22.5 | 58.0 | 1.22 | 30.030 | S.W. & N.W. | Two rainy days, with slight snow on two. |
| " 15..... | 35.3 | 15.0 | 78.0 | .27 | 29.776 | W. | Snow and rain on two days, and slight snow on another. |
| " 22..... | 33.9 | 21.0 | 72.0 | .94 | 29.605 | W. & N.W. | Two rainy days. |
| " 29..... | 31.5 | 16.0 | 74.0 | 2.20 | 29.864 | N.W. | Two rainy days. |
| December 6..... | 35.9 | 20.0 | 73.0 | .43 | 30.298 | N.E. | Two snowy days and another showery. |
| For the month (30 days)..... | 37.0 | 22.5 | 68.0 | 4.63 | 29.849 | N.W., W., N.E. | |
| December 13..... | 38.1 | 17.0 | 72.0 | .59 | 30.023 | S.W. & N.W. | Four rainy days. |
| " 20..... | 39.4 | 22.0 | 65.0 | .50 | 29.379 | S.E. & W. | One rainy day. |
| Eleven days ending December 31..... | 30.9 | 16.0 | 70.0 | 1.44 | 29.365 | S.W. | Three rainy days. |
| For the month (31 days)..... | 36.5 | 22.0 | 70.0 | 2.96 | 30.637 | S.W., S.E., W. | |
| For Fourth Quarter (three calendar months)..... | 43.1 | 22.8 | 67.0 | 10.32 | 29.917 | | |
| For the year..... | 51.36 | 27.0 | 64.94 | 52.56 | 29.902 | | |

TABLE No. XXXII.
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Population, [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 Years on Total Mortality. | Is registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons married. | Births. |
|-------------------------|--|----------------------------|-----------------------------------|------------------------------|---|---------------------------------|--|-------------------------|------------|
| New York..... | 1,000,000 | 29,084 | 29.08 | 14,182 | 48.76 | ..... | From the medical attendants and Coroners. From sextons and superintendents of burial-grounds. | 17,714 | 22,683 |
| Philadelphia, Pa..... | 775,000 | 13,224 | 13.64 | 6,260 | 42.72 | Yes. | ..... | 15,752 | 15,702 |
| St. Louis, Mo..... | 340,000 | 8,751 | 19.44 | 4,014 | 46.34 | Yes. | By returns of undertakers to Health Officer. | 5,010 | 5,027 |
| Brooklyn, N. Y..... | 435,314 | 10,968 | 25.19 | 5,589 | 50.50 | Yes. | ..... | 6,448 | 9,718 |
| Chicago, Ill..... | 400,000 | 9,557 | 23.89 | 5,676 | 59.39 | Yes. | From physicians in attendance. | 2,200 | ..... |
| Baltimore, Md..... | 305,000 | 7,614 | 24.96 | 2,301 | 30.22 | No. | ..... | 8,916 | 9,688 |
| Boston, Mass..... | 276,500 | 7,869 | 28.46 | 3,289 | 41.79 | Yes. | By undertakers from the physicians. | 2,772 | 1,555 |
| Cincinnati, O..... | 246,923 | 5,641 | 22.84 | 2,511 | 44.51 | Yes. | Returns of physicians. | No record. | No record. |
| Buffalo, N. Y..... | 170,000 | 2,336 | 13.74 | 1,016 | 43.49 | Yes. | Certificates of death. | 3,826 | 763 |
| San Francisco, Cal..... | 192,000 | 4,002 | 20.84 | 1,460 | 36.43 | Yes. | From physicians and midwives. | ..... | ..... |
| New Orleans, La..... | 200,000 | 7,505 | 37.52 | 2,562 | 34.13 | Yes. | From cemetery reports. | No record. | 4,752 |
| Cleveland, O..... | 137,000 | 2,641 | 19.23 | 1,491 | 54.18 | Yes. | From physicians. | 3,561 | 5,175 |
| Pittsburg, Pa..... | 133,900 | 3,519 | 26.46 | 1,781 | 50.61 | Yes. | From physicians, by undertakers. | Unknown. | Unknown. |
| Washington, D. C..... | 140,000 | ..... | ..... | ..... | ..... | Yes. | From physicians, by undertakers. | 2,560 | 3,618 |
| Newark, N. J..... | 125,000 | 3,735 | 29.83 | 1,891 | 50.63 | Yes. | Through the City Clerk, who issues burial-permits. | Uncertain. | Uncertain. |
| Jersey City, N. J..... | 111,000 | Uncertain. | ..... | Uncertain. | ..... | No. | From physicians in 1874. | 1,178 | 1,382 |
| Milwaukee, Wis..... | 100,000 | 2,026 | 18.78 | 1,135 | 58.98 | Yes. | By Clerk of Board of Health before burial. | ..... | ..... |
| | | including 146 still-borns. | | | | | | | |

TABLE No. XXXII.—(Continued.)

VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Is registry of Marriages and Births complete? | By what percent. age incomplete. | By what Methods certified and the Certificates collected? | Extent of Area within City Limits (Square Miles). | What are the present Sources and Modes of the Water-Supply? | From whom Information obtained (Name and Title). |
|-------------------------|---|----------------------------------|---|---|---|--|
| New York..... | No. | About 30. | By professional attendants. | 41½ | The Croton, from highland sources 40 to 60 miles distant. | Register of Records. |
| Philadelphia, Pa..... | Marriages nearly complete. | 29 | Clergymen make returns of marriages. Births collected monthly by messenger. | 122 | From Schuylkill and Delaware. | Geo. E. Chambers, Registrar. |
| St. Louis, Mo..... | No. | M. 25, F. 60 | ..... | ..... | Mississippi River, reservoirs. | Dr. Barrett, Health Officer. |
| Brooklyn, N. Y..... | No. | B. 33 | ..... | 22 | From Ridgewood through street-mains. | James Watt, M.D., Registrar. |
| Chicago, Ill..... | ..... | ..... | ..... | 35 | Lake Michigan, by pumping-works. | J. W. Russell, Sec'y Board of Health. |
| Baltimore, Md..... | ..... | 30 | By Clerk of Court of Common Pleas. | 14½ | Jones's Falls and Gunpowder River. | J. W. Mohler, Sec'y Board of Health. |
| Boston, Mass..... | Yes. | ..... | Licenses issued for marriages, canvassers employed for births. | 10,953 acres. | Cochituate Lake and Sudbury River. | N. A. Apollonio, City Reg'r. |
| Cincinnati, O..... | No. | ..... | By Probate Court. | 24 | Ohio River, by reservoir. | J. J. Quinn, M. D., Health Officer. |
| Buffalo, N. Y..... | ..... | ..... | ..... | 37½ | Niagara River, by reservoir. | E. C. W. O'Brien, M.D., Health Physician. |
| San Francisco, Cal..... | ..... | ..... | ..... | 45 | Reservoirs, fed by mountain-streams 15 miles away. | H. Gibbons, Jr., M.D., Health Officer. |
| New Orleans, La..... | ..... | ..... | ..... | 18 | Half of the city by river water-works, the rest by rain-water cisterns. | S. C. Russell, M. D., Secretary Board of Health. |
| Cleveland, O..... | Of births. | ..... | Births from physicians. | 81 | Lake Erie Water-Works from station 1½ mile from shore. | H. W. Kitchen, M. D., Health Officer. |
| Pittsburg, Pa..... | M., yes. | B., 5 | Marriages by ministers and aldermen; births by physicians, midwives, and parents. | 23 | Alleghany and Monongahela Rivers. | Crosby Gray, Health Officer. |
| Washington, D. C..... | No. | ..... | Sent voluntarily. | ..... | Potomac River Water-Works. | Hon. C. C. Cox, M. D., Pres. Board of Health. |
| Newark, N. J..... | No. | Unknown. | Reported monthly by professional attendants. | 18 | Passaic River Works through three dis-tributing reservoirs. | James Gillin, City Clerk. |
| Jersey City, N. J..... | No. | ..... | Clerk of Board of Health. | ..... | From Passaic River by three mains. | Indison Co. Board of Health. |
| Milwaukee, Wis..... | No. | ..... | ..... | 21 | Lake Michigan Water-Works. | James Johnson, M. D., Health Officer. |

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Population. [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 years on Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons married. | Births. |
|--------------------|--|-------------------|--------------------------------------|---------------------------------|--|------------------------------------|--|----------------------------|------------|
| Detroit, Mich. | 100,000 | 2,508 | 25.06 | 1,181 | 47.12 | Nearly. Yes. | From city cemeteries, monthly. From undertakers before burial. | 2,800 | 2,128 |
| Providence, R. I. | 32,668 | 1,719 | 17.26 | 681 | 36.70 | No. | | 1,084 | 1,423 |
| Albany, N. Y. | 95,000 | 1,786 | 18.80 | | | | | | |
| Indianapolis, Ind. | 60,765 | 2,087 | 33.55 | 889 | 43.64 | Yes. | By the sexton of each cemetery and from the Secretary of the Board of Health. | 1,180 | 1,789 |
| Richmond, Va. | 60,000 | 1,277 | 21.28 | 580 | 45.42 | Nearly. Yes. | By the Registrar. By report to the Health Officer. | | |
| New Haven, Conn. | 60,000 | 1,277 | 21.28 | 712 | 60.47 | Nearly. | From physicians. | 640 | 846 |
| Albany City, Pa. | 58,000 | 912 | 15.72 | 356 | 39.03 | Nearly. | By a superintendent of burials from undertakers. | 1,474 | 1,851 |
| Syracuse, N. Y. | 50,000 | 1,162 | 23.24 | 483 | 41.57 | Yes. | | No record. | No record. |
| Lowell, Mass. | 50,000 | 1,516 | 30.32 | 545 | 35.95 | Yes. | From physicians, by undertakers. By undertakers. | 1,180 | 1,660 |
| Charleston, S. C. | 48,000 | 1,049 | 21.85 | 422 | 40.23 | | | | |
| Worcester, Mass. | 45,000 | 569 | 12.61 | 277 | 48.68 | | From attending physicians. | | |
| Toledo, O. | 45,000 | 970 | 21.55 | 419 | 43.19 | Yes. | From undertakers. | 956 | 1,384 |
| Cambridge, Mass. | 43,289 | 1,343 | 31.02 | | | Yes. | From undertakers. | 1,278 | 1,420 |
| Fall River, Mass. | 40,000 | 1,169 | 29.22 | 365 | 31.22 | Yes. | From physicians. | 826 | No record. |
| Mobile, Ala. | 40,000 | 773 | 19.32 | | | | " | 1,010 | 989 |
| Hartford, Conn. | 40,000 | | | | | | | | |
| Reading, Pa. | 38,000 | 800 | 21.05 | | | | | | |
| Faterson, N. J. | 38,000 | 677 | 23.08 | 433 | 49.37 | Yes. | By register. | 986 | 1,085 |
| St. Paul, Minn. | 35,000 | 594 | 16.97 | 298 | 50.17 | Yes. | From physicians. | 750 | 2,125 |
| Evansville, Ind. | 35,000 | 629 | 17.97 | 233 | 41.81 | Yes. | From physicians. | 460 | No record. |
| Dayton, O. | 35,000 | 583 | 16.66 | 206 | 35.53 | Yes. | | No record. | 671 |

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Population, [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 Years of Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates Obtained? | No. of Persons Married. | Births. |
|---------------------------|--|-------------------|--------------------------------------|---------------------------------|--|------------------------------------|---|----------------------------|------------|
| Galveston, Tex..... | 31,564 | 687 | 19.87 | 179 | 26.05 | Yes. | From physicians, by undertakers. Returns made by sworn undertakers. | 870 | 562 |
| Portland, Me..... | 32,000 | 691 | 21.59 | 220 | 31.83 | Yes. | Same as Boston. | 406 | 867 |
| Charlestown, Mass..... | 30,000 | 794 | 26.47 | ..... | ..... | Yes. | Returns made by undertakers, from physicians. By undertakers, from physicians. | 818 | 425 |
| Lynn, Mass..... | 30,000 | 612 | 21.40 | 115 | 17.91 | Yes. | From attending physicians. | 830 | 390 |
| Manchester, N. H..... | 30,000 | 673 | 22.43 | 266 | 39.52 | Yes. | By undertakers' returns. | ..... | ..... |
| Savannah, Ga..... | 30,000 | 1,290 | 43.00 | ..... | ..... | Yes. | Returns to Health Officer by sextons. | 766 | 879 |
| Springfield, Mass..... | 30,000 | 654 | 21.80 | 280 | 42.81 | Yes. | From undertakers. By City sexton. | Unknown. | 884 |
| Wheeling, W. Va..... | 27,000 | 410 | 15.18 | 162 | 39.51 | Yes. | From attending physicians. | Co. record. No record. | No record. |
| Peoria, Ill..... | 27,000 | 389 | 14.41 | 150 | 48.54 | No. | From attending physicians. | 270 | 714 |
| Salt Lake City, Utah..... | 26,000 | 481 | 16.58 | 301 | 69.84 | Yes. | By City sexton. | ..... | ..... |
| Salem, Mass..... | 26,000 | 544 | 20.92 | 209 | 38.42 | Yes. | By City Clerk, Cemetery sextons. By attending physicians to Health Officer. | 350 | 761 |
| Elizabeth, N. J..... | 25,000 | 272 | 10.88 | ..... | ..... | Nearly. | ..... | ..... | ..... |
| Terre Haute, Ind..... | 25,000 | 326 | 13.04 | ..... | ..... | Nearly. | ..... | ..... | ..... |
| Foughakcepatic, N. Y..... | 23,000 | 372 | 16.17 | 138 | 37.09 | Yes. | ..... | ..... | ..... |
| Edmra, N. Y..... | 21,000 | 291 | 13.86 | 114 | 39.17 | Yes. | ..... | ..... | ..... |
| Norfolk, Va..... | 20,000 | 614 | 30.70 | 270 | 43.97 | Yes. | ..... | ..... | ..... |
| Augusta, Ga..... | 20,000 | 714 | 35.70 | 264 | 50.98 | ..... | ..... | ..... | ..... |
| Springfield, Ill..... | 20,000 | 404 | 20.20 | 125 | 30.94 | Yes. | ..... | ..... | ..... |
| Chelsea, Mass..... | 20,000 | 455 | 22.75 | 177 | 38.30 | Yes. | ..... | ..... | ..... |
| Sacramento, Cal..... | 20,000 | 463 | 20.15 | 138 | 34.24 | Yes. | ..... | ..... | ..... |
| Burlington, Vt..... | 18,000 | 228 | 12.67 | 87 | 38.16 | Nearly. | ..... | ..... | ..... |

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Is registry of Marriages and of Births complete? | By what Percent. | By what Methods certified and the Certificates collected? | Extent of Area Within City Limits (Square Miles). | What are the present Sources and Modes of the Water-Supply? | From whom Information obtained (Name and Title). |
|-----------------------|--|------------------|--|---|---|--|
| Galveston, Tex. | No. | About 5 | Births returned by collectors; marriages collected by City Clerk. | 30.15 | Rain-water collected from roofs. | Geo. M. Peete, Health Officer. |
| Portland, Me. | Yes. | ..... | Same as Boston. | 600 acres. | Lake Sebago, 16 miles distant. | H. O. Robinson, City Clerk. |
| Charlestown, Mass. | Yes. | ..... | By canvassing twice a year. | ..... | Mystic Lake, 4 miles distant, by gravitation. | N. A. Apollonio, Reg. of Vital Statistics, Boston, Mass. |
| Lynn, Mass. | M., yes; | ..... | Births by town-assessors; marriages by officiating persons. | 13 | Ponds within city limits. | B. H. Jones, City Clerk. |
| Manchester, N. H. | births, no. | ..... | By an officer of the court. | 22 | Mappesee Lake, 5 miles distant. | J. E. Bennett, City Clerk. |
| Savannah, Ga. | ..... | ..... | By canvassers and clergymen. | ..... | Savannah River Water-Works and by wells. | J. Stewart, Clerk of City Council. |
| Springfield, Mass. | Yes. | ..... | By physicians, midwives, and clergymen, to County Clerk. | ..... | From springs by gravitation and from wells. | A. T. Folsom, City Clerk. |
| Wheeling, W. Va. | ..... | ..... | No law regulating marriage; religious marriages only. | 4 | Ohio River Water-Works. | S. L. Jopson, Health Officer. |
| Peoria, Ill. | ..... | ..... | Marriages by persons officiating; births by canvassers, sent-annually. | 6 | Illinois River by Holly system. | E. McCollburn. |
| Salt Lake City, Utah. | ..... | ..... | By Tax-Assessors. | 16 | From mountain-streams by canals. | Jos. E. Taylor, City Sexton. |
| Salem, Mass. | Yes. | ..... | Deaths by physicians and sextons. | 6 | Water-works and aqueduct. | Henry M. Meek, City Clerk. |
| Elizabeth, N. J. | ..... | ..... | Clerk of Court. | 5 | Elizabeth River by reservoirs. | J. Seiple, City Clerk. |
| Terre Haute, Ind. | ..... | ..... | ..... | 4 | Wabash River Water-Works. | A. Thomas, Mayor. |
| Poughkeepsie, N. Y. | ..... | ..... | ..... | 3 | Hudson River, by reservoir. | Ed. C. Bolton, M. D., Pres. Board of Health. |
| Elmira, N. Y. | ..... | ..... | ..... | ..... | Seeley Creek, Can's Creek, and Lake Bridge, by Elmira Water-Works Co. | Wm. C. Woy, M. D. |
| Norfolk, Va. | No. | ..... | ..... | 800 acres. | Reservoir; 5 miles distant, and by Holly system. | W. H. Shepherd, Secretary Board of Health. |
| Augusta, Ga. | ..... | ..... | ..... | Nearly 4 | Wells, springs, and river-water. | L. T. Blome, Clerk of Council. |
| Springfield, Ill. | ..... | ..... | ..... | 4 | Saugamon River, by reservoir. | O. Lewis, Mayor. |
| Chelsea, Mass. | Yes. | ..... | Persons officiating. | 5 | Mystic Lake. | Samuel Bassett, City Clerk. |
| Sacramento, Cal. | No. | ..... | ..... | 1 1/2 | Sacramento River, by Holly system. | Thos. M. Logan, Secy State Board of Health. |
| Burlington, Vt. | M. 1, b. 10 | ..... | Births by school-census; marriages by City Clerk. | 6 | Lake Champlain, by water-works. | A. P. Grinnell, Health Officer. |

TABLE No. XXXII.—(Continued.)

VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Population. [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 Years on Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons Marr'd. | Births. |
|-------------------------|--|-------------------|--------------------------------------|---------------------------------|--|------------------------------------|--|---------------------------|------------|
| Gloucester, Mass..... | 17,000 | 314 | 18.47 | 138 | 43.95 | Yes. | By undertakers. | 354 | 615 |
| Newburg, N. Y..... | 17,014 | 320 | 18.81 | 153 | 47.81 | Nearly. | Physicians and undertakers. | 118 | 270 |
| San Antonio, Tex..... | 16,000 | 323 | 20.19 | 100 | 30.96 | Yes. | By County Clerk through City Physician. | 232 | No record. |
| Vicksburg, Miss..... | 16,000 | 618 | 38.62 | 297 | 48.05 | Yes. | City Sexton. | 110 | No record. |
| Birmingham, N. Y..... | 16,000 | 238 | 14.87 | 74 | 31.09 | Yes. | ..... | ..... | 364 |
| Oakland, Cal..... | 15,887 | 227 | 14.25 | 104 | 45.81 | Yes. | ..... | ..... | No record. |
| Concord, N. H..... | 14,000 | 236 | 16.86 | 75 | 29.29 | Yes. | By undertakers. | 332 | No record. |
| Austin, Tex..... | 14,000 | 256 | 18.29 | 75 | 29.29 | Yes. | Physicians to the County Clerk. | 234 | No record. |
| Logansport, Ind..... | 12,000 | 221 | 18.42 | 51 | 29.14 | Yes. | Undertakers and sextons. | No record. | No record. |
| Watertown, N. Y..... | 10-11,000 | 175 | 17.50 | 61 | 34.78 | Yes. | Undertakers. | 246 | No record. |
| Hudson, N. Y..... | 10,000 | 184 | 18.40 | 64 | 34.78 | Yes. | Physicians. | No record. | No record. |
| Schma, Ala..... | 8,000 | 187 | 23.37 | ..... | ..... | Yes. | By attending physicians. | ..... | ..... |
| Columbus, Ga..... | 8,000 | 304 | 38.00 | 114 | 37.50 | Yes. | By sextons, monthly. | 504 | ..... |
| Monroe City, Mich..... | 7,000 | 48 | 6.88 | 30 | 62.50 | Yes. | Supervisors of wards. | 20 | 141 |
| Peru, Ind..... | 6,500 | 71 | 10.92 | 25 | 35.21 | Yes. | ..... | ..... | ..... |
| Plymouth, Mass..... | 6,000 | 138 | 21.23 | 36 | 26.09 | Yes. | By undertakers. | 70 | 179 |
| Fayetteville, N. C..... | 5,000 | 118 | 23.60 | 63 | 53.39 | Yes. | Sextons. | 160 | ..... |
| Amherst, Mass..... | 4,014 | 42 | 10.28 | 8 | 19.05 | Yes. | Physicians and sextons. | 92 | 77 |
| Independence, Iowa..... | 3,300 | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| CITY (Foreign). | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| London..... | 3,356,073 | 76,634 | 22.83 | 31,759 | 41.48 | Yes. | By the Sub-Registrars. | 66,878 | 121,100 |
| Liverpool..... | 505,274 | 13,012 | 25.81 | 5,889 | 45.15 | Yes. | " " | 11,470 | 18,716 |
| Birmingham..... | 335,540 | 8,990 | 25.28 | 4,424 | 49.12 | Within 2 per cent. | " " | ..... | 14,497 |
| Manchester..... | 354,000 | 10,015 | 28.29 | 4,802 | 48.04 | Yes. | " " | ..... | 18,563 |

TABLE No. XXXII.—(Continued.)

VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY. | Is Registry of Mar- riages and of | By what Percent? | By what Methods certified and the Cer- tificates collected? | Extent of Area (Square Miles) | What are the Present Sources and Modes of the Water-Supply? | From whom Information ob- tained (Name and Title). |
|---------------------|--------------------------------------|------------------|--|----------------------------------|---|--|
| Gloucester, Mass. | M, yes. | B. 10 | Marriages by clergyman; births by car- vassers. | 28 | Wells and cisterns. | Robert L. Fears, Mayor. |
| Newburg, N. Y. | No. | M. 60; b. 50 | By clergy and physicians. | 4 | Pond, 3 miles distant, | J. S. Heard, M. D., President. |
| San Antonio, Tex. | | | By County Clerk. | 36 | San Antonio River. | F. Peterson, M. D., City Phy- sician. |
| Vicksburg, Miss. | | | By County Clerk. | 4 | Public and private cisterns. | Benj. A. Lee, Mayor. |
| Binghamton, N. Y. | | | | 24 | Holly system from Susquehanna River. | D. M. Hulbert, Mayor. |
| Oakland, Cal. | | | Marriages by persons officiating. | 42 | Reservoirs, 6 miles distant, and wells. | G. E. Sherman, Health Officer. |
| Concord, N. H. | | | By County Clerk. | 324 | Long Pond, aqueduct 3½ miles in length. | C. F. Stewart, City Clerk. |
| Austin, Tex. | No. | | | 14 | Cisterns, wells, and river. | J. W. Stalnaker, M. D. |
| Logansport, Ind. | | | | 6 | Black River, by reservoir. | V. Colman. |
| Watertown, N. Y. | | | | 2 | Springs and Hudson River. | V. B. A. Lewis, Health Officer. |
| Hudson, N. Y. | | | | 24 | Wells. | E. H. Evans, Mayor. |
| Schaub, Ala. | | | | | | Benj. H. Blazes, M. D., Pres. |
| Columbus, Ga. | | | Marriages by persons officiating. | 1 | Cisterns and river. | Board of Health. |
| Monroe City, Mich. | Yes. | | Ministers and justices of the peace. | 6½ | Lake Erie and artesian wells. | M. M. Moore, Clerk of Council. |
| Perrin, Ind. | | | | 14 | Wells. | John Davis, Clerk of City. |
| Plymouth, Mass. | Yes. | | By clergyman. | 60 | South Pond Aqueduct. | John H. Holm, M. D., Pres. |
| Fayetteville, N. C. | | | Register of Deeds of county. | 4 | Hydrants and aqueduct. | Board of Health. |
| Amherst, Mass. | Yes. | | Annual census. | 4 | Wells and cisterns. | Leander Lovell, Town Clerk. |
| Independence, Iowa. | | | | 2 | Wells. | W. C. McDuffie, M. D., mem- ber Sanitary Committee. |
| CITY (FOREIGN.) | | | | | | |
| London | M, yes; b, nearly. | | By the Sub-Registrars. | 122 | The Thames, the Lea, and wells in the chalk-formation around London. | W. Farr, M. D., Assistant Registrar-General. |
| Liverpool | M, yes; b, no. | | " " | 8 | From lake 30 miles north of Liverpool, and from deep wells. | Wm. French, M. D., Medical Officer. |
| Birmingham | | | " " | 8,400 acres. | Partly water-works, partly wells. | Alfred Hill, M. D., Medical Officer. |
| Manchester | | | " " | 4,355 acres. | Springs among the hills. | John Leigh, M. D., Medical Officer. |

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (FOREIGN). | Population. [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent. of Deaths of Children under 5 Years on Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons Married. | Births. |
|--------------------------|--|-------------------|--------------------------------------|--|---|------------------------------------|--|----------------------------|------------|
| Newcastle-upon-Tyne..... | 135,500 | 4,033 | 29.76 | ..... | ..... | Yes. | By the Sub-Registrars. | 2,922 | 5,652 |
| Sunderland..... | 104,880 | 2,841 | 22.42 | 1,123 | 47.97 | Yes. | " | ..... | 4,615 |
| Leicester..... | 104,360 | 2,473 | 23.74 | 1,350 | 53.67 | Yes. | " | 2,419 | 4,452 |
| Nottingham..... | 90,894 | 2,025 | 21.18 | ..... | ..... | Yes. | " | ..... | 3,233 |
| Wolverhampton..... | 70,000 | 1,726 | 24.65 | ..... | ..... | Yes. | " | ..... | 2,817 |
| Glasgow..... | 514,295 | 14,376 | 23.92 | 6,805 | 46.42 | Yes. | " | 9,994 | 20,502 |
| Edinburgh..... | 203,222 | 4,577 | 21.97 | 1,567 | 34.23 | Yes. | " | 7,840 | 6,785 |
| Barbadoes..... | 21,363 | No record. | ..... | No record. | ..... | ..... | No record. | No record. | No record. |
| Bombay..... | 644,405 | 15,665 | 24.31 | 6,914 | 44.13 | Yes. | By Sub-Registrars. | No record. | 12,722 |
| Calcutta..... | 417,600 | 11,557 | 25.82 | 3,120 | 26.99 | Yes. | By Ghat, cemeteries, hospital, and police returns. | No record. | 4,672 |
| Christiania..... | 72,725 | 1,566 | 21.53 | 696 | 44.44 | Yes. | By pastors. | 740 | 2,322 |
| Stockholm..... | 147,249 | 4,484 | 30.45 | 41 per cent. of total mor- tality. | 41.00 | Yes. | By the clergy. | 2,658 | 4,347 |
| Rotterdam..... | 125,893 | 3,663 | 31.43 | 1,733 | 45.63 | ..... | By declaration before burial. | 2,120 | 5,097 |
| Antwerp..... | 153,645 | 3,795 | 24.69 | 1,387 | 36.30 | Yes. | Report of physician attending. | 2,942 | 4,483 |
| Brussels..... | 185,000 | 5,377 | 29.06 | 1,387 | 25.63 | Yes. | Physicians appointed by government. | 1,772 | 6,200 |
| Bordeaux..... | 194,055 | 5,490 | 26.74 | 763 | 13.86 | Yes. | Reports of attending physicians. | 3,786 | 5,036 |
| Nice..... | 49,230 | 1,713 | 31.89 | 612 | ..... | Yes. | Mayor's office. | 514 | 1,971 |
| Algiers..... | 49,531 | 1,490 | 30.05 | ..... | ..... | Yes. | ..... | 432 | 1,711 |
| Zarich*..... | 56,695 | 1,451 | 25.59 | 1,063 (?) | (?) | ..... | ..... | 946 | 1,895 |
| Cadiz..... | 52,451 | 1,481 | 28.23 | 780 | 52.67 | ..... | Through municipal judge. | 836 | 2,929 |

* 1872.

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (Foreign). | Is Registry of Mar- riages and of Births complete? | By what Percent. By what Percent. | By what Methods certified and the Cer- tificates collected? | Area of City. | What are the Present Modes and Sources of the Water-Supply? | From whom Information ob- tained (Name and Title). |
|--------------------------|--|--------------------------------------|--|---------------|---|--|
| Newcastle-upon-Tyno..... | Yes. | ..... | By the Sub-Registrars. | 5,325 acres. | Water-company. | H. E. Armstrong, M.D., Medi- cal Officer. |
| Sunderland..... | Yes. | ..... | " " | 2,768 acres. | Water-company. | Henry I. Yeld, M.D., Medical Officer. |
| Leicester..... | Yes. | ..... | " " | 3,200 acres. | Water-company. | J. Wyatt Crauc, Medical Offi- cer. |
| Nottingham..... | Yes. | ..... | " " | 1,906 acres. | From the Trent and from wells. | Edward Seaton, M.D., Medi- cal Officer. |
| Wolverhampton..... | ..... | ..... | " " | 5½ | Water-works. | John H. Love, M.D., Medical Officer. |
| Glasgow..... | Yes. | ..... | " " | 9.17 | Lake Katrine. | Jas. B. Russell, M.D., Medi- cal Officer. |
| Edinburgh..... | Yes. | ..... | " " | 7,909 acres. | From Pentland Hills. | John Stewart, M.D., Medical Officer. |
| Barbadoes..... | ..... | ..... | No record. | 3¼ | Springs and reservoir. | Local Governor. |
| Bombay..... | No. | ..... | By Sub-Registrars. | 13,622 acres. | Hill reservoirs, 17 miles distant, and from wells. | Ch. Fabre Tonnare, H. O., per B. F. Farnham, U. S. Con'l. |
| Calcutta..... | ..... | Births, 50 | Police Registrars. | 7 sq. miles. | Tulnah Water-Works, 17 miles from city, pumped from Hoogley River. | A. C. Litchfield, U. S. Consul. |
| Christiania..... | Yes. | ..... | The church and the Statistical Bureau. | ..... | From lakes near the city. | G. Gade, U. S. Consul. |
| Stockholm..... | Yes. | ..... | By the clergy. | ..... | From the Arsta. | N. A. Erfwing, U. S. Consul. |
| Rotterdam..... | Yes. | ..... | Registration in City Hall. | 350 hectares. | ..... | Burgmaster of Rotterdam. |
| Antwerp..... | Yes. | ..... | Civil registers. | 7 | Pumps and cisterns. | J. R. Weaver, U. S. Consul. |
| Brussels..... | Yes. | ..... | ..... | 593 hectares. | Reservoir at Braine l'Allend. | Dr. F. Janssens. |
| Bordeaux..... | Yes. | ..... | ..... | 3,546 hect's. | From springs conducted by aqueduct. | P. Garrish, Jr., U. S. Consul. |
| Nice..... | Yes. | ..... | ..... | 7,111 hect's. | From adjacent mountains by water-com- pany. | U. N. Vesly. |
| Algiers..... | Yes. | ..... | Mayor's office. | 1 | Four aqueducts. | W. I. M. Burger, U. S. Con- sul. |
| Zurich*..... | Yes. | ..... | Through municipal judge. | 14.63 | From mountains and from Zurich Lake. | S. H. M. Byers, U. S. Consul. |
| Cadiz..... | ..... | ..... | ..... | .7 | English Water-Work Company. | A. N. Dudley, U. S. Consul. |

* 1872.

TABLE No. XXXII.--(Continued).
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (FOREIGN). | Population, [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 Years on Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons married. | Births. |
|-----------------------------|--|-------------------------------------|--------------------------------------|---------------------------------|--|------------------------------------|---|----------------------------|-------------------------------------|
| Havana..... | 205,676 (census 1862) | 7,755 | 37.70 | 1,786 | 22.97 | Yes. | Physicians and civil registers. | 1,674 | 4,716 |
| Mexico..... | 225,000 | 6,063 | 39.94 | 2,667 | 36.86 | Yes. | Through a public officer. | 1,066 | 9,273 |
| Vera Cruz..... | 15,500 | 1,093 | 70.51 | 523 | 29.98 | Yes. | From public registers. | 80 | 627 |
| Valparaiso..... | 95,000 | 6,435 | 64.58 | ..... | ..... | Yes. | By one parish register and two civil registers. | 962 | 4,787 |
| Montreal..... | 165,000 | 4,954 | 39.02 | 2,956 | 60.27 | Fairly complete. | By heades. | 2,870 | 6,086 |
| Quebec..... | 62,000 | 1,424 | 22.97 | ..... | ..... | Yes. | By official registered returns. | 1,136 | 2,125 |
| Halifax..... | 31,582 | 759 | 23.39 | 259 | 39.24 | Yes. | By returns from parents and medical certificates. | 1,090 | 867 |
| St Catharines, Canada..... | 9,285 | 129 | 13.81 | 55 | ..... | Yes. | Physicians. | 133 | 41 |
| Brantford, "..... | 8,000 | 80 | 10.00 | ..... | ..... | No. | ..... | 114 | 170 |
| Collingwood, "..... | 5,000 | 41 | 8.20 | ..... | ..... | Yes. | Direct from physicians. | 91 | 151 |
| Honolulu, Sandwich Isl..... | 14,872 | 1,639 | 110.25 | Unknown. | ..... | Yes. | Special canvassers. | 86 | 1,333 |
| Lahaina, "..... | 3,002 | 48 | 15.98 | Unknown. | ..... | Nearly. | " | 14 | 25 |
| Pesh..... | 290,000 | 11,323 | 49.23 | 5,128 | 45.29 | Yes. | Furnished by inspectors and physicians. | 4,523 | 10,073 |
| Vienna..... | 700,000 | 21,701 | 35.28 | 9,292 | 37.43 | Yes. | Furnished by medical verifiers. | 14,756 | 27,880 |
| Berlin..... | 950,000 | 26,124 | 27.81 | 14,883 | 56.32 | Yes. | By medical verifiers. | 11,881 | 36,281 |
| Leipsic..... | 140,000 | 2,869 including still-births. | 26.03 | 1,384 | 48.21 | Yes. | " | 2,722 | 4,982 including still-births. |

TABLE No. XXXII.—(Continued.)

VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (Foreign). | Is Registry of Marriages and of Births complete? | By what Percent- age Incomplete. | By what Methods certified and the Certificates collected? | Area of City. | What are the Present Sources and Modes of the Water-Supply? | From whom Information obtained (Name and Title). |
|-----------------------------|--|-------------------------------------|---|-------------------------|--|--|
| Havana..... | Yes..... | ..... | From the civil and ecclesiastical registers..... | ..... | River Almendares and wells and cisterns. | Dr. Vincenzo Luis Ferrer. |
| Mexico..... | Yes..... | ..... | ..... | 19,638,027 sq. metres. | Artesian wells and two springs, water of latter conducted by aqueducts. | D. A. Ortega, Consejo Superior de la Sanidad. |
| Yera Cruz..... | No..... | M., 25; b., 10 | From public registers. | 4,873 | ..... | F. P. Esteve. |
| Valparaiso..... | Yes..... | ..... | ..... | ..... | Springs, wells, and cisterns of rain-water. | Francisco Telanurren, Intendente de Valparaiso. |
| Montreal..... | Marriages fairly complete. | 5 | Registered in Prothonotary's office by ministers and magistrates. | 4 | St. Lawrence and Ottawa Rivers, from reservoir on side of Mount Royal. | J. J. Dugdale, M. D., Medical Officer of Health. |
| Quebec..... | Nearly complete. | 16 | By registrars. | $2\frac{3}{4}$ | Lake St. Charles, by gravitation. | W. Marsden, M. D. |
| Italians..... | Marriages complete. | ..... | Physicians and parents. | $7\frac{1}{4}$ | From lakes about six miles from city, by gravitation. | John Costley, Secretary of Statistics. |
| St. Catharines, Canada..... | ..... | ..... | ..... | About 1 | Wells and cisterns. | J. Hollison, Registrar of Births, Deaths, and Marriages. |
| Bramford, "..... | Marriages complete. | 33 | ..... | ..... | Wells. | James Woodyatt, Town Clerk. |
| Collingwood, "..... | Yes. | ..... | Official canvassers. | 184 acres. | Georgian Bay, water-tanks, and wells. | J. H. Lawrence, Town Clerk. |
| Honolulu, Sandwich Isl..... | Yes. | ..... | ..... | ..... | Reservoir for valley-streams. | Hon. W. S. Green, Minister of the Interior. |
| Lahaina "..... | No. | 25 | Official canvassers. | ..... | ..... | Hon. W. S. Green, Minister of the Interior. |
| Pesth..... | Yes. | ..... | Furnished by parish priests—marriages monthly, births weekly. | 1,48 | Partly aqueduct, conducting water from the Danube, partly wells. | Joseph Korösi, Director of Statistical Bureau. |
| Vienna..... | Yes. | ..... | By the clergywomen. | 10,305,422 sq. Klafter. | Water-works of the Sixenstein and Kalssequele, also the wells in some parts of the town. | Dr. Glatter, Director of Statistical Bureau. |
| Berlin..... | Yes. | ..... | By professional attendants and civil officers. | 6,257 hect's. | Wells and water-works of river Spree, 7 miles distant from Berlin. | H. Kredsman, U. S. Consul. |
| Leipsic..... | Yes. | ..... | " | 6,45 Ger. | Large wells bored in the meadows a short distance from the city, water forced by steam-power and a high reservoir. | John H. Stoward, U. S. Consul. |

TABLE No. XXXII.—(Continued.)
VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (Foreign). | Population, [Estimated for middle of Year 1873.] | No. of Deaths. | Death-rate per 1,000 Inhabitants. | Deaths under 5 Years of Age. | Percent of Deaths of Children under 5 years on Total Mortality. | Is Registry of Deaths complete? | By what Methods are the Certificates obtained? | No. of Persons married. | Births. |
|--------------------------|--|----------------|-----------------------------------|------------------------------|---|---------------------------------|--|-------------------------|-------------------------------|
| Dresden..... | 179,678 | 6,257 | 34.82 | 3,080 | 47.62 | Yes. | By medical verifiers. | 4,288 | 7,251 |
| Frankfort-on-the-Main... | 100,000 | 2,008 | 20.08 | 692 | 34.46 | Yes. | " | 2,180 | 2,769 |
| Stuttgart..... | 94,666 | 2,354 | 25.48 | 1,274 | 54.12 | Yes. | Coroners and physicians' report to mayor of city. | 989 | 3,763 |
| Mayence..... | 47,483 | 1,396 | 29.40 | 660 | 47.28 | Yes. | ..... | 396 | including 2,088 still-births. |
| Munich..... | 169,400 | 7,765 | 45.48 | 3,589 | 46.58 | Yes. | From physicians, by the superintendants of cemeteries, (Physician is required to give notice to Police-Office of every death.) | 2,471 | 7,865 |
| Padoa..... | 50,000 | 1,167 | 23.34 | 510 | 43.70 | Yes. | Physicians' reports. | 942 | 1,574 |
| Lausanne..... | 20,320 | 645 | 21.32 | 166 | 30.39 | ..... | Physicians' and parsons' reports. | 666 | 788 |
| Grosau..... | 3,800 | 303 | 30.32 | 135 | ..... | Yes. | ..... | 220 | 425 |
| Rome..... | 248,907 | 8,479 | 34.14 | 3,343 | 30.42 | Yes. | Physicians' reports and the records of civil officers. | 2,996 | 7,291 |
| Milan..... | 271,135 | 9,272 | 34.19 | 2,852 | 30.75 | Yes. | " | 5,618 | ..... |
| Falerno..... | 223,424 | 6,259 | 28.46 | 3,066 | 48.47 | Yes. | " | 2,007 | 7,636 |
| Genoa..... | 135,282 | 4,972 | 36.75 | 1,636 | 32.90 | Yes. | " | 1,914 | 4,521 |
| Venice..... | 135,644 | 4,919 | 36.26 | 1,873 | 38.07 | Yes. | " | 1,626 | 3,618 |
| Bologna..... | 112,462 | 3,951 | 35.13 | 1,980 | 32.62 | Yes. | " | 1,510 | 3,128 |
| Messina*..... | 111,851 | 3,294 | 29.91 | 1,676 | 51.62 | Yes. | " | 1,862 | 4,367 |
| Leghorn..... | 97,096 | 3,046 | 31.37 | 1,275 | 41.85 | Yes. | " | 1,316 | 3,027 |
| Wlra, Russia..... | 77,188 | 2,362 | 30.60 | 1,047 | 44.31 | Yes. | By professional attendants and ecclesiastical records. | 1,272 | 2,197 |

* Including 14 surrounding villages.

VITAL STATISTICS OF AMERICAN AND FOREIGN CITIES COMPARED.—1873.

| CITY (FOREIGN). | Is registry of Marriages and of Births complete? | By what Percent- age Incomplete. | By what Methods certified and the Certificates collected? | Area of City. | What are the Present Sources and Modes of the Water-Supply? | From whom Information obtained (Name and Title). |
|----------------------------|--|-------------------------------------|--|-----------------------------|---|--|
| Dresden..... | Yes. | ..... | ..... | 27,500,000 sq. metres. | Springs and ponds. | Loranzo Frontano, U. S. Consul. |
| Frankfort-on-the-Main..... | Yes. | ..... | ..... | 6,248 hec'ts. | Three water-works. | Statistical Bureau. |
| Stuttgart..... | Yes. | ..... | Furnished to the registrar by ministers and priests. | 9,455 $\frac{1}{2}$ acres. | Pumps and wells for drinking-water; the river Neckar and lakes for water used for other purposes. | Erbert G. Summis, U. S. Consul. |
| Mayence..... | Yes. | ..... | ..... | 1 $\frac{1}{2}$ Ger. | Water-works and pumps. | Prentiss Webster, U. S. Consul. |
| Munich..... | Yes. | ..... | Physician, midwife, etc., notify chief of police. | ..... | Two water-companies supplying from springs eastward and southward from city; well-water is also used to great extent. | G. H. Horsdamm, U. S. Consul. |
| Basle..... | Yes. | ..... | Civil authorities. | 1,293 Jucl. 40 kilom. | Wells and water-works. | Dr. F. Mueller. |
| Lausanne..... | ..... | ..... | ..... | ..... | ..... | A. Michod. |
| Horisau..... | Yes. | ..... | By solemnization before the civil officer and clergyman, whose acts are registered in the presence of two witnesses. | ..... | ..... | G. Kruel, M. D., Actuary Health Department. |
| Rome..... | ..... | ..... | ..... | 14 kilom. | ..... | D. Silvagni, Director of Statistics. |
| Milan..... | Yes. | ..... | ..... | 7,019,200 sq. metres. | Wells. | Mayor. |
| Palermo..... | Yes. | ..... | ..... | ..... | ..... | ..... |
| Genoa..... | Yes. | ..... | ..... | ..... | Two aqueducts. | H. Sindaco. |
| Venice..... | Yes. | ..... | ..... | ..... | ..... | St. Sindaco, Pres. Giunta Comunale di Statistica. |
| Bologna..... | Yes. | ..... | ..... | 1,026 square kilometres. | Fountains and wells. | Jos. Pistone-Brignello, Chief Bureau of Statistics. |
| Messina*..... | Yes. | ..... | ..... | 756,500 metres. | ..... | L. Govi. |
| Lugliorn..... | Yes. | ..... | ..... | 4,447,200 metres. | ..... | ..... |
| Wilna, Russin..... | Yes. | Nearly complete. | By ecclesiastical and civil registers. | 4 sq. miles. | Tubular aqueducts from a highland stream; also, 450 wells. | Director of the Department of Statistics. |

* Including 41 surrounding villages.

ABSTRACT OF MEMORANDA ACCOMPANYING THE STATISTICS OF CITIES.

BERLIN AND OTHER GERMAN CITIES.—The statistics and correspondence which we have received from these cities are so voluminous and important, that no reduction from them as a whole is attempted for this abstract of the sanitary records of cities. With death-rates ranging from 30 to 45 per 1,000 inhabitants, the problems of public health-care are at present receiving great attention in the chief cities of Germany. The following abstract of the law relating to the records of mortality in the German states, as adopted in 1874, is important and instructive for American cities :

The Death-Registers.—Every death is to be reported to the magistrate of the district, at the latest, on the day following that on which the death occurred.

The duty of reporting the death devolves upon the head of the family (or the widow), or, if there is no such person, or if that person is unable so to report, upon the person in whose residence or house the death has occurred.

The provisions of sections 15-17 extend to the certificates of deaths in the same manner (stating the order in which persons are required to report, viz. : 1. Father legitimate. 2. Midwife. 3. Physician, etc., etc.). If there is an official investigation into the cause of death, the entry will be made on the written report of the respective authorities.

The registry of every death will contain: 1. Full name, occupation, and residence, of person reporting the case. 2. Locality, day, and hour of the death. 3. Full name, religious profession, age, occupation, residence, and place of birth of deceased. 4. Full name of husband or wife, or remark that deceased was a single person. 5. Full name, occupation, and residence of the parents of deceased.

Without permission of the local police authorities, no burial can take place before the entry of the death in the death-register has been made. If the burial has taken place contrary to this rule, the entry of the death can only be granted by permission of the superintending authority after ascertaining the facts.

Births and deaths occurring upon ships during a voyage must be entered by the person in command, in ship's daily journal, in presence of two officers of the ship, or two other creditable persons. In cases of death the supposed cause of death is also to be noted. The person commanding the ship will deliver two copies of the documents to the marine court, and he must do so at the earliest opportunity: one of these documents is to be kept at the marine court, the other to be sent to that magistrate in whose district the parents of the deceased person live, or have last resided, for entry upon the proper registry. If the captain of the ship is dead, the officer next in command will fulfill the obligations imposed upon the former. As soon as the ship has arrived at the domestic port in which it ends its trip, the daily journal is to be laid before the magistrate (proper authorities), of the port, and it will be their duty to send a certified copy of the case to the magistrate in whose district the case belongs, for entry.

Concerning Corrections of the Registers.—The correction of an entry in the civil registers can only be permitted by an order from the court.

The supervisory authorities will, if an application is made for a correction, or if it is considered necessary by the court, give a hearing to the persons concerned, and, when required, issue a notice in a public newspaper. They will, after the transactions have been closed, lay the documents before the court (as prescribed). The supervision of the labors of the civil officers in the rural districts devolves by act of December 13, 1872, upon the district council, and, on appeal, upon the district court. This court may demand additional testimony, and, when necessary, require the applicant to bring suit.

BASLE.—With one of the most industrious manufacturing populations in the world and ample water-supplies, this city has suffered severely from the scourge of typhoid fever which has repeatedly sprung into fatal activity, making the hospital, as well as the sanitary

topography of the city, most instructive fields for the study of causes and phenomena of this malady. Prof. Liebermeister and others have attained practical results in such study there. Dr. Fr. Müller, the chief medical officer, states to us in a letter that numerous public wells have repeatedly become sources of infection.

BOMBAY.—This city, until within a recent period renowned for insalubrity, and an enormous death-rate, has been so improved by sanitary drainage, water-supplies from the hills seventeen miles away, and by the public works and sanitary police of the local government, that its 700,000 people give an instructive example of the means which enable both native and European residents to live in India and not die. The subjugation of the local causes of epidemic cholera, dysentery, and malarial fevers, has been brought about by the simplest and most effective resources of sanitary engineering and public health care. The death-rate in Bombay, in 1873, was 24.31 per 1,000 of the living, and the rate has fallen considerably in 1874. The health-officer, Dr. J. S. Weir, states in a letter to us that the city occupies about 18½ square miles, and that the wells, which still remain too much in use in the city, are in most cases as impure as the *Vebne*, or mountain-water, is pure.

BRUSSELS.—The general spirit of good government in the kingdom of Belgium is particularly exemplified in its capital city. The following extracts, from a communication to us by the Inspector of the Sanitary Service and Chief of the Bureau of Hygiene, unfolds an admirable view of the public utility of sanitary inquiry and vital statistics:

“ . . . I take this occasion to present to you my respects, and also my thanks to the members of the Board of Health, for your kindness in sending the weekly reports of the different causes of death, and for your excellent annual reports upon the operations of the Board of Health of New York. I am happy to inform you that the Council of the Commune of Brussels, at its meeting of the 26th of May last, voted the creation of a Board of Health consisting of one inspector, one deputy inspector, five district physicians, and five assistant physicians.”

Plan of the Sanitary Service and Vital Statistics of the City of Brussels.—“ . . . The Medical Branch of the Civil Service shall be apportioned among physicians attached to the Bureau of Hygiene. . . .

“The inspector of the Health Department—the head of the Bureau of Hygiene, under the direction of the Fourth Administrative Division—has the direction and supervision of the medical branch of the Civil Service. In case of absence or inability to be on duty, he shall be replaced by the assistant inspector.

“In all matters relating to the proof of births and deaths, the physicians shall assume the title of ‘Physician of the Civil Service.’

“They must conform to the instructions which shall be given them by the officer of the Civil Service relating to this Bureau, and shall be vigilant in strictly carrying out the rules and regulations given below, which embrace certain sanitary measures ordered by the Bureau of Hygiene.

“No burial shall be allowed until after proof of the actual decease, by the district physician, by means of a full and careful examination of the dead body. This proof, as well as identification of the deceased, shall be certified upon a blank, which they shall leave at the house where the death occurred.

“If the condition of the body gives any indication of a violent death, or if their suspicions be aroused by any other circumstances, they shall immediately inform, in writing, the officer of the Civil Service, as well as the commissioner of Police District, empowered to hold an inquest, as prescribed by Art. 81 of the Civil Code.

“They shall, at the same time, forward to the last-mentioned the *procès-verbal* of the proof of death, stating that permission to inter cannot be given except by the authorization of the police; and they shall inform those empowered to make the declaration of death of the fact.

“They shall explain to the officer of the Civil Service and to the district commissioners of police the infringement of the laws which prohibit the laying out, autopsy, embalming, or placing of the body in a coffin before the death has been properly proved. They shall call the attention of the family to their obligation in this respect, and impress upon them the fact that, up to the moment of medical proof of the death, they should take the same care of the dead person as if it were a question of illness.

“The proof of death of those still-born or of tender age should demand still more careful examination, and their investigations should aid them in discovering induced abortions, criminal practices, homicides committed through imprudence, as well as the practice of the art of accouchment by those unauthorized. They shall convince themselves of the period of gesta-

tion of the child and shall indicate on their *procès-verbal* whether the child died before, during, or after delivery, and, in the latter case, how long it lived after birth.

"If they doubt the fact of the death, they shall prescribe, and also, without delay, make use of all the means science suggests, to endeavor to recall life; they shall immediately notify the attending physician and under no circumstances fill out the *procès-verbal* of proof until they have assured themselves of it by repeated visits if necessary.

"When a woman shall have died in an advanced stage of pregnancy, they shall advise the artificial delivery of the child, presumably still alive, and in the absence of an attending physician shall themselves operate if necessary.

"They shall be answerable for the results which may occasion premature burials. The same shall happen in case they shall have neglected to examine carefully whether the death be not the result of crime, or a violent death, or an accident demanding a search for the cause. If, after a physician of the Civil Service shall have pronounced a death real, the body shows signs of life, the physician can be removed from office without debarring the prosecutions provided for by law.

"In case of an epidemic, where the forced removal of dead bodies is ordered in a manner common to all, and at any time when the public health demands it, the physician shall order the removal of the dead bodies to a hospital or to a morgue; for this purpose they shall make a requisition which shall be sent to the director of the nearest hospital, or to the commissioner of the District Police, to cause the immediate removal of the dead body.

"When circumstances, for family reasons, shall demand the keeping of the body for a time exceeding that allowed by law, a special authorization shall be indispensable. This permission shall be granted only after a report from a physician of the Civil Service conformably therewith, expressing the reasons for the delay asked, and the sanitary precautions needed by the family.

"If, in the proving of the cause of death of a person, they shall discover any disease, epidemic, contagious or infectious, they shall immediately notify the inspector of the Health Department, and in conjunction with him shall prescribe all such measures as the public health demands.

"The medical treatment to which the deceased may have been subjected ought not to be made the cause of a critical judgment on their part.

"They shall cause a medical declaration to be made by the physician or midwife who attended the deceased, for the purpose of affixing it to the *procès-verbal* of proof.

"As the attending physician may have had cause for concealing from the relatives of the deceased the illness which caused the death, the physician of the Civil Service shall have the power to correct or complete the diagnosis of the cause of death.

"The corrected medical declaration shall be sent by them directly to the Hôtel-de-Ville. The *procès-verbal* sent to the relatives shall show no other cause of death than that stated by the attending physician, and the number corresponding to the table of diseases inserted in the official circular of the 19th of September, 1866, and reproduced on the back of the blanks for declaration given to all practitioners of the city by the kindness of the Administration Communale.

"They shall supply any want or inexactitude in the declaration of the attending physician and give with care the number corresponding to the above-mentioned nomenclature of diseases.

"The declaration of the birth of a child shall be received and recorded by the officer of the Civil Service only upon the production of the certificate, stating that the appointed physician is assured of the identity and sex of the newly-born.

"When one of the physicians of the Civil Service shall have attended at a death or an accouchement, he shall send without delay to the assistant physician a blank of the *procès-verbal*, with reasons for his inability to serve in a marginal note, with the request that he shall proceed to the proving of the birth or death to which it refers.

"When, by reason of accidental absence or by illness, the district physicians shall find themselves obliged to leave their posts, they shall at once inform the officer of the Civil Service as well as the inspector of Health Department of the fact.

"This last-mentioned person shall immediately notify the assistant physician who is authorized to replace the officer absent, whether from inability or illness.

"The physicians shall take to or cause to be deposited at the Bureau of Hygiene the notices of births or deaths every day, between three and four o'clock in the afternoon, and on Sundays and *fête*-days between ten and eleven o'clock in the morning. The notices which shall not have been deposited shall be left under cover with the *concierge*.

"If no report regarding their district shall have been received during the day, a negative statement shall be forwarded to them. Any physician, who, by mistake, shall receive one or more notices not pertaining to his district, shall forward them at once to the person for whom they are intended. He shall send at once to the chief of the first division every irregular or incomplete report.

"The proof of death should take place on the morning following before ten o'clock at

the latest, that the blanks of verification may be returned, by those interested, to the Hôtel-de-Ville at noon, the hour at which burial-permits are given to the sextons who are authorized to dig graves and affix at the house the number on the coffin.

"On Sundays and *fête*-days all deaths should be proved before nine o'clock, to allow those interested to come to the Hôtel-de-Ville before the hour of closing the Bureau, which takes place at ten o'clock in the morning.

"The limit of time established above for proof of death shall be equally followed in the proof of births, Sundays and *fête*-days excepted.

"The physicians should, moreover, keep an account of the time elapsed since the birth, that the declaration may be made within the three days (the day of birth not reckoned), as Art. 55 of the Civil Code demands.

"Every proof marked 'In haste' should be made at once, or within the time stated in the notice.

"After verification and proof, the physicians should send their blanks properly filled up to the person empowered to make the declaration.

"They shall request them to go at once to the Hôtel-de-Ville, and shall explain particularly to the ignorant the duties still remaining to be performed, as are stated in French and Flemish at the bottom of the blank.

"They shall dwell particularly on the final article of the regulations mentioned in the previous article, and shall emphasize the necessity for producing authentic papers to establish the identity and confirm the place of residence. They should remind them that, in default of these documents, a declaration should be made by those relatives, friends, or neighbors, who are able to give the information required by the Civil Code.

"If by virtue of a requisition, or on demand of the parents, they have proved a death not reported at the Hôtel-de-Ville, they shall leave a blank properly filled out, at the residence of the deceased, and shall immediately give notice thereof at the Bureau of Deaths.

"The power of the physicians of the Civil Service is limited to the territory of Brussels: if it happens that a newly-born child or a dead body be removed beyond the town before the legal proving, they shall immediately notify the officer of the Civil Service. They will perhaps be of use to him in that they may furnish proof of births or deaths which may suddenly occur in other communities.

"Independently of the daily or weekly reports addressed to the Inspector of the Medical Branch of the Civil Service, regarding special cases, the authorized physicians shall, at the end of each six months, make out a general report regarding the facts pertaining to the service which they are intrusted with, and which would seem to be of a character to interest the government, justice, science, or humanity.

"The medical inspector charged with the direction of the Bureau of Hygiene and with the supervision of the Medical Branch of the Civil Service, shall receive daily for proof the minutes of the births and deaths (Art. 25). These minutes shall be accompanied by two blanks which he shall return to the officer of the Civil Service, properly commented upon in marginal notes.

"He shall transmit to him, during the first fortnight of each six months, a report making a *résumé* of the daily and biennial observations of the physicians of the Civil Service relating to the proofs of births and deaths, and shall immediately advise him of every obstacle to the service, or any forgetfulness of or inattention to the present instructions."

EDINBURGH.—Few cities present so normal a relationship and equipoise in the records of births, marriages, and deaths, as we witness in the Scotch metropolis: the death-rate, 21.97 per 1,000; birth-rate, 32.57 per 1,000; marriage-rate, 18.82 persons per 1,000. With pure and ample water-supplies from the Pentland Hills, with a vigilant sanitary police, and great improvements in the dwellings of the poor, and with abattoirs removed quite outside the built-up districts, Edinburgh has become one of the securest places for human life and health in the world; yet each year with the first onset of hot weather the poor and crowded portions of the population suffer for a few weeks a heavy mortality.

DRESDEN.—The two facts most conspicuously associated with the excessive death-rate (35.33 per 1,000), in Dresden, relate to the excessive birth-rate, and the proportionate mortality of children, and to the nature of water-supplies in this city. The following information is communicated by our correspondent in the city:

"In regard to the water-supply, I desire to say that the present sources and modes of supply are very defective and inadequate. The city of Dresden is divided into two parts, the 'Altstadt' (old city), and the 'Neustadt' (new city), the river Elbe being the dividing line. The old city receives its water-supply partly from the 'holy springs' (Heiligenbrunnen),

and partly from a brook called the Weisseritz. The water from the holy springs, which is of good quality, and is supplied by means of an aqueduct of some three miles, supplies only the royal castle and a small number of buildings. The water coming from the Weisseritz is what we would call a nuisance, the Weisseritz being contaminated by the refuse of many manufacturing establishments which have of late sprung up in its neighborhood. The new city receives its water-supply from a small pond called the 'Oberfischmannsteich,' but the supply is inadequate to the wants of that part of the city.

"Under these circumstances the city authorities resolved upon the erection of extensive water-works, which are erected on the right bank of the Elbe. These works are nearly finished, the mains are all laid throughout the city, and it is asserted that early in spring there will be a full supply of good and healthy water taken from the underground water, collected on the banks of the Elbe."

MUNICH.—The excessive death-rate in this city is associated with a special fault in the management of cloacal nuisances, most of the dwellings having an indoor compartment or shaft used for privy purposes, without adequate water-flushing. Hon. G. H. Horstman, the United States Consul-General, writes :

" . . . Total number of deaths in Munich during the year 1873 (exclusive of 275 still-born) was 7,705. Total number of deaths under five years of age, 3,864. The registry of deaths is complete; a notice of every death must be given to the police-office by attending physician, by undertaker, by superintendent of cemetery."

" . . . The extent of area of the city I am not able to give accurately. The city is very open, spread over a greater surface in proportion to its population than almost any other European city. There are two water-supplies, one at the east and one at the south of the city, both of spring-water, led into the city through iron pipes; pump-water is also used to a great extent."

The persistence of malignant cholera in Munich throughout the last half of the year 1873, and through the winter of 1874, is an instructive event. It is associated with the particular fault just mentioned concerning its cloacal filth, as well as with the perilous exposure of some of the supplies of drinking-water which receive surface soakage. The endemic conditions which Prof. Pettenkofer and Buhl have described in connection with the fluctuations and phenomena of the subsoil water, or saturation level of the ground-water, seem to hold relations of a factor in the general cause of enteric fever ("abdominal typhus"), and the Asiatic cholera in Munich. The cloacal filth and soakage may be an equally essential factor of causation of those maladies. Another and most conspicuous source of mortality in Munich, as in most other large cities of the Continent of Europe, is found in the causes and the enormous ratio of death in the newly-born infants. Munich (in 1874) buried 3,243 infants under a year old, out of an annual total of 7,868 births. The Bureau of Statistics of that city exhibits the fact that 2,897 out of the 3,243 of these young infants (exclusive of still-births) who perished were not nourished upon the mother's breast ("ohne die Mutterbrust"), while only 269 infants under a year old nourished on the mother's breast ("an der Mutterbrust") were entered in the lists of mortality; that is 90.70 per cent. of all the infants that perished, being under one year of age, were not nourished by their mother.

HAVANA, CUBA.—The land-locked harbor of Havana is becoming less the habitat of perpetual pestilence than it formerly was. The death-rate for the year 1873 was 37.76 per 1,000 inhabitants, whereas but a few years ago it was nearly double this ratio. Grading and paving of streets and the introduction of improved water-supplies contribute to this result.

HONOLULU AND THE HAWAIIAN ISLANDS.—By the courtesy of Hon. A. L. Green, the Hawaiian Minister of the Interior, and of Hon. H. A. Pierce, United States Consul, the following instructive facts are communicated :

In a population of 14,852 in Honolulu, there were 1,639 deaths in the year 1873. This death-rate, 117 in 1,000, has occurred in the midst of small-pox, constitutional syphilis, the diseases and casualties of seamen, and the leprosy and other destructive kinds of harm which have befallen the naturally favored Sandwich-Islanders. There were 286 more deaths than births in the capital city during the year, and after the national Government and its Board began to gather in the accounts of mortality and the chief causes of its excess, it has

been the duty of the Board to report to the Government the fact that leprosy has been on a steady increase, and will soon destroy the last of the Hawaiians, "if the energetic measures formerly noted by your honorable body are not carried out." The same authority also reported to the Government in 1873 that "syphilis may be considered as the most important cause of depopulation, and as one of the predisposing causes to leprosy." Thus upon the very ground that religion was about to win its signal trophies, the march of disease planted by immorality and sins against Nature threatens to exterminate, after degrading an entire people. That terrible example will yet be influential upon the civilized world. It affords a complete argument for the defensive and preventive measures of sanitary acts for cities and maritime towns.

The city of Honolulu and various smaller towns were visited by small-pox in 1872. The health-officer was clothed with ample authority to give hospital care, and vaccinate and re-vaccinate. After three months he reported the contagion exterminated, and the people protected, at a cost of only \$5,715. The effectual organization of that sanitary service was remarkable for its completeness in all respects.

The leprosy of the Hawaiians may never afflict any American city, yet its ravages are instructive and terrible. At the end of March, 1874, there remained 703 lepers in the asylum at Molokai, and 537 in the leper-hospital at Kalihi.

LIVERPOOL.—In this city the causes which produce excessive death-rates in particular quarters and in the poorer classes seem to be nearly identical with those witnessed in New York. In a population of 505,200, Liverpool had 13,042 deaths and 18,716 births. The ratio of its child-population is large, and this contributes to the high death-rate. The compactly built portion of the city, the "parish" of Liverpool, contains half of the population of the borough. The death-rate in the parish, in 1873, was 30.02 per 1,000 of the living; in the outer rim of towns it was 22, and in the whole borough 25.8 per 1,000. In its wards known as Vauxhall, St. Anne, and Scotland, the mortality of infants under 5 years of age is enormous, being in the ward last mentioned, 59.1 per cent. of the total. With a population of 505,200 in the parish alone, Liverpool in 1873 gave public alms or parochial relief to upwards of 8,000 persons daily. In the parish there were, at the end of the year, 1,007 registered lodging-houses, and 10,162 sub-let houses for the poor; 1,377 houses were officially cleansed and disinfected, and 33,684 articles were sent to the public disinfecting-chamber during the year. In no other city in the world is it more true that unceasing sanitary vigilance is the price of protection to the public health. The United States, and New York especially, may justly contemplate with interest the sanitary situation of Liverpool and the vigilance of its medical officers of health, for it is the most important port of departure for emigrants in the world.

LONDON.—This most populous metropolis in the world has from sheer necessity adopted such sanitary regulations and other measures in the nature of civil police surveillance, as three centuries of pestilence and epidemics compelled her enlightened classes to frame into the machinery of the government. The low death-rate in this great city in 1872 and 1873, and for the past fifteen years, is evidence of the vast utility of the improvement in the sanitary government of the city, and the physical conditions of the daily life of the masses of the people. The death-rate in London in 1872 was only $21\frac{1}{2}$ per 1,000 inhabitants, and in 1873 it was $22\frac{1}{2}$ per 1,000. The average density of population is not as great in London as in New York, the average rate of distribution being 42 persons to the acre in the former city, whereas in New York the rate of resident population from the Battery to Fourteenth Street was found by the census in 1870 to be equal to 206 per acre, inclusive of all the smaller parks, the avenues, and the commercial district. The financial ability of London to provide the most efficient sanitary works and municipal government is shown by the fact that the estimated income of its inhabitants in 1873 was £140,000,000 or \$700,000,000; while the taxes (rates) for government support, exclusive of county rates, amounted to upward of £3,353,710 or \$16,768,550.

Children under five years of age in London constitute 12.98 per cent. of the total population. This is one in the 1,000 more than in New York; 41.48 per cent. of the total mortality in London is of children under five years of age, against 48.76 per cent. of mortality at this age in New York. But London has an equable climate, its hottest week of summer (in 1873) having a mean temperature of 68.8°, and its coldest in winter being only 32.9°. The most important comment which the Registrar of Vital Statistics in London makes concerning the decreasing death-rate there during the past ten years is as follows: "It is a general law that the mortality *increases with the density*; and this would, no doubt, have been observed in London, had it not been for the increased purity of the water-supply, the new system of drainage . . . and some improvement in the most important condition of life-lodging."

London has a public water-supply which, in 1873, was distributed by eight corporations to 504,193 houses, at the rate of 18½ gallons to each house daily, or to the metropolis at the daily rate of 113,183,890 gallons. The parks of London now comprise 5,925 acres, over 4,000 acres of these public grounds being on the exterior of the city, beyond the registration district. These parks, the facilities for rapid transit, the improved housing of the London poor, and a good sanitary police, give to this great city peculiar advantages.

MEXICO.—The death-rate of this city is only a little greater than that of New York. Its great altitude (7,500 feet above the tide-level) and its excellent supply of good water, and the most wholesome fruits, must become associated with a death-rate 50 per cent. lower than is now suffered by the population of Mexico. It is noticeable that the extraordinary birth-rate (41.21 per 1,000 inhabitants) is not indicative of the most healthful condition of such a population. It is associated with social circumstances of a low state of civilization, and with constitutional defects of the parentage in a multitude of instances. Mexico has the mean temperature of Rome, about 60° Fahr. for the year.

NEWCASTLE-UPON-TYNE.—Like Liverpool, this is one of the cities of England which always has a high death-rate. In 1873 the city reported its rate at 80.1 per 1,000. Predominance of poor and ignorant population and an enormous birth-rate are in this city associated with fatal miasmatic diseases which produced nearly 25 per cent. of the total mortality.

VALPARAISO.—The records of mortality of this city indicate serious defects in the sanitary provisions for life and health. Notwithstanding Nature's lavish gifts of a naturally salubrious climate and rich and healthful fruits of the earth, the annual death-rate is between 60 and 70 in every 1,000 inhabitants. The very narrow and rock-bound water-front appears to operate as a barrier against salubrious conditions, and to furnish the local embarrassments which induce epidemics and generally impair the chances of life. The enormous birth-rate, 50.39 to every 1,000 inhabitants annually, must be taken into account as one of the essential circumstances contributing to the excessive death-rate in this city. Another circumstance which has always militated against the healthfulness of Valparaiso is the inadequate water-supply; depending upon surface-wells and springs, the inhabitants have suffered from the filth-soakage of such supplies; but efforts are now being made to provide drinking-water for the population by means of an aqueduct that shall bring the waters from a mountain-lake. It is worthy of note that the Pacific coast cities of South America are not favored with an adequate supply of the best nutritious fruits.

VERA CRUZ, MEXICO.—The excessive mortality in this city is largely due to the endemic fevers and bowel-diseases which have for a century been the worst enemies to its commercial and social welfare. Its present death-rate is far less than it was previous to the introduction of wholesome water-supplies.

VIENNA.—The excessive death-rate during the year 1873 in this city was in part due to the fatal prevalence of cholera and still more to the exceedingly bad water-supply. The latter evil was terminated by the introduction of the grand supply of the purest mountain-water at the end of the year (1873). There is not on record a more impressive proof of the

sanitary value of adequate and pure water-supplies for a city than this which the Austrian capital presents, for in the year 1874 the death-rate has been diminished nearly 50 per cent. by the absence of diarrhoeal and intestinal maladies.

BOSTON, MASS.—This city now comprises the five cities and the areas mentioned in the following, from the City Registrar, N. A. Apollonio, Esq.:

. . . . "Boston comprises at this time—

| | |
|-----------------------|--------------|
| 1. Boston proper..... | 1,570 acres. |
| 2. South Boston..... | 900 " |
| 3. East Boston..... | 1,585 " |
| 4. Dorchester..... | 4,533 " |
| 5. Roxbury..... | 2,100 " |

Total..... 10,688 acres.

Since January, 1874, Charlestown, Brighton, and West Roxbury, have become a part of Boston. These, of course, do not appear in the statistics of Boston. The area of these three is:

| | |
|-------------------|--------------|
| West Roxbury..... | 8,000 acres. |
| Brighton..... | 3,000 " |
| Charlestown..... | 600 " |

Total..... 11,600

Boston, therefore, now embraces an area of 22,288 acres."

BALTIMORE.—For a city of such magnitude, and without sewers or systematic drainage, Baltimore has a favorable rate of mortality. It suffers more than New York from fevers. Its colored inhabitants comprised 10.5 per cent. of the total population. The proportion of children is larger than in New York, but the rate of mortality among those under five years of age is only from 31 to 35 per cent. of the total for all ages.

BURLINGTON, VT.—This city, which in two wars became conspicuous for the rapid convalescence of great numbers of military patients in its temporary hospitals, is equally distinguished for its remarkably small death-rate, probably as small a rate as any town in the United States; 12.66 per 1,000 inhabitants was the death-rate in 1873.

CHICAGO.—The rate of infant mortality in this city exceeds that in New York; but, for the ages past the fifth year of life, the recent death-rates of Chicago are but little more than half as high as they were before drainage and water-supplies were introduced. Various endemic diseases, especially those attended with dysentery, erysipelas, and malarial dyscrasia, have nearly disappeared in that city since the improvements in drainage, cleansing, and water-supply.

GLOUCESTER, MASS.—The death-rate in this little city of fishermen and coasting tradesmen is 18.47 per 1,000, more than 35 per cent. of which was caused by casualties at sea. It is desirable that the deaths of seamen and voyagers should be registered in the city or town in which they have obtained a legal residence, and this mention of Gloucester is made to illustrate a duty which New York should no longer neglect. Complete records of the deaths at sea should be preserved concerning the inhabitants of any town or city where they perish thus away from their nominal homes.¹

LOWELL, MASS.—The 50,000 inhabitants of Lowell, half of them being employés of the cotton and woolen mills of that city, suffer a death-rate nearly twice as great as that which prevails in the city of Burlington, Vt. The birth-rate and infant population of Lowell are so very small as to be remarkable, but the marriage-rate is twice that of the best towns in Scotland.

¹ See the item of Registration Law, on this point, in note on the new laws of the German Empire, page 330, *ante*.

MEMPHIS.—The Board of Health frankly states the causes which permitted yellow fever to become an epidemic in that city in the autumn of 1873. It is the old and oft-repeated record of neglected plague-spots and the absence of adequate sanitary police authority when danger threatens. Naturally this is one of the most salubrious cities on the banks of the Mississippi south of St. Louis, and its death-rate, under ordinary circumstances, should not exceed 28 or 29 per 1,000 inhabitants, but in the presence of yellow fever the ratio of mortality was increased more than tenfold during the autumn, for that disease attacked one-fourth of all the inhabitants which remained in the city, and more than one in four of the sick died. August 10th, a river steamboat from New Orleans, with yellow fever on board, hauled up along shore, and put a dying patient and his "kit" into the cabin of a poor Irishman, in the low and filthy place by the river-side before mentioned. The poor population in that infected cabin soon sickened and died, and thence the pest swept along, house by house and street by street, up the hill-side and through the lowest grounds, and by the ravines and streams it swept most fatally, until November 20th, destroying 1,500 lives in that half of the 40,000 inhabitants who did not flee.

NEW ORLEANS, LA.—This great city comprises eighteen square miles. Its most unhealthy district, the Third, is being redeemed and made salubrious by the systematic drainage of the vast swampy area. The death-rate, 37.52 per 1,000 inhabitants, fluctuates from 30 per 1,000 in February, to 60, 70, and even 78 per 1,000 in September. The questions upon which the prevention of epidemics and excessive mortality depend are being successfully solved in New Orleans, by the extension of its drainage-system and the increased efficiency of the municipal and State Boards of Health. The experience of the past ten years, and most conspicuously that of 1873, seems to indicate that New Orleans can be protected from the pestilential ravages of yellow fever. Its most destructive zymotic diseases in 1873 were: small-pox, with 505 deaths; cholera, with 241; and yellow fever, with 226 deaths. Exclusive of these three diseases, the death-rate for the year was 31.72 per 1,000 living, and, with these 972 deaths added, the rate was 37.05 per 1,000. The death-rate in the city, in the five years from 1856-1860, was 46.3 per 1,000 annually.

NEW HAVEN.—The dependence upon surface-wells for the water-supply in a large degree, the imperfectly sewered streets, and the defective common drainage of the ten square miles occupied by this city and town, cause a death-rate 25 per cent. greater than New Haven has any natural necessity for enduring. It can readily be made one of the most healthful cities in the world.

PHILADELPHIA.—Its 750,000 inhabitants, distributed upon 122 square miles, and enjoying facilities for separate domiciles and the best of food-supplies, have a uniformly lower death-rate than the other large commercial cities upon the Atlantic coast. The census of 1870 found the 127,746 families of that city dwelling in 112,266 houses, averaging only six persons in each house, while in New York the average number of persons in each dwelling was nearly fifteen (14.72). Philadelphia is enjoying the peculiar advantage of unrestricted distribution of all classes—especially of the poorer classes of the population, where good dwellings are to be had on easy terms. The middle and poorer classes of inhabitants are enabled to reside in good separate dwelling-houses at about half the cost which the same classes have to expend for an equal amount of floor-area and but a tenth part of the amount of ground in the city of New York.

PITTSBURG.—With its enormous child-population, with the excessive toil of its iron-workers, and with kinds of tenements and lodgings often unwholesome, this city of iron industries suffers a death-rate which calls for sanitary interference. It has an active Health-Officer under its municipal government. *Alleghany City*, upon the opposite side of the river, is the twin-sister of Pittsburg, but its rate of mortality is much less than that of the latter city, though the infants of both cities perish at an equally enormous rate, namely, 50 to 60 per cent. of the total mortality being of children under five years of age.

PROVIDENCE, R. I.—A very accurate census of this city was taken May 1, 1874, and it showed that 99,608 was at that date the number of its inhabitants. The death-rate, estimated on 99,000 inhabitants, for the year 1873, was 17.36 per 1,000. Twenty years of faithful sanitary supervision have produced such beneficial results on the public health in Providence as no other manufacturing city in America has enjoyed. The death-rate in this city is steadily less than 20 per 1,000; public and private vaccination, and a thorough watchfulness against local sources of disease, are duties constantly enforced by precept and example of the Sanitary Superintendent and Registrar.

RICHMOND, VA.—The built-up portion of this city covers about three square miles. The census of population, which was taken in February, found a total of 60,705, of which 33,492 are whites, and 27,213 are colored. The death-rate in the latter class is nearly double that of the white population, hence the death-rate of the city as a whole appears to be high (33.55 per 1,000). The elevation and grades of the ground upon which the city is built, and the facility it enjoys for securing unlimited water-supplies from the James River, will secure its future salubrity, for the present high death-rate is owing to social and local circumstances of its poor classes which are being faithfully dealt with by the sanitary authorities.

SAVANNAH.—This fair city has grown more and more salubrious since the "wet culture" of its neighboring rice-fields has given place to dry culture. Its present death-rate (43 per 1,000) may yet be reduced to 23 per 1,000, when the paludal and yellow fevers cease to vex the inhabitants. The plateau of the city comprises four square miles.

SAN ANTONIO.—The low rate of mortality in that portion of the population under five years of age, as well as at all ages, in this midland city of Germanic families in Texas, is associated with high social culture, and one of the purest water-supplies in the world. The mean temperature of the year is 67.22° Fahr., the mean for July being below 82°, and that for January being nearly 50°. This city represents a district which scarcely any other portion of the world can excel for salubrity when cultivated, and upon which many millions can find ample food-supplies.

WASHINGTON AND THE DISTRICT OF COLUMBIA.—The national capital, and the several towns which constitute the District, contain a population estimated at 140,000. The 3,453 deaths registered in the year 1873 present its death-rate as being much higher than in 1872. In the latter year the records of the District Board of Health showed the rate of mortality to be only 18.6 per 1,000 inhabitants. The prevalence of small-pox, and unusual mortality among the colored population, increased the death-rate, yet it did not exceed 20 in the 1,000. The secretary of the District Board estimates the rate at 19.31 per 1,000, a fact that is in evidence of the salubrity of the locality.

WHEELING.—The sanitary history of this city is worthy of the efforts which have secured for it a more efficient care of the public health than is usual in cities of its limited size and wealth. Its death-rate is now steadily below 18 per 1,000, and less than 40 per cent. of it is from the mortality of children.

American Cities that have High Death-Rates.—Vera Cruz is notably the most unhealthful city in America. It is the special habitat of yellow fever, and perhaps the only one upon the main coast of North America. The greatest defect in the sanitary police, of the city is said to consist in the everywhere present outflowings from the population, until the city itself partakes of the nature and odors of a vast *latrine*.

Omitting any description of the South American cities, we pass to New Orleans, Vicksburg, Memphis, Mobile, Savannah, and Charleston, for the example of exceptionally excessive death-rates. The share which yellow fever had in the high death-rates in these six cities in 1873 was not large, except in Memphis, where 1,500 perished out of a nominal population of about 40,000 (the actual number of inhabitants who did not flee during the epidemic was

about 20,000). But, excepting in times of epidemics, the death-rate in Memphis is not as great as in the other five cities of this group.

New York, Boston, Brooklyn, Newark, Jersey City, Norfolk, and Richmond, suffer an enormous infant mortality, and, as that excess is largely among the poor and badly-housed classes, and as it is complicated with all the other unhygienic conditions which hold human life, especially the life and health of infants and mothers, at a disadvantage in these cities, the spectre of these destroyers will not down at the first commands of public health Boards. In each of these seven cities, with average rates ranging from 28 to 30 in the 1,000 living inhabitants, the unhygienic and faulty domestic circumstances of that half of the city populations termed the laboring-classes cause the excessive death-rates.

Certain Cities with Low Death-Rates.—The following are distinguished for great natural salubrity and low rates of mortality: Burlington, Vt., with altitude, natural drainage, and an unlimited supply of pure lake-water, affording unusually favorable sanitary conditions for the city. Hartford, Conn., with all the means of healthy living which natural and improved salubrity of site, separate family dwelling-houses, and general education and culture afford, has only a rural community's death-rate, and is experiencing the great benefit of a reduced mortality from phthisis, only about 16 in 10,000 of its inhabitants falling annually by this disease.

POUGHKEEPSIE.—The low rate of mortality is attributable to the like causes which operate in favor of Hartford.

PROVIDENCE, R. I.—The death-rate only 17.26 per 1,000, and the diminished mortality from phthisis, 23 in 10,000 living inhabitants, are among the good results of twenty years of an enlightened administration of sanitary duties, and the inculcation of popular knowledge relating to them. These are the more noticeable and significant, because the city is conspicuously devoted to manufactures, and would suffer a high death-rate if not eminently well governed.

Wheeling, W. Va., Rochester, Watertown, and Elmira, N. Y., Cleveland and Dayton, O., Evansville, Ind., St. Paul, Minn., and several of the cities of California, enjoy, when unvexed by infectious epidemics, the low death-rates of the best rural villages, and without exception the ratio of phthisis mortality corresponds with and in part accounts for the low death-rates. San Francisco, Oakland, and Stockton, suffer a rate of mortality only half as great as certain cities of like magnitude in the Southern States, and, notwithstanding the severity of prevailing winds along the Pacific coast, the ratio of deaths from phthisis is only half as great *pro rata* to total population as it is in certain cities in Maine. The climates and local salubrity of the regions in which these low death-rates occur are worthy subjects of sanitary study.

The annual review of the Vital Statistics of New York presents instructive contrasts and receives useful light at various points in the comparison of sanitary experience of the several cities enumerated in the preceding pages. The third city in rank in the civilized world as respects the number and density of its population, and the first in rank in respect of its maritime commerce, and the numbers of foreign immigrants daily arriving, New York has a sanitary experience which needs to be studied in the light of these facts in order to correctly understand its vital statistics. Among all the cities New York has, perhaps, the most important peculiarities as regards its massing, commingling, and the modes of housing of

inhabitants. Only in St. Petersburg, Berlin, Constantinople, Glasgow, Liverpool, and London, are these sanitary and social circumstances so analogous as to present a striking similarity in respect of the chief peculiarities of their death-rates; and in the comparison of these large cities, London has the great advantage of being now thoroughly drained, systematically policed, and of having its vast population self-contained, and employed, and distributed over an area of one hundred and twenty-two square miles, in a climate that is not vexed with sudden accessions of tropical heat nor of arctic cold. Yet with some disadvantages of mid-summer intemperature New York is becoming a healthful city, and, with due allowance for the tenement-house class and the unemployed poor, the sickness and death-rates of our city population compare favorably with those of any other city of similar magnitude. Unlike Paris, Rome, Frankfort-on-the-Main, and numerous European cities, the young infants for which charity and hired nursing provide, in New York are retained in the city, and not sent to the suburban villages; and, unlike most of the great capitals of the world, New York retains a vastly greater number of poor and dependent persons than can be employed or even be induced and enabled to live healthfully.

In this report the more important facts relating to the sanitary circumstances which influence the causes and ratios of mortality in the city are stated with as much correctness and completeness as possible. The sources of destructive diseases and premature deaths in such a city are always numerous, and many of the causes of such waste of life would be excessively active in such a population as this in New York, even under vastly improved domestic and social conditions. Yet human life is certainly becoming more and more secure in our midst, under the improved care and works for the protection of the public health, aided by popular diffusion of sanitary knowledge.

The life and health of useful and active classes of inhabitants attain very high value in this city. The expert members of professional and skilled vocations exert a great influence and receive large rewards in useful labors in the city; but the diseased, the unworthy, and the incapable members of the community become excessively burdensome. Hygiene will have to be invoked for its most comprehensive and effectual agency and all its recuperative and physiological resources to elevate the unfortunate classes, and prevent such an aggregation of misery and disease in the city. The sanitary improvements which shall finally secure health and a fair chance of life to the children of the humble classes will yet more greatly enhance the sanitary defenses of the rich and the favored classes generally. The demands of commerce and public affairs bring to the city vast numbers of the most highly-valued lives, and nothing is more true than that every year or month added to or taken from the probability of this commercially estimated value of such lives must, in the aggregate, have a vast cash value, and a social value that is still greater than the commercial. These

values are a hundred-fold greater than the total money expenditures upon the sanitary duties and improvements by which the highest security to life is purchased.

In a fair analysis of the causes and circumstances of all deaths which are registered in this city during the last eight years, it is apparent that a decided gain is at last being made in the security of human life in the city for its adolescent and middle periods; also, that there appears to be a beginning of increased security to the first year or two of infancy. The statistical abstracts in the preceding sections of this report present some of the evidence on this subject. During these past eight or nine years, the duty and means of making the tenements and all the dwellings in this city healthful for infants and families have been brought to the attention of the people, and have been to some degree successfully enforced where such means of health were most neglected. Vaccination has been freely offered to the inhabitants in five successive years. Cleansing and disinfectants, the abundant use of water, the drainage, drying and renovation of premises and open grounds, the ventilation and general sanitary improvement of tenements, the prompt and methodical hygienic care in guarding against contagious diseases, and generally the sanitary forethought and supervision respecting the prevention of local causes of disease, have received definite and watchful attention from the Health Department. The sacredness of human life, and the duty of protection against avoidable diseases and bodily injuries, are more and more appreciated by the city population. Even the formal administration of public charity has begun to be directed upon the principle of saving and preventing from the diseases and incapacities of pauperism; and this principle is at last being illustrated upon a large scale in the provisions which public and private charities have organized for the care of homeless infants and neglected children. The tenfold increase of expenditure in care and cost to save and give healthy and vigorous life in these, which only a few years ago were so neglected that ninety per cent. of them perished before their first birth-day, is a reform which the popular voice sustains. The sanitary want and inhuman neglect which until within a few years almost equaled the heathen practices of the "*tentator infantum*" at the cave of Taygetus, have nearly ceased, and the people see that by the same causes which cut off the children of poverty and misfortune, "many of the strongest children are wounded and left weakly for life."¹

The specific and formal care given by the sanitary authorities to protect the health, life, and welfare of all classes of the living, and to investigate, and as far as practicable diminish the causes of death, not only has given increased security to life and health, but has begun at last to produce the reflex influences in the community which lead to sanitary inquiry and self-

¹ Letter of Dr. Wm. Farr, supplementary volume, Twenty-fifth Report of the Registrar General of England.

care, and to a cheerful submission to sanitary regulations and the discharge of obligations which promote the public health. First of all, the practitioners of medicine have given a cordial and large support to the sanitary service and the registration duties of the Health Department. They have encouraged and greatly aided the duty of general vaccination and re-vaccination; they have cheerfully continued to report the cases and circumstances of contagious and local diseases, and their certificates and records of causes of death are rendered with such carefulness that they contribute largely to sanitary knowledge, and directly to the means for benefiting the public health. The localized and endemic causes of disease are regarded now with some degree of rational concern, and the variable and particularly fatal characteristics of the various prevailing diseases are studied more carefully than they formerly were with reference to causes and preventive agencies. Hospital and institutional hygiene has become a matter of public concern, and the medical attendants and governing boards of the hospitals and other charitable institutions are faithfully devising and introducing hygienic improvements. Even the foundlings receive such care as saves more than five times as large a proportion of their lives as was saved ten or twelve years ago. Unworthy classes that crowd the institutions of public correction receive sanitary care which until recently was unusual; and, by the enlightened provision of the United States Treasury Department, the sick seamen in this city are promptly and fully attended to by the Marine Hospital service. The two great nurseries and asylums for homeless infants have established rural cottage-houses, where the infants may live and not die. A Home for Incurables, and the House of Rest for Consumptives, have begun a beneficial work, for such sufferers as their inmates are, in the northern wards of this city; while the organized and voluntary methods of eleemosynary aid have begun to be administered with a rational regard for the encouragement of self-care, and the dispersion of all voluntary paupers. The frequency of infanticide and of the newly-born found dead has greatly diminished with improved care of homeless mothers and their infants. Deaths from drowning have decreased since the institution of the rescue apparatus and stations by the Health Department. Fatal accidents from cars and other vehicles have become less frequent since sanitary advice and authority began to be exercised to prevent them. The effectual removal of nuisances, and the regulation of offensive and offensively-conducted trades, the extensive works of deep drainage of saturated ground, the great improvement in local sewerage and house-drainage, and especially the ventilation of the chief portion of all the old, and the improved arrangements for ventilating the new tenement-dwellings, and the larger improvement which is witnessed in the supervision and proprietary care of the tenement-houses, are now contributing to the protection of human life, and the safe guarding of health, in a manner worthy of the people.

Steadily, yet quite certainly, the ratio of mortality from numerous

diseases, and in the most valued classes and important periods of life, will decrease. The least favored and most negligent and poor classes suffer many evils which officially directed sanitary improvements cannot immediately remove or mitigate; and among them there will continue to be a high death-rate until the material, social, and moral forces of society are more earnestly invoked by them and all who would help them.

In the summaries of the registered causes of mortality for the year, and in the comparison of the records of eight years as presented in this report, may be found much to sustain the hope that the gains which already are apparent in the saving of life and the protection of the public health can be greatly exceeded in the next succeeding years. Such increase and substantial gain to human life and health will necessarily depend largely upon the increased general knowledge and interest concerning domestic and personal hygiene among the people. Increased vigilance and supervision by the sanitary authorities must be sustained by such popular knowledge. Even in the common and higher schools the truths of physiology and hygiene should be carefully taught as indispensable elements of common education. The duty and intention as well as the means of living healthfully distinguish the higher civilization of our times, and they constitute an integral force in it. While entailment of disease, defective bodily organization, impaired vigor and vitality, are zealously investigated with reference to preventive means, all the pestilent diseases which cleansing and sanitary duties can mitigate and prevent are regarded as enemies to be controlled and exterminated. Filth and the decay and neglect which produce and accumulate it—be their form and nature what they may—propagate diseases, and induce degeneration, by means of such diseases, in the human family. Careful investigation into the causes of mortality and the avoidable diseases has been one of the chief duties in the daily service of the Bureau of Vital Statistics. The exactness and thoroughness which characterize this branch of registration are promoted by the sanitary utilization of the records of mortality; for, were the daily and yearly writing up of the certified returns to be a merely clerical duty, the very means by which errors, defects, and the actual diseases of the decedents are discovered in the certificates of death would in such case frequently be undetected; but, in the search for all facts that have present possible utility, scrutiny is inevitable.

The registration of marriages and births might, consistently enough, be a branch of civil service by itself, except that these elements of vital statistics are quite important in certain branches of biological and hygienic study, which sanitary authorities and medical and social science require. So important and far-reaching are the results of birth and marriage registration, that no community or State is excusable for any neglect or incompleteness in the official preparation and permanent keeping of such records. The honor of families and the rights of lineage, the welfare of society, and the most important truths of biological and social science, are

based upon this branch of exact statistical knowledge. It is true that the accuracy and fullness with which the individual records of birth and marriage are registered enable all persons, who are directly concerned in these separate records, to receive from them all the benefits which result naturally to the individual and the family immediately concerned in the same; but that is not all, though it certainly is the first benefit to be sought by the registration of births and marriages, for there is another important and permanent benefit and public result which the State should secure to itself, by such public registration.

While the same exactness and thoroughness characterize the records of birth and marriage as are obvious in regard to those relating to mortality, it is with regret and displeasure that thoughtful citizens in the State of New York point to the fact that, excepting in the metropolis, and to a limited degree in Brooklyn and three smaller cities, this entire Commonwealth, with its nearly five millions of inhabitants, remains destitute of civil registration of births and marriages; and further, that in only ten of the cities and towns is there a public registration of mortality and the causes of death. It is the fault of the State that its general statute concerning the registry of vital statistics is utterly obsolete, because of disuse from the date of enactment, and of the purely voluntary or permissive nature of the statute itself.¹ The general statute, which has thus remained a dead letter, was from the beginning left to execute itself, at the hands of officers of the district schools and town clerks of the State. Fortunately, the leading citizens in all parts of the State have become aware of this defect in the laws, and they are warranted in uniting to secure the adoption of a uniform and efficient system of registration of vital statistics for the entire State. In several States such efforts are in progress.

The importance of completeness in the records of each of the three branches of vital registration, the various reasons for requiring that the facts relating to lineage and personal identity shall be coincident and accurate, are witnessed alike in the hygienic, social, and economical uses of them. Their public and permanent value exceeds any individual or temporary importance they possess, but such public and lasting utility of vital statistics obviously depends largely upon the accuracy and completeness of the individual records. In this yearly summary, and in the chapter which here follows, as much attention has been given to the individual and immediate uses of the records as seems necessary; and, while the more permanently useful aspects of them have not been overlooked, it nevertheless is quite impossible, in the present state of incompleteness of the birth and marriage registration, to present a full view of the state of human life in this cosmopolitan city. We have presented whatever is complete, and whatever appears most important for securing the adoption of the necessary

¹ Session Laws of 1847, Chapter CLII., and vol. iii., Chapter XXI., New York Statutes at Large. Edmonds.

improvement of the laws and measures by which the registration shall be made truly perfect. The problems involved in vital statistics manifestly extend far beyond the question of death-rates, for the inherent ethnological and vital qualities, the personal circumstances, and the social condition of the various classes of human lives, hold definite relations to the ratios of increase and useful activities, as well as to the mortality of populations. The State should be concerned in the maintenance of complete registration of births, deaths, and marriages for the bearings which such records have upon matters of internal economy, employments and whatever affects the value and usefulness of human lives. Communities, families, and individuals, have legal and social interests of vital importance dependent upon this public registration, which records the lineage and establishes personal identity for every individual; while the separate consideration of the physical bearings of these records of the three vital epochs of human existence—its birth, termination, and reproduction—discloses most important facts in the causation of disease and mortality, and reveals the laws of bodily health and the philosophy of healthy and prosperous life. The physical facts which are disclosed in the vital statistics of New York already show that death-rates and destructive diseases are largely influenced by the physical and social circumstances of the various classes of inhabitants, and that artificial conditions greatly exceed all natural causes in producing whatever is excessive in the death-rate or the prevalence of disease in any portion of the population.

ELISHA HARRIS, M. D.,

Register.

REPORT OF THE DEPUTY REGISTER.

ELISHA HARRIS, M. D., *Register of Records.*

SIR: I have the honor to submit the following condensed summary, showing the variety and amount of labors performed in the Bureau of Vital Statistics during the year 1873. The details relating to the classification of the several branches of these labors, as presented in the following pages, will serve some useful purposes:

| 1873. | First Quarter. | Second Quarter. | Third Quarter. | Fourth Quarter. | Total, 1873. |
|---|-------------------|--------------------|-------------------|--------------------|---------------------|
| Number of burial-permits issued for deaths in this city. | 6,951 | 6,621 | 9,042 | 6,495 | 29,109 ¹ |
| “ “ “ “ “ “ bodies <i>in transitu</i> . | 659 | 704 | 893 | 507 | 2,733 |
| “ “ “ “ “ “ still-births in city. | 596 | 540 | 602 | 574 | 2,312 |
| “ “ permits for disinterment and removal of bodies from city cemeteries..... } | 12 | 65 | 1 | 65 | 143 |
| “ “ cases of deaths referred to coroners..... } | 41 | 35 | 35 | 33 | 144 |
| “ “ births..... | 5,601 | 4,866 | 6,300 | 5,916 | 22,683 |
| “ “ marriages..... | 2,110 | 2,481 | 2,036 | 2,244 | 8,871 |
| “ “ transcripts of birth record issued..... | 29 | 31 | 27 | 28 | 115 |
| “ “ “ “ marriage “ “ | 40 | 38 | 48 | 44 | 170 |
| “ “ “ “ death “ “ | 204 | 286 | 263 | 247 | 1,100 |
| “ “ searches of births, marriages and deaths made..... } | 194 | 155 | 352 | 295 | 996 |
| Imperfect certificates returned for correction or in- formation..... } | 112 | 140 | 141 | 123 | 526 |

The above table shows a decrease during the present compared with the previous year, of 3,638 permits issued on certificates of city deaths, 347 on bodies *in transitu*, 36 for the removal of bodies from city cemeteries, 10 for the interment of stillborn infants, of 14 cases of deaths referred to the coroners for investigation; of 137 marriage certificates and 190 faulty or imperfect certificates returned for correction or information. There was an increase of 615 certificates of birth, 139 transcripts of the death-record, 43 of marriage, 38 of birth, and of 223 searches of the records of births, marriages, and deaths.

¹ These figures refer to the number of death-certificates received from January 1 to December 31, 1873, and known as the registered mortality. The actual number of deaths during the year was 29,084.

The certificates of deaths which occur in this city are filled out with scrupulous care by the medical attendants, and returned promptly to this Bureau within the time specified by law. The law obliges the medical attendant to state the cause of death and other medical requirements while they are fresh in his memory, and to fill the other particulars exacted on the certificate with precision. As a permit for burial can only be obtained on a certificate of death accurately filled out, the undertaker, or other person superintending the funeral arrangements, seldom delays the presentation of the certificate at this Bureau beyond the time allowed by law.

The prompt return of the certificate of death often enables the Board to discover the appearance of dangerous epidemics, and, by the use of timely energetic sanitary measures, arrest their spread. The Health Department is indebted to the medical profession and coroners (whose deputies are physicians) for the completeness of the information furnished on the certificates of death.

The laws of the State make it the duty of the coroners to hold inquests on the bodies of all persons who die from *criminal violence, casualty, suddenly when in apparent health*, or unattended by a physician, or in prison, or in any suspicious or unusual manner, and they are obliged to make an autopsy on the body if required. In conformity with this law, 144 certificates of death received from physicians were referred to the coroners for investigation during the year. The total number of city deaths certified by the coroners and received in this Bureau during the year was 2,546; upon nearly half of them *post-mortem* examinations were held.

The precision and fullness with which the primary and secondary causes of death are stated on the certificates, induce me to suggest the experiment of introducing the latter, in parentheses, after the first, in the registration of diseases, particularly when there is structural or pathological change of the organs, thus :

CLASS I.—ZYMOTIC.

(Primary Causes.)

SCARLATINA,—

DIPHTHERIA,—

SYPHILIS,—

(Secondary or Complicating Causes.)

Pneumonia, Nephritis, Convulsions, Dropsy, Diphtheria, Septicæmia, etc.

Bronchitis, Croup, Diarrhœa, Toxæmia, Convulsions, Dentition, etc.

Gummy Tumor of Brain, etc., Laryngitis, Œdema of Glottis, Necrosis, Rheumatism, etc.

CLASS II.—CONSTITUTIONAL.

(Primary Causes.)

CANCER OF BREAST, STOMACH, ETC.,— Phthisis Pulmonalis, Syphilis, Congestion of Lungs, Marasmus, Diarrhœa, Ebrietas, etc.

PHTHISIS PULMONALIS,— Bright's Disease, Diarrhœa, Tubercular Meningitis, Insanity, Pott's Disease, Disease of Hip, etc.

SCROFULA,— Adenitis, Rachitis, Anæmia, Convulsions, Diarrhœa, Abscesses, etc.

CLASS III.—LOCAL DISEASES.

(Primary Causes.)

APOPLEXY,—

Paralysis, Ebrietas, Softening of the Brain
Fatty Degeneration of Liver, etc.

DISEASE OF THE HEART,—

Bright's Disease, Œdema of Lungs, Dropsy,
Rheumatism, Embolism of Cerebral Arteries,
Apoplexy, etc.

BRIGHT'S DISEASE,—

Cirrhosis of Liver, Uræmia, Ebrietas, Dropsy,
Œdema of Lungs, Disease of the Heart, etc.

CLASS IV.—DEVELOPMENTAL.

(Primary Causes.)

PREMATURE BIRTH,—

5th, 6th, 7th, 8th, 9th, etc., month's child,
Cyanosis, Atelectasis, Convulsions, Sick-
ness, Over-exertion, Debility, etc., of Mother,
Diarrhœa, Inanition, Marasmus, etc.

CHILDBIRTH,—

Uræmia, Albuminuria, Rupture of Uterus,
Protracted Labor, Flooding, Diarrhœa,
Pelvic Cellulitis, etc.

CLASS V.—VIOLENCE.

(Primary Causes.)

FALLS FROM WINDOWS, ETC.,—

Fracture of Skull, Ribs, etc., Compression of
Brain, Meningitis, Ebrietas, Pleurisy, etc.

BURNS AND SCALDS OF BODY, ETC.,—

Erysipelas, Gangrene, Pneumonia, Convul-
sions, Ebrietas, Shock, etc.

SURGICAL OPERATIONS,—

Excisions, Amputations, etc., of Pyæmia,
Phlebitis, Tetanus, Septicæmia, Peritoni-
tis, Gangrene, Secondary Hæmorrhage,
Shock, etc.

The addition of the complicating (or second, etc.) causes to the nomenclature which was prepared by Dr. Wm. Farr, of England, I think would be of value to the sanitarian, especially if it were arranged by wards and districts, as it would facilitate the study of the hygienic and medical history of localities, as well as the cause and prevention of disease. All certificates of death presented to this Bureau are carefully scrutinized before burial-permits are issued, so that none will be accepted from disreputable practitioners; or of cases of death certified by physicians, which by law the coroners are required to hold inquests upon; or from physicians who have not registered their names in this Bureau, as required by section 5 of the Sanitary Code, unless their signatures are known to us. The registration of every physician's signature is important, as it is the means of enabling us to compare them, and distinguish whether they are genuine or fictitious. Several cases of forged certificates of death have been detected; and a few cases of criminal abortion which were falsely certified by suspected physicians have been discovered and promptly investigated during the year. As there was no law regulating the practice of medicine and surgery in this State until recently, no person was hindered from practising medicine, no matter how incompetent he was; and, notwithstanding the vigilance of this Bureau, a crime was liable to be perpetrated at any time. One case of fraud from

its novelty deserves mention. A certificate of the death of "Louisa Germs, aged 22 years, 6 months, and 1 day; color, white; occupation, governess; birthplace, Germany; residence, 160 Eldridge Street; time of medical attendance from December 11, 1873, to March 29, 1874; cause of death, hysteria, complicated with suppression of menses, and *terminating in apoplexy*," signed "*Ernest Uling, M. D., medical attendant*," was presented to this Bureau, and, after a slight delay and a personal explanation of the death from that physician, to the Deputy Register, a permit was granted to bury the body. It afterward appeared that the life of (Louisa Germs) the person represented to be dead, was insured in the Merchants Life Insurance Company, of this city, for \$10,000, and the policy was drawn in favor of Dr. Uling. This, together with other facts concerning the physician and his explanation relating to the cause of death, were the principal reasons of suspecting foul play. The coffin containing the supposed remains was exhumed for *post-mortem* examination by the coroner, who, upon removing the lid, discovered the contents to be nineteen bricks carefully packed and wrapped in newspapers, and held down in their position by laths.

Attention has also been called, in a few instances, to certificates of death where the diagnoses of the causes were misstated.

The passage of the law regulating the practice of medicine and surgery by the last Legislature, although defective, will have the effect, if properly enforced, of driving a number of quacks and abortionists, who practise under various *aliases*, from this State, and in this manner will help to prevent fraud and crime, and establish a greater respect for the profession by the public than has heretofore existed.

(*Copy of Act regulating Practice of Medicine.*)

LAWS OF NEW YORK.—BY AUTHORITY.

[Every law, unless a different time shall be prescribed therein, shall commence and take effect throughout the State, on and not before the twentieth day after the day of its final passage, as certified by the Secretary of State. Sec. 12, title 4, chap. 7, part 1, Revised Statutes.]

CHAPTER 436.

AN ACT

TO REGULATE THE PRACTICE OF MEDICINE AND SURGERY IN THE STATE OF NEW YORK.

Passed May 11, 1874.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. Every practitioner of medicine or surgery in this State, excepting licentiates or graduates of some medical society or chartered school, shall be required, and they are hereby commanded to obtain a certificate from the censors of some one of the several medical societies of this State, either from the county, district, or State society; which certificate shall set forth that said censors have found the person to whom it was issued qualified to practise all of the branches of the medical art mentioned in it. And such certificate must be recorded in a book provided and kept for the purpose by the county clerk of each county in the State.

SEC. 2. The censors of each medical society aforesaid shall notify all practitioners of medicine and surgery of the terms and requirements of this act, and shall request such persons, so notified, to comply with those requirements within thirty days after such notification; and if such persons shall not, within the time specified in the notice, or within such further time as may be allowed by special arrangement with said censors, not exceeding ninety days, comply with the requirements herein made of physicians or surgeons, as the case may be, such persons shall thereafter be subject to all the provisions and penalties prescribed by this act for any violation of the same, and the president of the society making such request shall and he is hereby required to at once commence the proceedings authorized by this act against such person.

SEC. 3. It is hereby declared a misdemeanor for any person to practise medicine or surgery in this State, unless authorized so to do by a license or diploma from some chartered school, State board of medical examiners, or medical society, or who shall practise under cover of a medical diploma illegally obtained; and any person found guilty of such misdemeanor shall for the first offense be fined not less than fifty nor more than two hundred dollars. For any subsequent offense, not less than one hundred nor more than five hundred dollars, or by imprisonment not less than thirty days, or by both imprisonment and fine; and all such fines shall go into the county treasury of the county bringing such action.

STATE OF NEW YORK, }
Office of the Secretary of State. } ss. . .

I have compared the preceding with the original law on file in this office, and do hereby certify that the same is a correct transcript therefrom, and of the whole of said original law.

DIEDRICH WILLERS, JR., *Secretary of State.*

In order to carry out the provisions of this Act, and also to aid the Presidents of the Medical Societies in obtaining the status of practitioners of medicine and surgery, this Bureau will need to revise its register of physicians' signatures, containing the name in full, the name and location of the college or source whence the diploma was obtained, date of diploma, kind of practice (whether "Regular," "Homœopathic," "Eclectic," etc.), "date of signature," "Remarks."

Births.—The registration of births in this city still continues to be unsatisfactory; not more than 65 per cent. of the total that actually occur annually are reported to this Bureau. This continued inaccuracy is mainly due to the law regulating their return being inoperative. The law requires every person present at a birth to report it in writing to this Department within ten days after the birth takes place, and for any person guilty of such omission, a fine of ten dollars is imposed; and the regulations of this Bureau make it either incumbent on the medical attendant, or the parents of the child, to fill out the desired particulars on a blank form furnished for that purpose, and return the certificate to this Department within the time prescribed by law. It is difficult to prosecute for the violation of a law without sufficient evidence as to the culpability of the offender, which can only be obtained by diligent and continual inquiry; and it is also unreasonable to impose the same penalty for the accidental omission to report a birth within the short period allowed by law, particularly when the medical attendant furnishes the evidence of his own guilt or delinquency by

signing the certificate and sending it to this office, as to the failure of reporting it at all. This law, in order to be made practical, should be so modified or amended as to graduate the penalty for its violation; and as but about 70 per cent. of the total number of children reported to this office have the first name stated, it would be advantageous to either extend the time of the return from ten days to one month, or make a provision for the completion of the record within a reasonable time.

There were 22,683 certificates of children born alive in this city returned to this Bureau during the present year, being an increase of 615 over those received the year previous, and an annual birth-rate of 22.68 per 1,000 of the population. Of this number 22,465 were white, 11,707 were males, and 15,992 had the first name stated. The parentage of 17,099 children was foreign, and 5,587 native; 2,261 had foreign fathers and American mothers, and 889 had foreign mothers and American fathers; 242 were twins, and 4 were triplet births. The birth-rate per 1,000 of children reported of foreign parentage was 30.79, or 1 in 32 of the estimated population, and of native parentage 12.44, or 1 in 80 of the population.

The greatest number of children were born of parents whose ages ranged between twenty-five and thirty years, fathers numbering 4,511, and mothers 4,857. One native mother had her sixteenth child, and three foreign mothers had each her eighteenth child. The greatest number of births were reported in September and the least in May. The births of foreign parentage formed 78.47 per cent., and of native 21.39 of the total.

The following table representing the number of births that occurred in this city during the five years ending in 1870, as shown by the records of death and the census of living children under five years of age—all having been born in the period mentioned—was originally devised by you, sir, and furnishes a correct approximation of the births that took place in this city during that period.¹

| AGES OF INFANTS THAT DIED. | YEARS. | | | | | TOTAL. |
|--|--------|--------|--------|--------|--------|----------|
| | 1866. | 1867. | 1868. | 1869. | 1870. | |
| Deaths under one year..... | 7,769 | 7,464 | 8,157 | 7,405 | 8,283 | 39,178 |
| " from one to two years..... | ..... | 2,794 | 2,888 | 2,906 | 2,703 | 11,291 |
| " " two to three years..... | ..... | ..... | 1,050 | 1,295 | 1,151 | 3,496 |
| " " three to four years..... | ..... | ..... | ..... | 733 | 664 | 1,397 |
| " " four to five years..... | ..... | ..... | ..... | ..... | 432 | 432 |
| Yearly totals and the grand total of deaths of children born in that quinquennial..... | 7,769 | 10,258 | 12,095 | 12,339 | 13,233 | 55,704 |
| Total number of children under five years of age living January 1, 1871..... | | | | | | 111,305 |
| Total number of children living and dead that were born during the five years ending January 1, 1871..... | | | | | | 166,999 |
| Average number born each year..... | | | | | | 33,399.9 |

¹ Report of Registrar of Vital Statistics, Metropolitan Board of Health, 1867, page 189.

TABLE No. II.
**ABSTRACT OF THE REGISTRY OF BIRTHS IN THE CITY OF NEW YORK FOR THE TWELVE MONTHS
 ENDING DECEMBER 31, 1873.**

| 1873. | Total. | COLOR. | | | SEX. | | NATIVITY OF PARENTS. | | | | | | NAME OF CHILD. | | | | | | |
|-------------------------------|--------|--------|----------|-------------|--------|---------|----------------------|---------|----------|----------------------|----------------------|---------------------------------|----------------|---------------------------------|----------|----|--------|-------|-------------|
| | | White. | Colored. | Not stated. | Male. | Female. | Not stated. | Native. | Foreign. | Foreign Father only. | Foreign Mother only. | Nativity of Father stated only. | | Nativity of Mother stated only. | | | | | |
| | | | | | | | | | | | | Native. | Foreign. | Native. | Foreign. | | | | |
| January..... | 1,969 | 1,941 | 28 | ..... | 1,002 | 965 | ..... | 3 | 1,356 | 392 | 197 | 47 | 2 | 9 | 15 | 11 | 1,377 | 592 | Not stated. |
| February..... | 1,761 | 1,731 | 30 | ..... | 925 | 826 | ..... | .. | 1,173 | 309 | 176 | 70 | .. | 13 | 17 | 3 | 1,248 | 513 | .. |
| March..... | 1,809 | 1,785 | 24 | ..... | 947 | 862 | ..... | .. | 1,337 | 300 | 170 | 78 | .. | 9 | 10 | 3 | 1,289 | 520 | .. |
| Total (First Quarter)... | 5,539 | 5,457 | 82 | ..... | 2,874 | 2,663 | ..... | 6 | 3,766 | 941 | 543 | 195 | 4 | 31 | 42 | 17 | 3,914 | 1,625 | .. |
| April..... | 1,706 | 1,689 | 17 | ..... | 854 | 851 | ..... | 1 | 1,191 | 271 | 161 | 59 | 3 | 6 | 13 | .. | 1,493 | 513 | .. |
| May..... | 1,571 | 1,549 | 22 | ..... | 793 | 773 | ..... | .. | 1,074 | 261 | 135 | 72 | 2 | 15 | 7 | .. | 1,075 | 496 | .. |
| June..... | 1,651 | 1,631 | 17 | ..... | 867 | 778 | ..... | 6 | 1,118 | 278 | 153 | 69 | 2 | 11 | 16 | 2 | 1,183 | 468 | .. |
| Total (Second Quarter)... | 4,928 | 4,872 | 56 | ..... | 2,519 | 2,402 | ..... | 7 | 3,383 | 810 | 449 | 200 | 4 | 32 | 36 | 8 | 3,451 | 1,477 | .. |
| July..... | 2,112 | 2,099 | 13 | ..... | 1,066 | 1,011 | ..... | 5 | 1,431 | 360 | 223 | 74 | 1 | 11 | 9 | 2 | 1,699 | 613 | .. |
| August..... | 2,030 | 2,054 | 26 | ..... | 1,065 | 1,014 | ..... | 1 | 1,390 | 360 | 192 | 98 | 14 | 4 | 10 | 3 | 1,423 | 657 | .. |
| September..... | 2,122 | 2,105 | 17 | ..... | 1,078 | 1,036 | ..... | 8 | 1,491 | 339 | 181 | 77 | 4 | 8 | 3 | 13 | 1,491 | 631 | .. |
| Total (Third Quarter)... | 6,344 | 6,258 | 56 | ..... | 3,239 | 3,061 | ..... | 14 | 4,312 | 1,059 | 589 | 249 | 13 | 19 | 22 | 18 | 4,413 | 1,901 | .. |
| October..... | 1,998 | 1,922 | 6 | ..... | 992 | 973 | ..... | 13 | 1,261 | 323 | 230 | 85 | 1 | 11 | 10 | 1 | 1,388 | 540 | .. |
| November..... | 1,923 | 1,915 | 8 | ..... | 1,025 | 887 | ..... | 11 | 1,308 | 312 | 194 | 85 | 1 | 8 | 9 | 1 | 1,347 | 575 | .. |
| December..... | 2,651 | 2,641 | 10 | ..... | 1,068 | 984 | ..... | 12 | 1,323 | 382 | 246 | 75 | 2 | 5 | 8 | 2 | 1,479 | 572 | .. |
| Total (Fourth Quarter)... | 5,902 | 5,878 | 24 | ..... | 3,075 | 2,841 | ..... | 26 | 3,892 | 1,017 | 670 | 245 | 4 | 16 | 28 | 4 | 4,314 | 1,688 | .. |
| Total for the Year, 1873..... | 22,683 | 22,465 | 218 | ..... | 11,707 | 10,947 | ..... | 59 | 15,353 | 3,827 | 2,261 | 889 | 21 | 41 | 111 | 47 | 15,992 | 6,691 | .. |

TABLE No. III.
TABLE SHOWING THE AGE OF PARENTS,
 FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| | FATHER. | | | | | | MOTHER. | | | | | | Over 50 | | | | |
|----------------------------|---------|-------|-------|-------|-------|-------|---------|---------|-------|-------|-------|-------|---------|-------|-------|-------|-------|
| | 15-20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | Over 50 | 12-15 | 15-20 | 20-25 | 25-30 | | 30-35 | 35-40 | 40-45 | 45-50 |
| 1873. | | | | | | | | | | | | | | | | | |
| January..... | 5 | 148 | 352 | 370 | 256 | 123 | 52 | 19 | 10 | 89 | 393 | 430 | 236 | 138 | 45 | .. | .. |
| February..... | 2 | 108 | 293 | 269 | 216 | 110 | 68 | 33 | .. | 50 | 336 | 333 | 209 | 155 | 59 | 10 | .. |
| March..... | 6 | 138 | 297 | 304 | 191 | 95 | 34 | 15 | 17 | 136 | 333 | 323 | 229 | 110 | 32 | 7 | .. |
| Total (First Quarter).... | 13 | 391 | 912 | 943 | 663 | 328 | 144 | 67 | 27 | 275 | 1,062 | 1,076 | 674 | 403 | 136 | 17 | .. |
| April..... | 2 | 128 | 212 | 317 | 183 | 89 | 27 | 22 | 30 | 112 | 211 | 343 | 219 | 99 | 32 | 2 | 1 |
| May..... | 4 | 112 | 271 | 264 | 178 | 95 | 45 | 15 | .. | 63 | 328 | 334 | 198 | 115 | 41 | 4 | 1 |
| June..... | 3 | 132 | 316 | 268 | 171 | 63 | 52 | 19 | .. | 55 | 338 | 313 | 204 | 124 | 36 | 2 | 1 |
| Total (Second Quarter).... | 9 | 402 | 902 | 849 | 532 | 277 | 124 | 56 | 30 | 230 | 967 | 989 | 621 | 338 | 109 | 8 | 3 |
| July..... | 5 | 163 | 418 | 373 | 246 | 110 | 29 | 28 | 1 | 89 | 394 | 462 | 264 | 146 | 43 | 10 | .. |
| August..... | 1 | 166 | 510 | 402 | 273 | 150 | 76 | 17 | .. | 57 | 408 | 440 | 279 | 134 | 48 | 2 | .. |
| September..... | 1 | 270 | 424 | 406 | 313 | 131 | 71 | 16 | .. | 171 | 461 | 515 | 286 | 135 | 51 | 4 | .. |
| Total (Third Quarter).... | 7 | 599 | 1,352 | 1,181 | 832 | 400 | 189 | 61 | 1 | 340 | 1,258 | 1,417 | 829 | 415 | 142 | 16 | .. |
| October..... | 10 | 183 | 399 | 400 | 274 | 129 | 64 | 15 | 1 | 103 | 415 | 444 | 325 | 158 | 67 | 6 | .. |
| November..... | 2 | 137 | 479 | 309 | 309 | 133 | 48 | 9 | .. | 167 | 353 | 436 | 294 | 160 | 62 | 7 | 2 |
| December..... | 4 | 191 | 437 | 443 | 290 | 165 | 94 | 25 | .. | 100 | 416 | 495 | 317 | 158 | 62 | 5 | 1 |
| Total (Fourth Quarter).... | 16 | 511 | 1,315 | 1,292 | 897 | 427 | 206 | 49 | 1 | 370 | 1,184 | 1,375 | 936 | 516 | 191 | 18 | 3 |
| Total for Twelve Months. | 45 | 1,936 | 4,511 | 4,225 | 2,864 | 1,432 | 663 | 223 | 59 | 1,215 | 4,471 | 4,857 | 3,060 | 1,672 | 578 | 59 | 6 |

Age of mothers not stated, 6,506.

Age of fathers not stated, 6,894.

TABLE No. VI.

YEARLY ABSTRACT OF BIRTHS REGISTERED IN THIS BUREAU DURING THE PAST SEVEN YEARS.

| YEARS. | TOTAL. | COLOR. | | SEX. | | NATIVITY OF PARENTS. | | | | | | NAME OF CHILD. | | | | |
|------------|---------|---------|----------|--------|---------|----------------------|---------|---------------------------------|----------|---------------------------------|----------|----------------|-------------|-----|--------|--------|
| | | White. | Colored. | Male. | Female. | Foreign. | Native. | Nativity of Father-stated only. | | Nativity of Mother-stated only. | | Not stated. | Not stated. | | | |
| | | | | | | | | Native. | Foreign. | Native. | Foreign. | | | | | |
| 1867..... | 12,830 | 12,681 | 144 | 6,624 | 6,203 | 3 | 2,302 | 1,059 | 570 | 1 | 1 | 5 | 116 | 586 | 8,254 | 4,476 |
| 1868..... | 12,590 | 12,188 | 101 | 6,443 | 6,134 | 13 | 2,162 | 1,049 | 510 | 2 | 11 | 62 | 531 | 36 | 8,466 | 4,121 |
| 1869..... | 13,917 | 13,458 | 133 | 7,096 | 6,855 | 16 | 2,457 | 1,227 | 585 | 5 | 10 | 59 | 522 | 32 | 9,945 | 4,807 |
| 1870..... | 14,354 | 14,353 | 139 | 7,560 | 6,910 | 54 | 3,282 | 1,469 | 829 | 2 | 17 | 75 | 286 | 30 | 9,987 | 4,632 |
| 1871..... | 20,981 | 20,535 | 226 | 10,749 | 10,032 | 40 | 3,651 | 1,911 | 835 | 2 | 16 | 121 | 125 | 30 | 14,551 | 6,270 |
| 1872..... | 22,068 | 21,769 | 299 | 11,282 | 10,763 | 23 | 3,721 | 2,175 | 969 | 12 | 25 | 101 | 206 | 27 | 15,311 | 6,757 |
| 1873..... | 22,683 | 22,465 | 218 | 11,707 | 10,917 | 59 | 3,897 | 2,268 | 889 | 21 | 41 | 114 | 127 | 47 | 15,992 | 6,691 |
| Total..... | 119,463 | 118,109 | 1,310 | 61,461 | 57,794 | 208 | 20,653 | 11,121 | 5,157 | 45 | 124 | 513 | 1,916 | 768 | 82,596 | 36,557 |

NUMBER OF BIRTHS RECEIVED IN THIS BUREAU EACH MONTH DURING THE PAST EIGHT YEARS.

MONTHS.

| YEARS. | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | TOTAL. |
|------------|----------|-----------|--------|--------|-------|-------|--------|---------|------------|----------|-----------|-----------|---------|
| | | | | | | | | | | | | | |
| 1866..... | 367 | 472 | 515 | 583 | 921 | 915 | 915 | 1,226 | 1,415 | 922 | 973 | 982 | 10,006 |
| 1867..... | 1,113 | 1,053 | 1,149 | 898 | 1,014 | 1,036 | 1,380 | 1,317 | 1,402 | 1,057 | 1,031 | 1,017 | 12,830 |
| 1868..... | 1,105 | 1,111 | 1,061 | 925 | 960 | 975 | 1,334 | 1,077 | 1,356 | 1,065 | 1,069 | 962 | 12,590 |
| 1869..... | 1,224 | 1,075 | 1,440 | 1,220 | 761 | 849 | 1,403 | 1,263 | 1,283 | 1,027 | 1,241 | 1,257 | 13,917 |
| 1870..... | 1,251 | 1,221 | 1,375 | 1,067 | 1,092 | 1,080 | 1,439 | 1,303 | 1,404 | 1,285 | 1,085 | 1,517 | 14,354 |
| 1871..... | 1,708 | 1,809 | 1,809 | 1,320 | 1,512 | 1,429 | 1,741 | 1,918 | 1,761 | 1,935 | 1,915 | 1,951 | 20,981 |
| 1872..... | 1,890 | 1,710 | 1,870 | 1,721 | 1,688 | 1,579 | 1,882 | 1,998 | 1,988 | 1,963 | 1,886 | 1,884 | 22,068 |
| 1873..... | 1,969 | 1,761 | 1,809 | 1,706 | 1,571 | 1,651 | 2,112 | 2,080 | 2,122 | 1,928 | 1,933 | 2,051 | 22,683 |
| Total..... | 10,629 | 10,242 | 11,027 | 9,410 | 9,492 | 9,524 | 11,226 | 12,121 | 11,765 | 11,233 | 11,126 | 11,561 | 129,463 |

TABLE No. VII.

BIRTH-PLACES OF PARENTS OF CHILDREN BORN IN THIS CITY DURING
THE YEAR 1873, AND THE BIRTH-RATE PER 1,000 OF THE POPULA-
TION.

| NATIVITIES. | Father. | Mother. | Total. | Population (Cen- sus of 1870). | Rate of Births to Population. | Rate per 1,000 of the Population. |
|----------------------------------|---------|---------|----------|-----------------------------------|----------------------------------|--------------------------------------|
| United States..... | 4,786 | 6,352 | 11,088 | 523,198 | 94.37 | 10.59 |
| Germany..... | 10,195 | 9,037 | 19,232 | 151,216 | 15.72 | 63.52 |
| Ireland..... | 4,622 | 4,769 | 9,391 | 201,999 | 43.02 | 23.24 |
| England..... | 731 | 712 | 1,443 | 24,442 | 33.90 | 29.49 |
| France..... | 249 | 272 | 521 | 8,265 | 26.66 | 37.50 |
| Austria..... | 433 | 441 | 879 | 4,224 | 9.62 | 103.93 |
| Scotland..... | 237 | 173 | 410 | 7,562 | 36.88 | 27.10 |
| Switzerland..... | 104 | 104 | 208 | 2,178 | 20.94 | 47.75 |
| Norway..... | 23 | 21 | 44 | 372 | 16.90 | 59.14 |
| Sweden..... | 83 | 75 | 163 | 1,558 | 19.23 | 51.98 |
| Italy..... | 128 | 89 | 217 | 2,794 | 25.87 | 38.65 |
| Poland..... | 218 | 136 | 354 | 2,333 | 13.52 | 73.96 |
| Russia..... | 127 | 93 | 220 | 1,151 | 11.37 | 95.56 |
| Holland..... | 96 | 84 | 180 | 1,237 | 13.74 | 72.75 |
| Denmark..... | 51 | 34 | 85 | 682 | 16.23 | 61.53 |
| British America..... | 125 | 131 | 256 | 4,419 | 34.52 | 28.96 |
| Spain..... | 21 | ..... | 21 | 453 | ..... | ..... |
| West Indies..... | 54 | 29 | 74 | 489 | 13.21 | 75.66 |
| China..... | 6 | ..... | 6 | 115 | ..... | ..... |
| South America..... | 6 | ..... | 6 | 213 | ..... | ..... |
| Mexico..... | 1 | ..... | 1 | 64 | ..... | ..... |
| Africa..... | 1 | ..... | 1 | 50 | ..... | ..... |
| Other countries..... | 13 | 27 | 40 | ..... | ..... | ..... |
| At sea..... | 3 | 2 | 5 | 36 | ..... | ..... |
| Unknown..... | 311 | 110 | 421 | ..... | ..... | ..... |
| Total..... | 22,683 | 22,683 | 45,366 | 942,292 | ..... | ..... |
| | | Native. | Foreign. | Total. | | 22.68 |
| Present estimated population.... | | 555,240 | 444,760 | 1,000,000 | | |

TABLE No. VIII.

BIRTHS AND MARRIAGES REGISTERED IN ENGLAND DURING THE YEAR 1873.

| | MARRIAGES. | | | | | | | BIRTHS. | | | | | |
|--------------------|----------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------|--------------------|--------------------------------|-------------------------------|--------------------------------|-------------------------------|--------------------|--------------------|
| | Population, 1871. | Quarter ending March 31. | Quarter ending June 30. | Quarter ending Sept. 30. | Quarter ending Dec. 31. | Total for Year. | Rate per 1,000. | Quarter ending March 31. | Quarter ending June 30. | Quarter ending Sept. 30. | Quarter ending Dec. 31. | Total for Year. | Rate per 1,000. |
| England..... | 22,712,266 | 41,309 | 53,392 | 49,658 | 61,261 | 205,460 | 9.04 | 216,367 | 206,618 | 203,669 | 205,245 | 881,909 | 36.62 |
| 1 Divisions. | | | | | | | | | | | | | |
| London..... | 3,254,560 | 6,582 | 8,770 | 8,882 | 9,195 | 33,429 | 10.27 | 32,094 | 28,281 | 23,720 | 31,905 | 121,100 | 37.21 |
| Southeastern..... | 2,167,736 | 2,965 | 4,045 | 3,832 | 5,164 | 15,976 | 7.37 | 18,376 | 16,535 | 17,072 | 17,508 | 69,491 | 32.05 |
| South Midland..... | 1,442,654 | 1,758 | 2,525 | 2,463 | 3,365 | 10,111 | 7.00 | 13,129 | 12,091 | 11,885 | 12,093 | 49,133 | 34.05 |
| Eastern..... | 1,218,738 | 1,572 | 1,940 | 1,856 | 3,563 | 8,701 | 7.14 | 10,435 | 9,807 | 9,523 | 9,626 | 39,391 | 32.32 |
| Southwestern..... | 1,880,777 | 2,784 | 3,625 | 3,227 | 3,802 | 13,438 | 7.14 | 15,111 | 14,655 | 13,967 | 13,624 | 57,357 | 30.49 |
| West Midland..... | 2,720,669 | 4,948 | 6,527 | 5,890 | 7,593 | 24,958 | 9.17 | 26,898 | 25,804 | 25,042 | 24,920 | 102,654 | 37.70 |
| North Midland..... | 1,406,935 | 2,296 | 3,797 | 2,921 | 4,023 | 13,037 | 9.26 | 12,755 | 12,952 | 12,734 | 12,788 | 51,229 | 36.41 |
| Northwestern..... | 3,389,014 | 7,646 | 8,829 | 8,546 | 9,227 | 34,258 | 10.10 | 35,227 | 33,494 | 32,867 | 32,175 | 123,763 | 39.46 |
| York..... | 2,395,569 | 4,971 | 6,096 | 5,675 | 7,274 | 24,016 | 10.02 | 23,822 | 23,842 | 23,681 | 23,433 | 94,778 | 39.56 |
| Northern..... | 1,414,234 | 3,203 | 4,024 | 3,405 | 4,454 | 14,786 | 10.45 | 15,747 | 15,823 | 15,574 | 14,967 | 62,111 | 43.91 |
| Welsh..... | 1,421,670 | 2,481 | 3,201 | 2,951 | 4,401 | 12,740 | 8.95 | 12,893 | 13,224 | 12,544 | 12,241 | 50,862 | 35.77 |

¹ London division comprises parts of Middlesex, Surrey and Kent. *Southeastern*, Surrey (ex-metrop.), Kent (ex-metrop.), Sussex, Hampshire, Berkshire. *South Midland*, Middlesex (ex-metrop.), Hertfordshire, Bedfordshire, Buckinghamshire, Oxfordshire, Northamptonshire, Huntingdonshire, Redfordshire, Cambridgeshire. *Eastern*, Essex, Suffolk, Norfolk. *Southeastern*, Wiltshire, Dorsetshire, Devonshire, Cornwall, Somersetshire. *West Midland*, Gloucestershire, Herefordshire, Staffordshire, Warwickshire. *North Midland*, Leicestershire, Rutlandshire, Lincolnshire, Nottinghamshire, Derbyshire. *Northwestern*, Cheshire, Lancashire. *York*, West Riding, East Riding (with York), North Riding. *Northern*, Durham, Northumberland, Cumberland, Westmoreland. *Welsh*, Monmouthshire, South Wales, North Wales.

TABLE No. IX.
MARRIAGE AND BIRTH REGISTRATION.

| COUNTRY OR STATE. | City. | Population. | No. of Persons married and reg- istered during the Year. | Total Births registered in the Year. | Marriage rate per 1,000 of the Population. | Birth-rate per 1,000 of the Population. |
|-------------------|---------------------------|-------------|---|--|--|---|
| Austria | Trieste | 123,093 | 1,284 | 5,309 | 10.42 | 43.13 |
| " | Vienna | 700,000 | 14,756 | 27,880 | 21.07 | 39.83 |
| Algeria | Algiers | 49,531 | 432 | 1,711 | 8.72 | 34.54 |
| Belgium | Brussels | 185,000 | 1,772 | 6,200 | 9.58 | 33.51 |
| " | Antwerp | 153,655 | 2,942 | 5,453 | 19.15 | 35.96 |
| Chili | Valparaiso | 95,000 | 1,924 | 4,787 | 20.25 | 50.29 |
| England | | 23,356,414 | 410,920 | 831,809 | 17.59 | 35.61 |
| " | Birmingham | 355,540 | ..... | 14,515 | ..... | 40.82 |
| " | Bradford | 156,609 | ..... | 6,262 | ..... | 40.62 |
| " | Bristol | 189,648 | ..... | 7,061 | ..... | 37.23 |
| " | Hull | 128,125 | ..... | 5,153 | ..... | 40.22 |
| " | Leeds | 272,619 | ..... | 11,524 | ..... | 42.27 |
| " | Leicester | 104,360 | 2,418 | 4,452 | 23.17 | 42.66 |
| " | Liverpool | 505,274 | 11,470 | 18,716 | 22.70 | 37.04 |
| " | London | 3,356,073 | 66,873 | 121,100 | 19.92 | 26.05 |
| " | Manchester | 354,000 | ..... | 12,563 | ..... | 38.30 |
| " | Newcastle-upon- Tyne | 125,500 | 4,644 | 5,653 | 24.27 | 41.71 |
| " | Nottingham | 90,894 | ..... | 3,239 | ..... | 25.56 |
| " | Salford | 130,468 | ..... | 5,691 | ..... | 43.62 |
| " | Sheffield | 254,352 | ..... | 10,591 | ..... | 43.21 |
| " | Sunderland | 104,980 | ..... | 4,615 | ..... | 44.31 |
| East Indies | Bombay | 644,405 | No Registry. | 12,732 | ..... | 19.74 |
| France | Bordeaux | 194,055 | 3,786 | 5,036 | 19.51 | 25.95 |
| " | Nice | 49,230 | 1,028 | 1,971 | 20.83 | 40.03 |
| Germany | Berlin | 950,000 | 11,884 | 36,281 | 12.50 | 38.19 |
| " | Frankfort-on-the- Main | 100,000 | 2,180 | 2,789 | 21.80 | 27.69 |
| " | Mayence | 47,483 | 672 | 2,088 | 14.15 | 43.98 |
| " | Stuttgart | 91,666 | 1,973 | 3,798 | 21.58 | 41.38 |
| " | Leipzig | 110,000 | 2,722 | 4,052 | 24.74 | 37.11 |
| Holland | Rotterdam | 125,893 | 2,120 | 5,097 | 16.84 | 40.48 |
| Hungary | Buda-Pesth | 230,000 | 4,523 | 10,073 | 19.69 | 43.80 |
| Ireland | | 5,300,485 | 53,132 | 144,592 | 10.02 | 27.27 |
| " | Dublin | 314,666 | ..... | 9,031 | ..... | 25.70 |
| Italy | Messina | 111,854 | 1,532 | 4,367 | 16.38 | 39.05 |
| " | Palermo | 223,424 | 4,014 | 7,636 | 17.96 | 34.17 |
| " | Bologna | 112,462 | 1,510 | 3,138 | 13.42 | 27.81 |
| " | Milan | 271,135 | 5,615 | 9,091 | 20.72 | 35.52 |
| " | Genoa | 161,669 | 1,914 | 4,321 | 11.84 | 26.72 |
| " | Venice | 135,644 | 1,626 | 3,648 | 11.98 | 26.90 |
| " | Rome | 248,207 | 2,996 | 7,201 | 12.06 | 29.00 |
| " | Leghorn | 97,096 | 1,216 | 3,027 | 13.55 | 31.17 |
| Mexico | Vera Cruz | 15,550 | 160 | 627 | 10.29 | 40.32 |
| " | Mexico | 225,000 | 1,056 | 9,273 | 4.73 | 41.21 |
| Norway | Christiania | 72,725 | 740 | 2,522 | 10.17 | 34.69 |
| Nova Scotia | Halifax | 31,582 | 1,090 | 867 | 34.51 | 27.45 |
| United States. | | | | | | |
| New York | Albany | 95,000 | 1,084 | 1,423 | 11.41 | 14.98 |
| Massachusetts | Amherst | 4,044 | 92 | 77 | 22.74 | 19.04 |
| " | Cambridge | 45,000 | 956 | 1,284 | 21.24 | 30.75 |
| " | Charlestown | 30,000 | 406 | 567 | 13.53 | 25.90 |
| " | Chelsea | 20,000 | 248 | 548 | 12.40 | 27.40 |
| Illinois | Chicago | 400,000 | 6,448 | 9,718 | 16.12 | 24.29 |
| Ohio | Cincinnati | 246,922 | 2,772 | 1,515 | 11.22 | 6.13 |
| " | Cleveland | 137,000 | ..... | 4,752 | ..... | 34.63 |
| Georgia | Columbus | 8,000 | ..... | No Registry. | ..... | ..... |
| Connecticut | | 537,454 | 9,682 | 14,087 | 18.01 | 26.21 |
| New Hampshire | Concord | 14,000 | 232 | No Registry. | ..... | 23.71 |
| Maryland | Baltimore | 305,000 | 2,200 | No Registry. | ..... | 7.21 |
| Massachusetts | Boston | 276,500 | 7,332 | 9,688 | 28.32 | 25.07 |
| Connecticut | Bridgeport | 19,835 | 580 | 1,082 | 29.24 | 54.59 |
| New York | Brooklyn | 435,314 | 5,040 | 5,027 | 11.57 | 11.54 |
| Vermont | Burlington | 18,000 | 204 | 310 | 11.33 | 17.22 |
| Ohio | Dayton | 35,000 | None. | 671 | ..... | 19.17 |
| New Jersey | Elizabeth | 27,000 | 350 | 761 | 12.56 | 25.18 |
| Indiana | Evansville | 35,000 | 460 | No Registry. | ..... | 13.14 |
| Massachusetts | Fall River | 43,289 | 1,278 | 1,420 | 29.52 | 32.80 |
| New York | Fayetteville | 5,000 | 160 | ..... | ..... | ..... |
| Massachusetts | Gloucester | 17,000 | 703 | 613 | 41.64 | 36.17 |
| Connecticut | Hartford | 40,000 | 1,010 | 939 | 25.25 | 26.47 |
| Indiana | Logansport | 12,000 | 246 | None. | 20.50 | ..... |

TABLE No. IX.—(Continued.)

MARRIAGE AND BIRTH REGISTRATION.—(Continued.)

| COUNTRY OR STATE. | City. | Population. | No. of Persons married and registered during the Year. | Total Births registered in the Year. | Marriage-rate per 1,000 of the Population. | Birth-rate per 1,000 of the Population. |
|--------------------|---------------------|-------------|--|--------------------------------------|--|---|
| Massachusetts..... | Lowell..... | 50,000 | 1,406 | 1,351 | 28.12 | 27.02 |
| " | " | 30,000 | 818 | 425 | 27.26 | 14.16 |
| Michigan..... | Monroe City..... | 7,000 | 20 | 141 | 2.85 | 20.14 |
| Vermont..... | Montpelier..... | 3,000 | 52 | 65 | 17.33 | 21.66 |
| Alabama..... | Mobile..... | 40,000 | 826 | None. | 20.65 | ..... |
| New Hampshire..... | Manchester..... | 30,000 | 830 | 309 | 27.67 | 10.00 |
| Wisconsin..... | Milwaukee..... | 100,000 | 1,178 | 1,482 | 11.78 | 14.82 |
| New York..... | Newburg..... | 17,014 | 118 | 260 | 6.93 | 15.23 |
| New Jersey..... | Newark..... | 125,000 | 2,560 | 3,648 | 20.48 | 29.18 |
| Connecticut..... | New Haven..... | 69,000 | 632 | 1,675 | 10.53 | 27.88 |
| Virginia..... | Norfolk..... | 20,000 | 206 | ..... | 10.30 | ..... |
| Connecticut..... | Norwich..... | 16,653 | 454 | 517 | 27.26 | 31.04 |
| California..... | Oakland..... | 15,387 | ..... | 364 | ..... | 23.65 |
| New Jersey..... | Paterson..... | ..... | 392 | 1,181 | ..... | ..... |
| Pennsylvania..... | Philadelphia..... | 750,000 | 15,782 | 17,811 | 21.04 | 23.74 |
| " | " | 133,000 | 3,564 | 5,175 | 26.79 | 38.91 |
| Massachusetts..... | Plymouth..... | 6,500 | 140 | 179 | 21.54 | 27.54 |
| Maine..... | Portland..... | 32,000 | 435 | 561 | 13.59 | 17.50 |
| Rhode Island..... | Providence..... | 99,603 | 2,300 | 2,123 | 23.09 | 21.36 |
| New Jersey..... | Paterson..... | 38,000 | 468 | 1,085 | 12.31 | 28.55 |
| Virginia..... | Richmond..... | 60,075 | 1,180 | 1,789 | 19.64 | 29.77 |
| Minnesota..... | St. Paul..... | 35,000 | 750 | 2,125 | 21.43 | 60.71 |
| California..... | Sacramento..... | 20,000 | 210 | 223 | 15.50 | 11.15 |
| Massachusetts..... | Salem..... | 26,000 | 540 | 714 | 20.76 | 27.46 |
| " | Springfield..... | 30,000 | 766 | 879 | 25.53 | 29.20 |
| Texas..... | San Antonio..... | 16,060 | 232 | None. | 14.50 | ..... |
| California..... | San Francisco..... | 192,000 | 3,926 | 492 | 20.45 | 2.56 |
| Georgia..... | Savannah..... | 30,000 | 1,086 | None. | 36.20 | ..... |
| Mississippi..... | Vicksburg..... | 16,000 | 220 | No Record. | 13.75 | ..... |
| West Virginia..... | Wheeling..... | 27,000 | 412 | 384 | 15.26 | 14.22 |
| Massachusetts..... | Worcester..... | 48,000 | 1,180 | 1,650 | 24.58 | 34.37 |
| Scotland..... | ..... | 3,430,923 | 53,460 | 119,788 | 15.58 | 34.89 |
| " | Aberdeen..... | 91,626 | 1,450 | 3,087 | 15.82 | 33.69 |
| " | Dundee..... | 128,250 | 2,458 | 4,952 | 19.16 | 38.62 |
| " | Edinburgh..... | 228,322 | 3,920 | 6,785 | 18.81 | 29.57 |
| " | Glasgow..... | 514,295 | 9,822 | 20,002 | 19.09 | 38.89 |
| Spain..... | Madrid..... | 300,000 | ..... | 12,903 | ..... | 43.01 |
| " | Cadiz..... | 52,451 | 385 | 2,029 | 7.36 | 38.68 |
| Sweden..... | Stockholm..... | 147,249 | 2,658 | 4,247 | 18.05 | 29.52 |
| Switzerland..... | Lausanne..... | 29,520 | 606 | 738 | 22.85 | 27.82 |
| " | Zurich..... | 56,695 | 946 | 1,896 | 16.68 | 33.44 |
| " | Basle..... | 50,000 | 942 | 1,574 | 18.84 | 31.48 |
| " | Herisan..... | 9,800 | 220 | 325 | 22.45 | 33.16 |
| Sandwich Islands.. | Honolulu..... | 14,852 | 86 | 1,353 | 5.79 | 91.09 |
| " | Lahaina..... | 3,002 | 14 | 25 | 4.66 | 8.32 |
| Saxony..... | Dresden..... | 179,673 | 2,144 | 7,251 | 11.93 | 40.35 |
| West Indies. | ..... | ..... | ..... | ..... | ..... | ..... |
| Cuba..... | Havana..... | 205,676 | 1,674 | 4,716 | 8.14 | 22.93 |
| Barbadoes..... | Bridgton..... | 48,587 | No Registry. | 4,751 | ..... | 97.78 |
| Canada..... | Montreal..... | 165,000 | 2,870 | 6,086 | 17.39 | 36.89 |
| " | Collingwood..... | 5,000 | 94 | 151 | 18.80 | 30.20 |
| " | Quebec..... | 62,000 | 1,136 | 2,150 | 18.32 | 34.67 |
| " | St. Catharines..... | 9,285 | 138 | 41 | 14.86 | 4.41 |

MARRIAGE REGISTRATION.

The marriage-rate of this city during the year, although exceeding that of most European cities, does not represent more than 75 per cent. of the total number that actually occurred.

It will be impossible to obtain an accurate registration of this branch under the present law, which holds the person who performs the marriage ceremony accountable for the presentation of the marriage certificate to this Bureau, within ten days after its solemnization; the penalty for failure to report, and delay beyond this period, being the same as that imposed for neglecting to report a birth.

The failure of the greater portion of the Roman Catholic clergymen to send the records of marriages they solemnize, is based principally on the ground that *marriage is a religious ceremony, being a sacrament of their Church, and, as such, the State has no right to demand its return.*¹ The laws of this State, however, regard marriage as a civil contract, and, as such, ought to be recorded in order to be valid. It is upon the evidence of the marriage that it decides the legal issue, and numerous unsuccessful litigations relating to inheritances could have been avoided by a proper marriage registration.

An accurate public registration of marriage is imperative, to answer the several inquiries made to this Bureau, by parents and relatives of persons supposed or stated to be married, in order to convince them of the veracity of the reports, and also as a preventive of bigamy. The foundation of civil society is based upon marriage; it shows the moral and social condition as well as the prosperity of a people; it legitimizes children, and facilitates the lawful offspring or heirs to inherit property. It is of frequent occurrence for persons who call for information, relating to this branch of registration, to state that they have spent several weeks in fruitlessly searching the church registers, which they report as faulty and defective, and the names upon them in a great many instances illegible. In one case the registers of nearly fifty churches were examined before the positive evidence of a particular marriage was obtained in order to prosecute for bigamy. During the year 1873, 8,871 marriages solemnized in this city were registered in this Bureau, being 137 less than were registered during the previous year. Of this number 5,982 husbands and 5,132 wives, or 11,114 persons married, or 62.64 per cent., were of foreign birth; and 2,688 husbands and 3,530 wives, or 6,218 persons, or 35.04 per cent., were of native birth. The number of persons married per 1,000 of the native population was 11.98, or one in 84 of the population; and the foreign 24.99, or one in 40.02 of the population.

14,546 persons were stated to have been married the first time, of which

¹ This information is based upon the reports of the collectors of statistics; but they seem to be inconsistent, as the Archbishop of New York forwards a certified copy of each marriage he solemnizes in this city, with all the particulars required by law carefully filled up, to this Bureau for registration.

7,257 were males ; one male was married the fifth time, and seven white females married colored men. The greater number of marriages occurred between persons whose ages ranged from twenty to twenty-five years, 6,641 persons having been married, of which 3,564 were females ; 4 males were married between seventy and eighty years, and 3 females between sixty-five and seventy. In the months of May and June the most marriages were reported, and the least in August.

The number of churches in this city and the proportion of pastors who have not reported marriages to this Bureau during the year 1873, will be found in the accompanying statement :

TABLE No. X.

| DENOMINATIONS. | Total Churches and Mission Organizations. | Church Edifices. | Number of Pastors who did not report Marriages to this Bureau in 1873. | Percentage of Pastors who did not forward Marriage Certificates to this Bureau in 1873. |
|--------------------------------|---|------------------|--|---|
| Baptist..... | 46 | 20 | 7 | 15.2 |
| Congregational..... | 8 | 3 | .. | .... |
| Friends..... | 6 | 3 | .. | .... |
| Jews..... | 27 | 17 | .. | .... |
| Lutheran..... | 21 | 12 | 1 | 4.8 |
| Methodist Episcopal..... | 58 | 44 | 10 | 17.2 |
| African Methodist Episcopal... | 5 | 4 | 3 | 60.0 |
| Calvinistic Methodist..... | 1 | 1 | .. | .... |
| Free Methodist..... | 1 | 1 | .. | .... |
| Moravian..... | 2 | 2 | .. | .... |
| Presbyterian..... | 70 | 53 | 8 | 11.4 |
| United Presbyterian..... | 8 | 6 | .. | .... |
| Reformed..... | 7 | 3 | .. | .... |
| Roman Catholic..... | 42 | 42 | 30 | 71.4 |
| Union Mis'n—undenominat'n'l. | 13 | 12 | 3 | 23.1 |
| Unitarian..... | 5 | 2 | .. | .... |
| Universalist..... | 7 | 3 | .. | .... |
| German Evangelical Reformed. | 1 | 1 | .. | .... |
| Disciples..... | 1 | 1 | .. | .... |
| Protestant Episcopal..... | 93 | 80 | 11 | 11.9 |
| Reformed..... | 24 | 21 | 2 | 8.3 |
| Total..... | 445 | 341 | 75 | 16.74 |

TABLE No. XIII.

NATIVITY OF PERSONS

WHOSE MARRIAGES WERE REGISTERED IN THIS BUREAU DURING THE PAST EIGHT YEARS.

| YEARS. | Foreign. | | Native. | | Not stated. | | Born at Sea. | |
|------------|----------|--------|---------|--------|-------------|-------|--------------|-------|
| | M. | F. | M. | F. | M. | F. | M. | F. |
| 1866..... | 3,659 | 3,428 | 1,351 | 1,588 | 782 | 776 | ..... | ..... |
| 1867..... | 5,051 | 4,654 | 1,890 | 2,280 | 203 | 210 | ..... | ..... |
| 1868..... | 4,418 | 4,398 | 1,963 | 2,387 | 145 | 141 | ..... | ..... |
| 1869..... | 5,860 | 5,255 | 2,605 | 3,202 | 230 | 228 | ..... | ..... |
| 1870..... | 5,471 | 4,848 | 2,270 | 2,900 | 242 | 236 | 2 | 1 |
| 1871..... | 5,601 | 4,924 | 2,610 | 3,271 | 433 | 443 | 2 | 8 |
| 1872..... | 6,015 | 5,289 | 2,785 | 3,502 | 351 | 505 | 3 | 4 |
| 1873..... | 5,982 | 5,132 | 2,688 | 3,530 | 194 | 203 | 7 | 6 |
| Total..... | 42,457 | 37,928 | 18,162 | 22,660 | 2,752 | 2,580 | 14 | 19 |

TABLE No. XIV.

NUMBER OF MARRIAGES REGISTERED DURING EACH MONTH
FOR THE PAST EIGHT YEARS.

| YEARS. | MONTHS. | | | | | | | | | | | | Total. |
|------------|----------|-----------|--------|--------|-------|-------|-------|---------|------------|----------|-----------|-----------|--------|
| | January. | February. | March. | April. | May. | June. | July. | August. | September. | October. | November. | December. | |
| 1866..... | 256 | 223 | 229 | 274 | 461 | 523 | 601 | 554 | 604 | 767 | 683 | 612 | 5,792 |
| 1867..... | 557 | 493 | 517 | 636 | 766 | 727 | 580 | 530 | 645 | 674 | 578 | 441 | 7,144 |
| 1868..... | 569 | 547 | 469 | 615 | 744 | 635 | 524 | 584 | 584 | 623 | 658 | 374 | 6,926 |
| 1869..... | 687 | 621 | 565 | 883 | 832 | 709 | 656 | 608 | 998 | 620 | 822 | 694 | 8,695 |
| 1870..... | 717 | 580 | 734 | 500 | 702 | 804 | 590 | 538 | 628 | 662 | 1,049 | 461 | 7,985 |
| 1871..... | 636 | 640 | 523 | 654 | 830 | 740 | 583 | 651 | 901 | 894 | 808 | 777 | 8,646 |
| 1872..... | 723 | 713 | 515 | 864 | 833 | 767 | 699 | 629 | 779 | 885 | 862 | 728 | 9,008 |
| 1873..... | 778 | 687 | 645 | 776 | 852 | 853 | 649 | 606 | 781 | 825 | 733 | 686 | 8,871 |
| Total..... | 4,923 | 4,509 | 4,197 | 5,202 | 6,020 | 5,767 | 4,482 | 4,710 | 5,920 | 5,950 | 6,194 | 4,793 | 63,067 |

TABLE No. XV.

BIRTHPLACE OF PERSONS MARRIED IN NEW YORK CITY IN 1873.

| NATIVITIES. | Males. | Females. | Total. | Population. | Ratio of Persons married to Population. | No. of Persons married per 1,000 of Population. |
|----------------------|--------|----------|--------|-------------|---|---|
| United States..... | 2,688 | 3,530 | 6,218 | 523,198 | 1 in 84 | 11.88 |
| Germany..... | 3,416 | 2,924 | 6,340 | 151,216 | 1 " 24 | 41.93 |
| Ireland..... | 958 | 1,051 | 2,009 | 201,999 | 1 " 100 | 9.94 |
| England..... | 449 | 357 | 806 | 24,442 | 1 " 30 | 32.97 |
| France..... | 163 | 129 | 292 | 8,265 | 1 " 28 | 35.08 |
| Austria..... | 192 | 168 | 360 | 4,224 | 1 " 12 | 85.23 |
| Switzerland..... | 110 | 89 | 199 | 2,178 | 1 " 11 | 91.37 |
| Scotland..... | 177 | 104 | 281 | 7,562 | 1 " 27 | 37.16 |
| Poland..... | 80 | 30 | 110 | 2,393 | 1 " 22 | 45.93 |
| Russia..... | 72 | 26 | 98 | 1,151 | 1 " 12 | 85.14 |
| British America..... | 42 | 60 | 102 | 4,419 | 1 " 43 | 23.08 |
| Denmark..... | 53 | 33 | 91 | 682 | 1 " 7 | 133.43 |
| Norway..... | 41 | 31 | 72 | 372 | 1 " 5 | 193.55 |
| Sweden..... | 85 | 62 | 147 | 1,558 | 1 " 10 | 94.99 |
| Holland..... | 35 | 19 | 54 | 1,237 | 1 " 23 | 43.65 |
| Italy..... | 24 | 15 | 39 | 2,794 | 1 " 72 | 13.96 |
| Spain..... | 11 | 3 | 14 | 453 | 1 " 32 | 30.90 |
| West Indies..... | 56 | 24 | 80 | 489 | 1 " 6 | 163.60 |
| China..... | 6 | .. | 6 | 115 | 1 " 19 | 52.17 |
| South America..... | 6 | 4 | 10 | ..... | ..... | ..... |
| Africa..... | 2 | 1 | 3 | ..... | ..... | ..... |
| East Indies..... | 1 | 1 | 2 | ..... | ..... | ..... |
| Greece..... | 1 | .. | 1 | ..... | ..... | ..... |
| Portugal..... | 1 | 2 | 3 | ..... | ..... | ..... |
| Turkey..... | .. | 1 | 1 | ..... | ..... | ..... |
| Unknown..... | 199 | 200 | 399 | ..... | ..... | ..... |
| At Sea..... | 3 | 2 | 5 | ..... | ..... | ..... |
| Total..... | 8,871 | 8,871 | 17,742 | 1,000,030 | 1 in 56 | 17.74 |

TABLE NO. XVI.
BACHELORS WITH SPINSTERS.

| AGES OF SPINSTERS. | AGES OF BACHELORS. | | | | | | | | | | | Total. | | | |
|--------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| | Under 20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | | 70-75 | 75-80 | 80-85 |
| Under 20..... | 77 | 1,407 | 654 | 170 | 35 | 6 | 1 | .. | .. | .. | .. | .. | .. | 1 | 2,110 |
| 20-25..... | 16 | 1,179 | 1,242 | 487 | 122 | 18 | 4 | 2 | .. | .. | .. | .. | .. | .. | 3,071 |
| 25-30..... | 3 | 151 | 360 | 319 | 101 | 27 | 6 | 4 | .. | .. | .. | .. | .. | .. | 971 |
| 30-35..... | .. | 6 | 55 | 102 | 53 | 16 | 8 | 1 | .. | .. | .. | .. | .. | .. | 242 |
| 35-40..... | .. | 1 | 16 | 21 | 13 | 22 | 5 | 2 | 1 | .. | .. | .. | .. | .. | 72 |
| 40-45..... | .. | .. | .. | 3 | 2 | 4 | 3 | 2 | .. | .. | .. | .. | .. | .. | 16 |
| 45-50..... | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 4 |
| 50-55..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Total..... | 96 | 2,504 | 2,927 | 1,102 | 327 | 83 | 27 | 13 | 4 | 1 | 2 | .. | .. | 1 | 6,487 |

WIDOWERS WITH SPINSTERS.

| AGES OF SPINSTERS. | AGES OF WIDOWERS. | | | | | | | | | | | Total. | | | |
|--------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|
| | Under 20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | | 70-75 | 75-80 | 80-85 |
| Under 20..... | 3 | 39 | 31 | 18 | 6 | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | 92 |
| 20-25..... | 12 | 46 | 68 | 38 | 28 | 16 | 6 | 1 | .. | .. | .. | .. | .. | .. | 253 |
| 25-30..... | 1 | 24 | 62 | 78 | 35 | 15 | 10 | 4 | .. | .. | .. | .. | .. | .. | 209 |
| 30-35..... | .. | 4 | 16 | 23 | 23 | 19 | 11 | 4 | 1 | .. | .. | .. | .. | .. | 103 |
| 35-40..... | .. | .. | 3 | 15 | 16 | 7 | 5 | 3 | 3 | .. | .. | .. | .. | .. | 51 |
| 40-45..... | .. | 1 | .. | .. | 4 | 4 | 3 | 5 | 1 | .. | .. | .. | .. | .. | 18 |
| 45-50..... | .. | .. | .. | .. | .. | 2 | 2 | 2 | 2 | .. | .. | .. | .. | .. | 11 |
| 50-55..... | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 2 |
| 55-60..... | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 3 |
| 60-65..... | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 |
| Total..... | 16 | 107 | 180 | 180 | 122 | 66 | 42 | 21 | 8 | 2 | 2 | .. | .. | .. | 746 |

TABLE NO. XVII.
BACHELORS WITH WIDOWS.

| AGES OF WIDOWS. | AGES OF BACHELORS. YEARS. | | | | | | | | | | | Total. | | | | |
|-----------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-----|
| | Under 20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | | 70-75 | 75-80 | 80-85 | |
| Under 20 | | | | | | | | | | | | | | | | |
| Under 20 | | 7 | 1 | 2 | 3 | 2 | . | . | . | . | . | . | . | . | . | 10 |
| 20-25 | | 46 | 29 | 11 | 11 | 2 | . | . | . | . | . | . | . | . | . | 91 |
| 25-30 | | 34 | 93 | 42 | 20 | 5 | 3 | . | . | . | . | . | . | . | . | 194 |
| 30-35 | 1 | 17 | 52 | 47 | 26 | 5 | 3 | . | . | . | . | . | . | . | . | 151 |
| 35-40 | | 5 | 25 | 35 | 29 | 4 | 1 | 1 | 1 | . | . | . | . | . | . | 121 |
| 40-45 | | 2 | 3 | 9 | 8 | 14 | 6 | 1 | 1 | . | . | . | . | . | . | 44 |
| 45-50 | | | 1 | 1 | 1 | 1 | 3 | 1 | 1 | . | . | . | . | . | . | 8 |
| 50-55 | | | | | 1 | 1 | 2 | . | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 |
| Total | 1 | 111 | 203 | 147 | 88 | 48 | 18 | 3 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 627 |

WIDOWERS WITH WIDOWS.

| AGES OF WIDOWS. | AGES OF WIDOWERS. YEARS. | | | | | | | | | | | Total. | | | | |
|-----------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-----|
| | Under 20 | 20-25 | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | | 70-75 | 75-80 | 80-85 | |
| Under 20 | | | | | | | | | | | | | | | | |
| Under 20 | | | | | | | | | | | | | | | | 2 |
| Under 20 | | 1 | 7 | 11 | 7 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 36 |
| 20-25 | | 3 | 10 | 17 | 22 | 17 | 10 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 84 |
| 25-30 | | | 9 | 10 | 19 | 21 | 15 | 4 | 3 | .. | .. | .. | .. | .. | .. | 82 |
| 30-35 | | | 1 | 6 | 25 | 28 | 14 | 10 | 2 | 3 | 1 | 1 | 1 | 1 | 1 | 90 |
| 35-40 | | | 1 | 2 | 8 | 14 | 20 | 12 | 6 | 2 | 2 | 1 | 1 | 1 | 1 | 65 |
| 40-45 | | | | 1 | 2 | 8 | 14 | 12 | 6 | 2 | 1 | 1 | 1 | 1 | 1 | 43 |
| 45-50 | | | | | | | 1 | 6 | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 11 |
| 50-55 | | | | | | | .. | .. | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| 55-60 | | | | | | | .. | .. | .. | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| 60-65 | | | | | | | .. | .. | .. | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| 65-70 | | | | | | | .. | .. | .. | 1 | 1 | 1 | 1 | 1 | 1 | 4 |
| Total | 4 | 29 | 47 | 84 | 84 | 96 | 74 | 47 | 24 | 10 | 1 | 3 | 1 | 1 | 1 | 419 |

TABLE NO. XVIII.
CONDITION OF PERSONS MARRIED IN NEW YORK IN THE YEAR 1873.

| CONDITION. | Total Marriages. | Total Men and Women. |
|-------------------------------|------------------|----------------------|
| Bachelors with spinsters..... | 6,457 | 12,974 |
| Bachelors with widows..... | 627 | 1,254 |
| Widowers with widows..... | 420 | 840 |
| Widowers with spinsters..... | 746 | 1,492 |
| Condition not stated..... | 591 | 1,182 |
| Total..... | 8,871 | 17,742 |

The United States census of the different nationalities that compose the population of this city—if correct—will confirm the interesting fact that notwithstanding the total number of births reported to this Bureau represent but about 65 per cent., and the marriages not more than 75 per cent., of the actual number which occurred in this city during the year 1873, the birth and marriage rates of most of the natives of foreign countries residing in this city were much higher than those furnished by the officials of their native land; for instance, the birth-rate in this city of Austrian parentage reached the unprecedented rate per 1,000 of 103.93; Russian parentage following next in order with a rate of 95.96; then West Indian, 75.66; and that of Holland was 72.75, while the following countries were below the rate per 1,000 of the population, as furnished by the Registrar-Generals of their respective countries, viz.: the natives of Ireland, resident of this city, furnished a birth-rate of 23.24 per 1,000 of their population, England 29.49, and Scotland 27.10. The birth-rate of natives of the United States was 10.59, and the marriage-rate 11.88 (persons) to the 1,000 of the estimated population, which are much below the actual rates.

Although but about 75 per cent. of the marriages solemnized in this city are registered in this Bureau, the nativities—as collected from the certificates—are equally as remarkable as the births. The number of persons married to the estimated population of the natives of the West Indies amounted to 163.60, of Denmark 133.43, of Switzerland 91.37, and of Austria 85.23, while the lowest rate was furnished by the natives of Ireland,¹ being 9.94 persons to the 1,000 of their population, which is nearly similar to the marriage-rate of Ireland in 1873 (9.96 persons to 1,000 of the population of Ireland), as furnished by the Registrar-General of that country.

It is gratifying to announce the reception of such a large percentage of

¹ As but twelve of the forty-two Roman Catholic pastors of this city forwarded returns to this Bureau in 1873, and the Irish population being chiefly of that persuasion, it is probable that the small marriage-rate of this nationality is due to the failure of the clergy of this denomination to report the marriages they perform to this department.

births and marriages, particularly as they are all voluntary contributions to our vital statistics. The certificates of births and marriages that have been received in this Bureau during the year are complete in most of their details, and show that a very commendable amount of care is displayed by those that forward returns; nearly all the particulars which are of statistical importance being cheerfully furnished. The value of a registration bureau is in the completeness and accuracy of its returns, and as the present law relating to these returns is not enforced, it appears to be faulty or defective in its construction.

Some means should be devised to perfect these two allied and important branches of our vital statistics; their accuracy would be of considerable interest to the scientist and statistician; they would enable him to study the fecundity and the social, moral, and prosperous condition of the people which comprise the population of the city.

The recent appointments, by this Board, of canvassers to visit the clergy and medical profession, and collect whatever certificates they possess, will undoubtedly prove beneficial in obtaining increased returns of births and marriages; its efficacy would also be increased if the objects of the visits were made known in advance by printed notices sent at stated periods. The number of returns of births and marriages received during the year is sufficient proof of the regard and favor with which public registration is looked upon by the clerical and medical professions.

The relations of this Bureau with the persons who contribute toward its perfection ought to be as agreeable as possible, and certain facilities should be offered for forwarding the returns to this office. A simple plan would be the allowance of three cents, or sufficient to pay the postage on each perfect return to the medical attendant, or other person making it. The aggregate annual expense of this method—making due allowance for complete returns—would not exceed \$1,500 annually. The Sanitary Inspectors, Police Surgeons, District Visiting Physicians, or some other suitable officials under the control of the Board, could be employed in visiting clergymen, physicians, and midwives, residing in their respective districts, at stated intervals, collect their certificates and return them to the Board. By either the above, or some equally suggestive conveniences, no reasonable objection could be offered to the proper enforcement of the law. On account of the small penalty imposed for omission to report births and marriages, some cases will inevitably escape registration. The issuance of a receipt for each return of a birth or marriage would prove effective as a means of educating the people in regard to their obligations to this Board, and as an assurance of the reception of the certificate for registration.

By our present system, the certificates of births, marriages, and deaths, are stamped, numbered consecutively, and entered in the order in which they are received, hence the necessity of forwarding these certificates to this Bureau at the earliest possible moment, as delayed certificates lose the places to which they properly belong on their respective registers; this displacement sometimes renders it difficult or troublesome to find the name sought for on the record. In order to obviate this trouble, certificates of births and marriages received in

this Bureau sixty days after the date of a birth, or the solemnization of a marriage, will not now be registered unless by the authority of the Board.

In several States of the Union the registration laws are stringent and are rigidly enforced; certain facilities are also offered for the collection of the returns of births, marriages, and deaths.

In Connecticut the registrar ascertains, by actual inquiry, all births, marriages, and deaths in his town, and is also authorized to issue licenses for persons to marry.

The medical attendant at a birth is allowed, by the treasury of the town wherein the birth takes place, a fee of twenty-five cents for each perfect return made to the registrar, within the time allowed by law. If no return is made by the medical attendant, the registrar is authorized to ascertain the particulars, and is entitled to the same compensation as other persons for similar services.

Any town or city is empowered to enact municipal laws to more effectually attain the objects contemplated by the registration laws. A marriage cannot be performed in Connecticut unless a certificate is previously obtained from the registrar or town clerk, and a fee of fifty cents is exacted of the person who applies for and receives it.

Any person authorized by the laws of the State to join persons in marriage, without having first received the certificate, forfeits the sum of \$100.

The certificate (or license) must be indorsed and signed by the clergyman solemnizing the marriage, and forwarded to the registrar of the town from which it was issued, stating the time and place of the marriage, and upon failure forfeits \$10. This penalty is also imposed on the medical or other attendant at a birth who fails to report it during the first week of the calendar month succeeding the birth.

The registrars are authorized to perfect the record of a birth of a child born since July 24, 1868, in their respective towns upon affidavit of the father or mother of the child, sworn to before any officer authorized by law to administer oaths.

In Philadelphia, Pa., every person practising midwifery, or under whose charge a birth takes place, is required to keep an exact register of it, and enter the same on a blank schedule furnished by the Health Officer. The schedule contains a list of the births attended during the month, with the name, sex, color, the date and place of birth, the full name of its parent or parents, and is to be reported the 1st day of each month to the Health Officer, or any authorized person calling for it. Clergymen of all denominations, clerks or keepers of records of churches or religious societies, and all persons authorized to solemnize marriages, are required to be registered and send their returns every three months to the Health Officer. The certificates are to contain all the particulars required by law.

The penalty for each omission to report a birth or marriage is \$10. A charge of 50 cents is made for a transcript of the record of a birth, marriage, or death; and 10 cents for a search, but the registers are accessible to physicians, clergymen, and lawyers, without charge.

In Michigan, inspectors are appointed between April 10th and June 1st, to canvass certain circumscribed districts for births, and an allowance of 10 cents for each perfect record is made. In regard to marriages, clergymen are obliged to keep and return a certified copy of them to the County Clerk, and at the same time pay a fee of 25 cents for recording the same. In Massachusetts, parents are required to report the birth of their children; householders, of every birth and death happening in their houses; masters of ships, keepers of workhouses, houses of correction, prison hospitals, almshouses, etc., to the Clerk of the County (the law making the return of births the duty of physicians, having upon trial been found unsatisfactory, has been repealed). Canvassers are appointed once or twice a year, to make house-to-house inquiries and collect them. Marriages must be reported by the persons duly authorized to solemnize them, between the 1st and 10th day of each month, to the County Clerk of the town where the marriage is solemnized; and if neither of the parties reside in the town where they are married, the clergyman is obliged, also, to send a report to the County Clerk where one or both the parties reside, under penalty of \$20 to \$100 for non-compliance. Non-residents who intend to marry in the State of Massachusetts are required to cause notice of their intention to be entered in the office of the clerk or registrar of the town in which they propose to have the marriage ceremony performed. When residents of Massachusetts marry out of it, they are required to file a declaration of the marriage with the clerk of the town in which either of them resides, containing the full particulars required by law. In Vermont, every justice of the peace, minister of the gospel, and any and all other persons who are authorized by law to solemnize the rite of marriage, whether in the usual form or in the manner of the Society of Friends, shall each and all of them require to be placed in their hands, previous to the solemnization of such marriage-rite, a certificate signed by a town or city clerk of a town or city of the State where such marriage shall be solemnized.

In nearly all of the States where the registration laws exist, a birth or marriage is registered, if reported within a year succeeding the birth or marriage.

In England it is not lawful to register the birth of a child after the expiration of six calendar months following the day of birth; deaths can be registered at any time. The registrar is empowered to employ lawful means, as appear best, of receiving information in regard to births and deaths, of physicians, midwives, undertakers, etc. No marriage can be solemnized in England until after the expiration of twenty-one days after the day of the entry of the notice in the marriage notice book; nor can any marriage be solemnized by a superintendent registrar, licensed or registered, until after the expiration of seven days after the date of entry of such notice as aforesaid. The buildings in which marriages are solemnized are also required to be registered.

The laws regulating marriages in England require that every superintendent registrar will, four times in every year, after the months of March, June, September, and December, respectively, receive certified copies of entries of

marriages in the Register-Book of Marriages for the preceding three months, or certificates that there has been no marriage registered during such period, from the rector, vicar, or curate of every church or chapel wherein marriages may lawfully be solemnized, situated within his district, from every registering officer of the Society of Friends, commonly called Quakers, resident within his district, and from every secretary of a synagogue of persons professing the Jewish religion, which is situated within his district.

The superintendent registrar must direct every registrar of births and deaths under his superintendence that he shall quarterly, in the months of February, May, August, and November, respectively, and before the 10th day of each month, respectively, apply once to every officiating rector, vicar, or curate, within his district, for any certified copies of marriages, or certificates of no registry, or notices to superintendent registrars, which such rector, vicar, or curate, may not have delivered; and that, when he shall have collected all such as can be obtained, he shall, before the 15th day of each of such months, deliver the same to the superintendent registrar. Dr. W. Trench, Health Officer of Liverpool, England, describes the system of registration of births and marriages in that place as follows:

“In the case of births there is no certificate required, and no compulsory registration. The law simply provides that the father or mother of a child, or the occupier of every house or tenement, may, *or, upon being requested to do so, shall*, within forty-two days, give notice of such birth to the registrar of the district.

“The registry of marriages in England is compulsory. A copy of the certificate or registry of every marriage is transmitted to the superintendent registrar of the district and by him forwarded to the Registrar-General at Somerset House. In the case of marriages solemnized in licensed churches and chapels of the Established Church, the officiating clergyman is the person who forwards the copy of the certificate. In the case of Quakers, Jews, Roman Catholics, and Non-conformists, the copy of certificate is made and forwarded by specially-appointed registrars. There are also marriages executed and declared legal by the superintendent registrar. Copies of certificates of all marriages are transmitted to Somerset House, London.”

In the city of Geneva, Switzerland, the earliest continuous registration of births, marriages, and deaths, exists; it dates as far back as the year 1549, and numerous instances of its great value have repeatedly been demonstrated.

In Prussia, the registration of births, marriages, and deaths, is made exclusively by the officers appointed by the state, by recording them in the registers kept for that purpose. In city corporations the duties referred to are executed by the mayor. The mayor, however, is authorized to transfer them to a deputy or other member of the municipal government. The municipal government is also authorized to nominate a special officer. Every such officer has to keep three registers, under the titles of Register of Births, Register of Marriages, Register of Deaths; the entries into the registers to be made by current numbers, and without abbreviations; unavoidable blanks to be filled out by strokes

of the pen ; the important numbers reported to be written in letters. The entries made upon verbal or written reports will contain: 1. The place and date of the entries. 2. The names of persons reporting. 3. The report of the officiating officer, of the manner in which he has identified such persons. 4. The remark that the entry has been read to such persons, and has been approved by them. 5. The signatures of the persons reporting, and, if they cannot write, or are prevented to do so, their marks, or their reason why they are prevented from signing. 6. The signature of the officer. Additions, erasures, or alterations, are to be specially noted on the margin.

Every entry in the principal register is to be copied by the officiating officer on the same day into a second register, and to be certified to by him. At the end of the year the officer will close the registers, enumerating the number of entries in both registers, and will transfer the second register, after previous examination, to the court for safe keeping.

Entries made into the principal register after the transfer of the second register will be reported to the court at the same time, and these entries will be caused to be entered into the second register by the court.

On payment of sums payable according to the tariff fixed hereto, which will be added to the treasury of the municipality, the registers may be inspected by everybody, and extracts from the same be issued. In matters of the courts and when the applicants are unable to pay, the inspection of the registers and the extracts from them will be without cost.

Birth Registration.—The birth of every child is to be reported within one week to the officers of the district in which it has occurred. The duty of reporting is to be performed by—1. The legitimate father. 2. The midwife present at the birth. 3. The physician present at the birth. 4. Every other person present at the birth. 5. The person in whose house or domicile the birth has taken place. 6. The mother, as soon as she is able to do so. The report is to be made verbally by those whose duty it is made to report. Births occurring in public institutions will be reported exclusively by the superintendent of the same. A written report, in approved form, will be sufficient in this case. The official who receives the returns of births is authorized to make a suitable investigation into the particulars reported, if he has reason to doubt their correctness. The entry of the birth will contain—1. Full name, occupation, and residence of person reporting. 2. Place, day, and hour of the birth. 3. The sex of the child. 4. The Christian name of the child. 5. Full name, religion, occupation, and residence of parents. In case of twin births, or the birth of several children, an entry is to be made of every child, and to be so accurate that the time of the different births can be seen. If the Christian names of children at the time of the report had not yet been ascertained, they will be entered afterward, and must be reported within, at most, two months after the birth. These entries will be made on the margin of the original entry. If the child is still-born, the report must be made within one day. The entry is to be made into the Death Registers under numbers 1, 3, and 5, as above. Any person finding a newly-

born child is directed to report the fact within one day to the local police authorities. It is their duty to ascertain the necessary facts and to report the same to the proper officer. The entry in such cases will contain the time, place, and circumstances of the finding, the kind and marks of the clothing, and other articles found with the child, its supposed age, its sex, the authorities or the person under whose care the child has been given, and the names given to it.

If the report of a birth has not been made within three months, the entry can only be made on permission from the supervising authorities after ascertaining the facts. The costs of ascertaining such facts will be borne by the person who has neglected the report within the proper time.

Marriage Registration.—For the purpose of marrying, the bridegroom and bride have to appear before the proper civil officer and declare, in the presence of two witnesses, their intention to be married; this declaration is to be entered into the principal register by the persons to be married, and the officer entering the marriage. The entry in the marriage register will contain—1. Full name, religion, age, condition or occupation, birthplace, and residence of the persons married. 2. Full name, condition or occupation, and residence of their parents. 3. Full name, age, condition or occupation, and residence of the witnesses. 4. The declaration of the persons married. The persons married will be immediately given a certificate of their marriage.

Registration of Deaths.—Every death must be reported within one day after its occurrence. The duty of reporting devolves upon the head of the family, and when there is no such person, or when such person is unable to do so, upon the person in whose house the death has occurred. If there is any official inspection in regard to the cause of death, the entry will be made upon the written report of the proper officer. The entry of a death will contain: 1. Full name, condition or occupation, and residence of person reporting. 2. Place, day, and hour of the death. 3. Full name, religion, age, condition or occupation, residence, and birthplace of deceased. 4. Full name, condition or occupation, and residence of the parents of deceased.

The registration laws of two of the most prominent European nations are here submitted, in order to show the stringent methods they adopt to perfect their system of birth and marriage registration. The requirements and mode of collection of births and marriages in several States of the Union and foreign countries will appear in brief on the annexed statement, gleaned from replies to the circular letter of the Registrar of Records issued in May, 1874. (See page 318.)

The laws of this city relating to the registration of births and marriages, compared with some of those submitted, show conclusively their imperfection. These laws offer sufficient material to make a selection for the composition of laws which—if enforced—would be the means of perfecting these returns with very little expense to the Department. They also furnish convincing proof—judging from the completeness of the returns—that the license system is the

most efficacious in obtaining accurate returns of marriages; but all laws, no matter how perfect, will be of very little value, unless they are strictly enforced.

Transcripts of the Records.—There were 115 transcripts of the birth record, 170 of marriage, and 1,100 of death, issued during the past year, being an increase of 43 of birth, 38 of marriage, and 139 of death, over the year previous. These transcripts are used for various legal purposes, and are in many cases the only means relied on for proving the object for which they are intended.

TABLE No. XIX.

| YEARS. | TRANSCRIPTS OF | | | Transits. | Disinterments from City Cemeteries. | Searches. |
|-----------|----------------|------------|---------|-----------|-------------------------------------|-----------|
| | Deaths. | Marriages. | Births. | | | |
| 1870..... | 773 | 157 | 76 | 2,649 | 261 | .... |
| 1871..... | 734 | 119 | 65 | 2,645 | 133 | 627 |
| 1872..... | 961 | 132 | 72 | 3,080 | 179 | 773 |
| 1873..... | 1,100 | 170 | 115 | 2,733 | 143 | 996 |
| Total.... | 3,568 | 578 | 328 | 11,107 | 716 | 2,396 |

Searches.—The number of searches of the birth, death, and marriage registers made during the same period was 996, an increase of 223 over the previous year. These searches were made for persons desiring information, and where transcripts from the records were not necessary for the purposes for which they were desired. No information as to the records of births or marriages is furnished that will not subserve useful purposes or be made with a landable purpose.

Disinterments.—The number of permits issued to exhume bodies from city cemeteries in 1873 was 143, being a decrease of 36 compared with the number issued during the previous year.

The rules of this Bureau will not permit a disinterment in this city between May 1st and November 1st, except in cases of bodies deposited in receiving-vaults, and then only upon their being inclosed in metallic air-tight coffins.

The Board will not now allow the opening of a grave for the burial of any dead body in this city south of One Hundred and Thirtieth Street; and those that are to be placed in vaults temporarily must be inclosed in air-tight metallic cases, and receive the approval of the Sanitary Superintendent before a permit will be issued.

Transits.—During the year 1873, there were 2,733 permits granted to allow bodies to pass into and through this city, being a decrease of 347 compared with the number issued the previous year. This decrease is altogether owing to the establishment of Boards of Health and Vital Statistics, under the charge

of competent medical officers, in the counties bordering this city, whose permits for burial are accepted by this Board, and the same effect given to them as to a burial or transit permit issued by this Department; consequently no impediment or obstruction is placed in the way of the transportation of dead bodies which are accompanied by burial permits from the Boards of Health of Brooklyn, Long Island City, Richmond County, New York, or Hudson County, New Jersey.

The transportation through this city of the bodies of persons who die at a distance of over two days' journey from it, ought to be prohibited between the months of May and November, unless inclosed in air-tight cases or coffins, as they often arrive improperly incased, in a decomposed condition and emit offensive odors; cases of deaths from small-pox and cholera should be buried at least three months before being permitted to enter, and also be subject to the same restrictions as deaths from other causes. If some general rule or mutual understanding existed between established Boards of Health and Vital Statistics regarding the transportation of dead bodies, there would be no necessity of placing any impediment or obstacle in the way of the transmission of a corpse from the place of death to its destination, provided that a burial permit accompanied it, with a sufficient number of coupons attached and containing the same items of information regarding the deceased as are contained in the transit permit; the coupons to be collected by the transportation agents on the arrival or departure of the body, and returned to this Bureau, as the regulations may require, to be entered on the register of bodies in transit.

The telegraph could also be used advantageously as a means of communicating and imparting information between Health Departments, relating to bodies *in transitu* from distances, when temporary delays to their passage are liable to occur from sanitary regulations. Freight agents, superintendents of railroads, steamboat lines, etc., in this city could help to complete the record by keeping a registry of all bodies passing over their routes, and by reporting them to this Bureau as often as its regulations may require.

The passage of a law authorizing the formation of District Medical Officers of Health and Registrars of Vital Statistics for every county of the State, or a law empowering the county medical societies to depute some of their members to act as such, and report annually, semi-annually, or as often as may be required of them, to a Registrar-General and Chief Medical Officer of Health, on blank schedules furnished for that purpose, the most important items and requirements relating to a birth, marriage, or death, in their respective districts, for scientific or useful purposes, would prove of incalculable value in determining the salubrity and remedying the sanitary defects, as well as ascertaining the duration of life of the people that comprise the most populous State of the Union.

The system in vogue in this city for the collection of deaths would be the most practical and perfect to have extended throughout the State, providing that the same rules, penalties, restrictions, and laws that govern this branch in this city were applied to that of the State.

Still-births.—The number of children born dead in this city, and registered in this Bureau during the year, was 2,312, being a decrease of 10 compared with the number received during the year 1872. Of the total number 1,317 were males and 964 females, and the sex of 31 was not stated; 1,708 had foreign fathers and 1,632 had foreign mothers; the nativity of 116 mothers and 158 fathers was not stated. The greatest number of still-births was reported in the month of July (221), and the least in May (178); the ninth month of foetal existence furnished 47.53 per cent. of the total number reported. 1,701 returns were received from physicians, 443 from midwives, and 168 from the coroners. Of the number received from the coroners, 65 were found in the streets, 10 in the rivers, 4 in privies, and 3 in ash-barrels. The native population contributed 21.92 and the foreign 72.23 per cent. of the total still-births reported.

The still-birth rate was 2.31 per 1,000 persons living in the city, the population estimated at 1,000,000; and the proportion of still-births to those born alive was 1 to 9.81. The principal causes assigned to the still-births of this year do not materially differ from those reported the two preceding years; several of these cases were preventable, and a number might have resulted differently if the services of skillful accoucheurs and accoucheuses had been obtained, instead of those of ignorant and incompetent midwives. There was one still-birth to every 1095.15 of the native population, and 1 to every 266.32 of the foreign. The accompanying tables will briefly show other facts of interest relating to this branch of statistics during the year 1873:

TABLE No. XX.
RETURN OF STILL-BIRTHS.
 TABLE SHOWING THE NATIVITY OF PARENTS AND THE PERIOD OF UTERO-GESTATION, FOR THE TWELVE MONTHS ENDING DECEMBER 31, 1873.

| MONTHS. | SEX. | | | NATIVITY OF | | | | | | PERIOD OF UTERO-GESTATION. | | | | | | | | | | | |
|-------------------------|--------|-------|---------|-------------|----------|---------|----------|--------------|---------------|----------------------------|---------------|--------------|--------------|----------------|---------------|--------------|--------------|-------------|-------------|-----|----|
| | TOTAL. | Male. | Female. | FATHER. | | MOTHER. | | First Month. | Second Month. | Third Month. | Fourth Month. | Fifth Month. | Sixth Month. | Seventh Month. | Eighth Month. | Ninth Month. | Tenth Month. | Not stated. | | | |
| | | | | Native. | Foreign. | Native. | Foreign. | | | | | | | | | | | | Not stated. | | |
| January..... | 206 | 112 | 91 | 3 | 37 | 149 | 20 | 57 | 138 | 11 | ... | 4 | 9 | 11 | 17 | 16 | 32 | 112 | 1 | 3 | |
| February..... | 200 | 119 | 89 | 2 | 30 | 163 | 17 | 43 | 144 | 13 | ... | ... | 5 | 14 | 17 | 23 | 24 | 112 | ... | 2 | |
| March..... | 190 | 108 | 79 | 3 | 36 | 150 | 15 | 50 | 137 | 4 | ... | 1 | 6 | 12 | 22 | 23 | 22 | 98 | ... | 4 | |
| Total..... | 596 | 329 | 259 | 8 | 103 | 452 | 42 | 150 | 419 | 28 | ... | 2 | 5 | 20 | 37 | 56 | 66 | 78 | 322 | 1 | 9 |
| April..... | 183 | 106 | 75 | 2 | 37 | 129 | 17 | 40 | 130 | 13 | 2 | ... | 2 | 4 | 8 | 28 | 26 | 36 | 81 | 1 | 5 |
| May..... | 178 | 101 | 76 | 1 | 39 | 121 | 18 | 47 | 120 | 12 | ... | 3 | 1 | 4 | 11 | 20 | 25 | 40 | 71 | ... | 3 |
| June..... | 179 | 91 | 87 | 1 | 25 | 144 | 10 | 37 | 136 | 6 | ... | ... | 1 | 3 | 12 | 19 | 20 | 22 | 97 | ... | 5 |
| Total..... | 540 | 298 | 238 | 4 | 101 | 394 | 45 | 124 | 386 | 31 | 2 | 3 | 4 | 11 | 31 | 67 | 71 | 88 | 249 | 1 | 13 |
| July..... | 221 | 131 | 85 | 5 | 43 | 156 | 22 | 58 | 144 | 19 | ... | ... | 2 | 7 | 13 | 23 | 34 | 32 | 96 | ... | 14 |
| August..... | 191 | 111 | 79 | 1 | 47 | 137 | 7 | 44 | 142 | 5 | ... | ... | 2 | 5 | 11 | 18 | 36 | 29 | 88 | ... | 2 |
| September..... | 190 | 115 | 72 | 3 | 37 | 138 | 15 | 51 | 128 | 8 | ... | ... | 7 | 8 | 12 | 20 | 28 | 29 | 77 | ... | 8 |
| Total..... | 602 | 357 | 236 | 9 | 127 | 431 | 44 | 156 | 414 | 32 | ... | ... | 11 | 20 | 36 | 61 | 98 | 90 | 261 | 1 | 24 |
| October..... | 192 | 111 | 76 | 5 | 40 | 140 | 12 | 51 | 131 | 10 | ... | 2 | 6 | 17 | 20 | 27 | 24 | 89 | ... | 5 | |
| November..... | 185 | 110 | 72 | 3 | 37 | 139 | 9 | 42 | 133 | 10 | ... | ... | ... | 2 | 6 | 25 | 25 | 34 | 90 | ... | 3 |
| December..... | 197 | 112 | 83 | 2 | 39 | 152 | 6 | 43 | 149 | 5 | ... | 1 | 2 | 6 | 14 | 25 | 21 | 38 | 88 | ... | 1 |
| Total..... | 574 | 333 | 231 | 10 | 116 | 431 | 27 | 136 | 413 | 25 | ... | 3 | 4 | 14 | 37 | 70 | 73 | 96 | 267 | 1 | 9 |
| Total for the Year..... | 2,312 | 1,317 | 964 | 31 | 447 | 1,708 | 158 | 566 | 1,632 | 116 | 2 | 8 | 24 | 65 | 141 | 251 | 308 | 352 | 1,099 | 4 | 55 |

TABLE No. XXI.

RETURN OF STILL-BIRTHS, SHOWING THE NATIVITY OF PARENTS AND PERIOD OF UTERO-GESTATION, FOR THE PAST FIVE YEARS.

| YEARS. | TOTAL. | SEX. | | | NATIVITY. | | | | | |
|-----------|--------|-------|---------|-------------|-----------|----------|-------------|---------|----------|-------------|
| | | Male. | Female. | Not stated. | FATHER. | | | MOTHER. | | |
| | | | | | Native. | Foreign. | Not stated. | Native. | Foreign. | Not stated. |
| 1869..... | 2,215 | 1,276 | 914 | 25 | 447 | 1,551 | 217 | 502 | 1,601 | 111 |
| 1870..... | 2,254 | 1,284 | 947 | 23 | 401 | 1,650 | 203 | 479 | 1,623 | 152 |
| 1871..... | 2,276 | 1,266 | 977 | 13 | 448 | 1,677 | 151 | 540 | 1,643 | 93 |
| 1872..... | 2,322 | 1,308 | 997 | 17 | 422 | 1,737 | 163 | 546 | 1,669 | 107 |
| 1873..... | 2,312 | 1,317 | 964 | 31 | 447 | 1,708 | 158 | 566 | 1,632 | 116 |
| Total... | 11,379 | 6,471 | 4,799 | 109 | 2,165 | 8,323 | 892 | 2,633 | 8,169 | 579 |

TABLE No. XXII.

| YEARS. | PERIOD OF UTERO-GESTATION.—MONTHS. | | | | | | | | | | |
|------------|------------------------------------|----|-----|-----|-----|-------|-------|-------|-------|----|-------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | Not stated. |
| 1869 | 1 | 5 | 12 | 50 | 122 | 193 | 334 | 283 | 1,033 | 15 | 167 |
| 1870 | 2 | 2 | 14 | 51 | 114 | 231 | 319 | 275 | 977 | 9 | 187 |
| 1871 | 2 | 7 | 29 | 62 | 106 | 244 | 305 | 315 | 1,138 | 5 | 63 |
| 1872 | .. | .. | 23 | 55 | 132 | 257 | 352 | 344 | 1,080 | 19 | 60 |
| 1873 | 2 | 8 | 24 | 65 | 141 | 254 | 308 | 352 | 1,099 | 4 | 55 |
| Total ... | 7 | 22 | 102 | 283 | 615 | 1,179 | 1,618 | 1,569 | 5,327 | 52 | 532 |

TABLE No. XXIII.

TABLE SHOWING THE NATIONALITIES AND THE TOTALS OF THE SAME.

| NATIVITIES. | Nativity of the Population of the City of New York, U. S. Census, 1870. | Both Parents of the same Nativity. | Nativity of Mothers. | Nativity of Fathers. | Total. | Rate per 1,000 of Population. |
|------------------------------------|---|------------------------------------|----------------------|----------------------|--------|-------------------------------|
| Australia..... | 64 | 2 | 2 | 5 | 7 | 54.68 |
| Austria and Hungary..... | 2,743 | 37 | 46 | 37 | 83 | 15.13 |
| British America ¹ | 4,419 | 5 | 14 | 16 | 30 | 3.39 |
| China..... | 103 | .... | .... | 2 | 2 | 9.70 |
| Denmark..... | 680 | .... | 1 | 4 | 5 | 3.67 |
| England and Wales..... | 25,039 | 27 | 62 | 67 | 129 | 2.57 |
| France..... | 8,265 | 9 | 13 | 21 | 34 | 2.05 |
| Germany..... | 151,216 | 646 | 702 | 771 | 1,473 | 4.87 |
| Holland..... | 1,237 | 4 | 4 | 8 | 12 | 4.85 |
| Ireland..... | 202,063 | 575 | 712 | 660 | 1,372 | 3.39 |
| Italy..... | 2,790 | 19 | 19 | 21 | 40 | 7.16 |
| Norway..... | 373 | 1 | 2 | 1 | 3 | 4.02 |
| Poland..... | 2,392 | 27 | 25 | 36 | 64 | 13.37 |
| Portugal..... | 92 | .... | .... | 1 | 1 | 5.43 |
| Russia..... | 1,139 | 1 | 2 | 4 | 6 | 2.63 |
| Scotland..... | 7,551 | 4 | 13 | 18 | 31 | 2.05 |
| Spain..... | 464 | 2 | 2 | 2 | 4 | 4.31 |
| Sweden..... | 1,569 | 2 | 2 | 6 | 8 | 2.54 |
| Switzerland..... | 2,169 | 3 | 5 | 8 | 13 | 2.99 |
| United States..... | 523,198 ² | 384 | 587 | 466 | 1,053 | 1.00 |
| Not stated..... | ..... | 94 | 94 | 94 | 188 | .... |
| Unknown..... | ..... | .... | .... | 59 | 59 | .... |
| West Indies..... | 457 | 1 | 2 | 5 | 7 | 7.81 |
| Total..... | 942,292 | 1,823 | 2,312 | 2,312 | 4,624 | 2.31 |

Present estimated population—native, 555,240; foreign, 444,760. Total, 1,000,000.

¹ Including Canada.² Including 12,645 colored.

TABLE No. XXIV.

NATIVITIES OF MIXED PARENTAGE OF STILL-BORN INFANTS BORN IN NEW YORK CITY DURING THE YEAR 1873.

| NATIVITY OF MOTHER. | NATIVITY OF FATHER. | | | | | | | | | | | | | | | | | | | |
|---------------------|---------------------|----------|----------|-----------|----------|----------|----------------|----------|---------|---------|--------------|----------|----------|--------|----------------|---------|---------|--------------|--------|-----------|
| | TOTAL. | Germany. | Ireland. | Scotland. | England. | Unknown. | United States. | Austria. | Poland. | Russia. | Switzerland. | Holland. | Denmark. | China. | Brit. America. | France. | Sweden. | West Indies. | Italy. | Portugal. |
| United States.... | 203 | 75 | 71 | 8 | 13 | 23 | .... | .... | 1 | .... | 1 | .... | .... | .... | 5 | 2 | .... | 4 | .... | .... |
| Germany..... | 56 | .... | 2 | .... | 6 | 11 | 15 | 3 | 5 | .... | 2 | 2 | 2 | .... | .... | .... | .... | .... | .... | .... |
| Ireland..... | 137 | 25 | .... | 3 | 17 | 23 | 53 | .... | .... | .... | .... | .... | .... | .... | 5 | 2 | .... | .... | 1 | 1 |
| England..... | 35 | 5 | 6 | 3 | .... | 2 | 10 | .... | 3 | .... | 1 | .... | 2 | .... | 1 | 1 | .... | .... | 1 | .... |
| France..... | 4 | 4 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Austria..... | 9 | 6 | .... | .... | .... | .... | .... | .... | .... | 3 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Scotland..... | 9 | 1 | 5 | .... | 3 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Russia..... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| British America. | 9 | 4 | 1 | .... | 1 | .... | 3 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Denmark..... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| West Indies..... | 1 | .... | .... | .... | .... | .... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Switzerland..... | 2 | 2 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Poland..... | 1 | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Norway..... | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1 | .... | .... | .... |
| Total..... | 469 | 125 | 85 | 14 | 40 | 59 | 82 | 3 | 9 | 3 | 5 | 4 | 4 | 2 | 11 | 12 | 4 | 4 | 2 | 1 |

TABLE No. XXV.

**NUMBER OF STILL-BORN INFANTS CERTIFIED BY PHYSICIANS,
CORONERS, AND MIDWIVES, DURING THE YEAR 1873.**

| MONTHS. | Total Certificates received. | Certified by Physicians. | Certified by Coroners. | Certified by Midwives. | Number of still-born Infants found in the Str'ts. | Number of Infants still-born and found in privies. | Number of still-born Infants found in ash-bar'ls. | Number of still-born Infants found in the River. |
|---------------|------------------------------|--------------------------|------------------------|------------------------|---|--|---|--|
| January..... | 206 | 155 | 23 | 28 | 6 | .. | 1 | 1 |
| February..... | 200 | 153 | 18 | 29 | 6 | .. | .. | .. |
| March..... | 190 | 146 | 12 | 32 | 1 | 1 | 1 | .. |
| April..... | 183 | 141 | 13 | 29 | 7 | 1 | 1 | .. |
| May..... | 178 | 130 | 21 | 27 | 11 | .. | .. | .. |
| June..... | 179 | 134 | 10 | 35 | 2 | .. | .. | .. |
| July..... | 221 | 157 | 17 | 47 | 6 | .. | .. | .. |
| August..... | 191 | 144 | 10 | 37 | 1 | .. | .. | .. |
| September... | 190 | 124 | 14 | 52 | 5 | 2 | .. | .. |
| October..... | 192 | 147 | 10 | 35 | 5 | .. | .. | .. |
| November .. | 185 | 128 | 10 | 47 | 4 | .. | .. | .. |
| December.... | 197 | 142 | 10 | 45 | 1 | .. | .. | .. |
| Total..... | 2,312 | 1,701 | 168 | 443 | 65 | 4 | 3 | 1 |

TABLE No. XXVI.

**REVISED TABLE OF THE NUMBER OF DEATHS REGISTERED
IN EACH YEAR, AND ON FILE, IN THIS BUREAU, FROM
1798 TO 1873.¹**

| Years. | Number of Deaths registered. | Years. | Number of Deaths registered. | Years. | Number of Deaths registered. | Years. | Number of Deaths registered. |
|--------------|------------------------------|--------------|------------------------------|--------------|------------------------------|--------------|------------------------------|
| 1798..... | 5 | 1821..... | 3,422 | Population.. | 312,710 | 1858..... | 23,269 |
| 1800..... | Population (60,489) | 1822..... | 3,212 | 1840..... | 8,469 | 1859..... | 22,745 |
| 1801..... | 43 | 1823..... | 3,551 | 1841..... | 9,093 | Population.. | 805,858 |
| 1802..... | 843 | 1824..... | 4,224 | 1842..... | 9,154 | 1860..... | 24,760 |
| 1803..... | 1,134 | Population.. | 166,086 | 1843..... | 8,659 | 1861..... | 24,525 |
| 1804..... | 725 | 1825..... | 4,920 | 1844..... | 8,890 | 1862..... | 23,150 |
| 1808..... | 424 | 1826..... | 4,961 | Population.. | 371,223 | 1863..... | 26,617 |
| 1810..... | Population (96,373) | 1827..... | 5,139 | 1845..... | 9,652 | 1864..... | 25,792 |
| 1811..... | 40 | 1828..... | 4,818 | 1846..... | 11,411 | Population.. | 726,886 |
| 1812..... | 2,503 | 1829..... | 4,501 | 1847..... | 11,273 | 1865..... | 25,767 |
| 1813..... | 2,335 | Population.. | 197,112 | 1848..... | 11,280 | 1866..... | 26,815 |
| Population.. | 95,519 | 1830..... | 5,522 | 1849..... | 16,972 | 1867..... | 23,159 |
| 1814..... | 196 | 1831..... | 6,347 | Population.. | 515,547 | 1868..... | 24,889 |
| 1815..... | 2,511 | 1832..... | 10,257 | 1850..... | 10,332 | 1869..... | 25,167 |
| 1816..... | 3,000 | 1833..... | 5,689 | 1851..... | 14,029 | Population.. | 942,292 |
| 1817..... | 2,384 | 1834..... | 8,907 | 1852..... | 15,490 | 1870..... | 27,175 |
| 1818..... | 3,005 | Population.. | 268,089 | 1853..... | 21,979 | 1871..... | 26,976 |
| 1819..... | 3,178 | 1835..... | 7,096 | 1854..... | 28,473 | 1872..... | 32,647 |
| Population.. | 123,706 | 1836..... | 8,068 | Population.. | 629,810 | 1873..... | 29,084 |
| 1820..... | 3,522 | 1837..... | 8,626 | 1855..... | 24,448 | 1874..... | ..... |
| Total... | 25,848 | 1838..... | 7,911 | 1856..... | 21,748 | 1875..... | ..... |
| | | 1839..... | 7,910 | 1857..... | 22,811 | 1876..... | ..... |
| Total... | | Total... | 115,081 | Total... | 264,163 | Total... | 412,537 |

Total deaths registered in this Bureau, 817,629.

¹ The list of deaths printed in the Annual Report of the Board of Health of 1871, p. 239, was in correct.

TABLE No. XXVII.
DEATHS BY CLASSES.

| YEARS. | Zymotic. | Constitutional. | Local. | Developmental. | Violence. | Total. |
|-----------------------------|----------|-----------------|--------|----------------|-----------|---------|
| 1866..... | 8,788 | 6,121 | 9,061 | 1,875 | 970 | 26,815 |
| Percentage of each class... | 32.77 | 22.83 | 33.79 | 6.99 | 3.62 | 100.00 |
| 1867..... | 6,583 | 5,513 | 8,547 | 1,720 | 796 | 23,159 |
| Percentage of each class... | 28.41 | 23.80 | 36.91 | 7.43 | 3.44 | 100.00 |
| 1868..... | 7,456 | 5,664 | 9,362 | 1,523 | 884 | 24,889 |
| Percentage of each class... | 29.96 | 22.76 | 37.61 | 6.12 | 3.55 | 100.00 |
| 1869..... | 7,676 | 5,720 | 9,389 | 1,435 | 947 | 25,167 |
| Percentage of each class... | 30.50 | 22.73 | 37.31 | 5.70 | 3.77 | 100.00 |
| 1870..... | 8,314 | 6,329 | 9,899 | 1,633 | 1,000 | 27,175 |
| Percentage of each class... | 30.60 | 23.23 | 36.43 | 6.01 | 3.68 | 100.00 |
| 1871..... | 8,364 | 6,263 | 9,280 | 1,765 | 1,304 | 26,976 |
| Percentage of each class... | 31.01 | 23.22 | 34.40 | 6.54 | 4.83 | 100.00 |
| 1872..... | 11,815 | 6,604 | 10,903 | 2,004 | 1,321 | 32,647 |
| Percentage of each class... | 36.19 | 20.23 | 33.40 | 6.14 | 4.04 | 100.00 |
| 1873..... | 9,593 | 6,293 | 10,154 | 1,883 | 1,161 | 29,084 |
| Percentage of each class... | 32.98 | 21.64 | 34.91 | 6.47 | 3.99 | 100.00 |
| Total..... | 68,589 | 48,507 | 76,595 | 13,838 | 8,383 | 215,912 |
| Percentage of each class... | 31.76 | 22.47 | 35.48 | 6.41 | 3.88 | 100.00 |

TABLE No. XXVIII.

CONDENSED SUMMARY OF DEATHS IN THE CITY OF NEW YORK (in Quinquennial Periods),

FOR THE PAST EIGHT YEARS, REGISTERED IN THE BUREAU OF VITAL STATISTICS, HEALTH DEPARTMENT.

| YEARS. | NATIVITY. | | Colored. | Under 1 Year. | | | | | | | | Total under 5 Years. | 10 | 15 | 20 | 25 | 30 | | |
|------------|----------------|--------|----------|---------------|-------|-------|-------|---------|-------|-------|-------|----------------------|--------|--------|----|----|----|----|----|
| | United States. | | | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | | | | | | | 25 | 30 |
| | Foreign. | 1 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 2 | 3 | 4 | 5 |
| 1866..... | 16,631 | 10,184 | ... | 2,688 | 1,090 | 615 | 442 | 12,671 | 1,116 | 429 | 659 | 1,321 | 1,413 | 1,473 | | | | | |
| 1867..... | 15,479 | 7,680 | ... | 2,794 | 1,056 | 587 | 373 | 12,274 | 753 | 346 | 469 | 1,003 | 1,080 | 1,048 | | | | | |
| 1868..... | 16,805 | 8,084 | ... | 2,888 | 1,050 | 600 | 372 | 13,067 | 856 | 333 | 533 | 1,043 | 1,228 | 1,186 | | | | | |
| 1869..... | 16,357 | 8,610 | ... | 2,906 | 1,295 | 733 | 520 | 12,859 | 941 | 354 | 498 | 1,004 | 1,180 | 1,164 | | | | | |
| 1870..... | 17,461 | 9,714 | 475 | 2,703 | 1,151 | 664 | 432 | 13,333 | 822 | 364 | 567 | 1,160 | 1,345 | 1,355 | | | | | |
| 1871..... | 17,470 | 9,506 | 456 | 2,707 | 1,179 | 648 | 443 | 12,971 | 865 | 405 | 642 | 1,175 | 1,539 | 1,380 | | | | | |
| 1872..... | 21,448 | 11,199 | 549 | 3,342 | 1,514 | 938 | 603 | 16,188 | 1,321 | 575 | 751 | 1,416 | 1,614 | 1,601 | | | | | |
| 1873..... | 19,135 | 9,949 | 432 | 2,733 | 1,218 | 929 | 624 | 14,182 | 1,310 | 431 | 637 | 1,202 | 1,434 | 1,336 | | | | | |
| Total..... | 140,986 | 74,926 | 1,912 | 22,761 | 9,553 | 5,714 | 3,809 | 107,545 | 7,884 | 3,237 | 4,746 | 9,324 | 10,833 | 10,543 | | | | | |

| YEARS. | TOTAL BY SEXES. | | | | | | | | | | | | | | | | |
|------------|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|-----|-----------------|---------|---------|----|
| | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 | 90 | 95 | 100 and Upward. | M. | | F. |
| | | | | | | | | | | | | | | | M. | F. | |
| 1866..... | 1,399 | 1,175 | 965 | 929 | 760 | 711 | 668 | 470 | 336 | 247 | 111 | 32 | 23 | 7 | 14,241 | 12,574 | |
| 1867..... | 1,180 | 899 | 847 | 676 | 543 | 567 | 483 | 375 | 260 | 196 | 98 | 35 | 12 | 5 | 12,337 | 10,832 | |
| 1868..... | 1,201 | 962 | 824 | 700 | 579 | 592 | 573 | 435 | 343 | 180 | 97 | 43 | 9 | 5 | 13,300 | 11,880 | |
| 1869..... | 1,199 | 1,084 | 1,008 | 836 | 611 | 658 | 594 | 435 | 340 | 216 | 117 | 41 | 17 | 8 | 13,369 | 11,798 | |
| 1870..... | 1,420 | 1,248 | 1,065 | 974 | 755 | 766 | 632 | 548 | 382 | 238 | 130 | 45 | 16 | 11 | 14,475 | 12,400 | |
| 1871..... | 1,396 | 1,191 | 1,088 | 929 | 765 | 724 | 610 | 580 | 314 | 223 | 169 | 36 | 20 | 14 | 14,462 | 12,524 | |
| 1872..... | 1,625 | 1,427 | 1,236 | 1,075 | 785 | 852 | 618 | 655 | 436 | 248 | 127 | 46 | 34 | 10 | 17,327 | 15,320 | |
| 1873..... | 1,418 | 1,305 | 1,158 | 1,001 | 737 | 777 | 661 | 647 | 389 | 274 | 104 | 45 | 34 | 5 | 15,313 | 13,771 | |
| Total..... | 10,857 | 9,291 | 8,301 | 7,120 | 5,535 | 5,647 | 4,839 | 4,745 | 2,800 | 1,822 | 893 | 326 | 159 | 65 | 114,804 | 101,408 | |

CENTENARIANS.

A few particulars of the history and condition at the time of death of some aged people have been furnished by the attending physicians, and may prove of interest.

Mary Nixon, born in Ireland in 1765, died in this city August 26, 1873. She was attended in her last illness by Dr. John H. Wilson, who stated that she died of softening of the brain, nervous exhaustion, and old age, her memory and eyesight having completely failed previous to her death.

Patrick White, born in Ireland in 1771, emigrated to New York City in 1853, where he died, aged one hundred and two years, July 25, 1873, Dr. J. R. MacGregor attending him in his last illness. Mr. White was married between the ages of forty-five and fifty. His occupation in Ireland was that of a farmer, and his diet while there consisted principally, according to his own statement, of potatoes and milk, with an addition sometimes of fish and eggs. He did not eat meat more than once or twice a week, and oftentimes not more than once a month. He drank liquor moderately, and after his arrival in this country performed no hard work.

Thomas Craig, born in the county of Leitrim, Ireland, in 1771, came to the United States twenty-nine years previous to his death. His occupation in Ireland was that of wheelwright and carpenter, and in this country he became a porter. He was twice married, but had no children. About a year previous to his death he was injured by falling from a car, and was more or less childish from that time until he expired, at over one hundred years of age. His wife is still alive, and is aged eighty-three years. J. Burke, medical attendant.

Hannah Ruland, *née* Wilson, born August 29, 1774, at Oyster Bay, Long Island, of Scotch parents, died in this city October 26, 1873. She was married at the age of sixteen years, and was the mother of ten children. Her mother was married at the age of thirteen years and six months, and gave birth to sixteen children, eight girls and eight boys, all of them distinguished for remarkable longevity and robust constitutions. The youngest child was over fifty years old when the first death occurred in the family, and one of the male children nearly reached his one hundredth year. Mrs. Ruland performed her household duties with punctuality, and her longevity was attributed in a great degree to certain habits to which she rigidly adhered during lifetime—one of them being that of retiring to bed at sunset and rising with the sun. She always insisted on having eight or nine hours' sleep, and at regular hours; partook of plain and substantial food, with tea and coffee. She never wore corsets, or indulged in alcoholic liquors, and was robust and muscular. Her height was 5 feet 4½ inches. H. D. Ranney, M. D., medical attendant.

Christopher Rush, colored, born in Craven County, North Carolina, in 1777, died in this city of senile asthenia, July 16, 1873. He was brought to this city a slave in 1798, and gained his freedom about the year 1812. He joined the

African M. E. Church in 1803, was licensed to preach in 1815, ordained in 1822, and elected bishop of the church in 1828. He lost his eyesight in 1859, and in 1868 became subject to fits at intervals of from one week to two months, which greatly impaired his memory, and continued until his death. Frugality in his earlier years enabled him to save enough money to make him independent, so that he lived comfortably in his old age. He was a hearty eater, very fond of coffee, of which he drank a great deal, and was an inveterate tobacco-smoker. He was naturally robust and healthy, and drank no liquor stronger than cider. Henry S. Downes, M. D., medical attendant.

Alexander Scott, colored, born in Delaware in 1773, died in this city of senile asthenia at the age of one hundred years, at the Colored Home, to which he had been admitted in October, 1871. His father's death was caused by the rupture of a blood-vessel, and his mother died of old age. R. C. Baker, M. D., House Physician.

John McGibney, born in Ireland in 1776, died in this city January 11, 1873, of pleurisy. He came to this country in 1866, and was employed as a laborer, working occasionally, until a few weeks before his death. He was of temperate habits, and during his lifetime his diet consisted of the humblest fare. He was muscular and of medium stature, and enjoyed excellent health until his last illness. John Doran, M. D., medical attendant.

The statistical statement compiled for incorporation in this year's Annual Report gives the names of 91 centenarians, of whom 72 were females and 19 males. Of this number 56 were natives of Ireland; 25 of the United States; 2 of Germany; 2 of France; 2 of the West Indies; 1 of Scotland; 1 of Africa; 1 was born at sea, and the nativity of the other is unknown. The majority of these people died of old age, but the deaths of some were accelerated by disease. The majority were widowed at the time of death, but several left partners surviving, and a few had never married. The list, as procured from the records, is as follows:

TABLE No. XXIX.
DEATHS OF PERSONS ONE HUNDRED YEARS OLD AND UPWARD IN NEW YORK CITY FOR THE PAST TEN YEARS.
 AS COLLECTED FROM THE RETURNS OF DEATHS RECEIVED IN THIS BUREAU.

| DATE OF DEATH. | Year. | Name. | Age. | | Condition. | Occupation. | Nativity. | How long a Resident of this City | Color. | Cause of Death. |
|----------------|-------|--------------------|------|------------|------------|-------------|------------------|----------------------------------|----------|-----------------------|
| | | | Yrs. | Mos. Days. | | | | | | |
| January 9 | 1864 | India Wood | 100 | 3 | Single | | New Jersey | | Colored. | Senile Asthenia. |
| " 16 | 1864 | Fridget O'Brien | 100 | | Widow | | Ireland | | White. | Pneumonia. |
| March 21 | 1864 | Ira Cromwell | 104 | 6 | Widow | | Baltimore, Md. | | Colored. | Senile Asthenia. |
| May 27 | 1864 | Mary Buckley | 105 | | Married | | New York | | " | Erysipelas. |
| " 31 | 1864 | Minnie Thomas | 100 | | Widow | | Maryland | | " | Senile Asthenia. |
| January 17 | 1864 | Elizabeth Price | 100 | | Widow | | North Carolina | | " | " |
| June 28 | 1864 | Leah Cropsie | 100 | | Widow | | Virginia | | White. | Dropsy. |
| July 20 | 1864 | Isaac Daniels | 109 | | Widow | | Bedford, N. Y. | | Colored. | Senile Asthenia. |
| " 28 | 1864 | Ann Jackson | 100 | 21 | Widow | | S. Island, N. Y. | | White. | " |
| September 13 | 1864 | Rachel Stafford | 102 | 6 | Widow | | New Jersey | | White. | " |
| " 7 | 1864 | Isabella Cook | 100 | | Widow | | Virginia | | Colored. | " |
| December 1 | 1864 | Rose Gilligan | 103 | | Widow | | Ireland | | White. | " |
| January 4 | 1865 | Mrs. D. McKinney | 100 | | Widow | | Ireland | | White. | " |
| February 7 | 1865 | Johanna Waters | 104 | | Widow | | Ireland | | Colored. | " |
| March 13 | 1865 | Frances Davis | 100 | | Widow | | Ireland | | Colored. | " |
| June 4 | 1865 | Mincerva Ellis | 105 | | Widow | | Ireland | | White. | " |
| " 9 | 1865 | Absalom Thornton | 105 | 3 | Widow | | Ireland | | Colored. | " |
| August 18 | 1865 | Thomas Golden | 104 | 29 | Widow | | Ireland | | White. | " |
| " 21 | 1865 | Thomas McAnnally | 101 | | Widow | | Jamaica, W. I. | | White. | " |
| October 6 | 1865 | Patrick Noonan | 100 | 5 | Widow | | " | | " | " |
| November 30 | 1865 | James Quinn | 100 | 10 | Widow | | " | | " | " |
| January 13 | 1866 | Mary McMahon | 104 | | Widow | | New York | Life. | " | " |
| May 4 | 1866 | William Daily | 106 | | Widow | | Ireland | Life. | Colored. | " |
| " 15 | 1866 | Mary Ann Bastine | 118 | | Widow | | " | | White. | " |
| July 17 | 1866 | Mary Griffin | 100 | | Widow | | " | | " | " |
| August 1 | 1866 | Fridget Noonan | 100 | | Widow | | " | | " | " |
| September 12 | 1866 | Margaret Farrel | 105 | | Widow | | " | | " | " |
| December 7 | 1866 | Phyllis Bees | 105 | | Widow | | " | | " | " |
| " 18 | 1866 | Christina Reinfort | 105 | | Widow | | New York | 35 Yrs. | " | " |
| January 10 | 1867 | Rebecca Ward | 100 | | Widow | Domestic. | France | 67 " | " | " |
| February 6 | 1867 | Margaret Harly | 100 | | Widow | | Scotland | 17 " | " | " |
| March 25 | 1867 | Emilie C. Lorenz | 103 | | Widow | | Ireland | 18 " | " | " |
| May 13 | 1867 | Judy Green | 109 | | Widow | | Germany | 15 Yrs. | Colored. | Senile & Convulsions. |
| June 12 | 1868 | Margaret Terry | 100 | 11 | Widow | Cook | Ireland | 19 " | White. | Senile Asthenia. |
| February 29 | 1868 | Maria M. Possinger | 100 | 6 | Widow | | United States | 28 Yrs. | White. | Tumor of Breast. |
| July 3 | 1868 | Ann Mary Brown | 103 | | Widow | | Ireland | 19 " | " | " |
| April 26 | 1868 | Hannora Hanlon | 108 | | Widow | | " | 18 " | " | " |
| May 7 | 1869 | Florence McCarty | 100 | | Widow | | " | 8 " | " | " |
| December 19 | 1869 | Francis McLellan | 100 | | Widow | Labourer. | " | | " | " |
| September 29 | 1869 | | 100 | | Widow | | " | | " | " |

TABLE No. XXX.

DEATHS OF PERSONS NINETY YEARS OLD AND UPWARD IN NEW YORK DURING THE YEAR 1873.

| DATE OF DEATH. | Name of Deceased. | | Age. | | Condition. | Occupation. | Nativity. | Time of Residence in City. | Color. | Cause of Death. |
|----------------|-------------------|---------------------|-------|----|------------|-----------------|-----------------|----------------------------|----------|--|
| | Yrs. | Mos. | Days. | | | | | | | |
| January | 2 | Hugh Smith | 96 | | Widower. | Laborer. | Ireland | 10 Yrs. | White. | Senile Debility. |
| " | 8 | Hannah Goudy | 96 | 4 | Widow. | " | New York | " | " | " (Ulceration of Uterus). |
| " | 11 | John McGivney | 97 | | Widower. | " | Ireland | 7 Yrs. | " | Lobular Pneumonia (Old Age). |
| " | 16 | Caroline Wineburgh | 90 | | Widow. | " | Russia | 8 | " | Old Age. |
| " | 19 | David Gibbons | 92 | | Widower. | " | Ireland | 25 | " | Senile Debility. |
| " | 22 | Leopold Marguicau | 94 | | Married. | Night Scavenger | France. | 39 | " | Chronic Rheumatism (Old Age). |
| " | 26 | Mary Hardy | 90 | | Widow. | " | Massachusetts. | " | " | Diarrhea. |
| February | 3 | Catherine Bard | 95 | | Married. | Domestic. | New Jersey | 4 Yrs. | Colored. | Old Age. |
| " | 8 | David J. Demarest | 92 | 2 | Married. | " | " | 50 | White. | Bronchitis. |
| " | 9 | Samuel Nathan | 90 | | Widower. | Merchant. | Germany | 30 | " | Senile Asthenia. |
| " | 9 | John Whalen | 93 | | Married. | " | Ireland | 5 | " | Bronchitis (Old Age). |
| " | 14 | Ann Quinlan | 90 | 10 | Married. | " | " | 25 | " | Bronchitis (Old Age). |
| " | 18 | Perry Hopkins | 97 | | Widower. | Laborer. | " | 50 | " | " |
| " | 26 | James Dwyer | 94 | | Widow. | " | Maryland | 37 | " | Old Age. |
| March | 1 | Elizabeth Spicer | 92 | | Widow. | " | Ireland | 5 1/2 Yrs. | Colored. | Intermittent Fever. |
| " | 1 | Catherine O'Connell | 95 | | " | " | New York | 40 | " | Bronchitis (Old Age). |
| " | 6 | Ann Frisbie | 90 | | " | Domestic. | Maryland | " | " | Chronic Rheumatism (Old Age). |
| " | 7 | Charlotte Umlaup | 91 | 4 | " | House-keeper. | Germany | 11 | White. | Suicide by severing Vessels of Arm with Razor. |
| " | 11 | Ann Murray | 95 | | " | " | Ireland | 8 | " | Capillary Bronchitis (Old Age). |
| " | 14 | Mary McGrath | 100 | | " | " | " | 33 | " | Old Age. |
| " | 17 | Sarah Kelly | 97 | | " | " | " | 20 | " | " |
| " | 22 | Mary Managhan | 102 | | " | " | " | 25 | " | " |
| " | 23 | Bridget Moser | 90 | 20 | Married. | " | Germany | 11 | " | Bronchitis (Old Age). |
| April | 1 | Mary Tobin | 100 | | Married. | House-keeper. | Ireland | 33 | " | Senile Dementia. |
| " | 3 | Ellen Chancy | 90 | | Widow. | " | " | 20 | " | Bronchitis (Old Age). |
| " | 7 | William McDonald | 93 | | Widower. | Gentleman. | " | 22 | " | Old Age. |
| " | 23 | Ann Wyatt | 91 | | Married. | " | England | 30 | " | " |
| May | 4 | Thomas Craig | 102 | | Married. | " | Ireland | 40 | " | Bright's Disease (Marasmus). |
| " | 13 | Michael Lippman | 93 | | Widow. | " | Germany | 9 | " | Senile Asthenia. |
| " | 14 | Ann McGorey | 95 | | Widow. | " | Ireland | 40 | " | " |
| " | 21 | Timothy Curry | 95 | | Married. | " | " | 55 | " | " |
| " | 24 | Hugh Carroll | 90 | | Married. | " | " | 22 | " | " |
| June | 8 | Bridget Harrington | 90 | 30 | Widow. | " | " | 30 | " | Bronchitis (Senile Asthenia). |
| " | 16 | Horatio G. Stevens | 94 | 2 | Widower. | " | Connecticut | 93 | " | Epilepsy. |
| " | 16 | William Feuwick | 96 | | " | Porter. | South Carolina. | 30 | " | Chronic Cystitis (Old Age). |

| | | | | | | | | | |
|-----------|----|----------------------|-----|----------|---------------|----------------|---------|----------|-------------------------------------|
| June | 29 | Catharine Day | 90 | Widow. | ..... | New York | 90 Yrs. | White. | Senile Asthenia. |
| July | 30 | Sarah Ward | 97 | " | ..... | Ireland | 28 | " | Old Age. |
| " | 8 | Margaret Kehoe | 90 | " | ..... | Scotland | 45 | " | Senile Asthenia. |
| " | 15 | Jane Ferguson | 96 | Single. | ..... | North Carolina | 70 Yrs. | " | Old Age. |
| " | 16 | Christopher Kush | 97 | Widow. | ..... | Ireland | 23 | " | Senile Asthenia. |
| " | 18 | Jane McElvahn | 96 | " | ..... | " | 16 | " | " |
| " | 20 | Ann Reardon | 90 | " | ..... | " | 36 | " | " |
| " | 24 | John Walsh | 96 | Married. | ..... | " | 20 | " | " |
| " | 25 | Elizabeth Peete | 90 | Widow. | Farmer. | " | 19 | " | " |
| " | 25 | Patrick White | 98 | " | ..... | Albany, N. Y. | 3 Yrs. | " | Chronic Diarrhoea (Old Age). |
| August | 2 | Charles McGraden | 95 | " | ..... | Ireland | 50 | " | Senile Asthenia. |
| " | 2 | Susan Van Valkenburg | 96 | " | ..... | United States | 5 | " | Apoplexy. |
| " | 12 | Alice O'Brien | 91 | Widow. | ..... | Ireland | 26 | " | Phthisis Pulmonalis. |
| " | 23 | Joseph R. Cattle | 90 | Widow. | ..... | " | 20 | " | Phthisis (Bronchitis). |
| " | 25 | Mary Nixon | 95 | " | ..... | " | 20 | " | Senile Asthenia. |
| September | 3 | Mary Dempsey | 98 | " | ..... | " | 20 | " | Asthenia. |
| " | 3 | Mary Hammond | 92 | " | ..... | " | 20 | " | Senile Asthenia. |
| " | 6 | Andy Hughes | 97 | Widow. | ..... | New York | 46 Yrs. | " | Phthisis (Chronic Diarrhoea). |
| " | 10 | Rebecca Goldsmith | 93 | Widow. | Lady. | " | 46 Yrs. | " | Senile Asthenia. |
| " | 13 | Catharine Brown | 94 | " | ..... | " | 25 Yrs. | " | Phthisis (Bronchitis). |
| " | 24 | Sarah Arthur | 91 | " | ..... | Ireland | 20 | " | Senile Asthenia. |
| " | 27 | Mary Collins | 97 | " | ..... | " | 36 | " | Old Age. |
| " | 28 | Mary Collins | 96 | " | House-keeper. | " | 36 | " | Senile Asthenia. |
| " | 28 | Mary Ghrvan | 92 | " | ..... | " | 26 | " | Bronchitis (Asthenia). |
| " | 30 | Catharine Stevenson | 90 | " | ..... | " | 40 | " | Chronic Bronchitis (Old Age). |
| " | 30 | Elizabeth Nolan | 91 | " | ..... | " | 23 | " | Chronic Diarrhoea. |
| October | 9 | Patrick Rogers | 99 | " | ..... | " | 23 | " | Chronic Diarrhoea. |
| " | 9 | Mary Leckin | 99 | " | ..... | " | 23 | " | Chronic Diarrhoea. |
| " | 10 | Mary Leckin | 95 | Married. | ..... | " | 23 | " | Diarrhoea. |
| " | 10 | Catharine Smith | 92 | Widow. | Lady. | Massachusetts | 55 Yrs. | " | Laryngismus Stridulus (Bronchitis). |
| " | 15 | Morris Spillane | 90 | Married. | ..... | Ireland | 50 | " | Bronchitis (Senile Asthenia). |
| " | 18 | Margaret Fenlon | 95 | " | ..... | " | 16 | " | Senile Asthenia. |
| " | 26 | Hannah Ruland | 89 | Widow. | ..... | New York | 80 Yrs. | Colored. | " |
| " | 28 | Hagar Harrington | 96 | " | ..... | " | 27 | White. | " |
| November | 4 | John Garvin | 91 | Widow. | ..... | Ireland | 27 | " | Pneumonia. |
| " | 9 | Margaret Willard | 94 | " | ..... | New York | 20 Yrs. | " | Senile Asthenia. |
| " | 10 | Catharine Trainor | 95 | Widow. | ..... | " | 20 Yrs. | " | Senile Asthenia. |
| " | 14 | Mary Donnelly | 94 | Married. | Seamstress. | " | 40 | " | Senile Asthenia. |
| " | 14 | Sarah K. Audem | 94 | Widow. | ..... | New York | 21 | " | Senile Asthenia. |
| " | 23 | Mary Fisher | 90 | " | House-keeper. | " | 21 | " | Senile Asthenia. |
| " | 23 | Alexander Scott | 100 | " | ..... | Ireland | 30 | " | Senile Asthenia. |
| " | 24 | Neuman Ignatz | 91 | Widow. | Merchant. | Delaware | 28 | " | Senile Asthenia. |
| " | 27 | Terence Sheridan | 90 | Married. | ..... | Poland | 37 | " | Senile Asthenia. |
| " | 27 | Jeanette Davis | 98 | " | ..... | Ireland | 21 | " | Senile Asthenia. |
| December | 4 | Sarah Morrell | 98 | Married. | ..... | Germany | 19 | " | Senile Asthenia. |
| " | 6 | Sarah Dunlaid | 97 | Single. | ..... | New York | 25 Yrs. | " | Senile Asthenia. |
| " | 9 | Judith Healy | 92 | Married. | ..... | Ireland | 19 | " | Senile Asthenia. |
| " | 12 | Mary Ann Conkhu | 92 | Widow. | ..... | New York | 69 Yrs. | " | Senile Asthenia. |
| " | 14 | Jane L. Fleming | 95 | " | ..... | Scotland | 13 | " | Senile Asthenia. |
| " | 18 | Honora Connell | 90 | " | ..... | Ireland | 13 | " | Senile Asthenia. |
| " | 28 |  |  | " | ..... |  |  | " | Senile Asthenia. |

TABLE No. XXXI.

LIST OF CEMETERIES IN NEW YORK AND VICINITY THAT HAVE RESPONDED TO REQUESTS FOR INFORMATION FROM THIS BUREAU.

| NAME OF CEMETERY. | Religious Denomination. | Area in Acres. | Location. | Distance from New York City. | Name, etc., of Person furnishing Information. |
|----------------------|-----------------------------|----------------|--|------------------------------|--|
| City | Undenominational | 100 | Hart's Island, N. Y. | 14 miles. | Joshua Phillips, Sec'y Public Charities and Cor. |
| City | " | 15 | Flatbush, L. I., N. Y. | 6 " | James A. Murtha, Clerk, Com. of Charities. |
| Cypress Hills. | " | 305 | " | 4½ " | Wm. Edwards, Secretary. |
| State Emigrant. | " | 2½ | Ward's Island. | 12th Ward, N. Y. ... | H. I. Jackson, Acting Secretary. |
| Evergreens. | " | 53 | Elizabeth, N. J. | 14½ miles. | — — — — —, Superintendent. |
| Evergreens. | " | 221 | East New York, L. I., N. Y. | 2½ " | Wm. A. Cummings, President. |
| Flushing | " | 21 | Flushing, L. I., N. Y. | 8 " | David L. Waters. |
| Greenwood | " | 450 | Brooklyn, L. I., N. Y. ... | 3½ " | J. A. Perry, Controller. |
| Hoboken | " | 17½ | Hoboken, N. J. | 5 " | B. N. Crane. |
| Lutheran. | " | 300 | Middle Village, L. I., N. Y. | 4 " | F. W. Geissenhainer, Treasurer. |
| Machpelah. | " | 10 | New Durham, N. J. | 4 " | Walter S. Miller, Secretary. |
| " | Jewish. | 19 | New Lots, L. I., N. Y. | 5 " | Ferdinand Kurzman, Vice-Pres. Temple Bethel. |
| Salem Fields | " | 32½ | New Lots, Kings Co., L. I., N. Y. | 7 " | Meyer J. Stern, Secretary. |
| Maple Grove. | Undenominational | 80 | Jamaica, L. I., N. Y. | 7 " | Charles S. Goodwin, Secretary. |
| Mount Pleasant. | " | 33 | Newark, N. J. | 9½ " | W. V. W. Vreeland, Superintendent. |
| Mount Olivet. | " | 50 | Maspeth, L. I., N. Y. | 4 " | Charles M. Chamberlain, Keeper. |
| New York Bay. | " | 40 | New Jersey Shore, New York Bay. . | 2½ " | C. H. Backmaster, Secretary. |
| New York | True Reformed Dutch Church. | 8 | Hackensack, N. J. | 11 " | Daniel A. Eekerson, Superintendent. |
| Oak Hill | Undenominational | 22 | Nyack, N. Y. | 14½ " | D. N. Clark, Secretary. |
| Rockland. | " | 226 | Sparkhill, N. Y. | " | J. Martin, Superintendent. |
| Trinity | " | 25 | One Hundred and Fifty-fifth Street. . | 19th Ward, N. Y. ... | George T. Strong, Controller. |

| | | | | | |
|--------------------------|----------------------------------|------------------|-----------------------------------|-------------------------|-------------------------------------|
| Woodlawn..... | Undenominational..... | 375 | Woodlawn Station, N. Y..... | 24th Ward, N. Y..... | I. Hotchkiss, Assistant Treasurer. |
| Washington..... | "..... | 85 | Gravesend, L. I., N. Y..... | 5 miles..... | Robert Criswell, General Agent. |
| White Plains..... | "..... | 45 | White Plains, N. Y..... | "..... | W. H. Huestiz. |
| Weehawken..... | "..... | 12 ² | Weehawken, N. J..... | 3 miles..... | Emil Becker, Superintendent. |
| Rosedale..... | "..... | 45 | Orange, N. J..... | 13 "..... | G. Badner, Superintendent |
| St. Peter's..... | Roman Catholic..... | 2.88 | Jersey City, N. J..... | 3 "..... | John Hailiard, Secretary. |
| Hudson County..... | "..... | 50 | "..... | 3 "..... | John Hailiard, Secretary. |
| Calvary..... | "..... | 100 | Newtown, L. I., N. Y..... | 2 "..... | M. Rowan, |
| St. Raymond's..... | "..... | 2 | Westchester, N. Y..... | 2 "..... | Rev. J. A. Kinsella. |
| Holy Cross..... | "..... | 60 | Flatbush, L. I., N. Y..... | 6 $\frac{1}{2}$ "..... | P. H. Curran, Superintendent. |
| Holy Trinity..... | "..... | 11 $\frac{1}{2}$ | Hackensack, N. J..... | 10 "..... | Rev. Joseph Rolando. |
| St. Mary's..... | "..... | 6 | Flushing, L. I., N. Y..... | 10 "..... | Rev. Henry O'Loughan. |
| St. Michael's..... | Protestant Episcopal..... | 13 | Astoria, L. I., N. Y..... | 2 $\frac{1}{2}$ "..... | E. Scheurer, Keeper. |
| St. Paul's Church..... | "..... | 3 $\frac{1}{2}$ | Eastchester, N. Y..... | 9 "..... | Rev. Wm. G. Coffey. |
| Woodland..... | Episcopal..... | 35 | Newark, N. J..... | 10 miles..... | Charles Hayes, Secretary. |
| South Church..... | True Dutch Reformed..... | 1.46 | Schraalenburgh, N. J..... | 15 miles..... | Henry H. Voorhis, Superintendent. |
| North Church..... | Seeders from Dutch Reform'd..... | 2 | Schraalenburgh, N. J..... | 15 "..... | David N. Durmie. |
| Oldstone Church..... | True Dutch Reformed..... | 3 | English Neighborhood, N. J..... | 8 "..... | Rev. A. B. Taylor. |
| Dutch Reformed..... | Dutch Reformed..... | 1 | Jersey City Heights, N. J..... | 3 "..... | John J. Phillips. |
| Moravian..... | Moravian..... | 64 | New Dorp, S. I., N. Y..... | 9 "..... | N. J. Ostrandor, Superintendent. |
| Union..... | Methodist Protestant..... | 10 | Brooklyn, E. D., L. I., N. Y..... | 4 $\frac{1}{2}$ "..... | Thomas Brown, Superintendent. |
| Fairmount..... | Protestant..... | 60 | Newark, N. J..... | 11 $\frac{1}{2}$ "..... | Charles J. Nichols, Superintendent. |
| Methodist Episcopal..... | Methodist Episcopal..... | 6 | Newtown, L. I., N. Y..... | 5 "..... | Henry Haanschilt, Treasurer. |
| Morrisania..... | "..... | 2 $\frac{1}{2}$ | Bensonia..... | 23d Ward, N. Y..... | James L. Parshall, Superintendent. |
| Presbyterian..... | Presbyterian..... | 1 $\frac{1}{2}$ | West Farms..... | 24th Ward, N. Y..... | A. Petit, Superintendent. |

² Three acres allotted to Roman Catholics—consecrated ground.

¹ Jews own 64 feet square.

The disposition of the remains of those who died in the city of New York during the year 1873, will be shown in the accompanying table, and may prove of interest. From replies to letters of inquiry, forwarded to persons in charge of cemeteries in New York City and vicinity, requesting information as to their area in acres, the space allotted for free interments, the rules and regulations governing them, and whether they are under the control of any religious sect, the information respecting these items has been elicited. From these statements, it will be observed that the total number of acres of ground devoted to the interment of the dead of New York City and vicinity, at present, exceeds 3,053, which amply provides for their disposal for a great many years; and from the records of this Bureau it will be seen that since the year 1798 more than 817,629 deaths occurred in this city, and that the interments—with but few exceptions—were made in the cemeteries of this city and vicinity.

In addition to the cemeteries mentioned in the annexed list, there are several old church-yards and vaults in this city, varying from one-half to two acres, but on account of their overcrowded condition, and the rule of the Board of Health preventing burials in the built-up portion of the city, or south of One Hundred and Thirtieth Street, very few interments now take place in them.

In Paris, the subject relating to the disposal of its dead has been discussed with great interest, and the result has shown that in three cemeteries within the precincts of the city, which contain about 202 acres, the number of interments since 1804 has amounted to 1,493,920;¹ of this number, the cemetery of Père-la-Chaise, which is the largest cemetery, having an area of 108.57 acres, received 688,477 bodies; the cemetery of Montmartre, comprising 48 acres, received the remains of 382,937 persons; and the cemetery of Montparnasse, which contains but about 45 acres, is the resting-place of 422,506 bodies; the remaining seventeen cemeteries are much smaller and vary considerably in size, but are as overcrowded as those previously mentioned. The inadequacy of the cemeteries for the continued disposal of the dead, and the fear that their further overcrowding would endanger the health of the community, has obliged the authorities to prohibit the burial of any more dead bodies in them, unless to actual plot-owners; and also to pass an ordinance to establish a capacious cemetery in the commune of Méry-sur-Oise, which is situated about thirteen and a half miles north of Paris, and to be connected with it by a railway for the special and exclusive use of funerals. The number of acres required to bury the dead of that city for the period of 100 years is estimated at 2,000.

Nearly all the public cemeteries in this city and vicinity were incorporated under the general State law authorizing the organization of rural cemeteries, passed April 27, 1847, and the various acts adding to or amending the same, viz.:

¹ "Les Cimetières de Paris," par Maxime du Camp, *Revue des Deux Mondes*, April, 1874.

AN ACT

AUTHORIZING THE INCORPORATION OF RURAL CEMETERY ASSOCIATIONS. Passed April 27, 1847.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. Any number of persons residing in this State, not less than seven, who shall desire to form an Association for the purpose of procuring and holding lands to be used exclusively for a Cemetery, or place for the burial of the dead, may meet at such time and place as they or a majority of them may agree, and appoint a Chairman and Secretary by the vote of a majority of the persons present at the meeting ; and proceed to form an Association by determining on a corporate name, by which the Association shall be called and known ; by determining on the number of Trustees to manage the concerns of the Association, which number shall not be less than six, nor more than twelve ; and thereupon may proceed to elect by ballot the number of Trustees so determined on ; and the Chairman and Secretary shall immediately after such election, divide the Trustees by lot into three classes ; those in the first class to hold their office one year, those in the second class two years, and those in the third class three years. But the Trustees of each class may be reelected if they shall possess the qualification hereinafter mentioned. The meeting shall also determine on what day in each year the annual elections of Trustees shall be held.

SEC. 2. The Chairman and Secretary of the meeting shall, within three days after such meeting, make a written certificate, and sign their names thereto, and acknowledge the same before an officer authorized to take the proof and acknowledgment of conveyances in the county where such meeting shall have been held, which certificate shall state the names of the associates who attended such meeting ; the corporate name of the Association determined upon by the majority of the persons who met ; the number of Trustees fixed on to manage the concerns of the Association ; the names of the Trustees chosen at the meeting, and their classification, and the day fixed on for the annual election of Trustees ; which certificate it shall be the duty of the Chairman and Secretary of such meeting to cause to be recorded in the Clerk's office of the county in which the meeting was held, in a book to be appropriated to the recording of certificates of incorporation.

SEC. 3. Upon such certificate, duly acknowledged as aforesaid, being recorded, the Association mentioned therein shall be deemed legally incorporated, and shall have and possess the general powers and privileges, and be subject to the liabilities and restrictions contained in the third title of the eighteenth chapter of part first of the Revised Statutes. The affairs and property of such Associations shall be managed by the Trustees, who shall annually appoint from among their number a President and Vice-President, and shall also appoint a Secretary and Treasurer, who shall hold their places during the pleasure of the Board of Trustees ; and the Trustees may require the Treasurer to give security for the faithful performance of the duties of his office.

SEC. 4. Any Association incorporated under this Act may take by purchase or devise and hold, within the county in which the certificate of their incorporation is recorded, not exceeding two hundred acres of land, to be held and occupied exclusively for a Cemetery for the burial of the dead. Such land, or such parts thereof, as may from time to time be required for that purpose, shall be surveyed and subdivided into lots or plats of such size as the Trustees may direct, with such avenues, paths, alleys, and walks as the Trustees deem proper ; and a map or maps of such surveys shall be filed in the Clerk's office of the county in which the land shall be situated. And after filing such map, the Trustees may sell and convey the lots or plats designated on such map, upon such terms as shall be agreed, and subject to such conditions and restrictions, to be inserted in or annexed to the conveyances, as the Trustees shall prescribe. The conveyances to be executed under the common seal of the Association, and signed by the President or Vice-President, and the Treasurer of the Association. Any Association incorporated under this Act, may hold personal property

to an amount not exceeding five thousand dollars, besides what may arise from the sale of lots or plats.

SEC. 5. The annual election for Trustees, to supply the place of those whose term of office expires, shall be holden on the day mentioned in the Certificate of Incorporation and at such hour and place as the Trustees shall direct; at which election shall be chosen such number of Trustees as will supply the places of those whose terms expire. The Trustees chosen at any election subsequent to the first, shall hold their place for three years, and until others shall be chosen to succeed them. The election shall be by ballot, and every person of full age who shall be proprietor of a lot or plat in the Cemetery of the Association, containing not less than four hundred square feet of land, or if there be more than one proprietor of any such lot or plat, then such one of the proprietors as the majority of joint-proprietors shall designate to represent such lot or plat, may, either in person or by proxy, give one vote for each plat or lot, of the dimensions aforesaid; and the persons receiving a majority of all the votes given at such election, shall be Trustees to succeed those whose terms of office expire. But in all elections after the first, the Trustees shall be chosen from among the proprietors of lots or plats. And the Trustees shall have power to fill any vacancy in their number occurring during the period for which they hold their office. Public notice of the annual election shall be given in such manner as the By-Laws of the Corporation shall prescribe.

SEC. 6. The Trustees at each annual election shall make reports to the lot proprietors of their doings, and of the management and condition of the property and concerns of the Association. If the annual election shall not be held on the day fixed in the Certificate of Incorporation, the Trustees shall have power to appoint another day, not more than sixty days thereafter, and shall give public notice of the time and place, at which time the election may be held with like effect as if holden on the day fixed on in the Certificate. The office of the Trustees chosen at such time, to expire at the same time as if they had been chosen at the day fixed by the Certificate of Incorporation.

SEC. 7. All lots or plats of ground designated on the maps filed as aforesaid, and numbered as separate lots by the incorporation, shall be indivisible, but may be held and owned in undivided shares. One-half of the proceeds of all sales of lots or plats shall be first appropriated to the payment of the purchase-money of the lands acquired by the Association, until the whole purchase-money shall be paid, and the residue thereof to preserving, improving, and embellishing the said Cemetery grounds and the avenues or roads leading thereto, and to defraying the incidental expenses of the Cemetery establishment. And after the payment of the purchase-money and the debts contracted therefor, and for surveying and laying out the land, the proceeds of all future sales shall be applied to the improvement, embellishment, and preservation of such Cemetery, and for incidental expenses and to no other purpose or object.

SEC. 8. Any person who shall willfully destroy, mutilate, deface, injure, or remove any tomb, monument, grave-stone, building or other structure, placed in any Cemetery of any Association incorporated under this Act, or any fence, railing, or other work for the protection or ornament thereof, or of any tomb, monument or grave-stone, or other structures aforesaid, or of any plat or lot within such Cemetery, or shall willfully destroy, cut, break or injure any tree, shrub, or plant, within the limits of such Cemetery, shall be deemed guilty of a misdemeanor; and such offender shall also be liable in an action of trespass, to be brought in all such cases in the name of such Association, to pay all such damages as shall have been occasioned by his unlawful act or acts. Such money when recovered shall be applied by the Trustees to the reparation or restoration of the property so destroyed or injured.

SEC. 9. Any Association incorporated pursuant to this Act, may take and hold any property, real or personal, bequeathed or given upon trust, to apply the income thereof under the direction of the Trustees of such Association, for the improvement or embellishment of

such Cemetery, or the erection or preservation of any buildings, structures, fences, or walks, erected or to be erected upon the lands of such Cemetery Association, or upon the lots or plats of any of the proprietors; or for the repair, preservation, erection, or renewal of any tomb, monument, grave-stone, fence railing, or other erection, in or around any Cemetery lot or plat; or for planting and cultivating trees, shrubs, flowers, or plants, in or around any such lot or plat, or for improving or embellishing such Cemetery, or any of the lots or plats in any other manner or form; consistent with the design and purpose of the Association, according to the terms of such grant, devise, or bequest.

SEC. 10. The Cemetery lands and property of any Association, formed pursuant to this Act, shall be exempt from all public taxes, rates, and assessments; and shall not be liable to be sold on execution, or be applied in payment of debts, due from any individual proprietors. But the proprietors of lots or plats in such Cemeteries, their heirs, or devisees, may hold the same exempt therefrom so long as the same shall remain dedicated to the purpose of a Cemetery, and during that time, no street, road, avenue, or thoroughfare shall be laid through such Cemetery, or any part of the lands held by such Association, for the purposes aforesaid, without the consent of the Trustees of such Association, except by special permission of the Legislature of the State.

SEC. 11. Whenever the said land shall be laid off into lots or plats, and such lots or plats or any of them shall be transferred to individual holders, and after there shall have been an interment in a lot or plat so transferred, such lot or plat from the time of such first interment shall be forever thereafter inalienable, and shall upon the death of the holder or proprietor thereof descend to the heirs at law of such holder or proprietor, and to their heirs at law forever: *Provided*, nevertheless, that any one or more of such heirs at law may release to any other of the said heirs at law his, her, or their interest in the same, on such conditions as shall be agreed on and specified in such release, a copy of which release shall be filed with the town clerk of the town or the register of the city within which the said Cemetery shall be situated. And provided further, that the body of any deceased person shall not be interred in such lot or plat, unless it be the body of a person having at the time of such decease an interest in such lot or plat, or the relative of some person having such interest, or the wife of such person, or her relative, except by the consent of all persons having an interest in such lot or plat.

SEC. 12. The Legislature may at any time alter or repeal this Act.

SEC. 13. This Act shall go into effect immediately.

The rules concerning interments in all the large and well-regulated cemeteries in this city and vicinity are nearly similar, and correspond—with slight modifications—to the rules and regulations of Woodlawn Cemetery, which are as follows:

Rules and Regulations, adapted to the First Plan of the Woodlawn Cemetery, annexed to Deeds of Conveyance.

I. All lots shall be held in pursuance of an act entitled "An Act authorizing the Incorporation of Rural Cemetery Associations," passed April 27, 1847, and the several acts adding to, altering or amending the same; and shall not be used for any other purpose than as a place of burial for the dead, nor shall any person, without the express permission of the Trustees, be allowed to be interred therein, who shall have died in any prison, or shall have been executed for any crime.

II. The proprietor of each lot shall have a right to inclose the same with a wall, not exceeding one foot in thickness, and one foot in height above the surface, or with a railing (except of wood); but the Trustees request that all such railings be light, neat, and symmetrical.

III. Proprietors shall not allow interments to be made in their lots for a *remuneration*; nor shall any transfer or assignment of any lot, or of any interest therein, be valid, without the consent in writing of the Association first had and indorsed upon such transfer or assignment.

IV. No disinterment shall be allowed unless permission be obtained at the office of the Cemetery.

V. The proprietor of each lot shall have the right to erect any proper stones, monuments, or sepulchral structures thereon, except that no slab shall be set in any other than an horizontal position, and no headstone shall exceed two feet in height above the ground, unless placed on a cut stone base, resting upon a solid foundation of mason-work; that no vault shall be built entirely or partly above-ground, without permission of the Association; and that all monuments, and all parts of vaults above-ground shall be of marble, granite, or other cut stone. The proprietor of each lot shall also have the right to cultivate shrubs and plants, in the same; but no tree growing within the lot or border shall be cut down or destroyed without the consent of the Association.

VI. If any trees or shrubs, situated in any lot, shall by means of their roots, branches, or otherwise, become detrimental to the adjacent lots or avenues, or unsightly, or inconvenient to passengers, it shall be the duty of the Association, and they shall have the right to enter the said lot and remove the said trees and shrubs, or such parts thereof as they shall determine to be detrimental, unsightly, or inconvenient.

VII. If any monument, effigy, or inclosure, or any structure whatever, or any inscription be placed in or upon any lot, which shall be determined by the Trustees to be offensive or improper, or injurious to the appearance of the surrounding lots or grounds, they shall have the right, and it shall be their duty to enter upon such lot, and remove the said offensive or improper object.

VIII. The Trustees, from time to time, may lay out or alter such avenues or walks, and make such rules and regulations for the government of the grounds as they may deem requisite and proper to secure and promote the general objects of the Cemetery.

IX. The proprietors of lots, and their families, shall be allowed access to the grounds at all times, observing the rules which are or may be adopted for the regulation of visitors.

X. An order in writing is required from the lot-owners whenever a grave is to be opened.

Rules and Regulations adapted to the Landscape-Lawn Plan of the Wood-lawn Cemetery, annexed to Deeds of Conveyance.

I. All lots shall be held in pursuance of an act entitled "An Act authorizing the Incorporation of Rural Cemetery Associations," passed April 27, 1847, and the several acts adding to, altering or amending the same; and shall not be used for any other purpose than as a place of burial for the dead, nor shall any person, without the express permission of the Trustees, be allowed to be interred therein who shall have died in any prison, or shall have been executed for any crime.

II. Proprietors shall not allow interments to be made in their lots for a *remuneration*, nor shall any transfer or assignment of any lot, or of any interest therein, be valid, without the consent in writing of the Trustees of the Cemetery first had and indorsed upon such transfer or assignment.

III. No disinterment shall be allowed unless permission be obtained at the office of the Cemetery.

IV. All lot inclosures of any kind whatever are prohibited. The boundaries of lots will be marked at the expense of the Cemetery by galvanized iron plates, securely fastened at the corners of each lot, even with the surface of the ground, and showing in raised letters and figures the number of the lot and section.

V. A Lot-Book will be kept at the Cemetery-Office, which will show by means of accurate diagrams the dimensions of each lot, and the precise location of each grave, with the name of the deceased.

VI. Only one monument will be permitted to be erected on each lot, the foundation of which, of solid masonry and at least six feet in depth, will be built by the Cemetery at the expense of the owner.

VII. Headstones and footstones are prohibited.

VIII. Stone tablets, not exceeding two feet in length and eighteen inches in width, laid horizontally, with the upper surface even with the surface of the ground, may be placed over the heads of graves.

IX. The planting for rural adornment will be kept strictly under the control of the Cemetery.

X. The Trustees reserve to themselves the right to remove any tree, shrub, monument, or inscription that is objectionable or injurious to the appearance of the surrounding lots.

XI. The lots will be sold as they are laid out and mapped, at a fixed price per square foot.

XII. The Trustees, from time to time, may lay out or alter such avenues or walks, and make such rules and regulations for the government of the grounds, as they may deem requisite and proper to secure and promote the general objects of the Cemetery.

XIII. The proprietors of lots, and their families, shall be allowed access to the grounds at all times, observing the rules which are or may be adopted for the observance of visitors.

XIV. An order in writing is required from the lot-owner whenever a grave is to be opened.

Rules to be observed by Visitors.

1. No rapid riding will be allowed, and no driving on the grass.
2. No smoking will be allowed, nor persons with fire-arms or fishing-tackle admitted.
3. Persons with dogs, running at large, will not be permitted to enter the grounds.
4. Children will not be admitted unless accompanied by guardians.
5. All persons are prohibited from touching any object not their own.
6. Schools and large assemblages of persons will not be admitted.
7. No horse may be left by the driver in the grounds unfastened.
8. Persons with refreshments will not be permitted to enter, and those having baskets and like articles must leave them in charge of the gate-keeper.
9. Any person disturbing the quiet and good order of the place by noise or other improper conduct, or who shall violate any of the foregoing rules, will be compelled instantly to leave the grounds.
10. The gate-keeper is charged to prohibit the entrance of all improper persons, as well as those who, though presenting tickets, may be known at any time to have willfully transgressed any regulations of the Cemetery.
11. No money may be paid to any person in the employ of the institution, in reward for any personal attentions.
12. The gates will be opened at sunrise and closed at sunset, when all persons must leave the grounds.

Particulars required.

Name of Deceased, Place of Birth, Age, Married or Single, Late Residence, Place of Death, Time of Death, Disease, Name of Undertaker; Name of Nearest Relative of the Deceased, and his Residence; Date of Interment.

TABLE

CHARGES FOR INTERMENTS, AS COLLECTED FROM THE PRINTED
THE FOLLOWING

| NAME OF CEMETERY. | Size of Plot by Feet. | Price. | Interments Graves for Adults. | Opening Graves for Adults. | Graves for Children under 10 Years. | Opening Graves for Children under 10 Years. | REOPEN'G OF GRAVES. | |
|-------------------|--|---|---|---------------------------------|---|---|-----------------------------------|---------|
| | | | | | | | Adult Graves Usual Depth, 6 Feet. | 7 Feet. |
| Union | 10 x 20 | \$40 to \$45 | \$0 to \$12 | \$4.00 | \$5 to \$7 | \$3.00 | \$5.00 | \$5.50 |
| Greenwood.. | 14 x 27 | \$400 to \$600 | \$25.00 | Included in the price of grave. | \$18.00 | Included in the price of grave. | 5.00 | 5.50 |
| Woodlawn .. | 20 x 20 | 500, or from 50 cents to \$2 for superficial foot. | \$25.00 | " | \$20.00 | " | 5.00 | ..... |
| Cypress Hills | | | \$5 to \$18 Additional or reserved adult graves, each \$20. Opening not included. | | (Under 12 Years.) \$5 to \$12 Additional or reserved graves for children, \$12. Opening not included. | | | |
| Washington. | 20 x 20 10 x 20 10 x 10 | \$80 to \$100 \$35 \$20 | \$10.00 | \$3.00 | \$5 to \$7 | \$2.00 | ..... | ..... |
| Flushing .... | ..... | 40 to 50 cents per superficial foot. | 10.00 | Included in price of grave. | \$6.00 | Included in price of grave. | 3.00 | 3.25 |
| St. Michael's | 8 feet square at 1,500 square feet at | \$32 upward. \$150 | 10.00 | \$3.00 | \$5 to \$6 | \$3.00 | \$3.00 | Ex ra |
| Calvary..... | 16 x 16 8 x 16 8 x 8 6 x 8 | \$300 to \$500 \$150 to \$250 \$75 to \$125 \$50 | 10.00 | 7.00 | \$10.00 | \$3 to \$5 | ..... | ..... |

No. XXXII.

RULES AND REGULATIONS FORWARDED TO THIS BUREAU FROM CEMETERIES.

| REOPENING OF GRAVES. | | | | | | RECEIVING-TOMB CHARGES. |
|----------------------|-------------|----------|------------------------------------|---------|----------|--|
| 8 Feet. | 9 Feet. | 10 Feet. | Graves of Children under 10 Years. | | | |
| | | | Usual Depth, 6 Feet. | 8 Feet. | 10 Feet. | |
| \$6.00 | \$6.50 | \$7.00 | \$4.00 | \$4.50 | \$5.50 | Lot-owners are entitled to the use of the receiving-tomb, five days in summer and thirty days in winter, without charge. Other persons, not lot-owners, will be required to deposit the value of a grave in public ground, being— for each adult, \$9, and for each child under ten years, \$5. If removed to any lot or grave in the cemetery within six months, \$5 will be returned for adults, and \$2 for children under ten years. Opening vaults underground, \$4. Opening tombs in side-hills and above-ground, \$3. Opening receiving-tomb— for each adult, \$25, and for each child under ten years of age, \$15. If removed to any lot or grave in the cemetery, within three months, \$20 will be returned for adults, and \$10.50 for children, and \$15 if removed within six months for adults, and \$8.50 for children. If removed from the cemetery within six months, \$10 will be returned for adults, and \$7.50 for children. Opening vaults underground, \$3. Opening tombs in side-hills and above-ground, \$2. Receiving-tomb— for each adult, \$25. For each child under ten years of age, \$20. If removed to the grounds of the cemetery within ten days, the whole deposit will be returned. If removed within three months, \$20 will be returned for adults, and \$15 for children. If not removed within three months, the remains will be interred in a lot prepared for that purpose. Owners of lots are entitled to the use of the receiving-tomb, five days in summer, and thirty days in winter, without charge. Other persons not owners of lots using the receiving-tomb, will be required to deposit the value of a grave in the public ground, being— for adults, \$10, children under twelve years, \$7. |
| 6.00 | 6.50 | 7.50 | 4.00 | 4.50 | 5.50 | |
| | | | 4.00 | | | |
| | | | | | | Opening vaults underground, \$3. A receiving-tomb will be provided at the cemetery, for the accommodation of those who intend to purchase lots. Twenty days are allowed for making the selection, and removing the remains, from the time of interment. A reasonable extension of time will be granted when the improvement of a lot or other circumstances make it necessary. Interments made in the winter season may remain until the weather in the spring will admit of selections being made. Opening vaults, \$3. |
| 3.50 | 4.00 | 4.50 | 2.00 | 2.50 | 3.50 | |
| depth at | \$1 a foot. | | | | | |

TABLE No. XXXIII.

| CEMETERIES. | Total number of Burial-Permits issued for the Interment of the dead of New York City, as collected from the Records of Deaths of this Bureau. | | | | The following gentlemen have kindly furnished the information relating to their respective cemeteries, in the accompanying description. |
|---|---|--------|--------|--------|---|
| | YEARS. | | | | |
| | 1867. | 1868. | 1869. | 1873. | |
| Calvary..... | 8,891 | 9,317 | 9,612 | 11,685 | M. Rowan, Superintendent. Joshua Phillips, Secretary Department Public Charities and Correction. |
| City *..... | 2,954 | 3,354 | 3,162 | 3,800 | |
| Lutheran..... | 2,276 | 2,721 | 2,932 | 3,841 | F. W. Geissenhainer, Treasurer and Actuary. J. A. Perry, Secretary and Controller. |
| Greenwood..... | 3,026 | 3,074 | 2,975 | 2,596 | |
| Bodies interred outside New York City and vicinity..... | 1,668 | 1,196 | 1,383 | 1,596 | William Edwards, Secretary. William A. Cummings, President. John Koppel, Keeper; no reply. Thomas Brown, Superintendent. Russell Hotchkiss, Assistant Treasurer. Charles H. Backmaster. P. H. Curran, Superintendent. E. Scheurer, Keeper. W. T. Miller, Secretary. Robert Criswell, General Agent. George T. Strong, Controller. Rev. J. A. Kinsella, Pastor St. Raymond's Church. Henry Hanschildt, Treasurer. N. H. Hodson, Keeper. |
| Cypress Hills..... | 1,358 | 1,529 | 1,628 | 1,369 | |
| Evergreen..... | 1,191 | 1,067 | 1,104 | 1,299 | |
| Bay Side †..... | ..... | ..... | ..... | 421 | |
| Union..... | 691 | 613 | 580 | 348 | |
| Woodlawn..... | 79 | 151 | 183 | 391 | |
| New York Bay..... | 364 | 395 | 301 | 313 | |
| Flatbush (Holy Cross)..... | 252 | 241 | 198 | 285 | |
| St. Michael's † (Astoria)..... | ..... | ..... | ..... | 259 | |
| Machpelah †..... | ..... | ..... | ..... | 201 | |
| Washington †..... | ..... | ..... | ..... | 177 | |
| Trinity..... | 277 | 241 | 249 | 157 | |
| St. Raymond's (Westchester)..... | 93 | 110 | 125 | 175 | |
| Methodist..... | ..... | ..... | ..... | 66 | |
| Marble..... | 97 | 95 | 100 | 56 | |
| Temporary interments in receiving-vaults within the city limits..... | ..... | ..... | ..... | 39 | |
| St. Mark's..... | 59 | 26 | 35 | 17 | |
| Flushing †..... | ..... | ..... | ..... | 18 | |
| † Mt. Olivet, Machpelah, Washington, Mt. Pleasant, Friends', Flushing, and other cemeteries within the Metropolitan District..... | 162 | 759 | 600 | ..... |  |
| State Emigrant, see note on page 407..... | | | | | H. J. Jackson, Acting Secretary, Commissioner of Emigration. |
| Total interments..... | 23,443 | 24,889 | 25,167 | 29,109 | |

* About 275 of these interments were of immigrants.

† No separate list was made in 1867, 1868, and 1869.

Calvary Cemetery is situated at Newtown, Long Island, about two miles from this city, and belongs to the Roman Catholic Church; it contains nearly one hundred acres, two of which are allotted to the poor of the Roman Catholic denomination for free interments. During the year 1873, it received 40.14 per cent. of the dead of this city. The rules and regulations of this cemetery prevent the disinterment or removal of bodies interred in it between May 1st and November 1st, unless permission be given by the general superintendent.

Lutheran Cemetery is in Long Island, about four miles distant from this city, on the Williamsburgh and Jamaica Turnpike; it contains three hundred acres, and is undenominational—Roman Catholics and other religious sects are owners of plots in this cemetery; the bulk of the plot-owners, however, are Lutherans. There is no free ground, but any trustee, or justice of the peace of the county, may give an order for free burial; 13.19 per cent. of the persons who died in this city during the past year were interred in this cemetery.

City Cemetery is located at Hart's Island, about fourteen miles distant from this city; it contains nearly one hundred acres; it is owned by the city, and is under the control of the Department of Public Charities and Correction; it is the burial-place of the pauper dead, or unclaimed bodies of persons who die in this city. There is no religious distinction made in interring bodies, all persons being buried in conformity with an ordinance passed by the Common Council, and approved by the Mayor, June 5, 1874; previous to the passage of this act, Protestants and Roman Catholics were buried in separate pits, which were consecrated according to their respective rites. During the year 1873, 13.05 per cent. of the total deaths that occurred in this city were interred in this cemetery. The following ordinance will show the plan adopted by this cemetery in regard to interments:

DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION,
NEW YORK, June 10, 1874.

To —.

SIR: The following Ordinance, adopted by the Common Council, and approved by the Mayor, "In relation to the burial of strangers or unknown persons, who may die in any of the Public Institutions of the City of New York," is transmitted for your government and observance.

WILLIAM LAIMBEER,
JAMES BOWEN,
MEYER STERN, } *Commissioners.*

An Ordinance in relation to the Burial of Strangers or Unknown Persons, who may die in any of the Public Institutions of the City of New York.

The Mayor, Aldermen, and Commonalty of the City of New York do ordain as follows:

SECTION 1. The Commissioners of Charities and Correction are hereby instructed and required to advertise in the *City Record*, on the day succeeding the death of any stranger or unknown person who may die in any of the institutions under their charge, a notice giving a full description of such person, and a statement of all the property found in his or her possession at the time such person became an inmate of any such institution, together with such other information as in the opinion of the officers in charge of any such institution would be most likely to lead to the identification of the person so dying.

SEC. 2. Hereafter, all interments in the City Cemetery, on Hart's Island, shall be in trenches, to be numbered consecutively, commencing with No. 1; every such trench shall contain 150 bodies and no more, and each coffin shall be numbered by figures to be made of

iron or other metal, or branded into the lid or cover of such coffin so as to be indelible, in the manner shown in the annexed diagram,¹ viz.: Each trench shall be constructed running in a direction from east to west; shall be of a size sufficient to contain the said number of 150 bodies, which shall be laid therein in the order following, to wit: No. 1, at the northeast corner; No. 2, adjoining, and so on in regular order until No. 25 is deposited, when a layer of earth shall be placed on the twenty-five coffins thus deposited; No. 26 shall then be placed at the southeast corner, directly in the rear and in a line with No. 1, No. 27 adjoining; and so on until No. 50 is interred, which will be directly in the rear and on a straight line with No. 25; then covered with a layer of earth similar to those numbered from 1 to 25, thus completing the first stratum of coffins in the trench. No. 51 shall then be placed directly over No. 1; No. 52 over No. 2, and so on until No. 75 is interred over No. 25, then covered as before, from 1 to 25; No. 76 being placed directly over No. 26; and so on in the regular order until No. 100 is interred directly over No. 50, thus completing the second stratum of coffins; No. 101 shall then be placed directly over Nos. 1 and 51, and so on in regular order until No. 125 is placed directly over No. 75; then half the trench shall be permanently covered. No. 126 shall then be placed directly over Nos. 26 and 76, and so on in regular order until No. 150 is placed directly over Nos. 50 and 100, when the trench shall be considered full, and finally covered. A new trench, to be numbered trench No. 2, shall then be commenced and filled in the manner above provided, and succeeded by trench No. 3, and so on for the future in this and all other of the City Cemeteries. At the head of each tier of coffins shall be placed a proper and durable board or stone, with the numbers corresponding with the number on such coffins placed therein, with figures made of iron or other durable material, or branded thereon in such a manner as to be indelible. Each trench, when completed, and the numbers placed at the head of each tier of coffins, shall be inclosed by a substantial fence, leaving a space sufficient to pass between it and the head-boards to admit of the passage of two persons to afford an opportunity to inspect each head-board, to ascertain the numbers thereon.

SEC. 3. A register of burials shall be kept by the Superintendent, or other person in charge of the City Cemetery, which shall be so arranged that the name of each person interred shall be numbered to correspond with the numbers on the head-boards of the tiers of coffins deposited in each trench, and shall be accessible at all reasonable times for the inspection of the public, or the use of any person desiring to ascertain the particular place in which any person may be buried. A duplicate copy of such register shall be kept in the office of the Commissioners of Charities and Correction.

SEC. 4. This ordinance shall take effect immediately.

Adopted by the Board of Aldermen April 2, 1874. Adopted by the Board of Assistant Aldermen May 18, 1874. Approved by the Mayor June 5, 1874.

J. C. PINCKNEY,
Clerk Common Council.

¹ See diagram on next page.

Greenwood Cemetery is three and one-fourth miles distant from New York City, on Long Island, and contains about four hundred and fifty acres. During the year 1873 there were 8.92 per cent. of the dead of this city buried in this cemetery. There are no free interments, except for soldiers of the late war, but grounds for several benevolent institutions, such as orphan asylums, etc., have been appropriated free of charge. The total number of interments in this cemetery at the close of the year 1873 was 167,133.

Woodlawn Cemetery is situated in the Twenty-fourth Ward of this city, on the line of the Harlem Railroad, six miles above Harlem Bridge; the area is about three hundred and seventy-five acres. There is no free ground, and all religious sects are privileged to inter. During the year 1873, 1.34 per cent. of the dead in this city were interred in this cemetery, and at the close of the year 1873 the total number of interments was 12,693.

Cypress Hills Cemetery lies on the north side of the Brooklyn and Jamaica Turnpike, on Long Island, about four and one-half miles from this city; it contains three hundred and five acres, and is undenominational, offering no restrictions to religious sects or denominations: 4.70 per cent. of the dead of this city were interred in this cemetery during the past year. There is no ground allotted for free interments.

Evergreen Cemetery has an area of two hundred and twenty-one acres, and is situated near East New York, on Long Island, about four and one-half miles distant from this city. It is undenominational, and has no free ground, although charity cases can be interred at a small expense: 4.46 per cent. of the dead of New York City were interred in this cemetery during the year.

Union Cemetery is situated on Long Island, in the town of Bushwick, three and one-half miles from New York, and has an area of ten acres; it belongs to the Methodist Protestant Church. During the year 1873, 1.19 per cent. of the decedents of this city were interred in this cemetery. There is no ground allotted for free interments by this association.

Holy Cross Cemetery is situated at Flatbush, L. I., about six miles from this city, and comprises an area of sixty acres; it is under the authority of the Roman Catholic Bishop of Brooklyn, who has made ample provision for those who die in destitute circumstances in the city of Brooklyn. No interment is permitted in this cemetery unless a burial-permit or a physician's certificate of death is previously obtained: 0.98 per cent. of the dead of this city were deposited in this cemetery during the year. This cemetery was organized July 14, 1849, for the Catholic deceased of Brooklyn, and over 90,000 interments have been made in it since it was opened.

Washington Cemetery is located in the towns of Gravesend and New Utrecht, four miles from this city, on Long Island; it has an area of eighty-five acres, and is undenominational. The greater number of interments are of Israelites; the cemetery being divided into three parts, two for the Christian sects and one for the Israelites, there is no ground allotted for free interments: 0.61 per cent. of the dead of this city were interred in this cemetery during the past year.

St. Raymond's Church Cemetery, of Westchester, is located in Westchester County, and is about three and one-half miles above Harlem Bridge, and nearly two miles distant from this city; it contains about two acres of ground, and is a Roman Catholic cemetery. There is no ground allotted to the poor, but usually those who die in destitute circumstances are allowed to be interred free of charge: 0.60 per cent. of the dead of this city were interred in this cemetery during the year 1873.

St. Michael's Cemetery is situated near Astoria, L. I., about one and one-half miles from this city; it contains an area of thirteen acres, and belongs to the Protestant Episcopal Church. Free interments are permitted in this cemetery if a card be obtained from the superintendent of the N. Y. P. E. C. M. Society: 0.89 per cent. of the dead of this city were buried in this cemetery during the year 1873.

Trinity Church Cemetery is located in Carmansville, in the Twelfth Ward of this city, bounded by One Hundred and Fifty-third and One Hundred and Fifty-fifth Streets, Tenth Avenue and the Hudson River, and has an area of twenty-five acres; interments are only made in plots or vaults; the plots vary in size from one hundred to fifteen hundred square feet; persons of various religious views own the plots. There is no public or free ground, the church having provided for the burial of its poor in St. Michael's Cemetery, near Astoria: 0.54 per cent. of the dead of this city were interred in this cemetery during the year.

Methodist Cemetery is situated in the township of Newtown, L. I., about four miles from this city, and contains six acres; it belongs to the Second Street Methodist Episcopal Church, and free interments are granted only to members of that congregation: 0.23 per cent. of the dead of this city were interred in this cemetery during the year.

Flushing Cemetery is situated within one and one-half mile from Flushing Village, and about eight miles from this city; it contains an area of twenty-one acres, and is undenominational: .06 per cent. of the dead of this city were buried in this cemetery during the year 1873.

Machpelah Cemetery, of New Durham, N. J., is about four miles from this city, and comprises about ten acres of land, four acres of which are laid out for burial-purposes. There are no free interments, and the ground is not allotted to any religious sect.

Machpelah Cemetery, of New Lots, Kings County, L. I., is about five miles from this city, and contains about nineteen acres; thirteen belong to the Temple Beth El, and six to other Jewish societies: 0.69 per cent. of the dead of this city were interred in these cemeteries during the year.

New York Bay Cemetery is situated on the New Jersey shore of the bay of New York, about three and one-half miles distant from this city, and has an area of forty acres. No ground is allotted for free interments.

State Emigrant Cemetery is situated on Ward's Island, in the Twelfth Ward of this city, and is under the control of the Commissioners of Emigration; it contains about two and one-half acres, and is divided into two sections; the larger

section, which comprises about three-fifths of the whole tract, is consecrated and allotted to the Roman Catholic dead; the remaining portion is for the deceased of other denominations. All immigrants dying in the State Emigrant Institutions at Ward's Island, and at the Emigrant Landing Depot at Castle Garden, except those that are claimed by friends and removed for burial elsewhere, are interred in this cemetery.

Those who die on Ward's Island are, after death, removed to the "dead-house," by a sexton appointed for that purpose, and are there confined, the coffins being marked with the name, age, and date of death of the deceased, and, after an interval of from twenty-four to thirty-six hours has elapsed, are interred in the cemetery. The graves are dug fifteen feet deep, and in each grave five adults, or six children, are buried. The coffins are placed one above the other, six feet of earth covering the uppermost, and when the specified number is placed in a grave it is sodded over.

At the head of each grave a board is placed with the names of the persons interred therein inscribed upon it in the order in which they are placed in the grave, so that any particular body can be readily obtained. A record is kept in the superintendent's office, on the island, of the death of every immigrant in the institution, the number of the grave in which the body is buried, and its place in the grave. The cemetery was first opened on the 10th of July, 1874. Previous to this date, the deceased immigrants were interred with the city pauper dead at Hart's Island. The average number of interments is about 275 annually.

Bay Side Cemetery is situated at Bay Side, Queen's County, Long Island, about thirteen miles from this city; it contains about eighteen acres, and belongs to the Jewish persuasion; 421 permits were granted for the interment of persons who died in this city in this cemetery during the past year.

Very respectfully your obedient servant,

JOHN T. NAGLE, M. D.,

Deputy Register of Records.

REPORT OF THE ATTORNEY AND COUNSEL.

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
OFFICE OF THE ATTORNEY AND COUNSEL,
301 MOTT STREET, NEW YORK, *July 27, 1874.*

To the Board of Health.

GENTLEMEN: I have the honor to submit the following statement of the operations of this Bureau during the year ending April 30, 1874:

| | | |
|--|-------|------------|
| Number of actions commenced for the abatement of nuisances..... | 3,117 | |
| CLASSIFIED AS FOLLOWS: | | |
| For non-compliance with orders of the Board..... | 2,985 | |
| For violation of sanitary ordinances..... | 132 | 3,117 |
| Of this number there were pending at the end of such year..... | 425 | |
| Discontinued for all causes, nuisance having been abated in each instance. | 2,099 | |
| Tried, and judgment rendered for plaintiff..... | 531 | |
| Judgments of dismissal or nonsuit..... | 59 | |
| Abated by death of defendants..... | 3 | 3,117 |
| Number of actions brought against the Health Department..... | | 3 |
| Number of such actions pending..... | 1 | |
| Number of such actions discontinued..... | 2 | 3 |
| Amount of costs and penalties realized in settlement of actions, and paid to the City Chamberlain..... | | \$9,872 22 |

The aim of this office has been to secure a prompt compliance with the sanitary requirements of the Board, without serious hardship to persons prosecuted. In very many instances, the defendants in the actions brought by direction of the Board are able to show reasonable diligence in the execution of orders served upon them, and frequently a legal defense to the action. With the knowledge and approval of the Board, upon evidence of compliance on the part of such defendants, I have discontinued the actions against them upon payment of the disbursements, costs, or a small percentage of the penalty incurred, the facts of each case furnishing the rule of action followed. All attempts to evade the orders and ordinances of the Board, or willfully to ignore their requirements, have been punished by the vigorous prosecution of the offender, and have very generally resulted in full compliance with the law. Very many of the judgments obtained against defendants cannot be enforced by reason of the irresponsibility of the party or some defect in the service of the process. Experience has shown that the responsible owners of property in the city do not usually permit actions for penalties under the health laws to be prosecuted to

judgment. A majority of the judgments reported are against occupants, tenants, lessees, agents, or non-residents, who are either irresponsible or remove beyond the jurisdiction of the court before final process. In reviewing the work of the year, it is gratifying to record the fact that there has been no successful resistance to the authority of the Board, and that where the aid of the courts has been invoked in its behalf it has uniformly been granted. Early in the organization of the Board it was deemed necessary to exercise extraordinary powers for the removal of evils of long standing and obstinate character. Without the advantage of exact precedents reliance was had upon the inherent force and value of the various enactments relating to this Department. By chapter 956 of the Laws of 1867 the health authorities were especially restrained from the "removal, tearing down, or injury of any of the stalls or stands around Fulton or Washington Markets, in the city of New York, which were erected or enlarged prior to the first day of May, 1866, at any time before the first day of July, 1869." This provision gave temporary immunity from municipal interference to a large number of standholders who had for many years conducted their business in the streets adjacent to the larger markets of this city. Their encroachments upon the public streets had long been regarded as a serious evil, preventing the proper cleansing of the streets and gutters, and tending to infect the air and corrupt the food-supplies of the city. Notices requiring the removal of the stands that extended beyond the curb-line of the streets were duly served upon their owners and occupants. A number of such standholders thereupon commenced actions against the Board with a view to prevent all coercive measures in the removal of their stands. A preliminary order restraining the Board from any acts of interference was granted by Hon. Calvin E. Pratt, Justice of the Supreme Court, with an order to show cause why a permanent injunction should not be granted, but it was afterward modified so that the stay of proceedings on the part of the Board was vacated. The standholders of Fulton Market made a similar application, and the New York Fertilizer Manufacturing Company also sought an injunction, but these motions were denied by Justice Pratt, whose views are elsewhere given (by his permission), as expressed upon the argument. During the year the civil actions have been brought in the Third District Court where the fairness, promptness, and experience of the learned Justice have facilitated the speedy disposition of the same. Arrests and proceedings in the criminal courts for violations of the sanitary ordinances have become fewer and less necessary since the new constitution of the police courts, because of the attention and careful consideration which the police justices have given to these cases. For the enforcement of the Sanitary Code great dependence must be had upon those magistrates, and to their determination to administer the law without favor this Department is indebted for much of its success. Whenever notified of arrests in time to appear, I have endeavored to give such aid to the prosecution of this class of offenses as was required. Questions have continually arisen in the progress of the action of the Board of Health against old established nuisances, and also in regard to the contracts in force when the Board entered upon its work, upon which opinions have been required of the

Attorney and reported in writing. The jurisdiction of the Board was also from time to time challenged indirectly in suits against the city government and its officers, of which this Department was not officially informed. Technical objections to the proof and the record of proceedings of the Board of Health were also frequently to be met.

By chapter 636 of the Laws of 1874, sections 4, 5, 8, and 12, it was enacted that—

“SECTION 4. Said Board of Health may sue or be sued in and by the proper name of ‘The Health Department of the City of New York,’ and not in or by the name of the members of the said Board, or any of them; and service of all process in suits and proceedings against or affecting said Board, and other papers, may be made upon the President of the said Board, or upon its Secretary, and not otherwise; except that, according to usual practice in other suits, papers in suits to which said Board of Health is a party may be served on its Attorney.

“SEC. 5. The Attorney of the Board of Health shall be also its counsel, when appointed as such by the said Board, and shall have a salary for his services as Attorney and Counsel, to be fixed by the said Board, not to exceed the sum heretofore paid to the Counsel of the Metropolitan Board of Health; and in all actions in proceedings against the Mayor, Aldermen, and Commonalty of the city of New York, or any other department or person whatever, in which any action, order, regulation, ordinance, or proceeding of the said Board, or of any person acting under or pursuant to its authority, shall be called in question or made the subject of the action or proceeding, the said Board of Health shall be a necessary party, and have the right to answer, to appear, and take part therein by its own Attorney and Counsel.

“SEC. 8. Said Board of Health may institute and maintain, in the name of the said Health Department, all such suits and proceedings as shall be reasonable, necessary, and proper, for receiving any moneys expended, enforcing any lien, or the payment of any fine, the punishment for any offense, or in other respects carrying out the provisions of the laws under which it acts.

“SEC. 12. Copies of the record of the proceedings of said Board, of its rules, regulations, ordinances, by-laws, and books and papers, constituting part of its archives, when authenticated by its Secretary or Secretary *pro tem.*, shall be presumptive evidence, and the authentication be taken as presumptively correct in any court of justice or judicial proceeding, when they may be relevant to the point or matter in controversy of the facts, statements, and recitals therein contained.

These were provisions of the Laws of 1866 and 1867, and it is believed will be of benefit, relieving the Department from much embarrassment.

Much less resistance is now shown to the orders of the Board than one year ago, and the firm and consistent stand taken by the Board of Health has given the greatest support to its officers, and enabled them to perform their duties to the greater satisfaction of all interested.

The necessity of an appeal to the courts for judgments and for the administration of the severer penalties of the law will, it is hoped, continue to become less and less frequent.

All of which is respectfully submitted:

W. P. PRENTICE, *Attorney and Counsel.*

REPORT OF THE SANITARY ENGINEER.

To the Honorable Board of Health of the City of New York.

GENTLEMEN: In compliance with your request, I submit the following report on the subsoil drainage of the city.

Before the passage of the act authorizing the Board of Health to direct the drainage of land lying below the level of the sewers by means of underground drains following the courses of the original water-ways, the drainage of such land was wholly neglected in devising the plans for the sewerage system, excepting in so far as it was possible to provide for it in the location of the main sewers.

The advantage of thorough drainage to the health of cities is so great that every means should be employed to accomplish it; and there can be no doubt that the health, both of animals and plants, is benefited thereby, inasmuch as the soil, when well drained, is rendered porous, and in this state exerts a marked chemical influence on all organic compounds to such a degree as to purify the crudest sewage.

At the time of the passage of the "drainage act," the construction of sewers in several districts had progressed on the old system, without reference to the drainage of land lying below them, to such an extent that it was impossible, or too expensive, to change the plan, or to deepen them; and in these cases underground drains have been laid, following the old water-courses, several feet below the adjacent sewers, and in some instances forty feet below the street as graded. The main drains are built of dry stone-masonry, and the laterals leading from the living springs are generally the same, of smaller sizes, but in some instances a simple blind-drain is made.

The accompanying sketch shows the different drains used, and the hollow stoneware invert used in connection with brick sewers. This latter is for the purpose of securing thorough subsoil drainage in connection with the sewer, while at the same time greatly assisting construction by getting rid of the subsoil water by the continuous opening through them.

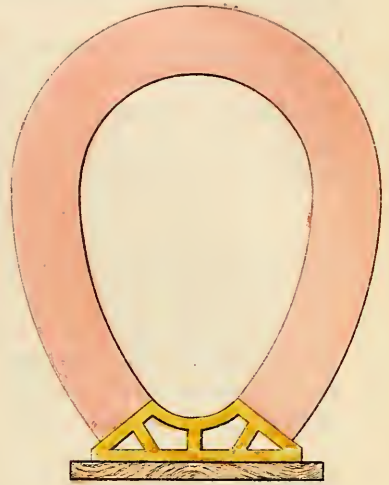
In wet soils and rock-cuttings, where large quantities of water are encountered, it is often advantageous to combine the subsoil drainage and sewerage whereby the land can be drained and the sewers flushed at the same time.

SECTIONS SHOWING THE DIFFERENT KINDS OF UNDERGROUND DRAINS.

Lateral Drain.



Small Egg Shaped Sewer with Vitri-
fied Stoneware Invert.



Main Drain following
Water Course.



This twofold purpose is accomplished by laying the sewers with dry instead of cement joints, which allows a free passage for the subsoil water into the sewers.

When, however, the sewers are to be built in dry and porous soil, great care must be taken to secure tight mortar-joints to prevent all escape of sewage; and combined drainage and sewerage cannot be obtained by means of the same structure, excepting in the case of brick sewers, with dry joints above the ordinary flow-line of the sewage.

It must not, however, be overlooked in laying sewers for drainage and sewerage, that there will be times during dry spells when there will be danger of the sewage escaping into and polluting the adjoining subsoil water; but this danger is slight compared with the great sanitary advantage of having all stagnant and foul impurities which may have percolated through from the surface promptly carried off and discharged through the sewers.

Since the passage of the act of 1871, twenty public contracts for underground drains have been fully completed, the aggregate length of drains built under them being 43,461 lineal feet; and four large contracts are now in progress which call for 20,207 lineal feet. Upon the latter some 7,600 lineal feet have been built, making the total extent of underground drains so far built by contract 51,061 lineal feet, or about $9\frac{1}{2}$ miles; besides which numerous small drains of the same nature, connecting with the street-sewers, have been built by property-owners.

Accompanying is a list of the underground-drain contracts, with the length on each.

In addition to what is shown by the length of drains, large quantities of earth-filling have been placed upon low, wet, and boggy lands, bringing their surface to even slopes, so that all rainfall will run off into the drains provided to receive it, to the material sanitary improvement of most of the unhealthy places which existed on the upper part of the island; and one of the contracts now in progress contemplates entirely filling in the lots under water on the Harlem flats, whereby much land will be reclaimed, and become desirable property, instead of, as formerly, a receptacle for filthy refuse.

Many places also have been thoroughly drained by the ordinary sewers, which recently have been so designed as to keep below the original surface of the ground whenever it has been found practicable or in consonance with ultimate economy so to do.

LIST OF UNDERGROUND DRAINS.

| | COMPLETED CONTRACTS. | Lineal Feet. |
|---|----------------------|--------------|
| On blocks bounded by 54th and 55th Streets and 4th and Madison Avenues. | | 390 |
| “ “ 92d and 93d Streets and 2d and 3d Avenues, and in 2d Avenue between 92d and 93d Streets | | 177 |
| “ “ 77th and 88th Streets, and by 1st and 2d Avenues. | | 573 |
| “ “ 61st and 63d “ “ 4th and Madison Avenues | | 272 |
| “ “ 91st and 93d “ “ 2d and 3d Avenues, and in 2d Avenue between 92d and 93d Streets. | | 177 |

| COMPLETED CONTRACTS. | | Lineal Feet. |
|---|--|---------------|
| On blocks bounded by 57th and 58th Streets, and by 5th and Madison Avenues. | | 125 |
| “ “ 56th and 57th “ “ “ “ “ “ | | 233 |
| Between 96th and 111th Streets, and between 10th and 11th Avenues. | | 4,674 |
| “ 62d and 68th “ “ 8th and 9th “ | | 3,774 |
| “ 72d and 73d “ “ 1st and 2d “ | | 153 |
| “ 57th and 58th “ “ 5th and Madison “ | | 275 |
| “ 56th and 57th “ “ 4th and Lexington Avenues. | | 470 |
| “ 66th and 67th “ “ 5th and Madison “ | | 190 |
| “ 62d and 69th “ “ Boulevard and Hudson River. | | 2,557 |
| “ 73d and 81st “ “ 1st and 5th Avenues. | | 7,158 |
| “ 71st and 74th “ “ 9th Avenue and Boulevard. | | 1,993 |
| “ 63d and 67th “ “ 4th and 5th Avenues. | | 3,618 |
| “ 74th and 92d “ “ 8th and 10th “ | | 9,602 |
| “ 78th and 80th “ “ 2d and 3d “ | | 662 |
| “ 77th and 88th “ “ 9th Avenue and Hudson River. | | 6,388 |
| Total lineal feet of underground drains. | | <u>43,461</u> |

UNDERGROUND DRAINS IN PROGRESS.

| | | |
|--|--|---------------|
| On both sides of the lines of Inwood and Dyckman Streets, between Harlem and Hudson River. | | 3,220 |
| Between 173d and 183d Streets, and between Kingsbridge Road and Harlem River. | | 6,800 |
| “ 92d and 106th “ “ 3d Avenue and Harlem River. | | 4,000 |
| “ 110th and 124th “ “ 5th and 8th Avenues. | | 6,187 |
| | | <u>20,207</u> |
| Total lineal feet of drains completed and under contract. | | <u>63,668</u> |

Very respectfully,

STEVENSON TOWLE,

Consulting Engineer.

April 30, 1874.

PRELIMINARY REPORT
ON THE
CHOLERA OF THE WEST AND SOUTH.

NEW YORK, *July 22, 1873.*

EMMONS CLARK, *Secretary, etc.*

SIR: In advance of a more full report, I can state that, to my personal knowledge, cholera was conveyed from New Orleans and Memphis, by steamboats, to Louisville and Cincinnati. The Health-Officer of Evansville also reports that the first three or more cases were landed there from steamboats from below; the same has happened at St. Louis.

I also have very positive information that cases were brought by railroad to Nashville and died there.

At Gallatin, Woodburn, and Bowling Green, the first cases, sometimes three in number, were imported ones.

But the momentous fact stands out very strongly that, however the disease may have been brought to, or have originated in, Murfreesboro, Nashville, and Bowling Green, and many other places, the pestilence quickly and almost exclusively localized itself in the filthiest parts of these towns, while the cleanest portions almost entirely escaped.

In Murfreesboro no direct importation of the disease is yet acknowledged, but it is well known that among the earliest cases in the neighborhood was that of a negro who arrived from Nashville, and died in a house near the town. The woman who nursed him and washed his clothes, died, and two others in the same house. In Murfreesboro the physicians generally admitted that the disease was true Asiatic cholera, like that of 1866, but were also fully impressed with the Southern theory, viz., that a long and severe winter, changing suddenly to a very warm summer, had produced such a rapid growth of vegetation, that all the grasses and vegetables were very watery and unwholesome; the filth accumulated during the winter was suddenly exposed to a very hot sun, and bred a peculiar indigenous malaria; that the drinking-water became affected, especially in the lower parts of the town, which received sewage and

drainage from above ; that the disease crept along the creek and water-courses, wherever drainage exists, and malaria most prevailed, and affected principally or almost exclusively the blacks and low-class whites who lived in such places.

These localizing influences were so great and manifest that importation was not thought of or looked for, especially as almost all the better and higher parts of Murfreesboro, and its more cleanly and comfortable inhabitants, almost entirely escaped. Still the Murfreesboro physicians regarded the disease as true Asiatic cholera, merely precipitated and modified by malarious and bad dietetic influences. They used cleanliness and disinfection of persons and clothes rigorously, forbade the nightly assemblages of negroes, and stamped the disease out quickly.

At Nashville the localizing causes of cholera were so extended and apparent that no importation of the disease was looked for, or generally believed in. Nor are the Nashville physicians much to blame for fastening their attention almost exclusively upon these secondary and localizing causes of the disease. They are so patent in Nashville that they force themselves upon every one's attention. Comparatively few deaths occurred in the highest, cleanest, best-ventilated, best-drained, and best-paved, portions of the city. The best residence and business portion of Nashville during the whole of the terrible epidemic which raged on its outskirts was almost perfectly safe to live in. The cholera was almost exclusively confined to the outer limits and low portions of the city, and carried off hundreds of those living near the small streams, or so called branches, licks, and runs of water, especially the Lick Branch on one side, and Wilson's Spring Branch upon the other, along which, says Dr. Jones, "there has been a rapid and progressive crowding of houses, or rather huts and shanties, either clustered together in narrow streets and alleys, or more frequently huddled together without system, and crowded with a careless and filthy population, wholly deficient in ventilation, without any facilities for the enforcement of hygienic regulations, forming a most favorable field for the lodgment and spread of diseases like cholera, and rendering it difficult, if not wholly impossible, to devise any efficient measures for the arrest of communicable diseases in them."

In these places the cholera prevailed both in 1866 and this year. In 1866 the disease came from the east and north ; and, in fact, was brought down from Cincinnati ; this year it came up from the south and west ; and Nashville has doubtless sent cases up to Cincinnati, as she has to many other places.

Dr. Jones feared in 1866 that cholera might appear and prevail among the blacks and ill-fed and poorly-cared-for whites in the suburbs of the city for days before its presence could even be suspected. But it did not ; on the 9th of August, 1866, he noticed the arrival of a negro woman from Cincinnati, where cholera was raging, and who was suffering with the disease. In 1873, cholera really appeared and prevailed some time before its presence was discovered. On June 2d the city physician published a card, as there was "quite an excited condition of the public mind upon the subject of cholera, because within the past few days some deaths had occurred so suddenly that some phy-

sicians and many good citizens feared the existence of epidemic or Asiatic cholera." That they were produced by cholera-morbus or sporadic cholera, he asserts, "there is not a doubt." The list of deaths was not published till June 7th, on which day they amounted to twenty-one. The disease had been progressing among this vast and careless population, unheeded and uncontrolled, for ten or fourteen days, when on June 7th the deaths amounted to twenty-one per day, and, notwithstanding the assurances of the city authorities that it was only mild American or African cholera, an enormous panic and stampede of the citizens took place, some of them carrying the disease to various parts of the country.

At Edgefield, just across the Cumberland River, and scarcely half a mile distant from Nashville, there were only fifteen or twenty deaths. It lies on a low, sandy plain, is supplied with good cistern-water, and has broad, well-ventilated streets. Its immunity was so remarkable that a public thanksgiving was held "for being only partially visited by the epidemic." Similar cases are very common; in 1849 it did not spread from St. Louis to Altona for more than a month.

At Gallatin, Woodburn, and Bowling Green, the first cases were all imported; some of the Nashville fugitives died in the hotels, followed by more deaths among the inmates, and another general scattering to more distant places, with the same general results.

At Bowling Green almost the same condition of things prevailed as in Murfreesboro and Nashville; viz., the higher, cleaner, and better parts of the town remained free from disease, while the course of a filthy stream, and the low marshy lands below, which were defiled with sewage from above, were ravaged by it.

Louisville—a very clean city, built on sandy, gravelly soil, with broad, well-paved streets, widely-separated houses, and clean courts, alleys, yards, and stables—has again, for the fifth time, escaped cholera. It has had little or none in 1832-'33, 1848-'49, 1854, 1866, or 1873. The disease has been repeatedly landed there from steamboats and railroads, to my own knowledge, but has never taken root, although it lies in the direct line of travel, both by river and rail, between Nashville and Cincinnati. Mobile always enjoys nearly the same immunity.

Cincinnati is not as clean as Louisville, nor as foul as Nashville; and cholera has pursued an intermediate course.

It was first imported as far back as May 22d, by a steamboat from New Orleans, and the first cases occurred on a contiguous boat. At least 120 passengers and crew were landed from this boat. I visited another infected vessel from Memphis, with about 60 passengers and crew, which had previously landed dead and dying at Louisville, and still had infected clothes on board. The disease has pursued a slow but relentless course in Cincinnati; creeping from person to person, and from house to house, with unmistakable marks of communication among relatives, friends, etc., of the sick. As the drinking-water is good, no general outbreak of the disease has occurred; and it has

always been perfectly safe to visit and live in the best parts of the business and residence quarter. But Cincinnati is a standing menace and danger to the rest of the country; more dangerous, perhaps, to other cities and towns than it is to itself and its own residents and visitors.

The type of cholera which I have seen at the West is of the most virulent and malignant type of Asiatic cholera—marked by suddenness of attack, rapidity of fatal result, by rice-water discharges, cramps, blueness; coldness of the surface, nose and breath; pulselessness; absence of elasticity of the skin; sunken eyes, pinched features, suppression of urine, etc. In short, scarcely any disease more virulent and malignant can be conceived of.

It has perhaps advanced north more slowly because the emigration from New Orleans upward is far less than it used to be.

The Cincinnati authorities preferred to give the list of deaths from June 16th only, and of course it was impossible to trace the history of the cases which occurred from May 22d to June 16th. But, from the latter date, I believe that the majority of cases were recorded at the Health-Office, with name, age, date, residence, and duration of attack. Of these 1 died in one hour; 1 in two; 1 in four; 1 in five; 10 in six; 1 in seven; 7 in eight; 6 in nine hours; 6 in ten; 1 in eleven; 25 in twelve; 2 in thirteen; 5 in fourteen; 2 in fifteen; 8 in sixteen; 11 in eighteen; 6 in twenty; 2 in twenty-two; 20 in twenty-six; 2 in twenty-eight; 1 in thirty; 9 in thirty-six; 13 in forty-eight hours; viz., 116 cases in less than twenty-four hours, and 25 cases in between twenty-four and forty-eight hours.

The disease has been scattered over the whole city.

Respectfully submitted:

JOHN C. PETERS, M. D.

REPORT ON CHOLERA.

SANITARY BUREAU, HEALTH DEPARTMENT, }
NEW YORK, *May 1, 1874.* }

WALTER DE F. DAY, M. D., *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following Report on the Progress of Epidemic Cholera through the Mississippi Valley in 1873, with the accompanying map:

During the month of May, 1873, information was received, through the newspapers, that a diarrhœal disease, of an unusual and fatal character, had appeared in Memphis, Tenn. Attention was soon called to the fact that, during the preceding March and April, a similar disease had appeared at New Orleans, and on further inquiry it was ascertained that the same disease had been observed by the physicians of Vicksburg and Jackson, Miss., during the month of May.

It thus became gradually evident that a disease, having some of the characteristics of Asiatic cholera, was advancing up the valley of the Mississippi. As the city of New York is in frequent commercial communication with the places above mentioned, it was deemed advisable that the progress of this threatening disease should be noted. Receiving instructions from this Bureau, I recorded all the facts obtainable, and on June 20th became convinced that the disease in question was Asiatic cholera. This opinion was based on the following considerations: 1. The first cases had appeared at a seaport (New Orleans); 2. The disease was of a diarrhœal character, and, in many cases, had proved fatal in less than twenty-four hours; 3. It was making progress; 4. Its progress was characterized by the apparently capricious selection of towns and cities which marked the cholera epidemic of 1849.¹

¹ The *Boston Medical and Surgical Journal* of September 12, 1849, makes the following extract from the *Cincinnati Gazette*, showing the capricious movements of the cholera epidemic of 1849: "It appears here, there, elsewhere, suddenly and often giving no warning, without reference to lines of travel, regardless of natural water-courses, wholly independent of the direction of prevailing winds, and uncontrolled by the topographical character or geological formation of the districts within its general course. . . . For weeks it is at New Orleans, and does not appear at Natchez, or Vicksburg, or Memphis, although the intercommunication is incessant; for even months it is in that city, and does not appear in Mobile at all, except in the instances of three or four persons who come home with the disease devel-

The published investigations of numerous experienced observers, and the Reports of the Boards of Health of the cities in which the disease appeared, have established beyond a doubt that the disease was Asiatic cholera.

The following is a brief summary of facts, many of which were presented in weekly reports made to your Bureau, while the disease was progressing, and when it was feared that it might reach New York. The facts were obtained chiefly by the examination of daily and weekly newspapers published in the regions invaded by the disease. For access to complete files of these papers, I was indebted to George P. Rowell, Esq., of the Advertising Agency, at 41 Park Row. Valuable information was also received from Ely McClellan, M. D., Assistant Surgeon, United States Army, and from John C. Peters, M. D., and Elisha Harris, M. D., Registrar of Vital Statistics of this Department.

The following summary of facts is arranged chronologically by States, as far as possible, and, under each State, alphabetically by towns :

LOUISIANA.

Baton Rouge. *Weekly Gazette-Comet*, May 31, 1873. "There have been some few cases of cholera-morbus, or spasmodic cholera."

Delta, Madison Parish. The *Weekly Journal* gives the following facts: "A colored man died on the Crane Plantation, of cholera, June 28th. Up to July 1st, there had been several deaths by cholera on the Utz plantation, and quite a number on Roundaway Bayou." There was a death from cholera on Fortune's Fork Plantation, July 7th, and in the week ending July 29th, ten or twelve colored persons died of cholera on the Ballard Place.

Monroe, Ouachita Parish. Population, 1,749. The report of the sexton states that the first case of cholera occurred about May 25th. In May there were sixteen deaths, and from June 1st to July 15th, sixty-nine deaths. Total deaths from cholera, eighty-five.

New Orleans. Population 191,418. The first three deaths from cholera occurred February 9th, 10th, and 28th. The Annual Report of the Board of Health of Louisiana, for 1873, presents a summary as follows: The following table comprises all cases of cholera and cholera-morbus reported to the Board of Health. It is almost wholly a record of deaths.

RECAPITULATION.

| | | | | | | | |
|----------------|----|-----------|-----|----------------|---|------------------|-----|
| February | 3 | May..... | 125 | August..... | 1 | November..... | 1 |
| March..... | 16 | June..... | 18 | September..... | 1 | | |
| April..... | 90 | July..... | 4 | October..... | 0 | Grand Total..... | 259 |

oping in their systems, and die of it. It appears at St. Louis, and scourges that city as no other American city has been scourged, and yet, for the space of five months, the city of Alton, a few hours' travel above, on the same river, and in daily, we may say hourly, communication, does not feel its presence in a single case. Then Alton is stricken, and in a fortnight many of her best citizens are borne to the grave. It leaps to Cincinnati, moving over hundreds of miles of populated country in a direct line, and passing by many cities and towns on the water-line of travel, and for two months subjects us to its terrible ravages, carrying off thousands of our people. Yet, while this is going on, a populous city, but little more than a hundred miles from us, nearly altogether escapes its presence, and many smaller towns, at half that distance, remain wholly exempt from its visitation. Then it leaps sixty miles north, to Dayton, a city of 12,000 to 14,000 inhabitants, and eighty miles south, to Lexington, a city of 7,000 or 8,000, and fills their cemeteries with new-made graves, while the intermediate towns, with their populations of 1,000 to 5,000 each, experience entire immunity. In the rural districts, too, the same capriciousness is shown. In some counties, almost every town of from 100 to 300 inhabitants has witnessed the presence and the ravages of the disease, while in adjoining counties even its breath has not been felt."

Providence, Carroll Parish. Several deaths from cholera are reported in the weekly paper the latter part of June.

Thibodeaux, Lafourche Parish. Population 1,922. The *Weekly Sentinel* gives the following facts: From May 10th to 17th, fifteen or more deaths from cholera occurred on the Oak Grove and Scudday Plantations. In the latter half of May, seven deaths from cholera occurred on Mrs. Collins's, and two on Harang's Plantation. By the end of June there had been from forty to fifty deaths from cholera in the parish, and five more occurred the first week in July.

Vidalia, Concordia Parish. The *Weekly Herald* states that from June 10th to 21st there were ten deaths from cholera on the plantation of Mr. Lambden. Up to July 19th, twenty-six cases and six deaths had occurred on Mr. David Miller's place.

MISSISSIPPI.

Holly Springs, Marshall County. Population 2,406. The *Memphis Appeal* reports three deaths from cholera on July 6th, two of them being children in one family.

Jackson, Hinds County. Population 4,234. The *Weekly Clarion* reports ten white and thirteen colored deaths from cholera from May 20th to July 4th.

Meridian, Lauderdale County. A death from cholera July 14th, and other cases rumored.

Vicksburg, Warren County. Population 12,443. The sexton's weekly reports give thirteen deaths from cholera in four weeks ending June 9, 1873.

ALABAMA.

Birmingham, Jefferson County. Population of township, by census of 1870, is 1,055. The first case occurred about June 1st, and from that date to July 18th there were one hundred and thirty deaths from cholera.

Eufaula, Barbour County. Population, 3,185. The *Eufaula News* of June 16th states that the prevalent "painful bowel-disease" has abated but little; and July 15th, gives account of the death of a prominent man, from "cramp colic."

Huntsville, Madison County. Population, 4,907. The *Weekly Democrat* states that from June 1st to July 23d, there were one hundred and ten deaths. Of these, forty-two are stated to have been from cholera.

Mobile. The *Eufaula News* of June 5th states that it was cholera-morbus and not Asiatic cholera, which caused alarm in Mobile the preceding week, and that there were many cases of cholera-morbus, or a disease resembling it, throughout the country.

Montgomery. The *Columbus* (Ga.) *Sun* of July 27th reports two cases of cholera at Montgomery: "A negro buried his wife Friday at sunset, came home, was stricken with the disease, and died next morning by eight o'clock."

GEORGIA.

Atlanta. The *Constitution*, July 3d, gives details of a fatal case which came from Chattanooga.

Dalton. The *Columbus Sun* states that a traveler arrived from Chattanooga, July 2d, in the morning, was taken sick at 4 P. M., and died at 10 P. M. "His brother is now sick with the disease. Several bad cases of cholera-morbus in town, but none have so far proved fatal."

Calhoun County. The *Eufaula News* states that a prominent lawyer of Eufaula died June 18th in Calhoun County, of "a very violent attack of cholera-morbus."

Columbus. The *Montgomery* (Ala.) *Journal*, July 30, 1873: "They have the 'cramp colic' at Columbus. One death last week from this cause."

FLORIDA.

The *Jacksonville Union* of July 1st mentions a death from cholera at Gainesville, and adds, "Fatal cases have also been reported at Cedar Keys, and elsewhere" in the State. J

ARKANSAS.

Little Rock, Pulaski County. Population, 12,380. The first case which was recognized as cholera occurred July 5th, and from that date to the middle of July, fifteen deaths from cholera occurred in the poor-house and penitentiary. Ten fatal cases of cholera occurred from July 24th to 28th on the Perkins Plantation, about sixteen miles below Little Rock.

Osceola, Mississippi County. On September 20th it was reported at Memphis, Tenn., that cholera had prevailed at Osceola for several days, and that six or seven deaths had occurred there on September 19th.

TENNESSEE.

Bellevue, thirteen miles southwest of Nashville on railroad. It was reported to the *Nashville Union and American* on July 1st, that two deaths from cholera had occurred at Bellevue.

Brownsville, Haywood County. Population, 2,457, fifty-six miles northeast from Memphis. It was reported in the *Bee* that two children of a lady who had died of cholera at Memphis on May 26th, and been buried at Brownsville, had been taken with cholera at Brownsville, and that one of them had died.

Carter's Station, Washington County, twelve miles east of Jonesborough on the railroad. It is reported in Knoxville papers that six deaths had occurred at Carter's Station from cholera, and that several persons (four in one family) were dangerously sick.

Celina, Overton County. Near the Kentucky line, on the Cumberland River, above Nashville. The *Gainsborough News* of July 25th says: "Some disease resembling the 'prevailing' is raging in the neighborhood of Celina."

Chattanooga, Hamilton County. Population, 6,093. The first case occurred June 23d, and from that date to July 10th, fifty-nine deaths from cholera are reported. On August 4th the disease reappeared, and from that date to August 25th caused sixteen more deaths.

Clarksville, Montgomery County. Population, 3,200. The *Weekly Chronicle* gives details of ten fatal cases of cholera from June 21st to July 9th.

Clinton, Anderson County. Population, 325. The *Knoxville Chronicle* reports two deaths from cholera up to August 7th.

Corbandale, Montgomery County, fifteen miles northeast from Erin, on the railroad. The *Dover Record*, July 18th, reports three or four cases of cholera.

Ducktown, Knox County. Between Knoxville and Clinton. The *Knoxville Chronicle*, July 23d, reports that "a very violent cholera-morbus prevails at Ducktown," and that "a considerable number of deaths had occurred."

Erin, Stewart County. It is said that the first attack of cholera occurred June 24th, and that the population is ordinarily about one hundred, of whom fifty left at the first rumor of the disease. The *Dover Weekly Record* states that up to July 2d there had been seven white and seven colored deaths from cholera, and that during the second attack of the disease there were fourteen deaths from cholera from August 5th to August 8th.

Farmington, Marshall County. Population, 919. About fifteen miles west of Shelbyville. The *Shelbyville Commercial* reports that the fourth death from cholera at Farmington occurred July 9th.

Flat Creek Village, Williamson County. Population, 637. The *Shelbyville Commercial* reports two or three deaths from cholera during the first week in August.

Fountain Head, five miles from Knoxville. F. K. Bailey, M. D., in the *Nashville Medical and Surgical Journal*, states that a family journeyed from Chattanooga to Knoxville and thence to Fountain Head. At Knoxville a boy was taken sick with diarrhœa, and at Fountain Head six deaths occurred in this family and among the neighbors.

Gallatin, Sumner County. Population, 2,123. The *Weekly Examiner* says that the first death occurred May 30th, and that "the total deaths from cholera from May 31st to this date (July 12th), at Gallatin, have been one hundred and four, of which eighty-eight were colored and sixteen white." June 28th: "With a disorganized force, and amid the awful scenes of death on every hand; in the almost painful quiet of our streets, only broken by

the rattle of hearses, we have managed to issue daily bulletins as to the progress of the epidemic, as well as a half-sheet of our weekly to our subscribers."

Galveston. Correspondence of *Louisville Courier-Journal*, of July 4th, states that the cholera has subsided at Galveston, Tenn.

Goodlettsville, Davidson County, thirteen miles north of Nashville on the railroad. The *Nashville Union and American* reports that up to July 3d there had been twenty-two deaths—eight white, fourteen colored—from cholera at Goodlettsville.

Greeneville, Greene County. Population, 1,039. The first fatal case of cholera in Greeneville, reported by the Knoxville and Greeneville papers, died June 11th, after an illness of two days. In the following week there were thirteen deaths. The last fatal case reported occurred July 15th. *National Union*, July 31st: "Below we give a full list of the cholera deaths in Greeneville, according to the most reliable records kept: Total white, thirty-two; total colored, seventeen; grand total, forty-nine." The following words are added: "We are acquainted with some fifty additional deaths through the county, so we think the grand total for our county would reach one hundred, that being a safe but not exaggerated estimate."

Near *Hartsville*, Sumner County. The *Gainsborough News* and *Louisville Courier-Journal* report the appearance of cholera on Little Goose Creek, about five miles north of Hartsville, on July 7th. Eight deaths occurred, chiefly in one family.

Jonesborough, Washington County. Population, 1,445. Letter to E. Harris, M. D., from W. R. Sevier, M. D., October 1, 1873: "Some four or five weeks elapsed from the time of its departure from Greeneville before it assumed an epidemic form in our town. During this period quite a number of cases occurred in the intervening country, some of which were of very malignant character. Two cases, both of whom were refugees from Greeneville, occurred here some days prior to its actual development as an epidemic. One of these was of a violent character, the other was not. Both recovered. The first case among our resident population was the wife of a gentleman who had waited constantly at the bedside of the first-mentioned case in the capacity of nurse. The houses were a quarter of a mile apart. Those who believe the disease to be contagious impute the attack to the poison conveyed in the clothes of the husband. No other case occurred after that date (15th) until the 24th of July, when it at once assumed an epidemic form. The period marked by the greatest fatality was from the 29th of July to August 1st, inclusive of both dates." The *Jonesborough Herald and Tribune* gives a list of names and dates of fatal cholera cases in Jonesborough, from which is compiled the following table:

Deaths from Cholera in Jonesborough, Tenn., in 1873.

| Date. | Number of Deaths. | Date. | Number of Deaths. | Date. | Number of Deaths. |
|--------------|-------------------|--------------|-------------------|---------------|-------------------|
| July 15..... | 1 | July 26..... | 1 | August 1..... | 5 |
| " 20..... | 1 | " 27..... | 1 | " 2..... | 2 |
| " 23..... | 1 | " 29..... | 5 | " 3..... | 2 |
| " 24..... | 1 | " 30..... | 4 | " 5..... | 1 |
| " 25..... | 1 | " 31..... | 2 | " 6..... | 1 |

Besides the above, four persons who contracted the disease at Jonesborough died, two at Knoxville, and two on Little Limestone Creek, below Jonesborough. The *Jonesborough Herald and Tribune* adds: "From July 15th to August 6th, thirty-four deaths occurred from the disease, which, taking into consideration the fact that not more than one hundred people remained in town during the prevalence of the disorder, shows a death-rate scarcely ever equaled."

Kerrville, Shelby County. The *Memphis Avalanche*, May 9, 1873, reports: "The sudden death of about twenty hands on the Memphis & Paducah Railroad, in the northern part of Shelby County, and the sickness of others, have alarmed the neighborhood. The cause is not known, but the facts are rather appalling." May 13th: "Dr. Black, of Kerrville, Shelby

County, on the Memphis & Paducah Railroad, attended the laborers who died suddenly and whose death caused something like consternation in the northern part of this county. Dr. Black states that Mr. Ledbetter had charge of seventy-five Tennessee convicts, and fifty free laborers, who were working on the first twenty-one miles from Memphis; Patrick Smith had fifty hands and worked on the Covington end. Of all these, seven convicts died, one white guard, and Mr. Smith. The doctor is of the opinion that the men died of malaria stirred up in the deep cuts filled with rotten wood and inhaled by them. In support of this theory he states that those who worked first in the cuts were the first to get sick; those who worked in the dump-cars were the next that were attacked, and those who were not in contact with the dirt or the cuts escaped sickness. When the patient lived eighteen hours he was very likely to recover, but that in those cases which proved fatal the patients died within six or eight hours after the attack. The Tennessee convicts have been removed from the road because the disease is pronounced a local one. The free laborers can remain or not, as they please." (See Nashville, Tenn.)

Knoxville, Knox County. Population, 8,008. F. K. Bailey, M. D., reports eighteen fatal cases from June 24 to August 22, 1873.

Lebanon, Wilson County. Population, 2,073. "Cholera in Lebanon and Vicinity," by J. L. Fite, M. D., in *Nashville Medical and Surgical Journal*: "Two young men came up from Nashville about the 6th of June. One of them was attacked with cholera on the 8th and died the same day; the other was attacked about the same time, and died several days after. The next case occurred in the person of a stout negro man seven days afterward. . . . He lived about fifteen hours. The epidemic then spread rapidly over the town, confining itself to no particular locality." The *Weekly Herald* states that the young man first mentioned as arriving from Nashville, "came up from that city on Friday's train (June 6th). He was suffering from diarrhoea when he came." The *Weekly Herald* gives names, residences, and dates, "from official cemetery records," of cholera deaths occurring in Lebanon and its immediate vicinity. The following table is compiled from this list:

Deaths from Cholera in Lebanon, Tenn., in 1873.

| Date. | Number of Deaths. | | Date. | Number of Deaths. | | Date. | Number of Deaths. | |
|-------------|-------------------|----------|-------------|-------------------|----------|-------------|-------------------|----------|
| | White. | Colored. | | White. | Colored. | | White. | Colored. |
| June 8..... | 1 | .. | June 21.... | 4 | 1 | July 4..... | .. | 1 |
| " 15..... | .. | 1 | " 24..... | .. | 1 | " 5..... | .. | 2 |
| " 16..... | .. | 3 | " 28..... | .. | 2 | Totals.... | 9 | 19 |
| " 17..... | 1 | 4 | " 29..... | 1 | .. | | | |
| " 18..... | 1 | 2 | July 1.... | .. | 1 | | | |
| " 20..... | 1 | .. | " 3.... | .. | 1 | TOTAL.... | ..... | 28 |

Near *Lebanon*, Wilson County. The *Weekly Herald* reports the following deaths from cholera in Wilson County, outside of Lebanon: At Shop Spring, June 27th, one; June 29th, one; July 5th, one. Some time before July 2d, at Huddleston's Cross Roads, one; at Silver Spring, one; near Taylorsville, one; July 2d, three miles east of Lebanon, one; July 5th, eight miles east of Lebanon, one; and on Cainsville Road, seven miles from Lebanon, one.

Limestone Station, Washington County, half-way between Greeneville and Jonesborough. The *Knoxville Chronicle*, August 3, 1873: "Three members of a family, living at Midway, were attacked with the dread 'prevailing,' and died, when the remaining members fled to Limestone, and have all since been attacked with the same disease in a very violent form."

Near *Loudon*, Roane County, twenty-eight miles southwest from Knoxville. The *Knoxville Chronicle* reports a fatal case of cholera six miles from Loudon, August 2d.

Loy's Cross Roads, Union County. Population, 468. The *Knoxville Press and Herald*, August 6th, reports three deaths from cholera at Loy's Cross Roads on August 1st.

Memphis, Shelby County. Population, 40,226. The history of the cholera in Memphis, in 1873, has not been written, probably because the medical men who survived the cholera

were occupied with duties connected with the succeeding epidemic of yellow fever. The facts and surmises furnished by the newspapers are presented below. They give a very imperfect view of a severe and fatal epidemic. *Memphis Avalanche*, May 18th: "In the death of — — —, our city lost yesterday one of its best and most progressive citizens. His death was the result of acute dysentery, which compelled him to leave his place of business on Wednesday morning last (May 14th), to which he was never to return." *Avalanche*, May 20th: "The prevailing epidemic, now sweeping over Memphis, bears the euphonious title of 'Strawberry Festival.'" May 29th: "The cholera-morbus excitement is not so intense as it was." "Memphis, June 4th, — . . . No alarm was felt until yesterday, when the physicians generally agreed that it was cholera, some classing it as 'sporadic,' and others as 'Asiatic.'" On June 4th, the Common Council refused to adopt a resolution passed by the Board of Aldermen, creating a Board of Health. June 16th, both branches of the City Council adopted an ordinance creating a Board of Health.

The *Memphis Appeal*, June 20th: "How it came— . . . it is stated that three emigrants from Hungary, on their way to Texas, four months ago, were landed and died in New Orleans of cholera. Therefore the dispatches from the Spanish consul at New Orleans, to the Alcalde of Havana, which caused New Orleans vessels to be excluded from that port. This quarantine against New Orleans at Havana was rigidly enforced two or three weeks before we heard of strangely-sudden deaths in this vicinity. Then we are told two railroad laborers from New Orleans went to work on the Paducah road, fifteen miles north of Memphis. (See Kerrville, Tenn.) These brought with them, from New Orleans, seeds of disease imported by the Hungarians. Other laborers were attacked, and thence the infection or contagion spread over the whole limestone-watered region of the United States." The *Memphis Appeal* gives the following causes of death from books of the undertakers from June 6th to 13th, both days inclusive:

| | | | | | | | |
|---------------------------|----|---------------------------|----|--------------------|---|---------------------|-----|
| Cholera | 33 | Summer Complaint. | 1 | Suicide..... | 1 | Measles..... | 2 |
| Cholera-Morbus... | 11 | Unknown..... | 21 | Old Age..... | 1 | Dyspepsia..... | 1 |
| Cholera Infantum. | 6 | Dysentery..... | 6 | Teething..... | 3 | Heart-Disease..... | 1 |
| Congestion | 7 | Insanity..... | 1 | Flux..... | 1 | Debility..... | 5 |
| Consumption | 4 | Premature Birth..... | 1 | Apoplexy..... | 1 | Comp. of Diseases.. | 1 |
| Meningitis..... | 1 | Small-Pox..... | 1 | Chronic Diarrhœa.. | 1 | Inflamm. of Brain.. | 1 |
| | | | | | | Total..... | 119 |

Memphis papers and dispatches give the following figures :

Week ending June 8, 1873, 55 interments.
 Corresponding week, 1872, 26 interments.
 Average weekly for 1872, 19 interments.
 June 9th, 11 interments.
 " 10th, 18 interments.
 " 11th, 24 interments.
 " 12th, 19 interments.
 " 13th, no report.
 " 14th, 12 interments.
 " 15th, 21 interments.
 " 16th, 19 interments (cholera and cholera infantum, 15).
 " 17th, 15 interments (cholera, 10).
 " 18th, 15 interments (cholera, 11).
 " 19th, 33 interments (cholera, 19).
 " 20th, 24 interments (cholera, 17).
 " 21st, 14 deaths from cholera.
 " 22d, 19 interments (cholera, 9).

June 23d, 8 interments from cholera.
 " 24th, 20 interments (cholera, 13).
 " 25th, 14 interments from cholera.
 " 26th, 7 interments from cholera.
 " 27th, 9 interments from cholera.
 " 28th, 12 interments (cholera, 8).
 " 29th, 4 interments from cholera.
 " 30th, 23 interments (cholera, 7).
 July 1st, 19 interments (cholera, 8).
 " 2d, 25 interments (cholera, 11).
 " 3d, 20 interments (cholera, 6).
 " 4th, 2 deaths from cholera.
 " 5th, 13 interments (cholera, 5).
 " 6th, 15 interments (cholera, 6).
 " 7th, 22 interments (cholera, 3).
 " 8th, 1 interment from cholera.
 " 9th, 3 interments from cholera.
 " 12th, 5 interments (cholera, 2).

According to the above mortality reports, manifestly imperfect as they are, there were in Memphis in six weeks, from June 1st to July 12th, five hundred and twenty-two deaths, of which two hundred and twelve were caused by cholera.

Midway, Greene County, nine miles west of Greeneville, on railroad. Population, 752. The following is quoted from the *Knoxville Chronicle*: "Midway, Tenn., August 4, 1873.

. . . There have been only three or four cases of cholera immediately in the village, one only proving fatal, and that was a colored boy that was living with me. He was taken sick on the morning of the 18th of July, and died within fourteen hours, of sporadic or Asiatic cholera. To give you some idea of the fatality of the disease, I inclose a draft representing one square mile, including all the deaths from cholera in this immediate vicinity. This includes a population of about eighty-five persons, all told, twelve of whom died of cholera within twenty-two days, six of cholera-morbus, and six of sporadic cholera. The entire population of the families of whom these twelve died, number forty-eight persons. On the 18th and 19th of July, five died of sporadic cholera, including the boy at my house, and the wife and three children of John G. Hahn, a tenant on my farm. Forty-eight hours from the time the first one was attacked all five were dead, and only thirty-four hours from the death of the first the fifth one was a corpse. The wife and two children were buried in one grave, the three dying within twelve hours. Mr. Hahn and his only living child are at my house. The child is convalescent from cholera, and I think will recover. Mr. Hahn has not had the cholera. . . . The inclosed drawing represents a small section of limestone country, including a branch heretofore known as the Seven Springs, but now is known as Cholera Branch. The citizens of Midway all use cistern-water. My work-hands had been using water out of a freestone spring, but, from some cause unknown, the colored boy and Mr. Hahn's family drank out of Cholera Branch, in which it is said some cloths had been thrown from those that had died. Two days after they had thus drunk the five were dead."

Morristown, between Knoxville and Greeneville. The *Nashville Banner*, June 18th, reports two cases at *Morristown*.

Mosheim, Greene County, seven miles west of Greeneville. Letter already quoted (*see Midway*): "There have been eight deaths from cholera at *Mosheim*." *Knoxville Press and Herald*: "One family, composed of husband, wife, and child, all died."

Murfreesborough, Rutherford County. Population, 3,502. The *Monitor* gives names and dates of fatal cases of cholera in *Murfreesborough*, from which the following table is compiled:

Deaths from Cholera in Murfreesborough, Tenn., in 1873.

| Date. | Number of Deaths. | | Date. | Number of Deaths. | | Date. | Number of Deaths. | |
|-------------|-------------------|----------|------------|-------------------|----------|-------------|-------------------|----------|
| | White. | Colored. | | White. | Colored. | | White. | Colored. |
| June 17.... | .. | 1 | July 3.... | 1 | 2 | July 24 ... | .. | 1 |
| " 18.... | .. | 1 | " 5.... | .. | 5 | " 25.... | 1 | 1 |
| " 20.... | .. | 1 | " 6.... | .. | 4 | Totals..... | 3 | 32 |
| " 29.... | .. | 1 | " 7.... | .. | 2 | TOTAL..... | | 35 |
| July 1.... | .. | 2 | " 8.... | .. | 5 | | | |
| " 2.... | 1 | 4 | " 9.... | .. | 2 | | | |

Near *Murfreesborough*. The *Monitor* gives facts from which the following table, of deaths in the country near *Murfreesborough*, is compiled:

Deaths from Cholera in the Country near Murfreesborough, in 1873.

| Date. | Number of Deaths. | | Date. | Number of Deaths. | | Date. | Number of Deaths. | |
|-------------|-------------------|----------|------------|-------------------|----------|-------------|-------------------|----------|
| | White. | Colored. | | White. | Colored. | | White. | Colored. |
| June 18.... | .. | 1 | July 2.... | 1 | 2 | July 24.... | .. | 1 |
| " 23.... | .. | 1 | " 4.... | .. | 3 | Totals..... | 3 | 16 |
| " 28.... | .. | 3 | " 6.... | .. | 1 | TOTAL..... | | 19 |
| " 30.... | .. | 1 | " 8.... | 1 | .. | | | |
| July 1.... | .. | 1 | " 9.... | 1 | 2 | | | |

In addition to the deaths above tabulated, the *Monitor* reports three deaths (whites) from cholera in the Big Spring district, six or eight miles southeast of town, on August 5th,

and three deaths from cholera on a farm, on the Jefferson Turnpike, about ten miles north of Murfreesborough, in the week ending September 6th.

Nashville, Davidson County. Population, 25,865. A history of the cholera in Nashville in 1873, is given by W. K. Bowling, M. D., in the *Nashville Medical and Surgical Journal*. The first fatal case marked by cholera-symptoms, mentioned by him, occurred May 26th. The patient died May 29th. From May 29th to June 7th he reports six fatal cases, and states that the deaths of some negroes were reported about the same time. From June 7th to the close of the epidemic, the number and dates of fatal cases of cholera are derived from the Nashville newspapers. The totals are: Whites, two hundred and forty-four; colored, four hundred and three; grand total, not counting the deaths prior to June 7th, six hundred and forty-seven.

The *Louisville Courier-Journal*, of July 1, 1873, states: "Nashville, June 30th. The cholera is now almost wholly confined to the Penitentiary just outside the city limits, seventy-five convicts being down with it. Only nine deaths have resulted from the disease in the institution during June. It is believed by many that the convicts who contracted what was then supposed to be the malarial fever on the Memphis & Paducah road, and were sent here a month ago to recruit their health, brought the cholera to Nashville, the fever or the cholera being one and the same." (See Kerrville, Tenn.)

Old Union, Shelby County. The *Memphis Ledger* reports six deaths from cholera in the residence of ———, Old Union, near Cuba, and fatal cases among the negroes at the "Noblin Place."

Ooltewah, Hamilton County, seventeen miles east of Chattanooga, on railroad. Population, 1,102. The *Knoxville Chronicle*, of July 25th, reports two deaths from cholera at Ooltewah on July 22d, and adds: "This makes four or five deaths from the 'prevailing,' reported at that place during the past week." The *Chronicle* also reports a fatal case at Ooltewah the 5th of August.

Palmyra, Montgomery County, sixteen miles northeast of Erin, on the railroad. The *Dover* (Tenn.) *Weekly Record*, of July 4, 1873, says: "Twelve deaths are reported to have taken place at Palmyra from cholera since it commenced."

Raccoon Valley, Union County, near Maynardsville, twenty miles northeast from Knoxville. A Knoxville paper reports the death from cholera of Mr. Pleas. Miller and Dr. Lewis, and the occurrence of five other cases, three of them in a critical condition.

Richland, Sumner County, fifteen miles north of Gallatin, on the railroad. The *Gallatin Examiner*, extra, of June 19th, reports four deaths from cholera at Richland.

Rogersville Junction, Hawkins County, eighteen miles west of Greenville, on the railroad. The *Knoxville Press and Herald* reports the death from cholera, at Rogersville Junction, August 1st, of a man whose daughter died during the week ending July 26th, of the same disease. Also fatal cases August 25th and 26th.

Sharp's Settlement, Campbell County, between Loy's Cross Roads and the Kentucky line. The *Knoxville Chronicle*, of August 5th, reports the death from cholera, at Sharp's Settlement, of a man from Raccoon Valley.

Shelbyville, Bedford County. Population, 1,719. The *Weekly Commercial* gives the following facts in regard to cholera: "The first fatal case occurred about June 6th, the second on June 17th. Up to June 21st there were seven fatal cases, and from June 21st to July 11th, there were (nineteen white and forty-three colored) sixty-two deaths from cholera. The disease then almost entirely disappeared until the death, on August 2d, of two well-known residents, members of the same family. They were taken sick at 10 p. m., and died early the next morning."

Springfield, Robertson County. Population, 2,140. The *Weekly Record* reports deaths from cholera as follows: "June 18th, one; 20th, one; 21st, one; 23d, one; 24th, one; 26th, three; 27th, one; 29th, one; 30th, two. Whites, three; colored, nine; total from June 18th to June 30th, twelve. July 14th, an old citizen of the county died from cholera near Bethlehem Church."

Telford's Station, Washington County, five miles west of Jonesborough, on the railroad. The *Knoxville Press and Herald* reports a death from cholera August 4th.

Union City, Obion County. Population, 2,479. The *Louisville Courier-Journal* reports two deaths from cholera at Union City, Tenn., on July 16th. The *Union City Weekly Courier* reports twenty-nine cholera deaths in the week ending July 25th. The *Courier-Journal* reports as follows: "Five deaths in the country around Union City on July 30th; and fifteen in the week ending August 8th; four deaths in Union City on August 11th, and three on August 14th." The *Weekly Courier*, August 15, 1873: "This fearful disease still lingers in our midst. . . . It is now more than six weeks since the first case of cholera occurred in this city. . . . The whole number of deaths from cholera in the city limits since its first appearance to date is fifty-one."

Wallace's Cross Roads, Anderson County, twenty miles northwest of Knoxville. Population, 791. The *Knoxville Press and Herald* reports the death, from cholera, of a prominent man, August 29th, and the death of another man, resident in the same house, on August 30th; also a death from cholera in the same vicinity September 12th, and the occurrence of several cases which recovered, among them a son of the first-mentioned case.

Whitesburg, Jefferson County, between Knoxville and Greenville, on the railroad. Population, 518. The *Knoxville Press and Herald* reports the death from cholera of a resident of Whitesburg, the sickness of his child, and the death, on July 10th, of his mother-in-law.

Winchester, Franklin County, thirty miles southeast from Shelbyville, on the railroad. The *Shelbyville Commercial* reports two deaths from cholera on July 27th.

On Wolf River, near the Kentucky line, south of Columbia, Kentucky. The *Columbia (Kentucky) Spectator*, July 3, 1873, reports several deaths from cholera.

KENTUCKY.

Ballard County. The *St. Louis Democrat* reported the following: "Cairo, July 2d. Four men belonging to the force at work on the Mississippi Central Railroad extension in Kentucky, six miles below Cairo, died last night from cholera, and several others are reported dangerously ill from the same disease." The *Cairo Bulletin*, of July 6th, reported: "Out of a camp of twenty men, in less than three days, nine of them died; and in the other camps the men died in the same proportion. In all, probably twenty men died from Monday morning, June 30th, to Thursday night, July 3d, when the men were disbanded, the camps broken up, and the works, for the time being, deserted."

Bowling Green, Warren County. Population, 4,574. First case June 3d. The disease became epidemic June 19th, and, up to August 10th, there were sixty-five deaths from cholera.

Boone County. The *Paris Kentuckian*, July 16, 1873, says: "Three cases of cholera have occurred near North Bend, in Boone County, all colored people, all in one house, and all fatal.

Bryantsville, Garrard County, seven miles northwest of Lancaster. Population, 2,656. The *Greensborough Monitor*, August 27, 1873, states that "Mount Vernon and Bryantsville are also similarly affected" (as Lancaster). The *Lancaster News* reports a death from cholera on September 2d, at Bryantsville.

Burkesville, Cumberland County, twenty-five miles south of Columbia. Population, 2,774. The *Weekly Courier* reports the death of a negro from cholera on September 10th.

Cadiz, Trigg County, twenty miles west of Hopkinsville. Population, 680. The *Princeton Banner*, July 24, 1873, reports: "There have been fifteen deaths in Trigg County from cholera during the past four weeks; six at Rockcastle; three at Trigg Furnace; four at Cadiz; and two elsewhere."

Columbia, Adair County. Population, 506. From August 29th to September 23d there were about twenty-five deaths from cholera, the majority of the victims having been connected, as residents or servants, with the tavern kept by J. C. Winfrey.

Covington, Kenton County. Population, 24,503. The *Weekly Journal* reports "a few

fatal cases of cholera" in the week ending June 28th, and the death from cholera of a mother and son, the latter on July 7th, after an illness of ten hours, and the former on July 8th, after an illness of seven hours. The *Cincinnati Commercial*, July 17th, says the cholera in West Covington "is said to be on the increase, and as many as fourteen deaths are reported for the past two weeks." The *Commercial* reports, July 23d: "Covington. Four more cases of cholera have come to light, two of them fatal. They all occurred in one neighborhood, and within the past two or three days." The *Weekly Journal*, July 26th, reports: "The cholera lingers in the city. A few cases have occurred during the week."

Dekoven, Union County, southwest of Henderson. The *Union County Advocate* reports the occurrence of several cases of cholera, and one death, at and near Dekoven, or Shotwell's Mines.

Elizabethtown, Hardin County. Population, 1,743. From July 8th to August 30th there were about thirty deaths from cholera, the majority occurring in Race Alley, a filthy negro quarter.

Frankfort, Franklin County. The *Yeoman*, July 8th, reports the sudden death of a man with choleraic symptoms.

Franklin, Simpson County. Population, 1,808. First case June 5th. The *Weekly Patriot* gives mortuary lists from which the following is compiled:

Deaths from Cholera in Franklin, Ky., in 1873.

| Date. | Number of Deaths. | | Date. | Number of Deaths. | | Date. | Number of Deaths. | |
|--------------|-------------------|----------|-------------|-------------------|----------|--------------|-------------------|----------|
| | White. | Colored. | | White. | Colored. | | White. | Colored. |
| June 22..... | 1 | .. | July 5..... | 3 | 1 | July 17..... | 1 | 1 |
| 25..... | 3 | .. | 6..... | 1 | 1 | 18..... | .. | 1 |
| 26..... | 1 | .. | 7..... | 3 | 2 | 20..... | .. | 1 |
| 27..... | 1 | 1 | 8..... | 1 | 1 | 21..... | .. | 1 |
| 28..... | 1 | 1 | 10..... | .. | 1 | 22..... | .. | 1 |
| July 1..... | 5 | 2 | 11..... | 1 | 1 | Totals..... | 28 | 25 |
| 2..... | 2 | 1 | 12..... | .. | 1 | TOTAL..... | | 53 |
| 3..... | 1 | 2 | 13..... | .. | 1 | | | |
| 4..... | 2 | 4 | 16..... | 1 | .. | | | |

The *Weekly Pantagraph* reports a death from cholera in Franklin, August 4th.

Near *Franklin*. The *Bowling Green Democrat* reports several deaths from cholera in the southwestern portion of Simpson County, in the week ending August 2d. "There were altogether one hundred deaths from cholera, in Franklin (town) and Simpson County.

Near *Glasgow*, Barren County. The *Glasgow Weekly Times* gives the following facts in regard to cholera: From July 1st to July 5th there were six sudden deaths from cholera, in a colored settlement on the Woodsonville Road, a mile and a half north of Glasgow. On July 22d, the son of a prominent citizen died of cholera at his father's residence, four miles from town. On August 4th and 5th, three deaths from cholera occurred in the neighborhood of Beaver Creek Bridge, about three miles north of Glasgow. On August 12th, 19th, and 21st, three colored persons died of cholera, eight miles southwest of Glasgow, on Beaver Creek. Total deaths from cholera, in the country, near Glasgow, from July 1st to August 21st, thirteen. No cases occurred in Glasgow.

Grayson, Carter County. Population, 152. The *Vanceburg Kentuckian*, July 11, 1873, says: "Several cases of the cholera in Carter County. We are informed that twenty-one persons have died with the disease at Grayson, generally negroes. One case has been reported at Olive Hill."

Hardin's Bottom, Henry County. The *Frankfort Yeoman* reports eleven fatal cases of cholera at Sand Ripple and Hardin's Bottom, a neighborhood on the Kentucky River and Henry County, from July 12th to July 21st. "The cases that proved fatal died in from six to twelve hours after being attacked." A family which had fled from the cholera returned in due time; but, two or three days after they reoccupied their house at Sand Ripple, two of them died of cholera, August 1st, and before August 15th a third member of the family

died at Union Church, where he had gone to bury the two bodies, and two others of the family died, six miles from home, as they were fleeing for safety.

Hartford, Ohio County, twenty miles southeast of Owensborough. Population, 511. The *Frankfort Yeoman*, July 29, 1873, says: "The disease still lingers at Princeton, Covington, Worthville, Hartford, and one or two other places in this State."

Henderson, Henderson County. Population, 4,171. The *Weekly News* furnishes the following facts: "There were deaths from cholera as follows: June 23d, one; June 28th, one; June 30th, one; July 1st, one; and July 2d, one. In the week ending July 15th, there were fourteen deaths in Henderson, some of which, perhaps all, were from cholera. On July 25th and 26th, a father and daughter died of cholera."

Hickman, Fulton County. Population, 1,120. The *Weekly Courier* reports three cholera deaths, on July 28th, and August 12th and 13th.

Hopkinsville, Christian County. Population, 3,136. The *Weekly New Era* reports as follows: "There were five fatal cases resembling cholera up to July 21st. There was a fatal case of cholera on August 4th, and two on August 6th, and another, the date of which is not given. There were two deaths from cholera in the week ending August 15th. The above cases occurred in Hopkinsville."

Jamestown, Russell County, fifteen miles southeast of Columbia. Population, 138. The *Lebanon Weekly Standard* reports six or seven severe cases of cholera at Jamestown, on the 21st and 22d of September.

Lafayette, Christian County, fifteen miles southwest of Hopkinsville. Population, 215. The *Dover (Tennessee) Weekly Record* reports the death, from cholera, of two colored women at Lafayette, August 24th.

Lagrange, Oldham County. Population, 612. First case, July 8th. From July 8th to 29th, there were thirty-one cases, fifteen of which were fatal.

Lancaster, Garrard County. Population, 741. The *Weekly News* gives mortuary reports from which the following table is compiled:

Deaths from Cholera in Lancaster, Ky., in 1873.

| Number of Deaths. | | | Number of Deaths. | | | Number of Deaths. | | |
|-------------------|--------------|----------|-------------------|--------|--------------|-------------------|--------|----------|
| Date. | White. | Colored. | Date. | White. | Colored. | Date. | White. | Colored. |
| | Aug. 15..... | 1 | | 1 | Aug. 23..... | | 2 | 1 | Sept. 3..... | .. | 1 |
| " 16..... | .. | 1 | " 24..... | 2 | .. | " 4..... | .. | 1 |
| " 19..... | .. | 3 | " 27..... | 1 | 1 | Totals... | 12 | 21 |
| " 20..... | 1 | 3 | " 29..... | 1 | 1 | TOTAL..... | | 33 |
| " 21..... | .. | 4 | " 30..... | 1 | 1 | | | |
| " 22..... | 3 | 2 | Sept. 2..... | .. | 1 | | | |

The first case occurred August 10th.

Larue County, between Lebanon and Elizabethtown. The *Elizabethtown Weekly News* reports the death of one negro, from cholera, at Marshall's, and two at Goodin's, August 5th, in Larue County.

Lebanon, Marion County. Population, 1,925. Dr. Ely McClellan, Assistant Surgeon, United States Army, states that the first case died July 19th. The following table is based on facts reported by the *Lebanon Weekly Standard*, and presents the deaths from cholera in Lebanon and Marion County, from August 19 to September 23, 1873:

| Deaths. | Town. | County. | Total. |
|--------------|-------|---------|--------|
| White..... | 10 | 40 | 50 |
| Colored..... | 16 | 21 | 37 |
| Total..... | 26 | 61 | 87 |

Logan County, between Franklin and Hopkinsville. The *Russellville Herald* gave the following facts: "In South Logan, in the neighborhood of Red River Church, and around Shocco, near the Tennessee border, the cholera is prevailing to an alarming extent." In this neighborhood, twenty-eight deaths, from cholera, are reported from July 17th to August 23d.

Louisville, Jefferson County. Population, 100,753. Dr. McClellan states that "from June 12th to August 16th, inclusive, twenty-one cases of cholera, all of which terminated fatally, are reported as occurring in Louisville." He also mentions three deaths from cholera in one family in the first week in September.

Maysville, Mason County. Population, 4,705. Dr. McClellan states that the first case occurred June 29th, and from that date to July 25th there were fourteen cases, eight of which terminated fatally.

Near *Maysville*. The *Maysville Bulletin* reports the death, from cholera, of two members of a well-known family, living near the North Fork Bridge, on July 4th and 9th, and the occurrence on July 13th of a third case, which recovered.

Metropolis. The *Paducah Kentuckian*, July 11, 1873, reports that several cases of cholera had occurred at Metropolis.

Middletown, Bourbon County. Population, 492. A death, from cholera, at Middletown was reported August 17th.

Millersburg, Bourbon County. Population, 675. Dr. McClellan states that eight cases of cholera occurred July 11th and 12th, six of which ended fatally within thirty-six hours. The next death from cholera occurred August 26th. He adds: "August 29th, eight cases occurred, and all terminated fatally in a few hours. From August 30th to September 7th, the disease was epidemic; seventy cases occurred in this town, forty-nine of which died."

Mount Vernon, Rock Castle County. (Twenty-five miles southeast of Stanford, on railroad.) Population, 252. (See Bryantsville, Ky.)

Nelson County. Between Lebanon and West Point. From August 20th to September 25th, there occurred, in the towns of New Haven and Boston, in Nelson County, about twenty deaths from cholera.

Newport, Campbell County. (Opposite Cincinnati, Ohio, and east of Covington.) Population, 15,087. The *Weekly Leader*, June 21, 1873, reports the prevalence of cholera-morbus in Newport. The *Leader*, August 9th, says: "There is more sickness now among the hands at the Licking River saw-mill than there has been for years. There has been on an average, for the last month, four men off, from sickness, every day; the disease being cholera, cholera-morbus, or whatever the severe current bowel-complaint may be termed. Within four weeks there have been six deaths by cholera within one square of the Licking River saw-mill."

Oddville, Harrison County. The *Paris Kentuckian* reports two sudden deaths, at Oddville, from cholera, July 10th and 13th.

Olive Hill, Carter County. Seven miles west of Grayson. Population, 737. (See Grayson, Ky.)

Owensboro, Daviess County. Population, 3,437. The *Weekly Monitor* reports nine fatal cases of cholera in Owensboro from the middle of August to about the 7th of September.

Paducah, McCracken County. Population, 6,866. Dr. McClellan states that the first case of cholera occurred May 21st, and adds: "It is estimated that about one hundred and eighty cases died of cholera from May 23d until July 24th."

Princeton, Caldwell County. Population, 1,012. The *Weekly Banner* reports cholera deaths in Princeton as follows: July 19th, one; 22d, one; 27th, two; 30th, five. The *Paducah Kentuckian* reports two deaths on July 31st and August 1st, and on August 7th states that the cholera is on the increase at Princeton.

Republican. The *Lancaster News* reports a cholera panic at Republican.

Rock Castle, Trigg County. Population, 80. (See Cadiz, Ky.)

Stanford, Lincoln County. Population, 752. The first case occurred August 22d. Dr.

McClellan states that, from August 29th to September 12th, there were fifteen deaths from cholera.

Taylor County. Between Lebanon and Columbia. Dr. McClellan states that the first case of cholera occurred July 17th, and from that date to September 8th there were ten fatal cases.

Washington County, north of Lebanon, The *Lebanon Standard* reports two deaths from cholera, September 29th and 30th, the former on Beach Fork, and the latter on Pleasant Run, in Washington County.

West Point, Hardin County. Population, 206. The *Shelby Kentucky Courant*, September 4, 1873, states that, "in Hardin County, near West Point, on Sunday week (August 24th), eighteen railroad-hands were buried; and on Monday (August 25th), twelve more, all deaths from cholera; and some six miles farther on, there were ten or fifteen more deaths last week." These deaths are said to have been among railroad-laborers.

Woodburn, Warren County. Population, 1,352. The *Bowling Green Democrat* prints a letter dated Woodburn, July 2d: "Counting those with the first symptoms, I make somewhere near sixty cases in this place, from which our physicians have lost eight, up to eight o'clock this evening."

Worthville, Carroll County, twenty-eight miles east of Lagrange, on railroad. Population, 417. The *Louisville Courier-Journal* reports the sudden death of a negro railroad-hand at Worthville, from cholera, on July 23d. (See Hartford, Ky.)

MISSOURI.

Columbia, Boone County, twenty-five miles southeast from Fayette. Population, 2,236. The *Weekly Statesman*, September 19th, reports that four deaths, after a brief and severe illness, occurred on September 13th.

Fayette, Howard County. Population, 518. The *Weekly Advertiser* states that from July 17th to 31st there were seven white and nine colored deaths from cholera, and that "on Monday, August 18th, the pestilence again broke out in a family which had returned to town. Four deaths occurred in this house in twenty-four hours." The *Advertiser* of September 4th prints a letter from U. S. Wright, M. D.: "Up to date there have been in this town forty deaths from cholera, with perhaps seven deaths occurring in the country within a few miles from town."

Hannibal, Marion County. Population, 10,125. In a letter to Dr. E. Harris, from James G. Hickman, M. D., Hannibal, August 12, 1873, he says: ". . . The first case was June 6th, a negro man, aged sixty years, recovered. Lost in his family, in close succession, wife and two grown daughters. Second case, a family young man, first thought to have sporadic cholera, lived several days and died from uræmia; his mother died in twenty-four hours afterward. Third, stout male, aged forty, taken suddenly and died in eight hours, no more cases taking place in the family. Fourth, family man, aged fifty, taken suddenly and died in nine hours; one more case in two days in the same family, died in seven hours. We have had some sixty-five deaths since the disease visited us, and all but five cases were in the fourth ward, known as South Hannibal. In most all the families several members suffered, and Union Street was the greatest sufferer. The disease is yet with us."

Hogan Mountain, Iron County, nine miles south of Pilot Knob, on railroad. *Ironton Weekly Enterprise* of October 16, 1873: "It is said that several cases of cholera occurred in the vicinity of Hogan Mountain during the past two or three weeks, two or three of which were fatal."

Iron Mountain, St. François County, five miles north of Pilot Knob, on the railroad. The *Ironton Weekly Enterprise* states that five deaths from cholera occurred in one family at Iron Mountain, September 21st and 22d.

Jefferson City, Cole County. Population, 4,420. The *Missouri Republican* states that six cases of cholera and three deaths had occurred in the Penitentiary at Jefferson City up

to July 31st, and that on that day a fatal case occurred in the city. The *Jefferson City Tribune* states that up to August 13th, four deaths from cholera had occurred in the prison.

Louisiana, Pike County. Population, 3,639. The *Weekly Journal*, June 21st: "There have been five cases of sickness in this city, three resulting fatally, with symptoms resembling cholera. Four of these cases were grown colored persons, and one a little boy. Three of the adults came from St. Louis." The *Journal* gives twenty-seven deaths from cholera up to July 26th.

Mill Spring, Wayne County. The *Ironton Weekly Enterprise* reports (June 26th) that one or more cases of cholera had occurred at Mill Spring, and (July 3d) that four cases had proved fatal.

Pilot Knob, Iron County. Population, 581. The *Ironton Weekly Enterprise* reports that two fatal cases in adjoining houses occurred on August 7th and 8th; that up to September 8th, "between forty and fifty persons had fallen victims to the terrible destroyer;" and that on September 10th and 11th, five or six persons died each day. "Mrs. M— was called upon to part with her husband and three children, leaving only herself and one child out of a family of six."

Poplar Bluff, Butler County. Population, 840. The *Ironton Weekly Enterprise* reports that cholera was raging at Poplar Bluff the latter part of June; that three deaths occurred in one day in the week ending June 21st, and fifteen deaths occurred in the week ending June 28th. The *St. Louis Dispatch* states that thirty deaths occurred at Poplar Bluff. "The mortality was chiefly confined to railroad hands, but several citizens had died."

St. Charles County. The *St. Charles Weekly News* reports, July 17th, that between fifteen and twenty deaths from cholera had occurred the preceding two weeks in the county below Portage; July 24th, that cholera, or a disease very similar and equally fatal, prevails to an alarming extent in Lincoln and Pike Counties, and the point portion of this (St. Charles) county;" and July 31st, that one death and several cases (cholera-morbus) had occurred on the steamboat S. H. Long, lying at the wharf at St. Charles. The boat was ordered off, and went up the river.

St. Louis. Population, 310,864. The *Missouri Republican*, June 20th, reports that at a meeting of the Board of Health, one of the members said "there were a few cases of cholera-morbus in the city, and three or four at the City Hospital." He suggested a special ward for the cases in the hospital. The *Republican*, July 7th, describes the cholera as it affected a family on the Gravois Road, near Second Carondelet Avenue. "On Saturday night, July 5th, the two children, a boy and a girl, aged seven and nine respectively, were taken sick, purging and vomiting. After six hours' sickness they both died. The father and hired man then took sick with the same complaint. They both died in a few hours' time, after suffering terribly. The mother then took sick, and at six o'clock last night she too died, leaving no one behind of the entire family." This family drew their drinking and cooking water from a filthy pool of stagnant water.

For the nine weeks ending September 13th there were reported in St. Louis papers one hundred and ten deaths from cholera, and two hundred and fifty-two from cholera-morbus

Mortality Table compiled from St. Louis Newspapers in 1873.

| Week ending | Total. | Cholera. | Cholera Morbus. | Cholera Infantum. | Summer Complaint. | Week Ending. | Total. | Cholera. | Cholera Morbus. | Cholera Infantum. | Summer Complaint. |
|-------------|--------|----------|-----------------|-------------------|-------------------|--------------|--------|----------|-----------------|-------------------|-------------------|
| June 14. | 107 | .. | 8 | 4 | .. | June 9. | 236 | 18 | 31 | 37 | 5 |
| 21. | 159 | .. | 11 | 25 | .. | 16. | 206 | 19 | 26 | 37 | 7 |
| 28. | 255 | .. | 25 | 30 | 40 | 23. | 193 | 9 | 23 | 22 | 6 |
| July 5. | 241 | .. | 49 | .. | 57 | 30. | 204 | 4 | 16 | 21 | 12 |
| 12. | 241 | .. | 67 | 10 | 33 | Sept. 6. | 185 | 6 | 15 | 16 | 7 |
| 19. | 292 | 14 | 69 | .. | 43 | 13. | 185 | 2 | 11 | 15 | 5 |
| 26. | 252 | 21 | 32 | 25 | 23 | 20. | 143 | .. | 8 | 6 | 2 |
| Aug. 2. | 211 | 17 | 29 | 26 | 10 | 27. | 147 | .. | 1 | 7 | 2 |

Sturgeon, Boone County, twenty-five miles east of Fayette. The *Missouri Republican* of September 13th reports the death from cholera of two of the best citizens of Sturgeon.

Troy, Lincoln County. Population, 703. The *Missouri Republican* of July 21st reports nineteen white and four colored persons died from cholera at Troy and in the immediate vicinity.

Versailles, Morgan County. Population, 503. The *Missouri Republican*, August 28th, reports the adjournment of "Circuit Court at Versailles on account of cholera."

TEXAS.

Denison, Grayson County. A letter from James Johnston, M. D., Denison, May 2, 1874, states: "The first fatal case of cholera that came under my notice in this place occurred about August 8, 1873. Some few cases occurred occasionally up to the 20th of September, when it assumed greater violence, and in the next twenty days we had about eighty deaths in this town, which had a population at that time of about three thousand. The disease subsided very rapidly, owing probably to change of weather and sanitary measures, and the last occurred about the 1st of November. The proportion of deaths to cases amounted to about eighty per cent. . . . The greater part of the cases that occurred manifested the symptoms of true Asiatic cholera. The patient was attacked with diarrhoea, followed by vomiting. The discharge from the bowels was generally what has been called 'rice-water,' the skin growing cold by degrees, with cramps usually, collapse arriving with intense thirst, oppression in breathing, loss of voice, disappearance of the pulse, suppression of urine, cold, blue, and shrunken skin, sometimes bathed in sweat, and at last cold breath and tongue. Almost all the cases I saw, and especially the fatal ones, were among the improvident and those who were in the habit of drinking bad whiskey. The city at the time was in a very filthy condition, and the houses where the largest number of cases occurred were remarkable for the amount of filth that had accumulated on the back premises.

"The town is generally supplied by water from private wells, and I could not trace its cause to this source. I have no sufficient reason to believe that the disease was imported, although this is quite possible, as we had railroad connection at the time with Missouri, Tennessee, and Kentucky, and emigrants were coming here from these places. The Missouri, Kansas & Texas Railroad, which runs from St. Louis through the Indian Territory, entering Texas on the north, was the only through line of railroad completed at the time from these places."

Sherman, Grayson County. Population, 1,439. The letter from Dr. Johnston, quoted above, says: "The disease did not appear in any adjacent town, except two or three cases that occurred in Sherman, a distance of ten miles (supposed to have been imported from Denison)."

IOWA.

Burlington, Des Moines County. Population, 14,930. Cholera appeared in this city about June 20th, and caused about thirty-eight deaths.

Chariton, Lucas County. Population, 1,728. The *Chicago Times* reports "several cases of sporadic cholera" in Chariton, in the week ending September 16th.

Davenport, Scott County. Population, 20,038. In a letter to E. Harris, M. D., from J. W. H. Baker, M. D., November 5, 1873, Dr. Baker says: . . . "Our first case of cholera occurred about the 5th of August; was left at our boat-landing by a steambot from St. Louis. . . . During the last week in August several residents of the city were attacked, and then for the first two weeks in September followed quite a cholera panic. Probably there were nearly two hundred cases of cholera, if we were to include choleraic diarrhoea, and out of this number about eighty died." Dr. Baker states that the second case was a traveler who lodged at an hotel about eight or ten days after the occurrence of the first case.

Stuart, Adair County. The *Weekly Locomotive* reports the death of two well-known residents on August 31st and September 1st, from violent symptoms "similar to Asiatic cholera."

MINNESOTA.

Kandiyohi County, about one hundred miles west of St. Paul. The annual report of the State Board of Health of Minnesota gives the following facts: Cholera occurred about July 8th in a house occupied by three Norwegian families (about eleven persons). Two of the families had just arrived *via* New York and Chicago. The first three cases occurred among those just arrived, and were fatal. There were seven cases and five deaths up to July 22d.

DAKOTA TERRITORY.

Russian Settlement, on the James River, twenty or thirty miles from Yankton. The *Yankton Union*, September 11th, reports: "Considerable sickness prevails at present among the Russo-German immigrants (Mennonites) in Yankton, and quite a number, principally children, have died. This sickness is no doubt superinduced by the sea-voyage and other inconveniences incident to the journey from Odessa to Dakota." The *Sioux City Journal*, September 18th, says: "The cholera is raging to a fearful extent among the Russian settlers on the Jim River, twenty or thirty miles from Yankton. . . . This settlement is made up of Russian immigrants recently from the old country, and no doubt they brought the seeds of this most terrible scourge with them."

Vermilion, Clay County. The *Weekly Republican* reports the death from cholera, on September 8th, of a man living alone in a filthy log-cabin, southeast of Vermilion.

Yankton. Population, 737. The *Sioux City Journal* reports four unmistakable deaths from cholera at Yankton, September 15th.

UTAH TERRITORY.

Kelton, Box Elder County. Population, 453. The *Corinne Reporter*, September 19, 1873, reports that "a sudden and fatal fever is perpetrating its ravages at Kelton, six deaths having already occurred from it. It generally proves fatal the same day of the attack. Considerable alarm prevails, and many people have left the town."

ILLINOIS.

Addieville, Washington County, four miles east of Okawville, on railroad. The *Illinois Nashville Journal* reports four fatal cases of cholera at Addieville in the week ending September 20th.

Cairo, Alexander County. Population, 6,267. The *Paducah Kentuckian* reports four or five deaths from cholera on June 27th.

Carmi, White County. Population, 3,669. The *Weekly Courier* reports the deaths from cholera as follows: July 20th, two; 21st, one; 22d, two; 30th, one; 31st, six; August 1st, one; 2d, one; 5th, one; and from August 5th to 11th, three; total, 18.

Caseyville, St. Clair County. The *Missouri Republican* says: "Up to Sunday evening last (August 3d), seventeen fatal cases of cholera had occurred in the little mining town of Caseyville."

Chapin, ten miles west of Jacksonville, on railroad. The *Jacksonville Journal* reports that a well-known resident of Chapin died of cholera August 13th, after six hours' illness, and his wife on August 14th, after twelve hours' illness.

Chicago. Population, 298,977. The first fatal case of cholera occurred May 24th. The second fatal case occurred June 10th. The deaths from cholera were: one in May, four in June, twenty-two in July, forty in August, and thirteen in September; total, eighty.

Chouteau Slough, Madison County, twelve miles above St. Louis, Mo. The *Alton Telegraph* reports that in one family the father and three sons died of cholera, August 2d, and a daughter on August 3d, leaving only the mother and one son.

Clear Creek Precinct, Alexander County, near Cairo. Population, 1,068. The *Cairo Bulletin* reports thirty cases of cholera, and twenty deaths at Clear Creek Precinct, from July 10th to 13th.

Delhi, Jersey County. The *Missouri Republican* reports six cases of cholera, three of which died August 22d at Delhi. Five of the cases and two of the deaths were in one family.

Exeter, Scott County. The *Jacksonville Journal* reports the following deaths from cholera at Exeter: two on August 6th (one of them died at Riggston the day after leaving Exeter); two on August 7th; two on August 8th; and up to August 15th, between fifteen and twenty in and near Exeter.

Fayette County, twenty-five miles north of Odin. The *Louisville Courier-Journal* reports four deaths from cholera in Fayette County on August 19th.

Grafton. The *Missouri Republican*, July 16th, reports several cases of cholera and two deaths at Grafton, Ill.

Grand Tower, Jackson County. Population, 2,181. On the Mississippi River, west of Makanda. The *Missouri Republican*, August 6th, reports many cases of cholera at Grand Tower and several deaths, chiefly among the colored folks, in the preceding two weeks.

Jacksonville, Morgan County. Population, 9,203. In a letter to E. Harris, M. D., from David Prince, M. D., November 4, 1873, Dr. Prince gives the following list, obtained from W. H. H. King, M. D., of cases of cholera in Jacksonville. No. 1, June 28th, got well; No. 2, August 8th, got well; No. 3, August 10th, got well; No. 4, August 13th, mother-in-law of No. 3, died; No. 5, August 17th, died; No. 6, August 18th, died (5 and 6 laid out 4); No. 7, August 19th, child of 5, died; No. 8, August 19th, died (6, 7, and 8, in the same house); No. 9, August 21st, died; No. 10, August 22d, got well (10 buried 9); No. 11, August 19th, got well (went to see corpse of 5). "These cases all occurred within the space of 300 feet, except 10, who lived half a mile away, and was sick at his own house."

Jonesborough, Union County, fifteen miles south of Makanda. Population, 1,108. (See Murphysborough, Ill.)

Lebanon, St. Clair County, fourteen miles east of Caseyville, on railroad. The *Belleville Weekly Democrat* gives the following facts in regard to cholera in and near Lebanon: "On July 4th, a man was taken sick with cholera in a harvest-field five miles north of Lebanon, and died in a few hours. Four men from the same field came to an hotel in Lebanon the same evening; one of them died that night, and another one the next day, and the remaining two took the train for St. Louis. The week ending July 14th there were several cases of cholera, some of which were fatal. Week ending July 21st, still some sickness, but not so many deaths from cholera." Week ending August 9th, "the number of deaths exceeded that of any previous week this summer." Among the deaths were three children in one family. Week ending August 23d, "still some sickness." Of the family above mentioned, the fourth and only remaining child died.

Litchfield, Montgomery County, thirty miles east of Delhi. Population, 3,852. The *Union Monitor* gives thirty deaths for August, of which twenty were from cholera-morbus and cholera infantum. The *Missouri Republican*, September 2d, reports a number of cases of cholera at Litchfield on August 30th; in one family, three cases and one death. The *Union Monitor*, September 17th: "The health of the town has not been good, and there are numerous convalescents even now, but no grave cases of illness."

Makanda, Jackson County. Population 1,680. The *Alton Telegraph*, August 14th, reports that a family of three persons, who had left Indiana to avoid the scourge, died of cholera, after twelve hours' sickness, in a neighborhood ten or twelve miles east of Makanda. "Four or five relatives, who came to their assistance, in a few hours were taken down and soon died."

Murphysborough, Jackson County, fifteen miles northwest from Makanda. Population, 3,464. A correspondent reports: "Cairo, September 6th. Parties direct from Murphysborough, Jackson County, report eight deaths there on Thursday (September 4th) from cholera, and eight new cases yesterday. Five members of a family . . . near Jonesborough, Union County, died from the same disease."

Nebo, Pike County, sixteen miles east of Louisiana, Mo. A correspondent, September 24th,

reports: "Twenty deaths have occurred in the region round about Nebo, Pike County, within the past month. In the family of —, one mile west of Nebo, four persons have died."

Odin, Marion County. Population 1,268. The *Missouri Republican* reports that, up to September 4th, eighteen deaths from cholera had occurred at Odin.

Okawville, Washington County. Population of the whole township, 1,521. The *Nashville* (Ill.) *Journal* reports eighteen deaths from cholera at Okawville from August 17th to September 3d. The *Missouri Republican* reports five deaths on September 11th, and three on September 12th, from cholera, at Okawville.

Whitehall, Greene County, twenty-eight miles above Delhi, on railroad. Population, 1,200. The *Indianapolis Journal*, July 12, 1873, reports cholera prevailing at Whitehall, Greene County, Ill.

INDIANA.

Aurora, Dearborn County. Population, 3,304. *Independent*: "There has been but one death from cholera here since our last issue, viz.: —, who died on Monday (August 11th), which makes eleven deaths in all within the last four weeks, who have died from well-authenticated attacks of that disease."

Cochran, two miles west of Aurora, on railroad. Population, 675. The *Aurora Independent*, July 17th, reports "quite a number of cases of flux, and some of cholera-morbus," at Cochran; and on August 7th, "quite a number of cases of flux."

Cumberland, Marion County, eleven miles east of Indianapolis, on railroad. Population, 276. The *Chicago Times*, September 20, 1873: "Over twenty deaths from cholera have occurred at Cumberland and in that vicinity within the last three weeks, largely among the Germans."

Delaware. The *Evansville Journal* reports two deaths from cholera, August 2d, at a little hamlet called Delaware.

Evansville, Vanderburg County. Population, 21,830. The *Daily Journal*, June 4th, reports a death from cholera-morbus. *Journal*, June 23d, says thirteen cases of cholera had been reported to the Health Officer in the preceding week. *Louisville Courier-Journal* states that seven of the thirteen cases above mentioned proved fatal. *Journal*, July 1st, says twelve cases of cholera had been reported in the preceding week. *Journal*, July 8th, says nine cases of cholera had been reported the preceding week, and that twelve deaths from cholera had occurred in the month of June. *Journal*, July 21st, reports three deaths from cholera on July 19th, and six in week ending July 19th. The same paper, of August 2d, reports two; and August 12th, three more deaths from cholera.

Indianapolis, Marion County. Population, 48,244. The *Daily Journal*, August 15, 1873, says: "According to the record of the Board of Health, the total number of deaths by cholera from the date of its appearance, July 25th to August 11th, was thirty-three." Three deaths from cholera occurred August 14th, 15th, and 17th.

Jeffersonville, Clarke County, opposite Louisville, Ky. Population, 7,254. The *Courier-Journal*, June 22d, reports several severe cases of cholera-morbus, and July 2d, six cases of cholera.

Lafayette, Tippecanoe County, sixty-four miles northwest from Indianapolis, on railroad. The *Chicago Times*, of August 27th, reports that "several cases of flux have proved fatal" at Lafayette, Ind.

Mount Vernon, Posey County. Population, 2,880. The *Weekly Republican*, of August 7th, says: "We subjoin a list of the victims of cholera in this city, classified by date, which embraces every fatal case which occurred in the city from the first (June 7th) to the last (August 5th), a period of eight weeks and three days." The dates are as follows:

Deaths from Cholera at Mount Vernon, Ind., in 1873.

| Date. | Number of Deaths. | Date. | Number of Deaths. | Date. | Number of Deaths. | Date. | Number of Deaths. |
|------------|-------------------|------------|-------------------|-------------|-------------------|-------------|-------------------|
| June 7.... | 1 | July 9.... | 2 | July 19.... | 3 | July 29.... | 1 |
| " 15.... | 2 | " 11.... | 6 | " 20.... | 3 | " 30.... | 1 |
| " 20.... | 1 | " 12.... | 6 | " 21.... | 3 | " 31.... | 1 |
| " 22.... | 1 | " 13.... | 2 | " 22.... | 2 | Aug. 1.... | 1 |
| " 27.... | 1 | " 14.... | 4 | " 23.... | 3 | " 2.... | 1 |
| " 28.... | 3 | " 15.... | 3 | " 24.... | 1 | " 3.... | 1 |
| " 30.... | 1 | " 16.... | 6 | " 25.... | 4 | " 4.... | 2 |
| July 1.... | 1 | " 17.... | 4 | " 27.... | 2 | " 5.... | 1 |
| " 8.... | 1 | " 18.... | 3 | " 28.... | 1 | Unknown... | 1 |
| | | | | | | Total..... | 80 |

The *Republican*, August 14th, reports three deaths from cholera in the week ending August 14th.

New Albany, Floyd County, opposite Louisville, Ky. Population, 15,396. The *Courier-Journal* reports several cases of cholera-morbus, sporadic cholera, and cholera, at New Albany, from June 23d to July 4th.

Newbery, Warrick County, ten miles above Evansville, on the Ohio River. Population, 1,464. The *Evansville Journal*, June 19, 1873, reports two cases of cholera-morbus at this place.

New Elizabeth, Hendricks County. The *Indianapolis Journal*, September 6, 1873, reports twelve deaths from cholera at New Elizabeth in the preceding ten days. On September 13th the disease is reported as still prevailing. The *Indianapolis Sentinel* gives a list of names of the fatal cases of cholera that occurred at New Elizabeth. The list gives twenty-four names, and contains a father and two daughters; a mother and child; a husband and wife; a father, son, and daughter; a father and three children, and a husband, wife, and child.

North Vernon, Jennings County, forty-nine miles west of Aurora. Population, 1,758. The *Weekly Sun*, July 16th, says: "There are several cases of cholera-morbus now in town, and one or two cases of genuine American cholera."

Near Princeton, Gibson County. Population, 1,847. Twenty-seven miles north of Evansville, on railroad. The *Princeton Weekly Democrat* reports that, from July 18th to August 2d, thirteen deaths from cholera occurred about three miles from Princeton, upon what is known as Indian Creek. This number contained a husband, wife, and five children, and a mother and two children. Three other children of the last-mentioned family were reported sick. The *Democrat* also reports one death from cholera in Princeton the week ending July 19th.

Terre Haute, Vigo County, Population, 16,103. The *Daily Journal* reports a death from cholera-morbus July 28th, and another August 8th. The wife of the patient who died July 28th died on August 9th, and is said to have "suffered an attack of cholera, but recovered, and died at the hospital of some other disease."

Washington, Daviess County. Population, 2,109. The *Weekly Age* reports deaths from cholera in Washington, as follows: Week ending August 15th, one; September 5th, four; September 12th, two.

OHIO.

Burlington, Lawrence County. The *Calletsburg (Ky.) Herald*, July 8, 1873, states: "Two or three deaths are reported at Huntington (West Va.), and five at Burlington, Ohio, with cholera-morbus."

Cadiz Junction, Harrison County, sixty-eight miles west of Pittsburg, Penn., on railroad. (See Pittsburg, Penn.)

Cincinnati, Hamilton County. Population 216,239. The first reported death from cholera took place June 14th. From that date to some time in the month of September, the total deaths reported from cholera were two hundred and seven.

Cleveland, Cuyahoga County. Population, 92,829. The *Plainsdealer* reports five cases of cholera from July 15th to 18th, some of them fatal.

Columbus, Franklin County. Population, 31,274. The *Daily Journal* reports the following deaths from cholera in Columbus: From July 5th to August 7th, eighteen deaths (out of twenty-four cases), and from August 7th to 14th, eight deaths. The above-mentioned cases and deaths occurred outside of the penitentiary. In the penitentiary, from July 12th to August 1st, there were twenty deaths from cholera, and one in the week ending August 15th.

Dayton, Montgomery County. Population, 30,473. Thomas L. Neal, M. D., Health Officer, in a letter to J. C. Peters, M. D., gives the following table compiled from reports made to the Health Officer:

Deaths from Choleraic Diseases in Dayton, O., in 1873.

| Date. | Duration of Disease. | Sex. | Age. | Form of Disease. |
|--------------|----------------------|--------|----------|--------------------|
| June 22..... | 2 days | Male | 9 days | Cholera Morbus. |
| July 1..... | 30 hours | Male | 35 years | Cholera. |
| " 4..... | 18 hours | Male | 35 years | Cholera Sporadica. |
| " 14..... | 4 days | Female | 45 years | Cholera Morbus. |
| " 19..... | 7 hours | Male | 38 years | Cholera Asiatica. |
| " 22..... | 12 hours | Female | 49 years | Cholera Sporadica. |
| " 22..... | 2 days | Female | 49 years | Cholera Morbus. |
| " 26..... | 12 hours | Female | 36 years | Cholera Sporadica. |
| " 26..... | 3 days | Male | 81 years | Cholera Sporadica. |
| " 27..... | 3 days | Female | 16 years | Cholera Sporadica. |

Portsmouth, Scioto County. Population, 10,592. In a letter to E. Harris, M. D., M. S. Pixley, M. D., August 13, 1873, reports the following cases of cholera: "1. Colored fireman on local packet to Cincinnati, taken sick on the boat and died June 15th, six hours after arrival at Portsmouth; 2. A gentleman from Mount Vernon, Ind., who was flying from the cholera, died twenty-four hours after his arrival at Portsmouth; 3. An intemperate beer-seller; 4. A little child. The result of the two last mentioned is not stated."

Springfield, Clark County. Population, 12,652. The *Daily Republican* reports two sudden deaths from cholera on August 9th and 11th.

Stuebenville, Jefferson County, forty-three miles west of Pittsburg, Pa. Population, 8,107. The *Louisville Courier-Journal*, June 19th, reports the death from cholera at Steubenville, of a man who had left Cincinnati the day before.

WEST VIRGINIA.

Huntington, Cabell County. (See Burlington, Ohio.)

Wheeling, Ohio County. Population, 19,280. The first death from cholera occurred June 15th. The second fatal case occurred July 17th. From the latter date to September 26th there occurred twenty-one deaths from cholera.

VIRGINIA.

Abingdon, Washington County. Population, 715. The *Abingdon Virginian* of June 27, 1873, reports "several violent cases of cholera-morbus" about June 13th, one of which was fatal.

Gish's Mills, Roanoke County (on railroad from East Tennessee). The *Lynchburg Daily Virginian* of August 21, 1873, reports four cases of cholera among negroes at Gish's Mills, two of them fatal.

PENNSYLVANIA.

Pittsburg, Alleghany County. Population, 86,076. In a letter to E. Harris, M. D., W. Snively, M. D., Physician to the Board of Health, reports the following facts: On August 4th a woman died of cholera after an illness of seventy-two hours. On August 6th her hus

band died of the same disease after being sick forty-six hours. They lived about five hundred yards beyond the city line, and the wife was taken sick two days after their return from Cadiz Junction, Ohio, a railroad village about seventy miles west from Pittsburg. The man stated that "there were several deaths within a few hundred yards of where they were boarding in Cadiz Junction, which were very sudden, and that he was told it was cholera-morbus." On August 6th a woman living just within the city line, and about five hundred yards from the residence of the preceding cases, died of cholera after twenty-four hours' illness. She was present at the death of the first-mentioned case, and performed various duties. On August 10th a fourth fatal case of cholera occurred in the person of a man who had assisted in burning the bedding of the first cases.

Very respectfully, etc.,

A. B. JUDSON, M. D.,

Sanitary Inspector.

REPORT ON LIFE-SAVING APPARATUS.

SANITARY BUREAU, HEALTH DEPARTMENT, NEW YORK, *April 30, 1874.*

WALTER DE F. DAY, M. D., *Sanitary Superintendent, etc.*

SIR: I have the honor to present the following report:

One of the early measures of public interest accomplished, was the repairing and improvement of the Life-Saving Apparatus along the water-side.

It will be remembered that, in view of the large number of deaths by drowning reported from time to time to the Metropolitan Board of Health, that body, by resolution adopted early in the year 1868, instructed its sanitary committee to report whether any, and what, measures could be taken to diminish the number of such casualties in the Metropolitan District. The result of this action, a full account of which is given in the "Annual Report" for that year, was the construction of a rescuing apparatus, including a ladder, a grappling-pole sixteen feet in length, and a heaving-line, or coil of rope with a small float attached to one end, by means of which the rope may be thrown its whole length before striking the water. Twenty-four sets and parts of sets of this apparatus were constructed, and distributed to as many places within the city, while several other places beyond the city limits, yet within what was then known as the Metropolitan District, were also supplied with similar appliances. In addition to this, printed instructions for the resuscitation of drowning persons were provided and posted at the different stations, and officers on duty at these stations were taught practically the necessary manipulations. In its necessarily exposed condition it is not strange that at each inspection the apparatus exhibits more or less the effects of wear and tear; for we must remember that in order to be useful it must be so located as to be readily used by any chance-comer, and therefore equally liable to be injured by careless handling, stolen by mischievous boys, or destroyed by evil-designed persons, to which we must add the occasional unavoidable losses, as by fire or some other casualty, of which there have been two instances during the past year, to wit by fire at the foot of Christopher Street, and by the falling in of the bulkhead at the foot of Clinton Street.

In the absence of any written memoranda, it is quite difficult to arrive at any positive information concerning the extent to which this apparatus has been employed, or the success attending its use; but from the accounts received, as based on the unaided memory of watchmen and others who are constantly employed at the several piers, it appears that on many occasions it has proved an important and useful means of saving human life, and that its usefulness far outweighs the trouble and expense of keeping it in order. Many instances are related of the apparatus being called into use for the purpose of rescuing some unfortunate individual who in a fit of intoxication had fallen into the water; or who, in an attempt to jump on a ferry-boat after it had left the dock, had overestimated his powers; or some child who by venturing too near the edge of the pier had lost his balance; or some still more unfortunate creature who in extreme depression of spirits had attempted suicide. But perhaps the occasion on which it has proved most useful was that of the Westfield explosion, when by its aid many lives were saved. At this time the heaving-line was used in rescuing a lady who without that assistance would have drowned. Many other cases of interest have been mentioned, as that of a drunken woman who on a cold winter night fell into the water at the foot of Pike Street; a young woman who on a cold winter's day had fallen into the water at the foot of East Twenty-third Street, and a young man who had jumped into rescue her, were assisted out by the ladder; and on two more recent occasions the grappling-pole has been used, once in recovering the body of a boy who was drowned, and once in saving the life of a little girl that had fallen into the river at the same-pier. We are also told that at the foot of East Twenty-sixth Street several adults and two children have been rescued from the water during the past year, and that one man has been rescued at One Hundred and Thirtieth Street. These are some of the incidents related from memory from which it may be inferred that too little is known concerning the full value of this apparatus in saving life, to enable us to make a just estimate of its importance. In the police records of rescues from drowning no mention is made of the means employed, and the inspections of the apparatus have been too irregular to enable the officers of this Department to obtain complete statistics; and it may be safely assumed that the cases thus reported from memory form but a part of the number of lives saved by the means thus provided. It may be added that many of the accidents which call this apparatus into use happen after nightfall, when the piers are comparatively deserted; for during the daytime in the event of such an accident the boatmen at many of the piers resort immediately, both from choice and convenience, to their own ropes and boat-hooks which they are more accustomed to handling, while the ferries are generally supplied with some apparatus for the rescue of persons from the water. This latter fact has induced me to recommend that the apparatus at Liberty, Barclay, and West Twenty-third Streets, be removed therefrom and placed at some frequented piers where they are more needed, or where there are no similar appliances. It is not without some reason that a few persons object to the use of the heaving-line. The principal objections to its use are, that the float attached to the end of the line is too

small to be readily seized by a person in the water; and that while throwing it there is some danger of stunning, should it in the excitement of the moment be so directed as to strike the head of the person to whom it is thrown. Instead of a round ball of wood at the end of the line, some of the ferry companies attach life-preservers which are regarded with more favor by many, as it is claimed that they are more buoyant, may be thrown with less danger, and are more readily seized by persons in the water. Be this as it may, most of the rescues, so far as I could learn, are made by aid either of the ladder or pole, the heaving-line being used in those cases only in which the person is at a considerable distance from the shore, in which cases it appears to me indispensable.

The following is the yearly statement of deaths by drowning as they appear in the reports of the Bureau of Vital Statistics for the last seven years :

| | | | |
|-----------|-------------------------------|-----------|--------------------------------|
| 1867..... | 191 of which 4 were suicidal. | 1870..... | 192 of which 11 were suicidal. |
| 1868..... | 177 " " 6 " " | 1871..... | 193 " " — " " |
| 1869..... | 180 " " 8 " " | 1872..... | 232 " " 13 " " |

While these figures do not show an annual increase in the number of deaths by drowning proportional to that of population, we must still regard the figures as sufficiently formidable to warrant the most careful measures for the prevention of such casualties. Frequent inspections, therefore, and repairs and additions whenever required, with repeated instructions in the approved methods of resuscitation, are among the means necessary to be carried out in order to effect the greatest amount of good in this direction.

Very respectfully,

E. H. JANES, M. D.,

Assistant Sanitary Superintendent.

THE LIABILITY OF CAR-DRIVERS TO CERTAIN FORMS OF DISEASE.

NEW YORK, *March 17, 1874.*

To DR. W. DE F. DAY, *Sanitary Superintendent.*

SIR: My attention was called over a year ago to an evil which I do not think has hitherto engaged the attention of the Board—I allude to the condition and working-hours of the car-drivers on the various city horse-railways. I was first made aware of the suffering of these men by the statement of one of their number, who informed me that a great many of them were affected with various diseases of circulation of the lower extremities. That these evils are due to their occupation I have no doubt, and I feel certain that, if some power higher than the President of the Railroad Company should take the matter into its own hands and protect these overworked men, the physical condition of many hundreds of poor fellows would be improved.

It is very hard to believe that fifteen or seventeen hours is the working-time of some of them, but it is true. Scarcely an hour is given in this whole time for meals and recreation, and, when food is taken, according to the statement of a veteran, “we bolts it down and takes it in our hands and eats it on the cars.”

It is rare for these men to work for less than twelve hours, and the time is usually much longer. I have interviewed many drivers during the last year, and more than half of them have some story to tell of their own or others' suffering. A new hand who is taken on the road, and who begins this hard work, keeping the same hours on the track as the rest, will find that his legs begin to swell, the skin grows tense and shiny, and it is impossible to wear the same boots or shoes he did before he became an employé of the company.

He may have extreme pain in his legs and feet, and a sensation of tension.

He sometimes has neuralgic pains, which may continue till his “day off;” he then seeks his bed, tired out, and is benefited to some degree by the recumbent position. This perpetual gravitation of the fluids of the body will eventually produce a change in the veins, their walls become badly nourished, the vasomotor nerves are paralyzed, and there is a general atony—a varicose condition occurs which extends to a remarkable degree.

There are many cases where the veins burst. Often when the drivers are

on duty, ulcers and mal-nutrition of the skin occur in addition to this varicosity. In winter these men are subject to chilblains and "frost-bite."

In one of the cases where a varicose vein burst it occurred in Third Avenue, and the man nearly bled to death before relief was afforded. The patient was finally taken to a neighboring drug-store.

Of course there are exceptional cases when the subject goes about his work for many years, and perhaps is benefited, but the converse is the rule.

The drivers are constantly on their feet from the beginning of their long day's work till the end; they stand on their heels and not on the ball of the foot. The perpetual jolting of the cars then is transmitted directly through the bones of the leg and thigh to the vertebræ, and acts upon the spinal cord. A constant jarring of this organ therefore occurs, and in many of the drivers a congestion of the cord or meninges, followed by a heavy pain and sense of weight in the legs, symptomatizes various nervous diseases. When we consider the exposure and unusual labor of these people, and make comparison with other laborers, I do not think we can help but arrive at a conclusion that the car-drivers are forced to perform an unreasonable amount of labor. The protracted marches of the soldier, when at least exercise is a redeeming feature, and the close application of the artisan who has the benefit of noonday rest, proper meals, and regular and short hours, are nothing to be compared to the unnatural drudgery of the car-driver, *where morbid pathological changes are fairly invited*. Degeneration of tissue, through mechanical changes, disturbance of digestion, secretion, and excretion, are the evils that come to the car-driver.

It may be impossible to aim at the root of the system, for it is useless to attempt to work a change, sanitary or otherwise, that will touch the pockets of the railway director; but if such could be the case it would be well to regulate the working-hours of the overtaxed car-driver, and provide for him a comfortable seat, such as is now placed on the cars of the Fourth Avenue road at its upper end.

If this could be accomplished, I am certain the physical comfort and health of the driver would be greatly advanced.

Respectfully submitted:

ALLAN McLANE HAMILTON, M. D.,
Assistant Sanitary Inspector

REPORT

ON

CASUALTIES FROM STREET RAILROAD-CARS.

NEW YORK, *September 16, 1873.*

THE Sanitary Committee submit the following report upon casualties occurring to persons getting on or off, or falling from, the front platforms of street-cars :

The Warden of Bellevue Hospital reports the following list of casualties for the year :

- GEORGE EGAN. *Died.* Run over by car while getting off from front platform ; laceration of thigh and leg.
- FRANK KIEMAN. *Died.* Run over by car while getting off from front platform ; fractured right leg and compound fracture of left.
- JOHN PYE. *Recovered.* Fell from car stepping off front platform ; dislocation of hip.
- JOHN REILLY. *Recovered.* Fell stepping off front platform of car ; injury of hand.
- JOSEPH RYAN. *Recovered.* Fell stepping off front platform of car. Car went over his foot ; injury of foot.
- THOMAS FINLEY. *Recovered.* Fell getting off front platform.
- CARL DASHER. *Died.* Had foot injured stepping off front platform ; died from exhaustion.
- WILLIAM SEAMAN. *Recovered.* Run over by car ; thrown from front platform by conductor ; compound fracture of arm.
- WILLIAM McGRATH. *Died.* Fell getting off front platform of car ; compound fracture of tibia and fibula.
- CATHARINE CRONIN. *Recovered.* Received fracture of leg getting off front platform ; conductor would not stop his car.
- JAMES MAHER. *Recovered.* Received injury to foot by jumping off front platform of car.
- LEWIS WOIDE. *Recovered.* Received compound fracture of foot jumping off front platform of car.
- JACOB DOWNEY. *Recovered.* Was pushed off car and run over ; fracture of fibula.
- THOMAS FARRELL. *Recovered.* Thrown from car by conductor ; received injuries.
- JAMES ADAMS. *Died.* Brought from Third Avenue and Twenty-fifth Street ; run over by car in getting on front platform.
- WILLIAM JUSTICE. *Recovered.* Fell from car while getting off ; received compound dislocation of elbow.

MARY WILLIAMS. *Recovered.* Thrown from car by conductor before the car was stopped; received injuries.

ALFRED SHEARS. *Died.* Fell from front platform of car; received compound fracture of tibia and fibula; leg amputated, and died of tetanus.

From this table it appears that eighteen cases of injury occurring from falling while attempting to get on or off, or from being pushed off the front platform of the street-cars, were admitted to this hospital during a single year; of these six died, giving a mortality of $33\frac{1}{3}$ per cent. The nature of the injuries was as follows: fracture of the thigh and leg, with lacerations of soft parts, six, of whom four died; injuries of foot, four; injury of hand and arm, two; dislocation of hip, one; dislocation of elbow, one; injuries, four, of whom two died.

Of all the injuries which the surgeon meets, none equal in severity those which occur from the crushing effect of the street-cars; when the wheels traverse the limb, the parts are so crushed as to require, with rare exceptions, immediate amputation.

The victims of these accidents are generally children, or laborers in a state of semi-intoxication. In endeavoring to get on or off the front platform while the car is in motion, they seize firmly the hand-rail, but miss their footing, and, while endeavoring to save themselves from falling, the foot or leg is thrust under the forward wheel. In other instances the platform is so crowded with passengers that the child or intoxicated person is easily thrust aside, and off the step.

To guard against these accidents, the city railroads, with but an exception or two, have made and posted rules and regulations, forbidding persons getting on or off the front platform; but these rules are posted inside of the cars, and are not heeded by the class of persons who are generally the subjects of such accidents. There is but one way to enforce these very judicious regulations, and that is by inclosing the platform so effectually that neither the step nor hand-rail is accessible from the outside. If this provision were made, it would not only prevent persons from attempting to get upon the front platform, except as they passed through the car, but it would prevent persons upon the platform from getting off directly, or from being pushed off by the crowd.

In order to give practical effect to the rules of the city railroad companies, which will not be obeyed by children and drunken persons, as the records of accidents for the past year prove, the committee are of the opinion that this Board should adopt an ordinance requiring these companies to inclose the front platform of their cars in such manner as to render them directly inaccessible to persons on the street, and to prevent persons already upon them from getting off or falling off.

It may be alleged that this is not a proper subject for an ordinance of this Board—as the remedy for the evil complained of is to be found in the courts, where every person suffering from these accidents can obtain redress; and that in attempting to get on or off the front platform of street-cars, when the car is in motion, the person is himself culpably negligent. Admitting the truth of

these statements, it does not follow that this Board has no duty to perform in the premises. On the contrary, the statute expressly includes among the powers of this Board "the ordering and enforcing, in the same manner as other orders are provided to be enforced, . . . the prevention of accidents by which life or health may be endangered" (last clause section 12, chapter 74, Laws of 1866). In its ordinances the Board recognizes this power, and has ordained: "Nor shall any person omit to do any act, or to take any precautions reasonable and proper, to prevent or remove danger or detriment to the life or health of any human being" (last clause section 8, Code of Sanitary Ordinances).

The propriety of legislation to prevent accidents by which life or health may be endangered, even though such accidents could occur only through the negligence of the individual, has long been recognized. Ferry and steamboat companies are obliged to regulate their course and speed with direct reference to the safety of their passengers; railroad companies have to use proper precautions at street-crossings to prevent accidents; places of amusement, manufactories, etc., etc., are required to provide against accidents of every description. The Legislature of the State of Missouri seems to have fully appreciated its duty and its obligations to prevent the horrible and fatal accidents by street-cars, now of such frequent occurrence in this city, by the following enactment, passed February 6, 1866: "SEC. 10. No passenger shall be permitted to get on or off any car by the front platform while the car is in motion; and each car shall be furnished with such adjustable gate or guard as shall effectually prevent it."

The committee respectfully recommend the adoption of the following ordinance:

That each of the several persons and companies that run, or cause to be run, any car drawn by horses for the transportation of passengers, in any part of the city of New York, do cause both the front entrances from the street upon the platform of the fore-end of each of said cars to be effectually barred or closed by gate or otherwise, while said cars are in motion, so as to prevent access to any portion of the said platform, or the hand-rails, or the steps thereof, by any person not upon such car.

REPORT ON BREAD.

DR. W. DE F. DAY, *Sanitary Superintendent.*

SIR: I have the honor to submit the results of the examination of the bread sold in this city. The adulterants of bread mentioned in the literature on the subject consist of alum, carbonate of ammonia, carbonate of magnesia, chalk, pipe-clay, bone-ash, sulphate of copper (blue vitriol), sulphate of zinc (white vitriol), and carbonate of potash. By some authorities, common salt, when added beyond a certain amount, is considered as an adulteration (Hassall), but such adulteration could not conveniently be practised to any great extent, as it would readily be detected by the taste. Of the above adulterants, but two, alum and sulphate of copper, had probably been used in the preparation of the samples of bread examined.

In the fifty-one samples examined, only thirteen gave no reaction whatever for copper, and, inasmuch as the amount detected was in most cases exceedingly small, suspicion was aroused that the copper might have been introduced in some of the materials used in making the bread.

Accordingly, articles which might supposably have been used by bakers in making their bread were examined in the same manner as the bread; and potatoes, white and yellow Indian-meal were found to contain small traces of copper, though in bakers' yeast none could be detected.

The method of examination consisted in treating a portion of the bread with a few drops of ferrocyanide of potassium, which should impart a red coloration to it in case copper was present; moistening another portion of it with a mixture of carbonate of ammonia and extract of logwood-chips, in methyl-alcohol, which should give a blue coloration if alum was present; and incinerating another portion and examining the ash.

Experiments already on record having shown that traces of copper might be imparted to organic substances incinerated over a Bunsen burner (the tube of which is usually of brass), even when the incineration was performed in a platinum dish, great precautions were taken to avoid any error which might arise from that or similar sources.

The crust of the bread was removed, and the crumb only was taken for analysis. This was incinerated in a clean muffle of fire-clay instead of over a gas

flame. When the solutions obtained by treating the ash with acids, etc., were evaporated, they were placed in an evaporating-dish of porcelain, about two inches in diameter, and the dish was placed on a sheet-iron tray nine by twelve inches in size, on which sand was strewed. Heat was applied below by a Bunsen burner, the flame being turned very low, and not allowed to touch the bottom of the tray, nor was the temperature of the solution allowed to reach that of boiling.

The results obtained may be briefly stated as follows:

| | |
|---|-------------|
| Containing apparently no adulterant. | 41 samples. |
| Containing copper probably added as sulphate. | 2 " |
| Containing alumina probably added as alum. | 6 " |
| Containing both copper and alumina. | 2 " |
| Total. | <u>51</u> |

Testing for the sulphuric acid which was probably combined with the copper or alumina, as a check-test, was found to be useless, as almost all the salt used in the process of bread-making contains sulphate of lime as an impurity; and hence it is found that even the samples of bread which did not show the faintest trace of copper, gave tests for sulphuric acid.

The object, in adding the sulphate of copper or alum to the dough, is to stop or retard the fermentation induced by the yeast at a certain point, which will impart a whiteness to the bread, which it otherwise would not possess. The proportions stated to be most advantageously used are one-seventh of a grain of sulphate of copper, or ten to thirty grains of alum to the pound of flour.

Experiments were made by mixing and baking bread, adding in some cases alum or sulphate of copper in order to observe the degree of certainty with which those adulterants could be detected. The results were as follows:

| To 1 lb. of Flour. | | Tests on the Bread. | | Test on the Ash. | |
|-----------------------------|---------------|-------------------------------|------------------------|------------------|--------------|
| Sulphate of Copper, Grains. | Alum, Grains. | With Ferrocyanide of Potassa. | With Logwood for Alum. | For Copper. | For Alumina. |
| 0 | 0 | No coloration | Red | None | None |
| $\frac{1}{7}$ | 5 | Uncertain | Bluish | Decided | Decided |
| $\frac{2}{7}$ | 20 | Red color | Decided blue | Decided | Decided |
| $\frac{3}{7}$ | 1 | No coloration | Gray-blue spots | Decided | Doubtful |
| $\frac{4}{7}$ | 0 | Uncertain | Red | Decided | |
| $\frac{5}{7}$ | 0 | Uncertain | | Decided | |

The sulphate of copper used was in the crystallized form, containing about 59 per cent. of the anhydrous salt. The tests for copper on the samples of bread purchased and reported as probably adulterated, showed about the same intensity as the ash of the bread made with $\frac{2}{7}$ grain sulphate of copper. In other cases the amount was apparently much less.

It must be admitted that the use of copper utensils in preparing the bread, or the materials used in making it, may have been the cause of the introduction of the copper detected in the samples.

The percentage of ash in some of the samples was taken, in order to note whether pipe-clay, gypsum, bone-dust, or some similar adulterant, had been added. Such additions are practised when it is desired to increase the weight of the bread, but, as bread is not sold by weight in our city, no inducement exists to practise such sophistication.

The percentages of ash in twelve of the samples purchased were found to range from 0.51 to 0.78 per cent., and to average 0.583 per cent., and as the amount of ash from the other samples was apparently no greater, it may be assumed that such adulteration had not been practised.

It has been stated that the addition of alum to bread increases its capacity for water; but such was not found to be the case. The ash of bread, made without any addition, was found to be 0.49 per cent., that of strongly-alumed bread 0.71 and 0.625 per cent. Had the amount of water retained in the bread been greater in the case of the alumed loaves, the percentage of ash would naturally have been smaller.

This fact has already been established by an extended series of experiments already on record. (Watts's Dictionary, vol. i., p. 659.)

As for the effects on the system of alum and sulphate of copper when taken in bread, authorities are much divided with reference to the former, but all agree in pronouncing the sulphate of copper, in however small quantities it may be taken, as highly poisonous.

Respectfully submitted:

ELWYN WALLER, E. M.,

Assistant Sanitary Inspector.

| FOR WEEK ENDING | Appearance. | Inorganic Matter. | Organic and Volatile Matter. | Total Solids in Solution. | Suspended Impurities. | Total Solids. | Carbonate of Lime, "Hardness." | Oxygen required to oxidize Organic Matter. |
|-----------------|-----------------------------------|-------------------|------------------------------|---------------------------|-----------------------|---------------|--------------------------------|--|
| Feb. 14..... | Faint turbidity, light-green..... | 3.965 | 0.816 | 4.781 | 0.017 | 4.798 | 1.650 | 0.041 |
| " 21..... | Turbid, light-green..... | 3.849 | 0.816 | 4.665 | 0.071 | 4.736 | 1.650 | 0.048 |
| " 28..... | "..... | 3.033 | 1.049 | 4.082 | 0.027 | 4.109 | 1.650 | 0.048 |
| March 7..... | "..... | 2.799 | 0.933 | 3.732 | 0.016 | 3.748 | 1.650 | 0.066 |
| " 14..... | Slightly turbid, yellowish..... | 3.033 | 1.049 | 4.082 | 0.031 | 4.113 | 1.501 | 0.055 |
| " 21..... | Clear, yellowish cast..... | 3.150 | 0.816 | 3.966 | 0.035 | 4.001 | 1.650 | 0.084 |
| " 28..... | Faint turbidity, light-green..... | 2.682 | 0.816 | 3.499 | 0.044 | 3.543 | 1.650 | 0.084 |
| April 4..... | Slightly turbid, light-green..... | 3.266 | 0.816 | 4.082 | ..... | ..... | 1.650 | 0.055 |
| " 11..... | Clear, light-green..... | 3.150 | 0.816 | 3.966 | ..... | ..... | 2.183 | 0.076 |
| " 18..... | Turbid, greenish..... | 3.150 | 0.816 | 3.966 | ..... | ..... | 1.866 | 0.084 |
| " 25..... | Turbid, light-green..... | 2.800 | 0.816 | 3.616 | 0.104 | 3.720 | 2.183 | 0.068 |
| Average..... | ..... | 3.516 | 0.961 | 4.477 | 0.042 | 4.533 | 1.897 | 0.079 |

(RESULTS GIVEN IN PARTS IN 100,000.)

| | | | | | | | | |
|---------------|-------|------|------|------|-------|--------|-------|-------|
| 1873. | | 5.4 | 1.4 | 6.8 | 0.086 | 6.886 | 2.88 | 0.085 |
| April 5..... | | 4.8 | 1.6 | 6.4 | 0.035 | 6.435 | 2.88 | 0.120 |
| " 12..... | | 4.6 | 1.2 | 5.8 | 0.042 | 5.842 | 2.74 | 0.128 |
| " 19..... | | 4.2 | 1.6 | 5.8 | 0.060 | 5.860 | 2.89 | 0.171 |
| " 26..... | | 5.8 | 0.6 | 6.2 | 0.045 | 6.245 | 3.15 | 0.136 |
| May 3..... | | 4.8 | 1.8 | 6.6 | 0.072 | 6.672 | 2.89 | 0.102 |
| " 10..... | | 5.8 | 1.2 | 7.0 | 0.062 | 7.062 | 2.89 | 0.128 |
| " 17..... | | 5.8 | 1.6 | 7.4 | 0.105 | 7.505 | 3.15 | 0.145 |
| " 24..... | | 5.8 | 1.2 | 7.0 | 0.057 | 7.057 | 3.42 | 0.128 |
| " 31..... | | 5.8 | 1.6 | 7.4 | 0.048 | 7.448 | 3.42 | 0.145 |
| June 7..... | | 0.2 | 1.2 | 7.4 | 0.039 | 7.439 | 3.68 | 0.180 |
| " 14..... | | 5.4 | 4.4 | 9.8 | 0.086 | 9.886 | 3.68 | 0.180 |
| " 21..... | | 6.6 | 2.0 | 8.6 | 0.062 | 8.662 | 3.94 | 0.133 |
| " 28..... | | 7.2 | 1.6 | 8.8 | 0.048 | 8.848 | 3.94 | 0.116 |
| July 5..... | | 6.0 | 2.0 | 8.0 | 0.044 | 8.044 | 3.94 | 0.107 |
| " 12..... | | 5.8 | 1.8 | 7.6 | 0.187 | 7.787 | 3.68 | 0.089 |
| " 19..... | | 5.6 | 1.2 | 6.8 | 0.073 | 6.873 | 3.68 | 0.133 |
| " 26..... | | 4.6 | 2.0 | 6.6 | ..... | ..... | 3.68 | 0.116 |
| August 2..... | | 4.6 | 1.6 | 6.2 | 0.120 | 6.320 | 3.42 | 0.125 |
| " 9..... | | 6.0 | 2.4 | 8.4 | 0.055 | 8.455 | 3.16 | 0.116 |
| " 16..... | | 7.2 | 1.4 | 8.6 | 0.045 | 8.645 | 3.42 | 0.116 |
| " 23..... | | 6.4 | 1.6 | 8.0 | 0.079 | 8.079 | 3.42 | 0.150 |
| " 30..... | | 6.0 | 2.2 | 8.2 | ..... | ..... | 3.608 | 0.217 |
| Sept. 20..... | | 7.8 | 1.6 | 9.4 | ..... | ..... | 4.123 | 0.173 |
| " 27..... | | 8.0 | 1.4 | 9.4 | 0.355 | 9.755 | 3.865 | 0.148 |
| Oct. 4..... | | 6.6 | 1.6 | 8.2 | 0.074 | 8.274 | 3.865 | 0.165 |
| " 11..... | | 7.6 | 1.8 | 9.4 | 0.146 | 9.546 | 3.865 | 0.200 |
| " 18..... | | 7.4 | 2.6 | 10.0 | 0.059 | 10.059 | 3.865 | 0.173 |
| " 25..... | | 8.0 | 2.4 | 10.4 | 0.115 | 10.515 | 3.608 | 0.217 |
| Nov. 1..... | | 7.2 | 2.4 | 9.6 | 0.105 | 9.705 | 3.608 | 0.217 |
| " 8..... | | 8.0 | 2.6 | 10.6 | 0.109 | 10.709 | 3.350 | 0.252 |
| " 15..... | | 6.8 | 2.0 | 8.8 | 0.040 | 8.840 | 3.608 | 0.191 |
| " 22..... | | 7.4 | 1.6 | 9.0 | 0.033 | 9.033 | 3.350 | 0.144 |
| " 29..... | | 6.8 | 1.4 | 8.2 | 0.045 | 8.245 | 3.092 | 0.107 |
| Dec. 6..... | | 6.6 | 1.4 | 8.0 | 0.052 | 8.052 | 3.092 | 0.144 |
| " 13..... | | 5.8 | 1.2 | 7.0 | 0.030 | 7.030 | 2.834 | 0.167 |
| " 20..... | | 5.6 | 1.4 | 7.0 | 0.043 | 7.043 | 2.834 | 0.119 |
| " 27..... | | 5.6 | 1.4 | 7.0 | 0.043 | 7.043 | 2.834 | 0.119 |
| 1874. | | 5.8 | 1.4 | 7.2 | 0.060 | 7.260 | 2.834 | 0.095 |
| Jan. 3..... | | 5.6 | 1.4 | 7.0 | 0.040 | 7.040 | 2.834 | 0.135 |
| " 10..... | | 5.6 | 2.0 | 7.6 | 0.072 | 7.672 | 2.320 | 0.119 |
| " 17..... | | 5.0 | 1.4 | 6.4 | 0.032 | 6.432 | 2.834 | 0.107 |
| " 24..... | | 6.0 | 0.4 | 6.4 | 0.068 | 6.468 | 2.576 | 0.095 |
| " 31..... | | 6.0 | 1.4 | 7.4 | 0.037 | 7.437 | 2.834 | 0.119 |
| Feb. 7..... | | 6.8 | 1.4 | 8.2 | 0.030 | 8.230 | 2.834 | 0.071 |
| " 14..... | | 6.6 | 1.4 | 8.0 | 0.122 | 8.122 | 2.834 | 0.083 |
| " 21..... | | 5.2 | 1.8 | 7.0 | 0.046 | 7.046 | 2.834 | 0.083 |
| " 28..... | | 4.8 | 1.6 | 6.4 | 0.027 | 6.427 | 2.834 | 0.113 |
| March 7..... | | 5.2 | 1.8 | 7.0 | 0.054 | 7.054 | 2.576 | 0.095 |
| " 14..... | | 5.4 | 1.4 | 6.8 | 0.060 | 6.860 | 2.834 | 0.144 |
| " 21..... | | 4.6 | 1.4 | 6.0 | 0.076 | 6.076 | 2.834 | 0.144 |
| " 28..... | | 5.6 | 1.4 | 7.0 | ..... | ..... | 2.834 | 0.095 |
| April 4..... | | 5.8 | 1.0 | 6.8 | ..... | ..... | 3.743 | 0.131 |
| " 11..... | | 5.4 | 1.4 | 6.8 | ..... | ..... | 3.208 | 0.144 |
| " 18..... | | 5.4 | 1.4 | 6.8 | ..... | ..... | 3.743 | 0.117 |
| " 25..... | | 4.8 | 1.4 | 6.2 | 0.178 | 6.378 | 3.743 | 0.117 |
| Average..... | ..... | 6.03 | 1.65 | 7.68 | 0.074 | 7.778 | 3.242 | 0.137 |

The first column gives the appearance of the water in the mass, when inspected in a colorless glass vessel.

The results given in the second column were obtained by evaporating a measured quantity of the water to dryness, igniting, moistening with carbonic-acid water, and drying at 260° Fahr.

The third column gives the loss on ignition, and represents the organic matter in solution, the acids of such salts (except carbonates) as are decomposed by the temperature of ignition, and the water of crystallization of sulphate of lime, etc.

The fourth is the sum of the two columns immediately preceding it, and shows the results obtained by drying the water residue at 260° Fahr.

In the fifth column is given the amount of suspended impurities determined by passing the water through one of the "Curtiss Bigelow" sponge-filters, and then through a water-meter. The impurities thus separated were collected, dried at 260° Fahr., and weighed. The amount was averaged on the amount of water which had been passed through the meter.

Between fifty and one hundred gallons were passed through the filter in order to obtain a fair average.

The sixth column gives the sum of the two preceding.

In the seventh column are given approximately the amounts of lime-salts in the water, the amounts having been determined by use of a standard solution of soap.

In the last column are given the results obtained by treating the water with a standard solution of permanganate of potassa.

Respectfully submitted :

ELWYN WALLER, E. M.,

Assistant Sanitary Inspector.

REPORT ON DISINFECTION AND DISINFECTANTS.

DR. W. DE F. DAY, *Sanitary Superintendent.*

SIR: I have the honor to communicate the following report on disinfection and disinfectants. The only reliable and certain method of disinfection implies a knowledge of the nature of infectious matter, and of the action of certain substances, known as disinfectants, upon that matter. These points are at present but imperfectly understood, and therefore at this time our knowledge of disinfection does not approach that certainty which is desirable. These problems are, however, being constantly investigated, and it is to be hoped that the necessary knowledge will soon be acquired. Some points have been established and from these some conclusions may be drawn which may give assistance in solving the problem.

Diseases which are the effects of infection are known, and it is also known that infection is most frequent, indeed, may be called an invariable accompaniment of decomposing animal and vegetable matter, chiefly the former; but the intermediate link, the nature of infection, is at present in the dark, and the various and widely-differing theories of high authorities show how difficult the subject is.

Putrefaction,¹ which is with good reason believed to be the direct source of infection, is considered to be synonymous with fermentation, the only difference being that the former is accompanied by a disagreeable odor, while the latter is not; the term putrefaction being believed to be really another name for putrid fermentation.

The labors of M. Pasteur have shown that fermentation is dependent on chemical changes induced by the presence and growth of microscopic germs derivable from the air; hence the theory has been advanced, and has met with general support, that infection consists in microscopic bodies² floating in the air, endowed with vitality, any one of which on attaching itself to a spot favorably situated for its development germinates, and in producing others like

¹ Schraeder and Berend, "Wagner's Jahresber.," 1871, p. 702; cf. "Ber. d. Chem. Gesellschaft," 1871, p. 809; *Chem. Centralblatt*, 1871, p. 728.

² Chaveau, "Comptes Rendus," vol. lxvi, p. 289; Dalton, "Origin and Propagation of Disease;" "American Chemist," iv., p. 373.

itself, produces derangement in such forms of animal life as offer favorable conditions for its growth.

Since the germ theory, so far as understood, does not agree perfectly with some facts which have been observed with regard to disease, a theory has been advanced that, though germs and the resulting microscopic organisms may be connected with infection, they are not the direct cause of it,¹ but that by the changes which they produce, or which favor their existence, certain compounds are formed, which are in themselves the direct causes of disease.

Liebig² propounded the theory that infection is caused by the presence of decomposing matter in the air, ready to communicate its action in virtue of its own activity, and thereby cause decomposition and derangement.

Another theory very similar to Liebig's disregards entirely the intervention of microscopic organisms, and attributes infectious diseases to the presence of infectious matter of a gaseous character in the air,³ which may or may not be the result of putrefaction, while other theories take in some or all of these views as to the existence of agents conspiring to produce and spread infection.

A recent writer (Von Kletzinski),⁴ in discussing the disinfection question in Vienna with special reference to the epidemic of this last summer at that place, classifies the causes of diseases of this character under two heads, "miasms" and "contagions," and defines the first as poisonous gases rich in hydrogen, such as sulphuretted hydrogen and ammonia, while "contagions" are described as germ-cells. He further states that the contagions only flourish where miasms are developed. This last fact has been noted by many other observers,⁵ and under so many different circumstances, that it may be regarded as unquestionable. It is a principle which should never be lost sight of, that whatever the nature of the infection may be, it certainly flourishes best where the conditions are most favorable, which conditions so far as known are fostered, if not directly afforded, by the presence of decomposing matter. The old proverb about prevention and cure is nowhere more applicable than in this connection.

Dr. W. E. A. Erdt⁶ classes infectious diseases as—volatile at all temperatures, slightly volatile, and fixed. None are destructible below blood-heat, while the majority are destroyed by a temperature of 112 to 140° Fahr.

Dr. Angus Smith⁷ supposes diseases to be caused—1. By gases easily diffused, and somewhat soluble in water. By passing gases from putrefying matter through cotton-wool, and then treating the cotton with an alkali, he obtained an extremely offensive and possibly poisonous substance, apparently

¹ Davaine, "Comptes Rendus," vols. lvi. and lix., vol. lx., p. 1297; Vulpian, "Arch. de Physiologie," 1868, p. 466; Coze and Felz, "Recherches chimiques et experimentales sur les Maladies infectueuses," Paris, 1872.

² "Agricultur-Chemie," "Ann. de Chim. et de Phys.," 1871, xxiii., p. 9.

³ "Disinfectants," by R. Angus Smith, Edinburgh, 1869, p. 22.

⁴ *Neues Wiener Tagesblatt*, "Am. Chem.," iv., p. 131.

⁵ Burdon-Sanderson, "Thirteenth Report of the Medical Officer of the Privy Council," London, 1871; Cohn, "Beiträge zur Biologie der Pflanzen," No. 2, p. 189.

⁶ "Die Veterinär-Polizei," Sorau, 1865, p. 11.

⁷ "Disinfectants," Smith, p. 23.

not containing organized life. 2. By vapors, volatile in warm, condensable in cool air, possibly containing organized germs. 3. By putrid and decomposing substances. 4. By organic bodies in various stages and ferments.

M. Davaine, in a report to the Paris Academy of Medicine,¹ announces as the result of his and M. Onimus's researches: 1. That the virus of infection is not an organized ferment. 2. That the lower organisms are the result and not the cause of putrid changes. This virus, he asserts, is not dialyzable, and hence is albuminoid in character. M. Davaine has extracted a substance from putrid blood, which he considers to be probably the virus of which he speaks, and has called it *septicemie*. A few drops of this substance injected into the veins of an animal were found to be fatal, but in the course of producing its effects on the animal it appeared to alter into a much more virulent poison—so virulent, indeed, that a trillionth part of a drop of blood from the animal first inoculated was sufficient to poison another, the animal rarely surviving forty hours.

From these, and numerous other experiments which might be cited, it will be seen how unsettled at present is our knowledge of the true nature of infection. An attempt to decide, in one way or another, brings one face to face with an array of facts which cannot be readily explained.

The means of combating infection—disinfectants—are of at least two kinds, according to their mode of action: 1. That of oxidation, which carries a decomposing body which would otherwise favor the production of infection so rapidly through its changes as to prevent the formation of hurtful compounds or organisms. 2. That of arresting decomposition by some action as yet not thoroughly understood, but thought by many to be by coagulation of albumen. Dr. Angus Smith² suggests that they may perhaps act by putting the molecules in such a state of tension as to prevent putrefaction.

Another class of substances act as driers,³ simply absorbing the water necessary to assist in the putrid changes. Such substances are chiefly efficient as antiseptics, and not as true destroyers of putrefaction and infection, and, in their action as disinfectants, they run on the one hand into the class acting by oxidizing, and on the other hand into those producing the effects described under the second class.

Those substances which prevent putrefaction, and sometimes perhaps arrest it by abstracting the oxygen required to keep it up, belong more properly to the class of antiseptics.

Of course, such substances as only mask a disagreeable odor by a stronger and more agreeable one, cannot be considered in any sense as true disinfectants.

¹ *Journ. de Pharm. et de Chim.*, February, 1873; *Bull. de l'Acad. de Méd.*, September 17, 1872.

² *Loc. cit.*, p. 91.

³ Davy, *Phil. Mag.*, 1856; *Dingl. Polyt.*, cxli, p. 229; Rogers, *Dingl. Polyt.*, cxi, p. 318; Tamling, *Dingl. Polyt.*, cxviii, p. 320; Salmon, "Bull. Soc. d'Enc.," 1835-'39; *Dingl. Polyt.*, lvi, p. 393; Poittevin, *Dingl. Polyt.*, lxxiii, p. 317; Soldan, "Notizblatt des Hannov. Gewerbever.," 1845, No. 3.

To effect oxidation many substances are employed, among which are water containing air in solution; constant supplies of fresh air, both of which require frequent renewal; inert substances in powder, or finely divided, which condense air on their surfaces and also the noxious gases, thereby bringing the two into more intimate contact; and chemicals causing the liberation of oxygen, as chlorine and hypochlorites, permanganate of potash, peroxide of hydrogen, ozone, iodine, bromine, hyponitric acid, and the lower nitrogen oxides, chromates, etc.¹

These substances act by oxidizing the carbon and hydrogen to the comparatively innocuous carbonic acid and water; but when the oxygen is exhausted they have no further effect, and putrefaction, if other conditions favor it, may begin anew, and reproduce the noxious compounds.

A little oxygen, sufficient only to foster putrefaction, is of course not a destroyer of infection, but large quantities, such as are supplied by comparatively small amounts of the above-mentioned agents, are quite efficient.

It is usually recommended that disinfectants of this kind should be used in connection with those of the second class, that the odor and putrefaction may be destroyed at once by the first, and prevented from reappearing by the second.

Among disinfectants which act by arresting decomposition,² have been enumerated carbolic and cresylic acids, creosote, thymol³ (a compound obtained from oil of thyme), iron, zinc, manganese, copper and lead salts, and other more expensive ones, as those of mercury, arsenic, etc. Some mineral acids, chlorides, and nitrates, alkalies, and alkaline earths, and mixtures of these compounds, are recommended. Many of these have little or no disinfecting action, being rather antiseptics than disinfectants.

Of all these, cresylic and carbolic acids are generally believed, and with reason, to be the best. A mixture of the two is usually employed, since the separation is laborious and too expensive for obtaining an article sufficiently cheap for universal use.

Of disinfectants sufficiently inexpensive for general use (cheapness is desirable), next to carbolic and cresylic acids are placed zinc salts, and after them manganese and iron salts. The action of these substances upon putrid material has been the subject of much study, since by that means it has been hoped that the true nature of infection may be discovered. Those substances found to be most efficient have been observed to be agents which coagulate albumen; and hence as an outgrowth of the germ theory, combined with the fact that contagion and putrefaction, if not identical, require exactly similar conditions, the

¹ Sulphurous acid may, under some circumstances, be placed in this category, though its action may be at other times reducing, from its tendency to form sulphuric acid, by taking up more oxygen. Its comparative instability tending in one direction or the other according to circumstances, renders it often efficient as a disinfectant, if the effects required are to be immediate and not permanent. This acid has been recommended in the report of the Paris Academy.—*Dingl. Polyt.*, cciii., p. 326.

² Letheby, "Am. Chem.," iv., p. 381.

³ Paquet, *Bull. Gén. de Thérapeut.*, 1869, No. 25, p. 205; *Neues Jahrb. f. Pharm.*, xxxii., p. 44; *Polyt. Notizblatt*, 1869, p. 286.

assumption was made that the germs causing infection or contagion contain albumen, which is essential to their existence. Hence, that which coagulates albumen, disinfects. This theory was promulgated by Dr. J. Hirsch, in 1869,¹ but it will not account for all the phenomena of infection, and is therefore open to serious objection. It has been shown that cresylic acid,² which is a more powerful disinfectant than carbolic acid, has not so much power to coagulate albumen. Dr. Angus Smith³ has also shown that coagulation of albumen though it retards, does not absolutely prevent, putrefaction. Moreover, it is stated that a solution of carbolic acid (one in one thousand)⁴ may be made, which, though too dilute to coagulate albumen, may yet disinfect. It may here be incidentally remarked that a sample of the Girondin disinfectant purchased during the past summer, and found by analysis to contain over twenty-one per cent. of zinc sulphate and about one per cent. of sulphate of copper, became in a short time spotted on the surface with a white mould, evidently of organic character, which leads irresistibly to the conclusion that the germs for that form of vegetable life, and therefore by analogy for perhaps others, do not depend for their existence upon uncoagulated albumen.

A commission of the Academy of Sciences in Paris,⁵ appointed to make an examination of the mode in which disinfectants act, reported that chlorine and the hypochlorites destroyed the gases, while carbolic acid destroyed the living agents of infection.

Dr. Calvert,⁶ in experimenting on the relative efficiency of disinfectants as antiseptic agents with egg-albumen, found that carbolic and cresylic acids, and powders prepared with them, stood first, chloride of zinc next, and next to that chloride of lime; chloride of aluminum was found to be among the lowest in the scale of those tried.

In another series of experiments,⁷ accompanied by microscopic examination, he found that while in an untreated solution of blood, the vibrios increased steadily, cresylic acid destroyed them entirely, carbolic acid, quinine sulphate, chloride of zinc, or sulphuric acid, destroyed nearly all (a few nevertheless remaining); chloride of aluminum, sulphurous acid, and prussic acid, at first destroyed them, but they afterward reappeared. Chloride of lime, chloride of mercury, caustic soda, nitric acid, sulphate of iron, and acetic acid also destroyed some at first and then favored the development of what remained. Arsenious acid, salt, chloride of calcium, and sulphate of lime, had no effect, while lime, charcoal, permanganate of potash, and ammonia actually favored their formation.

If the germ-theory is accepted in connection with these results, most sub-

¹ *Brit. Med. Journ.*; "Am. Chem.," ii., p. 120.

² "Disinfectants," Smith, pp. 68, 69, 106.

³ *Loc. cit.*, p. 16.

⁴ Lemaire, "De l'Acide Phenique," Paris, 1865.

⁵ "Comptes Rendus," lxxii., 242; *Bullet. Mus. de l'Ind. Belg.*; "Am. Chem." ii., 141.

⁶ *Chem. News*, 1871, No. 601, p. 281; *Dingl. Polyt.*, cxcix., p. 68.

⁷ "Comptes Rendus," lxxv., No. 19.

stances believed to be efficient in disinfection must be discarded, or else the germs causing disease require different conditions of life to what the microscopic organisms already known stand in need of.

Dumas¹ states that carbolic acid acts by arresting the decomposition of albuminous matter; and, secondly, by killing the germs formed. He recommends the use of carbolic acid in conjunction with chloride of lime for disinfecting purposes.

Junghaus² states that carbolic acid, when tried on the battle-fields in France, did not disinfect, but only retarded putrefaction, while Wiederholt and others claim that it is the only true disinfectant. A comparison of these views with the results obtained by Dr. Calvert renders it probable that some of the properties of cresylic acid have in some cases been attributed to carbolic acid, since the difficulty of perfectly separating the two would render such a mistake very natural.

Many of the disinfectants enumerated destroy or precipitate sulphuretted hydrogen and sulphur compounds allied to it; perhaps among such compounds those which render the emanations from putrid matter so dangerous. Magnesium salts,³ and some other compounds, remove ammonia, which also accompanies putrefaction, but the question may fairly be raised whether this is not doctoring the symptoms rather than the disease, sulphuretted hydrogen and ammonia being the invariable accompaniments of putrefaction.

In general it is recommended that disinfectants should contain no free acid, as that tends to set free sulphuretted hydrogen, and increase the disagreeable odor, if it does not free other and more deleterious compounds.

Many objections⁴ have been raised to the disinfectants at present in use. Wiederholt⁵ takes the following exceptions to them: Permanganate of potassa is easily decomposed, giving up its oxygen to organic matter whether hurtful or not, and moreover to be effective must be used in large quantities. Chlorine, and chlorides of lime and the alkalies, are dangerous to those having weak respiratory organs, while carbolic acid is stated to be only effective when used concentrated, and then it has an unendurable smell. Some of these objections are valid; but it is certainly much better to endure some inconvenience than to run the risk of greater evils.

Infection may possibly exist without affording any appreciable odor; so that we cannot be certain when the noxious elements are destroyed, yet so far as our

¹ "Am. Chem.," i., 400; Faye, Dumas, et Chevreul, "Comptes Rendus," No. 24, 1871.

² *Dingl. Polyt.*, xcix., 1; "Am. Chem." ii., 92.

³ Suvern, *Ind. Blätter*, 1868, No. 15, p. 62; *Dingl. Polyt.*, clxxxvii., pp. 438, 439; *Deutsche Ind'zeitung*, 1868, p. 166; *Polyt. Centralbl.*, 1868, p. 703; Virchow, *Deutsche Ind'zeitung*, 1869, p. 506.

⁴ Wanklyn, *Pharm. Journ. and Trans.*, 1873, xxxix., p. 205; "Discussion on the Modes of Disinfection," *The Doctor*, October 1, 1873, p. 193; Hoppe-Seyler, "Medicinischemische Untersuchungen aus dem Laboratorium für angewandte Chemie zu Tübingen. Berlin, 1871; Eckstein, *Wochenschr. d. niederösterreich. Gewerbever.*, 1872, No. 47; Pettenkofer, *Dingl. Polyt.*, xxi., 248; *Vierteljahresschr. f. öff. Gesundheit*, 4, 602.

⁵ *Deutsche Ind'zeitung*, 1870, p. 442; "Wagn. Jahresber.," 1870, p. 557.

knowledge goes almost the only test we can apply is the presence or absence of odor, which shows whether putrefaction is going on or not, and is therefore to some extent uncertain. Thus much is certain, however, that sulphuretted hydrogen and other ill-smelling sulphur compounds, as well as ammonia, always accompany putrefaction, from which the most danger in the way of infectious diseases is to be apprehended. Sulphuretted hydrogen and ammonia, though in themselves unwholesome, are entirely powerless to produce quickly in one's system the derangements of the class or of the character produced by what we term infection. In conducting the experiments I have made I have accordingly made the removal of odor the test of the efficiency of the various disinfectants, and, as will be seen, the results correspond with those obtained by other experimenters who have applied not only the test of odor, but have supplemented it by a microscopic examination.

The disinfectants examined were as follows:

No. 1.—MONSEL'S¹ SOLUTION (*Liquor Ferri Subsulphatis*).

1 lb., §1. Sp. gr., 1.4525. Weight of one gallon, 193.62 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------------|---------------|------------------|
| Sulphate of Sesquioxide of Iron..... | 30.444 | 58.95 |
| Nitrate of Sesquioxide of Iron..... | 10.766 | 20.84 |
| Water, Free Nitric Acid, etc..... | 58.790 | 113.83 |
| | 100.000 | 193.62 |

No. 2.—DE WESSELY'S SOLUTION (BY-PRODUCT IN DE-TINNING SCRAP-TIN PLATE).

Supplied to the Board of Health at 10 cts. per gallon.

Sp. gr., 1.304. Weight of one gallon, 173.82 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Protosulphate of Iron..... | 4.527 | 7.87 |
| Protochloride of Iron..... | 14.338 | 24.92 |
| Chloride of Zinc..... | 8.737 | 15.18 |
| Water, Chloride of Calcium, trace of Tin, etc..... | 73.998 | 125.85 |
| | 100.000 | 173.82 |

No. 3.—LIQUID OF THE MANHATTAN METAL AND CHEMICAL CO. (BY-PRODUCT IN DE-TINNING SCRAP-TIN PLATE).

FIRST SAMPLE.—Sp. gr., 1.2425. Weight of one gallon, 165.62 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|---|---------------|------------------|
| Protochloride of Iron..... | 5.805 | 9.61 |
| Chloride of Zinc..... | 21.519 | 35.64 |
| Water, with small amounts of Lime-Salts, and a trace of Free Acid.. | 72.676 | 120.37 |
| | 100.000 | 165.62 |

¹ "United States Dispensatory," thirteenth edition, p. 1253.

SECOND SAMPLE.—Sp. gr., 1.365. Weight of one gallon, 181.95.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|-------------------------------------|---------------|------------------|
| Protochloride of Iron | 6.924 | 12.60 |
| Sesquichloride of Iron | 0.322 | 0.59 |
| Chloride of Zinc | 30.190 | 58.04 |
| Water, and traces of Sulphates..... | 62.564 | 110.72 |
| | 100.000 | 181.95 |

No. 4.—GIRONDIN DISINFECTANT.

FIRST SAMPLE.—1 qt., 75 cts. Sp. gr., 1.2435. Weight of one gallon, 165.76 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Sulphate of Zinc..... | 19.692 | 32.64 |
| Sulphate of Copper..... | 1.202 | 1.99 |
| Sulphate of Lime..... | 0.480 | 0.79 |
| Water, with traces of Chloride of Calcium, Acetic Acid, etc..... | 78.626 | 130.34 |
| | 100.000 | 165.76 |

SECOND SAMPLE.—1 qt., 50 cts. Sp. gr., 1.272. Weight of one gallon, 169.56 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Sulphate of Zinc..... | 21.653 | 36.72 |
| Sulphate of Copper | 0.908 | 1.54 |
| Sulphate of Lime | 0.402 | 0.68 |
| Chloride of Calcium..... | 0.091 | 0.15 |
| Water, traces of Acetic Acid, etc..... | 76.941 | 130.47 |
| | 100.000 | 169.56 |

No. 5.—HOVEY'S CHLORIDE OF ZINC.

1 qt., 62½ cts. Sp. gr., 1.445. Weight of one gallon, 192.62 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Chloride of Zinc..... | 12.468 | 24.00 |
| Water, traces of Sulphates of Zinc, Lime, etc..... | 87.532 | 168.62 |
| | 100.000 | 192.62 |

No. 6.—COUTARET'S WHITE FLUID.

1 qt., 62½ cts. Sp. gr., 1.074. Weight of one gallon, 143.16 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Sulphate of Zinc..... | 7.370 | 10.55 |
| Water, traces of Chlorides of Zinc and Calcium, and Acetic Acid..... | 92.630 | 132.61 |
| | 100.000 | 143.16 |

No. 7.—SEELEY'S SULPHATE OF MANGANESE (BY-PRODUCT IN THE MANUFACTURE OF CHLORINE).

Supplied in bulk at 7 cts. per gallon.

FIRST SAMPLE.—Sp. gr., 1.246. Weight of one gallon, 166.09 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------------|---------------|------------------|
| Sulphate of Manganese | 10.060 | 16.71 |
| Sulphate of Sesquioxide of Iron..... | 4.931 | 8.19 |
| Sulphuric Acid..... | 6.566 | 10.90 |
| Hydrochloric Acid..... | 1.404 | 2.33 |
| Water | 77.039 | 127.96 |
| | 100.000 | 166.09 |

SECOND SAMPLE.—Sp. gr., 1.422. Weight of one gallon, 189.55.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------|---------------|------------------|
| Sulphate of Manganese | 28.308 | 53.66 |
| Sesquichloride of Iron..... | 6.265 | 11.87 |
| Free Chlorine (available)..... | 0.223 | 0.42 |
| Free Hydrochloric Acid..... | 6.624 | 12.55 |
| Water..... | 58.580 | 111.05 |
| | 100.000 | 189.55 |

No. 8.—CHLORALUM (OF ENGLISH CHLORALUM Co.).

1 pt., 50 cts. Sp. gr., 1.1435. Weight of one gallon, 153.43 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------------|---------------|------------------|
| Chloride of Aluminum..... | 13.213 | 20.14 |
| Sulphate of Lime..... | 0.197 | 0.30 |
| Water, Chloride of Calcium, etc..... | 86.590 | 131.99 |
| | 100.000 | 153.43 |

No. 9.—BROMOCHLORALUM (TILDEN & Co.).

1 pt., 50 cts. Sp. gr., 1.170. Weight of one gallon, 155.96 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Chloride of Aluminum..... | 8.152 | 12.71 |
| Water, Bromide of Aluminum, Lime-Salts, etc..... | 91.848 | 143.25 |
| | 100.000 | 155.96 |

No. 10.—DARBY'S PROPHYLACTIC FLUID.

½ pt., 50 cts. Sp. gr., 1.073. Weight of one gallon, 143.03 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|------------------------------|---------------|------------------|
| Permanganate of Potassa..... | 0.055 | 0.08 |
| Sulphate of Potassa..... | 1.750 | 2.50 |
| Chloride of Potassium..... | 1.270 | 1.81 |
| Carbonate of Potassa..... | 6.570 | 9.40 |
| Water..... | 90.355 | 129.24 |
| | 100.000 | 143.03 |

No. 11.—LE DOYEN'S DISINFECTANT.

1 pt., 50 cts. Sp. gr., 1.11. Weight of one gallon, 147.96 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|----------------------|---------------|------------------|
| Nitrate of Lead..... | 11.628 | 17.20 |
| Water..... | 88.372 | 130.76 |
| | 100.000 | 147.96 |

No. 12.—LABARRAQUE'S SOLUTION OF CHLORIDE OF SODA.

1 pt., 50 cts. Sp. gr., 1.0315. Weight of one gallon, 137.50 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|---------------------------|---------------|------------------|
| Available Chlorine..... | 1.423 | 1.96 |
| Water and Soda-Salts..... | 98.577 | 135.54 |
| | 100.000 | 137.50 |

No. 13.—GRANTVILLE CARBOLIC ALKALI (F. W. NICHOLS, 71 WILLIAM STREET).

1 qt., 34 cts. Sp. gr., 1.035. Weight of one gallon, 137.96 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|---------------------------|---------------|------------------|
| Potassa..... | 1.863 | 2.57 |
| Carbolic Acid..... | 4.360 | 6.01 |
| Water and Impurities..... | 93.777 | 129.38 |
| | 100.000 | 137.96 |

No. 14.—PHENOL SODIQUE (HANCE BROS. & WHITE, PHILADELPHIA).

(Prepared according to French patent of M. Bobœuf.)

½ pt., 50 cts. Sp. gr., 1.027. Weight of one gallon, 136.90 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--|---------------|------------------|
| Carbolic Acid..... | 1.177 | 1.61 |
| Soda-Salts, Water, and Impurities..... | 98.823 | 134.29 |
| | 100.000 | 136.90 |

No. 15.—SQUIBB'S WATER-SOLUTION OF CRUDE CARBOLIC ACID.

1 qt., 35 cts. Sp. gr., 1.00. Weight of one gallon, 133.30 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|---------------------------|---------------|------------------|
| Carbolic Acid..... | 1.680 | 2.24 |
| Water and Impurities..... | 98.320 | 131.06 |
| | 100.000 | 133.30 |

No. 16.—METROPOLITAN DISINFECTANT¹ (D. G. FARWELL'S).

Sp. gr., 1.124. Weight of one gallon, 149.83 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------------|---------------|------------------|
| Protosulphate of Iron..... | 11.413 | 17.10 |
| Carbolic Acid (about)..... | 3.330 | 4.99 |
| Water, Dead Oil, and Impurities..... | 85.257 | 127.74 |
| | 100.000 | 149.83 |

No. 17.—DISINFECTING SOLUTION (W. METTENHEIMER).

25 cts. per qt. Sp. gr., 1.073. Weight of one gallon, 143.03 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|----------------------------|---------------|------------------|
| Protosulphate of Iron..... | 5.975 | 8.45 |
| Carbolic Acid (about)..... | 5.000 | 7.15 |
| Water and Impurities..... | 89.025 | 127.43 |
| | 100.000 | 143.03 |

No. 18.—DISINFECTING SOLUTION (A. DUNG & SON).

1 pt., 30 cts. Sp. gr., 1.040. Weight of one gallon, 138.63 oz.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Gallon. |
|--------------------------------------|---------------|------------------|
| Protosulphate of Iron..... | 3.591 | 4.98 |
| Carbolic Acid (about)..... | 5.000 | 6.93 |
| Water, Dead Oil, and Impurities..... | 91.409 | 126.72 |
| | 100.000 | 138.63 |

In the last three samples, the amount of carbolic acid could only be determined approximatively, as the presence of protosulphate of iron interferes with the quantitative estimation of that acid.

No. 19.—ORDINARY COPPERAS (GREEN VITRIOL).

10 cts. per pound.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|--|---------------|-----------------|
| Protosulphate of Iron..... | 53.20 | 8.51 |
| Water of Crystallization and Impurity..... | 46.80 | 7.49 |
| | 100.00 | 16.00 |

¹ Not the true Metropolitan Disinfectant, which consists of a mixture of dead oil and sesquichloride of iron. Mixtures of the nature of the above were put up and sold as "disinfecting solutions" by several druggists in this city during the past summer, who charged twenty-five to thirty cents per quart for the mixture.

No. 20.—EXCELSIOR DISINFECTANT.

15 cts. per 1-lb. can.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|--|---------------|-----------------|
| Protosulphate of Iron..... | 31.464 | 5.03 |
| Chloride of Sodium (Common Salt)..... | 19.251 | 3.03 |
| Flowers of Sulphur..... | 7.800 | 1.25 |
| Water of Crystallization, Oil of Cassia, and Impurity..... | 41.485 | 6.64 |
| | 100.000 | 16.00 |

No. 21.—CHLORIDE OF LIME.

20 cts. per pound.

FIRST SAMPLE.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|-----------------------------|---------------|-----------------|
| Available Chlorine..... | 31.33 | 5.02 |
| Lime-Salts, Water, etc..... | 68.62 | 10.98 |
| | 100.00 | 16.00 |

SECOND SAMPLE.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|-----------------------------|---------------|-----------------|
| Available Chlorine..... | 32.27 | 5.16 |
| Lime-Salts, Water, etc..... | 67.73 | 10.84 |
| | 100.00 | 16.00 |

THIRD SAMPLE.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|-----------------------------|---------------|-----------------|
| Available Chlorine..... | 27.55 | 4.41 |
| Lime-Salts, Water, etc..... | 72.45 | 11.59 |
| | 100.00 | 16.00 |

No. 22.—CARBOLATE OF LIME (KING, HOAGLAND & WOODRUFF).

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|---|---------------|-----------------|
| Lime..... | 64.245 | 10.28 |
| Magnesia..... | 0.602 | 0.09 |
| Sand, Oxide of Iron, etc..... | 0.670 | 0.11 |
| Carbolic Acid..... | 0.472 | 0.07 |
| Carbonic Acid and Organic Impurities..... | 34.021 | 5.40 |
| | 100.000 | 16.00 |

No. 23.—CARBOLATE OF LIME (J. R. NICHOLS, BOSTON, MASS.).

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|---|---------------|-----------------|
| Lime..... | 58.342 | 9.33 |
| Magnesia..... | 3.779 | 0.60 |
| Sand, Oxide of Iron, etc..... | 3.470 | 0.56 |
| Carbolic Acid..... | 0.470 | 0.07 |
| Carbonic Acid and Organic Impurities..... | 33.939 | 5.44 |
| | 100.000 | 16.00 |

No. 24.—GRANTVILLE CARBOLATE OF LIME (F. W. NICHOLS, NEW YORK).

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|---|---------------|-----------------|
| Lime..... | 53.930 | 8.68 |
| Magnesia, Sand, Oxide of Iron, etc..... | 5.290 | 0.84 |
| Carbolic Acid..... | 0.671 | 0.11 |
| Carbonic Acid and Organic Impurities..... | 40.119 | 6.37 |
| | 100.000 | 16.00 |

SECOND SAMPLE.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|---|---------------|-----------------|
| Lime..... | 50.412 | 8.07 |
| Magnesia..... | 3.830 | 0.61 |
| Sand, Oxide of Iron, etc..... | 1.264 | 0.20 |
| Carbolic Acid..... | 0.256 | 0.04 |
| Carbonic Acid and Organic Impurities..... | 44.238 | 7.08 |
| | 100.000 | 16.00 |

No. 25.—GRANULATED CARBOLIC DISINFECTING POWDER, CONSISTING OF WOOD SAWDUST SOAKED WITH DEAD OIL.

 $\frac{1}{2}$ lb., 25 cts.

No. 26.—PHENIX DISINFECTANT.

5 lbs., \$1.75.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|---|---------------|-----------------|
| Silicate of Alumina (Clay)..... | 56.876 | 9.10 |
| Sesquichloride of Iron..... | 1.192 | 0.19 |
| Sesquioxide of Iron..... | 7.102 | 1.14 |
| Lime..... | 2.470 | 0.39 |
| Carbolic Acid..... | 0.400 | 0.06 |
| Carbonic Acid and Organic Impurities..... | 31.960 | 5.12 |
| | 100.000 | 16.00 |

No. 27.—EGYPTIAN DISINFECTANT.

1 lb., 25 cts.

| CONSTITUENTS. | Parts in 100. | Oz. in 1 Pound. |
|--|---------------|-----------------|
| Silica..... | 72.090 | 11.53 |
| Alumina and trace of Oxide of Iron. } Probably combined as a Siliceous Clay. } | 15.720 | 2.52 |
| Lime..... | 0.354 | 0.06 |
| Carbolic Acid..... | 0.320 | 0.05 |
| Other constituents of Dead Oil extracted by Ether..... | 5.685 | 0.91 |
| Organic Matter and Water..... | 5.831 | 0.93 |
| | 100.000 | 16.00 |

The carbolates of lime were put up in boxes holding about three-quarters of a pound each, and this quantity is retailed at twenty-five cents per box.

The samples of carbolic acid were tested in two different ways: 1. By the degree of solubility in water, all not dissolving in a large excess of water being subtracted, and reckoned as not carbolic acid. 2. By comparing the amount of bromine-water required to completely precipitate the carbolic acid from a water-solution of the samples, with the amount required to precipitate the carbolic acid from a solution containing a known amount of that acid.

The results were as follows:

| LABEL. | Quantity. | Price. | Specific Gravity. | Percentage soluble in Water. | Percentage Carbolic Acid by Bromine Test. |
|---|-----------|--------|-------------------|------------------------------|---|
| Calvert's No. 5..... | 1 pt. | 65 | 1.036 | 98. | 69.23 |
| Squibb's No. 1..... | 1 pt. | 1 00 | 1.0365 | 82.4 | 77.90 |
| Squibb's No. 2..... | 1 pt. | 75 | 0.985 | 57.6 | 37.46 |
| Edey's Crude Carbolic Acid..... | 1 pt. | 75 | 0.975 | 42.4 | 30.41 |
| Kidder, Wetherell & Co's..... | 1 pt. | 50 | 0.9975 | 34. | 27.85 |
| W. E. Armstrong..... | 1 pt. | 75 | 1.047 | 70.8 | 68.12 |
| King, Hoagland & Woodruff..... | | | 1.0475 | 26.8 | |
| Carle & Strong..... | 1 pt. | 50 | 1.0525 | | 74.80 |
| Eight Samples from the Warren Chemical Company: | | | | | |
| No. 1..... | | | 1.037 | 69.2 | 67.5 |
| No. 2..... | | | 1.045 | 80.4 | 74.7 |
| No. 4..... | | | 1.041 | 64. | 71.2 |
| July 27th..... | | | 1.033 | 60.8 | 55.8 |
| XXXX..... | | | 1.026 | 66.2 | 14.79 |
| XXX..... | | | 1.026 | 64.0 | 75.1 |
| XX..... | | | 1.026 | 46.4 | |
| X..... | | | 1.005 | 34. | 20.21 |

TESTS OF DISINFECTING POWER.

Two pounds of dried blood (such as is used by sugar-refiners under the name "spice") were dissolved in eight times their weight of water, and the solution set aside for a few days until it had become putrid. Of this solution one hundred cubic centimetres were then taken for each disinfectant, and a measured quantity of the disinfectant added until apparent disinfection had taken place, or when that was not the case the addition was stopped when a volume of the disinfectant equal to that of the blood (one hundred cubic centi-

metres) had been added. During and after such addition, the bottles were shaken, to thoroughly incorporate the mixture; they were then closed with plugs of cotton, set aside, and examined daily for twenty-five days, and after that at longer intervals, the experiments being continued for sixty-six days in all. With the metallic solutions the carbolic alkali was also tried in order to form a standard of comparison.

It must be borne in mind that in working over considerable quantities of putrid material, the sense of smell, upon which I was obliged to rely, was necessarily much blunted, so that deodorization was apparently caused in most cases where an examination the next day showed that it had probably not been complete. This remark may be necessary to explain the statements in the tables, where, for instance, fifty or sixty cubic centimetres of the disinfectant were added, until as above mentioned apparent deodorization had been effected, though subsequent examination did not show that permanent deodorization was effected until after thirty or forty days. The deodorization is designated as "permanent" when the odor of putridity did not reappear during the experiment.

TABLE I.

| SOLUTION USED. | Amount of Disinfectant used c.c. | Phenomena observed with regard to Odor during Sixty-six Days. |
|---|----------------------------------|---|
| Grantville Carbolic Alkali..... | 4.5 | Odor almost completely destroyed at once, a stale odor remaining. |
| De Wessely's | 20.5 | Permanent deodorization in 23 days. |
| Seeley's Sulphate of Manganese, first sample..... | 44 | Permanent deodorization in 17 days. |
| Manhattan Metal and Chemical Co.'s..... | 100 | Permanent deodorization in 23 days. |
| Hovey's Chloride of Zinc..... | 65 | Permanent deodorization in 39 days. |
| Contaret's White Fluid..... | 100 | Permanent deodorization in 39 days. |
| Le Doyen's Disinfectant..... | 100 | Permanent deodorization in 39 days. |
| Girardin, first sample..... | 100 | Deodorized in 39 days, a faint putrescent odor appearing just at the end of the experiment. |
| Girardin, second sample..... | 100 | Permanent deodorization in 39 days. |
| Chloralum | 100 | Permanent deodorization in 60 days. |
| Bromochloralum | 100 | Odor somewhat diminished, but not removed. |
| Labarraque's Chloride of Soda..... | 22 | Putrid odor, at first replaced by that of chlorine, which was soon gone, the putrid odor rapidly reappearing. |
| Darby's Prophylactic..... | 48 | Odor at first destroyed, returned more rapidly than with Labarraque's solution. |

Comparatively cool weather, especially when clear, rendered the putrid odor less marked in all cases, which makes it probable that, if the experiments had been conducted at a cooler season, instead of during the warm months of August and September, deodorization would have been more rapid.

These experiments show the rapid action of oxidizing disinfectants with their subsequent loss of power, and the comparative slowness of the action of metallic salts, which act by arresting decomposition.

In Dr. Angus Smith's experiments on the comparative efficiency of various compounds when used as disinfectants,¹ in three different series, while the other substances remained the same, chloride of zinc appeared to vary in its action,

¹ "Disinfectants," Smith, p. 93.

forty parts being necessary in one case where only fifteen were required in another.

In the above results a similar variation may be observed by a comparison of the effects produced by the disinfectants containing zinc-salts, and the results obtained by analysis of them, though a mixture of iron and zinc-salts appears to be more efficacious than zinc-salts alone.

Chloride of aluminum, as in other experiments on record, stands low. The bromine in the bromochloralum not being free, did not apparently improve the powers of that disinfectant; the amount was probably too small to have any effect unless it were free; indeed, the bromochloralum is essentially nothing more than a weaker solution of aluminum chloride, and as such stands lower than the chloralum.¹

Sulphate of manganese stood very well, though containing considerable amounts of free acid. Manganese-salts are by no means so plentiful or so cheap with us as in Europe. They would doubtless prove very efficient, to judge from the sample experimented upon.

Nitrate of lead, though from the chemical properties of its constituents it was argued ought to stand very high, does not appear to answer the expectations formed regarding it. I have found no record of experiments with it.

In order that a better estimate of the comparative value of the disinfectants might be formed by the use of the same amount in each case, a second series of experiments was made, one hundred cubic centimetres of the solution of putrid blood being taken for each disinfectant as before, and ten cubic centimetres of the disinfectant added, the mixtures being treated as before.

Besides the disinfectants in solution, five grammes of the Excelsior Disinfectant and five grammes of *solid* crude protosulphate of iron, as well as one gramme of the same protosulphate dissolved in about eight or ten cubic centimetres of water, were also tried, one hundred cubic centimetres of putrid blood being used for each.

The results were as follows :

¹ Calvert, *Chemical News*, 1871, No. 601, p. 281; *Dingl. Polyt.*, cxcix., 68; Fischer, "Mitth. d. Hannov. Gewerbever.," 1873, p. 200. *Dingl. Polyt.*, ccx., p. 120; Fleck, "Erster Jahresber. d. Chem. Centr'st für öff. Ges'h'tspflege in Dresden," 1872; "Vierteljahress. f. prakt. Pharm.," Wittstein, vol. xxi., 1872, 2; Letheby, "American Chemist," iv., 388; Smith, "Disinfectants," p. 97; Endemann, "Report of Met. Board of Health," 1871.

TABLE II.

Comparative Efficiency of Disinfectants, ten per cent. of each being used.

| DISINFECTANT. | Phenomena observed with regard to Odor during Sixty-six Days. |
|---|---|
| Grantville Carbolic Alkali..... | Faint odor of carbolic acid mixed with a stale odor throughout. |
| Monsel's solution..... | Permanent deodorization in 21 days. |
| De Wessely's..... | Permanent deodorization in 23 days. |
| Liquid of Manhattan Metal and Chemical Co..... | Permanent deodorization in 40 days. |
| Seeley's Sulphate of Manganese..... | Permanent deodorization in 40 days. |
| Girondin, first sample..... | Permanent deodorization in 40 days. |
| Girondin, second sample..... | Permanent deodorization in 40 days. |
| Hovey's Chloride of Zinc..... | Putrid odor faint in 18 days. Deodorization in 66 days. |
| Contaret's White Fluid..... | Putrid odor scarcely perceptible in 18 days. Deodorization in 66 days. |
| Chloralum..... | Putrid odor faint in 25-days. Deodorization in 66 days. |
| Le Doyen's..... | Faint putrescence and staleness apparent at end of 66 days. |
| Crude Protosulphate of Iron (five grammes solid). | Odor diminished, but remained more marked than with preceding. |
| Crude Protosulphate of Iron (one gramme in solution). | Putrid odor decreased for about a week, then remained quite perceptible for some six weeks, after which it began to increase. |
| Bromochloralum..... | Odor diminished slightly, but perceptible putrescence throughout. |
| Excelsior..... | Action like that of the one gramme crude protosulphate of iron. |
| Labarraque's Solution..... | Partial deodorization at first, the bad odor soon returning. |
| Darby's Prophylactic..... | Effect very slight, bad odor soon returned. |

The order of efficiency of the disinfectants is about the same as in the previous table. The contrast between the effects produced by the addition of five grammes of solid protosulphate of iron undissolved, and the one gramme in solution, shows that when in solution, as might be anticipated, the action of this salt is more rapid, but that after a short time the solid probably dissolves, and shows its effects. Moreover, five per cent. of this salt is insufficient to deodorize putrid blood even in two months, and indeed if an insufficient quantity of disinfectant is used, a point is reached where it ceases to act, and the putrefaction recommences. Of the oxidizing disinfectants, permanganate of potash and chloride of soda, enough was not added to effect complete deodorization, and putrefaction again set in more rapidly with the former than with the latter.

A comparison of the results in the two series as to the time in which permanent deodorization was effected (at least which I term permanent, since the putrid odor did not reappear up to the end of the experiment), shows that the effects produced are not proportional to the amount of disinfectant added, so that in some cases, beyond a certain point, further addition of a disinfectant is mere waste of material.

Tests were also made with the samples of chloride of lime. The effects produced were essentially the same as in the case of Labarraque's solution of soda.

In trying the effects of the samples of carbolic acid, the results obtained with the "carbolic alkali" led to the supposition that ten per cent. would be too large an amount to use and obtain good comparative results. It was

therefore decided to use one-quarter of that proportion. Accordingly, two hundred cubic centimetres of the putrid blood were taken for each sample, and five cubic centimetres of the sample added, the bottles shaken, stoppered with cotton, set aside, and examined as before. With these samples two points were noted particularly. The carbolic acid destroyed the odor in a longer or shorter time, in some cases, however, leaving the solution with no definite odor, and after some time, though sometimes immediately, the odor of the carbolic acid or dead oil made its appearance. The times of such disappearance of putrid odor, and appearance of that of carbolic acid, are noted in the table.

The results were as follows:

TABLE III.

| NAME OF SAMPLE USED. | Putrid Odor disappeared. | Odor of Carbolic Acid permanent. |
|---|--------------------------|----------------------------------|
| Squibb's No. 2. Impure Carbolic Acid..... | Immediately. | Immediately. |
| Edey's Crude..... | Immediately. | Immediately. |
| "Dead Oil." Warren Chemical Company..... | Immediately. | Immediately. |
| Kidder, Wetherell & Co.'s Crude..... | Immediately. | In 1 day. |
| Squibb's No. 1..... | In 6 days. | In 6 days. |
| Calvert's No. 5..... | In 7 days. | In 7 days. |
| "Dead Oil." Warren Chemical Company..... | In 10 days. | In 10 days. |
| King, Hoagland & Woodruff's..... | In 9 days. | In 21 days. |
| Carbolic Acid, No. 1..... | In 11 days. | In 23 days. |
| "Dead Oil." Warren Chemical Company..... | In 11 days. | In 23 days. |
| Carbolic Acid No. 4..... | In 12 days. | In 24 days. |
| Carbolic Acid. Warren Chemical Company..... | In 12 days. | In 25 days. |
| "Dead Oil." Warren Chemical Company..... | In 16 days. | In 16 days. |
| Carbolic Acid. W. E. Armstrong..... | In 17 days. | In 24 days. |
| Carbolic Acid No. 2..... | In 20 days. | In 23 days. |
| Carbolic Acid. Carle & Strong..... | In 13 days. | In 54 days. |

The above-mentioned consisted only of carbolic acid more or less rectified. A few of the liquid carbolic acid preparations contained some other substance besides carbolic acid, as alkali, or protosulphate of iron. These were also tested in the same manner, with the exception that the water solution and that containing protosulphate of iron were tried on one hundred cubic centimetres of putrid blood instead of two hundred cubic centimetres, the amount used with the others.

The results were as follows:

| NAME OF DISINFECTANT. | Phenomena observed with regard to Odor during Sixty-six Days. |
|--|--|
| Phenol Sodique..... | Odor diminished, but quite perceptible throughout. |
| Grantville Carbolic Alkali..... | Essentially the same as the above, a slight ammoniacal odor being perceptible. |
| Squibb's Water Solution of impure Carbolic Acid. | Some putrid odor perceptible throughout. |
| "Metropolitan Disinfectant."..... | Putrid odor at first diminished, then increased. |

In this series of experiments the disinfecting power of the samples does not appear to be so closely corresponding to the percentage of carbolic and cresylic acids as determined; a difference in the relative proportions of carbolic and cresylic acids, the latter being much the most efficient disinfectant, may have much to do with this.

In testing the solid preparations containing carbolic acid, five grammes of each were taken, shaken up with one hundred cubic centimetres of putrid blood, the odor noted, the bottles stoppered with cotton, set aside, and examined, as in the previous experiments. One hundred cubic centimetres of putrid blood were also shaken up with five grammes of partially slacked lime, in order to determine, if possible, whether any or all of the deodorizing properties of the disinfectant were to be attributed to the lime in the samples, the majority of them being the so-called carbolates of lime.

The results were as follows :

TABLE IV.

| DISINFECTANT USED. | Phenomena observed with regard to Odor during Sixty-two Days. |
|---|--|
| Lime (partially slacked)..... | Putrid odor gone in 21 days, returned at the end of 50 days. |
| Carbolate of Lime—King, Hoagland & Woodruff..... | Putridity gone in 19 days, being superseded by the odor of carbolic acid. |
| Nichols's Carbolate of Lime..... | Putridity gone in 37 days, the odor of carbolic acid taking its place in a short time. |
| Grantville, Carbolate of Lime, first sample..... | Putrid odor decreased slowly, not having disappeared entirely by the end of the experiment. |
| Grantville, Carbolate of Lime, second sample.... | Odor almost entirely removed in 37 days, after which it gradually returned. |
| (In all of the above samples the first addition of the disinfectant developed a strong odor of ammonia, which gradually disappeared.) | |
| Granulated Disinfecting Powder..... | Odor diminished perceptibly, but not entirely removed..... |
| Phoenix Disinfectant..... | Very slight diminution in putrid odor..... |
| Egyptian Disinfecting Powder..... | Same as the above, an increase of putrid odor being observed toward the close of the experiment. |

From these experiments it appears that the carbolates of lime owe their disinfecting properties, what little they possess, largely to the amount of slacked lime which they contain. Those which had absorbed most carbonic acid appeared to have the least effect. The lime alone appears to have considerable effect at first, but, as might be anticipated, gradually loses ground by prolonged action.

As general conclusions from this examination of the disinfectants sold in our city, it may be affirmed that by far the best disinfectant of all is carbolic acid,¹ and of metallic or inorganic preparations, zinc-salts, or a mixture of zinc and iron salts, nitrate of sesquioxide of iron, and manganese salts, are most efficient.

Our knowledge of the practice of disinfection is as yet very imperfect, but a consideration of the foregoing experiments, and also of others which have been made on this subject, tends to show that—

For prompt disinfection which is only to be temporary, strong oxidizing agents, as chlorine, permanganate of potash, nitric acid, etc., should be used. Of these, the cheapest and most available is the chloride of lime.

¹ Perrymond, *Mon. Industr.*, 1845, No. 957; Chevalier, *Journ. Chim. Méd.*, 1852; De-meaux et Corne, *Dingl. Polyt.*, clvi., p. 46; Coutaret, *Monit. Ind.*, 1846, 1050; Calvert, *Dingl. Polyt.*, clvi., p. 50; Letheby, *Chem. News*, 1866, p. 267; *Dingl. Polyt.*, 1872, cciii., p. 326; Crookes, *Ber. D. Chem. Ges.*, 5, 541; and "Report on the Cattle Plague," London.

Carbolic acid may be diluted up to a point at which it may cease to act as a disinfectant, though it may still act as an antiseptic. To disinfect, the carbolic acid should probably constitute about one per cent.¹ of the mixture.

The action of metallic solutions in disinfecting is comparatively slow. Nitrate of sesquioxide of iron especially, and iron and zinc salts generally, are the best of this class of disinfectants. A mixture of iron and zinc salts appears to be superior to either the one or the other when used alone.

The preparations known as carbolates of lime usually contain but little carbolic acid, and are of comparatively little efficacy. The lime absorbs carbonic acid from the air, and the efficiency of those preparations as antiseptics is apparently diminished in proportion as the lime assumes the form of carbonate.

Those powders containing no lime have still less effect on putrid matter than those having lime as one of their constituents.

Respectfully submitted :

ELWYN WALLER, E. M.,

Assistant Sanitary Inspector.

¹ Hoppe-Seyler, "Med. Chem. Untersuch.," 4tes Heft ; Plugge, *Pflüger's Archiv für Physiologie*, v. 538-565.

APPROPRIATION FOR 1873.

APPROPRIATION FOR THE MAINTENANCE OF THE HEALTH DEPARTMENT FOR THE YEAR COMMENCING JANUARY 1, 1873.

| SALARIES: | | | |
|--|-------------|--------------|-----------|
| 4 Commissioners, as per resolution of Board of Apportionment, etc..... | \$5,000 00 | \$20,000 00 | |
| Secretary..... | \$6. 00 00 | | |
| Auditing Clerk..... | 2,400 00 | 16,200 00 | |
| 1 Clerk..... | 1,800 00 | | |
| 4 Clerks, at \$1,500..... | 6,000 00 | | |
| Attorney..... | \$5,000 00 | | |
| Chief Clerk..... | 4,000 00 | 15,600 00 | |
| 2 Clerks, at \$1,800..... | 3,600 00 | | |
| 2 " at \$1,500..... | 3,000 00 | | |
| Sanitary Superintendent and City Sanitary Inspector..... | \$4,400 00 | | |
| Deputy Sanitary Superintendent and City Sanitary Inspector..... | 2,400 00 | 66,897 50 | |
| 10 Health Inspectors, at \$1,800..... | 18,000 00 | | |
| 12 Assistant Health Inspectors, at \$1,500..... | 18,000 00 | | |
| 1 " " (Assistant Engineer)..... | 2,500 00 | | |
| 3 Clerks, at \$1,800..... | 5,400 00 | | |
| 4 " at \$1,500..... | 6,000 00 | | |
| 1 Messenger..... | 900 00 | | |
| 1 Assistant Chemist..... | 1,500 00 | | |
| Ambulance Corps, 3 men, at \$1,200..... | 3,600 00 | | |
| " " " at \$3 per day, \$1,095 per annum..... | 3,285 00 | | |
| 1 Stable-keeper, at \$2 50 per day, \$912 50 per annum..... | 912 50 | | |
| Sanitary Permit Inspector..... | \$2,400 00 | | |
| 2 Clerks..... | 3,000 00 | | |
| Register of Records..... | \$3,000 00 | | |
| Deputy Register of Records..... | 2,000 00 | | |
| 10 Clerks, at \$1,500..... | 15,000 00 | | |
| 1 Meteorologist..... | 120 00 | | |
| Janitor..... | \$1,000 00 | | |
| Messenger..... | 800 00 | | |
| Sweeper..... | 600 00 | | |
| Laborer (during Winter months, at \$600 per annum)..... | 300 00 | | |
| CONTINGENT EXPENSES: | | 2,700 00 | |
| Vaccine virus..... | \$5,000 00 | 8,950 00 | |
| Fuel and gas..... | 1,500 00 | | |
| Extra service..... | 1,000 00 | | |
| Carriage-hire..... | 250 00 | | |
| Stenography..... | 250 00 | | |
| Ice..... | 100 00 | | |
| Stamps..... | 200 00 | | |
| Newspapers, Medical Gazettes, etc..... | 150 00 | | |
| Incidentals..... | 500 00 | | |
| STATIONERY AND PRINTING: | | | 15,000 00 |
| Advertising..... | \$500 00 | | |
| Blanks..... | 6,000 00 | | |
| Books..... | 1,000 00 | | |
| Posters and placards..... | 500 00 | | |
| Writing materials (stationery)..... | 2,500 00 | | |
| Printing in general, including Annual Report..... | 4,500 00 | | |
| CHEMICAL DISINFECTANTS: | | | |
| For Laboratory..... | \$500 00 | 11,000 00 | |
| Disinfectants..... | 5,000 00 | | |
| Purchase of horses..... | 750 00 | | |
| Repairing harness, wagons, etc..... | 450 00 | | |
| Horseshoeing and horse-feed..... | 1,800 00 | | |
| Foreman and laborers in distributing disinfectants..... | 2,500 00 | | |
| Reserve Fund for epidemics and abating nuisances requiring summary removal by the Board..... | \$50,000 00 | 50,000 00 | |
| | | \$231,867 50 | |

REVISED APPROPRIATION FOR THE YEAR 1873, AUTHORIZED BY THE BOARD OF ESTIMATES AND APPORTIONMENT, JUNE 30, 1873.

| | | | |
|--|--------------------|--------------------|---------------------|
| Amount of Pay-Rolls and Bills of Indebtedness forwarded to the Comptroller for payment previous to May 11, 1873, by the Board of Health of the Health Department, organized under the Charter of 1870..... | | | \$66,760 62 |
| Pay-Rolls and other expenses for month of May (estimated)..... | | | 13,500 00 |
| Total to June 1, 1873..... | | | \$80,260 62 |
| SALARIES FROM AND AFTER JUNE 1, 1873. | | | |
| <i>Commissioners:</i> | PER ANNUM. | FOR 7 Mos. | |
| President..... | \$6,500 00 | | |
| Commissioner of Health..... | 5,000 00 | | |
| | \$11,500 00 | \$6,708 33 | |
| <i>Sanitary Bureau:</i> | | | |
| Sanitary Superintendent..... | \$6,000 00 | | |
| Assistant Sanitary Superintendent..... | 3,000 00 | | |
| 10 Sanitary Inspectors, at \$2,000 each..... | 20,000 00 | | |
| 12 Assistant Sanitary Inspectors, at \$1,500 each..... | 18,000 00 | | |
| 1 Clerk..... | 2,000 00 | | |
| 1 "..... | 1,800 00 | | |
| 1 "..... | 1,500 00 | | |
| 2 Clerks, at \$1,200 each..... | 2,400 00 | | |
| 1 Messenger..... | 600 00 | | |
| Chief of Disinfecting Corps..... | 1,500 00 | | |
| 3 Men in Disinfecting Corps, at \$1,200 each..... | 3,600 00 | | |
| 2 " " " at \$1,080 "..... | 2,160 00 | | |
| 1 Stable-keeper..... | 900 00 | | |
| | \$63,460 00 | 37,018 33 | |
| <i>Bureau of Vital Statistics:</i> | | | |
| Register of Records..... | \$4,000 00 | | |
| Deputy Register of Records..... | 2,500 00 | | |
| 1 Clerk..... | 2,000 00 | | |
| 3 Clerks, at \$1,800 each..... | 5,400 00 | | |
| 3 " " at \$1,500 "..... | 4,500 00 | | |
| 4 " " at \$1,200 "..... | 4,800 00 | | |
| | \$23,200 00 | 13,533 33 | |
| <i>Office of the Board, Secretary's Department:</i> | | | |
| Secretary..... | \$6,000 00 | | |
| Auditing Clerk..... | 2,400 00 | | |
| 1 Clerk..... | 2,000 00 | | |
| 1 "..... | 1,800 00 | | |
| 1 "..... | 1,500 00 | | |
| 1 "..... | 1,200 00 | | |
| 1 Janitor..... | 900 00 | | |
| 1 Messenger..... | 600 00 | | |
| 1 Sweeper..... | 600 00 | | |
| 1 Laborer, 3 months, at \$50 per month..... | 150 00 | | |
| | \$17,150 00 | 10,004 16 | |
| <i>Office of the Board, Attorney's Department:</i> | | | |
| Attorney..... | \$2,500 00 | | |
| Chief Clerk..... | 3,500 00 | | |
| 1 Clerk..... | 1,800 00 | | |
| 1 "..... | 1,500 00 | | |
| 1 "..... | 1,200 00 | | |
| | \$10,500 00 | 6,125 00 | |
| Salaries, June 1 to December 31, 1873..... | | \$73,389 15 | 73,389 15 |
| CONTINGENT EXPENSES: | | | |
| Vaccine virus..... | | \$3,000 00 | |
| Fuel and gas..... | | 1,000 00 | |
| Carriage-hire..... | | 100 00 | |
| Stenography..... | | 100 00 | |
| Ice..... | | 100 00 | |
| Post-Office stamps..... | | 200 00 | |
| Incidentals..... | | 500 00 | |
| | | \$5,000 00 | 5,000 00 |
| Amount carried forward..... | | | \$158,649 77 |

REVISED APPROPRIATION.—(Continued.)

| | PER ANNUM. | FOR 7 Mos. | |
|---|-------------|------------|--------------|
| Amount brought forward | | | \$158,649 77 |
| STATIONERY AND PRINTING: | | | |
| Advertising | | \$200 00 | |
| Blanks | | 2,000 00 | |
| Blank-books | | 1,000 00 | |
| Stationery | | 1,000 00 | |
| Printing in general, including Annual Report | | 3,000 00 | |
| | | \$7,200 00 | 7,200 00 |
| DISINFECTION: | | | |
| Disinfectants | | \$4,000 00 | |
| Repairs of harness and wagons | | 300 00 | |
| Horseshoeing and horse-feed | | 1,200 00 | |
| Laborers and teams in distributing disinfectants | | 2,000 00 | |
| | | \$7,500 00 | 7,500 00 |
| Law expenses, Marshal's fees, etc. | | \$4,500 00 | 4,500 00 |
| For Special Contingencies for epidemics and nuisances requiring removal by the Board of Health | \$20,000 00 | | 20,000 00 |
| Amount of contract for removal of offal and dead ani- mals | 15,000 00 | | 15,000 00 |
| For removing night-soil, at \$1 50 per day, to February 6, 1873 | | | 4,950 00 |
| Removing night-soil, as per contract with Frank Swift, at \$634 per week, from March 21, 1873 | | | 26,019 42 |
| Total appropriated | | | \$243,819 19 |
| Actual expenditures for the year 1873 | | | 215,227 04 |
| Unexpended balance | | | \$28,592 15 |
| Unexpended balance of appropriation for 1872 | | | 12,475 28 |
| | | | \$41,067 33 |

LAWS RELATING TO THE BOARD OF HEALTH.

CHAPTER 74, 1866.

AN ACT to create a Metropolitan Sanitary District and Board of Health therein, for the Preservation of Life and Health, and to prevent the Spread of Disease. Passed February 26, 1866, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. So much of the territory of the State of New York, and of the cities, villages, and towns thereof, as now composes the Metropolitan Police District of the State of New York, shall constitute, and is hereby declared, a district to be known as "The Metropolitan Sanitary District of the State of New York."

SEC. 2. Within fifteen days after the passage of this act the Governor shall nominate, and, by and with the consent of the Senate, shall appoint four suitable persons, residents of said District, three of whom must be physicians, and one of whom shall be a resident of the city of Brooklyn, who, with the Health Officer of the port of New York for the time being, shall be Sanitary Commissioners in and for said District; and the said Sanitary Commissioners, together with the Commissioners, for any time being, of the Metropolitan Police (not exceeding four, and being the present four and their successors), shall constitute a Board of Health for the said Metropolitan Sanitary District, and said Board shall be denominated "The Metropolitan Board of Health;" any five members of which, at any regularly called or adjourned meeting, shall organize and constitute a quorum for the transaction of business; and the phrase "said board," or "the board," when used herein, unless clearly referring to some other body, shall be construed to mean said "The Metropolitan Board of Health;" and the phrase "said district," or "the district," unless the same clearly refers to some other district, shall be construed to refer to said "The Metropolitan Sanitary District of the State of New York." And the term "sanitary commissioners" shall refer to the members of said board who are not also members of the Board of Police, and whenever the words "police," "board of police," or "police commissioners," are used in this act, they shall be taken and construed to mean the "Board of Metropolitan Police Commissioners of the Metropolitan Police District of the State of New York." And whenever the words "place, matter, or thing," or either two of said words, are used in this act, they shall, unless the sense plainly requires a different construction, be construed to include whatever is embraced in the enumeration with which they are connected in either and both clauses of the fourteenth section of this act.

SEC. 3. The said four persons so appointed shall hold office as such Sanitary Commissioners respectively for the terms following, namely: One for one year, one for two years, one for three years, and one for four years, and until their successors are appointed and qualified. Immediately after the appointment of said four persons as aforesaid, they shall meet in the office of the Secretary of State, and shall proceed, under his direction, to deter-

mine by lot which of them shall hold, for the respective terms of one, two, three, and four years, the said office of Sanitary Commissioner. Immediately, and before entering upon the duties of the office, they shall take the oath prescribed for State officers by the Constitution of the State, and shall file the same in the office of the Secretary of State, who, upon receiving the said oath of office, shall issue to each of said commissioners a certificate of appointment for his respective term of office so determined as aforesaid; upon receiving which they shall severally be and become Sanitary Commissioners, and shall possess and exercise the powers and perform the duties of said Board as defined in this act.

SEC. 4. The term of office of each of the said Sanitary Commissioners, after the expiration of the terms aforesaid, shall be four years, and they shall be appointed upon the nomination of the Governor, by and with the advice and consent of the Senate. Any vacancies that may occur by reason of death, resignation, removal from office, or otherwise, shall be filled in like manner. But if any vacancy shall occur during the recess of the Senate, the Governor may fill such vacancy by appointment, and the person so appointed shall hold office until twenty days after the next meeting of the Senate.

SEC. 5. ¹ Immediately after the four appointed Sanitary Commissioners shall have taken the oath of office as above provided, they shall meet with the Commissioners of the Metropolitan Police, and the Commissioners of Metropolitan Police with them, and the Health Officer of the port of New York, and organize as a Board of Health by electing one of said Board to be President, and one of said Board to be Treasurer thereof, and by appointing a proper person to be Secretary of said Board. And the successive Presidents of said Board of Health shall be annually elected by said Board from the members thereof, and the successive Treasurers shall be members of said Board; but the Secretary shall not be a member of the Board. The Treasurer and Secretary shall respectively continue in office as such until removed by the election of a successor or otherwise. The said Sanitary Commissioners shall each receive a salary of two thousand five hundred dollars a year; and each Police Commissioner who may be a member of said Board of Health, and a Health Officer, shall as such receive a salary of five hundred dollars a year; ² and the member of said Board of Health, who acts as Treasurer, shall receive an additional compensation of five hundred dollars a year for his services as Treasurer. All salaries allowed under this law shall be payable as the Board shall provide. But for every regular or special meeting of said Board which any Sanitary Commissioner or the Secretary shall fail to attend, there shall be deducted from the salary of the person so failing the sum of ten dollars; and for every failure of a Police Commissioner or of said Health Officer to attend any such meeting, there shall be deducted from his said salary the sum of two dollars; but these provisions shall not apply to any adjourned meeting, and it shall be the duty of the Treasurer to see that all such deductions are made before payments of said salaries. The Board may appoint a Corresponding Secretary at an annual salary not exceeding one thousand dollars.

SEC. 6. The President of the said Board shall preside and preserve order at the meetings of the Board; and, in case of the absence of or inability of the regular Secretary to attend, he shall appoint a Secretary *pro tem.*, who, for the time being, may perform any duty of the Secretary.³ The President shall have all the power and authority given to the "City Inspector," in the six hundred and forty-sixth chapter of the laws of eighteen hundred and sixty-five (passed May first, eighteen hundred and sixty-five), in respect to the making, awarding, or executing of a contract or contracts for street-cleaning, or any matter thereto pertaining. But nothing herein contained shall be construed as affecting in any manner the validity of any contract heretofore made by virtue of said act. And the Board at any time, in the

¹ As amended, Laws of 1866, chapter 686, section 4.

² Amended, Laws of 1867, chapter 956, section 16.

³ Amended, Laws of 1867, chapter 956, section 1.

absence of the President or Secretary, may elect a President or Secretary *pro tem.* from their number, who shall exercise the powers of such officers respectively.¹ The Secretary shall, subject to the direction of said Board, keep and authenticate its acts, records, papers, and proceedings, preserve its books and papers, conduct its correspondence, and aid in accomplishing the purposes of this law, as the Board may direct; and said officer (as well as the other officers and agents appointed by said Board) shall be subject to removal by the Board for cause, to be entered in its minutes, and said Board may appoint his or their successor; and his salary, to be fixed from time to time by the Board, shall not exceed three thousand five hundred dollars annually. Said Board may design and adopt a seal and use the same in the authentication of its orders and proceedings, commissioning its officers and agents, and otherwise, as the rules of the Board may provide.

SEC. 7. The Treasurer of said Board shall be the fiscal officer of the Board. He shall hold, and, on check and voucher, duly disburse, as said Board may order, and for the purposes of and in conformity to this act, the moneys he may receive or belonging to the fund herein provided; and shall deposit the same when paid to him by the Treasurer of the State of New York, or otherwise, and pending the regular disbursement thereof, in a bank or banks in the city of New York designated by such last-named officer. He shall execute a bond, with not less than two sureties, conditioned in a penalty of thirty thousand dollars, to the people of the State of New York, for the faithful discharge of his duties as such Treasurer. The sureties, not less than two in number, shall justify before a Justice of the Supreme Court, in the aggregate in a sum not less than twice the last-named amount; but before the said Treasurer shall enter upon his duties, the said bond shall be approved by and filed with the Controller of the State. The Treasurer shall keep, or cause to be kept, books showing all his receipts and payments, and shall preserve his vouchers therefor; and should any collections ever be made on such bond, or in suits or proceedings, or otherwise, by said Board, the amount thereof shall be received and accounted for by the Treasurer, or in case of collection on his bond, by the recipient thereof, to the State Treasurer, and be deposited in the bank or banks aforesaid, applied for the legitimate uses of said Board, or as herein elsewhere provided.

SEC. 8. Any Sanitary Commissioner of said Board who shall accept or hold any political or municipal office during his term of office, or shall be publicly nominated for any office elective by the people, and shall not, within ten days succeeding his knowledge thereof, publicly decline the said nomination, shall, in either case, be deemed thereby to have vacated his membership of said Board, and the vacancy so created shall be filled as is provided as to other vacancies; but membership of this Board shall not affect membership in the Board of Police or the office of Health Officer.

SEC. 9. Any member of the said Board may, at any time, be removed from office by the Governor, under the provisions of the laws relative to the removal of sheriffs from office, which provisions are hereby extended so as to relate to the members of said Board; but before such removal, such member shall be served with specific charges, stating the dereliction of duty complained of, and shall be afforded an adequate opportunity to publicly answer the same and to make his defense thereto, upon reasonable notice to be given him; and on the application of the Governor, or the party charged, any Judge of the Supreme Court shall have as full power and authority to compel the attendance and examination of witnesses, touching such charges or defense, and the production of books and papers relating thereto, at the place and time where the aforesaid proceedings or hearing may take place, as is given herein in respect to the examination of witnesses, or the production of papers, on the application of said Board, in the fourteenth section of this act. And it shall be the duty of such

¹ Amended, Laws of 1867, chapter 956, section 1.

judge (and of any other judge named in said section) to exercise such authority, and to take or supervise the taking of such examination to be used on the hearing of such charges or defense. And if, by removals or other cause, the members of the Board shall be less than five, but not less than three, the existing members shall still constitute a Board, competent, by unanimous action, to exercise the powers delegated by this act.

SEC. 10. Said Board shall have power to create a chief executive office, and appoint a suitable person to fill such office, who shall be an experienced and skillful physician, resident in said district, whose full name of office shall be, "The Sanitary Superintendent of the Metropolitan Sanitary District of the State of New York," but he may be designated as "Sanitary Superintendent." It shall be the duty of said officer, as he may be directed, to execute, or cause to be executed, the orders of said Board, and generally, according to its instruction, to exercise a practical supervision in respect to the inspectors, agents, and other persons other than the Secretary, Treasurer, and members of the Board, or the members of the police force who may exercise any authority under this act; and said officer shall devote his services to the aforesaid purposes as the Board may from time to time direct. He shall be entitled to receive a salary to be fixed by the Board, which shall not exceed five thousand dollars annually.¹ Such Superintendent shall make reports weekly, or oftener, if directed by the Board, in writing, stating generally his own action and that of his subordinates, and the condition of the public health in said district, and any causes endangering life or health that have come to his knowledge during said period. And said Board may appoint two "Assistant Sanitary Superintendents," one of whom shall be a resident of the city of Brooklyn, and shall principally perform his duties in that city, whose duties shall be of the same nature as those of the last-named officer; and their salaries, not to exceed thirty-five hundred dollars a year each, shall be fixed by the Board.²

SEC. 11. Said Board may appoint and commission such number of "sanitary inspectors" as the Board may deem needful, not exceeding fifteen, and from time to time prescribe the duties and salaries³ of each of said inspectors and the place of their performance, and of all other persons exercising any authority under said Board, except as herein specially provided; but at least ten of such inspectors shall be physicians of skill and of practical professional experience in said district, and the residue thereof shall be selected with reference to their practical knowledge of scientific or sanitary matters, which may especially qualify them for such inspectors. Each of such inspectors shall, twice in each week, make a written report to said Board, stating what duties he has performed and where he has performed them, and also such facts as have come to his knowledge, connected with the purposes of this act, as are by him deemed worthy the attention of said Board or as its regulations may require of him; and such, and the other reports herein elsewhere mentioned, shall be preserved among the records of said Board. The Board may also employ such number of clerks and servants, and fix their salaries, and take such legal advice and employ such attorneys, as may be necessary to the efficient, safe, and economical discharge of the duties by this act devolved on said Board. And may also rent, lease, fit up and furnish such offices as the convenience of the Board, its officers, agents, and employés, and the prudent and proper discharge of the duties of the Board, may require; and may make such incidental and additional expenditures, having due regard to economy, as the purposes and provisions of this act and the dangers to life and public health may justify or require; and may provide that any failure of an officer, agent, or employé of the Board to duly fulfill his engagements or discharge his duty, shall cause a forfeiture of the whole or any less portion of the salary or compensation of such officer, agent, or employé, as the rules or practice of the Board may provide. And the Board of Police is authorized to allow the Board of Health to occupy a portion of its premises.

¹ Amended, Laws of 1867, chapter 936, section 15.

² Ibid.

³ Ibid.

¹ SEC. 12. The authority, duty, and powers, whether given by any law, or by any ordinance made thereunder, heretofore (for the purpose of preserving or protecting life or health, or preventing disease) conferred upon or now belonging to, or being exercised by the Board of Health, or the Board of Public Health of or in the city of New York, or of or in the city of Brooklyn, or elsewhere in said District, the Mayor and Common Council of either of said cities, the Mayor of the city of New York, by and with the advice and consent of the Board of Aldermen, the President of the Board of Aldermen, the President of the Board of Assistant Aldermen (or Councilmen), the resident physician, the Health Commissioner, the Mayor and the Commissioners, the Commissioners of Health, the City Inspector (or the City Inspector's department), of either of said cities; or conferred upon or now belonging to any two or more of the said bodies or officers, or last-named boards or departments, or to any Board of Health or health officer or agent in said District, or exercised by any officer or person appointed by or deriving authority from any one or more of the bodies, officers, departments, or last-named boards (so far as said powers and authority can be exercised and such duty performed by the Board hereby created, without interference with the proper discharge of the duties, other than sanitary duties, heretofore imposed upon the Board of Metropolitan Police), are hereby exclusively conferred upon, and shall hereafter be exclusively exercised by the aforesaid "The Metropolitan Board of Health," the members and officers thereof, as herein provided; and the same are to be exercised as herein set forth (and to such an extent, and in such place and manner, as said Board may provide), for the greater protection and security of health and life in said District, and the appropriate parts thereof;² and after this act goes into effect, no salary or compensation shall be paid to, or fees demanded by, or expense ordered to be incurred by, any officer, board, or agent, or in respect to any service, expenditure, or employment, under the authority of any health law, ordinance, regulation, or appointment of or in said cities, or any part of said District, unless such salary, expenditure, employment, fees, or expense, shall be authorized by the Board hereby created and contemplated by the provisions of this act. And the aforesaid power, duty, and authority, hereby transferred to and conferred upon said Board, shall be held to include all the power, duty, and authority given or conferred, or purporting to be given or to be conferred, to or upon any person, officer, or board, in or by any ordinance contained or purporting to be contained in the first ten chapters of ordinances, being numbered from one to ten inclusive, in a compilation of "Laws and Ordinances relative to the Preservation of the Public Health in the City of New York," and purporting to be published under the authority and by the direction of the Mayor and Commissioners of Health of said city, in the year one thousand eight hundred and sixty, and by any existing amendments and additions thereto. But no fees of any kind shall be charged for the performance of any duties imposed by said ordinances. And said Board shall also possess (and may exercise by its own agents, or by order to be executed by said Board of Police), throughout said District, all the power and authority for the protection of life or health, or the care or preservation of health, or persons diseased or threatened therewith, conferred by any law or ordinance relating to any part of said District, and especially by the act of the seventeenth of April, eighteen hundred and fifty-four, being the three hundred and eighty-fourth chapter of the Laws of eighteen hundred and fifty-four, upon the Mayor, Common Council, Board of Health, or the health officers (or upon any two or more of them, or other officers), in said act mentioned. But the powers and authority in this section given shall not be held to interfere with the powers and duties of the Croton Aqueduct Board, Street Commissioner, Superintendent of Unsafe Buildings, Controller of New York City, or the Board authorized to contract for street-cleaning (under the law of eighteen hundred and sixty-five); nor shall any thing in the aforesaid laws or ordinances contained be construed as a limitation of any power in this bill elsewhere given to the said Board, or to limit the penalties and expenses it may enforce or collect; and all the power recited or given by said laws or ordi-

¹ See Laws of 1867, chapter 956, section 10.

² As amended, Laws of 1866, chapter 656, section 8.

nances shall belong wholly to said Board, who may exercise the same without the advice, assent, or coöperation of any municipal board or officer, and in any manner not inconsistent with the other sections of this law, without being limited to the means or by the procedure in said ordinances stated. And no municipal body or other authority in said District shall hereafter create or employ any officer or agent, or incur any expense, under any of said (or other) health laws or ordinances, or in respect of any matter concerning which said Board is by this act given control or jurisdiction. All the aforesaid powers are to be possessed and exercised as fully as if herein repeated and separately conferred upon said Board. And the powers of said Board shall be construed to include the ordering or enforcing, in the same manner as other orders are provided to be enforced, the repairs of buildings, houses, and other structures; the regulation and control of all public markets (so far as relates to the cleanliness, ventilation, and drainage thereof, and to the prevention of the sale or offering for sale of improper articles therein); the removal of any obstruction, matter, or thing, in or upon the public streets, sidewalks, or places,¹ which shall be in their opinion liable to lead to results detrimental to the public, or dangerous to life or health; the regulation and licensing of scavengers; the prevention of accidents by which life or health may be endangered; and, generally, the abating of all nuisances.

SEC. 13. Said Board shall possess all the authority and be charged with all the duties conferred or imposed on the City Inspector of the city of New York, by the act passed on the second day of April, one thousand eight hundred and fifty-three, or by any and all acts relative to births, deaths, or marriages; and the duty of all persons and officers in any such (or any aforesaid) acts mentioned shall hereafter be the same, in respect to said Board, as if said law or laws had contained the name of said Board instead of that of the City Inspector of the city of New York or other officer, and said acts are hereby extended throughout said district;² but the powers now possessed by the City Inspector with reference to the inspection of weights and measures, are hereby conferred upon the Mayor of the city of New York. And it shall be the duty of said Inspector, and of whoever may have possession or control thereof, to transfer and deliver to said Board all public books, records, statistics, and papers, in his or their possession, or under his or their official and personal control, and to give such information to said Board as he or his department may possess relative to any matter in this section, or in either of said last-mentioned laws referred to, and his authority and duty under said laws shall cease when this act goes into effect, and the Justices of the Supreme Court shall have jurisdiction to enforce this provision by mandamus. And said Board shall perform all the duties by this section imposed, as a part of its regular duties, and no fees shall be demanded or received by reason thereof or any thing in said act or acts contained. It shall be the duty of the next of kin of any person deceased, and of each person being with such deceased person, at his or her death, and of the person occupying or living in any house or premises in or on which any person may die, and of the parents of any child born in said district (and if there be no parent alive that has made such report, then of the next of kin of such child born), and of every person present at such birth, within five days after such birth or death, to report to said Board in writing, so far as known, the date, ward, and street, number of said birth, and the sex and color of such child born, and the names of the parents, and the age, color, nativity, last occupation, and cause of death of such deceased person, and the ward and the street, and place of such person's death and last residence. And for every omission of any person to make and keep the registry required by the acts referred to in this section, and for every omission to report a written copy of the same to said Board within ten days after any birth or marriage provided to be registered, and for every omission by any person to make the report of any death or birth, with the particulars as herein required, any person guilty of said omission shall be liable to pay a fine of ten dollars, which may be sued for and recovered in the name of said Board, for the benefit of said Board. But no

¹ See Laws of 1867, chapter 956, section 6.

² Amended, Laws of 1867, chapter 956, section 11.

person shall be liable for such fine for not making the report herein required if he or she shall prove that such report had been made to the Board by some other person before suit brought for such penalty, or that he or she was ignorant of such birth or death.¹

SEC. 14. First.—Whenever any building, erection, excavation, premises, business pursuit, matter or thing, or the sewerage, drainage, or ventilation thereof, in said District, shall, in the opinion of said Board (whether as a whole or in any particular), be in a condition or in effect dangerous to life or health, said Board may take and file among its records what it shall regard as sufficient proof to authorize its declaration that the same, to the extent it may specify, is a public nuisance, or dangerous to life or health; and said Board may thereupon enter in its records the same as a nuisance, and order the same to be removed, abated, suspended, altered, or otherwise improved or purified, as said order shall specify; and shall cause said order, before its execution, to be served on the owner, occupant, or tenant thereof, or some of them, who to said Board may appear most directly interested in its execution, provided said parties, or any of them, are in said District and can be found, and such service can be conveniently made,² and if any party so served (or intended to be according to this law) shall, before its execution is commenced, or within three days after such service or attempted service, apply to said Board, or the President thereof, to have said order or its execution stayed or modified, it shall then be the duty of said Board³ to temporarily suspend or modify said order or the execution thereof (save in cases of imminent danger from impending pestilence, when said Board may exercise extraordinary powers, as herein elsewhere specified), and to give such party or parties together, as the case in the opinion of the Board may require, a reasonable and fair opportunity to be heard before said Board, and to present facts and proofs (according to the rules or directions of said Board) against said declaration and the execution of said order, or in favor of its modification, according to the regulations of the Board,⁴ and the Board shall enter in its minutes such facts and proofs as it may receive, and its proceedings on such hearing, and any other proof it may take; and thereafter may rescind, modify, or reaffirm its said declaration and order, and require execution of said original, or of a new or modified order to be made, in such form and effect as it may finally determine.⁵

Second.—Said Board may order or cause any excavation, erection, vehicle, vessel, watercraft, room, building, place, sewer, pipe, passage, premises, ground, matter, or thing (in said District or adjacent waters), regarded by said Board as in a condition dangerous or detrimental to life or health, to be purified, cleaned, disinfected, altered, or improved; and may also order any substance, matter, or thing, being or left in any street, alley, water, excavation, building, erection, place, or grounds (whether such place where the same may be, be public or private), and which said Board may regard as dangerous or detrimental to life or health, to be speedily removed to some proper place; and may designate or provide a place to which the same shall be removed, when no such adequate or proper place, in the judgment of said Board, is already provided. The said Board may require the said Board of Police to execute any of the orders referred to in this act. It shall be the duty of the Board of Police to execute the orders of the said Board of Health, and the said Board of Police may employ the necessary persons and means about such execution. Or the said Board of Health, if it shall consider the public health or interests so to require, may execute such orders through its own officers or persons, and means to be engaged by the said Board of Health; and about the execution of the said orders, both the said Board of Police and the said Board of Health shall have, each, as well the authority conferred by this act as all the powers and authority conferred by the fifty-third and fifty-fourth sections of the Metropolitan Police act, passed

¹ See Laws of 1867, chapter 956, section 11.

² See Laws of 1867, chapter 956, section 5; and Laws of 1867, chapter 903, section 9.

³ Amended, Laws of 1866, chapter 656, section 6.

⁴ See Laws of 1867, chapter 956, section 12.

⁵ Amended, Laws of 1866, chapter 656, section 6; Laws of 1867, chapter 956, section 10.

on the twenty-fifth day of April, eighteen hundred and sixty-four, and of any amendments made to said act or to be made, enlarging such authority; and all powers and authority possessed and exercised by said Board of Police under said act pertaining to sanitary matters, or in conflict with the objects and purposes of this act, shall hereafter be enjoyed, possessed, and exercised by said Board of Health, and the orders of the kind in this section secondly mentioned shall, if the proper person or persons are known to the Board, and can be conveniently found in said District, on whom to make the service, be served upon one or more of the owners, occupants, lessees, or tenants of the subject-matter to which said order relates, or upon one or more of the persons whose duty it was to have done what is therein required to be done, as the case may render just and proper in the opinion of said Board;¹ and if said order is not complied with, or as far complied with as the Board may regard as reasonable, within five days after such service or attempted service, or within any shorter time which, in case of pestilence, the Board may have designated, or is not thereafter speedily and fully executed, then any such order may be executed as herein elsewhere provided in regard to any of the orders of said Board. And if personal service of any aforesaid order cannot be made under this section by reason of absence from said District, or inability to find such persons therein, to be shown by the official certificates of the officer having such order to serve, then service may be made through the mail, or by a copy left at the residence or place of business of the person sought to be served, with a person of suitable age and discretion, and the expenses attending the execution of any and all such orders respectively shall be a several and joint personal charge against each of the owners or part owners, and each of the lessees and occupants of the building, business, place, property, matter, or thing, to which said order relates, and in respect of which said expenses were incurred;² and also against every person or body who was by law or contract bound to do that in regard to such business, place, street, property, matter, or thing, which said order requires, and said expenses shall also be a lien on all rent and compensation due, or to grow due, for the use of any place, room, building, premises, matter, or thing, to which said order relates and in respect of which said expenses were incurred; and also,³ a lien on all compensation due or to grow due for the cleaning of any street, place, ground, or thing, or for the cleansing (or removal) of any matter, thing, or place, the failure to do which by the party bound so to do, or the doing of the same in whole or in part by order of said Board, was the cause or occasion of any such order or expense.⁴ Said Board of Health, its assignee, or the party who has, under its order or that of the Board of Police, acting thereunder, incurred said expense, or has rendered service for which payment is due, and as the rules of said Board of Health may provide, may institute and maintain a suit against any one herein declared liable for expenses as aforesaid, or against any person, firm, or corporation, owing, or who may owe, such rent or compensation, and may recover the expenses so incurred under any order aforesaid.⁵ And only one or more of such parties liable or interested may be made parties to such action as the Board may elect; but the parties made responsible as aforesaid for such expenses shall be liable to contribute or to make payment as between themselves, in respect of such expenses and of any sum recovered for such expenses or compensation, or by any party paid on account thereof, according to the legal or equitable obligation existing between them. And it is hereby declared to be the duty of every owner and part owner and person interested, and of every lessee, tenant, and occupant of or in any place, water, ground, room, stall, apartment, building, erection, vessel, vehicle, matter, and thing, in said District, and of every person conducting or interested in business therein or thereat, and of every person who has undertaken to clean any place, ground, or street therein, and of every person, public officer, and Board having charge of any ground, place, building, or erection therein, to keep,

¹ Amended, Laws of 1867, chapter 956, section 5; chapter 908 section 9.

² See Laws of 1867, chapter 956, section 13.

³ As amended, Laws of 1866, chapter 686, section 5.

⁴ See Laws of 1867, chapter 956, section 13.

⁵ See Laws of 1867, chapter 956, section 13.

place, and preserve the same, and every part, and the sewerage, drainage, and ventilation thereof, in such condition, and to conduct the same in such manner, that it shall not be dangerous or prejudicial to life or health. And in any suit in this action, or elsewhere in this act, authorized to be brought, the right of said Board or the Board of Police to make any order or cause the execution thereof, shall be presumed. Any member of the police force, and every inspector or officer of said Board of Health, as the regulations of either of said Boards may respectively provide relative to its own subordinates, may arrest any person who shall in view of such member of officer violate, or do or be engaged in doing or committing in said District any act or thing forbidden by this act, or by any law or ordinance, the authority conferred by which is given to said Board of Health, or who shall in such presence resist, or to be engaged in resisting, the enforcement of any of said orders of said Board, or of the Board of Police, pursuant thereto. And any person so arrested shall be thereafter treated and disposed of as any other person duly arrested for a misdemeanor. And said Board of Health, having first entered on its minutes, or filed in its records, what it may regard as adequate proof of a violation or resistance, by any person in said District, of any such law, ordinance, or order, may order (by its warrant, under its seal and attested by the signature of its president and secretary, and indicating, as far as conveniently practicable, the time, place, and nature of the offense committed) the arrest of any such person, and such order of arrest shall be of the same effect and shall be executed as a warrant from a justice or judge, duly issued; and the party arrested shall be taken before a magistrate, and thereupon and thereafter shall by all officers be treated as being, and have the rights and liability of a party, under arrest by order of the proper officer or tribunal, for a misdemeanor of the nature indicated in the said order of arrest. Proofs, affidavits, and examinations as to any matter under this act may be taken by or before one or more members of the Board, or other person, as the Board shall authorize; and the secretary, the Sanitary and Assistant Superintendents, and any member of said Board, shall, severally, have authority to administer oaths in such matters, and any person guilty of willfully testifying falsely shall incur all the pains and penalties of perjury. Any Judge of the Supreme Court of any judicial district, wholly or partly within said Sanitary District, or who is holding court or chambers therein, upon the written application of said Board or its president, to be made by or through its attorney or counsel, may issue his order by him subscribed, for the examination without unreasonable delay, by or before such justice, of any person or persons, and the production of books and papers, or the inspection and taking of copies of the whole or parts thereof, at a time and place within said District, and in said order to be named; and it shall be the duty of such justice to take or superintend such examination, which shall be under oath, and shall be signed by the party or parties examined and be certified by said judge, and with any copies of books or papers be delivered to said Board or its secretary, for the use of said Board. And such examination, and any proceeding connected therewith or under said order, may wholly or in part be had, conducted, or continued by or before any other of said judges, as well as that one thereof who made said order; and in and about the same, every such judge shall have as full power and authority to punish for contempt, and enforce obedience to his said or other order or directions respecting the matter aforesaid (or that of any other judge), as any such Judge of the Supreme Court may now have or shall possess to enforce obedience or punish contempt in any case or matter whatever. Such application shall name or describe the person or persons whose examination is sought (and so far as possible the books or papers desired to be inspected), and the matters or points affecting life or health in said District as to which said Board requests the same to take place, and the judge shall, on the proceedings decide what questions are pertinent and allowable in respect thereto, and shall require the same to be properly answered; but no answer of any person so examined shall be used in any criminal proceeding. Service of any order of any such judge may be made, and the same proved, in the same manner as the service of either an injunction or of a subpoena may now be made or proved. And it shall be the duty of all said judges to facilitate the early determination of the aforesaid proceedings.

Sec. 15. It shall be the duty of said Board to give all information that may be reasonably requested concerning any threatened danger to the public health, to the Health Officer of the port of New York, and to the Commissioners of Quarantine of said port, who shall give the like information to said Board; and said Board and said Officer and said Quarantine Commissioners shall, so far as legal and practicable, coöperate together to prevent the spread of disease, and for the protection of life, and for the promotion of health, within the sphere of their respective duties; and the authority and power of said Health Officer and Quarantine Commissioners are not by this act affected, save as last aforesaid, any thing herein elsewhere to the contrary notwithstanding.

Sec. 16. And said Board shall use all reasonable means for ascertaining the existence and cause of disease or peril to life or health, and for averting the same throughout said District; and shall promptly cause all proper information in possession of said Board to be sent to the local health authorities of any city, village, or town in this State which may request the same, and shall add thereto such useful suggestions as the experience of said Board may supply. And it is hereby made the duty of said health authorities to supply the like information and suggestions to said Metropolitan Board of Health. And said Board may take measures, and supply agents, and afford inducements and facilities for general and gratuitous vaccination and disinfection, and may afford medical relief to and among the poor of said District, as in its opinion the protection of the public health may require, and may remove or cause to be removed to a proper place within said District, to be by them designated, any person sick with small-pox or other contagious disease.¹ And in the presence of great and imminent peril to the public health in said District, by reason of impending pestilence, it shall be the duty of said Board to take such measures, and to do and order, and cause to be done, such acts and make such expenditures (beyond those duly estimated for or provided), for the preservation of the public health (though not herein elsewhere or otherwise authorized) as it may in good faith declare the public safety and health to demand, and the Governor of the State shall also in writing approve. But the exercise of this extraordinary power shall also, so far as it involves such excessive expenditures, require the written assent of at least six members of the Board. And such peril shall not be deemed to exist except when, and for such period of time as, the Governor of the State, together with said Board, shall declare by proclamation the same to exist or continue

Sec. 17. It shall be the duty of said Metropolitan Police Board (and of its officers and men, as the last-named Board shall direct) to promptly advise said Metropolitan Board of Health of all threatened danger to human life or health, and of all matters thought to demand its attention, and to regularly report to said Board of Health all violations of its rules and of said ordinances and of the health laws, and all useful sanitary information.² And said last-named Boards shall, so far as practical and appropriate, coöperate for the promotion of the public health, and the safety of human life in said District. And it shall be the duty of said Metropolitan Police Board, by and through its proper officers, agents, and men, to faithfully, and at the proper time enforce and execute the sanitary rules and regulations, and the orders of said Board of Health (made pursuant to the power of said Board of Health), upon the same being received in writing and duly authenticated, as said Board of Health may direct. And said Police Board is authorized to employ and use the appropriate persons and means, and to make the necessary and appropriate expenditures, for the execution and enforcement of said rules, orders, and regulations; and such expenditures, so far as the same may not be refunded or compensated by the means herein elsewhere provided, shall be paid as the other expenses of said Board of Health are paid. And in and about the execution of any order of the Board of Health or of the Board of Police made pursuant thereto, police officers and policemen shall have as ample power and authority as when obeying any order of or law

¹ Amended, Laws of 1867, chapter 956, section 3.

² Amended, Laws of 1867, chapter 956, section 2.

applicable to the Police Board, or as if acting under a special warrant of a justice or judge, duly issued, but for their conduct they shall be responsible to the Board of Police and not to the Board of Health.

SEC. 18. It shall be the duty of said Board, so far as it may be able without serious expense, to gather and preserve such information and facts relating to deaths, disease, and health, from other parts of this State, but especially in said District, as may be useful in the discharge of its duties, and contribute to the promotion of the health or the security or life in the State of New York. And it shall be the duty of all health officers and Boards of Health in the State to communicate to said Metropolitan Board of Health copies of their reports, and also such sanitary information as may be useful in said District. And said Board shall keep records of its acts and proceedings as a Board, and of the execution of its orders, so far as reasonably practicable.

SEC. 19. It shall be the duty of said Board, on or before the first Monday of December in each year, to make a report in writing to the Governor of this State, upon the sanitary condition and prospects of said District; and such reports shall set forth generally the statistics of births, deaths, and marriages, the action of said Board and of its officers and agents, and the names thereof for the past year, and may contain other useful information, and shall suggest any further legislative action or precautions deemed proper for the better protection of life and health, as well in other parts of the State as especially in said District. Such annual report may contain the sanitary rules and by-laws adopted by the Board hereby created. And the annual report of said Board shall also contain a detailed statement, under the oath of the Treasurer, of all money received and paid out by said Board, or its Treasurer, and a detailed statement of the manner of its expenditure during the year last past, and of the funds on hand. Said Board may annually have, not exceeding one thousand copies of said report, printed in an economical form, at the expense of said Board, and may distribute the same as shall be best adapted to promote the purposes of the law; but a copy of said report shall be sent to each duly-organized Board of Health in the State of New York which may have requested such copy, and shall have furnished said Board with a copy of its own annual report.

SEC. 20.¹ Said Board may enact such by-laws, rules, and regulations, as it may deem advisable, in harmony with the provisions and purposes of this act, and not inconsistent with the Constitution or laws of the State, nor the regulation of the action of said Board, its officers and agents, in the discharge of its and their duties, and, from time to time may alter, annul, or amend the same; and said Board shall, in like manner, for more fully carrying into effect the intents and purposes of this act, annually, on or before the fifth day of May in any year, make, and publish twice a week, for three successive weeks next thereafter, in two daily newspapers published in the city of New York, and in one daily newspaper published in the city of Brooklyn, "a code of health ordinances," for the protection of the public health in said District, to take effect on and after the first day of June next thereafter following, and to remain in full virtue, force, and effect, within said District, until altered, amended, or annulled,² and may at any time alter, amend, or annul the same, or any part thereof, upon publishing the same as altered and amended, or such portion as is so altered and amended, and for a like time as said original ordinances: but during the year eighteen hundred and sixty-six, such code of health ordinances shall take effect at any time after it shall have been published as aforesaid for two weeks; and every person, body, or corporation, that shall violate or not conform to any ordinance, rule, sanitary regulation, or special or general order of said Board, duly made, shall be liable to pay a penalty, not exceeding fifty dollars for each offense, which may be sued for and recovered by and in the name of said Board, with costs, before any

¹ As amended, Laws of 1866, chapter 656, section 1.

² Amended, Laws of 1867, chapter 956, section 10.

justice or tribunal in said District having jurisdiction of civil actions; ¹ and all such justices and tribunals shall take jurisdiction of such actions. And upon the complaint of any citizen of said District against any person for a violation of any rule, sanitary regulation, ordinance, or order, made to any police justice or magistrate having jurisdiction in criminal cases, such justice or magistrate shall order the arrest of any person against whom such complaint is made, as in any other case of a criminal offense, and, by his warrant, may require any policeman or constable to make such arrest, and may, after such arrest, proceed summarily to try such person for such alleged offense; but no such trial shall be had on any arrest made in the city of New York without sufficient notice thereof being first given to said Board, or its President. And upon an application in behalf of said Board, made before the trial is commenced, the trial of such person, together with the papers, shall be remitted to the Court of Special Sessions, upon which Court jurisdiction to try such persons is hereby conferred; but the right of any person to elect to be tried before a jury as it may now exist, is not affected by any thing herein contained. If such person shall, upon such trial, be found guilty, he or she may be fined in any amount not exceeding twenty-five dollars; and the payment thereof may be enforced in the same manner as is usual in other cases where fines are imposed. Such fines, when collected, shall be at once paid over to the Treasurer of said Board, to the credit of said Board. Reports of all such trials, and of fines imposed for violations of this act, or of the code of health ordinances hereby authorized, shall be made monthly to said Board by the justice before whom such trial is had. But nothing in this section contained shall be construed as in any manner limiting any powers, penalty, and punishment in this act elsewhere conferred.

SEC. 21. Said Board shall cause to be kept a general complaint-book, or several such books, in which may be entered by any person, in good faith, any complaints of a sanitary nature which such person thinks may be useful, with the name and residence of the complainant, and may give the name of the person or persons complained of, and the date of the entry of the complaint, and such suggestions of any remedy as may in good faith be thought appropriate, and said books shall be open to all reasonable public examination as the Board may authorize; and the Board shall cause the facts in regard to such complaints to be investigated, and the appropriate remedy to be applied.

SEC. 22. Said Board may, from time to time, engage a suitable person or persons to render sanitary engineering service, and to make or supervise practical and scientific sanitary investigations and examinations in said District requiring engineering skill, and to prepare plans and reports relative thereto. And it is hereby made the duty of all Boards, officers and agents having the control, charge, or custody of any public structure, work, ground, or erection, or of any plan, description, outline, drawing, or charts thereof, or relating thereto, made, kept, or controlled under any public authority, to permit and facilitate the examination and inspection, and the making of copies of the same by any officer or person thereto by said Board authorized; and the members of said Board, the Sanitary Superintendent or Assistant aforesaid, any of the aforesaid sanitary inspectors, and such other officer or person as may at any time be by said Board authorized, may, without fee or hinderance, enter, examine, and survey all grounds, erections, vehicles, structures, apartments, buildings, and places, in said District, including vessels of all kinds in the adjacent waters, and all cellars, sewers, passages, and excavations of every sort, and inspect the safety and sanitary condition, and make plans, drawings, and descriptions thereof, according to the order or regulations of said Board. Said Board may make and publish a report of the sanitary condition, and the result of the inspection of any place, matter, or thing, in said District so inspected, or otherwise as aforesaid, so far, as in the opinion of said Board, such publication may be useful. And said Board may provide a badge of metal, with a suitable inscription thereon, and direct and require it to be worn, in a position to be designated, by any person or officer under the

¹ See Laws of 1867, chapter 956, section 2.

authority of said Board, at such times and under such circumstances as the rules or by-laws of said Board shall direct. It shall be a misdemeanor, punishable by imprisonment in the county jail, or, in the city and county of New York, in the penitentiary, for not less than one year nor exceeding two years, or by a fine of not less than two hundred and fifty dollars, for any person not an officer under this act, to falsely represent himself as such, with a fraudulent design upon persons or property, or to have, use, wear, or display, without authority, any shield, or other insignia or emblem such as is worn by such officer. But no more than five thousand dollars in any one year shall be expended for sanitary engineering service.

SEC. 23. Said Board shall hold regular and special meetings as frequently as the proper and efficient discharge of its duties shall require; the same to be held (unless it shall be impracticable so to do, or shall be, for good reasons, otherwise ordered) at the regular office of said Board in the city of New York; and the rules or by-laws shall provide for the giving of proper notice of all such meetings to the members of the Board. And all meetings shall in every suit and proceeding be taken to have been duly called and regularly held, and all orders and proceedings to have been duly authorized, unless the contrary be proved.

SEC. 24. It shall be the duty of said Board of Health to aid in the enforcement of, and so far as practicable to enforce all laws of this State, applicable in said District, to the preservation of human life, or to the care, promotion, or protection of health; and said Board may exercise the authority given by said laws to enable it to discharge the duty hereby imposed; and this section is intended to include all laws relative to cleanliness, and to the use or sale of poisonous, unwholesome, deleterious, or adulterated drugs, medicine, or food. And said Board is authorized to require reports and information (at such times and of such facts, and generally of such nature and extent, relating to the safety of life and promotion of health as its by-laws or rules may provide), from all public dispensaries, hospitals, asylums, infirmaries, prisons, and schools, and from the managers, principals, and officers thereof; and from all the public institutions, their officers and managers, and from the proprietors, managers, lessees, and occupants of all theatres and other places of public resort or amusements in said District; but such reports and information shall only be required concerning matters or particulars in respect of which it may, in its opinion, need information, for the better discharge of its duties in said District. And it is hereby made the duty of the officers, institutions, and persons so called on, or referred to, to promptly give such information and make such reports, verbally, or in writing, as may be required by said Boards. And it is hereby further made the duty of all persons, officers, and Boards, to make to said Board of Health the reports and returns, and to give the information and afford to said Board the aid and facilities which by law or ordinance they or any of them were required to make, afford, or give to any person, officer, or Board, when any powers hereby conferred on said Board of Health were exercised by any other officer or Board.

SEC. 25. Such Board shall not be required to make any return or report, or give any information or advice, or do any act which, under the former administration of the health laws in said District, was made necessary or appropriate by reason of the various officers, boards, or agents, by or through which said laws were executed or administered, or the powers hereby conferred were exercised; and said Board may establish reasonable regulations as to the publicity of its records and proceedings; and may publish such information as may, in its opinion, be useful, concerning births, deaths, marriages, sickness, and the general sanitary condition of said District, or any matter, place, or thing therein.

SEC. 26. The department known as the "City Inspector's Department," and every bureau thereof, and so much of the twenty-seventh section of the four hundred and forty-sixth chapter of the laws of eighteen hundred and fifty-seven, as relate thereto, and each and every office in the said District relating to public health, or the duties of which are conferred on

said Board, except the Health Officer of the port of New York and the Board of Quarantine Commissioners and its officers, are hereby abolished. And no salary or compensation shall be due or paid by any officer or Board whatever, to any officer or agent or Board in said District for services to be rendered after this act goes into effect, under any law or ordinance concerning life or public health, except under this act and as authorized by the Board hereby created. And all other Boards and officers now existing in said District under or by virtue of any law or ordinance relating to public health, are hereby also abolished; and no compensation shall be paid to or in respect of the same for any service rendered after this law shall go into effect, save as said Board of Health shall authorize.

SEC. 27. All the sums of money provided or raised for meeting the expenses, compensations, and payments provided by this act, or that may be authorized by said Board (except penalties or other sums received and amounts collected by suit as herein provided), shall be paid into the Treasury of the State, and shall constitute a fund, to be, so far as needed, used by said Board in the performance of its duties and discharge of its obligations; and may and shall be paid therefrom, on the order of the Treasurer of said Board, as said Board may direct, and shall be applied and paid by the Treasurer of said Board only as this act and the regulations of said Board may authorize. And unless this Board shall otherwise specially provide, all salaries and compensation for services and expense shall, so far as is practicable, be paid quarterly. And any member or officer of said Board may, if a judge shall so order, be summarily examined upon an order (to be made on application and written affidavit on the oath of three freeholders of said District) requiring such examination, and signed by any Justice of the Supreme Court of the First Judicial District, and directing such examination to be publicly made, at the chambers of said justice, at a day and hour to be named, not less than forty-eight hours after personal service of said order, and such examination shall be confined to an inquiry into any alleged wrongful diversion or misapplication of any of said moneys or fund, or any other delinquency charged in said affidavit, touching their office or the discharge or neglect of duty of which it is alleged, in the application for said order, that such member of said Board or said officer has knowledge or information. And such member or officer shall answer such pertinent questions relative thereto as the judge shall direct, and the examination may be continued from time to time as such judge may order, but the answers of the party charged shall not be used against him on any criminal proceeding. The proceedings may be continued before any other judge in said District, and other witnesses, as well as the parties making such application, may, in the discretion of such judge, be compelled to attend and be examined touching such alleged delinquency; and such judge may publish any refusal to attend such examination or to answer any questions pursuant to his order as for and being a contempt of court. And such examination, affidavit, and orders, shall be filed in the office of the County Clerk of the county of New York. And in regard to this last examination and matters therewith connected, any such judge shall have all the powers and authority conferred in respect to the examination or proceedings mentioned in the fourteenth section hereof, as if herein repeated.

SEC. 28. The Mayor and Controller of the city of New York and the Mayor and Controller of the city of Brooklyn, together with the members of said Board, created by this act, shall, on reasonable notice from said Board, convene at the office of said Board of Health, as a Board of Estimate, a majority of whom shall form a quorum, and shall annually, on or before the first day of August, make up a financial estimate and statement, including all sums and expenses in arrear, and also any sum borrowed, as herein elsewhere provided for, of the sums required for the year, commencing on the first day of January ensuing, annually (above any sums on hand), for the expenses and proper support, and for the discharge or the duties of said Board, including the proper expenses and disbursements of said Board, and of the members or officers thereof in the discharge of their official duties, and for such other general or incidental expenses as may from time to time, in the judgment of such Board of

Estimate, become necessary, with the enumeration thereof. But the sums raised for the expenses of any year shall not exceed one hundred thousand dollars in amount, independently of such sums as may have been expended in the presence of great and imminent peril to the public health in said District by reason of impending pestilence, and independently of the sums herein elsewhere provided, to be paid by or recovered back from any person or corporation.¹ And the expenses for the remainder of the current year after the passage of this act, to be reckoned at the said rate of one hundred thousand dollars a year, independently of said extraordinary expenses, and of said sums to be paid or recovered back, shall be estimated and apportioned to the several cities, counties, and towns in said District as hereinafter provided, and collected in the next annual tax levies. Such estimate shall be accompanied by a written apportionment, made by said Board of Estimate, of the proportions of expenses applicable to and to be paid by each county, city, and town in said District. And in apportioning the salaries of the members of the Board, its officers, agents, and employés, the following rules shall be observed :

1. The salaries and compensation of all members of the Board appointed to this Board, other than the Health Officer, from any county, and of all officers, agents, and employés thereof, whose principal sphere of duty shall be in any county, shall be apportioned against and paid by such county.

2. The salary of the Health Officer, and all general, office, contingent, and other expenses of the Board, not included in the first class aforesaid, shall be apportioned against and paid by the respective counties and towns (or counties to which they belong) in the ratio of the taxable property, real and personal, of each, in said District, according to the assessment under which the last preceding taxes therein were respectively levied.

3. But no apportionment against any county (or town therein), other than the counties of New York and Kings, shall be made under the two foregoing clauses, unless as follows, that is to say: Each other county (and each of said towns) shall have apportioned against it and shall pay all disbursements and expenses arising, caused or ordered therein, to or by said Board, or for salaries, and services, or portions thereof, earned or rendered therein, as the regulations of said Board may provide; but such salaries and services will not include any portion of the salaries of the members of the Board or of its general officers.

4. It is further provided, in respect of each of said counties, that all the expenses caused by any act or any order of said Board, or the execution thereof in or for any particular county or part thereof, shall be apportioned to and be paid by said county or part thereof; and any sums collected in either shall be credited to such county or part thereof, unless the same was on account of expenses incurred in some other county, city, or town, and in that event it shall be credited thereto. The said estimate and statement shall, at least ten days before the first day of September in each year, be submitted to the committee of revision, composed of the Presidents of the Boards of Supervisors of the counties of New York, Kings, Westchester, and Richmond, and of the Presidents of the Board of Aldermen of the city of Brooklyn, and of the Supervisors of the respective towns of Newtown, Flushing, and Jamaica, in the county of Queens, who may meet, by a majority thereof, and consider and act upon the said estimate and enumeration, on or before the first Monday of September in each year. If the said committee of revision, on or before the second Monday of said September, shall object in writing to such estimate or apportionment, or any portion thereof, and so in writing, by said date, notify, or cause to be notified, the said Board of Estimate, it shall be the duty of the latter to immediately and carefully revise the same, and consider the same, and consider the said objections. If such committee shall fail to meet, or if said Board of Estimate shall adhere to their original action and estimate, or if they shall modify the same, but they shall not increase the same, then their final determination, apportionment, and action, shall be binding and conclusive upon all concerned. And the Board of Supervisors of the counties of New York, Kings, Westchester, Richmond, and Queens (the expenses in the last-named

¹ Amended, Laws of 1867, chapter 956, section 15.

county to be charged and collected in, and in respect of the property of the towns of, New-town, Flushing, and Jamaica), respectively,¹ are empowered and directed, annually, to order and cause to be raised and collected, by tax upon the estates, real and personal, subject to taxation according to law, within the said respective counties and towns, their respective proportions of the sums of money as aforesaid, annually estimated and as apportioned and finally determined upon, as said total expenses and estimate aforesaid. The sums of money so respectively raised, as provided for in this act, shall be, by the proper officers, immediately and without deduction, paid into the Treasury of the State, and shall constitute the separate fund herein elsewhere mentioned and provided, and be used only for the purposes of said Board, and shall be paid from the State Treasury, under such appropriate regulations as shall be agreed upon between the Comptroller of the State, the State Treasurer, and the Treasurer of said Board.

SEC. 29. The said Board may borrow on the credit of this act, and of the funds to be raised thereunder, such amounts (the borrowing of the same respectively to be first approved in writing by the Governor of the State) as may, in the opinion of said Board, be reasonably necessary and proper to enable it to discharge its duties and defray its expenses hereby authorized, up to the time when the requisite funds can be realized, for said Board and purposes, from the taxation and sources herein provided for and authorized; and such moneys so borrowed, with legal interest, shall be a charge upon and shall be repaid by the said counties and cities and towns in the proportion hereinbefore provided, and the amounts thereof shall, in addition to the requisite annual expense to secure a future annual fund, be included or allowed in the next or first annual estimate of the sums required and expenses as aforesaid, and shall, with interest, be included, and the amount, with interest collected in and with the tax in this act provided for, and the same shall go into the said fund, and shall from thence, by the Treasurer of the Board, be paid to or in favor of the parties entitled. And said Board may issue its certificates to those of whom it borrows money, as herein authorized, under its seal, and signed by its President and Secretary, and bearing interest at the rate of not more than seven per cent., and payable at a time not more than eighteen months from the date at which any sum may have been borrowed.²

SEC. 30. ³ Whoever shall violate any provisions of this act, or any order of said Board, made under the authority of the same or any by-law or ordinance therein referred to, or shall obstruct or interfere with any person in the execution of any order of said Board, or any order of the Board of Police, in pursuance or execution of the order of the Board of Health, or willfully omit to obey any such order, shall be guilty of a misdemeanor, and be liable to be indicted and punished for such offense; and in cases where it was made a misdemeanor to do or omit any act or thing, when any power or authority hereby conferred upon this Board was exercised by any other Board or officer or officers, the omission or doing of such, or a corresponding act or thing, which this act requires, or contemplates to be done or forbids, shall in like manner be a misdemeanor, and the offender shall be liable to indictment and punishment for the same. A willful omission or refusal of any individual, corporation, or body, to conform to any sanitary regulation of said Board, duly made for the protection of life, or the care, promotion, or preservation of health, pursuant to its power or authority, shall be a misdemeanor, and the person or officers guilty thereof shall be liable to indictment and punishment as for a misdemeanor. And all prosecutions and proceedings against any person for a misdemeanor under this act may be had or tried before any judge or tribunal having jurisdiction of any misdemeanor within said District, or within the town, city, or village, within which any such misdemeanor under this act was committed. And any person, corporation, or body, which may have willfully done or omitted any act or thing which is in

¹ As amended, Laws of 1867, chapter 956, section 4.

² Amended, Laws of 1867, chapter 956, section 10.

³ As amended, Laws of 1869, chapter 686, section 2.

this act, or any law or ordinance therein referred to, declared to be, or to subject the party guilty thereof to punishment for, a misdemeanor, shall, in addition thereto, be subject to a penalty of two hundred and fifty dollars, to be sued for and recovered by said Board in any civil tribunal in said District, except, that in the marine, or justice, or county courts, no greater amount can be recovered than the extent of the jurisdiction in other civil suits. And any such suits may be against one or more, or each or all of those who participate in the act, refusals or omissions complained of, and the recovery may be against one Board, or any order of the Board of Police, in pursuance or execution of the order of the Board of Health, or willfully omit to obey any such order, shall be guilty of a misdemeanor, and be liable to be indicted and punished for such offense, and in cases where it was made a misdemeanor to do or omit any act or thing, when any power or authority hereby conferred upon this Board was exercised by any other Board or officer or officers, the omission or doing of such, or a corresponding act or thing, which this act requires, or contemplates to be done or forbids, shall in like manner be a misdemeanor, and the offender shall be liable to indictment and punishment for the same. A willful omission or refusal of any individual, corporation or body, to conform to any regulation of said Board, duly made for the protection of life, or the care, promotion, or preservation of health, or the carrying out the purposes of this act pursuant to its power or authority, shall be a misdemeanor, and the person or officers guilty thereof shall be liable to indictment and punishment as for a misdemeanor.¹ And all prosecutions and proceedings against any person for a misdemeanor under this act may be had or tried before any judge or tribunal having jurisdiction of any misdemeanor within said District, or within the town, city, or village, within which any such misdemeanor under this act was committed. And any person, corporation, or body, which may have willfully done or omitted any act or thing which is in this act, or any law or ordinance therein referred to, declared to be, or to subject the party guilty thereof to punishment for, a misdemeanor, shall, in addition thereto, be subject to a penalty of two hundred and fifty dollars, to be sued for and recovered by said Board in any civil tribunal in said District, except that in the marine, or justice, or county courts, no greater amount can be recovered than the extent of the jurisdiction in other civil suits. And any such suits may be against one or more, or each or all of those who participate in the act, refusals or omissions complained of, and the recovery may be against one or more of those joined in the action, as the justice of the court shall direct. And the provisions of this section as to the jurisdiction of tribunals, parties, and costs, shall apply to all suits by said Board or its assignees or the assignees of the Police Board under this act. And said Board of Health may institute and maintain in its own name all such suits and proceedings as shall be reasonable, necessary, and proper, for recovering any moneys expended, enforcing the payment of any fine, the punishment for any offense, or in other respects carrying out the objects of this act.² All processes and papers usual or necessary in the commencement and prosecution of actions, or for the collection of money, in suits or proceedings under this act on execution, may be served by any policeman, and in and about such matters, the policeman so engaged shall have all the powers of marshals, and no fees shall be charged by any court, magistrate, or clerk, for the issue of any paper or process, or the performance of any duty in suits under this act. Any civil action brought under or by authority of this act, shall be in the name or by the authority of said Board, and may be brought in any court in said District having jurisdiction in any civil action, to an amount as large as is demanded in such action, and if judgment be rendered for the plaintiff in any amount, costs of the court in which such action is brought shall also be recovered without reference to the amount of the recovery, provided payment was demanded before suit brought, and the defendant or defendants, in the action against whom the recovery is had, did not, as the code of procedure authorizes, offer to pay an amount equal to the recovery against him or them, except that in cases where the recovery shall be less than fifty dollars, the amount of

¹ See Laws of 1867, chapter 956, section 17.

² *Ibid.*, section 8.

costs shall be ten dollars, and in case no recovery is had, the plaintiff shall not pay costs, unless the judge or justice at the conclusion of the trial shall certify in writing that there was not reasonable cause for bringing the action, and in such case the costs shall not exceed ten dollars, unless the amount claimed exceeded fifty dollars. No action shall abate or right of action already accrued be abolished by reason of the expiration, repeal, or amendment of any ordinance, code of health ordinances or regulation of said Board; nor shall any court lose jurisdiction of any action by reason of a plea that title to real estate is involved, provided the defendant is sought by the pleadings, to be charged in said action on any of the grounds mentioned in this act, other than by virtue of ownership of such real estate. In respect to all proofs and proceedings by said Board, or its agents or officers, under this act, papers filed shall be deemed entered upon or in the minutes of the Board.

SEC. 31. Copies of the records of the proceedings of said Board, of its rules, regulations, by-laws and books and papers constituting part of its archives, when authenticated by its Secretary or Secretary *pro tem.*,¹ shall be presumptive evidence, and the authentication be taken as presumptively correct in any court of justice or judicial proceeding, when they may relevant to the point or matter in controversy, of the facts, statements, and recitals therein contained; and the action, proceedings, authority, and orders of said Board shall at all times be regarded as in their nature judicial, and be treated as *prima facie* just and legal.

SEC. 32. It shall be the duty of all prosecuting officers of criminal courts and police justices to act promptly upon all complaints, and in all suits or proceedings for any violation of this act, and in all proceedings approved or promoted by said Board, and to bring the same to a speedy hearing or termination, and to render judgment and direct execution therein without delay.

SEC. 33. This act, so far as it relates to the appointment of the Sanitary Commissioners provided for therein, shall take effect immediately, and shall, in other respects, go fully into effect on the first day of March, eighteen hundred and sixty-six.

CHAPTER 686, LAWS OF 1866.

AN ACT to amend an Act entitled "An Act to create a Metropolitan Sanitary District and Board of Health therein, for the Preservation of Life and Health, and to prevent the spread of Disease therefrom," passed February 26, 1866. Passed April 19, 1866, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

[The first five sections of this act are declared to be amendments of chapter 74, and are inserted there.]

SEC. 6. Said Board may, by resolution, confer upon the President power to exercise, in the absence of the Board, the authority given in the fourteenth section, to temporarily suspend or modify any order or its execution. And said Board may change or modify any order made under the first clause of the fourteenth section, except that, in cases where no hearing is asked for by the party affected, the order shall not be so altered as to render its effect more stringent than the original order.²

SEC. 7. This act shall take effect immediately.

¹ Chief Clerk added, Laws of 1867, chapter 956, section 1

² Amended, Laws of 1867, chapter 956, section 10.

CHAPTER 956, LAWS OF 1867.

AN Act relating to the Metropolitan Board of Health, and to the duties and powers of the Commissioners of said Board, and the salaries of their subordinates. Passed May 25, 1867; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION. 1. The Metropolitan Board of Health shall hereafter have the power of electing persons to perform, *pro tempore*, the duties of Secretary or President respectively, during any time when either of said officers may be absent, or be unable or may refuse to perform their respective duties ; and the Board may designate one of the clerks in the Secretary's office of said Board as "chief clerk," who may perform such duties of the Secretary as shall be assigned him ; and papers certified by said chief clerk shall be of the same effect, as evidence and otherwise, as if certified by the Secretary ; and all courts shall take judicial notice of the seal of said Board and of the signature of its Secretary and chief clerk.

SEC. 2. It shall be the duty of the officers and men of the Metropolitan Police force to enforce all of the ordinances and regulations of said Board of Health, and to report all violations of the same ; where, in any case the minimum penalty for a refusal to obey, or for a violation of any order, regulation or ordinance of said Board of Health, or any law, is not fixed, the amount recovered in such case shall not be less than twenty dollars ; and the judge or justice who presided at a trial where such penalty is claimed, shall, on said trial, in writing fix the amount (not contrary to said provisions) of said penalty to be recovered, and shall direct such amount so fixed to be and it shall be included in the judgment.

SEC. 3. Said Board shall have the same powers in respect of persons afflicted with pestilential or infectious diseases, as are given by the sixteenth section of the seventy-fourth chapter of the laws of eighteen hundred and sixty-six, or otherwise, in respect of persons afflicted with contagious disease, and shall have power to provide and pay for the use of proper places to which to remove such persons, as well as to designate such places ; and said Board may cause proper care and attendance for such persons so sick or removed, when it shall appear to said Board that any such person is so poor as to be unable to procure for himself such care and attendance.

[Section 4 is a verbal amendment of chapter 74, and is incorporated there.]

SEC. 5. Service of any order of said Board of Health shall be deemed sufficient, if made upon a principal person interested in (or upon a principal officer charged with duty in respect of) the business, property, matter, or thing, or the nuisance or abuse to which said order relates ; or upon a person, officer or Board, or one of the Board who may be most interested in or affected by its execution. And if said order relate to any building (or the drainage, sewerage, cleaning, purification or ventilation thereof, or of any lot or ground on or in which such building stands) in the cities of New York or Brooklyn, used for or intended to be rented as the residence or lodging-place of several persons, or as a tenement house or lodging-house, service of such order on the agent of any person or persons for the renting of such building, lot or ground, or for the collecting of the rent thereof (or of the parts thereof to which said order may relate), shall be of the same effect and validity as due service made upon the principal of such agent, and upon the owners, lessees, tenants and occupants of such buildings, or parts thereof, or of the subject-matter to which such order relates.

SEC. 6. The word nuisance, as used in this act, shall be held to embrace public nuisance as known at common law, or in equity jurisprudence ; and it is further enacted that whatever is dangerous to human life or detrimental to health ; whatever building or erection, or part or cellar thereof, is overcrowded with occupants, or is not provided with adequate ingress and egress to and from the same, or the apartments thereof, or is not sufficiently supported,

ventilated, sewerred, drained, cleaned or lighted, in reference to their or its intended or actual use; and whatever renders the air, or human food or drink, unwholesome, are also, severally in contemplation of this act, nuisances; and all such nuisances are hereby declared illegal; and each and all persons and corporations who created or contributed thereto, or who may support, continue or maintain or retain them, or any of them, shall be jointly and severally liable for or toward the expense of the abatement and remedying of the same; but, as between themselves, any such persons and corporations may enforce contribution or collect expenses, according to any legal or equitable relations existing between them; but nothing herein contained shall annul or defeat any common-law liability or responsibility in respect of nuisances. Provided, however, that nothing contained in this act or in the act entitled "An Act to create a Metropolitan Sanitary District and Board of Health therein for the preservation of life and health, and to prevent the spread of disease," passed February twenty-sixth, eighteen hundred and sixty-six; nor in the act amending said last-mentioned act, passed April nineteen, eighteen hundred and sixty-six, shall be construed to confer or as conferring upon the said Board or its officers or agents the power or authority to order the removal, tearing down, or injury of any of the stalls or stands around Fulton or Washington Markets, in the city of New York, which were erected or enlarged to their present size prior to the first day of May, 1866, at any time before the first day of July, 1869; and if, at such date, the erection of a new market or markets, in the place of said markets, shall have been authorized by law, such power shall not be exercised at any time prior to the first day of May, 1870. But it is hereby expressly declared that the said Board shall have and possess full and complete power with reference to the ventilation, drainage and cleanliness of said stands or stalls, and shall have power to order the removal of all stands or stalls which have been erected or enlarged upon any street or sidewalk in said city since said first day of May, 1866, or shall hereafter be so erected; and that the power given to said Board over obstructions in the streets or on the sidewalks by existing laws is hereby expressly reaffirmed except as herein modified; and the said Board are hereby directed to propose and submit to the next Legislature plans and recommendations for the building of one or two new markets, whichever they shall deem necessary, to replace the Fulton, Washington, and West Washington Markets in said city.

1. Said Board of Health may institute and maintain, in any court in the Metropolitan Sanitary District (having jurisdiction in suits where the amount claimed exceeds one thousand dollars), a suit or suits for the abatement or remedying of any of the aforesaid nuisances, either completely or as fully as may be thought necessary by the court. And said Board shall also have, in said District, all common-law rights to abate any nuisance without suit, which can or does, in this State, belong to any person whatever. And all costs collected in any such action or proceeding shall be paid over to the Treasurer of the Board and accounted for by him.

2. To all such suits the provisions of chapters seventy-four and six hundred and eighty-six of the laws of eighteen hundred and sixty-six, relative to jurisdiction, costs, and parties, shall be applicable; and the courts shall allow the plaintiff, at any proper stage of the case, to amend, by joining other parties defendant; and no suit shall be dismissed or defeated by reason of there being other persons interested therein or concerned in causing, creating, or maintaining the nuisance complained of in such suit where such person is not a necessary party to the suit.

3. Such suit shall be tried as an issue of law, and without a jury, unless some defendant shall, in his answer, or by notice in writing to be served on the plaintiff's attorney within five days after service of said answer, demand a trial by jury on some question of fact, to be in said answer or notice distinctly stated, and in respect of which a right of trial by jury exists, and if any such demand be so made and served, the case shall, as to all the defendants, be placed on the calendar of jury-trial cases, and when reached for trial, if issues of fact for the jury have not before been settled, the presiding judge may state in writing the issues of fact to be submitted to the jury, or the trial shall proceed upon the material issues of fact made

by the pleadings without such written statement of issues; and the judge who presided at the trial (or some judge of the same court, if said judge be unable) shall, on receiving the verdict, or as soon thereafter, and at the same term, if possible, settle and cause to be entered the proper judgment in said suit.

4. If the judgment be that any nuisance may be abated or remedied, in whole or in part, said judgment shall contain sufficient directions for its proper execution, and the judge shall, from the pleadings and from the evidence given at the trial, find and state what proportion of the expense of such execution shall be paid or be borne by each or all of the defendants, jointly or severally; and if, in the opinion of the court, any part of or all of the expense of such execution should be borne by said Board of Health, or the execution of such judgment should be made by said Board, or under its direction, said judgment shall contain the appropriate directions in respect to such last-named payment or execution. And the court may also adjudge the Board to pay or advance such proportion of the expenses of executing such judgment, as the judgment shall not direct to be paid by some one or all of the defendants. Said judgment, if against any defendant, shall, on its face, state that it will be a lien on the real property, corporeal hereditaments of such defendant or defendants respectively, to which the said nuisance shall have related, till his or their proportion of such expenses of execution are satisfied, or the lien thereof shall be otherwise discharged according to law.

5. Any person prejudicially affected by the lien of any such judgment may, on eight days' notice to said Board, make a motion before any judge of the court in which said judgment was rendered, for an order that the lien of such judgment be discharged as to all or any specific property set forth; and if it shall appear to such judge, on the hearing of such motion, that such eight days' notice of such motion has been given to the Board of Health, and that such judgment has been executed and the expenses paid, which the lien sought to be discharged was designed to secure; or if a proper or sufficient undertaking or bond, with sureties, shall be given for the payment of such expenses; or if said Board of Health, through its attorney or counsel, shall in writing consent to the discharge of the last-named lien, as to any or all property referred to, or as to one or more defendants, then said judge may order said lien discharged of record by the proper officer, to the extent and as to the person or persons that the order shall specify; and it shall be so discharged; and such order and the moving papers shall be filed with the proper clerk, as the judge shall direct.

6. No appeal by any party defendant shall stay the execution of any judgment aforesaid, except to the extent, in reference to the persons, and on the conditions the judge who tried the case, if he can be conveniently applied to, or, if not, some other judge of the same court, shall, on the settling of the judgment, or on motion, and on four days' notice to said Board of Health, and with due reference to the public interests involved, specially order; and if no such order shall be made, the judgment shall be executed, notwithstanding any appeal, undertaking, or security, and without any liability on the part of any person (other than as herein elsewhere provided, in respect of said Board), by reason of any damages or consequences growing out of the execution of such judgment, whether the same be reversed or not. All appeals by the defendant from any judgment in the said abatement suits shall be taken within ten days after notice in writing to the defendant or his attorney, of the entry of the judgment therein, and the judge who tries the case may, in his discretion, and without security, but only for the period of the said ten days, order a stay as to the execution of the judgment; and within said period of ten days an undertaking or security on appeal (to stay execution of the judgment, as herein provided) must be filed, the same to be otherwise of the form and obligation as is required in ordinary appeals from judgments, but which shall also be conditioned for the payment of the appellants' adjudged share of the expenses of executing such judgment as the court may have estimated and said judgment may have stated, or (if not estimated in said judgment), as the judge, on application and three days' notice to said Board, shall estimate the same, in conformity with the judgment, for the purpose of such security on appeal. But, pursuant to any order, or otherwise, the execution of any judgment against the defendants shall not be delayed beyond said ten days, if within that period the proper undertaking or

security on appeal, approved by the judge, has not been filed, and the appeal perfected, as herein provided; and the judgment may state the estimated expense that will have to be paid by any party toward executing said judgment. But said Board may appeal in any such case, or any case to which it is a party, within ten days after the entry of any judgment, and without giving any security; such appeal shall be effectual, and shall operate as a stay on the judgment, or upon the part thereof in respect to which said Board appeals.

7. In any such abatement suit said Board may join a cause of action for any penalty or penalties that may have been incurred by either of the defendants, by reason of, or in connection with, the nuisance complained of, or by reason of any omission or refusal of any defendant to obey or comply with any order of the Board of Health touching such alleged nuisance, and have the proper provision in any judgment therefor against one or more of the defendants. No motion for a new trial on a case made shall be entertained in any such abatement suit, except as a part of and as arising upon the papers upon a regular appeal to a general term of the court, and to be heard therewith.

8. The judgment of the general term, if it shall to any extent direct any change in the judgment appealed from (but shall direct, or allow or fail to forbid the judgment in part to be executed), shall also contain the requisite specific provisions, so that the judgment as modified may be executed, and the due proportion of the expenses of such execution may be assessed on the defendants respectively, or on said Board, as the general term may adjudge. Upon any appeal from the general term to the Court of Appeals, in such abatement suit, the provisions hereof as to appeals from the judgment to the general term, and as to security on appeal, shall, in all particulars, including the length of time given in which to take an appeal, apply; and no change in the code of procedure, or otherwise, hereafter to be made, though in subject-matter applicable to said abatement suits, shall be construed to modify the aforesaid or other provisions of the health laws, as to any suits thereunder, unless such act shall specifically declare such modification to be intended.

9. Upon the execution in whole or in part of any such judgment (if said Board shall, as it is hereby authorized to do, decide the public interest to demand only execution in part thereof), a statement of the expenses of such execution shall be made, and such expenses shall be therein apportioned not contrary to any provisions of said judgment; and upon the same being verified by the oath of some person who, by due authority, took part in or had charge of the execution of such judgment, or by some officer of said Board, such statement, entitled in the case, may be filed or given to the proper clerk to be filed, with such judgment; and notice of such filing or delivery, and a copy of such statement, shall be given to the attorneys of the defendant in the suit, or to the defendants themselves, or to some one of the joint defendants; and unless within ten days after any such notice, such defendants shall give due notice in writing, to said Board or to the person who, as assignee or by order, executed such judgment or is entitled to payment of such expense (in case it was not executed by said board), of a motion, and serve therewith copies of affidavits to correct such statement in particulars to be mentioned, and separately and clearly stated in such affidavit, such statement aforesaid shall be, in all suits and proceedings and tribunals, and at all times, deemed and taken to be final, conclusive, and correct; and no formal defect in such statement shall in any wise vitiate the same. And on any hearing of such motion, any party in interest, or said Board, may read affidavits in support of such original statement; and the finding of any judge on the hearing of such motion, as to the said statement of such expenses and other matters in such motion involved or statement contained, shall be final and conclusive, and not subject to appeal; and such finding or statement as modified by such finding, when filed, shall be of the same effect as such original statement would have been, had no motion in regard thereto been made; and for the purpose of an execution for such expense, and creating a lien under any judgment, such statements and finding or modified statement shall be regarded as a part of said judgment, and the lien thereof shall extend to any amounts stated in such final statement and finding.

10. For the proportion and amounts, as authorized by such judgment, and contained in

such finding or in such statement or modified statement, when either of the same shall have become final as aforesaid, said Board or any assignee of such Board, or any other person who has executed such judgment, or has otherwise a right to receive the expense of so doing (or the portion thereof that may be due from any defendant), shall have execution, on such execution being allowed, *ex parte*, by a judge of the court in which any judgment was recovered (and such execution, shall, in due form, be allowed, by any such judge); such execution to be against any one or more defendants or joint defendants for the recovery of any amount due from such defendant or defendants, which the party claiming such execution is entitled to receive; and such execution, except as herein especially provided, shall be of the same effect and form as any execution duly issued pursuant to any judgment. But no execution shall be issued against any defendant for less than the whole sum due from such defendant, or for less than he shall be liable to pay in such suit; but any sum adjudged against any defendants or defendant, in any such abatement suit for penalties, costs, or for other cause than the expense of the abatement or remedying of such nuisance, may be collected by separate or other executions (than those authorized for collecting such expense), to be issued in due course of law.

11. In any abatement suit aforesaid, the court, or a judge thereof, may issue and enforce an appropriate preliminary injunction, whenever it shall be asked for pursuant to an order of said Board of Health, by affidavit, and there shall appear to such judge to be reasonable cause therefor; and such injunction may also be granted whenever it shall be made to appear to the court or a judge thereof, by affidavit, that such injunction is needed to prevent any illegal act, conduct, or business aforesaid, or its continuance, or to prevent serious danger to human life, or serious detriment to health, or great public inconvenience touching any matter or thing to which this act or the health laws aforesaid relate. And in any such injunction order the court may require any building, erection, or grounds, to be put in a condition that will not be dangerous to the life or detrimental to the health of any occupant, before the same shall be leased, or rented, or occupied, or before any rent or compensation shall be collected for the rent or use of the whole or any portion of the same. In any such injunction order, and also in any judgment in any abatement suit, the judge or court may require the tenants, lessees, and occupants (or either or any of them) of any such building, erection, or grounds, to pay the rent thereof (or compensation therefor) due or to grow due, to said Board, and said Board to collect and receive the same, and to apply said rent to pay the expenses of putting any said building, erection, or ground, in a condition that will not be dangerous to the life or detrimental to the health of any present or future tenant, lessee, or occupant, or of any other persons; all such collections and payments to be made in such manner, to such extent, and on such conditions, as any such order or judgment may provide; and every such payment to said Board, and the receipt of its Treasurer for such rent or compensation, shall be as effectual to protect any person who has made the same, and every such tenant, lessee, and occupant, and all his and their rights under any lease or occupation, as if such payment had been made to and such receipt had been given by any lessor or owner, or any proper claimant of any such rent or compensation, who had, but for such order or judgment, the right and authority to receive the same. (But no undertaking or security shall be required or necessary, on the part of said Board, as a condition of granting such injunction, or the same being effectual; and in any final judgment in such suit there may be enjoined whatever if about to happen or threatened, would be the proper subject-matter of a preliminary injunction.) And when the public interest seems to the court to require a speedy trial or hearing of any such suit or appeal therein, it shall be the duty of any judge of any court aforesaid, or of the court to whom application by said Board may be properly made, to cause such suit or appeal to be brought to a speedy trial (and before it would otherwise be reached for trial or argument in due course on the calendar), as the judge or court may by special order direct.

12. In so far as any judgment may be directed to be executed at the expense of said Board of Health, or by any party defendant at his own expense, and shall by such party defendant be so executed, the expense of such execution shall not be stated or embraced in the

aforesaid statement or finding of expenses ; but if any part of the execution aforesaid, which any party should have borne or paid, shall (by reason of the delay, refusal, or defective act or execution of such party, or any other cause) be paid, borne, or incurred by said Board of Health, in and about the execution of such judgment, then the said latter expenses of said Board may be embraced in said statement and finding, and collected by execution as aforesaid.

13. Whatever expenses said Board of Health may lawfully and properly incur in the execution of any judgment aforesaid, or in executing, or in connection with its own orders, made in good faith, or in and about the discharge, in good faith, of its supposed duties, or in satisfying any liability or judgment it may have in good faith incurred or suffered by reason of its acts done in good faith as aforesaid, or in satisfying any claim against its officers or subordinates, arising from their acts in the discharge in good faith of their supposed respective duties, shall, so far as established, be paid out of its fund or other moneys, and shall be apportioned, assessed, collected, and paid as is provided in the health laws aforesaid in respect to the expenses of said Board and such sums paid or recovered under this act shall not be included in or considered as a part of that class of the expenditures of the Board in respect to which there is or may be a specific limitation as to amount.

SEC. 7. No member, officer, or agent of said Board of Health and no person (but only the Board itself) shall be sued or held to liability for any act done or omitted by either person aforesaid (in good faith and with ordinary discretion), on behalf of or under said Board, or pursuant to its regulations, ordinances, or said health laws. And any person whose property may have been unjustly or illegally destroyed or injured, pursuant to any order, regulation, or ordinance, or action of said Board of Health, or its officers, for which no personal liability may exist as aforesaid, may maintain a proper action against said Board for the recovery of the proper compensation or damage, to be paid by and from the funds of said Board of Health. Every such suit must be brought within six months after the cause of action arose, and the recovery shall be limited to the damages suffered. And there shall be the same right to sue and recover against said Board (the amount to be paid from its funds), when no security or undertaking is given by the Board on appeal, or the granting of an injunction, that would have existed (pursuant to the foregoing provisions), to sue and recover of any party to such undertaking, had the same been duly executed by any such party and Board, and duly approved and filed, according to the practice in analogous cases.

SEC. 8. Said Board of Health may sue or be sued in and by its proper name, as "The Metropolitan Board of Health," and not in or by the name of the members of said Board or any of them ; and service of all process in suits and proceedings against or affecting said Board, and other papers, may be made upon the President of said Board, or upon its Secretary, and not otherwise ; except that, according to usual practice in other suits, papers in suits to which said Board of Health is a party, may be served on its attorney. But when a party plaintiff or defendant to a suit (or otherwise designated in any manner, in its capacity as a Board of Excise), said Board of Health shall be designated in said capacity and said Board of Excise shall hereafter be known and described as "The Metropolitan Board of Excise," and only by such last name shall it or its members sue or be sued.

SEC. 9. No preliminary injunction shall be granted against the Metropolitan Board of Health, or of Police, or its or their officers, or against the commissioners of said Boards in their capacity as a board of Excise, or against the last-named Board, except by the Supreme Court, at a special or general term thereof, after service of at least eight days' notice of a motion for such injunction, together with copies of the papers on which the motion for such injunction is to be made.

SEC. 10. The sixth section of the six hundred and eighty-sixth chapter of the laws of eighteen hundred and sixty-six, is hereby amended by substituting the word "burthensome"

in place of the word "stringent," therein contained. The "code of health ordinances," mentioned in said six hundred and eighty-sixth chapter, shall hereafter be designated as the "code of sanitary ordinances," and the same may embrace all matters and subjects to which, and so far as, the power and authority of said Board of Health extends; nor shall any thing in said acts be construed as limiting their application to the subject of health only; and said ordinances may respectively be designated as, or include, rules and regulations. Hereafter said Code shall be published once only in any week, and for two weeks only in the aggregate, in any one year, and it shall not be necessary to publish any portion of said Code which has remained unaltered since its last previous publication. The twenty-ninth section of the seventy-fourth chapter of the Laws of eighteen hundred and sixty-six shall be deemed applicable to any case hereafter to arise, when said Board may find it necessary and proper to borrow money to discharge its duties and defray its expenses as in said section more particularly mentioned; but no more than twenty-five thousand dollars shall be borrowed by virtue hereof, or under said section, in any one year. The right given in the seventy-fourth and six hundred and eighty-sixth chapters of the Laws of eighteen hundred and sixty-six, to said Board of Health, to sue for and recover, in its own name, any penalties, shall embrace any and all penalties that might, before the acts aforesaid, have been sued for or collected by the Mayor, Aldermen, and Commonalty of the city of New York, the city of Brooklyn, or any person (or body in either of said acts referred to), under or in respect of any law or ordinance, the power or authority given or conferred, or purporting to be exercised by which is now possessed by said Board of Health.

SEC. 11. If any person shall knowingly make to said Board of Health or any officer thereof any false return, statement or report relative to any birth, death or marriage, or other matter concerning which a report or return may be legally required of or should be made by such person: or if any member, inspector or officer, or agent of said Board of Health shall knowingly make to said Board of Health any false or deceptive report or statement (in connection with his duties), or shall accept or receive, or authorize or encourage, or knowingly allow any other person to accept or receive any bribe or other compensation as a condition of or an inducement for not faithfully discovering and fully reporting or otherwise acting according to his duty in any respect; then any and every such person shall be deemed guilty of a misdemeanor, and shall be liable to be for such crime indicted, tried and punished according to law, and shall, in addition, forfeit all compensation due or to grow due from said Board.

SEC. 12. Upon the application of any party in interest in any matter pending examination before said Board of Health, by affidavit stating the grounds of such application to any judge of a court of record, and asking that any person or persons therein named shall appear before said Board of Health, or any person taking or about to take such examination, at some time or times and place, to be stated in said affidavit, it shall be the duty of such judge, if he discovers reasonable cause so to do, to issue his order requiring such person or persons named to appear and submit to such examination as and to the extent such order may state, at the times and places to be in said order named; and such order, to be signed by such judge, may be served, and shall in all respects be obeyed as a subpoena duly issued; and a refusal to submit to the proper examination may be punished by such judge, or by any judge of such court, as a contempt of court, upon the facts as to such refusal being brought before any such judge by affidavit.

SEC. 13. The said Board, its assignee, or any person acting under its authority, in executing any order of said Board, shall have a lien for the expenses necessarily incurred in the execution of said order, and said expenses shall be a lien upon the land and buildings upon and in respect to which, or either of which, the work required by said order has been done, or expenses incurred, which lien shall have priority over all other liens and incumbrances, except taxes and assessments. But no such lien shall be valid for any purpose till the said

Board or person shall have caused to be filed in the office, or with the officer, where notices of mechanics' liens are now or may be hereafter required to be filed, a notice containing the same particulars required to be stated with reference to mechanics' liens, with the further statement that the expense has been incurred in pursuance of an order of said Board, and giving its date. Upon such filing the said officer shall make the same entry on the book or index in which mechanics' lien are entered as he is required to enter in cases of mechanics' lien, together with a reference to said order by date; and thereafter the same shall, except as herein elsewhere provided, have the same effect in all respects as a mechanics' lien; and all proceedings with reference to said lien, its enforcement and discharge, shall be had and carried on in the same manner as similar proceedings with reference to mechanics' liens are now or may be hereafter by law had or carried on. The filing of such statement shall, as to all persons, have the same effect as filing of notice of mechanics' lien; and unless within two months after actual notice of such filing, proceedings are taken by the party against whom or whose said property the lien is claimed to discharge such lien, the filing shall, as to all persons having such actual notice, become conclusive evidence that the amount claimed in such statement, with interest, is due, and is a just lien upon said land and building. Such lien shall continue to be a lien for the space of four years from the time of filing such statement, unless proceedings are in the mean time taken to enforce or discharge the same, which may be done at any time during its continuance. In case proceedings are so taken, it shall remain a lien until the final termination of such proceedings; and if such proceedings shall result in a judgment for the amount claimed in such statement, or any portion thereof, such judgment shall, to such extent, be a lien in the same manner, and from the same time, as said statement.

SEC. 14. The said Board of Health may from time to time fix and define the time of making, and the form of returns and reports to be made to said Board by the coroners of the counties of New York and Kings, in all cases of *post-mortem* inquests, or viewing the dead bodies held by them or any of them; and the said coroners are hereby required to conform to the directions of said Board in the premises, and it shall be the duty of every coroner at once, and before holding any inquest, upon being called upon to hold an inquest as aforesaid, or notified thereof, to immediately transmit and cause to be delivered to the Secretary of said Board of Health, written notice of the fact of such call for holding inquest, in which shall be stated every particular then known to said coroner as to said call, the body, the place where it is, and the reported cause of death. If at any time said Board, or the Sanitary or Assistant Sanitary Superintendent, shall deem the protection of the public health to demand, it may (so soon as the coroner's jury shall have viewed the dead body, and an autopsy thereof shall have been made, provided the coroner deems the same necessary) order the immediate burial of any dead body, or if he or it deems that the public health demands an immediate removal of said body from the place of death to another place for inquest, may likewise at any time order said immediate removal, and shall have power to cause all orders to be obeyed and executed.

SEC. 15. The seventy-fourth chapter of the Laws of 1866, is amended, by substituting in the place of the words "one hundred thousand dollars," where the same occurs in the twenty-eighth section thereof, the following words, viz., "one hundred and fifty thousand dollars." The salary of the Sanitary Superintendent shall be five thousand dollars per annum; of the Assistant Sanitary Superintendent thirty-five hundred dollars, and the Sanitary Inspectors not less than eighteen hundred dollars, nor more than than twenty-five hundred dollars; and said Board may divide said inspectors into classes, and fix the salaries of each class within said limits. Said Board may appoint such number of Assistant Sanitary Inspectors as they shall deem necessary, and fix their salaries at an amount not exceeding twelve hundred dollars each. And all sums that may be expended in executing any order, resolution or regulation of said Board of Health, or in executing any judgment that

may be recovered by the Board, or in paying any sums that may be recovered against the Board of Health, shall be deemed sums provided to be paid by and to be recovered back from some person or corporation, within the meaning of the said last-named twenty-eighth section.

SEC. 16. By reason of the additional duties to be performed by the several commissioners of said Board of Health, in their capacity as commissioners of excise, the salary of each thereof, except the health officer of the port of New York, is increased by the sum of fifteen hundred dollars, and a reasonable compensation or salary in addition to what has been heretofore authorized may be paid by said Board to any of its officers or employes whose labors are for that reason increased; the said increase of salary to date from the first day of December, one thousand eight hundred and sixty-six, and the same shall be paid from the moneys received for licenses. The provisions of the seventy-fourth chapter of the Laws of 1866, so far as the same relate to the calling and holding of meetings, or a quorum thereat, the duties of the Secretary, the dismissal and control of officers and agents, the designation and use of a seal, the authentication and presumptive effect and legality of the records, papers and acts of the Board, shall be held to apply to said Board and the commissioners named in said act and to their doings, in their capacity as a Board of Excise. Said Board of Excise shall make a like annual report as is required of said Board of Health.

SEC. 17. Any willful omission or refusal to obey or conform to any part of this act, or any willful resistance of or refusal to obey any order, regulation or ordinance made in pursuance of this act, shall be subject to the same punishment, penalty and liabilities, both civil and criminal, as if such omission, refusal or resistance was in respect of either of the acts mentioned in the tenth section hereof, or in respect of an order, regulation or ordinance made in pursuance of either of the last-named acts.

SEC. 18. When any order of said Board of Health has been executed or so far executed as said Board may require, the expenses of such execution, giving in general terms the items of such expense, and the date of execution, shall be stated in an affidavit, and the same shall be filed among the records of said Board, with the order so executed; and said Board shall take care, by or through some proper officer, or otherwise, that the expenses of such execution be so stated with fairness and accuracy; and when it shall appear that such execution, or the expenses thereof, related to several lots or buildings belonging to different persons, said affidavit shall state what belongs to or arose in respect to each lot of said several lots or buildings, as said Board or its authorized officer may direct; and the correctness of such appointment or expenses, as stated in any such affidavit, shall not be called in question or reviewed elsewhere than before said Board; but said Board may revise and correct the same, as said Board shall think truth and justice may require.

Whenever the expenses attending the execution of any order of said Board of Health (and all such expenses are to be a lien and charge, as said original act specifies as to certain expenses) may be made the subject of a suit by said Board, or its assignee (or the person having the right to recover such expenses), there may be joined in the same suit a claim or claims for any penalty or penalties for violations of either of said chapters, or of this act, or for the violation or omission to perform or obey said order (or any prior order of said Board), or for the not doing of that or any portion of that, for the doing of which said expenses arose or were incurred; and said Board may make an assignment of the claim for any such penalty or penalties, to enable the claim for the same and the claim for said expenses to be joined in the same suit; and the proper joint or several judgment may be had against one or more of the defendants in the suit, as they or either of them may be liable in respect of both said claims, or either or any of them.

And said expenses of executing said order, and the expenses of executing any judgment in any abatement suit herein provided for, and the several judgments that may be recovered hereunder, or otherwise, for any such penalty or expenses (or both such penalty and expenses

together), until the same are paid or discharged, shall be (a lien as other judgments, and also) a lien and charge upon rent and compensation due or then maturing from any tenant or occupant of the building, lots and premises, or the parts thereof, to which any such order or judgment relates, or in respect of which any such expenses were incurred.

And such expenses and judgments shall respectively be liens on the several compensations mentioned, and under the circumstances stated (as to certain expenses being such lien) in the fourteenth section of the seventy-fourth chapter of the Laws of eighteen hundred and sixty-six, as if the provisions there contained were here repeated. For the purpose of rendering such lien and charge more effectual to secure payment of any such expenses or judgment, from any rent or compensation aforesaid, the following proceedings may be taken :

1. The Board of Health, or any person owning any such judgment, or the claim for any such expenses, or having a right to receive payment therefor, may serve a copy of the order under or by reason of which such expenses were authorized or incurred (with a copy of any affidavit, stating the expenses of the execution of such order), or if the claim be a judgment may serve a transcript of such judgment (and any affidavit showing the expense of its execution, if there be any) upon any person or corporation owing, or who is about to owe, any compensation (in respect of any matter or thing in said fourteenth section mentioned), or owing or about to owe, any rent or compensation for the use or occupation of any grounds, premises or building, or any part thereof, to which said order or judgment relates, and in respect of which such expenses or the expenses embraced in said judgment related or were incurred; and may, at any time of such service, demand in writing that such rent, or any such compensation (to the extent of said claims for said expenses, or of any such judgment or expense in executing the same), shall, when such rent or compensation becomes due and payable, be paid to the Treasurer of said Board of Health.

2. After the service of the papers aforesaid and such demand, any tenant, lessee, occupant or other person owing or about to owe, any such rent or any such compensation, shall, when such rent or any such compensation shall mature or become payable, pay the same, and from time to time any other amount thereof, as the same may become due and payable (or so much thereof as is sufficient to satisfy any such judgment or claim for expenses or both, so served), to the Treasurer of said Board of Health; and such Treasurer shall give his receipt as Treasurer therefor, stating on account of what order or judgment and expenses the same has been paid to him and received; and the amount so received shall be deposited in some bank in the city of New York, where other funds of the Board are kept, to the special account of such Treasurer.

3. Any person or corporation refusing or omitting, as herein directed, to make such payment to said Treasurer, after service of the paper and demand aforesaid, as herein required, shall be personally liable to said Board of Health, or to the party owning any such claim for expenses or judgment (if not belonging to said Board), for the amount that should have been paid to said Treasurer, according to the provisions hereof, and may by such party (or Board, if the owner aforesaid) be sued therefor; and such persons shall not in such suit dispute or call in question the authority of said Board of Health to incur or order such expense, or the validity or correctness of such expenses or judgment in any particular, or the right of the party making said demand, or his assignee, to have the same paid from such rent or compensation. But the receipt of such Treasurer for any sum paid him as aforesaid, shall, in all suits and proceedings and for every purpose, be as effectual in favor of any person holding the same as actual payment of the amount thereof to the proper landlord, lessor, owner, or other person or persons who would, but for the provisions of this statute, or said service and demand, have been entitled to receive the sum so paid to such Treasurer, could or would have been. And it is further expressly declared, that no tenant or occupant of any lot, building or premises, or his or their assignee or lessee, shall be dispossessed or disturbed, nor shall any lease or contract, or rights, be forfeited or impaired, nor any forfeiture or liability be incurred by reason of any omission to pay any landlord, owner, lessor, contractor, party or other person, the sum so paid to said Treasurer, or any part thereof.

4. The Treasurer of said Board of Health shall retain said money so paid him until twelve days after it shall be made to appear to said Board of Health, or some proper officer thereof, by satisfactory affidavit, that the party or parties, or his or their agent for the collection of any such rent or compensation, who (but for the provisions hereof would have been entitled to receive the same) has had written notice of such payment being made, to said Treasurer, and a copy of his receipt therefor; and if at the end of said twelve days, the party or parties aforesaid, so notified, have not instituted suit to recover said money, as hereinafter provided, then the same shall, by said Treasurer, be paid to any person who may own or have the right to recover the amount of the judgment or the claim for expenses so served as aforesaid (or so much thereof as the party may be entitled to), or on account of which the money was paid to said Treasurer; and after such payment by the Treasurer, the party or parties aforesaid (who failed to sue) shall have no right to demand or receive any such money unless they shall, within six calendar months from the expiration of said twelve days, in a suit allege that they had no notice of such payment to said Treasurer, and shall, on the trial of such suit, prove said allegation, and also that they were not liable to pay the said claim for expenses or the said penalty or judgment, and that the said Board had not jurisdiction to order the expenses aforesaid, on account of which the money was so paid to said Treasurer, or on which any such judgment was obtained; and in case of a recovery in such suit it shall be only to the extent such parties were not so liable; and in such suit any person or persons who may have received said money from said Treasurer or Board shall, by the plaintiff, be made a party defendant; and if the plaintiff shall recover such money, or any part thereof, said Board of Health shall be entitled to any equitable judgment in such suit which the court may see fit to direct for recovering said money back, or any part thereof, from such co-defendant, which had been paid to him by said Treasurer.

5. In case any suit shall be brought under the last subdivision of this section, or before the expiration of the said twelve days, said Board of Health (but not said Treasurer) shall be joined at a party defendant; and any person or persons, other than said Board, claiming the right to receive said money on account of said order, expenses or judgment, or who has received the same, shall also by the plaintiff be made parties defendant; and no answer need be made by said Board (except at its option, or if it be not a claimant as having paid or incurred said expenses, or as being the owner of said judgment), further than the allegation that it holds said money so paid, and is ready to pay it over, as the result of the suit may render it proper, or to pay an equal amount to the plaintiff, if adjudged to do so; and said money shall be held by said Board pending said suit (if not paid over before suit brought as aforesaid), and provided said suit be diligently prosecuted to judgment; and on its conclusion the Board of Health shall cause the money, if still with its Treasurer, or the proper amount from its funds, to be paid as the determination of the suit may render proper; and no costs in any suit in this section mentioned shall be recovered against said Board of Health. But to entitle a plaintiff to recover in any such last-named suit, he must make the same proof and establish the same fact as is required to enable him to recover in any aforesaid suit in this section mentioned, except as to his not having had notice of such payment to such Treasurer. The Treasurer shall obey the directions of said Board, and shall not be personally liable (unless for his own fraudulent acts) for or in respect of any such money or facts aforesaid to any one, but said Board of Health shall pay such sum as may be finally adjudged against it in any suit.

SEC. 19. Said Board of Health is hereby authorized and directed to employ such competent person or persons to reduce to the form of a code all the laws applicable to said Board or such parts of them as are deemed appropriate to be enforced, and to add thereto such provisions as said Board may deem needful; and also to prepare a complete code of ordinances appropriate to be enacted and put in force in said District; and also such general regulations, and blank forms, as in the opinion of said Board are requisite in the discharge of its duties; the same to be reported to the Legislature as early as they can be prepared and per-

fected, and not later than the opening of the session in eighteen hundred and sixty-nine ; and said Board may incur the necessary expense for the purposes aforesaid, and said Board may have such report printed.

SEC. 20. No law heretofore enacted or hereafter to be enacted shall be construed to repeal or modify any portion of this act or of any law relating to said Board of Health, or to the members of said Board, their duties or powers as such or as a Board of Excise, unless and except in so far as said law shall expressly thereto refer, and repeal or modify the said laws.

SEC. 21. The Board of Metropolitan Police shall have power to erect, operate, supply and maintain, under the general laws of the State relating to telegraphs, all such lines of telegraph to and between such places in the District as for the purposes and business of the police the Board shall deem necessary. Said Board may procure and shall own and control all instruments, fixtures, property and materials procured for the purpose above mentioned, but the cost thereof shall be chargeable to general expenses of Metropolitan Police. The Board of Police is hereby permitted to use the said telegraph-lines, to aid them in facilitating the operations of the Board of Health, and when so used the expense thereof shall be charged to the said Board of Health. The Board of Metropolitan Police may detail from the force members thereof, not exceeding five in number, to perform surgeon's duties in any part of the District, and may remand them to post duty, and while they are so detailed to surgeon's duties their pay shall be the same as other surgeons'. The pay of surgeons shall be chargeable to the respective counties in which they served as surgeons ; and any surgeon may be dismissed by resolution of the Board, but the unanimous vote of the Board, all the commissioners being present, taken by ayes and noes, and recorded, shall be required to adopt such resolution. The Board of Police may, if requested by the Board of Health, employ their surgeons to aid the sanitary inspectors in the discharge of their duties, under such regulations and order as the Board of Police may make and issue.

SEC. 22. This act shall take effect immediately.

CHAPTER 908, LAWS OF 1867.

AN ACT for the regulation of tenement and lodging houses in the cities of New York and Brooklyn.
Passed May 14, 1867.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. From and after the first day of July, eighteen hundred and sixty-seven, no house, building, or portion thereof, in the cities of New York and Brooklyn, shall be used, occupied, leased or rented for a tenement or lodging house unless the same conforms in its construction and appurtenances to the requirements of this act.

SEC. 2. Every house, building, or portion thereof, in the cities of New York and Brooklyn, designed to be used, occupied, leased or rented, or which is used, occupied, leased or rented, for a tenement or lodging house, shall have in every room which is occupied as a sleeping-room, and which does not communicate directly with the external air, a ventilating or transom window, having an opening or area of three square feet, over the door leading into and connected with the adjoining room, if such adjoining room communicates with the external air, and also a ventilating or transom window of the same opening or area, communicating with the entry or hall of the house, or, where this is, from the relative situation of the rooms, impracticable, such last-mentioned ventilating or transom window shall communicate with an adjoining room that itself communicates with the entry or hall. Every such house or building shall have in the roof, at the top of the hall, an adequate and proper ventilator, of a form

approved in New York by the Inspector of Public Buildings, and in Brooklyn by the Assistant Sanitary Superintendent of the Metropolitan Board of Health.

SEC. 3. Every such house shall be provided with a proper fire-escape, or means of escape in case of fire, to be approved in New York by the Inspector of Public Buildings, and in Brooklyn by the Assistant Sanitary Superintendent of the Metropolitan Board of Health.

SEC. 4. The roof of every such house shall be kept in good repair, and so as not to leak, and all rain-water shall be so drained or conveyed therefrom as to prevent its dripping on to the ground, or causing dampness in the walls, yard or area. All stairs shall be provided with proper banisters or railings, and shall be kept in good repair.

SEC. 5. Every such building shall be provided with good and sufficient water-closets or privies, of a construction approved by the Metropolitan Board of Health, and shall have proper doors, traps, soil-pans, and other suitable works and arrangements, so far as may be necessary to insure the efficient operation thereof. Such water-closets or privies shall not be less in number than one to every twenty occupants of said house; but water-closets and privies may be used in common by the occupants of any two or more houses, provided the access is convenient and direct, and provided the number of occupants in the houses for which they are provided shall not exceed the proportion above required for every privy or water-closet. Every such house situated upon a lot on a street in which there is a sewer, shall have the water-closets or privies furnished with a proper connection with the sewer, which connection shall be in all its parts adequate for the purpose, so as to permit entirely and freely to pass whatever enters the same. Such connection with the sewer shall be of a form approved in New York by the Croton Aqueduct Board, and in Brooklyn by the Board of Water Commissioners. All such water-closets and vaults shall be provided with the proper traps, and connected with the house sewer by a proper tight pipe, and shall be provided with sufficient water and other proper means of flushing the same; and every owner, lessee, and occupant shall take adequate measures to prevent improper substances from entering such water-closets or privies or their connections, and to secure the prompt removal of any improper substances, that may enter them, so that no accumulation shall take place, and so as to prevent any exhalations therefrom, offensive, dangerous, or prejudicial to life or health, and so as to prevent the same from being or becoming obstructed. No cesspool shall be allowed in or under or connected with any such house, except when it is unavoidable, and in such case it shall be constructed in such situation and in such manner as the Metropolitan Board of Health may direct. It shall in all cases be water-tight, and arched or securely covered over, and no offensive smell or gases shall be allowed to escape therefrom, or from any privy or privy-vault. In all cases where a sewer exists in the street upon which the house or building stands, the yard or area shall be so connected with the same, that all water, from the roof or otherwise, and all liquid filth shall pass freely into it. Where no sewer exists in the street, the yard or area shall be so graded that all water, from the roof or otherwise, and all filth shall flow freely from it and all parts of it into the street-gutter, by a passage beneath the sidewalk, which shall be covered by a permanent cover, but so arranged as to permit access to remove obstructions or impurities.

SEC. 6. From and after the first day of July, eighteen hundred and sixty-seven, it shall not be lawful, without a permit from the Metropolitan Board of Health, to let or occupy, or suffer to be occupied separately as a dwelling, any vault, cellar, or underground room built or rebuilt after said date, or which shall not have been so let or occupied before said date. And from and after July first, eighteen hundred and sixty-seven, it shall not be lawful without such permit to let or continue to be let, or to occupy or suffer to be occupied separately as a dwelling, any vault, cellar, or underground room whatsoever, unless the same be in every part thereof at least seven feet in height, measured from the floor to the ceiling thereof, nor unless the same be for at least one foot of its height above the surface of the street or ground

adjoining or nearest to the same, nor unless there be outside of and adjoining the said vault, cellar, or room, and extending along the entire frontage thereof, and upward, from six inches below the level of the floor thereof, up to the surface of the said street or ground, an open space of at least two feet and six inches wide in every part, nor unless the same be well and effectually drained by means of a drain, the uppermost part of which is one foot at least below the level of the floor of such vault, cellar, or room, nor unless there is a clear space of not less than one foot below the level of the floor, except where the same is cemented, nor unless there be appurtenant to such vault, cellar, or room, the use of a water-closet or privy kept and provided as in this act required, nor unless the same have an external window opening of at least nine superficial feet clear of the sash-frame, in which window opening there shall be fitted a frame filled in with glazed sashes, at least four and a half superficial feet of which shall be made so as to open for the purpose of ventilation. Provided, however, that in case of an inner or back vault, cellar, or room let or occupied along with a front vault, cellar or room, as part of the same letting or occupation, it shall be a sufficient compliance with the provisions of this act if the front room is provided with a window as hereinbefore provided, and if the said back vault, cellar, or room is connected with the front vault, cellar, or room by a door and also by a proper ventilating or transom window, and, where practicable, also connected by a proper ventilating or transom window, or by some hall or passage, or with the external air. Provided always that in any area adjoining a vault, cellar, or underground room there may be steps necessary for access to such vault, cellar, or room, if the same be so placed as not to be over, across, or opposite to the said external window, and so as to allow between every part of such steps and the external wall of such vault, cellar, or room, a clear space of six inches at least, and if the rise of such steps is open; and provided further that over or across any such area there may be steps necessary for access to any building above the vault, cellar or room to which such area adjoins, if the same be so placed as not to be over, across, or opposite to any such external window.

SEC. 7. From and after the first day of July, eighteen hundred and sixty-eight, no vault, cellar, or underground room shall be occupied as a place of lodging or sleeping, except the same shall be approved, in writing, and a permit given therefor, by the Metropolitan Board of Health.

SEC. 8. Every tenement or lodging house shall have the proper and suitable conveniences or receptacles for receiving garbage and other refuse matters. No tenement or lodging house, nor any portion thereof, shall be used as a place of storage for any combustible article, or any article dangerous to life or detrimental to health; nor shall any horse, cow, calf, swine, pig, sheep, or goat, be kept in said house.

SEC. 9. Every tenement or lodging house, and every part thereof, shall be kept clean and free from any accumulation of dirt, filth, garbage, or other matter in or on the same, or in the yard, court, passage, area, or alley connected with or belonging to the same. The owner or keeper of any lodging-house, and the owner or lessee of any tenement-house or part thereof, shall thoroughly cleanse all the rooms, passages, stairs, floors, windows, doors, walls, ceilings, privies, cesspools, and drains thereof of the house or part of the house of which he is the owner or lessee, to the satisfaction of the Metropolitan Board of Health, so often as shall be required by or in accordance with any regulation or ordinance of said Board, and shall, well and sufficiently, to the satisfaction of said Board, whitewash the walls and ceilings thereof twice at least in every year, and in the months of April and October, unless the said Board shall otherwise direct. Every tenement or lodging house shall have legibly posted or painted on the wall or door in the entry, or some public accessible place, the name and address of the owner or owners, and of the agent or agents, of any one, having charge of the renting and collecting of the rents for the same; and service of any papers required by this act, or by any proceedings to enforce any of its provisions, or of the acts relating to the Metropolitan Board

of Health, or the Department for the Survey and Inspection of Buildings, shall be sufficient if made upon the person or persons so designated as owner or owners, agent or agents.

SEC. 10. The keeper of any lodging-house, and the owner, agent of the owner, lessee and occupant of any tenement-house, and every other person having the care or management thereof, shall, at all times, when required by any officer of the Metropolitan Board of Health, or by any officer upon whom any duty or authority is conferred by this act, give him free access to such house and to every part thereof. The owner or keeper of any lodging-house, and the owner, agent of the owner, and the lessee of any tenement-house, or part thereof, shall, whenever any person in such house is sick of fever, or of any infectious, pestilential or contagious disease, and such sickness is known to such owner, keeper, agent, or lessee, give immediate notice thereof to the Metropolitan Board of Health, or to some officer of the same, and, thereupon, said Board shall cause the same to be inspected, and may, if found necessary, cause the same to be immediately cleansed or disinfected at the expense of the owner, in such manner as they may deem necessary and effectual; and they may also cause the blankets, bedding, and bedclothes used by any such sick person, to be thoroughly cleansed, scoured, and fumigated, or, in extreme cases, to be destroyed.

SEC. 11. Whenever it shall be certified to the Metropolitan Board of Health by the Sanitary Superintendent, that any building or part thereof is unfit for human habitation, by reason of its being so infected with disease as to be likely to cause sickness among the occupants, or by reason of its want of repair has become dangerous to life, said Board may issue an order and cause the same to be affixed conspicuously on the building, or part thereof, and to be personally served upon the owner, agent, or lessee, if the same can be found in this State, requiring all persons therein to vacate such building for the reasons to be stated therein as aforesaid. Such building or part thereof shall, within ten days thereafter, be vacated; or within such shorter time, not less than twenty-four hours, as in said notice may be specified; but said Board, if it shall become satisfied that the danger from said house, or part thereof, has ceased to exist, may revoke said order, and it shall thenceforward become inoperative.

SEC. 12. No house hereafter erected shall be used as a tenement-house or lodging-house, and no house heretofore erected and not now used for such purpose shall be converted into, used, or leased for a tenement or lodging-house, unless, in addition to the requirements hereinbefore contained, it conforms to the requirements contained in the following sections:

SEC. 13. It shall not be lawful hereafter to erect for or convert to the purposes of a tenement or lodging house a building on the front of any lot where there is another building on the rear of the same lot, unless there is a clear open space exclusively belonging thereto, and extending upward from the ground of at least ten feet between said buildings, if they are one story high above the level of the ground; if they are two stories high, the distance between them shall not be less than fifteen feet; if they are three stories high, the distance between them shall be twenty feet; and if they are more than three stories high, the distance between them shall be twenty-five feet. At the rear of every building hereafter erected for or converted to the purposes of a tenement or lodging house on the back part of any lot, there shall be a clear open space of ten feet between it and any other building. But when thorough ventilation of such open spaces can be otherwise secured, said distances may be lessened or modified, in special cases, by a permit from the Metropolitan Board of Health.

SEC. 14. In every such house hereafter erected or converted, every habitable room, except rooms in the attic, shall be in every part not less than eight feet in height from the floor to the ceiling; and every habitable room in the attic of any such building shall be at least eight feet in height from the floor to the ceiling, throughout not less than one-half the area of such room. Every such room shall have, at least, one window, connecting with the external air, or over the door a ventilator of perfect construction connecting it with a room or hall which has

a connection with the external air, and so arranged as to produce a cross-current of air. The total area of window or windows in every room communicating with the external air, shall be at least one-tenth of the superficial area of every such room; and the top of one, at least, of such windows, shall not be less than seven feet and six inches above the floor, and the upper half, at least, shall be made so as to open the full width. Every habitable room of a less area than one hundred superficial feet, if it does not communicate directly with the external air, and is without an open fireplace, shall be provided with special means of ventilation by a separate air-shaft extending to the roof, or otherwise, as the Board of Health may prescribe.

SEC. 15. Every such house hereafter erected or converted shall have adequate chimneys running through every floor, with an open fireplace or grate, or place for a stove, properly connected with one of said chimneys, for every family and set of apartments. It shall have proper conveniences and receptacles for ashes and rubbish. It shall have Croton, Ridgewood, or other water furnished at one or more places in such house, or in the yard thereof, so that the same may be adequate and reasonably convenient for the use of the occupants thereof. It shall have the floor of the cellar properly cemented, so as to be water-tight. The halls on each floor shall open directly to the external air, with suitable windows, and shall have no room or other obstruction at the end, unless sufficient light or ventilation is otherwise provided for said halls in a manner approved by the Metropolitan Board of Health.

SEC. 16. Every owner or other person, violating any provision of this act, after the same shall take effect, shall be guilty of a misdemeanor, punishable by a fine of not less than ten dollars, nor more than one hundred dollars, or by imprisonment for not more than ten days for each and every day that such violation shall continue, or by both such fine and imprisonment in the discretion of the court. He shall also be liable to pay a penalty of ten dollars for each and every day that such offense shall continue. Such penalty may be sued for and recovered by the Metropolitan Board of Health, and when recovered shall be paid over to the Treasurer of said Board. In every proceeding for a violation of this act, and in every such action for a penalty, it shall be the duty of the owner of the house to prove the date of its erection or conversion to its existing use, if that fact shall become material, and the owner shall be *prima facie* the person liable to pay such penalty, and after him the person who is the lessee of the whole house, in preference to the tenant or lessee of a part thereof. In any such action the owner, lessee, and occupant, or any two of them, may be made defendants, and judgment may be given against the one or more shown to be liable, as if he or they were sole defendant or defendants.

SEC. 17. A tenement-house, within the meaning of this act, shall be taken to mean and include every house, building or portion thereof, which is rented, leased, let, or hired out to be occupied, or is occupied, as the house or residence of more than three families living independently of another, and doing their cooking upon the premises, or by more than two families upon a floor, so living and cooking, but having a common right in the halls, stairways, yards water-closets, or privies, or some of them. A lodging-house shall be taken to mean and include any house or building, or portion thereof, in which persons are harbored or received, or lodged for hire for a single night, or for less than a week at one time, or any part of which is let for any person to sleep in for any term less than a week. A cellar shall be taken to mean and include every basement or lower story of any building or house of which one-half or more of the height from the floor to the ceiling is below the level of the street adjoining.

SEC. 18. The Metropolitan Board of Health shall have authority to make other regulations as to cellars and as to ventilation, consistent with the foregoing, where it shall be satisfied that such regulations will secure equally well the health of the occupants.

SEC. 19. This act, except when it is otherwise expressly provided, shall take effect in May first, eighteen hundred and sixty-seven.

CHAPTER 700, LAWS OF 1867.

AN ACT with reference to the powers of the Metropolitan Board of Health in the regulation of cattle-driving and other matters. Passed April 24, 1867,

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. From and after the passage of this act it shall not be lawful to drive any cattle, sheep, swine, pigs, or calves, through the streets or avenues of New York or Brooklyn, or any of them, except at such times and in such manner as the Metropolitan Board of Health may by ordinance or resolution prescribe. But so long as said Board shall permit the business of slaughtering animals for food to be carried on, in that portion of the city of New York south of Fortieth Street, it shall be lawful to drive through such streets and avenues in the city of New York as may be designated by said Board, and under such restriction as to numbers as said Board may prescribe, cattle from eight o'clock in the evening till two hours after sunrise in the morning, and sheep until twelve o'clock at noon. But in designating the streets and avenues the said Board shall have regard as well to the convenience of persons driving the same as to the character, condition, and ordinary use of the said streets and avenues.

SEC. 2. No person in charge of any cattle, sheep, pigs, swine, or calves, shall, if able to prevent it, permit any such cattle, sheep, pigs, swine, or calves, to pass upon or across any sidewalk in said cities, and any person violating any provision of this act shall be deemed guilty of a misdemeanor, and on conviction be punished by a fine of not less than ten or more than fifty dollars, or by imprisonment in the penitentiary for not more than thirty days, or by both such fine and imprisonment.

SEC. 3. In all cases to which said Board of Health is a party, either when acting as such or as a Board of Excise, preference shall be given to the same by all courts and judges on all motions, trials, and appeals, in the same manner as to cases to which the people of the State are directly parties plaintiff, and whenever said Board shall seek any provisional remedy, or shall prosecute any appeal, it shall not be necessary before obtaining or prosecuting the same to give any undertaking, but such Board shall be liable in the same manner as if an undertaking had been given in the ordinary manner.

SEC. 4. This act shall take effect immediately.

 CHAPTER 382. 1867.

AN ACT to incorporate the Soldiers' Business Messenger and Dispatch Company. Passed April 15, 1867.

The People of the State of New York, represented in Senate and Assembly, do enact as follows:

. . . . SECTION 6. Said corporation is hereby authorized and shall have power to erect and maintain covered stands or booths on the streets of the cities and villages in said district, except Broadway in the city of New York. Provided that no booth or stand shall be placed upon the sidewalk, without the previous consent of the owner or lessee of the property fronting against said booth or stand; and the number, size, and location of said booths or stands shall be determined by the Metropolitan Board of Health, or a majority of said Board, who shall determine and locate the same upon application by the president of this corporation.

. . . . SEC. 9. This act shall take effect immediately.

CHAPTER 806. 1867.

AN ACT to enable the Board of Supervisors of the County of New York to raise money by tax for certain county purposes; to extend the powers of the Metropolitan Police, and to provide for the auditing and payment of unsettled claims against said county. Passed April 25, 1867, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

. . . SECTION 26. Nothing in this act shall be deemed to conflict, in any manner, with the Quarantine laws, or with the rules and regulations of the Health Officer of the port of New York; nor shall any permit or licenses issued under the act hereby amended authorize any person to visit any ship or vessel under quarantine, without the authority of the Health Officer of the port of New York, or of the Metropolitan Board of Health.

CHAPTER 566.

AN ACT to provide for the proper drainage of lands within the corporate limits of the City and County of New York. Passed April 18, 1871, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. Whenever it shall appear to be necessary for the protection of the public health that any part or parcel of land, within the corporate limits of the city and county of New York, needs to be drained by other means than by sewers, and it shall be so certified by the city Sanitary Inspector, and said certificate is filed among the records of the Board of Health of the Health Department of said city, the said Board shall direct that the same be done by and under the direction of the Department of Public Works of said city and county.

SEC. 2. All parts and parcels of land lying below the levels of the sewers adjacent thereto, upon which surface water remains stagnant, or through which water-courses have or at present do run, may be so drained by a properly-constructed blind drain, which shall be carried along such natural water-course, until it can be made to enter any sewer at its proper level, or if such sewer cannot be reached, it shall be carried to the adjacent river.

SEC. 3. All lands benefited by said drain directly or indirectly, for a distance from said drain included between the adjacent streets and avenues thereto, shall be liable to assessment thereon pro rata in proportion to the direct or indirect benefit derived from the construction of said drain. The assessment to be made and collected as other assessments for the public benefit are provided for. The assessments to become a lien upon the property assessed as in like cases provided.

CHAPTER 742. 1871.

AN ACT in relation to storage and the keeping of combustible material in the City of New York, the use and control of the fire-alarm telegraph, the incumbrance of hydrants, and other purposes connected with the prevention and extinguishment of fires therein, and imposing certain powers and duties upon the Board of Fire Commissioners of the said city. Passed April 26, 1871, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. The following regulations are hereby established for storage and the keeping and sale of combustible materials in the city of New York :

SEC. 4. No person shall have, keep upon sale, or store in any place or building within the corporate limits of the city of New York any crude petroleum, coal, or any similar oil, nor

any of their products, either of which shall emit an inflammable vapor at a temperature below one hundred degrees Fahrenheit, except under the following provisions.¹

CHAPTER 677. 1872.

AN ACT in relation to the cleaning of the streets, avenues, lanes, alleys, gutters, wharves, piers, and heads of slips in the City of New York, and the removal of all ashes, garbage, rubbish, and sweepings, and all dead animals, blood, offal, and other refuse matter, and all bones, fish not fit for human food, and all diseased, tainted, and impure meats, and other like matters in said city, therefrom, and in relation to the supervision and enforcement of and the cancellation of existing contracts and arrangements in respect thereto. Passed May 14, 1872, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows.

SECTION 1. The Board of Police in the City of New York, as it may, from time to time, be constituted, shall have full and exclusive power and authority, and is hereby charged with the duty of causing all streets, avenues, lanes, alleys, gutters, wharves, piers, and heads of slips in said city, to be thoroughly cleaned, from time to time, and kept at all times thoroughly clean, and to remove from said city daily, and as often as may be necessary, all ashes, garbage, rubbish, sweepings of every kind, and all dead horses and other dead animals, blood, offal, and other refuse matter, and all bones, all fish not fit for human food, all diseased, tainted, or impure meats, and all other matter or nuisances of a similar kind, which the Board of Health in said city may order to be removed. The said ashes, dirt, garbage, and rubbish shall be removed from the city as fast as collected, except such dirt and ashes as, in the judgment of the said Board of Health, may be suitable to fill low or sunken lots, and which may be required for such purpose.

SEC. 2. The said Board of Police is hereby vested with full and exclusive power and authority to supervise, and is hereby charged with the duty of supervising the execution of the agreement for cleaning the streets in said city, made on the ninth day of June, A. D. eighteen hundred and sixty-five, between the Mayor, Aldermen and Commonalty of the city of New York, of the first part, and John L. Brown, William H. Devoe, and Shepherd F. Knapp, contractors of the second part, provided the same is found to be a valid, existing agreement, and to see that said agreement is fully executed, on the part of the said contractors, and of those who, by assignment or otherwise, have succeeded to the rights, interests, and duties of said contractors, and to arrange by agreement for the surrender and cancellation of said contract by said contractors, or by their said successors in interest therein, on such terms as, in their judgment, will be for the best interests of said city; and to declare the same canceled and determined whenever the said contractors or their successors in interest therein shall fail or omit to perform substantially all the stipulations and covenants therein contained on the part of said contractors, and to be by them kept and performed. Whenever the said contract shall be canceled, as in this section provided, either by agreement or by reason of the failure of said contractors, or their successors in interest, to perform the same on their part, the Board of Police shall proceed to exercise the powers and perform the duties, and shall thence continue to exercise the powers conferred, and perform the duties enjoined, by the first section of this act, in respect to the cleaning of the streets in said city, and the removing of ashes, garbage, rubbish, and sweepings.

SEC. 3. Whenever the existing contract in relation to the removal from said city of dead animals, blood, offal, and other refuse matter, made on the eighth of April, eighteen hundred

¹ The remainder of this section gives in detail the rules and regulations established by law. By this law, and by section 76, article 10, of the Charter, chapter 335, 1873, the control of this subject-matter is vested in the Fire Department, in which there is a Bureau, whose principal officer is called Inspector of Combustibles.

and sixty-five, between the Mayor, Alderman, and Commonalty of the city of New York, of the first part, and the Long Island Bone Laboratory of the second part, shall be terminated, the said Board of Police shall proceed to and thence continue to exercise the power and authority conferred and perform the duties enjoined by the first section of this act, in respect to the removal from said city of dead animals, blood, offal, and other refuse matter.

SEC. 4. The department, bureau, or city official or officials, authority or authorities, having from time to time the management and control of the public docks, piers, and slips of said city, shall designate and set apart, for the use of the said Board of Police, suitable and sufficient docks, piers, and slips, or berths in slips, and so located as to be adapted to and meet the wants of said Board in executing the various duties imposed by this act, without interruptions or delays.

SEC. 5. The said Board of Police is hereby authorized to contract for the sale of street manure, dirt, sweepings, ashes, and garbage, any or either of them, to any person or persons, for such price or prices as to them shall seem expedient, and so as that the same shall be promptly removed from said city, or so disposed of as not to be offensive or detrimental to health, and to use the moneys thus obtained in defraying the expense of executing the powers conferred by this act. All moneys received under this section, and all contracts made under this act, shall be reported to the Controller of the City of New York semi-monthly.

THE CHARTER OF THE CITY OF NEW YORK, SO FAR AS ITS PROVISIONS RELATE TO THE POWERS AND DUTIES OF THE HEALTH DEPARTMENT. 1873.

AN ACT to reorganize the local government of the City of New York. Passed April 30, 1873, three-fifths being present, as amended by an act entitled "An act to amend chapter 335 of the Laws of 1873," passed June 13, 1873.

ARTICLE SECOND. OF LEGISLATIVE POWERS.

SECTION 17. The Common Council shall have power to make, continue, modify, and repeal such ordinances, regulations, and resolutions as may be necessary to carry into effect any and all of the powers now vested in or by this act conferred upon the corporation, and shall have the power to enforce obedience to such ordinances and observance thereof, by ordaining penalties for each and every violation thereof, in such sums as it may deem expedient, not exceeding one hundred dollars; and shall have power to make such ordinances, not inconsistent with law and the constitution of this State, and with such penalties, in the matter, and for the purposes following, in addition to other powers elsewhere specially granted, namely:

1. To regulate traffic and sales in the streets, highways, roads, and public places.
2. To regulate the use of the streets, highways, roads, and public places by foot-passengers, animals, vehicles, cars, and locomotives.
- 2.¹ To regulate the use of sidewalks, and prevent the extension of building-fronts and house-fronts within the stoop-lines.
4. To prevent encroachments upon and obstructions to the streets, highways, roads, and public places, not including parks, and to authorize and require the Commissioners of Public Works to remove the same, but they shall have no power to authorize the placing or continuing of any encroachment or obstruction upon any street or sidewalk, except the temporary occupation thereof, during the erection or repair of a building on a lot opposite the same.
5. To regulate the opening of street surfaces, the laying of gas and water mains, the building and repairing of sewers, and the erecting of gas-lights.

¹ So in original.

6. To regulate the numbering of the houses and lots in the streets and avenues, and the naming of the streets, avenues, and public places; but it shall not be lawful for the said Board to number or renumber any houses, in any street, avenue, alley, lane, road, way, or public place, or to in anywise change or alter any such numbering or the name of any street, avenue, or public place, save between the first day of December of any year and the first day of May next ensuing.

7. To regulate and prevent the throwing or depositing of ashes, offal, dirt, or garbage in the streets.

8. To regulate the cleaning of the streets, avenues, sidewalks, and gutters, and removing ice and snow from them.

9. To regulate the use of the streets and sidewalks for signs, sign-posts, awnings, awning-posts, horse-troughs, urinals, telegraph-posts, and other purposes.

10. [*As amended by sec. 6, chap. 757, Laws of 1873.*] To provide for and regulate street pavements, crosswalks, curb-stones, gutter-stones, sidewalks, and the grade of streets, and to provide for regulating, grading, flagging, curbing, guttering, and lighting streets, roads, places, and avenues.

11. To regulate public cries, advertising noises, steam-whistles, and ringing bells in the streets, and to control and limit traffic in the streets, avenues, and public places.

12. In relation to street beggars, vagrants, and mendicants.

13. In relation to the use of guns, pistols, fire-arms, fire-crackers, fireworks, and detonating works of all descriptions within the city.

14. In relation to intoxication, fighting, and quarreling in the streets.

15. In relation to places of public amusement.

16. In relation to exhibiting banners, placards, or flags in or across the streets or from houses or other buildings.

17. In relation to the exhibition of advertisements or handbills along the streets, avenues, and public places.

18. In relation to the construction, repairs, and use of vaults, cisterns, areas, hydrants, pumps, and sewers.

19. In relation to partition fences and walls.

20. In relation to the construction, repair, care, and use of markets.

21. In relation to the licensing and business of public cartmen, truckmen, hackmen, cabmen, expressmen, car-drivers, boatmen, pawnbrokers, junk-dealers, hawkers, peddlers, and venders, and all licenses shall be according to an established form and regularly numbered, and be duly registered in the office of the Mayor.

22. In relation to the inspection and sealing of weights and measures, and enforcing the keeping and use of proper weights and measures by venders.

23. In relation to the inspection, weighing, and measuring of fire-wood, coal, hay, and straw, and the cartage of the same.

24. In relation to the mode and manner of suing for, collecting, and keeping accounts of the city and county, and disposing of the penalties provided for a violation of all ordinances.

25. In relation to the erection and repair of public fountains for the use of man and animals, at convenient points along the streets and avenues and public places.

26. By resolution to require the Commissioner of Public Works to do any work or take any action proper for carrying into effect the powers of the Common Council. The ordinances of the Common Council shall, as far as practicable, be reduced to a code, and be published as such in the *City Record*.

ARTICLE THIRD.—OF THE EXECUTIVE POWER.

SECTION 26. There shall be the following other departments in said city:
Finance Department.

Law Department.
 Police Department.
 Department of Public Works.
 Department of Public Charities and Correction.
 Fire Department.
 Health Department.
 Department of Public Works.¹
 Department of Docks.
 Department of Taxes and Assessments.
 Department of Buildings.

SEC. 27. The said departments shall, once in three months, and at such other times as the Mayor may direct, make to him, in such form and under such rules as he may prescribe, reports of the operations and action of the same and each of them, which reports shall be published in the *City Record*. The said department shall always, when required by the Mayor, furnish to him such information as he may demand, within such reasonable time as he may direct.

SEC. 28. The heads of all departments (except as otherwise herein specifically provided) shall have power to appoint and remove all chiefs of bureaus (except the chamberlain), as also all clerks, officers, employés and subordinates in their respective departments, except as herein otherwise specially provided, without reference to the tenure of office of any existing appointee. But no regular clerk or head of a bureau shall be removed until he has been informed of the cause of the proposed removal, and has been allowed an opportunity of making an explanation; and in every case of a removal, the true grounds thereof shall be forthwith entered upon the records of the department or Board. In case of removal, a statement, showing the reason therefor, shall be filed in the department. The number and duties of all officers and clerks, employés and subordinates in every department, except as otherwise herein specifically provided, with their respective salaries, whether now fixed by special law or otherwise, shall be such as the heads of the respective departments shall designate and approve; but subject, also, to the revision of the Board of Apportionment; provided, however, that the aggregate expense thereof shall not exceed the total amount duly appropriated to the respective departments for such purposes. Any head of department may, with the consent of the Board of Apportionment, consolidate any two or more bureaus established by law, and may change the duties of any bureau; and it shall be the duty of the head of the Finance Department to bring together all officers and bureaus authorized to receive money for taxes, assessments or arrears, in such manner that the payment of the same can be made, as nearly as practicable, at one time and place, and in one office.

ARTICLE SEVENTH.—OF THE POLICE DEPARTMENT.

SEC. 67. The Board of Police by this act created shall possess all the powers conferred upon the existing Board of Police by chapter six hundred and seventy-seven of the Laws of eighteen hundred and seventy-two, and any act or acts amendatory thereof or supplemental thereto, except as herein otherwise provided; and shall establish in their department a bureau, which shall be called the Bureau of Street Cleaning, the chief officer of which shall be a police officer and shall be called "Inspector of Street Cleaning;" and who shall, under the supervision of the Board of Police, have charge of the cleaning of the streets, avenues and public places of the city. He shall supervise and enforce the performance of the conditions of any existing contract for such cleaning, or for the removal, under any contract now existing or hereafter made by the Board of Health, of night-soil and contents of sinks and privies, and

¹ So in original.

offal and dead animals; and shall perform such additional cleaning as, in the opinion of the Board of Health, is necessary to keep said streets, avenues and public places clean. He shall possess all the powers and rights imposed upon or reserved to the City Inspector in any law or ordinance, or in any contract now in force, so far as the same relates to street-cleaning. He shall file with the comptroller monthly a statement, under oath, showing the number of persons, and at what salary or compensation, that were employed during each day in the preceding month, and shall keep and preserve regular pay-rolls, which shall be open to reasonable public inspection.

ARTICLE EIGHTH.—OF THE DEPARTMENT OF PUBLIC WORKS.

SEC. 71. The said department shall have cognizance and control—

1. Of all structures and property connected with the supply and distribution of Croton water.
2. Of the collection of the revenues arising from the sale or use of the Croton water.
3. Of opening, altering, regulating, grading, flagging, curbing, guttering and lighting streets, roads, places and avenues.
4. Of repairing and construction of public roads.
5. Of the care of public buildings.
6. Of the filling of sunken lots.
7. Of public sewers and drainage.
8. Of street vaults and openings in sidewalks.
9. Of paving, repairing and repaving streets, and keeping the same clear of obstructions.
10. Of digging and constructing wells.

ARTICLE ELEVENTH.—OF THE HEALTH DEPARTMENT.

SEC. 80. The Health Department shall consist of the president of the Board of Police, the Health-Officer of the Port, and two officers to be called "Commissioners of Health," one of whom shall have been a practising physician for not less than five years preceding his appointment. The Commissioner of Health, who is not a physician, shall be the president of the Board, and shall be so designated in his appointment. These several officers shall together constitute a Board, which shall be the head of the Health Department. The Commissioners of Health, except those first appointed, shall hold their offices for six years, unless sooner removed as herein provided.

SEC. 81. There shall be two bureaux in this department. The chief officer of one bureau shall be called the "Sanitary Superintendent," who, at the time of his appointment, shall have been, for at least ten years, a practising physician and for three years a resident of the city of New York, and he shall be the chief executive officer of said department. The chief officer of the second bureau shall be called the "Register of Records;" and in said bureau shall be recorded, without fees, every birth, marriage and death, and all inquisitions of coroners which shall occur or be taken within the city of New York. But in cases of inquests, where the jury shall find that death was caused by negligence or malicious injury, only a copy of the record need be filed in said bureau. Said Board may, with the consent of the Board of Police, impose any portion of the duties of subordinates in said department upon subordinates in the Police Department, and may delegate any portion of its powers to the President or Sanitary Superintendent, to be exercised when the Board is not in session. The said Board of Health may appoint an attorney at a salary not exceeding two thousand five hundred dollars a year, to be provided for and paid as other salaries in said department.

SEC. 82. It shall be the duty of said Board, immediately upon organization under this act, to cause to be conformed to this article the sanitary ordinances then or lately adopted by the

existing Department of Health, which shall be called the "Sanitary Code." And said Health Department is hereby authorized and empowered to add to such Sanitary Code from time to time, and shall publish additional provisions for the security of life and health in the city of New York, and therein to distribute appropriate powers and duties to the members and employés of the Board of Health, which shall be published in the *City Record*. Any violation of said code shall be treated and punished as a misdemeanor, and the offender shall also be liable to pay a penalty of fifty dollars, to be recovered in a civil action in the name of the Mayor, Aldermen and Commonalty of the city of New York. All orders duly made by the existing Department of Health, and by their terms or necessary legal effect to be executed in the city of New York, may be executed, and the execution thereof compelled, and the execution of such of them as are partly executed may be compelled by the Department of Health hereby created; and the said orders may be severally rescinded or modified by last said department, with like effect as could have been done by the existing Department of Health at the time the said orders were severally made. The said department may discharge all liens upon real estate in the city of New York, created in proceedings instituted by the Metropolitan Board of Health, or the existing Department of Health, in the same manner and for the same causes that, by laws existing January first, eighteen hundred and seventy, they could be discharged by the Metropolitan Board of Health.

[*Amended by adding the following—section 12, chapter 757, Laws of 1873.*] The authority, duty, and powers conferred or enjoined upon the Metropolitan Board of Health by chapter seventy-four of the Laws of eighteen hundred and sixty-six, and the several acts amendatory thereof, and by any other subsequent Laws of this State, and upon the several officers and members of said Board, not inconsistent with the provisions of this act, are hereby conferred upon and vested in, or enjoined upon, and shall hereafter be exclusively exercised in the city of New York, by the Health Department and Board of Health created by this act; and by the officers of the said Board of Health and the said Health Department; and the same are to be exercised in a manner specified in the said chapter seventy-four, of the Laws of eighteen hundred and sixty-six, and the several acts amendatory thereof, and by any other subsequent Laws of this State, and in conformity to the provisions of this act.

ARTICLE SIXTEENTH.—GENERAL PROVISIONS, POWERS, AND LIMITATIONS.

SEC. 89. A majority of the members of a Board in any department of the city government, and also of the Board for the revision and correction of assessments, shall constitute a quorum to fully perform and discharge any act or duty authorized, possessed by or imposed upon any department or any Board aforesaid, and with the same legal effect as if every member of any such Board aforesaid had been present, except as herein otherwise specially provided. Each Board may, except as herein otherwise provided, choose, in its own pleasure, one of its members, who shall be its president, and one who shall be its treasurer, and may appoint a chief clerk or secretary. No expense shall be incurred by any of the departments, boards, or officers thereof, unless an appropriation shall have been previously made covering such expense.

SEC. 91. All contracts to be made or let for work to be done or supplies to be furnished, except as herein otherwise provided, and all sales of personal property in the custody of the several departments or bureaus, shall be made by the appropriate heads of departments under such regulations as now exist or shall be established by ordinances of the Common Council. Whenever any work is necessary to be done to complete or perfect a particular job, or any supply is needful for any particular purpose, which work and job is to be undertaken or supply furnished for the corporation, and the several parts of the said work or supply

shall together involve the expenditure of more than one thousand dollars, the same shall be by contract, under such regulations concerning it as shall be established by ordinance of the Common Council, excepting such works now in progress as are authorized by law or ordinance to be done otherwise than by contract; and unless otherwise ordered by a vote of three-fourths of the members elected to the Common Council; and all contracts shall be entered into by the appropriate heads of departments, and shall, except as herein otherwise provided, be founded on sealed bids or proposals, made in compliance with public notice duly advertised in the *City Record*, said notice to be published at least ten days; and all such contracts, when given, shall be given to the lowest bidder, the terms of whose contracts shall be settled by the counsel to the corporation as an act of preliminary specification to the bid or proposal, and who shall give security for the faithful performance of his contract in the manner prescribed and required by ordinance; and the adequacy and sufficiency of this security shall, in addition to the justification and acknowledgment, be approved by the Comptroller. All bids or proposals shall be publicly opened by the officers advertising for the same and in the presence of the Comptroller, but the opening of the bids shall not be postponed if the Comptroller shall, after due notice, fail to attend. If the lowest bidder shall neglect or refuse to accept the contract within forty-eight hours after written notice that the same has been awarded to his bid or proposal, or if he accepts but does not execute the contract and give the proper security, it shall be readvertised and relet as above provided. In case any work shall be abandoned by any contractor, it shall be readvertised and relet by the head of the appropriate department, in the manner in this section provided.

SEC. 92. All property sold shall be sold at auction, after previous public notice, under the superintendence of the appropriate head of department. Every contract, when made and entered into, as before provided for, shall be executed in duplicate, and shall be filed in the Department of Finance; a receipt for each payment, made on account of or in satisfaction of the same, shall be indorsed on the said contract by the party receiving the warrant, which warrant shall be only given to the person interested in such contract, or his authorized representative. The proceeds of all sales made under and by virtue of this act shall, except as provided in section sixty-five hereof, be by the officer receiving the same immediately deposited with the Chamberlain; and the account of sales, verified by the officer making the sales, shall be immediately filed in the office of the Comptroller. No expenditure for work or supplies involving an amount for which no contract is required shall be made, except the necessity therefor be certified to by the head of the appropriate department, and the expenditure has been duly authorized and appropriated.

SEC. 93. Every person who shall be appointed or elected to any office under this act shall receive a certificate of appointment, designating the term for which such person has been appointed or elected.

SEC. 94. Every person elected or appointed to any office under the city government shall, within five days after notice of such election or appointment, take and subscribe, before the Mayor, or any judge of a court of record, an oath or affirmation faithfully to perform the duties of his office; which oath or affirmation shall be filed in the office of the Mayor.

SEC. 95. Any officer of the city government, or person employed in its service, who shall willfully violate or evade any of the provisions of this act, or commit any fraud upon the city, or convert any of the public property to his own use, or knowingly permit any other person so to convert it, or by gross or culpable neglect of duty allow the same to be lost to the city, shall be deemed guilty of a misdemeanor, and, in addition to the penalties imposed by law, and, on conviction, shall forfeit his office, and be excluded forever after from receiving or holding any office under the city government; and any person who shall willfully swear falsely in any oath or affirmation required by this act shall be guilty of perjury.

SEC. 96. [*As amended by section 16, chapter 757, Laws of 1873.*] No officer of the city government, except the city marshals, shall have or receive to his own use any fees, perquisites, or commissions, or any percentage; but every such officer shall be paid by a fixed salary, and all fees, percentages, and commissions received by any such officer shall be the property of the city. And every officer who shall receive any fees, perquisites, commissions, percentages, or other money which should be paid over to the city, shall, before he shall be entitled to receive any salary, make under oath a detailed return to the Comptroller, showing the amount of all such fees, commissions, percentages, perquisites, and moneys received by him since the last preceding report, the person from whom received, and the reason for its payment, and shall produce the receipt of the Chamberlain, showing the payment to him, by said officer, of the aggregate amount thereof. All sums received as above or for licenses or permits shall be paid over weekly, without deduction by the officers or department receiving them, to the Chamberlain, and a detailed return under oath shall at the same time be made in such form as the Comptroller shall prescribe, stating when and from whom, and for what use, such moneys were received. But nothing herein contained shall be construed so as to repeal, modify, or otherwise affect the provisions of the fourteenth section of chapter seven hundred and forty-two of the Laws of eighteen hundred and seventy-one.

SEC. 107. The heads of all departments, except the Police Department, and the chiefs of each and every bureau of said departments, or any of them, except the Police Department, shall, with reasonable promptness, furnish to any tax-payer desiring the same a true and certified copy of any book, account, or paper kept by such department, bureau, or officer, or such part thereof as may be demanded, upon payment in advance of five cents for every hundred words thereof by the person demanding the same. All books, accounts, and papers, in any department or bureau thereof, except the Police Department, shall at all times be open to the inspection of any tax-payer, subject to any reasonable rules and regulations in regard to the time and manner of such inspection as such department, bureau, or officer may make in regard to the same, in order to secure the safety of such books, accounts, and papers, and the proper use of them by the department, bureau, or officer. In case such inspection shall be refused, such tax-payer, on his sworn petition, describing the particular book, account, or paper that he desires to inspect, may, upon notice of not less than one day to such department, bureau, or officer, apply to any Justice of the Supreme Court for an order that he be allowed to make such inspection as such justice shall by his order authorize, and such order shall specify the time and manner of such inspection.

SEC. 109. Any alderman, commissioner, head of department, chief of bureau, deputy thereof, or clerk therein, or other officer of the corporation or person, may, if a judge shall so order, be summarily examined upon an order to be made on application based on an affidavit of the mayor or of the Comptroller, or any five aldermen, or any commissioner of accounts, or of any five citizens who are tax-payers, requiring such examination, and signed by any Justice of the Supreme Court of the first judicial department, directing such examination to be publicly made at the chambers of said court, or at the office of said department, on a day and hour to be named, not less, however, than forty-eight hours after personal service of said order. Such examination shall be confined to an inquiry into any alleged wrongful diversion or misapplication of any moneys or fund, or any violation of the provisions of law, or any want of mechanical qualification for any inspectorship of public work, or any neglect of duty in acting as such inspector, or any delinquency charged in said affidavit touching the office or the discharge or neglect of duty, of which it is alleged in the application for said order that such alderman, head of department, or other aforementioned officer or person, has knowledge or information. Such alderman, commissioner, head of department, clerk, or other aforesaid officer or person shall answer such pertinent questions relative thereto, and produce such books and papers in his custody, or under his control, as the justice shall direct,

and the examination may be continued from time to time, as such justice may order, but the answer of the party charged shall not be used against him in any criminal proceeding; provided, however, that for all false answers on material points he shall be subject to the pains and penalties of the crime of perjury. The proceedings may be continued before any other justice in said district, and other witnesses, as well as the parties making such application may, in the discretion of said justice, be compelled to attend and be examined touching such alleged delinquencies. Such justice may punish any refusal to attend such examination or to answer any questions pursuant to his order, as for a contempt of court, and shall have as full power and authority to enforce obedience to the order or directions of himself, or any other justice, as any Justice of the Supreme Court may now have, or shall possess, to enforce obedience or to punish contempt in any case or matter whatever, and shall impose costs upon those promoting such an examination not exceeding two hundred and fifty dollars, if he thinks there was no probable cause for making the application hereinbefore provided for, the said costs to be paid to the officer or person examined, and for which the said officer or person may have judgment and an execution. The examination hereinbefore provided for shall be reduced to writing, and be filed in the office of the county clerk of the county of New York, and be at all reasonable times accessible to the public, and notice of the same given to the department in which said officer is employed.

SEC. 110. In every department or board there shall be kept a record of all its transactions, which shall be accessible to the public, and once a week a brief abstract, omitting formal language, shall be made of all transactions, and of all contracts awarded and entered into for work and material of every description, which abstract shall contain the name or names, and residences by street and number, of the party or parties to the contract, and of their sureties, if any. A copy of such abstract shall be promptly transmitted to the person designated to prepare the *City Record*, and shall be published therein. Notice of all appointments and removals from office, and all changes of salaries, shall, in like manner, within one week after they are made, be transmitted to and published in the *City Record*.

SEC. 111. There shall be published daily (Sundays and legal holidays excepted), under a contract to be made as hereinafter provided, a paper to be known as the *City Record*. . . . All advertising required to be done for the city, and all notices required by law or ordinance to be published in corporation papers, shall be inserted, at the public expense, only in the *City Record*, and a publication therein shall be a sufficient compliance with any law or ordinance requiring publication of such matters or notices; but there may be inserted in two morning and two evening and two weekly papers published in the English language, and in one newspaper published in the German language, all in said city, to be designated by the mayor, corporation counsel and commissioner of public works, annually, brief advertisements calling attention to any contracts intended to be awarded, or bonds to be sold, and referring for full information to said *City Record*. No money shall be paid from the city treasury for advertising hereafter done except such as is herein authorized, and no action shall be maintained or judgment obtained against the city for any advertising hereafter done except such as is herein authorized. The copies of the *City Record* furnished to the city shall be distributed to the several departments and officers, and to such persons and in such manner as the mayor shall direct. All printing for said city, including the printing of the *City Record*, shall be executed, and all stationery shall be supplied, under contracts, to be entered into by the mayor, corporation counsel and commissioner of public works. . . . No more than one thousand copies of any message of the mayor, or report of any head of a department, and no more than five hundred copies of any report of a committee of the Board of Aldermen, or Board of Assistant Aldermen, shall be printed apart from the *City Record*. Neither the work known as the "Manual of the Common Council" nor any similar work shall be printed at the public expense; but there shall be published in the *City Record*, within the month of January in each year, a list of all subordinates employed in any department (except laborers),

with their salaries, and residences by street numbers, and all changes in such subordinates or salaries shall be so published within one week after they are made. It shall be the duty of all heads of departments to furnish, to the person appointed to supervise the publication of the *City Record*, every thing required to be inserted therein. The said person shall have the power to make requisitions in writing upon the heads of departments to furnish the information necessary to make up such list according to rules prescribed by him and approved by the Comptroller; and such information must be supplied by the department within ten days after such requisition. He shall have power to require such information in the same manner, every three months, and all other information in the control of said heads of departments, necessary to perform his duties under this section. He shall include in his list the number of laborers, designating the department in which they are employed, and if practicable the numbers employed in the prosecution of specific work, and the amounts paid to them. He shall also cause to be printed in each issue of said *City Record* a separate statement of the hours during which all public offices in the city are open for business, and at which each court regularly opens and adjourns, as well as of the places where such offices are kept and such courts are held. The detailed canvass of votes at every election shall be published at the expense of the city only in the *City Record*. The mayor may order the insertion of any official matter or report in the *City Record*.

[*Amended by adding the following—section 19, chapter 757, Laws of 1873.*] Nothing herein contained shall apply to any printing or supplies of stationery for any department where, by the concurrent vote of the mayor, commissioner of public works, and corporation counsel, it shall be decided to have such printing done, or such stationery furnished without contract, but in such cases such printing and stationery shall be procured in such manner and on such terms and conditions as the said officers shall deem to be for the best interests of the city.

SEC. 112. [*As amended by section 20, chapter 757, Laws of 1873.*] The mayor, Comptroller, president of the Board of Aldermen, and the president of the Departments of Taxes and Assessments, shall constitute a Board of Estimate and Apportionment, who shall annually, between the first day of August and the first day of November, meet, and, by the affirmative vote of all the members, make a provisional estimate of the amounts required to pay the expenses of conducting the public business of the city and county of New York, in each department and branch thereof, and the Board of Education, for the then next ensuing financial year. In such provisional estimate they shall include such sum as may be necessary for the payment of the interest on the bonds of the said city and county, which shall become due and payable within said year, and such sums as shall be necessary to pay the principal of any bonds and stocks which may become due and payable from taxes during said year, and also so much as may be necessary to pay the proportion of the State tax required to be paid by the city and county of New York in said year. Such provisional estimate shall be prepared in such detail as to the aggregate sum allowed to each department and bureau as the said Board of Apportionment shall deem advisable. For the purpose of making said provisional estimate, the heads of departments and the Board of Education shall, at least thirty days before the said provisional estimate is required to be made as herein provided, send to the Board of Apportionment an estimate in writing, herein called a departmental estimate, of the amount of expenditure, specifying in detail the objects thereof, required in their respective departments, including a statement of each of the salaries of their officers, clerks, employés and subordinates. The same statement as to salaries and expenditure shall be made by all other officers, persons and boards having power to fix or authorize them. A duplicate of these departmental estimates and statements shall be made at the same time to the Board of Aldermen. The Board of Apportionment shall consider such departmental estimates and other statements in making the provisional estimates herein provided, and in approving the salaries of the officers, clerks, and other per-

sons before named. . . . After the final estimate is made, in accordance herewith, it shall be signed by the members, and when so signed the said several sums shall be and become appropriated to the several purposes and departments therein named. The said estimate shall be filed in the office of the Comptroller and published in the *City Record*. . . . The said Board of Apportionment may, from time to time, by the affirmative vote of three members, authorize the issue of the whole or any portion of any stock or bonds which are now by law authorized to be issued, upon compliance with the provisions of law authorizing them. The said Board of Apportionment may, from time to time, on the application of the head of any department, authorize the transfer, from one bureau or purpose to another in the same department, of any sum theretofore appropriated for the purpose of such department or bureau, but no department or officer shall incur any expense in excess of the sum appropriated. . . . Any balances of appropriations remaining unexpended, after allowing sufficient to satisfy all claims payable therefrom, may at any time, after the expiration of the year for which they were made, be transferred by the Comptroller, with the approval of said Board of Estimate and Apportionment, to the general fund of the city, and applied to the reduction of taxation.

SEC. 118. The several departments shall continue to possess the same powers and perform the same duties as heretofore, except as herein otherwise provided.

SEC. 119. The city of New York is hereby excepted from the provisions of an act entitled an act to establish a metropolitan police district, and to provide for the government thereof, passed April fifteen, eighteen hundred and fifty-seven, and of the acts amendatory thereof, and any sections of statutes and provisions of law which created said district are hereby repealed; and the city of New York is also hereby excepted from the provisions of the act entitled an act to create a metropolitan sanitary district and board of health therein, for the preservation of life and health, and to prevent spread of disease, passed February twenty-six, eighteen hundred and sixty-six, and of the acts amendatory thereof, and any sections of statutes and provisions of law which created said district are hereby repealed; and the city of New York is also hereby excepted from the provisions of an act entitled an act to create a metropolitan fire district, and establish a fire department therein, passed March thirtieth, eighteen hundred and sixty-five, and the acts amendatory thereof, and any sections of statutes and provisions of law which created said district are hereby repealed. The act to amend the charter of the city of New York, passed April seventh, eighteen hundred and thirty; and the act to amend the charter of the city of New York, passed April second, eighteen hundred and forty-nine; and the act to amend an act entitled an act to amend the charter of the city of New York, passed April second, eighteen hundred and forty-nine, passed July eleventh, eighteen hundred and fifty-one; and the act further to amend the charter of the city of New York, passed April twelfth, eighteen hundred and fifty-three; and the act supplementary to an act entitled an act further to amend the charter of the city of New York, passed April twelfth, eighteen hundred and fifty-three, passed June fourteenth, eighteen hundred and fifty-three; and the act to amend the charter of the city of New York, passed April fourteen, eighteen hundred and fifty-seven; and the act relative to the charter of the city of New York, passed April three, eighteen hundred and sixty-three; and the act to make provision for the government of the city of New York, passed June third, eighteen hundred and sixty-eight; and the act entitled an act to reorganize the local government of the city of New York, passed April fifth, eighteen hundred and seventy; and the act entitled an act to make further provisions for the government of the city of New York, passed April twenty-six, eighteen hundred and seventy (save sections twenty-seven and twenty-nine thereof); and the sixth section of an act entitled an act concerning the police life-insurance fund, and the powers and duties of the Police Department of the city of New York, passed March seventeen, eighteen hundred and seventy-one; and the

act entitled an act to amend an act to reorganize the local government of the city of New York, passed April fifth, eighteen hundred and seventy, passed April the eighteenth, eighteen hundred and seventy-one (save so much of section five thereof as relates to the establishment of a scale of water-rents, and sections six and seven of said act); and the act entitled an act to make provision for the local governments of the city and county of New York, passed April nineteen, eighteen hundred and seventy-one, so far as said act relates to the city of New York, are hereby repealed; and all acts or parts of acts inconsistent with the provisions of this act are also hereby repealed; but the repeal of the act hereinabove cited of April fifth, eighteen hundred and seventy, and the acts passed subsequently thereto and hereinabove cited or referred to, so far as the same or either of them relate to any department by this act created, shall not take effect until the organization of any such department as provided for in this act. The charters of the city of New York, known as Dongan and Montgomerie charters, so far as the same or either of them are now in force, not inconsistent with the provisions of this act, shall continue and remain in full force. This section shall not prejudice or affect any right accrued or legal proceeding commenced by reason of any thing contained in the acts hereby repealed, and so accrued and commenced before this act takes effect, except so far as herein specially provided for. The ordinances of the Common Council of the city of New York, in force on the first day of April, eighteen hundred and seventy, and all ordinances passed and adopted since the first day of May, eighteen hundred and seventy, and in force at the time of the passage of this act, are hereby revived and continued in full force as city ordinances, subject to modification, amendment or repeal by the Common Council of said city.¹

CHAPTER 251. 1873.

AN ACT to provide for the regulation and licensing of scavengers in the City of New York. Passed April 22, 1873, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. From and after the passage of this act the Mayor of the city of New York shall have sole and exclusive power to grant licenses to scavengers for the removal of night-soil in the city of New York. "The mayor may make rules and regulations, specifying the duration of such licenses, and the causes for which they may be revoked, and also in relation to the removal of night-soil in said city and therefrom; whoever shall violate and not conform to either of said regulations shall be subject to a penalty of ten dollars for each offense, to be recovered by action in name of the Mayor, Aldermen and Commonalty of the city of New York, in any court having jurisdiction thereof; where the misconduct was willful, the offender shall be subject to a penalty of fifty dollars for each offense, to be recovered as aforesaid."

SEC. 2. All acts or part of acts, and all laws and ordinances inconsistent with this act are hereby repealed; "scavengers duly licensed as above provided shall not be restricted, prevented or prohibited from carrying on their business except by action brought in which a trial by jury may be demanded by either party thereto."

SEC. 3. This act shall take effect immediately.

CHAPTER 329.

AN ACT to authorize the Board of Health of the Health Department of the City of New York to make a contract to remove the contents of sinks and privies in said city. Passed June 26, 1873, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. The Board of Health of the Health Department of the City of New York is hereby authorized to contract with any responsible person or persons, up to the first of May,

¹ See Chapter 326. Laws of 1873.

eighteen hundred and seventy-five (or the sooner determination of a contract made by and between the mayor, aldermen and commonalty of said city of the one part, and Daniel Gallagher of the other part, bearing date May first, eighteen hundred and sixty-five, by which the former agreed, among other things, to deliver to the latter all the contents of sinks and privies, as therein specified until the first of May, eighteen hundred and seventy-five), to furnish during the day, as well as the night, the necessary boats for receiving and removing, and to remove and deliver all the contents of sinks and privies, as Thomas Andrews, by a contract, between him and the mayor, aldermen and commonalty of said city, bearing date May first, eighteen hundred and sixty-five, agreed to furnish for receiving and removing, and to remove and deliver such contents, and in relation thereto, at a price not exceeding thirty-three thousand dollars per annum, to be paid in equal monthly installments, and to require and receive satisfactory security in such form and amount as such Board may approve for the faithful performance, by the person or persons to whom such contract may be awarded, of all and every of the provisions of such contract on his or their part. For any breach of said contract by such contracting party or parties, an action may be prosecuted in the name of the Mayor, Alderman¹ and Commonalty of the city of New York, in any court having jurisdiction thereof, against said party or parties, his or their sureties, or both, to recover the damages sustained by such breach or breaches, as the same may from time to time occur; but nothing in this section contained shall be construed to legalize the contract or contracts for the purposes herein stated.

Sec. 2. This act shall take effect immediately.

CHAPTER 636.

AN ACT relating to the Board of Health of the Health Department of the City of New York, to the Commissioners of Health and the Officers of the said Department, their duties and powers, and the expenses of the said Department. Passed June 15, 1874, three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows

SECTION 1. The Board of Health of the Health Department of the city of New York shall use all reasonable means for ascertaining the existence and cause of disease or peril to life or health, and for averting the same, throughout said city, and shall promptly cause all proper information in possession of said Board to be sent to the local health authorities of any city, village or town in this State which may request the same, and shall add thereto such useful suggestions as the experience of said Board may supply; and it is hereby made the duty of said health authorities to supply the like information and suggestions to said Board of Health.

2. In the exercise of the powers and duties of said Board in the presence of great and imminent peril to the public health by reason of impending pestilence, as confirmed and vested in and enjoined upon the said Board by the sixteenth section of chapter seventy-four of the Laws of eighteen hundred and sixty-six, the assent in writing of three members of the said Board, instead of six, as there prescribed, and the assent of the Mayor of the city of New York in place of the Governor of the State, shall alone be required. The said Board having first taken and filed among its records what it shall regard as sufficient proof to authorize its declaration of such peril as aforesaid, and having duly entered the same in its records, it shall be its duty to take such measures, and do and order or cause to be done such acts, and make such expenditures beyond those duly estimated for or provided for the preservation of the public health, though not herein elsewhere or otherwise authorized, as it may in good faith as aforesaid declare the public health and safety to demand, and the mayor of the city shall also in writing approve. Such peril shall not be deemed to exist except when and for such period as the said Board shall declare.

3. Said Board shall have the same powers in respect to persons afflicted with any contagious, pestilential or infectious disease, as are given by the sixteenth section of chapter seventy-four

¹ So in original.

of the Laws of eighteen hundred and sixty-six, in respect to persons afflicted with contagious diseases; shall have exclusive charge and control of the hospitals for the treatment of such cases, and shall have power to provide and pay for the use of proper places to which to remove such persons, as well as to designate such places; and said Board may cause proper care and attendance to be given to persons so sick, or removed when it shall be made to appear to the said Board that any such person is so poor as to be unable to procure for himself such care and attendance, or that the public health requires special medical care and attendance.

SEC. 2. The authority, duty and powers of the Board of Health of the city of New York shall extend over the waters of the bay, up to and within the quarantine limits as established by law, but shall not be held to interfere with the powers and duties of the Commissioners of Quarantine or Health Officers of the port.

SEC. 3. All the powers and duties heretofore vested in or enjoined upon the city Sanitary Inspector under and pursuant to the provisions of chapter five hundred and sixty-six, Laws of eighteen hundred and seventy-one, are vested and confirmed in, enjoined upon and to be exercised by the Sanitary Superintendent of the Health Department of the city of New York, and certificate required in the first section of the said act shall be made by and in the name of the Sanitary Superintendent, or the executive officer of the said Department of Health.

SEC. 4. Said Board of Health may sue or be sued in and by the proper name of "The Health Department of the City of New York," and not in or by the name of the members of said Board, or any of them; and service of all process in suits and proceedings against or affecting said Board, and other papers may be made upon the President of said Board, or upon its Secretary, and not otherwise; except that, according to usual practice in other suits, papers in suits to which said Board of Health is a party may be served on its attorney.

SEC. 5. The Attorney of the Board of Health shall be also its counsel when appointed as such by the said Board, and shall have a salary for his services as attorney and counsel, to be fixed by the said Board, not to exceed the sum heretofore paid to the counsel of the Metropolitan Board of Health, and in all actions in proceedings against the Mayor, Aldermen, and Commonalty of the city of New York, or any other department or person whatsoever, in which any action, order, regulation, ordinance or proceeding of the said Board, or of any person acting under or pursuant to its authority, shall be called in question or made the subject of the action or proceeding, the said Board of Health shall be a necessary party, and have the right to answer, to appear and to take part therein by its own attorney and counsel.

SEC. 7. The said Board of Health, if it shall consider the public health or interests so to require, may execute orders through its own officers or persons, and means to be engaged by the said Board of Health; and about the execution of the said order, both the said Board of Police and the said Board of Health shall severally have as well the authority conferred by this act as all the powers and authority conferred by the fifty-third and fifty-fourth sections of the Metropolitan Police Act, passed on the twenty-fifth day of April, eighteen hundred and sixty-four, and of any amendments made to said act or to be made, enlarging such authority; and all powers and authority possessed and exercised by said Board of Police under said act pertaining to sanitary matters, or in conflict with the objects and purposes of this act, shall hereafter be enjoyed, possessed and exercised by said Board of Health. Whatever expenses said Board of Health may lawfully and properly incur in the execution of any judgment aforesaid, or in executing, or in connection with its own orders, made in good faith, or in and about the discharge in good faith, of its duties, or in satisfying any liability or judgment it may have in good faith incurred or suffered by reason of its acts done in good faith as aforesaid, or in satisfying any claim against its officers or subordinates, arising from their acts in the discharge, in good faith, of their respective duties, shall, so far as established,

be paid out of its fund or other moneys, and shall be apportioned, assessed, collected and paid as is provided in the health laws aforesaid, in respect to the expenses of said Board, and such sums paid or recovered under this act, shall not be included in or considered as a part of that class of the expenditures of the Board in respect to which there is or may be a specific limitation as to amount.

SEC. 8. Said Board of Health may institute and maintain, in the name of said Health Department, all such suits and proceedings as shall be reasonable, necessary and proper, for recovering any moneys expended, enforcing any lien or the payment of any fine, the punishment for any offense, or in other respects carrying out the provisions of the laws under which it acts.

SEC. 10. The said Board of Health shall have full and exclusive power and authority over the removal of night-soil and in the removal of dead animals, offal, night-soil, blood, bones, tainted or impure meats, and other refuse matter from said city. It is hereby charged with the duty of causing the removal of the same daily, or as often as may be necessary, and of keeping the said city clean from all matter or nuisance of a similar kind.

SEC. 11. The said Board of Health is authorized to make contracts with any responsible person or persons for the removal of said offal, dead animals, night-soil, and other refuse matter from the city of New York, and to require and receive security in such form and amount as the said Board may approve for the faithful performance by the person or persons aforesaid to whom such contracts may, by the said Board be, in its discretion, awarded, of all and every of the provisions of such contracts on his or their part.

SEC. 12. Copies of the record of the proceedings of said Board, of its rules, regulations, ordinances, by-laws and books and papers constituting part of its archives, when authenticated by its secretary or secretary *pro tem.*, shall be presumptive evidence, and the authentication be taken as presumptively correct in any court of justice or judicial proceeding, when they may be relevant to the point or matter in controversy, of the facts, statements and recitals therein contained.

SEC. 13. Upon the application of any party in interest in any matter pending examination before said Board of Health, by affidavit stating the grounds of such application, to any judge of a court of record, and asking that any person or persons therein named shall appear before said Board of Health, or any person taking or about to take such examination, at some time or times and place to be stated in said affidavit, it shall be the duty of such judge, if he shall discover reasonable cause so to do, to issue his order requiring such person or persons named to appear and submit to such examination as, and to the extent such order may state, at the time and places to be in said order named; and such order, to be signed by such judge, may be served, and shall in all respects be obeyed as a subpoena duly issued, and a refusal to submit to the proper examination may be punished by such judge, or by any judge of such court, as a contempt of court, upon the facts as to such refusal being brought before any such judge by affidavit.

SEC. 14. If any person shall knowingly make to said Board of Health, or any officer thereof, any false return, statement or report relative to any birth, death or marriage, or other matter concerning which a report or return may be legally required of or should be made by such person; or if any member, inspector or officer or agent of said Board of Health shall knowingly make to said Board of Health any false or deceptive report or statement (in connection with his duties), or shall accept or receive or authorize or encourage, or knowingly allow any other person to accept or receive any bribe or other compensation as a condition of or an inducement for not faithfully discovering and fully reporting or otherwise acting according to his duty in any respect; then any and every such person shall be deemed guilty

of a misdemeanor, and shall be liable to be for such crime indicted, tried and punished according to law, and shall in addition forfeit all compensation due or to grow due from said Board.

SEC. 15. The publication of additional provisions in and of additional ordinances of the Sanitary Code for the security of life and health, and the prevention of accidents and of the spread of disease in the city of New York once a week for two successive weeks in the *City Record* in said city shall be sufficient, and render any further publication of the same in any other newspaper unnecessary.

SEC. 16. This act shall take effect immediately.

NOTE.—There are no sections 6 and 9 in the certified copy of the Act received from the Secretary of State.

CHAPTER 635.

AN ACT to secure effective vaccination in the City of New York, and the collection of pure vaccine lymph or virus. Passed June 15, 1874; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows.

SECTION 1. For the purpose of more effectually preventing the spread of small-pox in the city of New York, by the thorough and systematic vaccination of all unvaccinated persons residing therein, the Board of Health of the said city is hereby empowered to organize a corps of vaccinators within and subject to the control of the Bureau of Sanitary Inspection, to appoint the necessary officers, keep suitable records, collect and preserve pure vaccine lymph or virus, and to add to the Sanitary Code as provided by section eighty-two of chapter three hundred and thirty-five of the Laws of eighteen hundred and seventy-three, entitled "An act to reorganize the local government of the city of New York," passed April thirtieth, eighteen hundred and seventy-three, such additional provisions as will most effectually secure the end in view.

SEC. 2. Whenever the amount of vaccine lymph or virus collected by the said corps shall exceed the amount required in the proper performance of its duties, the said Board of Health may authorize the sale of such surplus lymph or virus at reasonable rates, to be fixed by said Board. The avails of such surplus lymph or virus shall be accounted for and paid to the Chamberlain of the city of New York, as provided by existing laws, and shall be set apart and constitute a distinct fund to be known as "The fund for gratuitous vaccination," and shall be subject to the requisition of said Board for the purposes of this act.

SEC. 3. Within fifteen days after the passage of this act the Board of Apportionment created by section one hundred and twelve of the act entitled "An act to reorganize the local government of the city of New York," passed April thirtieth, eighteen hundred and seventy-three, shall, by the affirmative vote of all the members thereof, estimate the amount required to organize and maintain the said corps for the present financial year; and such estimate shall be final, and the amount thereof shall be and become appropriated for the use and maintenance of such corps, and shall be raised in the manner provided by the said section one hundred and twelve of the act herein named.

SEC. 4. This act shall take effect immediately.

CHAPTER 549.

AN ACT to amend an act entitled "An Act to provide for the proper drainage of lands within the corporate limits of the City and County of New York. Passed June 9, 1875; three-fifths being present.

The People of the State of New York, represented in Senate and Assembly, do enact as follows :

SECTION 1. Section one of chapter five hundred and sixty-six of the Laws of eighteen hundred and seventy-one, entitled "An act to provide for the proper drainage of lands within the corporate limits of the city and County of New York," is hereby amended to read as follows :

§ 1. Whenever it shall appear to be necessary for the protection of the public health that any part or parcel of land within the corporate limits of the city and county of New York needs to be drained by other means than by sewers, and it shall be so certified by the City Sanitary Inspector, and said certificate is filed among the records of the Board of Health of the Health Department of said city, the said Board shall direct that the same be done by and under the direction of the Department of Public Works of said city and county, except that, in the territory annexed to the city and county of New York by chapter six hundred and thirteen of the Laws of eighteen hundred and seventy-three, as amended by chapter three hundred and twenty-nine of the Laws of eighteen hundred and seventy-four, the said Board shall direct that the work provided for in this act to be done, shall be done, and the Mayor, Aldermen, and Commonalty of the city of New York, shall authorize and empower the Department of Public Parks or the Department of Public Works of the city and county of New York to do the work so directed by the Board of Health.

§ 2. This act shall take effect immediately.

RULES AND REGULATIONS

OF THE

HEALTH DEPARTMENT OF THE CITY OF NEW YORK.

MEETINGS.

1. THE regular meetings of the Board of Health of the Health Department shall be held on Tuesday and Friday in each week, at two o'clock p. m. unless otherwise ordered.

2. Special meetings may be called at any time by the Secretary, when requested by the President, or a majority of the members, specifying the object of the meeting, and also a special meeting may be held at any time when all the Commissioners are present, with or without previous notice of the object of the meeting. At such special meetings no ordinance or regulation shall be made, repealed, or changed; no officer, clerk, or agent shall be dismissed, employed, or have his term extended, or his compensation diminished or increased; no final order (under the first clause of section 14, chapter 74, Laws of 1866, relating to orders), or order of arrest shall be made; no money or compensation exceeding two hundred and fifty dollars shall be voted or allowed, and no action shall be taken upon any measure or matter touching the general policy or duty of the Board, or of its officers, except to refer the same to the next meeting of the Board, unless all members are present.

3. No notice shall be required for meetings referred to in section one, but three hours' notice of special meetings shall be given personally, or left at such place as the members may severally designate. Two hours' notice by telegraph given by the President or the Secretary, addressed to the residences of the Commissioners, of a call to a special meeting, shall be in lieu of any other notice.

COMMITTEES.

4. The Standing Committee of the Board shall be four in number, and all the members of the Board shall be members of each Standing Committee. Two members of any committee (except the Committee on Applications, of which it shall be necessary to have three to constitute a quorum) shall constitute a quorum for the transaction of business.

5. The Standing Committees shall be as follows:

(1.) The Finance Committee, of which the President shall be chairman.

(2.) The Sanitary Committee, of which the Commissioner of Health, who is a physician, shall be chairman.

- (3.) The Committee on Applications, of which the Health Officer of the Port shall be chairman.
- (4.) The Committee on Law and Ordinances, of which the President of the Board of Police shall be chairman.

6. To the Committee on Finance shall be referred all questions in respect to expenses and salaries, and the procuring of supplies; and it shall audit all bills and accounts, and report the same in detail monthly; and shall have supervision of the office of the Secretary and the Attorney.

7. To the Sanitary Committee shall be referred all subjects of a scientific or medical nature, and it shall have supervision of the Sanitary Bureau and Bureau of Vital Statistics.

8. To the Committee on Applications shall be referred all applications for positions under the Board. Said Committee shall examine each applicant in regard to the special duties to be performed, and report the result in writing.

9. To the Committee on Law and Ordinances shall be referred all matters and subjects of law and ordinances, and it shall have direction of all examinations or hearings, and, in conjunction with the Attorney of the Board, have charge of all suits and litigations.

10. It shall also be the duty of the Finance and Sanitary Committees to examine and report upon all cases of remissness in the performance of duty by any officer or clerk upon complaint of the Secretary and Attorney, or the Chiefs of Bureaus respectively, and all cases in which any such officer or clerk has been guilty of any conduct that they may think impairs his usefulness in the service of the Board, and on all changes and transfers they think would promote economy or efficiency in the Department.

11. Special Committees may be appointed on any subject by the President, when so ordered by the Board, to consist of one or more members of the Board.

ORDER OF BUSINESS.

12. The following shall be the order of business at meetings of the Board:
 1. Reading of minutes.
 2. Reports from Attorney.
 3. Reports of standing committees.
 4. Report of special committees.
 5. Communications from Chiefs of Bureaus.
 6. Communications from the Board of Police.
 7. Communications from all other sources.
 8. Resolutions and orders.
 9. Unfinished business.
 10. New business.

RESOLUTIONS.

13. All resolutions shall be submitted in writing.

APPOINTMENTS AND TRANSFERS.

¹ 14. No appointment, transfer, or removal of any officer, clerk, or subordinate shall be made except by the Board, and such action shall require not less than three affirmative votes.

NEGLECT OF DUTY.

15. Chiefs of Bureaus and the Secretary and Attorney shall report to the chairman of the Sanitary and Finance Committees respectively all cases of remissness or neglect in the performance of duty by any of their subordinates, and all cases in which any officer or clerk has been guilty of any conduct that they may think impairs his usefulness in the service of the Board, and on all changes they think would promote economy or efficiency in the respective departments.

¹ As amended March 16, 1875.

OFFICE HOURS.

16. All subordinates, whose duties are at the offices of the Board, shall be required to be on duty from 9 A. M. to 4 P. M.

17. The chief officers of each Bureau, and the Sanitary Inspectors, and Assistant Sanitary Inspectors, shall be considered always on duty.

LEAVE OF ABSENCE.

18. Leave of absence may be granted by the President to any officer or employé of the Board for a period not to exceed four days, but the same must be in writing, filed with the Secretary, and reported at the next meeting of the Board. The applications of clerks, inspectors, and employés, for leave of absence, must be in writing, and approved by their superior officers respectively.

19. Chiefs of Bureaus and the Secretary and Attorney shall report to the President all absences of their subordinates, and every absence from the office of the Board, without leave, of any clerk, between the hours of 9 A. M. and 4 P. M., with the length and cause of such absence.

OFFICERS TO TAKE OATH.

20. All officers and clerks appointed by this Board shall take the constitutional oath of office.

AUTHENTICATION.

21. Except in the cases where a different mode of authentication is required by the rules or regulations of this Board, or by law, all orders made, or that may be made, by this Board, may be authenticated by adding to a copy of such order the words "a true copy," and by the signature thereunder of the name of the Secretary of this Board by such Secretary, or the name of the Chief Clerk by such Chief Clerk.

EXPENDITURES.

22. No expense shall be incurred by any officer or employé of this Board, without an order of the Board, or the written approval of the chairman and one other member of the Finance Committee, and until the same has been entered upon the books of the Secretary, and a written order issued therefor.

23. Pay-rolls of the officers and employés of this Department shall be prepared monthly by the Secretary, and, when approved by the Board, shall be forwarded to the Comptroller.

24. All necessary supplies for this Department shall when duly ordered be purchased under the direction of the chairman of the Finance Committee, and as far as possible by contract.

REPORTS.

25. The chief officer of each Bureau shall report to the Board in writing, through the office of the Secretary; and all reports and communications shall be delivered to the Secretary before 12 o'clock noon of the days of the regular meetings, and all weekly reports before 12 o'clock noon of Tuesday of each week. The Secretary shall forward to the chairman of the respective Committees all communications referred by the Board, and they shall indorse thereon the approval, disapproval, or recommendation of said Committees respectively, and present them to the Board at the next regular meeting. The Attorney shall report direct to the Board. All clerks in the office of the Secretary shall be under his direction.

26. Before any order be made under the 14th section of chapter 74, Laws of 1866, the report or reports, on which the same is to be founded, shall be sworn to by the persons making the same.

HEARINGS.

27. The power of the President to suspend the execution of an order shall only extend to its suspension until the next meeting of the Board, when every suspension since the last

meeting shall be by him reported to the Board and entered on its minutes. No suspension shall be of any effect unless the same be in writing upon the order suspended, and a note of such suspension shall be at the same time entered upon the record of such order in the books of the Board.

In all proceedings under the 1st subdivision of section 14 of chapter 74, of the Laws of 1866, where the person or persons served, or intended to be served, with the order made thereunder, shall, within the time limited, apply to the Board, or to the President thereof, to have said order, or its execution, stayed or modified, the following proceedings shall be had, save in cases of imminent danger from impending pestilence: The person or persons so applying shall, unless the Board otherwise direct, appear, and make their proofs before such officers as in any given case the Board may direct, and the said officers are hereby appointed persons, and authorized to take, any and all proofs, affidavits, and examinations, as to any matters under chapter 74 of the Laws of 1866. Such appearance shall be at the office of the Board, at No. 301 Mott Street, New York, at such hour and day as the Board may direct; the applicant shall produce his witnesses, and there, orally and under oath, present the facts and proofs against the declaration on which the order was made, and against the execution of said order, or in favor of its modification, and shall have a full and fair opportunity so to do.

The presentation of such facts and proofs shall be continued without needless interruption or delay, and shall be completed, if possible, within one day from its commencement.

After such facts and proofs on behalf of the said person or persons have been completed, the other facts and proofs may be presented in the same manner, in favor of said declaration and order and its execution.

Any witnesses may be presented, examined, and cross-examined, for or against such declaration and order and its execution or modification, subject to the reasonable direction of the person appointed and authorized by the Board to take the proofs, affidavits, and examinations in the case. After all of such facts and proofs shall have been presented, the same shall be returned to the Board, and the case shall be considered at the next regular meeting of the Board, unless the Board shall appoint a different time therefor. At such meeting one counsel may be heard on behalf of said person or persons, but not to exceed thirty minutes, unless, in particular cases, the Board shall permit a more protracted argument.

PERMITS.

28. All applications for permits under the hereinafter designated sections of the "Sanitary Code" shall be made to the Sanitary Superintendent, who shall forthwith cause inspection to be made of the business, matter, or thing for which a permit is sought, the name, residence, and fitness of the applicant, and shall return the said application, with his report or the report of a Sanitary Inspector, at the next regular meeting of the Board. The following are the sections of the Code herein referred to, viz.: 50, 52, 53, 56, 59, 60, 62, 71, 76, 79, 80, 82, 83, 104, 112, 118, 119, 130.

29. All permits granted under the orders of the Board for the business, matters, or things mentioned in the foregoing sections of the said Code, shall be issued by the Secretary, who shall keep a record of all permits granted and of all applications for permits in cases where permits have been refused, including the name and residence of each applicant, the date of the application, the business or matter or thing for which a permit is asked, and the action of the Board, if any, thereon, and such other facts as may be necessary to a complete record of each application.

30. The Sanitary Superintendent is authorized to issue permits under sections 94, 100, 101, 102, 112, 141, 142, of the Sanitary Code, and shall keep a proper record of such permits.

31. Permits may be granted by the Sanitary Superintendent for the removal of stable-manure and stable-straw between the hours of 8 A. M. and 6 P. M., provided the loading of the carts is done within the premises or in the inclosed yard, and provided that each and every cart so loaded shall be closely covered with a proper canvas cover, and the name of the

owner or owners of said carts shall be placed conspicuously thereon, and provided that all the manure be removed daily from each stable, except those in which the accumulation does not amount to one load daily, in which case the stables are to be thoroughly cleaned at least once in each week.

32. All permits required or authorized by the Sanitary Code or otherwise, unless authorized to be given by some officer, must be expressly authorized by the Board, and shall be countersigned by the Secretary or Chief Clerk.

33. Persons desirous of procuring a permit to slaughter animals at any place where slaughtering is not carried on, shall advertise in three daily morning journals, twice a week for two weeks, their intention of applying to the Board of Health for a permit at a specified time, giving in said advertisement the location proposed.

34. No vessel or ship arriving at the port of New York, with emigrant passengers on board, or arriving at said port from a place where disease, subject to quarantine, existed at the time of the departure of said ship or vessel, or which shall have arrived at any such place and proceeded thence to New York, shall receive a permit from the Health Department to come to the docks of New York, until the Sanitary Superintendent shall, in person or by a Sanitary Inspector, have boarded said ship or vessel, and examined carefully every person on board, and become satisfied, from such examination, that there is no person on board of said ship or vessel having any contagious or infectious disease, which might be communicated to any other person or persons.

SANITARY SUPERINTENDENT.

35. The chief officer of the Sanitary Bureau shall be called "The Sanitary Superintendent."

36. The "Sanitary Superintendent" and his assistants shall severally devote their entire time to the service of the Board; they shall be in attendance at the office of the Board each day during the designated official hours of this Board (9 o'clock A. M. to 4 P. M.), unless absent on duties pertaining to their offices, and they shall hold no other office, nor any place of profit or emolument, without the express permission of the Board.

37. All complaints, except as otherwise ordained herein, not requiring immediate action of the Board, shall be referred to the Sanitary Superintendent for investigation, and he shall report upon the same to this Board.

38. When an order shall be or shall have been made to remedy any complaint in the case of an overflowing or leaking privy, or of water in the cellar of an inhabited house, or of a collection of garbage and manure, or of cellars foul with decaying or other unhealthy matter, and when it shall appear by the reinspection report of a Sanitary Inspector or Assistant Sanitary Inspector of the Board that the order has not been complied with, the Sanitary Superintendent may, in his discretion, transmit the order with the papers to the Attorney, with a recommendation that the order be executed by the Board; and in every such case the Attorney shall report to the Board his opinion as to whether the service of the order has been such that the Board will have a legal right to recover any money expended by it, in the execution of the order.

39. The Sanitary Superintendent shall issue the permits required by sections 94, 100, 101, 102, 112, 141 and 142 of the Sanitary Code.

40. The Sanitary Superintendent may, by and with the assent of the chairman of the Sanitary Committee, issue permits in the name of this Board for the landing and storage of rags, if the same are in compressed bales, closely covered with bagging, and tightly bound with iron hoops or with rope, and provided said bales are not opened or to be opened in this city.

41. The Sanitary Superintendent shall report to this Board for its action the name and position, with the facts as to danger to health therefrom, and the names of the owners and consignees of any vessel that shall come within less than (300) three hundred feet of any dock or pier, without first having obtained a permit from the Board.

42. The Sanitary Superintendent shall present a monthly tabulated statement to the Board of all orders modified, suspended, or delayed, during the month, together with the causes for such modification, suspension, or delay.

BURIALS.

43. Permits for the removal of the body of any deceased person from the city of New York for interment, and all burial-permits, and permits for the disinterment of the remains of deceased persons in the city of New York, shall be granted and signed by the chief officer of the Bureau of Vital Statistics, under such directions as he may receive from time to time from the Board.

44. Burials are prohibited in the city of New York south of One Hundred and Thirtieth Street, but, from November 1st to the 1st of May, vaults south of the said limit may be opened for the temporary deposit of any dead body if a permit shall have first been obtained from the Bureau of Vital Statistics, and approved by the Sanitary Superintendent. In special cases arising under this rule special applications may be made to the Register of Records and the Sanitary Superintendent, who shall in their discretion grant special permits.

BUREAU OF VITAL STATISTICS.

45. The chief officer of the Bureau of Vital Statistics shall be called "The Register of Records," and shall, under the Secretary of the Board, have charge of the records and papers of this Board relating to the registration of births, marriages, and deaths in the city of New York, and shall, except as herein otherwise provided, perform all the clerical duties required in respect thereto.

46. Any weekly list of deaths, or of deaths occurring in any designated period of time, which by any law or ordinance may be required to be published, shall be published under the direction of the Register of Records.

47. The Register of Records shall grant Burial and Transmit Permits, at the office of this Board, to applicants therefor, from seven o'clock A. M. to nine o'clock P. M., on weekdays; and from nine o'clock A. M. until six o'clock P. M. on Sundays and legal holidays.

48. No information as to the records of births shall be furnished by any officer or clerk of this Board for publication; nor shall information as to the record of any marriage, when the publication thereof, in the opinion of the Register of Records, would not subserve any useful purpose, or be made with any laudable motive, be furnished for publication; and the Register of Records shall keep such care and oversight of his records as will prevent a violation of this regulation.

49. No alteration of the records of births, marriages, or deaths, or of any papers relating thereto, shall be made without the written order of the Board. No alteration whatsoever shall be made of the records of births, marriages, or deaths, which occurred previous to May 11, 1878, nor of the records of births, marriages, or deaths, which occur after that date, except to correct clerical errors.

SANITARY INSPECTORS.

50. The Sanitary Inspectors will keep constantly in mind the great good to society and the scientific value of the knowledge expected to be gained by the present system of Health Police. It is desirable that they should take especial interest in all sanitary questions, and keep themselves informed of what is being done at home and abroad relative to the causes which affect health or disease.

51. They will be held to a strict accountability. They will be subject to the immediate control of the Sanitary Superintendent, obey orders with promptness, and relinquish the demands of private business, in order the better to observe the obligations imposed upon them by their office.

52. They shall present themselves at the office of the Sanitary Superintendent as often as is required by them, to receive orders and to make reports; nor are they to consider that

their duties are limited to the districts to which they may have been assigned, but that they are bound to leave their districts and to examine into complaints and sickness elsewhere, whenever the Sanitary Superintendent may deem it advisable thus to employ them. They are to watch over all cases of fever and small-pox, and, if the patients are removed, to follow them with proper supervision.

53. Any gross delinquency on the part of a Sanitary Inspector will justify the Sanitary Superintendent in suspending him from duty until action is taken by the Board, when the delinquent may be censured or dismissed.

54. All the forms for making reports must be filled up legibly and minutely, and any information added that will throw light on the subject under investigation.

55. They shall wear their badges prominently displayed when engaged in their official duties. On entering any house or premises they must announce their authority, and the object of their visit, and, while endeavoring to avoid giving offense, must make their investigations minutely.

56. If resistance is offered to the performance of their duties, they are at once to report the fact to the Sanitary Superintendent, and await instructions. They will likewise report all who violate the Health Laws, and Sanitary Code.

57. Whenever two Sanitary Inspectors shall report in writing that any person is sick of any contagious or infectious disease, under such circumstances that the continuance of such sick person in the place where he or she is, is dangerous to the lives of other persons residing in the neighborhood, the Sanitary Superintendent shall, if he has reason to believe there is ground for so doing, in some proper manner cause the removal of such sick person to Ward's Island Hospital, or to the hospitals under the charge of the Commissioners of Charities and Correction, as may be proper.

58. Sanitary Inspectors and Assistant Sanitary Inspectors shall conscientiously devote such time to the duties of their offices as the Board or the Sanitary Superintendent may from time to time direct, and shall report weekly the duty performed on each successive day. They shall immediately, and without delay, report upon all special cases referred to them, and shall in no case allow any business or employment to prevent such inspection and report; they shall hold no other office, nor place of profit or emolument, without the express permission of the Board, and shall be at all times at the call of the Sanitary Superintendent.

59. The Sanitary Superintendent shall add to his regular weekly report of the aggregate amount of duty performed by the Sanitary Inspectors and Assistant Sanitary Inspectors of the city of New York, a tabulated statement, giving the name of each Inspector, the limits of his district, the amount of duty performed by him on each successive day, and the character of the duty. Said tabulated statements shall be made up from the reports forwarded by the Sanitary Inspectors and Assistant Sanitary Inspectors, and from their statements, severally taken before the Sanitary Superintendent, and by him certified to as personally examined and found to be accurate, to the best of his knowledge and belief.

ENGINEER.

60. The Engineer shall have a general charge and responsibility in respect to the engineering duties of the Board. In all cases, where any matter requires the attention of an engineer, the same, with any papers relating thereto, shall be at once referred by the Sanitary Superintendent to the Engineer, and he shall report the full details as to what is needed in the several cases, including size and material, and the proper mode of construction, and the precise nature of repairs, the mode of ventilation to be adopted, and similar information proper in such cases.

ATTORNEY.

61. The Attorney shall have a general supervision and responsibility in regard to the legal business of the Board, and all suits shall be under his immediate supervision.

62. It shall be the duty of the Attorney and Counsel to take the proper measures for

perfecting the lien for all expenses for which any person is liable, and has not paid within fifteen days after the same have become payable, or after final action, on any appeal in respect thereto, to any said officer, or to this Board. And he shall, in writing, inform the Secretary of the filing of all papers to secure a lien under any order; and shall institute such suits as the Board may order. And said Attorney shall, at the end of each month, make a report, in writing, to this Board, of all suits (giving the names of the defendants, and for what brought) instituted by him by direction of this Board; of all suits decided or settled; of the number and classes of suits and legal proceedings commenced against the Board since the last report, and of all moneys by him collected, of the dates of collection, and of the amounts, and the particulars thereof, by him paid out during the month. And at the end of each year he shall make a consolidated report of all suits and legal proceedings instituted by authority of this Board.

63. The Attorney of this Board, whenever ordered to bring suit against a physician or midwife for not reporting births, or against a clergyman for not reporting marriages, or against a physician for not reporting deaths as required by law, or the Sanitary Code; or against any person for violation of or not conforming to the provisions of the "Tenement-House Act," shall, before commencing suit, notify such person that the Board has ordered that he be sued, and for what cause, and that any excuse he may wish to make, will be considered, if promptly presented.

64. In cases wherein the Attorney has been instructed to commence actions by this Department, for the recovery of the penalties established by law, against physicians who have failed to report the death of patients within the period and in the manner prescribed by sections 160 and 161 of the Sanitary Code, and it appears that the omission to comply with the requirements of such Ordinances was not intentional, no proceedings shall be taken without the further order of the Board.

65. The Attorney shall, for his salary, do all the legal business of the Board.

EXECUTION OF ORDERS, JUDGMENTS, ETC.

66. No order of the Board shall be suspended or modified by any of its officers, except as provided in section 6, chapter 686, Laws of 1866; such suspension and modification shall be granted only on recommendation of the Sanitary Superintendent.

67. The Engineer is authorized to audit, apportion, and certify accounts for work done under orders of this Board, which are a charge against the owners, part-owners, lessees, or tenants of the premises, or against the persons interested in the premises, or whose duty it was to do the thing ordered done.

68. An account shall be kept by the Secretary in the books of this Board, of the time and place of the execution of each order by, or under any person acting under or in the employment of the Board; and in such account shall be entered the date of giving out the order for execution, the name of the foreman, or person under whom the same was executed, and the expense and date of such execution, the date and amount of any bill for the expenses thereof (the same to bear the same number as the order), the date of rendering the same (or sending the same to the Finance Committee), and the amount and date of any collection, and whether by suit or otherwise. The bill shall be made out in the office of the Secretary, by the Auditing Clerk of the Board, and be by him entered, rendered, and collected.

69. The Auditing Clerk shall record the date of receiving, and the amount of any such bill, of which a copy shall be received from the Secretary, and the number of the order to which it relates. He shall cause the same to be duly rendered, and, so far as possible, to be speedily collected. The amounts and dates of all such collections, and from whom made, and of all reductions of any bill authorized by the regulations of this Board, and when and by whom made, shall also be recorded by the Auditing Clerk. He shall report monthly to the Finance Committee, who shall, after examination, forward the same to the Board: (1) the number and amount of all such bills received for collection during the past month; (2) the respective number of any bill that has been reduced, and the amount of such reduction,

and by whom made; (3) the amount of all collections, and from whom, and on what bills, and how otherwise made, and the amount, and the number and date of bills rendered and remaining unpaid; and (4) what amounts, to whom, and on account of what orders, he advises that any and what sums should be paid for work done under any and what orders; (5) to what persons, at what date, and in what amount, he has made payment to any person by reason of work done in executing any and what orders, or other claim. But no payment aforesaid shall be made, save as authorized by a vote of this Board.

70. It shall be the duty of the Secretary of this Board to see that an affidavit be made, and filed in the form provided by this Board, and as intended by the 18th section of the 956th chapter of the Laws of 1867; and that there are therein stated, with fairness and accuracy, the expenses of such execution.

71. A like account in all respects shall also be kept relative to executing any judgment which may in like manner be executed.

72. When any such judgment or order shall relate to several lots or buildings belonging to different persons, and the same shall have been executed, and the expense of such execution ascertained, the Engineer shall justly apportion said expenses to each lot or building separately owned, and against the owners thereof; and such officer shall, before making such apportionment, cause an affidavit to be made by "some person who took part in or had charge of such execution," which affidavit shall contain facts enabling him to make such apportionment, and the apportionment shall be made in the form approved by this Board.

73. Whenever any order of this Board shall have been executed, for which a claim for the reimbursement of the expenses thereof is to be made, it shall be the duty of the Auditing Clerk of this Board or the person having had charge of the execution thereof, to speedily render, or cause to be rendered, to the several persons of whom reimbursement is to be claimed (but nothing herein stated shall give such person any right to demand the same), a bill stating the expenses of such execution according to the facts. Such bill shall contain a printed heading which shall state: (1) that payment of such amount is required to be made to the Board (or some authorized person) within ten days of the date of such bill; (2) that, if the amount of such bill is claimed to be excessive, or the apportionment unfair, application may be made to the Sanitary Superintendent or Engineer of this Board, for a reduction of said bill within said ten days—section 18, of chapter 956, Laws 1867; (3) that, in case of a failure to pay said amount (or as the same may be reduced), the parties responsible will be liable to suit for such amount (or reduced amount), and also for a penalty of fifty dollars in addition, by reason of having failed to fulfill the order under which such expenses were incurred; (4) that such expenses will be a lien on property and rent, all according to section 6, subd. 7, and the sections 18th and 13th, and other sections of the 956th chapter of the Laws of 1867, and the 74th and 686th chapter of the Laws of 1866; (5) that any party so complaining, if such officer do not adjust such amount or apportionment satisfactorily, may be heard before the next regular meeting of the Board of Health (of which such party must take notice), when the matter in dispute will be adjusted and decided by said Board; that it shall be the duty of the officer before whom any such complaint concerning any bill or apportionment is made (as in these regulations authorized), if convinced himself of the fairness of such bill or apportionment, to satisfy the party complaining of the same of its fairness, and to advise present payment of such bills; but, in cases when he thinks it just or advisable, in order to secure such present payment, he may write, and shall state on the face thereof, and sign his name to a statement, that the same will be satisfied by the payment, within twenty-four hours thereafter, of the sum, in such writing to be named, reducing such apportionment or charge; but no reduction shall be valid if exceeding ten per cent. of the face of such bill or apportionment. And every reduction shall, by the officer making the same, be at once, in writing, stated to the Secretary, in order that the same may be noted on the records of the Board, and the Secretary shall enter the same in his books, and report such reduction to the next meeting of the Board. And no reduction shall be of

any effect if payment be not made of the bill, as reduced, within twenty-four hours after such reduction. And if such officer fail to adjust such bill or apportionment on any complaint relating to any bill or apportionment, the party complaining may apply for a correction of any such bill or apportionment at the next regular meeting of this Board, of which he must take notice, when he can be fully heard, personally or by counsel, as to any complaint he may then and there make to the Board, and have justice done in the premises.

74. It shall be the duty of the Engineer of the Board to make the necessary arrangements, in accordance with these regulations, for the prompt execution of such orders as shall be transmitted to him for that purpose by the Sanitary Superintendent, to see that such contracts or arrangements are properly carried out, and to furnish to the Secretary all the facts and information needed to enable him to keep full records regarding the same. When orders are directed to be executed, those having reference simply to cleansing, whitewashing, disinfection, and minor repairs, may be executed by the Sanitary Superintendent directly; and those relating to scavenging, the Sanitary Superintendent may continue to execute through the agency of the Captain of the Sanitary Company of Police.

75. Whenever any arrangement or contract shall be made (and none can be made on any subject by any officer or officers, or committee, except pursuant to the express authority of the Board) with any person for the execution of any judgment or order, or for doing any work or incurring any expense, which is a charge upon those whose duty it was to do the thing ordered, the same, or a memorandum thereof, shall be made in writing, and signed by the contracting party, and a copy of the 67th and 68th sections of these regulations shall be attached thereto; and it shall be deemed a part of every such contract, memorandum, and agreement. Every contracting party shall take notice of the following general conditions of contracts made with this Board, and have a copy thereof given to him by the Secretary:

(1.) That all prices and charges shall be fair and reasonable, and the work shall be well done, and the material used shall be good.

(2.) That all work and examination shall be promptly and regularly proceeded with, and shall be allowed to give no unnecessary trouble to parties affected thereby.

(3.) That neither the Board, nor the Health Department, will be responsible, as the principal or otherwise, for or on account of any such contractor, or his employés, as being their principals or otherwise.

(4.) That the prices and compensation for all work and material will be subject to the same apportionment, adjustment, and appeal, as said regulations provide for when such work may be done, or material furnished by the Board, or under its officers.

(5.) That the execution of the work will be subject to the supervision and reasonable directions of the Engineer and Sanitary Superintendent of this Board, and at any stage of such execution the same may be suspended by order of the Sanitary Superintendent.

(6.) That the contractor shall make like affidavits (save as the Board may direct them modified), as is provided for in these regulations; and bills for his work shall be rendered by the Auditing Clerk, as they may be properly made up by the Secretary, as herein provided as to other bills.

(7.) That in case suits become necessary to collect bills, the Board will have its option to assume and pay the proper bills, or to assign the claims for penalties to the contractors.

(8.) That in no event will the Board or the Health Department be liable to pay any bill, save as any contract specially approved by the Board shall specifically provide.

76. The Sanitary Superintendent shall, once in each month, make a written report of all orders executed during the past month; and the engineer, and every officer under whom any work shall have been done, shall prepare and forward to the Sanitary Superintendent, for transmittal to the Board, monthly returns, giving the number of each order executed, the premises to which said orders respectively refer, and in each case the character of the work done, the number and names of the men employed, the materials used, and the expense involved, and such other details as may in any case be of importance.

77. The Sanitary Superintendent shall make a weekly report of any orders executed

under his direction, stating the street and number, and, when known, the owner and occupant of the premises to which said order related, and of what the execution thereof consisted, and the date of such execution.

78. It shall be the duty of the Sanitary Superintendent to cause a correct account to be kept, and made up, and sworn to, of the expense of executing said orders respectively, and the same shall be filed with the other papers relating to said respective orders; a duplicate of said account of expenses shall be furnished the Auditing Clerk, who shall promptly demand payment of such expenses of the proper parties.

DISINFECTING CORPS.

79. The organization of this corps shall be as follows:

1. The chief of the Disinfecting Corps, under the direction of the Sanitary Superintendent, shall oversee all work, and keep accurate accounts of the labor done by each employé, and the date and place of doing the same.

2. The roll shall be called every morning before commencing work, and every evening after the day's labor is finished, and the chief of the Disinfecting Corps shall be present on these occasions, and note and record who was present.

3. On pay-days, the amount of money required shall be made known and certified, in writing, by the chief of the Disinfecting Corps to the Secretary of the Board.

BOARD OF POLICE OF THE POLICE DEPARTMENT OF THE CITY OF NEW YORK.

80. The Board of Police is requested to execute and enforce the orders of the Health Department, in relation to cleanliness and the preservation of life and health, through such of its officers and organizations as shall be selected by said Board of Police.

81. The Board of Police is hereby required to execute each and all orders made, and that may be made by this Board, under section 14 of chapter 74 of the Laws of 1866, or laws amending the same, and to serve each and every notice required by said act to be served as preliminary to the execution of, or in part execution of, every and all of such orders.

82. The Board of Police is requested to aid in enforcing the provisions of the Sanitary Code, as they now stand or may be hereafter amended, and to cause the attention of patrolmen to be called to its provisions.

83. The Captain of the Sanitary Company of Police is hereby authorized, under the direction of the Board of Police, and by means of the police force of his company, to make inspection and investigation of, and in relation to, any and all matters enumerated in section 14 of chapter 74 of the Sessions Laws of 1866, and report daily, for the information and action of this Board, any and all of such matters as are in a condition detrimental to life or health, with the location thereof, and the names of the owners, occupants, lessees, and tenants, so far as the same can be ascertained.

84. The Board of Police is requested to direct that all reports of nuisances emanating from their offices be made on the blank form provided by the Sanitary Superintendent.

85. In cases where the orders of the Health Department, or its authorized officers, shall be performed or executed by the Board of Police, or any of its officers, or members of the police force, the Health Department will be responsible to defend and save harmless said Board of Police, its officers, and members of the force, and all pecuniary responsibility, damages, costs, and expenses.

AMENDMENTS.

¹ 86. These rules and regulations shall not be altered, nor shall any new rule or regulation be made, unless pursuant to a notice of a motion therefor, or to alter or repeal, entered in the minutes at some prior regular meeting of the Board; and such alteration, repeal, or new regulation, shall require not less than three affirmative votes.

¹ As amended March 16, 1875.

FEES FOR SEARCHES AND TRANSCRIPTS.

87. The Public Registers of Births, Marriages or Deaths, when not in actual use by the officers or clerks of the Bureau of Vital Statistics, may be searched by applicants during the regular office-hours, free of charge.

88. Whenever application is made for a search of the Registers of Births, Marriages or Deaths by any officer or clerk of the Bureau of Vital Statistics, fees shall be paid for such service as follows :

| | |
|---|------|
| a. For each and every search for the public registry of a death, extending over a period not exceeding one year..... | 50 |
| b. For each and every search for the public registry of a marriage, extending over a period not exceeding one year..... | 25 |
| c. For each and every search for the public registry of a birth, extending over a period not exceeding one year..... | 25 |
| d. For searching any additional year of records..... | 10 |
| e. For transcript of any record of a birth, marriage or death (5 cts. per folio and 5 cts. for certificate and seal)..... | 10 |
| f. The fees for a search for the record of any birth, marriage or death not to exceed.. | 2 00 |

89. Applications for the services of any employés of this department, in searching the records, must be made to the Secretary, and the fees paid to him before such service is rendered. Fees for transcripts of the records shall be paid upon the sealing and delivery of the certificates. The Secretary shall give to applicants for such service an order upon the Register of Records, which shall state the name to be searched for, the year or years, and other necessary particulars, with the amount of fees paid, which orders shall be preserved and filed in the Bureau of Vital Statistics.

90. An account of all fees collected shall be kept in the office of the Secretary, and a monthly report of the same shall be made to the Board. On the first day of each month, the amount of fees collected for the previous month shall be deposited with the City Chamberlain.

THE SANITARY CODE.

THE Sanitary Ordinances adopted by the Department of Health, called the Sanitary Code, and conformed to Article XI. of Chapter 335, of the Laws of 1873, by the Board of Health, June 2, 1873, with the amendments and additional provisions pursuant to Section 82 of said article, added and published to September 1, 1875.

DEFINITIONS OF TERMS.

SECTION 1. That the terms "Board," "this Board," and "said Board," shall be held to mean the "Board of Health of the Health Department of the City of New York;" that the word "Department," wherever used herein, shall be held to mean the Health Department of the City of New York; that the words "person," "owner," "tenant," "lessee," "occupant," "contractor," "party," "manager," "Board," and "officer," shall respectively be held to apply to and include, both jointly and severally, each and all owners, part-owners, tenants, lessees, occupants, managers, contractors, parties in interest, persons, officers, boards, and corporations, who may sustain the relations, or may be in like position of any one or more thereof referred to in any ordinance or regulation; that every order, ordinance, or regulation declared applicable to the built-up portion of New York, shall, so far as the subject-matter thereof is applicable (save as to interments), and so far as this Board has authority to make the same, be held to include and apply to the built-up portions of said city; that every word or phrase anywhere herein defined shall be held to include the same sense wherever used; that the words "city," or "this city," or "said city," whenever used herein, shall be held to mean the city of New York; that the word "regulations" shall be held to include "special regulations" (which latter will be from time to time issued, and will contain more detailed provisions than can be herein conveniently set forth); that the word "permit" shall be construed to mean the permission in writing of this Board, issued according to its by-laws, rules, regulations, and Sanitary Code; and that every "report" herein required shall be held to be a report in writing, signed by the person (and indicating his official position) who makes the same; that the word "light," or "lighted," shall be held to refer to natural, external light; and that all words and phrases herein defined shall also include their usual and natural meanings, as well as those herein especially given.

SEC. 2. That the word "street," when used in the Sanitary Code, shall be held to include avenues, sidewalks, gutters, and public alleys; and the words "public place" shall be held to include parks, piers, docks, and wharves, and water and open spaces thereto adjacent, and also public yards, grounds, and areas, and all open spaces between buildings and streets, and in view of such streets; the word "ashes" shall be held to include cinders, coal, and every thing that usually remains after fires; the word "rubbish" shall be held to include all the loose and decayed material and dirt-like substance that attends use or decay, or which accumulates from building, storing, or cleaning; the word "garbage" shall be held to include

every accumulation of both animal and vegetable matter, liquid or otherwise, that attends the preparation, decay, and dealing in or storage of meats, fish, fowl, birds, or vegetables; and the word "dirt" shall be held to mean natural soil, earth, and stone.

SEC. 3. That a "tenement-house" shall be taken to mean and include every house, building, or portion thereof which is rented, leased, let, or hired out to be occupied, or is occupied as the house, home, or residence of more than three families living independently of one another, and doing their cooking upon the premises, or by more than two families upon a floor, so living and cooking, but having a common right in the halls, stairways, yards, water-closets, or privies, or some of them. A "lodging-house" shall be taken to mean and include any house or building, or portion thereof, in which persons are harbored or received, or lodged for hire for a single night, or for less than a week at one time, or any part of which is let for any person to sleep in for any term less than a week. A "cellar" shall be taken to mean and include every basement or lower story of any building or house of which one-half or more of the height from the floor to the ceiling is below the level of the street adjoining. The phrase "boarding-house" shall be held to include every building, and every story and portion thereof, which is at any time or usually used, leased, or occupied, or intended so to be, by any number of persons, exceeding ten, as boarders thereat. The word "manufactory" shall be held to include every building, and every story and portion thereof, in which any sort of labor or work is done, which calls for the continual or usual presence of several persons during several hours of the day or night engaged about said work or labor; and the word "saloon" shall be held to include every portion of any building in which the business of selling meals, liquors, drinks, or refreshments of any kind, shall be conducted, and includes "concert-saloons."

SEC. 4. That the term "theatre" shall be held to include the building, rooms, and place where any play, concert, opera, circus, trick of jugglery, show, gymnastic, or other exhibition, masquerade, public dance, drill, lecture, address, or other public or frequent gathering or amusement, are, is, or may be held, given, performed, or take place, and the approach or approaches to and appurtenances thereof.

SEC. 5. That the word "physician" shall include dentists, and every other person who practises about the cure of the sick or injured, or who has the charge of, or professionally prescribes for, any person sick, injured, or diseased, and any person who pursues the business of, or acts as midwife; that the phrase "contagious disease" shall be held to include all persons sick, affected, or attacked by or of a disease of an infectious, contagious, or pestilential nature (more especially, however, referring to the cholera, yellow fever, small-pox, diphtheria, ship, or typhus, typhoid, spotted, relapsing, and scarlet fevers), and also including any new disease of an infectious, contagious, or pestilential nature, and also any other disease publicly declared by this Board dangerous to the public health; and every physician in said city shall at all times cause his or her name, office, and residence, and also his or her kind and class of practice, to be registered within the Bureau of Vital Statistics, and in a manner according to the regulations prescribed by this Board.

SEC. 6. That the word "meat," whenever herein used, includes every part of any land-animal and eggs (whether mixed or not with any other substance); and the word "fish" includes every part of any animal that lives in water, or the flesh of which is not meat; and the word "vegetable" includes every article of human consumption as food, which (not being meat, or fish, or milk) is held, or offered, or intended for sale or consumption, as food for human beings, at any place in said city; and all fish and meat found therein shall be deemed to be therein, and held for such sale or consumption as such food, unless the contrary be distinctly proved.

SEC. 7. That the word "cattle" shall be held to include all animals, except birds, fowl, and fish, of which any part of the body is used as food; the word "butcher" shall be held

to include whoever is engaged in the business of keeping, driving, or slaughtering any cattle, or in selling any meat; the words "private market" shall include every store, cellar, stand, and place (not being part of a public market) at which the business is the buying, selling, or keeping for sale, of meat, fish, or vegetables for human food.

MISFEASANCE AND NONFEASANCE.

SEC. 8. That no person shall carelessly or negligently do, or advise or contribute to the doing of any act or thing dangerous to the life, or detrimental to the health, of any human being; nor shall any person knowingly do, or advise, or contribute to the doing of any such act or thing (not actually authorized by law), except with justifiable motives and for adequate reasons; or shall any person omit to do any act, or to take any precaution, reasonable and proper, to prevent or remove danger or detriment to the life or health of any human being.

OBEEDIENCE TO ORDINANCES AND REGULATIONS.

SEC. 9. That every contractor in these ordinances referred to, and every person who has contracted, or undertakes, or is bound to do, or is engaged in doing, any one of those things, in respect of which these ordinances contain provisions or regulations, shall comply with these ordinances, to the extent that any contract, obligation, or duty, requires or permits; and no direction of any contractors or persons shall excuse him for a non-compliance with any of said ordinances.

SEC. 10. That every person shall observe and obey each and every special regulation, and every order of this Board that is or may be made, for carrying into effect any of the ordinances or powers hereinbefore or hereinafter contained, or any law of this State, or otherwise, whether issued directly by the Board, or promulgated by any Bureau charged therewith, as if the same had been herein inserted at length.

ENFORCEMENT OF ORDINANCES.

SEC. 11. That the Inspectors of this Department, and its proper officers and agents, shall make the inspections and examinations required by law; that the Board of Police of the City of New York do execute and cause to be executed all the orders of this Board when so specially ordered; and all persons are hereby forbidden to interfere with or obstruct such inspection, examination, or execution.

SEC. 12. That, except as herein specially or otherwise provided, or as may be hereafter provided, or as is otherwise made necessary by the laws of the State, the Board of Police of the Police Department shall, through its proper officers and men, and as near as may be according to its existing regulations, or amendments to be made thereto, on advice with this Department, and subject to the supervision of this Department, carry into effect and exercise the sanitary powers heretofore exercised by the Board of Police; and that said Board of Police shall keep this Department regularly advised of its action in that behalf, and shall conform to these and all future ordinances, and to all special regulations of this Department.

BILLS OF HEALTH.

SEC. 13. That no person, officer, or Board within said city (except this Board or its proper officers, or proper officers of any Bureau of this Department, and as the regulations prescribed by this Board shall provide), shall grant, sign, or deliver any certificate, or "Bill of Health."

MEDICINES, ADULTERATIONS, AND POISONS.

SEC. 14. That no doctor, druggist, or other person shall make, sell, put up, prepare, or administer any prescription, decoction, or medicine under any deceptive or fraudulent name

direction, or pretense; nor shall any false or deceptive representation be made by any person to any other as to the kind, quality, purpose, or effect of any such or other drug, medicine, decoction, drink, or other article offered or intended to be taken as food or medicine.

SEC. 15. That no poisonous medicine, decoction, or substance shall be held for sale or sold, except for lawful purposes and with proper motives, and by persons competent to give the proper directions and precautions as to the use thereof; nor shall any bottle, box, parcel, or receptacle thereof be delivered to any person unless the same is marked "poison," nor to any person who the party delivering the same has reason to think intends it for any illegal or improper use or purpose.

SEC. 16. That no person shall make, offer, or have for sale, or keep at any place of sale, any "poisonous, unwholesome, deleterious, or adulterated drugs, medicines, or food," or in respect thereto omit any act or thing required, or do any act forbidden by any law or health regulation of this State applicable in any part of said city.

CONSTRUCTION OF BUILDINGS, VENTILATION, AND DRAINAGE.

SEC. 17. That no person shall hereafter erect, or cause to be erected, or converted to a new purpose by alteration, any building or structure which, or any part of which, shall be inadequate or defective in respect to strength, ventilation, light, sewerage, or of any other usual, proper, or necessary provision or precaution; nor shall the builder, lessee, tenant, or occupant of any such or of any other building or structure (within the right or ability of either to remedy or prevent the same), cause or allow any matter or thing to be or to be done in or about any such building or structure dangerous or prejudicial to life or health.

SEC. 18. That no owner or lessee of any building, or any part thereof, shall lease or let, or hire out the same, or any portion thereof, to be occupied by any person, or allow the same to be occupied as a place in which or for any one to dwell or lodge, except when said buildings or such parts thereof are sufficiently lighted, ventilated, provided, and accommodated, and are in all respects in that condition of cleanliness and wholesomeness, for which this Code or any law of this State provides, or in which they or either of them require any such premises to be kept. Nor shall any such person rent, let, hire out, or allow, having power to prevent the same, to be used as or for a place of sleeping or residence, any portion or apartment of any building which apartment or portion has not at least two feet of its height and space above the level of every part of the sidewalk and curbstone of any adjacent street, nor of which the floor is damp by reason of water from the ground, or which is impregnated or penetrated by any offensive gas, smell, or exhalation prejudicial to health. But this section shall not prevent the leasing, renting, or occupancy of cellars or rooms less elevated than aforesaid, and as a part of any building rented or let, when they are not let or intended to be occupied or used by any person as a sleeping-apartment, or as a principal or sole dwelling apartment.

SEC. 19. That no person, having the right and power to prevent the same, shall knowingly cause or permit any person to sleep or remain in any cellar, or in any place dangerous or prejudicial to life or health, by reason of a want of ventilation or drainage, or by reason of the presence of any poisonous, noxious, or offensive substance or otherwise.

SEC. 20. That no owner, lessee, or keeper of any tenement-house, lodging-house, boarding-house, or manufactory shall cause or allow the same to be overcrowded, or cause or allow so great a number of persons to dwell, be, or sleep in any such house, or any portion thereof, as thereby to cause any danger or detriment to life or health.

SEC. 21. That no person, being the lessee, manager, conductor, or owner of any theatre shall cause, or permit, or allow the same, or any part or appurtenance thereof to be so far overcrowded or inadequate, faulty, or insufficient in respect of strength, ingress or egress,

cleanliness, ventilation, or in any other particular, as that thereby, or by reason thereof, any avoidable peril shall come or happen to, or be incurred or suffered by any person being properly at or in any such theatre.

SEC. 22. That every person who shall be the owner, lessee, or keeper or manager of any tenement-house, boarding-house, lodging-house or manufactory, shall provide, or cause to be provided for the accommodation thereof, and for the use of the tenants, lodgers, boarders, and workers thereat, adequate privies or water-closets, and the same shall be so adequately ventilated, and shall at all times be kept in such cleanly and wholesome condition as not to be offensive, or to be dangerous or detrimental to life or health. And no offensive smell or gases, from or through any outlet or sewer, or through any such privy or water-closet, shall be allowed, by any person aforesaid, to pass into such house or any part thereof, or into any other house or building.

SEC. 23. That every owner, lessee, and tenant and manager of any boarding-house or manufactory, shall cause every part thereof and its appurtenances to be put, and shall thereafter cause the same to be kept, in a cleanly and wholesome condition, and shall speedily cause every department thereof in which any person may sleep, dwell, or work, to be adequately lighted and ventilated; and, if the same be a manufactory, shall cause every part thereof in which any person may work to be maintained at such temperature, and be provided with such accommodations and safeguards as not, by reason of the want thereof, or of any thing about the condition of any such manufactory or its appurtenances, to cause unnecessary danger or detriment to the life or health of any person being properly therein or thereat.

SEC. 24. That no keeper, or other officer or person having control or authority in any jail, prison, or other place where any person may be kept or confined, shall needlessly or illegally cause or allow any peril or detriment to the life or health of any such person, by reason of too little or too much heat, or of a want of food, drink, or ventilation, or from the want or neglect of any other reasonable care, protection, or precaution.

SEC. 25. That every person, when cleaning any street, shall clean, and every contractor shall cause to be cleaned, the gutters and parts of the streets along which the water will run, before using any water to wash the same; and no substance that could be before scraped away shall be washed or allowed to be carried or be put into the sewer, or into any receptacle therewith connected.

SEC. 26. That it shall be the duty of every person using, making, or having any drain, soil-pipe, passage, or connection between any sewer (or with either the North or East River) and any ground, building, erection, or place of business, and in like manner the duty of the owner and tenant of all grounds, buildings, and erections, and of the parties interested in such place of business or the business thereat, and in like manner the duty of all Boards, departments, officers, and persons (to the extent of the right and authority of each), to cause and require that such drain, soil-pipe, passage, and connection shall at all times be adequate for its purpose, and shall convey and allow freely and entirely to pass whatever enters or should enter the same.

SEC. 27. That it shall be the duty of all Boards, departments, officers, and persons having power and authority so to do or require (and to the extent thereof), to cause to be used sufficient water, and other adequate means to be taken, so that whatever substances may enter any sewer shall pass speedily along and from the same, and sufficiently far into some water or proper reservoir, so that no accumulations shall take place, and no exhalations from thence proceed dangerous or prejudicial to life or health.

SEC. 28. That the proper officers and authorities shall, to the extent of their power and ability, cause the sewers and drainage of said city to be so well located and constructed, so

adequate in size, and to be so kept in repair and cleaned, and so adequately supplied with water, and with such proper arrangements and constructions in every particular, that life and health shall not be needlessly exposed, or suffer unnecessary peril or detriment by their neglect, or by reason of the defects or deficiencies of any sewers or drainage, or the want thereof.

FOOD AND DRINK.

SEC. 29.¹ That no meat, fish, birds, or fowl, fruit or vegetables, nor any milk, not being then healthy, fresh, sound, wholesome, and safe for human food, nor any meat or fish that died by disease or accident, shall be brought within said city, or offered or held for sale in any public or private market, as such food anywhere in said city.

SEC. 30. That no calf, pig, or lamb, or the meat thereof, shall be brought, held or offered for sale, as such food, in said city, which, at the date of its death (being a calf), was less than four weeks old; or (being a pig), was, when killed, not more than five weeks old; or (being a lamb), was, when killed, not more than eight weeks old. Nor shall any meagre, sickly, or unwholesome fish, birds, or fowl be bought, held, sold, or offered for sale, as such food, in said city.

SEC. 31. That no cattle shall be killed for human food while in an overheated, feverish, or diseased condition; and all such diseased cattle, in the city of New York, and the place where found, and their disease, shall be at once reported to this Department by the owner or custodian thereof, that the proper order may be made relative thereto, or for the removal thereof from said city.

SEC. 32. That no meat, or dead animal above the size of a rabbit, shall be taken to any public or private market for food until the same shall have fully cooled (and all blood shall have ceased dripping therefrom) after its killing, nor until the entrails, head (unless the same be skinned), hide, horns, and feet shall have been removed. Nor shall gut-fat, or any unwholesome or offensive matter or thing, be brought to or near any such market.

SEC. 33. That no person shall, in the built-up portion of the city of New York, or adjacent thereto, sell or have for sale any fish in or from any vehicle or in any street or public place, from which all parts which are not usually cooked for food have not been removed.

SEC. 34.² That no decayed or unwholesome fruit or vegetables shall knowingly be brought into said city to be consumed or offered for sale for human food, nor shall any such articles be kept or stored therein.

SEC. 35. That no person, being the manager or keeper of any saloon, boarding-house, or lodging-house, or being employed as a clerk, servant, or agent thereat, shall therein or thereat offer or have for food or drink, or to be eaten or drank, any poisonous, deleterious, or unwholesome substance, nor allow any thing therein to be done or to occur dangerous to life or prejudicial to health.

SEC. 36. That no cased, blown, plaited, raised, stuffed, putrid, impure, or unhealthy or unwholesome meat or fish, birds or fowl, shall be held, bought, or sold, or offered for sale for human food, or held or kept in any market, public or private, or any public place in said city.

SEC. 37.³ That no meat, fish, fruit, vegetables, or milk, or unwholesome liquid, shall knowingly be bought, sold, held, offered for sale, labeled, or any representation made in respect thereof, under a false name or quality, or as being what the same is not, as respects wholesomeness, soundness, or safety for food or drink.

¹ As amended July 16, 1875.

² As amended July 16, 1875.

³ As amended July 16, 1875.

SEC. 38.¹ That every person, being the owner, lessee, or occupant of any room, stall, or place where any meat, fish, fruit, or vegetables, designed or held for human food shall be stored or kept, or shall be held or offered for sale, shall put and keep such room, stall, and place, and its appurtenances, in a cleanly and wholesome condition; and every person having charge, or interested or engaged, whether as principal or agent, in the care, or in respect to the custody or sale of any meat, fish, fruit, birds, fowl, or vegetables, designed for human food, shall put and preserve the same in a cleanly and wholesome condition, and shall not allow the same, or any part thereof, to be poisoned, infected, or rendered unsafe or unwholesome for human food.

SEC. 39. That no butcher or dealer shall keep in any market any refrigerator or ice-box, unless the same shall be lined with lead or some proper metallic substance, so as to be water-tight, nor unless the same be provided with a pipe of lead, zinc, or copper leading therefrom to the nearest gutter or proper waste pipe.

SEC. 40.² That it shall be the duty of every person knowing of any fish, meat, fowl, birds, fruit, or vegetables being bought, sold or offered, or held for sale as food for human beings, or being in any market, public or private, in said city, and not being sound, healthy, or wholesome for such food, to forthwith report such facts, and the particulars relating thereto, to this Department, or to one of its officers or inspectors.

SEC. 41. That no person shall, without consent of this Department, bring into said city for use as a drink for human beings, or offer or have for sale in said city, as such drink, any poisonous or deleterious liquid.

SEC. 42.³ That upon any cattle, meat, birds, fowl, fish, fruit, or vegetables being found by any inspector or other officer of this Department, in a condition which is in his opinion unwholesome and unfit for use as human food, or in a condition or of a weight or quality in in this Code condemned or forbidden, he shall cause the same to be examined by two reputable persons, reasonably competent to judge in respect thereto, whom he may conveniently find; and if both said persons disagree with him in opinion in respect thereto, he shall take no action, and give no order, relative to the same, till he has been instructed by the Sanitary Superintendent; and if one or both of said persons agree with him in respect to said articles, then such inspector or officer may forbid the same being offered or exposed for sale, or being sold, for human food, till the owner or party in charge or other proper person has obtained the consent of the Sanitary Superintendent, or of this Board, to their being so offered, used, or sold. And if both such persons agree with him in opinion, he may order the same to be removed; and thereupon, or if this Board shall have approved the judgment of said inspector, it shall be the duty of the owner and party in charge to speedily remove such articles from any market, street, or public place, and not to sell or dispose or offer to sell or dispose thereof for the purpose of human food. And in default of such removal, and also in case of disobedience to such order, and also in all cases where, in his opinion, such articles, by reason of their being in a decayed or offensive condition, would, if allowed longer to remain, be dangerous to health, the same (as this Board may provide) may be caused to be removed by any inspector, police officer, or officer of this Department, to some suitable place, at the expense of the party who should have removed the same, and the owner and party in interest must take notice thereof.

SEC. 43. That no person shall sell or give to any other person or permit such other person to get (having the right and ability to prevent the same) any drink, when such first-named person may have reason to think or believe that such drink may cause danger or detriment to life.

¹ As amended July 16, 1875.

² As amended July 16, 1875.

³ As amended July 16, 1875.

SEC. 44. That no distiller, or brewer, or other person, shall manufacture, or have or keep for sale, any liquid designed as a drink or beverage for human beings which would be, if used, needlessly dangerous or detrimental to life or health.

SEC. 45. That no person shall have at any place where milk, butter, or cheese is kept for sale nor at any place offer or have for sale, nor shall any person bring or send to said city, any unwholesome, watered, or adulterated milk, or milk known as swill-milk, or milk from cows or other animals that for the most part lived in stables, or that fed on swill, garbage, or other like substance; nor any butter or cheese made from any such milk, nor any unwholesome butter or cheese.

SEC. 46. That no person shall throw, or allow to run or pass, into any public reservoir, water-pipe, or aqueduct, or into or upon any border or margin thereof, or excavation or stream therewith connected, any animal, vegetable, or mineral substance whatever; nor shall any person allow the same to be done (having power or right to prevent the same); nor shall any person do or permit to be done (having right or power to prevent the same), any act or thing that will impair or peril the purity or wholesomeness of any water or other fluid used or designed as a drink in any part of said city, nor shall any person bathe (nor, except in the discharge of a public duty, put) any part of his person into such water; nor shall any unauthorized person open any erection or unscrew any hydrant holding such water.

SEC. 47. That it shall be the duty of every person, officer, department, and board having any authority and control in regard to any water designed for human consumption (and within the proper sphere of the duty of each thereof), to take all usual and also all reasonable measures and precautions to secure and preserve the purity and wholesomeness of such water.

SEC. 48. That no person shall destroy nor in anywise injure or impair any drinking-hydrant, or part thereof, in the said city; nor shall any person interfere with the use or enjoyment of the water therein, or therefrom, or interrupt the flow thereof, for or as a drink; nor shall any person put any dirty, poisonous, medicinal, or any noxious substance into or near said water or hydrant, whereby such water is made or may be regarded as dangerous or unwholesome as a drink.

CATTLE, HORSES, ETC.

SEC. 49. That no cattle, sheep, horse, goat, goose, or mule, or any dangerous or offensive animal, shall be allowed by any owner, or by any person having charge of or who shall have charge of the same, to go at large in any street or public place in the city of New York. And no pigs, swine, or cattle shall be unloaded from any cars upon any street or public place in the city of New York, except pursuant to a written permit from this Department.

SEC. 50. That no person shall allow any swine or goat to run at large in said city, and no person shall, within the built-up portions of said city, or within one thousand feet of any residence or place of business or street thereof, keep any swine or goat, without a permit so to do from this Department.

SEC. 51. That no cattle shall be kept in any place of which the water, ventilation, and food are not sufficient and wholesome for the preservation of their health, safe condition, and wholesomeness for food.

SEC. 52. That no person shall keep or allow to be kept in any building, or on any premises, or on grounds of which he may be the owner, lessee, tenant, or occupant, more cows or on other cattle than at the rate of fifteen to an acre (in or near the built-up portions of said city), without a permit from this Department. And every such person shall cause every stable and place where any cows, horses, or other animals may be, to be kept at all times in

a cleanly and wholesome condition, and shall not allow any animal to be therein, while infected with any disease contagious or pestilential among such animals, without a permit from this Department.

SEC. 53. That no cattle, swine, or sheep, geese, goats, or horses, shall be yarded within or adjacent to the built-up portions of the city of New York, without the permit of this Department, or otherwise than according to its regulations.

SEC. 54. That no cattle shall be placed or carried while bound or tied by their legs, or bound down by their necks, in any vehicle in said city, but shall be allowed freely to stand in such vehicle when transported, and while being therein.

SEC. 55.¹ That no cattle, swine, pigs, or calves shall be driven through the streets or avenues of the city of New York, or any of them, except between the hours of eight in the evening and two hours after sunrise of the next morning; nor shall any sheep be there driven except between the hours of eight o'clock in the evening and twelve o'clock, noon, of next day; nor shall more than twenty cattle, or more than one hundred and fifty hogs, or more than two hundred and fifty sheep or lambs, be driven together; and they shall be so driven only through the following streets, that is to say: Forty-fifth Street from First to Second Avenue; Sixtieth Street, from Eighth Avenue to Tenth Avenue; the transverse road through Central Park at Seventy-ninth Street; Ninety-second Street, from Third Avenue to Astoria Ferry; Ninety-fourth Street, from Third to Fifth Avenue; One Hundred and Tenth Street, from Second to Eighth Avenue; One Hundred and Twenty-fifth Street, from Eighth Avenue to Manhattan Street; First and Second Avenues, in their entire lengths north of Fortieth Street; Third Avenue, between Ninety-second Street and One Hundred and Tenth Street; Fifth Avenue between Seventy-ninth Street and One Hundred and Tenth Street; Eighth Avenue, from Sixtieth Street to McComb's Dam Road; McComb's Dam Road in its entire length; Tenth Avenue, from Fortieth Street to Sixtieth Street; Harlem Lane, from the intersection of One Hundred and Twenty-fifth Street and Eighth Avenue to the intersection of One Hundred and Tenth Street and Sixth Avenue; Eleventh Avenue, from Forty-second Street to Forty-ninth Street; Fortieth and Forty-first Streets, from the Hudson River to Tenth Avenue; and Forty-fifth, Forty-sixth, Forty-seventh, Forty-eighth, and Forty-ninth Streets, between Hudson River and Eleventh Avenue.

After the first day of June, 1874, no cattle, sheep, swine, pigs, or calves shall be driven across the city between the Tenth and Second Avenues south of Seventy-ninth Street.

It shall not be lawful to drive cattle, sheep, pigs, swine, or calves through any street or avenue south of Fortieth Street, nor to slaughter any cattle, sheep, pigs, swine or calves south of said street; nor shall any such cattle, sheep, swine, pigs, or calves be allowed to pass upon or across any sidewalk, or to remain in the streets or avenues, except when being driven in accordance with this Sanitary Code.

Cattle arriving in the city of New York by cars or boats may be driven in accordance with this Code from the place of unloading, being north of Thirty-ninth Street, to any existing cattle-yard, through the streets and avenues designated, without limit as to number, pro-

¹ As amended April 23, 1874.

² Adopted June 22, 1875.

² *Resolved*, That the Sanitary Superintendent be and is hereby authorized to grant temporary permits to drive cattle from the stock-yards, on the North River, whenever and during the time that the navigation of the river is impossible on account of fog or ice.

³ Adopted July 6, 1875.

³ *Resolved*, That until otherwise ordered permission be given to drive cattle across the city, between midnight and 6 o'clock, A. M., by the following routes: 1st, Sixty-third Street to Eighth Avenue; Eighth Avenue to Sixty-fifth Street; Sixty-fifth Street through transverse road of Central Park to Madison Avenue; Madison Avenue to Sixty-third Street; Sixty-third Street to First Avenue; First Avenue to slaughter-houses. 2d, Tenth Avenue to Eighty fifth Street and transverse road through Central Park to First Avenue; First Avenue to Harlem Bridge and Morrisania. 3d, Tenth Avenue and Old Bloomingdale Road to Kingsbridge and Yonkers.

vided they are accompanied by one attendant, if composed of twenty or any less number of head ; by two attendants for more than twenty and less than fifty head ; by three attendants for more than fifty and less than one hundred head ; and by one attendant for every additional forty head above one hundred.

Such cattle and sheep as shall arrive within the Twenty-second and Thirtieth Police Precincts, as established by the Board of Police, by conveyances that, according to time-tables, should have arrived in season to be driven in conformity to this Code, but the actual arrival of which cattle or sheep has been delayed, without the wrongful act of the owners of the same (or of their agents), may be driven upon the routes hereinbefore designated, when they shall arrive, to any established yards above Fortieth Street, upon obtaining a written permit for driving the same (out of the hours fixed by this Code, but otherwise in conformity thereto), at the police station-houses in said precincts respectively, under such regulations as the police authorities may provide.

SLAUGHTERING AND SLAUGHTER-HOUSES.

SEC. 56.¹ That the keeping and slaughtering of all cattle, and the preparation and keeping of all meat and fish, birds and fowl, shall be in that manner which is, or is generally reputed or known to be, best adapted to secure and continue their safety and wholsomeness as food. Neither the slaughtering nor the driving of cattle shall be permitted or conducted at any place in the city of New York south of Fortieth Street ; nor shall the slaughtering of cattle be conducted at any place in the city of New York north of said street, without a special written permit from this Department ; unless the same shall be done in buildings located directly upon the water-front, each having a capacity sufficient for the yarding and slaughtering daily of one-half of the entire number of cattle, or hogs, or small stock (all or separately, according to the particular object of each abattoir) slaughtered in the city, at the time the application for the permit for such abattoir shall be made ; and so constructed as to receive all stock deliverable thereat, directly from cars or transports ; and to discharge therefrom all liquid refuse below low-water mark, and to secure the proper care and disposition of all parts of the slaughtered animals upon the premises, or the immediate removal thereof by means of boats.

SEC. 57. That every butcher and every person owning, leasing, or occupying any place, room, or building where any cattle have been, or are killed or dressed, and every person, being the owner, lessee, or occupant of any room or stable where any cattle may be kept, or market, public or private, and, having power and authority so to do, shall cause such place, room, building, stall (and market, being private), and their yards and appurtenances to be thoroughly cleansed and purified, and all offal, blood, fat, garbage, refuse, and unwholesome or offensive matter to be therefrom removed, at least once in every twenty-four hours after the use thereof for any of the purposes herein referred to ; and shall, also, at all times (unless some public authority prevents), keep all woodwork, save floors and counters, in any building, place, or premises aforesaid, thoroughly painted or whitewashed.

SEC. 58. That no cattle shall be slaughtered, dressed, or hung, or the meat or any part thereof, within said city, wholly or partly within any street, avenue, or sidewalk, or public alley or place ; nor shall any blood, or dirty water, or other substance from such cattle, meat or place of killing, or the appurtenances thereof, be allowed to run, fall, or to be in any such street, avenue, sidewalk, alley, or place.

SEC. 59. That no building occupied wholly or partly as a slaughter-house, or any part thereof, or any building on the same lot, shall, without a special permit from this Department, be occupied for a dwelling or lodging place ; that every such building shall at all times be kept adequately and thoroughly ventilated ; that no blood shall be allowed to remain therein over night ; that adequate underground connections shall be made from

¹ As amended January 19, 1875.

every such dwelling with a public sewer, and the floor of such building on which the slaughtering is done, and the yard, shall be cemented and paved so as not to absorb blood, and so as to carry all liquid into the sewers.

SEC. 60. That neither the business of slaughtering cattle, nor the keeping of any slaughter-house, nor the yarding of cattle, shall be begun or undertaken at any new or additional place within the city of New York, except pursuant to a permit from this Department; nor shall any person or corporation keep any slaughter-house or yard, or any cattle therein, hereafter, without a permit from this Department.

SEC. 61. That no person shall kill or dress any animal or meat in any market, nor have, or permit to escape therein, or within one hundred feet thereof, any poisonous, noxious, nauseous, or offensive substance.

SEC. 62. That no person shall become, or continue, or engage as, or in the business of, a butcher, at or in any public or private market or stand in the city of New York, without a permit therefor from this Department.

SEC. 63. That every butcher and milk-dealer, and their agents, shall allow the parties authorized by this Department, to freely and fully inspect their cattle and meats, fish, and vegetables, held, offered, or intended for sale, and will be expected to answer all reasonable and proper questions asked by such persons relative to the condition thereof, and of the places where such articles may be.

SEC. 64. That from and after the first day of December, 1870, the slaughtering of animals shall not be allowed or conducted at any place between Second (2d) Avenue and Tenth (10th) Avenue in the city of New York.

SEC. 65.¹ That no offal or butcher's refuse shall be conveyed through any street or avenue of the city of New York between the hours of ten o'clock A. M. and ten o'clock P. M., and that no offal, fat or refuse, shall, at any time, be brought into the city, or conveyed over any ferry, except in accordance with the terms of a written permit, first obtained therefor from this Department; nor shall any such substance be conveyed through any street or avenue, unless the same be in tight boxes, barrels, or vessels, and covered over so that no odor therefrom shall escape.

SIDEWALKS.

SEC. 66.² That no person engaged in the selling or keeping for sale of any fish, meat, birds, fowl, or vegetables, shall, without a permit from this Department, occupy or encroach upon any portion of any street or sidewalk, or public place in the city of New York.

SEC. 67. That no person being owner, lessee, or tenant of any house or building, shall allow any water or other liquid to run from or out of his building or ground, upon or across any sidewalk curbstone, and if such substance is allowed to pass upon any street it must reach the same by a passage, to be kept at all times adequate and in repair by such person, under or through such flagstone or curbstone; and no such water or other liquid, or ice therefrom, shall be allowed to gather or remain on the upper surface of such curb, flagstone, or passage; nor shall such person allow any accumulation of such water or liquid, or the ice therefrom, upon any street or place, but shall, at all times, cause the same to be removed, or to pass along the gutter or some proper passage to one of the rivers or into a sewer.

SEC. 68. That every owner, lessee, tenant, and occupant of any building or lot in the built-up portions of the city of New York, shall, within two hours after the fall of any snow exceeding one inch in depth, and within two hours after the forming of any ice on the sidewalk or in the gutter, in front of or against the side of any such building or lot, remove, or

¹ As amended May 5, 1874.

² As amended July 29, 1873.

cause the same to be removed from such sidewalk and gutter, or in case of great difficulty in removing such ice, that every such person do sprinkle or cause to be sprinkled thereon sand or ashes, so that traveling thereon shall not be perilous; but that where said snow falls or ice forms between the hours of eight o'clock of the evening and daylight in the morning, this ordinance will be complied with by removing or sprinkling the same within two hours after sunrise of the morning succeeding its fall or formation.

SEC. 69. That every owner, tenant, lessee, and occupant of any building or lot (whether vacant or occupied), within or near the built-up portions of said city, shall keep and cause to be kept the sidewalk and flagging, and curbstone in front thereof, in good repair and condition; and that every such person shall keep and cause every such sidewalk to be kept free from obstructions, as well as also free from any incumbrance, and free from all substances of every kind.

SEC. 70. That no person shall take, or allow to go or be taken (having the right and ability to prevent the same), any horse or other animal, nor any vehicle, upon any sidewalk or footpath in front of any building, to the peril of any person; nor shall any person block up or obstruct any street or place, or contribute thereto.

POUNDS.

SEC. 71. That no person shall act as or be a keeper of any public pound in the city of New York, except pursuant to a permit from this Department.

SEC. 72. That no keeper of any such pound shall allow the same, or any animal therein, by reason of any want of care, food, ventilation, or cleanliness or otherwise, to be or become dangerous or detrimental to human life or health.

SEC. 73. That every such pound-keeper shall, from time to time, report to this Department, as its special regulations may require, and shall obey and conform to all such regulations, and that in the mean time such pounds shall, in the particulars not herein mentioned, be regulated by the rules heretofore enacted by the proper authorities of said city.

DOGS, ETC.

SEC. 74.¹ That no person shall take or call any dog into or allow any dog to go into, any street or public place, in the city of New York, between the fifteenth day of June and the fifteenth day of September in any year, unless properly muzzled, and nothing in this section shall repeal or supersede any existing regulations as to such dogs, not inconsistent herewith.

SEC. 75. That every animal which is mad or has the hydrophobia, or shows symptoms thereof, shall, by the person owning the same, or having the possession, charge, or control thereof, be at once killed; and every animal that has been exposed to such disease, shall be at once confined in some secure place for such length of time as to show that such exposure has not given such animal said disease, and so as to avoid all danger to life or health. And the dead body of any animal that died of such disease shall be at once, by such person, buried not less than three feet under ground, at some place not within one thousand feet of any residence.

OFFENSIVE ODORS AND LIQUIDS.

SEC. 76. That no person shall permit or have any offensive water or other liquid or substance on his premises or grounds to the prejudice of life or health, whether for use in any trade or otherwise; and no establishment or place of business for tanning, skinning, or scouring, or for dressing hides or leather, or for carrying on any offensive or noisome trade or business, shall hereafter be opened, started, or established in the city of New York with-

¹ Repealed June 16, 1874.

out a permit of this Board. And every such establishment now existing shall be kept cleanly and wholesome, and be so conducted in every particular as not to be offensive, or prejudicial to life or health.

SEC. 77. That no person or company being a manufacturer of gas, or engaged about the manufacture thereof, shall throw or deposit, or allow to run, or having the right or power to prevent the same, shall permit to be thrown or deposited into any public waters, river, or stream, or into any sewer therewith connected, or into any street or public place, any gas-tar, or any refuse matter of or from any gas-house, works, or manufactory; nor shall any such person or company allow any substance or odor to escape from such house, works, or manufactory, or make any gas of such ingredients or quality that any substance shall escape therefrom, or be formed in the process of burning any gas, which shall be offensive or dangerous, or prejudicial to life or health. Nor shall any such person or company fail to use the most approved or all reasonable means for preventing the escape of odors.

SEC. 78. That no water-closet, sink, tub, vat, or other structure shall hereafter be constructed within the city of New York, having connection with, or by any sewer or underground passage, unless the same is provided with adequate, or the best generally approved constructions and precautions for preventing gases and other offensive currents, substances or smells from passing up or out through such connection from such sewer or passage; nor shall any such water-closet or privy be constructed without adequate provisions for the effectual and proper ventilation and cleansing thereof.

SEC. 79. That no person shall boil any offal, swill, bones, or fat in the built-up portions of said city, save in ordinary cooking, nor shall the business of bone-crushing, bone-boiling, bone-grinding, bone-burning, shell-burning, fat-boiling, gut-cleaning, nor the skinning or making of glue from any dead animals or parts thereof, nor any other occupation that is dangerous or detrimental to life or health, be hereafter established within said city; and no business or pursuit of the kind in this section named shall be carried on anywhere in said city, unless the same be allowed by a permit of this Board.

SEC. 80.¹ That no person shall boil, heat, dry, keep, store or manufacture any offal, swill, blood, bones, fat, tallow or lard, or any decaying animal or vegetable matter; nor shall the business of bone-crushing, bone-boiling, bone-grinding, bone or shell burning, lime-making, gut-cleaning, skinning, or making glue from any part of dead animals, heating, drying, storing, shipping or transporting any blood, scrap, fat, grease, or offensive animal or vegetable matter or manufacturing materials for manure, be allowed or conducted in the city of New York, or in its waters, without a special permit from this Board, to be applied for in writing, specifying the nature and precise location of the proposed business.

SEC. 81. That all persons engaged in the business of boiling or rendering fat, lard, or animal matter, shall cause the scrap or residuum to be so dried or otherwise prepared as effectually to deprive such material of all offensive odors, and to preserve the same entirely inoffensive immediately after the removal thereof from the receptacles in which the rendering process may be conducted.

SEC. 82. That no person shall hereafter erect, start, or establish in said city, without the consent of this Board, any manufactory or place of business for boiling any varnish or oil, or for the distilling of any ardent or alcoholic spirits, or for making any lamp-black, turpentine or tar, or for conducting any other business that will or does generate any unwholesome, offensive or deleterious gas, smoke, deposit, or exhalation, or any business that is or would be dangerous to life or detrimental to health.

¹ As amended August 26, 1873.

SEC. 83. That no animal or vegetable substance, nor street-sweepings, muck, or silt, nor dirt gathered in cleaning yards, buildings, docks, or slips, nor waste of mills or factories, nor any materials which are offensive, or tend by decay to become putrid or to render the atmosphere impure or unwholesome, shall be deposited or used to fill up or raise the surface or level of any lot, grounds, dock, wharf, or pier in or adjacent to the built-up portions of said city, or any ground filled for the purpose of building thereon, unless pursuant to a special permit from this Board.

SEC. 84. That no ground or material filled with offensive matter or substance, or that will emit or allow to arise, through or from the same, any offensive smell or deleterious exhalation, shall (adjacent to or within the built-up portion of said city) be opened or turned up, or the surface thereof removed, between the first day of May and the first day of October of any year, except according to permit first therefor obtained from this Board.

SEC. 85. That no petroleum-oil, kerosene-oil (or other liquid having like composition or qualities as a burning-fluid as said oil), shall be kept or exposed or offered for sale as a burning-fluid for lamps or any receptacle for the purpose of illumination, nor shall such oil or fluid or any description thereof be sold or kept or exposed or offered for sale, or given away for use or be used as a burning-fluid for any such lamp or receptacle, or be kept for such use, unless such oil or fluid shall be of such quality and ingredients that it shall stand and be equal to the following test and conditions, to wit:

It shall not evolve an inflammable vapor at a temperature below one hundred (100) degrees of the Fahrenheit thermometer.

SEC. 86. That no fat, tallow, or lard shall be melted or rendered except when fresh from the slaughtered animal, and taken directly from the places of slaughter in the city of New York, and in a condition free from sourness and taint and all other cause of offense at the time of rendering, and that all melting and rendering are to be in steam-tight vessels, the gases and odors therefrom to be destroyed by combustion or other means equally effective, and according to the best and most improved means and processes; and every thing preceding, following, and in connection with such melting and rendering, and the premises where the same shall be conducted, must be free from all offensive odor, and other cause of detriment to the public health. No fat, lard, or tallow shall be brought into the city of New York to be rendered or melted, and none is to be rendered or melted that has come from any place outside of said city, except as part of the living animal.

FILTH—DIRT.

SEC. 87. That no part of the contents of or substances from any sink, privy, or cesspool, nor any manure, ashes, garbage, rubbish, or dirt, shall be by any person flung or allowed to run or drop into or remain in any street or public place, except as herein elsewhere specified; nor shall the same be thrown or allowed to fall or run into the North or East River, save through the proper underground connection.

SEC. 88. That no swill, brine, urine of animals or other offensive animal nuisance, nor any stinking, noxious liquid, or other filthy matter of any kind, shall by any person be allowed to run or fall from or out of any building, vehicle, or erection into or upon any street or public place, or be taken or put therein, save as herein elsewhere provided.

SEC. 89. That no butchers' offal or garbage, nor any dead animals, nor any putrid or stinking animal or vegetable matter, shall be thrown by any person or allowed to go into any street, place, sewer, or receiving-basin, or into any river or standing or running water or excavation, or upon any ground or premises in the built-up portions of said city.

SEC. 90. That no person shall draw off, or allow to run off into any ground, street or place of said city, the contents (or any part thereof) of any vault, privy, cistern, cesspool, or

sink; nor shall any owner, tenant, or occupant of any building to which any vault, sink, privy, or cesspool shall appertain, or be attached, permit the contents, or any part thereof, to flow therefrom, or to rise within two feet of any part of the top, or permit said contents to become offensive; nor shall any privy, or other erection in this section mentioned, be filled with or covered with dirt till its filthy contents shall be emptied.

SEC. 91. That no person shall throw into, or deposit in any vault, sink, privy, or cesspool, any offal, ashes, meat, fish, garbage, or other substance, except that of which any such place is the appropriate receptacle.

SEC. 92. That neither the contents of any such tub, or of any receptacle, cesspool, privy, vault, sink, or water-closet, cistern, nor any thing in any room, excavation, vat, building, premises, or place, shall be allowed to become a nuisance, or offensive, so as to be dangerous or prejudicial to life or health.

SEC. 93. That every tub or other receptacle in any necessary house, sink, or privy (or placed, or allowed to stand therein, by any owner, tenant or occupant of any building, or premises), and used to contain any liquid, or partially liquid substance, shall be sufficiently strong, perfectly tight, and adequately provided with a strong cover and with hoops and handles; shall not be allowed to be filled to within four inches of any part of the top, and shall not be allowed (or its contents) to be offensive. And the provisions of this Code relative to emptying cesspools, and to throwing any substance therein, shall apply to said tubs and receptacles as if here repeated and applied thereto.

And no person shall throw, drop, or allow to fall into the North or East river, or into any street or place, any substance being, or having been part of, the contents of any such vault, cesspool, privy, sink, tub, or receptacle, or any offal.

SEC. 94. That no person shall deposit upon any street or public place within the generally built-up portion of the city of New York, or upon any paved street, any dirt or brick, or other material or dirt taken from any ground therein, in such manner as to occupy more than one hundred square feet of surface of any street or place (and the same shall be compact and at one side), nor allow the same to remain more than twelve hours, without a permit from this Department, or unless such occupancy shall be otherwise duly authorized by paramount authority. Nor shall any such substance be so deposited or allowed to remain by any person as to obstruct the free flowage along any gutter.

SEC. 95. That it shall be the duty of every owner, tenant, lessee, and occupant of any and every building or place of business in the generally built-up portions of the city of New York, forthwith to provide or cause to be provided, and at all times thereafter to keep and cause to be kept and provided, within such building or place of business, suitable and sufficient boxes, barrels, or tubs for receiving and holding, without leakage, and without being filled to within four inches of the top thereof, all the ashes, rubbish, garbage, and liquid substances, of whatever kind, that may accumulate during thirty-six hours from said building or place of business, or the portion thereof of which such person may be the owner, tenant, lessee, or occupant; and every such box, barrel, and tub designed to hold ashes shall be made of or lined with some suitable metal. That a separate vessel shall be provided for ashes and rubbish, and another for garbage and liquid substances; and ashes and rubbish shall not be placed or kept in the same vessels with garbage and liquid substances; and all ashes, rubbish, garbage, and liquid substances that should be removed from such building and place of business, or from that part for which said receptacles were provided, and none other (without the proper consent), shall be placed therein, and no such box, barrel, or tub shall remain on any sidewalk, or in any public place, longer than may be needful for the removal of the contents thereof.

SEC. 96. That such boxes, tubs, and barrels shall be placed and kept in such position (unless kept within or upon private grounds, within the sidewalks) as the inspectors or agents of this Department shall provide or the police direct; and no person, not for that purpose authorized, shall interfere therewith, or with the contents thereof.

SEC. 97. That all occupants, so preferring, may deliver their ashes, garbage, and rubbish directly to the proper carts, to be taken away at any hour of the day when said carts may be present; and said carts may take such articles from receptacles delivered at any such hour; provided, that such garbage or rubbish be not highly filthy or offensive; and in the latter case, the same shall not be so delivered or received during the period from seven o'clock A. M. of any day till ten o'clock of the evening of the same day.

SEC. 98.¹ That no lime, ashes, coal, dry sand, hair, feathers, or other substance that is in a similar manuer liable to be blown by the wind, shall be sieved, or agitated, or exposed, nor shall any mat, carpet, or cloth, be shaken or beaten, nor any cloth, yarn, garment, or material, or substance, be scoured, cleaned, or hung, nor any business be conducted over, or any rags, damaged merchandise, wet, broken, or leaking casks, barrels, or boxes, or broken bales of merchandise, or goods, be placed, kept, or exposed for sale, in any street or public place, or where it, or particles therefrom, or set in motion thereby, will pass into any such street or public place, into any occupied premises. That neither any usual nor any reasonable precaution shall be omitted by any person to prevent fragments or other substances from falling, to the peril of life, or dust, or light material flying into any street, place, or building, from any building or erection, while the same is being altered, repaired, or demolished, or otherwise.

SEC. 99. That every person who shall have paved, or caused to be paved, any street or place, shall cause all rubbish, dirt, and whatsoever else he has deposited, or allowed to be deposited on such pavement, to be removed from the several parts of such pavement, within five days from the time of the same being deposited thereon. And every person who has removed any flagstone, curbstone, pavement-stone, or other stone, or dirt or iron in or from any street, sidewalk, or place, for the purpose of repairs, or for the purpose of paving, flagging, or curbing, or repairing, recurbing, or reflagging, or making any repairs or changes, or otherwise, shall cause the same or a proper substitute therefor to be placed or replaced and completed as soon as the same can reasonably be done.

SEC. 100. That every owner, lessee, tenant, and occupant of any stall, stable, or apartment in which any horse, cattle, or swine, or any other animal shall be kept, or of any place in which manure or any liquid discharge of such animals shall collect or accumulate, within the built-up portion of said city, shall cause said liquid and manure to be at once removed to some proper place, and shall at all times keep or cause to be kept such stalls, stables, and apartments, and the drainage, yard, and appurtenances thereof, in a cleanly and wholesome condition, so that no offensive smell detrimental to health shall be allowed to escape therefrom; and when within three hundred feet of any occupied dwelling-house, or of any manufactory where more than five persons are employed, the removals from the stables shall not be made, nor shall the manure or refuse from the stable be allowed to remain on any street or place near such stable, any time between eight o'clock A. M. and six o'clock P. M., without a permit from this Board. Every such stall, stable, or apartment, where horses or cattle are kept, shall have an underground and properly-covered manure-vault of not less than sixty-four cubic feet capacity. But the Sanitary Superintendent is authorized to issue permits to be regularly reported to this Board regulating such removal within said hours.

¹ As amended May 5, 1874.

² Adopted, June 29, 1875.

² *Resolved*, That the Board of Police be and is hereby respectfully requested to arrest any person engaged in removing manure or emptying any manure-vault across any sidewalk between ten o'clock A. M. and six o'clock P. M. and in driving any cart loaded with manure which is not covered as required by the regulations of this Board

SEC. 101. That no person shall empty, or attempt to empty, any vault, sink, privy, or cesspool in the city of New York, except pursuant to a permit therefor first received from this Department.

SEC. 102. That from and after the first day of September, 1872, no part of the contents of any privy, vault, sink, cesspool, except substances other than excrements insoluble in water, or any accumulation of any offensive fluid, liquid, or semi-liquid substance or material, being in any excavation, cellar, or place, within the limits of the city of New York, shall be removed therefrom, nor shall the same be transported through any of the streets or avenues of said city, unless and except the same shall be removed and transported by means of an air-tight apparatus, or in such manner as shall prevent entirely the escape of any noxious or offensive odors therefrom, and by a permit from this Department.

SEC. 103. That the drivers of all carts for the removal of any garbage, offal, rubbish, or dirt from any building or premises, shall give adequate notice to those dwelling in any street whose buildings or premises such cart is about to or should approach for the removal of any substance aforesaid.

SEC. 104. That no person shall engage in the business of a scavenger, or of transporting manure, swill, ashes, offal, rubbish, or garbage, or any offensive or noxious substance, or in driving any cart for such purpose, in the city of New York (except the persons acting under the street-cleaning commissioners, or the contractors for cleaning the streets, and as this Department may provide), until he shall have first received a permit from this Department of such form and effect as the regulations of the Board shall provide, authorizing such person so to engage.

SEC. 105. That every cart and other vehicle hereafter constructed for or engaged about any business, or intended to be loaded with any matter or substance in the last section mentioned, shall be constructed according to this Code, and to the regulations and orders of the Board of Health of the Health Department.

SEC. 106. That no cart or other vehicle for carrying any offal, swill, garbage, or rubbish, or the contents of any privy, vault, cesspool, or sink, or having upon it or in any thing on such cart any manure, or other nauseous or offensive substance, shall, without necessity therefor, stand or remain, nor shall a needless number gather before or near any building, place of business, or other premises where any person may be; nor shall any such cart or vehicle occupy an unreasonable length of time in loading or unloading, or in passing along any street or through any inhabited place or ground; nor shall any such cart or vehicle, or the driver thereof, or any thing thereto appertaining, be (or by any person having a right to control the same, be allowed to be) in a condition needlessly filthy or offensive; and when not in use, all such carts, vehicles, and all implements used in connection therewith, shall be stored and kept in some place where no needless offense shall be given to any of the people of said city.

SEC. 107. That all carts and vehicles in the last section mentioned, and boxes, tubs, and receptacles thereon, in which any substance in said section referred to may be or be carried, shall be strong and tight and the sides shall be so high above the load or contents that no part of such contents or load shall fall, leak, or spill therefrom; and that when, in the opinion of this Board, it is necessary to prevent the contents of such carts or vehicles, tubs or boxes, or receptacles from being offensive, each of such carts, tubs, and boxes, and receptacles shall be adequately and tightly covered, as the orders or regulations of this Department may provide or direct.

SEC. 108. That no driver of such cart or vehicle, nor any person having undertaken or being engaged about the loading or unloading thereof, nor person engaged about the cleaning or emptying or having undertaken to empty or remove any manure, garbage, offal, or

the contents of any vault, sink, privy, cesspool, or any noxious or offensive substance, shall do or permit to be done about the same, or in connection therewith, that which shall be needlessly offensive or filthy in respect to any person, street, place, building, or premises.

SEC. 109. That no person shall allow (and it shall be the duty of every contractor and person who has ordered or procured, or is having any of the following articles carried, or who is driving the same, to prevent) any cart or vehicle to be so fully loaded, or being in such bad condition of repair, or of such faulty construction, or being so improperly driven or managed, that any offensive liquid, or any manure, garbage, rubbish, offal, dirt, or material thereon, shall fall upon or in any place, street, or premises; and it shall be the duty of every such person to at once replace on such vehicle and remove what has so fallen.

SEC. 110. That all putrid or offensive matter, and all night-soil, and the contents of sinks, privies, vaults, and cesspools, and all noxious substances in the built-up portion of said city, shall before their removal or exposure, be disinfected and rendered inoffensive by the owner, lessee, or occupant of the premises where the same may be, or (in default of the same being so done) by the person or contractor who removes or is about to remove the same; and for all such matter so disinfected and rendered inoffensive, the person (not being such tenant, owner, or occupant) who shall so disinfect and remove the same, shall be entitled to demand and receive a compensation, to be fixed by the Board of Health of the Health Department, not exceeding twelve cents per cubic foot for making such disinfection and removal, to be paid by such tenant, owner, or occupant.

SEC. 111. That neither the owner, tenant, nor occupant of any building or premises, in the built-up portions of the city of New York, shall employ, cause, or permit any part of the contents of any vault, privy, sink, or cesspool (being thereon, and of which he has control) to be removed, unless according to a permit or the regulations of the said Department.

SEC. 112.¹ That no pile or deposit of manure, offal, dirt or garbage, nor any accumulation of any offensive or nauseous substance, shall be made within the built-up portions of the city of New York, or upon any open space inclosed within any portions thereof, or upon the piers, docks, or bulkheads adjacent thereto, or upon any open grounds near (or upon any vessel or scow other than those to be speedily, and according to the duty of any person removed, lying at) any such pier, wharf, or bulkhead, except according to a resolution of this Board specially authorizing the same, and a permit obtained from this Department, and according to its regulations. And no person shall contribute to the making of any such accumulations. Nor shall any straw, hay, or other substance which has been used as bedding for animals, be placed or dried upon any street or sidewalk, or roof of any building, nor shall any straw, hay, or other substance, or the contents of any mattress, or bed, be deposited, or burned; nor shall accumulation thereof be made within two hundred feet of any street without a permit from this Board.

SEC. 113. That no pile or deposit of manure, offal, or garbage, nor any accumulation of any offensive or nauseous substance, shall be made within three hundred feet of any church or place of worship, nor within the limits of said city within three hundred feet of any inhabited dwelling, nor shall any person or corporation unload, discharge, or put upon or along the line of any railroad, street, or highway, or public place within said city, any manure, offal, garbage, or other offensive or nauseous substance, within three hundred feet of any inhabited dwelling, nor shall cars or flats loaded with or having in or upon them any such substance or substances be allowed to remain or stand on or along any railroad, street, or highway within the limits of said city within three hundred feet of any inhabited dwelling.

¹ As amended May 5, 1874.

SEC. 114. That no manure, garbage, or other material that is liable to emit an offensive exhalation, shall, in or adjacent to the built-up portions of the city of New York, be turned or stirred (except about its removal), in such way as to be liable, by reason thereof, to increase such exhalations.

SEC. 115. That every proprietor, lessee, tenant, and occupant of any oyster-house, oyster-saloon, or other premises where any oysters, clams, lobsters, or shell or other fish are consumed, used, or sold, or where any of the refuse matter, offal, or shells thereof accumulate, shall daily cause all such shells, offal, and refuse matter to be removed therefrom to some proper place, and shall keep his house, saloon, and premises at all times free from any offensive smells or accumulations.

SEC. 116. That no hotel or house swill or garbage, or offensive material of a liquid nature, or partly liquid nature, not removed or required to be removed by the contractors for street-cleaning, shall be transported through or along any street of the city of New York, except in tightly-covered iron-bound casks or boxes, and none of the contents of such casks or boxes shall be allowed to fall, or leak, or spill therefrom.

SEC. 117. That the owners, lessees, tenants, and managers of every blacksmith or other shop, forge, coal-yard, foundery, manufactory, and premises where any business is done, shall cause all ashes, cinders, rubbish, dirt, and refuse to be removed to some proper place, so that the same shall not accumulate at any of the above-mentioned premises, or in the appurtenances thereof, nor the same become filthy or offensive. Nor shall any smoke, cinders, dust, gas, or offensive odor be allowed to escape from any such building, place, or premises to the detriment or annoyance of any person not being therein or thereupon engaged.

SEC. 118. That from and after the 1st day of June, 1870, every furnace employed in the working of engines by steam, or in any mill, factory, printing-house, dye-factory, iron, foundery, glass-house, distillery, brew-house, sugar-refinery, bakehouse, gasworks, or in any other buildings used for the purposes of trade or manufacture, shall be so constructed as to consume or burn the smoke arising therefrom, unless a permit to the contrary be obtained from this Department.

SEC. 119. That no vault, privy, sink, cistern, or cesspool shall hereafter be made or rebuilt in the city of New York, except in accordance with the regulations, and pursuant to a permit first obtained from this Department; nor shall any erection or cover be made or put upon, or over the same, until the same has been inspected by the Sanitary Superintendent, or any officer detailed by him, and been found to correspond to such permit and regulations; and no privy shall be built within two feet of the line of any lot.

DISEASED ANIMALS.

SEC. 120. That no diseased or sickly horse, cattle, swine, sheep, dog, or cat, or other animals, nor any that have been exposed to any disease that is contagious among such animals, shall be brought into the city of New York.

SEC. 121.¹ That no person shall keep, retain, or allow or employ to be kept or retained at any place within or adjacent to the built-up portions of the city of New York, any horse, ass, or colt, having the disease known as glanders or farcy, but shall at once report the fact to the Board of Health of said city, and under the direction of the Sanitary Superintendent shall remove such animal in the manner designated by such Sanitary Superintendent. No animal having glanders or farcy, or any contagious disease, or that shall die thereof, shall be removed, disposed of, or exposed in any street or public place in said city, without a written permit from said Board of Health, and then only in accordance with the terms of such permit.

¹ As amended, August 20, 1875.

DEAD, SICK, AND INJURED ANIMALS.

SEC. 122. That no person shall leave in or throw into any place or street or public water, nor offensively expose or bury, the body (or any part thereof) of any dead or fatally sick or injured animal; nor shall any person keep any dead animal or any offensive meat, bird, fowl, or fish, in a place where the same may be dangerous to the life or detrimental to the health of any person.

SEC. 123. That any animal, being in any street or public place, within or adjacent to the built-up portions of New York City, and appearing in the estimation of any officer or inspector of this Department (and of two discreet citizens, called by such officer or inspector to view the same in his presence) injured or diseased, past recovery for any useful purpose, and not being attended and properly cared for by the owner or some proper person to have charge thereof for such owner; or not having been removed to some private premises, or to some place designated by such officer or inspector within one hour after being found or left in such condition, may be deprived of life by such officer or inspector, or as he may direct, and shall thereafter, unless at once removed by the owner or proper person, be treated as any other animal found on a street or place.

SEC. 124. That any person having a dead animal or an animal past recovery, and not killed for and proper for use as meat or fish, or in any offensive condition or sick with an infectious or contagious disease, on his premises in said city, and every person whose animal, or any animal in his charge or under his control in any street or place, may die or become or be in a condition past recovery, shall at once remove or cause the removal of such animal, dead or alive, to some proper place; and when such place may be designated by the Sanitary Superintendent of this Department, to the place so designated.

SEC. 125. That it shall be the duty of the owner, and of the person that last had or then having charge of any animal, so dead or injured or diseased, and being in any street or public place, to at once give notice thereof, and of the nearest street and avenue where it may be, to some inspector or officer of this Department, or of the Sanitary Bureau, unless such animal is at once removed by some proper person.

SEC. 126. That no person other than the inspectors or officers of this Department or the Board of Police, or persons thereto authorized, shall in any way interfere with such dead, sick, or injured animal in any street or place, and no person shall skin or wound such animal in such street or public place, unless to terminate its life as herein authorized, except that the owner or person having control of such animal may terminate the life thereof in the presence and by the consent of a policeman or an inspector or officer of this Department.

SEC. 127. That no person shall obstruct, delay, or interfere with the proper and free use, for the purposes for which they may be, and should be, set apart and devoted, of any dock, pier, or bulkhead set apart for the use of any contractor or person engaged in removing any offal, garbage, rubbish, dirt, dead animals, night-soil, or other like substances, or with the proper performance of such contracts.

SEC. 128. That it shall be the duty of every contractor and person (his agents and employés) who has contracted or undertaken to remove any diseased or dead animal, offal, rubbish, garbage, dirt, street-sweepings, night-soil, or other filthy, offensive, or noxious substance, or is engaged about any such removal, or in loading or unloading of any such substance, to do the same with dispatch, and in every particular in a manner as cleanly and little offensive, and with as little danger and prejudice to life and health as possible.

SEC. 129. That no matter or material in the section last mentioned shall lie piled up, or partially raked together, in any street or place before the removal thereof, more than a reasonable time, nor for more than four hours in the daytime, under any circumstances.

SEC. 130.¹ That no ship, boat, or other vessel or article, shall be taken or allowed by any person to come into or lay to, or at, or within any dock, pier, bulkhead, or slip, or be placed thereon, for the purpose of the shipment or removal of any offal, garbage, rubbish, blood, or offensive animal or vegetable matter, dirt, or dead animals, or for the use of any contractor about the removal of any of the foregoing substances, without a permit from this Department.

REPORTS AS TO CONTAGIOUS AND INFECTIOUS DISEASES.

SEC. 131. That every physician shall report to the Sanitary Bureau, in writing, every person having a contagious disease (and the state of his or her disease, and his or her place of dwelling and name, if known) which such physician has prescribed for or attended for the first time since having such a contagious disease, during any part of the preceding twenty-four hours; but not more than two reports shall be required in one week concerning the same person; but every attending or practising physician thereat must, at his peril, see that such report is or has been made by some attending physician.

SEC. 132. That it shall be the duty of each and every practising physician in the city of New York to report, in writing, to the Board of Health, the death of any of his patients who shall have died in said city, of contagious or infectious disease, within twenty-four hours thereafter, and to state in such report the specific name and type of such disease.

SEC. 133. That every keeper of any boarding-house or lodging-house, and every inn-keeper and hotel-keeper, shall, within twenty-four hours, report in writing to the Sanitary Bureau, the same particulars in the last section required of any physician concerning any person being at any of the aforesaid houses or hotels, and attacked with any contagious disease.

SEC. 134. That the commissioners, managers, principal, or other proper head officer of each and every public or private institution in said city shall twice in each week report in writing (or cause such report by some proper and competent person to be made twice in each week) to the Sanitary Bureau, and state therein the name, if known, and condition, and disease, of any and every person being thereat, and sick of any contagious disease.

SEC. 135. That the master, chief officer, and consignee, or one of them, of every vessel, not being in quarantine, or within quarantine limits, but being within one-fourth of a mile of any dock, wharf, pier, or building of said city, shall daily report to the Sanitary Bureau, or cause to be reported, in writing, the particulars, and shall therein state the name, disease, and condition, of any person being in or on such vessel, and sick of any contagious disease.

SEC. 136. That it shall be the duty of every person knowing of any individual in said city sick of any contagious disease (where such person shall have reason to regard such individual as neglected or not properly cared for, and to avoid giving said disease to others) and the duty of every physician hearing of any such sick person, who he shall have reason to think requires the attention of this Department, to at once report the facts to the Sanitary Bureau, in regard to the disease, condition, and dwelling-place or position of such sick person.

SEC. 137. That the keepers, lessees, tenants and owners of every boarding-house and lodging-house shall, within six hours after the fact shall come to his or her or their knowledge notify the Sanitary Bureau, in writing, of the fact of any seafaring man or person lately from any vessel being taken sick at such house, and shall in such notice state where such sick person may be found, and from what vessel, and when he came, to the best of the knowledge of the person or persons giving such notice.

¹ As amended August 26, 1873.

SEC. 138. That every master and chief officer of any vessel, and every physician of, or who practised on, any vessel, which shall arrive in the port of New York from any other port, shall at once report to this Department any facts connected with any person or thing on said vessel, or that came thereon, which he has reason to think may endanger the public health of this city; and he shall report the facts as to any person being or having been sick thereon of a contagious disease, and as to there being, or having been during the voyage or since her arrival, any infected person or articles thereon.

SEC. 139. That every master, charterer, owner, part owner, and consignee of any vessel or of the cargo thereof which shall be in the water of said city, unless detained in quarantine, shall at once give, or cause to be given, to the Sanitary Superintendent, written notice of any infected article, or person, and of every person sick of a contagious disease, being or having within ten days been on board said vessel; and also of each and every fact and thing relative to said vessel, sick person or cargo, or to the crew of such vessel, which any of the first-mentioned persons shall have reason to think may be useful for this Department to know, or be or become dangerous or prejudicial to life or health in said city.

REMOVALS FROM, AND UNLOADING OF, VESSELS.

SEC. 140. That every master, owner, charterer, part owner, and consignee of any vessel that shall bring any cotton into the port of New York and within the limits of the city of New York, between the first day of May and the first day of November of each year, shall at once report to this Department, or cause to be made, in writing, a report to this Department of, the fact of any such cotton being in a dangerous, infected, or unsound condition, or having been exposed to any infection.

SEC. 141. That no master, charterer, owner, part owner, or consignee of any vessel, or any other person, shall bring to any dock, pier, wharf, or building within one thousand feet thereof, in said city, or unload at any dock, building, or pier therein, or have on storage in the built-up portion of said city any skins, hides, rags, or similar articles or materials, having been brought from any foreign country or any infected place, or from any point south of Norfolk, Virginia, without or otherwise than according to a written permit so to do from this Department; and no person shall sell, exchange, or in any way make exposure of any straw, bedding, or other articles that have been exposed to the contagion or infection of any contagious disease, or have been or are liable to communicate such disease, or have lately been on any emigrant vessel, till after the same have been adequately cleansed or disinfected.

SEC. 142. That no owner, agent, or consignee of any vessel or cargo, and no officer of any vessel (in respect of either of which vessel or cargo a permit, according to any law, ordinance, or regulation, shall or should have been obtained to pass quarantine, or to come up to the water-front of the city of New York), shall unlade or land, or cause to be unladen or landed, such cargo, or any part thereof, in said city, without having first received the written permit of this Department so to do.

SEC. 143. That no captain, officer, consignee, owner, or other person in charge of any vessel (or having right and authority to prevent the same) shall remove or aid in removing from any vessel to the shore (save as legally authorized by the Health Officer of the Port of New York, and into quarantine grounds or building only) any person sick of, or person that has been exposed to and is liable very soon to develop any contagious disease, nor so remove nor aid in removing any articles that have been exposed to the contagion of any such disease, except in accordance with a permit of this Department, or with its special regulations.

SEC. 144. That no master, charterer, consignee, or other person, shall order, bring, or allow (having power and authority to prevent) any vessel or person, or article therefrom,

from any infected port, nor any vessel, or person, or article therefrom liable to quarantine, according to the ninth section of the three hundred and fifty-eighth chapter of the Laws of 1863 (or under any other laws, and whether such quarantine has been made or suffered, or not), to come or be brought to any point nearer than three hundred yards of any dock or pier, or to any building in said city, without or otherwise than according to a permit of this Department. Nor shall any vessel, or person or thing therein or therefrom, having been in quarantine, come or be brought within the last-named distance of any last-named place, without the permit or assent of this Department.

SEC. 145. That no person shall bring into this city, from any infected place, or land, or take therein, from any vessel lately from any infected port, or from any vessel or building in which had lately been any person sick of a contagious disease, any article or person whatsoever, nor shall any such person land or come into said city without a permit of this Department; and it shall be no excuse that such person or article so offending, or the occasion of offense, has passed through quarantine, or has a permit from any other source than this Department.

SEC. 146. That no owner, part-owner, charterer, agent, or consignee of any vessel, nor any officer or person having charge or control of the same, shall allow to be cast therefrom, and no person shall cast therefrom, into any public waters of the city of New York, any straw, bedding, clothing, or other substance, from any incoming vessel, from any foreign port, or port south of Cape Henlopen, without a permit from this Board, except as allowed by the quarantine authorities.

HEALTH OFFICER.

SEC. 147. That the Health Officer of the Port of New York, his assistants and deputies, shall at all times keep this Department informed, by weekly written reports, of the number of vessels in Quarantine, of the number of persons sick in the floating or other hospitals thereat, and of the diseases with which they are severally afflicted; he and they shall also receive into the floating hospital all cases of yellow fever found in this city and the port aforesaid; he or they shall not send or allow to return to the vicinity of said city, without the permit of the Sanitary Superintendent, any person, vessel, or article which this Department has ordered to Quarantine.

REMOVALS OF SICK PERSONS.

SEC. 148. That no person shall, within the built-up portions of said city, without a permit from this Department, carry or remove from one building to any other, or from any vessel to the shore, any person sick of any contagious disease. Nor shall any person, by any exposure of any individual sick of any contagious disease, or of the body of such person, or by negligent act connected therewith, or in respect of the care or custody thereof, or by a needless exposure of himself, cause or contribute to, or promote, the spread of disease from any such person, or from any dead body.

VACCINATION.

SEC. 149. That every person, being the parent or guardian, or having the care, custody, or control of any minor, or other individual, shall (to the extent of any means, power, and authority of said parent, guardian, or other person, that could properly be used or exerted for such purpose) cause and procure such minor or individual to be so promptly, frequently, and effectively vaccinated, that such minor or individual shall not take, or be liable to take, the small-pox.

EXPOSURE TO DISEASE.

SEC. 150. That no parent, master, or custodian of any child or minor (having power and authority to prevent) shall permit any such child or minor to be unnecessarily exposed, or

to needlessly expose any other person, to the taking, or to the infection of, any contagious disease.

DEAD BODIES—INTERMENTS—SEXTONS.

SEC. 151. That no interment of the dead body of any human being, or disposition thereof in any tomb, vault, or cemetery, shall be made within the city of New York, without a permit therefor granted by this Department, nor otherwise than in accordance therewith, and no sexton or other person shall assist in, or assent to, or allow, any such interment, or aid or assist about preparing any grave or place of deposit for any such body, for which such permit has not been given authorizing the same. And it shall be the duty of every person who shall receive any such permit, to preserve and to return the same to this Department, as its regulations may require.

SEC. 152. That no new burying-ground, cemetery, tomb, or vault for dead human bodies shall be established, nor shall the remains of any dead body be placed in any existing burying-ground, vault, tomb, or cemetery in the city of New York, nor any of said receptacles be opened, exposed, or disturbed except according to the terms of a permit therefor given by this Department; and every body buried in any such place shall be buried to a depth of six feet below the surface of the ground, and four feet below any closely adjacent street.

SEC. 153. That every person who acts as a sexton or undertaker in the city of New York, or has the charge or care of any vault, tomb, burying-ground, or cemetery for the reception of the dead, or where the bodies of any human beings are deposited, shall cause his or her name and residence, and the nature of his or her charge and duties, to be registered with this Department.

SEC. 154. That every sexton and other person having charge of any burying-ground, cemetery, tomb, or vault in the city of New York, shall, before twelve o'clock of Monday of each week, make return to this Department of the bodies and persons buried since their last return, and in such form, and specifying such particulars, as the special regulations of this Department shall require.

SEC. 155. That no captain, agent, or person having charge of, or attached to, any ferry-boat, sailing or other vessel, nor any person in charge of any car, stage, or other vehicle, or public or private conveyance, shall convey or allow to be conveyed thereon, or by any means aforesaid, nor shall any person convey or allow to be carried or conveyed, in any manner, from or in the city of New York, the dead body of any human being, or any part thereof, without a permit therefor from this Department. And the proper coupon for that purpose attached to any such permit, when issued, shall be preserved and returned to this Department, as its regulations may require, by the proper officer or person on such boat or vessel, and by the proper person in charge of any train of cars or vehicle on which any such body may be carried from said city; provided, however, that the same effect shall be given, under this section, to a burial or transit permit issued by the Health Officer, or Board of Health of the city of Brooklyn, as to a burial or transit permit issued from this Department, when the death of the person named in the permit shall have occurred in the city of Brooklyn; and provided that the same effect shall be given under this section to a burial or transit permit issued by the Board of Health and of Vital Statistics of Richmond County, as to a burial permit from this Department, when the death of the person named in the permit shall have occurred in Richmond County; and provided that the same effect shall be given under this section to a burial or transit permit issued by the Board of Health, or Health Officer, of Long Island City, as to a burial or transit permit issued from this Department, when the death of the person named in the permit shall have occurred in Long Island City.

SEC. 156. That no person shall retain, expose, or allow to be retained or exposed, the dead body of any human being to the peril or prejudice of the life or health of any person.

Sec. 157. That it shall be the duty of every person who has discovered or seen the body of a dead human being, or any part thereof (if there is reason for such person to think that the fact of the death, or the place of such body, or part thereof, is not publicly known), to immediately communicate to the Bureau of Vital Statistics the fact of such discovery of such body, the place where, and time when, the same was discovered or seen, and where the same is or may be found, and any facts known by which said body may be identified, or the cause of death ascertained.

Sec. 158. That no person shall retain or allow to be retained unburied the dead body of any human being for a longer time than four days after the death of such person, without a permit from this Department, which permit shall specify the length of time during which such body may be retained unburied. This ordinance shall not apply to bodies retained in the public Morgue at Bellevue Hospital during the time of such detention.

CORONERS.

Sec. 159. That at least two hours before the holding of any inquest, within the city of New York, upon a dead body, the coroner who has been notified of any death, or who may propose or intend to hold such inquest, shall transmit and cause to be delivered to the Bureau of Vital Statistics, a written notice containing the following facts, so far as known or reported to any such coroner :

1. The fact of any such call for the holding of an inquest, and by whom made, and when and from whom received by the coroner.
2. The place (giving the street and street number, and if there be none, then other particulars) where the body is.
3. What is reported to be the cause of the death.
4. When and where the death took place, and where the body has since been.
5. When and where he proposes to hold the inquest, giving the street, the street number (or otherwise sufficiently designating such place), and the hour.
6. What physician, or physicians, or other professional person last attended such deceased person, or attended such person within forty-eight hours of such decease.

At any time after the commencement of any inquest, the coroner holding, or who should hold, or who held such inquest, shall within twelve hours after the receipt of a written request so to do from the Sanitary Superintendent, answer in writing such of the following or such other questions as may be propounded to him by the said Inspector, to the best of his knowledge, information, and belief.

Report of Coroner [*here insert Coroner's name*] upon the body of [*here fill in name or description of deceased*], on the [*here fill in year, month, and day*], at [*here mention street and number*].

1. What was the age, sex, and last occupation, residence, and nativity of such deceased person ?
2. At what house or place, and in or near what street or avenue, at what number therein did such deceased person die ?
3. If such person died of any poison, when and where was the same administered, and what was the kind of poison ?
4. If such person died of violence, when and where was the same committed, and upon what part of the body and organs, and of what did it consist ?
5. If such person died of any other cause, state such cause, and when and where the cause took effect upon, or was received by the deceased ?
6. Who was last in care of or with such deceased person, and at what place and at what time before death, and when, giving the full name and residence of each such person ?
7. What was the name and residence of the physician and persons who last attended, and of each physician and person who within forty-eight hours of such death attended upon

such deceased person, and where did he so attend; and whether said physician was notified of or attended and was examined at such inquest?

8. The times, places, and dates of holding the inquest, and the names and residences by street number of the jurors and witnesses that attended, and dates of their attendance, and when and where the body of the deceased was present at such inquest?

9. Was any *post-mortem* examination made, and if so, when, where, and by whom, and who was present thereat?

It shall be the duty of all coroners in said city to make return to the Bureau of Vital Statistics of all inquisitions by them taken, except when, by law, such inquests are required to be filed elsewhere, and such return shall include the evidence taken on such inquest, and the verdict of the jury, and the full names and residences of the several jurymen.

And in all cases where the inquest may be required by law to be filed elsewhere, such coroner shall make return to said Bureau of a copy of such inquest, including a copy of such evidence and verdict; and all such returns shall be made within forty-eight hours after the holding of any and every inquest.

MARRIAGES, BIRTHS, AND DEATHS.

SEC. 160. That every clergyman, magistrate, and other person who may perform a marriage ceremony, shall make and keep a registry of the marriage celebrated, and therein enter the full names of the parties married, and the residence, age, and condition of each; and every physician, midwife, and other person who may professionally assist or advise at any birth, shall make and keep a registry of every such birth, and therein enter the time and place, ward, and street number of such birth, and the sex and color of every child born, and the names and residence of each of the parents (so far as the foregoing facts can be ascertained); and every physician and professional adviser who has attended any person at a last illness, or has been present by request at the death of any person, shall make and preserve a registry of such death, stating the cause thereof, and specifying the date, hour, place, and street number of such death.

SEC. 161. That it shall be the duty of every person mentioned in the last section, or required to make or keep any such register, to present to the Bureau of Vital Statistics a copy of such register, signed by such person, or a written statement, by him signed, of all the facts in said register required to be entered, within five days after the birth or marriage, and within thirty-six hours after the death of any person to whom such registry may or should relate, which shall thereupon be placed on file in the said Bureau.

SEC. 162. That every clerk, officer, and person within said city, required by the one hundred and fifty-second chapter of the Laws of 1847, or by the three hundred and eightieth chapter of the Laws of 1864, to make or preserve any entry, registry, record, or certificate, as to births, deaths, or marriages, shall send, or cause to be sent, to the Bureau of Vital Statistics of this Department, within five days after knowledge of the birth, death, or marriage, a full and true statement in writing, containing all the particulars in respect thereto (so far as reasonably ascertainable), which, in any other section hereof, are required to be stated by any person relative to any birth, death, or marriage, which shall thereupon be placed on file in said Bureau.

SEC. 163. That every person therein referred to within the city of New York shall perform the acts required in the following provisions (so far as the same are applicable to said city) of section 13 of chapter 74 of the Laws of 1866, to wit:

"It shall be the duty of the next of kin of any person deceased, and of each person being with such deceased person at his or her death, and of the person occupying or living in any house or premises in or on which any person may die, and of the parents of any child born in said district (and if there be no parent alive that has made such report, then of the next of kin of such child born), and of every person present at such birth, within five days after

such birth or death, to report to said Board in writing, so far as known, the date, ward, and street-number of said birth, and the sex and color of such child born, and the names of the parents, and the age, color, nativity, last occupation, and cause of death of such deceased person, and the ward and street, and place of such person's death and last residence."

RAILROAD-CARS.

SEC. 164. That no railroad-car, or vehicle constructed for or engaged in the business of carrying passengers on any line of railroad in the city of New York, and which car is propelled by horse-power, and not by steam-power, shall be used with cushions on the seats, or on the backs of the seats thereof.

SEC. 165. That each and every car used upon any railroad in the city of New York for the carrying or transportation of passengers, shall on each and every day on which it may be used for the carrying or transportation of passengers, be carefully and thoroughly washed and cleaned, so that all filth and dirt are removed from the inside of said car.

SEC. 166. That no straw or hay shall at any time be used or placed on the floor of any railroad-car engaged or used in the business of carrying or transporting passengers, within the city of New York.

SEC. 167. That no person shall at any time carry or convey in or upon any passenger railroad-car, nor shall any conductor or person in charge of any such railroad-car allow to be carried or conveyed in or upon such car, except on the front platform, any soiled or dirty articles of clothing or bedding, in baskets or bundles.

SEC. 168. That every car used for the transportation of passengers in the city of New York shall be so constructed as at all times to provide and secure good ventilation; and each and every such car shall have placed in the roof, in addition to windows in the roof, two ventilators—one at a distance of two feet from each end of the car, and so arranged with a revolving top, that when the car is in motion the currents of air shall pass outward through the ventilators.

GENERAL SUBJECTS.

SEC. 169. That no master or teacher, or manager of or in any school, public or private, or of or in any Sunday-school or gymnasium, nor the officers or managers thereof, nor officers or managers, or persons having charge of any place of public worship, shall so far omit or neglect any duty or reasonable care or precaution respecting the safety or health of any scholar, pupil, or attendant, or respecting the temperature, ventilation, or cleanliness or strength of any church, hall of worship, school-house, school-room, or place of practice or exercise, or relative to any thing appurtenant thereto, as that by reason of such neglect or omission the life or health of any person shall suffer or incur any avoidable peril or detriment.

SEC. 170. That no owner, part-owner, tenant, or occupant of any building or erection shall allow any part thereof, or any substance therein, or any thing thereto attached, and which any such person can control or remove, to continue or remain in a position or condition that shall imperil the life or safety of any person thereat or therein, or who is or may properly be in any street or place.

SEC. 171. That no person shall take, carry, expose, or place (or induce any other person so to do) in or upon any street or public place, any substance, animal or thing, which shall imperil the life or health of any person who is or may properly be in such street or place.

SEC. 172. That no person owning, occupying, or having charge of any stable or other premises, shall keep or allow thereon or therein any dog or other animal which shall by

noise disturb the quiet or repose of those or any one therein or in the vicinity, to the detriment of the life or health of any human being.

SEC. 173. That no person shall race or run or rapidly drive any horse or other animal in a public street or place, or allow the same to so move, or throw or send up any kite, stone, or other substance, or burn or set off any fireworks, fire-crackers, or other substance, whereby, or by reason of which, any human life may be put in danger or peril.

SEC. 174. That no person shall engage in or encourage any fight, or the dealing of any blow by any human being in said city, against any other human being; nor shall any person permit such fight, having power and authority to prevent the same.

SEC. 175. That no person shall, except according to a permit or the regulations of this Department, set off or fire any gun or other fire-arm, or rock-blast in any public street, alley, or place within the built-up portions of said city, whereby any human life may be imperiled.

SEC. 176. That no person shall sell, loan, or give to, or allow to be taken by any other person, any fire-arm, or other deadly or dangerous weapon, when there shall be any reason for such first-named person to think or believe that any danger to life may illegally result from the giving, loaning, selling, or from the use of such arm or weapon.

SEC. 177. That no large or church-bell shall be rung or tolled at any funeral in said city without a permit therefor from this Department, nor shall such bell be rung or tolled at any other time therein to the prejudice or peril of the life or health of any human being.

SEC. 178. That every person who omits or refuses to comply with, or who resists any of the provisions of the Sanitary Code, or any of the rules, orders, sanitary regulations, or ordinances established or declared by this Board, or any of the provisions of said seventy-fourth chapter of the Laws of 1866, or of chapter six hundred and eighty-six of the Laws of 1866, or of chapter nine hundred and fifty-six of the Laws of 1867, in so far as the same is now in force and applicable to the city of New York, or the execution of any order or special regulation of this Department, will be liable to the arrest, suit, penalty, fine, and punishment in said laws provided and declared; of all of which notice must be taken.

ADDITIONAL ORDINANCES OF THE SANITARY CODE.

SEC. 179.¹ No adulterated or deleterious coffees, teas, or other preparations from which drinks are made shall be bought, sold, held, or offered for sale.

SEC. 180.² That no offal, blood, scrap, guts, gut-fat, or refuse of slaughter-houses shall be transported through, brought in, or allowed to be between Second Avenue and Tenth Avenue in the city of New York, without a special written permit from this Department.

SEC. 181.³ That each of the several persons and companies that run or cause to be run any car drawn by horses for the transportation of passengers in any part of the city of New York do cause both the front entrances from the street upon the platform of the fore-end of each of said cars to be effectually barred or closed by gate or otherwise while said cars are in motion, so as to prevent access to any portion of the said platform, or the hand-rails or the steps thereof, by any person not upon such car.

SEC. 182.⁴ That the owners, lessees, and occupants of any building in the city of New York, in which hatchways or well-holes exist, or shall hereafter be constructed, shall cause the same to be effectually barred or inclosed by railing, gates, or by other contrivances approved by the Board of Health, for the prevention of accidents therefrom.

¹ Adopted July 29, 1873.

² Adopted August 1, 1873.

³ Adopted September 16, 1873.

⁴ Adopted October 14, 1873.

SEC. 183.¹ That no person shall place or deposit garbage, rubbish, or liquid substance of any kind in any box, barrel, tub, cart, wagon, or any receptacle whatever used for the reception, the holding, or the transportation of ashes; nor shall any one put ashes in, or upon, garbage, rubbish, or liquid substances, or in any way place together, mix, or have in the same receptacle ashes and garbage in the city of New York.

SEC. 184.² That on and after the fourth day of July, 1876, the business of slaughtering animals in the city of New York shall not be conducted south of One Hundred and Tenth Street, unless the same shall be done in buildings located directly upon the water front, each having a capacity sufficient for the yarding and slaughtering daily of one-half of the entire number of cattle, or hogs, or small stock (all or separately according to the particular object of each abattoir) slaughtered in this city, at the time this ordinance shall go into effect, and so constructed as to receive all stock deliverable thereat, directly from cars or transports; and to discharge therefrom all liquid refuse below low-water mark; and to secure the proper care and disposition of all parts of the slaughtered animal upon the premises, or the immediate removal thereof by means of boats; and on and after the fourth day of July, 1876, no cattle, sheep, hogs, or calves, shall be driven in the streets of such city below One Hundred and Tenth Street; nor shall any offensive business growing out of that of slaughtering, as fat-melting, hide-curing, gut-cleaning, bone-boiling, glue-making, etc., etc., be conducted except on the premises constructed and prepared as herein required, and devoted to the slaughtering and the disposing thereon of all parts of the slaughtered animals as aforesaid; nor shall any fat, hides, hoofs, or entrails, or other refuse parts of slaughtered animals (except fat or tallow attached to meat exposed for sale, or collected by licensed dealers), be transported in said streets; nor shall any buildings be erected, or converted into, or used as a slaughter-house, until the plans thereof have been duly submitted to the Board of Health, and approved in writing by the said Board.

SEC. 185.³ That every veterinary surgeon who is called to examine or professionally attend any animal within the city of New York, having the glanders or farcy, or any contagious disease, shall, within twenty-four hours thereafter, report in writing to the Board of Health of such city the following facts, viz.: 1. A statement of the location of such diseased animal; 2. The name and address of the owner thereof; 3. The type and character of the disease.

¹ Adopted April 23, 1874.

² Adopted October 13, 1874.

³ Adopted August 20, 1875.

CIRCULARS, ORDERS, ETC.

MEMORANDUM ON DISINFECTION.

Fresh air and pure water, constant ventilation, and thorough cleansing, are natural means of preventing and destroying the causes of infection and disease. But there may be infected or foul places and things, and there are times of special necessity or sudden danger from the presence of infectious epidemic disease, which require the instant arrest or destruction of the infection and all its removable causes; this is disinfection. The clothing from persons with small-pox, scarlatina, or typhus, and even the air in the sick-rooms of such patients, is infectious; and the sick with typhoid fever or cholera *discharge excremental matters which possess infective properties that should be immediately destroyed.*

In this memorandum the words infection and disinfection are employed just as they are understood, as referring to the preventable causes that are concerned in repropagating specific kinds of disease; these causes are:

1. The specific infectious property or contagious substance of any one of the pestilential disorders.
2. The local impurities and moisture in the house and grounds where the outbreaks of disease have occurred or are liable to occur.
3. The foul exhalations and atmospheric impurities which injure health or help to propagate pestilential epidemics.

Experience has proved that it is possible, by certain chemical agencies (such as are described in sections 4, 5, 6, and 7 of this memorandum), wholly to destroy or prevent the operation of the specific infection or *contagium* of any disease; but to do this, it is necessary that precise rules should be observed in applying the disinfectants; and, as regards cholera and typhoid fever, it is especially important that the infective discharges from the sick should be disinfected *as soon as voided from the body*, and that whatever clothing or surfaces may have been soiled by such discharges should be disinfected as soon as practicable. The fact should also be borne in mind by all persons who have charge of infected things, that the infective property of virus of some diseases, and of cholera especially, is capable of rapid increase in filthy places and in a foul, damp atmosphere. Therefore, the cleansing and disinfection of such places should, if possible, precede the arrival or outbreak of any such pestilence. Every unclean and damp place about dwelling-houses, warehouses, factories, places of assemblage, passenger-vessels, railway-depots, and hotels, should be made and kept perfectly clean and dry. All drains, privies, and water-closets, should be kept as clean as possible, and should be thoroughly purified before cholera comes into the neighborhood. Such cleansing and disinfection give the surest protection against pestilential epidemics.

DISINFECTANTS AND THEIR USES.

There are three important classes of disinfectants, each having specific uses as mentioned above. Some of these purifying agents accomplish only one object, others accomplish two or more objects; some may be advantageously combined; others are incompatible with each other, and must not be used together.

CLASS I. *Positive Disinfectants that quickly destroy or completely restrain every contagious and infectious virus.*

This class comprises the caustic acids, the acid salts of metals (soluble oxide salts), such as sulphate of iron, sulphate of zinc, etc.; carbolic acid and cresylic acid; which not only destroy every communicable virus of disease, but also prevent those kinds of fermentation and decay that aid in propagating epidemics. Frost destroys some infections, but preserves many others, while boiling or high steam heat destroys all contagious matter. It will be observed that no one of these agents, singly, is applicable to every thing and every place that may require disinfection.

CLASS II. *Antiseptics, comprising chemical agents that arrest or wholly prevent fermentation and decay.*

This is a large class, and embraces carbolic acid and most of the agents of the first class; but not every antiseptic substance or gas (common salt or chlorine, for example) can absolutely prevent the fatal operation of epidemic infections.

CLASS III. *Deodorants, absorbents, etc., comprises all the chemicals that deodorize or destroy putrid exhalations, or that absorb moisture and gases: charcoal, quicklime, and chlorine, are good examples of this group.*

Each of these three classes, and each disinfecting agent, has its proper uses, and, as it is frequently important that these threefold means of disinfection should be applied at once to a given place or source of disease, the chemical properties of the several agents must be regarded. For example, it should be remembered that chlorine and the common alkaline compounds do not destroy the cholera infection; also, the fact that if permanganate salts, carbolic acid, and chlorine be used together, or if the first two of them be mixed, they will simply destroy each other, and leave the infection undestroyed.

Volatile Disinfectants.—Carbolic acid on any surfaces from which it will evaporate, or from which it may be vaporized by steam-heat, and the sulphurous acid fumes, are examples of disinfectants belonging both to the *first* and the *second* class. Bromine and nitrous acid have similar powers, but should be used only by medical officers.

Of the volatile deodorants in Class III., chlorine is the chief, and though useful for certain purposes in the other classes (I. and II.), if intensely concentrated, it is principally useful to destroy other gases and temporarily to arrest decay. It seems not to have power to destroy the infectious property of cholera, small-pox, and the cattle-plague, while the vapor, as well as the strong solution of carbolic acid, seems to destroy, or at least arrest, the infectious activity of all of them.

§ 1. **QUICKLIME.**—To absorb moisture and putrid fluids, use fresh stone-lime finely broken; sprinkle it on the place to be dried, and in damp rooms place a number of plates or pans filled with the lime-powder; whitewash with pure lime, and not with kalsomine.

§ 2. **CHARCOAL-POWDER.**—To absorb the putrid gases, the coal must be *dry and fresh*, and should be combined with *lime*; this compound is the *calx-powder*, as sold in the shops.

§ 3. **CHLORIDE OF LIME.**—To give off *chlorine*, to destroy putrid effluvia, and to stop putrefaction, use it as lime is used, and if in cellars or close rooms the *chlorine gas* is wanted pour strong *vinegar* or diluted *sulphuric acid* upon plates of chloride of lime occasionally, and add more of the chloride.

§ 4. SULPHATE OF IRON (COPPERAS), AND CARBOLIC ACID.—To disinfect privies, cesspools, drains, and sewers, and especially the vessels, grounds, or places in which the discharges from the sick with cholera and diarrhœal diseases are evacuated, dissolve eight or ten pounds of sulphate of iron in five gallons of water, and add a pint of fluid carbolie acid (if it can be had); stir or agitate it briskly, to make a complete solution. Use as follows:

To keep privies and water-closets from becoming infected or offensive, pour a pint of this solution into every water-closet pan or privy-seat, morning and evening.

To disinfect masses of filth, privies, sewers, or drains, gradually pour in the solution, hour by hour, until every part of the mass or foul surface has been thoroughly disinfected.

To disinfect the cholera-discharges, let a small quantity of this solution be constantly kept in all vessels into which the discharges are voided from the body, and let every privy and place where the discharges are cast away be thoroughly saturated with the disinfecting solution. Wherever cholera is present in a house or neighborhood, and wherever persons are arriving from infected places, the daily use of this disinfecting fluid should be maintained. *Bed-pans and chamber-vessels* are disinfected with this strong solution, using a gill at a time, and emptying and thoroughly cleansing as soon as used by the patient.

§ 5. PERMANGANATE OF POTASSA.—To be used in disinfecting clothing and towels from patients sick with cholera, scarlatina, typhus or typhoid fevers, during the night, or when such articles cannot be instantly boiled: throw the soiled articles immediately into a tub of water in which there has been dissolved an ounce of the permanganate salt to every three gallons of water. Boil the clothing as soon as it is removed from this colored solution, or boil them in it.

The Weimar Conference recommends that sulphate of zinc should be used precisely as we use permanganate of potassa. The zinc solutions need to be much stronger than those of the permanganate: use at least two ounces of *sulphate of zinc* to one gallon of water. It must be remembered that if any of these solutions are very strong they would destroy clothing. At the best, they are but temporary substitutes for disinfection by boiling.

[NOTE.—*Rules for testing and Disinfection of Impure Drinking-Water.*—To test for organic impurities in drinking-water, proceed as follows: *For testing.*—Make a solution of chemically pure permanganate of potassa, eight grains to one ounce of distilled water. Into a half-pint of the impure or suspected water, in a goblet or tumbler, put one drop of the red solution; if the red tint disappears from the glassful in half an hour, add more of the solution. For every drop that loses its color in the half-pint there will be found to be from one and a half to two grains of putrid organic matter in the gallon of water. *To disinfect.*—To purify such water, if it must be used, drop in the permanganate solution until a slightly perceptible red tint remains in the water. This very weak solution of permanganate is not unwholesome; but for common purposes and among the poor it is better to depend upon the thorough boiling of impure water, if such water must be used. The permanganate quickly tests the presence of organic impurities. It destroys them by instantly oxidizing or burning them.]

§ 6. CARBOLIC ACID (FLUID).—This may be diluted at the rate of from forty to one hundred parts of water to one of the fluid acid. Use this solution for the same purpose as copperas is used; also to sprinkle upon any kind of garbage or decaying matter, and on foul surfaces, or in drains. When used to disinfect clothing, carbolie acid of a pure quality should be thoroughly mixed with its own quantity of strong vinegar, and next be dissolved in one hundred times its own quantity of water before the clothing is immersed in it. This mixture with vinegar insures such complete solution of the carbolie acid, that the clothing will not be burned by undissolved drops of acid when disinfected in the carbolie-water. This weak solution (one part to one hundred) will not injure common clothing, but the acid

must be of good quality and free from tarry matter. The clothing, etc., will long retain the offensive odor of the acid, except in articles that can be immediately washed out in a strong solution of soap-and-soda.

If it should be desirable to destroy certain articles and their infection together, without fire, then saturate them with the acid, or use it diluted in ten to thirty times its own quantity of water. The disinfecting and antiseptic power of good carbolic acid is so great that one part of it to one hundred parts of water is sufficient for ordinary disinfecting solutions. For ordinary purposes in disinfecting clothing, the zinc solution is preferable to that of carbolic acid.

For drains, sewers, foul heaps, stables, and privies, the cheap "dead oil" of coal-tar, or the crude carbolic acid, answers every purpose when freely applied. Coal-tar itself is available as a disinfectant or antiseptic paint for the walls of stables, privy-vaults, and drains. By mixing with saw-dust or dry lime, coal-tar or crude carbolic acid may be used on foul grounds or heaps of refuse.

The carbolic and cresylic "acids" are derived from coal-tar. Chemically considered, they are *alcohols*, and not acids. In market they are called by the first name—carbolic acid—and are frequently much adulterated or very impure in consequence of the naphthaline and tarry matters that dissolve in this kind of alcohol. The impurities do not dissolve in water. Coal-tar and the "dead oil" of coal-tar derive their disinfecting power from the "carbolic acid," of which the tar contains two or three per cent., and the dead oil contains five to twelve per cent. The impurities and adulterations of the crude "acids" make it desirable for sanitary officers to know the *percentage of crystallizable acid* in the carbolic fluids or disinfecting powder they use. Crude carbolic acid, containing fifty per cent. its weight crystallizable, costs less than a dollar per gallon, and is a good disinfectant for grounds, drains, or the air of a foul place in which cholera or any pestilential disease exists. Dilute or thoroughly agitate the acid in forty to one hundred parts water, and completely saturate grounds, the surfaces, and foul things in the infected neighborhood. Streets, court-yards, drains, and sewers may be quickly and effectually disinfected in this manner. The sprinkling of streets and gutters with a cheap solution of the acid has proved very useful in damp, hot weather. Add sulphate of iron whenever it is practicable.

§ 7. BOILING OR HIGH-STEAM HEAT.—Whenever foul clothing and infected things can be boiled, or having a boiling heat steadily applied and kept up for an hour, this is one of the simplest and best modes of disinfection. But, until such high heat is actually applied to the infected things, some one of the disinfecting solutions must be used. A common steam tub (in a laundry, or elsewhere), with a tight cover, is a good disinfecting vat; but the temperature must be kept at boiling-point.

[NOTE.—The methods of disinfection which are here described are preferred simply because they are effectual, safe, easily applied, and not expensive. They have been thoroughly tested, and are in accordance with the latest experience.

PLACES THAT MUST BE DISINFECTED, AND WHAT DISINFECTANTS TO USE.

Water-closets, Privies, Close-stools, Bed-pans, etc.—Use either of the substances, 4 or 6, as described in the numbered sections of the foregoing directions.

Cellars, Vaults, Stables, or any Damp or Offensive Places.—Use 1, 2, 3, 4, or 6, in any manner suited to the objects to be attained, as described in these directions.

[NOTE.—The permanganate salts must not be used with the carbolic or coal-tar disinfectants. It is also best that chlorine and the chlorides should not be used at the same time or in contact with the latter class of substances.]

Sick-rooms, Bedrooms, and Closets.—Ventilate and keep clean, and use substances described in sections 1, 2, or 3, according to directions.

To disinfect a Privy or a Quantity of Earth that is contaminated with Cholera-Excrement, or liable to be infected.—Use the mixed carbolic and copperas solution, saturated strength, as follows:

To every cubic foot of soil or filth give two or three pints of the strong solution.

To every privy and water-closet allowed at the rate of one pint of this solution, to be poured in daily, at evening, for every four persons on the premises. This practice to be kept up while cholera is in the district or country.

[This method of systematic disinfection would be useful in every household; but when cholera is present in any city or country, such thorough application of this means of protection cannot be safely neglected in any city to which persons may come from towns where cholera is epidemic. Sanitary chemists advise that the estimated quantity of these privy and sewer disinfectants required for each person daily, in the presence of cholera, should be one half an ounce sulphate of iron and one half a drachm or one half a teaspoonful of carbolic acid.]

THINGS TO BE DISINFECTED.

(a.) *Beds, Bedding, and Upholstered Stuffs.*—Expose to sunlight and ventilation freely and frequently. If actually infected, thoroughly moisten every part with a strong solution of 6 or 5.

(b.) *Soiled Clothing, etc., from the Sick with Cholera or any Contagious Disease.*—Use solution 5 or 6, precisely as directed, and as soon as the soiled articles are removed from the patient. Or immerse them at once in boiling water. In any case of infectious disease, the clothing must be boiled previous to washing or drying. Infected clothing must be thrown into the water at boiling heat. The boiling should be kept up for an hour.

(c.) *Carpets, Sofas, Lounges, Mattresses, Floors, etc., infected by Cholera-Excrement, or by Small-pox, Scarletina, and other Contagions.*

First.—Thoroughly moisten every infected thing with one of the carbolic or permanganate solutions (No. 5 or No. 6).

Second: Rules for Fumigation.—To give still greater completeness to the disinfection required for an infected apartment and thick woolen stuffs, carpets, etc., to which boiling heat cannot be applied, fumigate with sulphurous acid, thus: Arrange to vacate the room for twelve hours; close every window and aperture, and, upon an iron pipkin, or kettle with legs, burn a few ounces of sulphur; the quantity required for effectual work will depend upon cubical space of the apartment, and there should be enough to burn rapidly until want of oxygen in the air shall extinguish the flame. Instantly after kindling it every person must withdraw from the place, and the room must remain closed for the succeeding eight hours. If any other kind of fumigation is resorted to (as that by chlorine, bromide, or nitrous acids), a sanitary officer or a chemist should superintend the process. Fumigation should be resorted to in dwelling-houses only by official orders or permission, or under the personal superintendence of a competent medical man, as the disinfecting gases are very poisonous.

(d.) Finally, let fresh air and sunlight purify every place they can reach. Open and dry all cellars and vaults, and keep the grounds and surfaces about dwellings as dry and clean as possible. Use fresh lime or the "calx-powder" freely upon wet or offensive surfaces. Flush the water-closets and drains daily before throwing in the disinfectants as directed. Domestic and personal cleanliness should be everywhere observed. *There are no substitutes for pure air and water.*

TO SEXTONS AND OTHER PERSONS IN CHARGE OF THE UNBURIED DEAD.

Cleansing.—In cleansing the surface of the corpse, especially the parts most soiled by discharges, use the solution of *chlorinated soda* (Labarraque's solution, of the shops), a pint to two quarts of hot water. A solution of *chloride of lime*, made by straining or decanting a gallon of water into which a pound of that substance has been thrown, answers the same purpose. This cleansing is required for the whole person in every case of death from *cholera*, *fever*, *scarlatina*, or *small-pox*. Cloths, sponges, etc., employed about the dead must be instantly burned or boiled.

Disinfection.—Fill a large wad of cotton or fine shavings with two pounds of coal-tar powder, or chloride of lime, and place it beneath the hips; and, in cases of cholera, place much more of this kind of absorbent material beneath the corpse, to absorb and disinfect the purged fluids that may flow.

Directions in the Family.—Whatever disease has caused the death, order every garment and cloth that was used upon the dead person, and in cholera and infectious fevers, *whatever was about the person* or was soiled during sickness, to be immediately boiled, or, until boiled, to be kept in one of the disinfecting solutions. Ventilate every room and closet upon the floor where a death has occurred from an infectious disease. Keep windows and fireplaces open for several days.

Burials.—The dead of cholera should be interred as soon as practicable, and always *within thirty-six hours after death*.

PREVENTION OF CHOLERA.

1. To disinfect diarrhoeal discharges, and to purify water-closets, privies, drains, and cesspools, dissolve ten pounds of sulphate of iron (copperas) in five gallons of water, and add a pint of common carbohc acid. Keep a small quantity of this solution in the vessel which is to receive the discharges. Pour a pint of the solution into the pan of the water-closet three or four times a day, or add half the entire quantity to the contents of an ordinary privy-vault. If this practice is made general in all private dwellings, not only will the house-drains of such dwellings be disinfected, but the benefit will extend even to the public sewers.

2. The seats and floors of all water-closets in private houses, at ferry-houses, at hotels and lodging-houses, on steamboats and rail-cars, should be frequently washed with a solution of one ounce of carbohc acid in each gallon of water.

3. During the prevalence of cholera, all diarrhoeal discharges should be received in vessels containing some of the disinfecting fluid, before being thrown into the privy-vault or pan of the water-closet. Patients suffering with diarrhoea, however mild, should remain isolated, observe the recumbent posture, and avoid unripe fruits and stale vegetables. Nothing is of more importance in these cases than **ABSOLUTE REST**.

4. Clothing, sheets, towels, etc., from cholera patients, should be immediately boiled; but, when this is impracticable, they may be thrown into a tub of water, in which have been dissolved eight ounces of sulphate of zinc, with three or four ounces of carbohc acid to every three or four gallons of water, or in water containing sufficient permanganate of potash to maintain a light-purple color, until the articles can be boiled.

5. To absorb moisture from damp cellars, closets, courts, and sunken areas, use fresh stone-lime finely broken, and suitably distributed, or placed on plates in the places to be dried. Whitewashing should be done with pure fresh lime. Putrid and offensive gases may be destroyed by chloride of lime.

6. Open and thoroughly ventilate cellars, garrets, closets, sleeping-rooms, and all other

apartments, and keep them clean and dry. Observe the utmost cleanliness in basements areas, and grounds about the house.

7. "*Personal health requires pure drinking-water, fresh air, substantial food, the needed rest, and bathing of the body.*"

† SANITARY REGULATIONS AGAINST SMALL-POX, SCARLATINA, AND MEASLES.

EVERY case must be reported to the Sanitary Superintendent upon its first recognized appearance.

Care of Patients.—The patients should be placed in a separate room, and no person except the physician, nurse or mother, allowed to enter the room, or to touch the bedding or clothing used in the sick-room, until they have been thoroughly disinfected.

Infected Articles.—All clothing, bedding or other articles, not absolutely necessary for the use of the patient, should be removed from the sick-room. Articles used about the patient, such as sheets, pillow-cases, blankets or clothes, must not be removed from the sick-room until they have been disinfected, by placing them in a tub with the following disinfecting fluid: eight ounces of sulphate of zinc, three ounces of carbolic acid, three gallons of water.

They should be soaked in this fluid for at least one hour, and then placed in boiling water for washing.

A piece of muslin, one foot square, should be dipped in the same solution and suspended in the sick-room constantly, and the same should be done in the hallway adjoining the sick-room.

Feather beds and pillows, hair pillows and mattresses, and flannels or woolen goods, require fumigation, and should not be removed from the sick-room until after this has been done. Whenever the patient is removed from the sick-room, notify the Bureau of Sanitary Inspection, when the disinfecting corps will as soon as possible thereafter perform the work of fumigation.

All vessels used for receiving the discharges of patients should have some of the same disinfecting fluid constantly therein, and immediately after use by the patient be emptied and cleansed with boiling water. Water-closets and privies should also be disinfected daily with the same fluid, or a solution of chloride of iron, one pound to a gallon of water, adding one or two ounces of carbolic acid.

All straw beds should be burned, but must not be removed from the sick-room without a permit from this Department. They will be removed by the disinfecting corps.

It is advised not to use handkerchiefs about the patient, but rather soft rags for cleansing the nostrils and mouth, which should be immediately thereafter burned.

The ceilings and side walls of the sick-room, after removal of patient, should be thoroughly cleaned and lime-washed, and the wood-work and floor thoroughly scrubbed with soap-and-water.

SANITARY REGULATIONS AGAINST SMALL-POX IN DWELLING-HOUSES AND ELSEWHERE.

Concerning the Small-Pox Patient.—Every case of this disease must be reported to the Sanitary Superintendent, at the office of the Board of Health, on the first day of the sickness or eruption.

The patient should be placed in a separate room, and no person except the nurse and the physician should be allowed to enter the sick-room, or to touch or be near any of the clothing. If the sick cannot be thus separated from all other persons, the Board of Health will send the patient to hospital. Persons with small-pox must not be moved from one house to another, or to hospital, except by permission of the Board of Health, in a carriage designated by the Sanitary Superintendent.

All Persons in the House must be vaccinated.—Have this performed by your own physician, or go to the Dispensary, or at once allow the Sanitary Inspector to vaccinate all who need. The hall-doors must be locked and visitors to the house forbidden. No children from any family should be permitted to go to school while small-pox is in the house where they live.

Infected Things.—All clothing, bedding, and furniture in the rooms where there is small-pox are considered as infected, and must not be taken away or used until disinfected, as the Board of Health directs. The infected clothing must be soaked in the disinfecting fluid, and then boiled for an hour; or, if boiling is not possible, the disinfectant must be applied very thoroughly. Beds, pillows, and thick stuffs, after being soaked in disinfecting fluid, must be placed on the roof or in an empty room to dry. They must not be placed in the yard or in the hall-ways. All straw beds and refuse stuff must be burned, but neither the bedding or any thing else can be removed from the house without permission.

The corpse of any person dead of small-pox should be wrapped in a clean sheet, wet with the carbolic solution, and must be buried within twenty-four hours. Companies of persons and wakes must not be permitted about the corpse.

The rooms and furniture must be fumigated by an officer of the Board of Health as soon as the patient has been removed.

CLEANSE AND DISINFECT.

ADVICE IN REGARD TO THE USE OF DISINFECTANTS.

IN view of the great importance of thorough disinfection, as a sanitary measure, at this season of the year, of every source of impurity within and around the dwellings of citizens, and to meet a frequent inquiry in regard to the use of articles for this purpose, the following plain and brief statements have been prepared and published for the benefit of the public:

The very hot and damp weather causes every kind of filth, garbage, and refuse to putrefy and give out poisonous and sickening gases. Privies, water-closets, garbage, and filthy gutters are the worst of these dangerous evils about dwelling-houses. The mould, the slime, and the offensive smells found in damp places, cellars, closets, and especially in gutters and garbage-tubs, are every hour putrefying, and they poison the air. These and other preventable evils are causing so much needless sickness and mortality, that it is now the duty of every person to do what he can to promote cleanliness, and to secure a suitable use of disinfectants to remove and prevent the consequences of putrefaction in places and things that are unclean. Every family, and every owner or lessee of tenement-houses or other dwellings, is earnestly advised to enforce and encourage thorough cleanliness, and to use disinfectants so freely as to protect their premises against every kind of putrescence and all foul gases. Wherever you find any foulness or nuisance which you cannot yourself immediately remove or prevent, you should give information to the Board of Health.

BRIEF RULES FOR USING DISINFECTANTS.

To disinfect water-closets, privies, waste-pipes, and all kinds of drains and foul places in houses, stables, and yards, and especially in any drain or sewer that is liable to become offensive, use a strong solution of copperas (*sulphate of iron*) and acid. You will make this solution by mixing eight pounds of dry copperas and a pint of fluid carbolic acid in five gallons of water, and stirring this mixture briskly.

To keep privies and water-closets from becoming infected or offensive, pour a pint of this solution into every water-closet, pan, or privy-seat morning and evening. Garbage and garbage-tubs should be daily disinfected with this fluid.

To disinfect masses of filth in privies, sewers, or drains, gradually pour in the solution, hour by hour, until every part of the mass or foul surface has been thoroughly disinfected. To every cubic foot of filth give a pint or more of this strong solution.

To every privy and water-closet allow at the rate of one pint of this solution, to be poured daily, at evening, for every four persons that use the same. This practice to be kept up while the hot weather lasts.

To disinfect sewers, stables, gutters, foul ditches, filthy ground, slimy surfaces of drying ponds, etc., or other places where there are great surfaces or masses of putrid matter: use the "heavy oil of coal-tar," or some one of the strongest disinfecting powders that are made from coal-tar. Heavy oil, or coal-tar, used with copperas, or used alone, is the most effectual and the cheapest disinfectant for this class of nuisances. The inside walls of foul stables, vaults, cellars, open gutters, and all such places, can be quickly and permanently disinfected by occasionally laying upon these surfaces a coating of the "heavy oil," or of the crude coal-tar.

Sewers and all foul drains can be kept perfectly disinfected by pouring into them, at as many places as possible, a small quantity of the "heavy oil," or a quantity of the strongest solution of sulphate or sesquichloride of iron mixed with a twentieth part as much crude carbolic acid, and well stirred together.

Wherever it is proper to use a powder that does not dissolve, as upon filthy heaps, and in larger drains or cesspools, stables, cellars and the like, carbolic acid or coal-tar powders are effectual. And for use in a larger way, upon filthy masses, and drying, stagnant or foul pools, a powerful disinfectant may be made by mixing one part (by measure) of "heavy oil" with five parts of quicklime and ten parts of saw-dust, to use by covering the foul places with this mixture. The following substances also have well-known uses, viz.:

(1.) QUICKLIME.—To absorb moisture and putrid fluids, use fresh stone lime finely broken; sprinkle it on the place to be dried, and in damp rooms place a number of plates or pans filled with the lime-powder; whitewash with pure lime, and not with kalsomine.

(2.) CHARCOAL-POWDER.—To absorb the putrid gases, the coal must be *dry and fresh*, and should be combined with *lime*; this compound is the *calx-powder*, as sold in the shops.

(3.) CHLORIDE OF LIME.—To give off *chlorine*, to destroy putrid effluvia and to stop putrefaction, use it as lime is used, and if in cellars or close rooms the *chlorine gas* is wanted, pour strong *vinegar* or diluted *sulphuric acid* upon plates of chloride of lime occasionally, and add more of the chloride.

(4.) CARBOLIC ACID.—This may be diluted at the rate from forty to one hundred parts of water to one of the fluid acid. Use this solution for the same purpose as copperas is used; also sprinkle upon any kind of garbage or decaying matter, and on foul surfaces of any kind. For sprinkling foul or unhealthy streets and alleys, mix one part of this crude carbolic acid with 100 parts of water or copperas-water, and sprinkle the entire surface every four or five days during the summer and autumn.

HOW TO PROCURE THE DISINFECTANTS.

Copperas (Sulphate of Iron).—Buy of any druggist. You can buy 100 pounds of wholesale dealers for three dollars or less.

Carbolic Acid.—The cheapest crystallized acid costs one dollar a pound. It dissolves in 100 parts of water. A pound is sufficient to make twelve gallons of the disinfecting fluid, with copperas. The uncrystallized or fluid carbolic acid costs from fifty cents to three dollars a gallon, according to its degree of purity. These preparations of the acid should be obtained from reliable dealers in chemicals.

"Heavy oil," or the coal-tar, can be obtained from wholesale druggists generally.

All the *crude* disinfecting substances of the coal-tar, or carbolic class, are so offensive to the smell, that they should be used only moderately in dwelling-houses; but the copperas and carbolic solution can be used in *sufficient* quantity without this objection, and it should be used by every family, and especially in all hotels and boarding-houses.

Let fresh air and sunlight purify every place they can reach. Open and dry all cellars and vaults, and keep the grounds and surfaces about dwellings as dry and clean as possible. Domestic and personal cleanliness should be everywhere observed; and let it be remembered, *there are no substitutes for pure air and water.*

To the Practitioners of Medicine in the Metropolitan Sanitary District :

The Metropolitan Board of Health, in the discharge of its duty under the existing law relating to the public health, deems it necessary to ascertain the residence, place of business and signature of every practitioner of medicine within the Sanitary District.

In order to attain this end, the Board hereby requests that every person who practises medicine, surgery, or obstetrics within the limits of the Metropolitan Sanitary District, shall, within ten days from the date hereof, call at the place herein designated, and enter his name and address in the Medical Practitioners' Register.

Physicians who cannot call and enter their signatures in the Medical Register at the office of the Bureau of Records, during the present month, will fill out the following form and forward the same immediately, as before directed :

| NAME. | RESIDENCE. | PLACE OF BUSINESS. |
|-------|------------|--------------------|
| | | |

Whenever any medical practitioner changes his residence or his place of business in the aforesaid cities, or removes therefrom, he shall give notice of such removal, and his then residence and place of business within one month thereof.

Physicians are respectfully requested to embrace this opportunity to communicate to the Board of Health any information which, in their judgment, requires the attention of this Board in regard to any particular place or condition, known, or believed by them, to be in a condition that is dangerous or prejudicial to public or domestic salubrity.

BRIEF SUGGESTIONS TO MEDICAL PRACTITIONERS RESPECTING CERTIFICATES OF DEATH.

- (1.) Write the causes of death, when there is more than one cause, under each other, in the order indicated by the words

FIRST.

SECOND.

- (2.) It will usually be advisable, thus to register the causes in the order of importance, and in all cases give the duration of each disease and complication.
- (3.) The duration of the diseases (thus certified as "FIRST," "SECOND") will not unfrequently answer the questions every hour asked in the Bureau of Vital Statistics: "Which disease killed the patient?" "What shall be recorded as the cause of death?"
- (4.) The period of the continuance of the respective causes certified, should imply the time intervening between the first appearance of the characteristic symptoms and death. All inflammatory and febrile diseases should be dated from the first rigors, thus :

And that the CAUSE of h death was—

FIRST.—*Typhus Fever*. Existing for twenty days before death.

SECOND.—*Pneumonia*. Beginning six days before death :

Implying that the typhus commenced twenty days before death, and that pneumonia supervened on the fourteenth day of the fever, or six days before death. The case would go on record as a death from *typhus*.

- (5.) In all fatal cases of small-pox, state whether *vaccination* had been performed and at what period, thus :

FIRST.—*Small-pox* (confluent). Existing for twelve days before death.

SECOND.—*Convulsions*. Beginning six hours before death.

Said to have been vaccinated in youth, but no cicatrix.

- 6.) Surgeons will in all cases please return the primary disease or injury ; the period of the operation (if an operation was performed), before death, and lastly the period at which any secondary disease, such as erysipelas, peritonitis, fatal hæmorrhage, etc., supervened, thus :

FIRST.—*Incarcerated Hernia*. Existing for four days before death.

SECOND.—*Operation twenty-two hours, sloughing of intestine—with peritonitis—beginning sixteen hours before death.*

Such a case would go on record as a death from *incarcerated hernia with sloughing, etc.*

A copy of the Classified Nomenclature of causes of death can be obtained at the Bureau of Vital Statistics.

MEMORANDUM FOR THE GUIDANCE OF MEDICAL OFFICERS AND OTHERS.

The Board of Health has ordered that relapsing fever shall be regarded as a contagious and infectious disease. It is a fever that can be controlled and prevented by sanitary measures ; but in order to apply the necessary means for preventing its spread in overcrowded quarters, it is required that every person who is sick with it should be discovered and brought under sanitary care.

Though contagious and infectious, and consequently requiring the entire separation of the sick from the well, this fever is so particularly a disease that can spread dangerously only by the aid of overcrowded, badly-fed and uncleanly people, that wherever the health of these classes of the poor is properly protected and the sick removed and well provided for, and their unclean and infected houses are purified, the fever will cease to spread.

" 1. The greatest personal predisposition to relapsing fever is given by states of poverty and privation ; so much so that the disease is often known by the name of famine fever. Where destitution has not existed, or has been adequately relieved, relapsing fever is not likely to be epidemic.

" 2. Relapsing fever is, in a very high degree, communicable from sick to healthy. The more confined the atmosphere in which sick and healthy are together, the more certain is the disease to be communicated.

" 3. An attack of relapsing fever is greatly less dangerous to life than an attack of typhus. But when relapsing fever has attacked and when all its acute symptoms are past, the sufferers remain for a while extremely weak, requiring that food and restoratives should be liberally supplied them ; in default of which the feebleness left by the disease may often be of indefinite duration.

" 4. Relapsing fever is a disease which cannot safely be treated in the houses of the poor ; for in them, crowded and ill-ventilated as they generally are, and with inmates insufficiently nourished, there must be every likelihood that the infection will spread. It is essential that, under such circumstances, the sick should at once be removed from amid the

healthy. Ample hospital accommodation is therefore an indispensable condition for limiting the extension of the disease."

Medical officers of the Board of Health are required to make a thorough inspection of every inhabited cellar and of the entire tenement-house district under their care respectively, and as often as once in each week, to make a searching tour for reinspection through those tenement-house regions where this fever is most liable to become prevalent. All uncleanly cellars, lodging-houses, alleys, rear yards, and badly-crowded or filthy tenements should be reported, in official form, upon the day the inspection is made: and, forthwith, whatever the Board of Health and the Sanitary Superintendent can do to apply or execute the needed sanitary measures, will promptly be ordered and carried into effect.

Every medical officer and every agent of the Board of Health on sanitary duty in any portion of the district, is hereby instructed to advise the poor and destitute classes of inhabitants, especially those in crowded and unclean tenements, wherever such people are found, to keep their apartments ventilated and to cleanse and whitewash all bedrooms, halls, and closets; and especially to direct them to give information to the Board of Health, without delay, whenever any person becomes sick in their tenements. And further, let every medical officer see to it that every case of this fever be removed to hospital during the day the case is reported from any lodging-house, cellar, or tenement.

Wherever this fever is found, or liable to be introduced, any family or persons that are poorly fed or have not some kind of good animal food daily, should be reported to the Commissioners of Public Charities, or to the Association for improving the Condition of the Poor.

This disease, correctly understood, cannot become a source of public alarm. Its habits and history are well known, and facts concerning its prevalence elsewhere, as well as what has thus far been seen of it in New York, warrant the belief that by the coöperation of medical practitioners with the Board of Health, and by vigilant and active sanitary measures, this new scourge of poverty and overcrowding may be restrained and soon driven from the district.

RULES FOR CARE OF INFANTS.

I. *Nursing of Infants.*—Overfeeding does more harm than any thing else; nurse an infant a month or two old, every two or three hours.

Nurse an infant of six months and over, five times in twenty-four hours, and no more.

If an infant is thirsty, give it pure water, or barley-water, no sugar.

On the hottest days, a few drops of whiskey may be added to either water or food; the whiskey not to exceed a teaspoonful in twenty-four hours.

II. *Feeding of Infants.*—Boil a teaspoonful of powdered barley (ground in coffee-grinder) and a gill of water, with a little salt, for fifteen minutes, strain, then mix it with half as much boiled milk, add a lump of white sugar, size of a walnut, and give it lukewarm from a nursing-bottle. Keep bottle and mouth-piece in a bowl of water when not in use.

For infants five or six months old, give half barley-water and half boiled milk, with salt and a lump of sugar.

For older infants, give more milk than barley-water.

For infants very costive, give oatmeal instead of barley. Cook and strain as before.

When your breast-milk is only half enough, change off between breast-milk and this prepared food.

In hot weather, if blue litmus-paper, applied to the food, turns red, the food is too acid, and you must make a fresh mess, or add a small pinch of baking-soda.

Infants of six months may have beef-tea or beef-soup once a day, by itself, or mixed with other food; and, when ten or twelve months old, a crust of bread and a piece of rare beef to suck.

No child under two years ought to eat at your table.

Give no candies, in fact, nothing that is not contained in these rules, without a doctor's orders.

III.—*Summer Complaint*.—It comes from overfeeding, and hot and foul air; *never from teething*. Keep doors and windows open.

Wash your well children with cold water twice a day, and oftener in the hot season.

When infants vomit and purge, give nothing to eat or to drink for four or six hours, but all the fresh air you can. After that time, give a few drops of whiskey in a teaspoonful of ice-water every ten minutes, but no more until the doctor comes.

Whenever there are vomiting and purging, give *no* milk. Give no laudanum, no paregoric, no soothing-sirup, no teas.

DIPHTHERIA.

MODE OF ATTACK.

DIPHTHERIA is caused by the inoculation of the air-passages with the diphtheritic poison, which, from this point, infects the whole system; the local inflammation is attended by the formation of membrane (exudation); the fever and general symptoms are the result of this local infection.

HOW IT SPREADS.

Diphtheria is therefore a contagious disease (not, perhaps, as marked as scarlet fever) induced by contact with persons and objects infected. It may be diffused by the exhalations of the sick, by the air surrounding them, or directly by the exudation, communicated in the act of kissing, coughing, spitting, sneezing, or by the infected articles used, as towels, napkins, handkerchiefs, etc. The poison clings with great tenacity to certain places, rooms, and houses, where it may occasion cases after the lapse of months.

SYMPTOMS.

In ordinary attacks the poison begins to act the moment it lodges upon the tissues, but, like a vaccination, causes but slight sensible effects in from two to five days; then there are marked prostration, dryness of throat, and pricking pain in swallowing; the throat becomes red, and patches of white exudation appear, and the glands of the neck swell. In mild cases these symptoms subside on the third or fourth day from their appearance; if more severe, these symptoms may be prolonged; if unfavorable, the fever increases, the local inflammation spreads, and exhaustion rapidly follows.

PREDISPOSING CONDITIONS.

The Person.—Diphtheria attacks by preference children between the ages of one and ten years (the greatest mortality being in the second, third, and fourth years); children of feeble constitution, and those weakened by previous sickness; and those suffering from catarrh, croup, and other forms of throat-affections.

Social Relations.—All classes are liable to diphtheria where it is prevailing, but those suffer most who live on low, wet grounds; in houses with imperfect drains or surrounded by offensive matters, as privies, decaying animal and vegetable refuse; in damp rooms, as cellars; in overcrowded and unventilated apartments.

Seasons.—Diphtheria is not affected by either heat or cold, drought or rain.

PRECAUTIONS.

(a.) *The Dwelling or Apartment*.—Cleanliness in and around the dwelling, and pure air in living and sleeping rooms, are of the utmost importance where any contagious disease is prevailing, as cleanliness tends both to prevent and mitigate it. Every kind and source of filth around and in the house should be thoroughly removed; cellars and foul areas should be cleaned and disinfected; drains should be put in perfect repair; dirty walls and ceilings

should be lime-washed, and every occupied room should be thoroughly ventilated. Apartments which have been occupied by persons sick with diphtheria should be cleansed with disinfectants; ceilings lime-washed, and wood-work painted; the carpets, bed-clothing, upholstered furniture, etc., exposed many days to fresh air and the sunlight (all articles which may be boiled or subjected to high degrees of heat should be thus disinfected); such rooms should be exposed to currents of fresh air for at least one week before reoccupation.

(b.) *When Diphtheria is prevailing.*—No child should be allowed to kiss strange children nor those suffering from sore-throat (the disgusting custom of compelling children to kiss every visitor is a well-contrived method of propagating other grave diseases than diphtheria); nor should it sleep with, nor be confined to rooms occupied by, or use articles, as toys, taken in the mouth, handkerchiefs, etc., belonging to, children having sore-throat, croup, or catarrh. If the weather is cold, the child should be warmly clad with flannels.

(c.) *When Diphtheria is in the House or in the Family.*—The well children should be scrupulously kept apart from the sick in dry, well-aired rooms, and every possible source of infection through the air, by personal contact with the sick, and by articles used about them or in their rooms, should be rigidly guarded. Every attack of sore-throat, cough, and catarrh should be at once attended to; the feeble should have invigorating food and treatment.

(d.) *Sick Children.*—The sick should be rigidly isolated in well-aired (the air being entirely changed at least hourly), sun-lighted rooms, the outflow of air being, as far as possible, through the external windows by depressing the upper and elevating the lower sash, or a chimney heated by a fire in an open fireplace; all discharges from the mouth and nose should be received into vessels containing disinfectants, as solutions of carbolic acid or sulphate of zinc; or upon cloths, which are immediately burned; or if not burned, thoroughly boiled, or placed under a disinfecting fluid.

RESCUE OF DROWNING PERSONS.

THE RESCUE STATIONS AND APPARATUS.

At every ferry-house, and at the other stations mentioned in the list, the rescue apparatus, namely, the heaving-lines, grappling-pole, and ladders are found.

Every police officer by the water-side is regarded as having authority over the rescue apparatus, but whoever can reach the apparatus first, and employ it, should make the effort, and should call for help. Lose no time in grappling and lifting the body out of the water, and at the nearest dry place at once begin the work of resuscitation.

If there is help enough at hand when the patient is taken from the water, or afterward, let the nearest medical officer in the catalogue (or any other physician near by) be called, but let there be no waiting for a physician. Do the best that can be done methodically and deliberately, according to the following rules:

RULES FOR RESUSCITATING OR SAVING THE LIFE OF THE DROWNED.

Remember that the patient must be treated instantly, and on the spot where rescued. He must be freely exposed to the open air; loosen the clothing so as to freely expose the neck and chest. All persons not needed for saving him should avoid crowding about.

- (1.) Let the throat and mouth be cleansed by placing the patient gently face downward, with one of his wrists under his forehead. Quickly wipe and cleanse the mouth, and, if the patient does not breathe, immediately begin the following movements:
- (2.) *Posture.*—Place the patient on his back, with shoulders raised, and supported easily on a folded coat or some kind of pillow.
- (3.) *To keep up a Free Entrance of Air into the Windpipe.*—Let one person, at the patient's head, grasp the tongue gently and firmly with his fingers, covered with a bit of hand-

kerchief, and, drawing it out beyond the lips, then either hold it, or press the under jaw (chin) up so as to retain the tongue protruding from the mouth; but it is better to hold it in that position with the hand.

- (4.) *To produce and imitate the Movements of Breathing.*—Raise the patient's extended arms upward to the sides of his head, and then pull them steadily, firmly, slowly, outward. Next turn down the elbows by the patient's sides, and bring the arms closely and firmly across the pit of the stomach, and press them and the sides and front of the chest gently but strongly for a moment, then quickly begin to repeat the first movement.
- (5.) Let these two kinds of movements be made very deliberately and without ceasing until the patient breathes, and let the two movements be repeated about twelve or fifteen times in a minute, but not more rapidly, remembering that to thoroughly fill the lungs with air is the object of the first or upward and outward movement, and to expel as much air as possible is the object of the second or downward motion and pressure. This artificial respiration should be steadily kept up for forty minutes or more when the patient appears not to breathe; and, after the natural breathing begins, let the same motion be very gently continued, and let the proper stimulants be given in the intervals.

WHAT ELSE IS TO BE DONE, AND WHAT IS NOT TO BE DONE, WHILE THE MOVEMENTS ARE
BEING MADE.

If help and blankets are at hand have the body stripped, wrapped in blankets, but not allow the movements to be stopped. By-standers can supply dry clothing. And the assistants should briskly rub the feet and legs, pressing them firmly and rubbing upward, while the movements of the arms and chest are going on. Apply hartshorn or a feather within the nostrils occasionally, and sprinkle or lightly dash cold water upon the face and neck. The legs and feet may be rubbed and wrapped in hot blankets, if blue or cold, or if the weather is cold.

WHAT TO DO WHEN THE PATIENT BEGINS TO BREATHE.

Give brandy by the teaspoonful or hot sling two or three times a minute, until the beating of the pulse can be felt at the wrist, but be careful and not give more of the stimulant than is necessary. Warmth should be kept up in the feet and legs, and, as soon as the patient breathes naturally, let him be carefully removed to a house, and be placed in bed, under medical care.

ANOTHER METHOD—MARSHALL HALL'S.

This method is most useful after the other has become wearisome.

First.—Treat the patient instantly on the spot in the open air, freely exposing the face, neck, and chest to the breeze, except in severe weather.

Second.—In order to clear the throat, place the patient gently on the face, with one wrist under the forehead, that all fluid and the tongue itself may fall forward, and leave the entrance into the windpipe free.

Third.—To excite respiration, turn the patient slightly on his side, and apply some irritating or stimulating agent to the nostrils, as veratrine, dilute ammonia, etc.

Fourth.—Make the face warm by brisk friction; then dash cold water upon it.

Fifth.—If not successful lose no time, but to imitate respiration place the patient and turn the body gently, but completely, on the side, and a little beyond; then again on the face, and so on, alternately. Repeat these movements deliberately and perseveringly fifteen times only in a minute. When the patient lies on the thorax, this cavity is compressed by the weight of the body, and expiration takes place. When he is turned on the side, this pressure is removed, and inspiration occurs.

Sixth.—When the prone position is resumed, make a uniform and efficient pressure along the spine, removing the pressure immediately before rotation on the side. (The pressure augments the expiration, the rotation commences inspiration.) Continue these measures.

Seventh.—Rub the limbs upward with firm pressure and with energy. (The object being to aid the return of venous blood to the heart.)

Eighth.—Substitute for the patient's wet clothing, if possible, such other covering as can be instantly procured, each by-stander supplying a cloak or coat, etc. Meantime, and from time to time, to excite inspiration, let the surface of the body be slapped briskly with the hand.

Ninth.—Rub the body briskly till it is dry and warm, then dash cold water upon it and repeat the rubbing.

Avoid the immediate removal of the patient, as it involves a dangerous loss of time; also the use of bellows, or any forcing instrument; also the warm bath and all rough treatment.

If the weather be very cold, and the situation exposed, a tolerable shelter should, if possible, be secured; and in extremely cold weather it may be necessary to perform the rubbing and rotating movements with the body loosely covered with dry blankets, coats, or something of the kind.

The treatment described in these Rules (by one, or—successively—by both of the methods) should be persevered in for some hours, unless the patient is positively known to be dead. Persons have been restored after several hours of steady treatment in this way.

PRECAUTIONS AGAINST SUNSTROKE.

WHEN exposed to excessive heat the natural perspiration or sweating must not be checked; let the sweat flow, and do not throw off all the flannel garments.

Wash the head and neck frequently in cold water, and, if exposed in the sun, or in any very hot place, wear upon the top of the head, under a hat or otherwise, a light handkerchief or other thin folds of cloth wet with cold water. Remember that the head and neck must be kept cool, and also be free from the pressure of tight clothing.

If headache, dizziness, a feeling of tightness across the forehead, a failing of sight, or a feeling of weakness and prostration ("giving out") occurs, let the person immediately go to a cool place and lie down with the back and the feet covered, and have a few quarts of cold water poured slowly upon the head and the sides of the neck. If the symptoms are not at once relieved, send for the nearest good physician.

WHAT TO DO UNTIL THE PHYSICIAN COMES.

If the patient is still sweating, let him drink freely of cold black tea or coffee; tea is best. But, if sweating has ceased, there is very great danger. Then the head, face, neck, and entire chest should be rapidly sponged with ice-water, and a bag of pounded ice, well covered with a towel, should be kept under the head and the back of the neck. Give a mixture of the carbonate of ammonia (hartshorn), and muriate of ammonia, eight or ten grains of each in water every ten or fifteen minutes, until the physician comes, or until the patient rallies and sweats.

HYDROPHOBIA.

1. A dog that is SICK, from any cause, should be watched and treated carefully until his recovery.

2. A dog that is sick and RESTLESS is an object of suspicion. This is the earliest peculiar symptom of hydrophobia.

3. A dog that is sick and restless, and has a DEPRAVED APPETITE, gnawing and swallowing bits of cloth, wood, coal, brick, mortar, or his own dung, is a dangerous animal. He should be at once chained up, and kept in confinement until his condition be clearly ascertained.

4. If, in addition to any or all of the foregoing symptoms, the dog has DELUSION OF THE SENSES, appearing to see or hear imaginary sights or sounds, trying to pass through a closed

door, catching at flies in the air when there are none, or searching for something which does not exist, there is great probability that he is, or is becoming, hydrophobic. He should be secured and confined without delay.

5. In case any one is bitten by a dog whose condition is suspicious, the most effective and beneficial mode of treatment is to CAUTERIZE THE WOUND AT ONCE with a stick of silver nitrate, commonly called "lunar caustic." The stick of caustic should be sharpened to a pencil-point, introduced quite to the bottom of the wound, and held in contact with every part of the wounded surface until it is thoroughly cauterized and insensible. This destroys the virus by which the disease would be communicated.

POISONS.

TO DRUGGISTS, DEALERS IN PAINTS, AND OTHERS.

Whereas, "The sale of Paris-green is now very general, and suicides by persons with this material have become alarmingly frequent :

Resolved, "That the Sanitary Superintendent be, and that he is hereby directed to enforce section 15 of the Sanitary Code, and to cause a printed notice of the same, and of the State Law, with regard to the sale of poisons, to be served upon all persons who keep this and other poisonous materials for sale."

SANITARY CODE.

SEC. 15. That no poisonous medicine, decoction, or substance shall be held for sale or sold, except for lawful purposes and with proper motives, and by persons competent to give the proper directions and precautions as to the use thereof; nor shall any bottle, box, parcel, or receptacle thereof be delivered to any person unless the same is marked "Poison," nor to any person whom the party delivering the same has reason to think intends it for any illegal or improper use or purpose.

STATE LAW, REGULATING THE SALE OF POISONS.

SEC. 7. It shall be unlawful for any person, from and after the first day of June, eighteen hundred and seventy-two, to retail any poison enumerated in schedules A and B, as follows, to wit :

Schedule A.—Arsenic and its preparations, corrosive sublimate, white precipitate, red precipitate, biniodide of mercury, cyanide of potassium, hydrocyanic acid, strychnia, and all other poisonous vegetable alkaloids and their salts, essential oil of bitter almonds, opium and its preparations, except paregoric and other preparations of opium containing less than two grains to the ounce.

Schedule B.—Aconite, belladonna, colchicum, conium, nux-vomica, henbane, savin, ergot, cottonroot, cantharides, creosote, digitalis and their pharmaceutical preparations, croton-oil, chloroform, chloral hydrate, sulphate of zinc, mineral acids, carbolic acid, and oxalic acid, without distinctly labeling the bottle, box, vessel or paper in which the said poison is contained, and also the outside wrapper or cover, with the name of the article, the word "Poison," and the name and place of business of the seller; nor shall it be lawful for any person to sell or deliver any poison enumerated in said schedules A and B, unless upon due inquiry it be found that the purchaser is aware of its poisonous character, and represents that it is to be used for a legitimate purpose. Nor shall it be lawful for any registered pharmacist to sell any poisons included in schedule A, without, before delivering the same to the purchaser, causing an entry to be made, in a book kept for that purpose, stating the date of sale, the name and address of the purchaser, the name and quality of the poison sold, the purpose for which it is represented by the purchaser to be required, and the name of the dispenser; such book to be always open for inspection by the proper authorities, and to be preserved for reference for at least five years. The provisions of this section shall not apply

to the dispensing of poisons in not unusual quantities or doses upon the prescriptions of practitioners of medicine.

FRUIT AND VEGETABLES.

THE attention of dealers in fruit and vegetables is called to the following resolution of the Board of Health, and to section 34 of the Sanitary Code.

Resolved, "That the Sanitary Superintendent be and is hereby directed to superintend the inspection of fruits of every description, with instructions to seize, condemn, and cause the destruction of all unripe, decayed and unwholesome fruits offered for sale, as provided by the ordinances of this Board."

SEC. 34. "That no decayed or unwholesome fruit or vegetables shall knowingly be brought into said city to be consumed or offered for sale for human food, nor shall any such articles be kept or stored therein."

If forwarders and dealers will bear in mind the inevitable seizure of all unwholesome fruit and vegetables, they can readily save themselves much trouble and expense.

VACCINATION.

SINCE the introduction of vaccination the number of people in each million of living population dying from small-pox has been greatly diminished.

| COUNTRY. | Before Vaccination. Years. | Average number of People in 1,000,000 dying each year of Small-pox. | After Vaccination. Years. | Average number of People dying each year of Small-pox in 1,000,000 of Liv- ing Population. |
|--------------------|-------------------------------|--|------------------------------|--|
| Lower Austria..... | 1776 to 1806 | 2,484 | 1807 to 1850 | 240 |
| Upper Austria..... | 1776 to 1806 | 1,421 | 1807 to 1850 | 501 |
| East Prussia..... | 1776 to 1780 | 3,321 | 1810 to 1850 | 556 |
| West Prussia..... | 1780 | 2,272 | 1810 to 1850 | 356 |
| Berlin..... | 1781 to 1805 | 3,422 | 1810 to 1850 | 176 |
| Bohemia..... | 1777 to 1805 | 2,174 | 1807 to 1850 | 215 |
| Copenhagen..... | 1751 to 1800 | 3,128 | 1801 to 1850 | 286 |

A great many more people die of small-pox of those who are unvaccinated as compared with the vaccinated.

| PLACE. | Time. | Whole number hav- ing Small-pox. | Deaths in each 100 Cases of Unvacci- nated. | Deaths in each 100 Cases of Vaccin- ated. |
|------------------------------------|--------------|-------------------------------------|---|---|
| France..... | 1816 to 1841 | 16,397 | 16 $\frac{1}{2}$ | 1 |
| Philadelphia..... | 1825 | 140 | 60 | 0 |
| Bohemia..... | 1835 to 1855 | 15,640 | 23 $\frac{1}{2}$ | 5 |
| London, Small-pox Hospital..... | 1836 to 1856 | 9,000 | 35 | 7 |
| Vienna..... | 1837 to 1856 | 6,213 | 30 | 5 |

This table shows that if people are vaccinated and in after-years get small-pox, sometimes only one in a hundred dies, or sometimes only one in twenty; but if they have not been vaccinated, then sixteen or twenty-nine, or thirty or thirty-five in a hundred die.

The reason for being vaccinated a second or a third or more times is seen by the fact that people who have been vaccinated may contract small-pox after some time. If small-pox is in the house or in the neighborhood, or some of your friends have it, be vaccinated at once, if you have not been successfully vaccinated within five years, and have your family

vaccinated. Small-pox can be arrested by this measure. Doctors who are so much exposed to the disease do not get small-pox because they are frequently vaccinated. This is the only thing they use to keep off the disease. Many of them are vaccinated every five years.

Never let your children be older than three or six months without being vaccinated so that it takes. Never let them be over seven years old without being vaccinated a second time. When small-pox is in the house where you live, or your friends have it, or it is in the neighborhood, have your child vaccinated no matter what its age or its condition, nor what the time of year it is.

Vaccination with a clean lancet and with good matter, such as the Board of Health and good physicians use, seldom produces inflammation of the arm.

The Board of Health will perform free vaccination at No. 301 Mott Street, on week-days from 9 A. M. to 4 P. M.

If you cannot come, send your name and the number of the street at which you live, with a statement that you desire to be vaccinated, to Dr. James B. Taylor, Vaccinating Office, No. 301 Mott Street, and he will send a doctor who will vaccinate free of expense.

GENERAL DIRECTIONS TO BE FOLLOWED AFTER VACCINATION.

Avoid having a flannel or woollen sleeve or a linen band around the arm, as they irritate it and keep it sore much longer than it should be, and will also prevent the vaccination from becoming perfect. Be careful that the sore be not scratched or torn. Either leave the arm entirely bare or cover it with a thin, loose sleeve of calico or muslin. In case the arm becomes very much inflamed after the tenth day, do not poultice it, but keep it covered with a cloth wet with lukewarm water, and it will usually heal very readily. Babies should be vaccinated before they are five months old, if possible, so that they may get entirely over the effect of it before teething begins. It makes no difference at what time of the year the vaccination is performed. Vaccination, such as we offer, will *always* prevent small-pox if attended to in time. If any bad effects appear to follow vaccination, notify the Board of Health, and a physician will be sent to attend the case free of charge.

The "Vaccinating Corps" will visit your house twice each year, and offer free vaccination.

VACCINE VIRUS.

The Board of Health, of the Health Department of the city of New York, in accordance with an "Act to secure effective vaccination in the city of New York, and the collection of pure lymph or virus" (chapter 635, Laws of 1874), is now prepared to furnish carefully-selected vaccine lymph, suitably prepared for preservation in any climate, according to the following schedule, viz.:

| | |
|--|--------|
| One slip (one-half of the quill)..... | \$0 25 |
| Seven slips..... | 1 00 |
| Fluid in capillary tube, sufficient for seven persons..... | 1 00 |
| One crust, sufficient for ten persons..... | 1 50 |
| Crusts, per dozen..... | 12 00 |

Vaccine virus should always be kept in a cool, dry place.

The quill slips and tubes are taken fresh each day, at all seasons of the year, and can be furnished in any quantities. Particular attention is called to the large stock of fresh crusts constantly on hand.

Prompt attention given to all orders by mail or telegram.

DIRECTIONS FOR THE USE OF VACCINE CRUSTS.

The surest method of vaccinating is to insert a small part of the crust, by a valvular

incision, in, or immediately under, the skin, as superficially as possible, so that it will remain without band or plaster. To accomplish this, any narrow-bladed lancet is suitable.

NOTE.—Vaccine crust, dissolved in water or glycerine, becomes poisonous in a few hours from decomposition.

DIRECTIONS FOR THE USE OF VIRUS IN CAPILLARY TUBES.

Break off each end of the tube. Place one end to the mouth, and gently blow the virus upon a piece of glass lightly smeared with glycerine, to prevent too rapid evaporation. When an ordinary lancet is used, it would be well to have the arms scarified previous to removing the virus from the tube. When Whittemore's instrument for vaccinating can be obtained, time will be saved by its use, as it obviates the necessity of scarifying.

DIRECTIONS FOR THE USE OF QUILL-SLIPS.

Scarify over a surface the size of a small penny, so as to bring a slight trace of blood or serum. Place the outside of the square-cut or charged end of the quill in contact with this surface, holding it there and gently rubbing for a moment, and the virus will be dissolved and removed.

NOTE.—Vaccine, in any form, should *always* be kept in a dry, cool place.

ORDERS.

[FORM 1.]

Order No.

Copy Order and Notice under the Second Clause of Section 14 of Chapter 74, Laws of 1866. See also Laws of 1866, Chap. 686, and Laws of 1867, Chap. 956, and Laws of 1870, Chaps. 137 and 383.

OFFICE OF THE BOARD OF HEALTH OF THE HEALTH DEPARTMENT, No. 301 Mott Street, New York City.

At a meeting of *The Board of Health of the Health Department*, held on the _____ day
1875, at said office, proceedings as follows:

Said Board declares that it regards the premises mentioned in the following Order as in a condition dangerous to life and detrimental to health, and hereby makes the following Order, to wit:

Ordered, that

and that the same be served as said law provides; and that the Sanitary Superintendent do execute this Order, unless, within five days after the service thereof, this Board shall otherwise direct.

(A TRUE COPY),

Secretary of the Board.

YOU WILL PLEASE TAKE NOTICE of the Order, of which the above is a copy, and that, if within five days of the service thereof upon you, the same is not complied with by you (or so far complied with as said Board may regard as reasonable, and if not thereafter speedily and fully executed), then, and in either case the same, by authority of the Board, may be executed as therein directed, at your expense, and that of the parties liable therefor, under said Act, or either, as the law authorizes, all being held responsible, and that such expense will be held a lien on the premises and the rent; and that you also become liable to a penalty of \$50, for failing to execute such order; and no further notice will be given you relative to the action of the Board, or the execution hereof.

In all cases of non-compliance, actions will be commenced for above-named penalty.

EMMONS CLARK, Secretary of the Board.

[FORM 2.]

Order No.

Copy Opinion, Declaration and Order, under the First Clause of Section 14 of Chapter 74, Laws of 1866. See also Laws of 1866, Chap. 686, and Laws of 1867, Chap. 956, and Laws of 1870, Chaps. 137 and 383, and Chaps. 335 and 757, Laws of 1873.

OFFICE OF THE BOARD OF HEALTH OF THE HEALTH DEPARTMENT,
No. 301 Mott Street, New York City.

At a meeting of *The Board of Health of the Health Department*, held on the _____ day of _____ 1875, at said office:

The premises hereinafter named having been, and being in the opinion of the Board, and in fact in a condition and in effect dangerous to life and health; and said Board having taken and filed among its records what it regards as being, and what is sufficient proof to authorize its declaration, that the same is a public nuisance, and dangerous to life and health, said Board does hereby enter the same on its records as a nuisance, and makes, in respect thereto, the following Order, to wit:

Ordered, that

And directs this Order be served as said law requires, and that in case this Order is not executed by the proper persons, the same be executed by the Sanitary Superintendent; and that its execution be not commenced by the said Sanitary Superintendent until the further order of this Board, of which further order no notice will be given to the parties interested. As witness the signature of

(A TRUE COPY),

Secretary of the Board.

YOU WILL PLEASE TAKE NOTICE of the Order, of which the above is a copy, and that, if within three days after the service thereof upon you, the same is not complied with by you (or so far complied with as said Board may regard as reasonable, and is not thereafter speedily and fully executed), or if the said Order is not on due application suspended or modified, then said Board, in its discretion, may make its order directing the execution hereof at your expense, and that of the parties liable therefor, under said Act, or either, as the law authorizes, all being held responsible, and that such expense will be a lien on the premises and rent; and that you also become liable to a penalty of \$50 for failing to execute such order; and no further notice will be given you relative to the action of the Board, or the execution hereof.

In all cases of non-compliance, actions will be commenced for above-named penalty.

EMMONS CLARK, Secretary of the Board.

To

[FORM 3.]

Order No.

Final Order, under the First Clause of Section 14 of Chap. 74 of the Laws of 1866; no hearing having been demanded. See also Laws of 1866, Chap. 686, and Laws of 1867, Chap. 956, and Chaps. 137 and 383, Laws of 1870, and Chaps. 335 and 757, Laws of 1873.

OFFICE OF THE HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
No. 301 Mott Street.

187

The Board of Health of the Health Department of the City of New York having, on the _____ day of _____ 1875 made the following Order No. _____ to wit: Ordered that

And the same having been duly served upon _____ the same being _____ of the _____ therein referred to, and more than three days having elapsed since said service, and due proof having been furnished that the said Order has not been complied with, and that no party has applied for a hearing, or to have said Order or its execution stayed or modified as said law provides; it is hereby further ordered, that said order be reaffirmed. As witness the signature of

(A TRUE COPY),

Secretary of the Board.

[Form 4.]

Order No.

Final Order (with modification), under the First Clause of Section 14 of Chap. 74 of the Laws of 1866; no hearing having been demanded. See also Laws of 1866, Chap. 686, and Laws of 1867, Chap. 956, and Chaps. 137 and 383, Laws of 1870, and Chaps. 325 and 757, Laws of 1873.

OFFICE OF THE HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
No. 301 Mott Street.

187

The Board of Health of the Health Department of the City of New York having, on the day of 187 made the following Order No. to wit: Ordered that

And the same having been duly served upon the same being therein referred to, and more than three days having elapsed since said service, and due proof being furnished that said order has not been complied with, and that no party has applied for a hearing, or to have said order or its execution stayed or modified as said law provides; and said Board having on due consideration decided that said order shall be modified so as to be less burthensome: it is ordered that the same be modified so as to read as follows: Ordered that

It is hereby further ordered, that said order be reaffirmed. As witness the signature of

(A TRUE COPY),

Secretary of the Board.

OFFICE OF THE BOARD OF HEALTH OF THE HEALTH DEPARTMENT,
No. 301 Mott Street, New York.

At a meeting of *The Board of Health of the Health Department*, held on the day of 187 at said office, proceedings as follows:

Whereas, the Sanitary Superintendent and City Sanitary Inspector has certified to this Board, that the building situated upon the lot No. New York City, has become dangerous to life by reason of

Ordered, That all persons in said building situated upon lot No. New York City, be required to vacate said building on or before for the reason that said building is dangerous to life by reason of and further, that this Order be affixed conspicuously on the front of said building, and be served as the law requires under the direction of the Sanitary Superintendent and City Sanitary Inspector, and further, that said building be not again used as a human habitation without a written permit from this Board.

(A TRUE COPY),

Secretary of the Board.

CERTIFICATE OF DRAINAGE.

HEALTH DEPARTMENT, SANITARY BUREAU, }
NEW YORK, 1875. }

To The Board of Health of the Health Department of the City of New York:

In accordance with the provisions of chapter 566 of the Laws of 1871, entitled "An Act to provide for the proper drainage of lands within the corporate limits of the City and

County of New York," and of chapter 549 of the Laws of 1875, amendatory thereof, I hereby certify that it is necessary for the protection of the public health that those parts and parcels of land lying and being within the corporate limits of the city and county of New York, and bounded as follows, viz.:

need to be drained by other means than by sewers. It is therefore respectfully recommended that this certificate be filed among the records of the Board of Health of the Health Department of the City of New York, as provided by the act hereinbefore recited, and that the said Board of Health shall direct the said parts and parcels of land to be drained in the manner and by the Department authorized and empowered by the Mayor Aldermen, and Commonalty of the City of New York, to do said work, under and pursuant to the provisions of said chapter 549 of the Laws of 1875.

(Signed)

Sanitary Superintendent and City Sanitary Inspector.

HEALTH DEPARTMENT,
NEW YORK, 1875.

To the Mayor, Aldermen, and Commonalty of the City of New York:

At a meeting of this Board, held on the _____ the following preamble and resolutions were adopted:

Whereas, The Sanitary Superintendent and City Sanitary Inspector has certified, under and pursuant to the provisions of chapter 566 of the Laws of 1871, and of chapter 549 of the Laws of 1875, amendatory thereof, that it is necessary for the protection of the public health that the parts and parcels of land within the corporate limits of the city and county of New York, hereinafter described, need to be drained by other means than by sewers: it is hereby

Ordered, That the said certificate be filed among the records of the Board of Health of the Health Department of the City of New York, and that duplicates thereof, duly signed by the said Sanitary Superintendent and City Sanitary Inspector, be forwarded to the Mayor, Aldermen, and Commonalty of the City of New York, for their designation of the Department to do the work required under and pursuant to the provisions of section 1 of chapter 549 of the Laws of 1875; and it is further

Ordered, and directed, pursuant to the provisions of the acts hereinbefore recited, that the following-named parts and parcels of land within the corporate limits of the city and county of New York shall be drained by other means than by sewers, by and under the direction of the Department of said city and county hereafter authorized and empowered to do such work by the Mayor, Aldermen, and Commonalty of the City and County of New York, pursuant to section 1, chapter 549 of the Laws of 1875, said parts and parcels of land being situate as follows, viz.:

(A TRUE COPY),

(Signed)

Secretary

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TO

ANNUAL REPORT FOR 1873.

COMPILED BY CHAS. P. RUSSEL, M. D.

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