

FORTIETH ANNUAL REPORT

OF THE

DEPARTMENT OF HEALTH

OF THE

STATE OF NEW JERSEY

1916



TRENTON, N. J.

STATE GAZETTE PUBLISHING CO., PRINTERS

1917

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 J. V. Mulcahy, Bacteriologist.
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 John E. Bacon, Chemist.
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 Edwin G. Applegate, Chemist.
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 Joseph A. Moran, Laboratory Assistant.
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 Elizabeth Stackhouse, Clerk.

Letter of Transmittal.

TRENTON, N. J., October 31st, 1916.

To His Excellency, James F. Fielder, Governor of New Jersey:

SIR—I have the honor to transmit herewith the fortieth annual report of the Department of Health of the State of New Jersey.

Very respectfully,

J. C. PRICE,
 Director.

Report of the Director.

J. C. PRICE, M.D., DIRECTOR.

Three groups of citizens are vitally interested in the public health work carried on in New Jersey. The least of these groups is composed of the eight members and sixty employes of the State Department of Health, who are employed by the citizens of the state to do that part of the public health work which is not local in character, to act as arbiters between municipalities in matters pertaining to health and sanitation, to supervise to a certain extent the activities of local boards of health, and to serve as a unifying force to weld together and keep harmonious all the public health activities in the state. The next group comprises the local boards of health. In this state each of the 496 sanitary districts—cities, towns, villages, boroughs and townships—is required by law to have a board of health whose duty it is to carry on the great mass of local public health work in accordance with local needs.

By far the most important of these groups is the third, which includes all the people of the state, each of whom should be as vitally interested in the preservation of his health as in protecting his property or safeguarding his liberty. It is one of the most important functions of both the State Department of Health and local boards of health to point out to the people the need for this interest and to show them that when each citizen becomes sufficiently interested in personal hygiene to govern himself in accordance with its laws and in public hygiene to insist that its mandates be obeyed, his interest will result in a reduced death rate and a lower sickness rate. The resultant lessening in the terrific drain on our vital capital which is now caused by unnecessary sickness and premature death will amount, in mere money value alone, to many times the cost of bringing it about.

ORGANIZATION AND DUTIES OF THE STATE DEPARTMENT OF HEALTH.

The present State Department of Health succeeded the former State Board of Health, which was abolished in 1915. The new Department has been given greater responsibilities, increased powers, and new duties. Chapter 288 of the Laws of 1915, which created the Department and defined its powers and duties, for the first time in the history of this state attempted to give the State Department of Health some control over local boards of health. The intent of this act, in this particular, was admirable; the operation has not been as satisfactory as might have been expected. But a beginning has been made to provide for a rational subdivision of labor between the state and local health authorities, and it is hoped that the coming legislature will remedy some of the defects in this and other acts, which will be presently pointed out, and place this subdivision of labor, upon which the efficiency of public health activities depends, on a much more scientific and satisfactory basis.

The State Department of Health is divided into eight bureaus, each in charge of a particular line of work, and presided over by a chief, who reports to the Director of Health, and through him to the board. These bureaus are as follows:

The Bureau of Administration, of which the Director is the chief, has charge of all the administrative work of the Department, carries on the correspondence, supervises the office work, and generally brings together and unifies the work of all the other bureaus. Within this bureau is a division of administration, under the supervision of the chief clerk of the Department, containing four clerks and stenographers besides the chief clerk. This division carries on much of the clerical work of the Department except that relating exclusively to vital statistics. The division also has charge of the central filing office, in which are kept all the records and correspondence of the Department except those pertaining to vital statistics, including morbidity, and furnishes additional clerical help to the other bureaus when needed, thus providing an elastic clerical force which can be used to the best possible advantage in carrying on the work of the Department.

When this division was created and an attempt was made to bring all the departmental records into a single file under a uniform system, it developed that some of the record keeping of the bureaus under the former arrangement had been unsatisfactory, and much time has been spent during the year in rearranging the very large number of records in the possession of the Department. This is of the utmost importance, as many of these records have a permanent value. The work is not yet completed, but a good beginning has been made.

With the small clerical force at the disposal of the division, it has not been possible to centralize the clerical work of the Department as completely as should be the case. At present a good deal of clerical work is done in the various bureaus by technical assistants of various

kinds, because there are not clerks enough to do it. This is not an efficient method, but it cannot be improved until the clerical force is increased.

The Bureau of Medical Supervision has only one employe, the chief, who acts in a medical advisory capacity to the other bureaus, does what diagnostic work is required by the Bureau of Local Health Administration, and is supposed to keep in touch with all the medical activities in the state, particularly the State Medical Society and its county branches. Under ordinary circumstances, this bureau is not called upon very frequently to make diagnoses in suspected cases of communicable diseases, as this is done by persons employed by local boards of health, and this Department's diagnostician is only called upon in cases of dispute. During the past year, however, because of the prevalence of acute anterior poliomyelitis, the chief of this bureau was requested to make diagnoses in thirty-nine cases of this disease by the Bureau of Local Health Administration, and in twenty-five cases by physicians throughout the state. In a few other instances diagnoses of other diseases were made. The chief of this bureau has also made a number of investigations regarding the location of cemeteries and hospitals and of various nuisances.

The Bureau of Local Health Administration is the most important bureau of the Department. To it are entrusted the dealings with local boards of health, and the control of communicable diseases which is exercised as far as possible through local boards of health. Its principal functions are to co-operate with local health authorities throughout the state, to assist them when they need assistance, to encourage them to a more active interest in their work, and to bring them into closer relations with each other and with the State Department.

At present the bureau has five employes—a chief, three epidemiologists and one clerk. This force is far too small, and it is planned to increase it as soon as the appropriation available for the use of the Department will permit. During the year employes of the bureau attended twenty-five meetings of local boards of health, and 114 conferences with local health officials. Much work with local boards of health has also been carried on by correspondence. Complete sanitary surveys have been made in Perth Amboy and in Keyport, and partial surveys in Penns Grove, Roselle, Allendale, Butler, Flemington borough and Linden, Pompton and Union townships. It is planned to continue and increase this sanitary survey work very much during the coming year. These surveys are of great assistance to local boards of health in furnishing them with specific information which enables them to improve their work. They are also very effective in arousing public opinion to the point where improvement is demanded in sanitary conditions. The law requires that local boards of health shall furnish this Department such assistance as may be needed in making these surveys, and in preparation for further work a form has been prepared which will shortly be sent to every sanitary district in the state, and upon which the annual reports of local boards of health are to be made. These reports are now required to be made on the first of Feb-

ruary, and not upon the first of November, as formerly. Upon the information which is received on these forms will be based, to a large extent, the plans of this bureau for sanitary survey work during the coming year.

At the request of the Commissioner of Education, inspections have been made of school buildings in Ridgewood and Ramsey, and inspections of summer camps have been made in Beach and Wall townships.

During the year, because of the unusual outbreak of infantile paralysis, this bureau has devoted much time to the control of this disease. During the epidemic 3,973 cases were reported to this Department, which is equivalent to a case incidence of 134.8 per hundred thousand population, the highest case incidence which has been observed in any state during the epidemic. The measures taken to attempt to control this outbreak must be familiar to everyone, and will only be briefly touched upon here. A complete report upon the outbreak is now in preparation and will be published as soon as completed.

Early in the disease a circular was prepared giving information regarding the symptoms of the disease and the precautions which should be taken to prevent its spread. This was distributed to local boards of health, and widely disseminated in other ways throughout the state. When the epidemic in New York and Brooklyn assumed formidable proportions, and cases began to appear in Northern New Jersey, the United States Public Health Service provided for a system of interstate certification. Many of the local health authorities in municipalities in the northern part of the state put into force the most stringent regulations governing the travel of children, in some cases going so far as to prohibit children not residents of the municipality coming into it under any circumstances whatsoever. These regulations of different places were different and conflicting. Soon after this the Commissioner of Health of Pennsylvania put into effect regulations requiring persons entering Pennsylvania to be provided with health certificates. This Department adopted and made effective, on August 15th, a section of the Sanitary Code which provided that children under the age of sixteen years should not travel from one municipality to another in this state or from points outside of the state into the state, unless they were accompanied by identification certificate, showing that they had not been recently exposed to infantile paralysis, and had not lived on premises where a case had occurred. These regulations were adopted by the Department very largely for the purpose of harmonizing, or attempting to harmonize, local regulations, and to bring about some order in the confusion which had arisen because of different regulations being enforced in different localities. It was also believed that these regulations, by restricting the movements of children somewhat, would assist in preventing the spread of the disease. The local health authorities were required to see that these regulations were enforced within the state. This Department endeavored to cover, by means of its inspectors, the more important points of

entry into the state, which were not guarded by other people. It was impossible, with the force at the disposal of this bureau, to carry on this work, and practically all the field force of the Department were transferred to this bureau during the epidemic, and a number of extra employes were also secured.

While the State of New Jersey is surrounded on three sides by water, only the boundary between it and New York being on land, there are so many points of entrance into the state that it was impossible to keep representatives of the Department at all of them. There are seventeen bridges, twenty-three ferries, sixteen steamboat lines not ferries, forty-two roads and nineteen railroads and trolley lines which enter the state at various points. In some few of these places the point of entrance of two or more of these agencies are at the same point; for example, at Penns Grove the ferry to Wilmington and the boat line to Philadelphia land at the same wharf; at Burlington two lines of river boats and one ferry land at the same wharf; and at Mahwah the trolley line runs along the wagon road. These duplications, however, are relatively few. Most of the entrances into this state from New York City were guarded by officials of the United States Public Health Service; at Trenton the local authorities guarded the bridges, and at some other points in the state assistance was received from local authorities. Railroads were required to see to it that children under sixteen years of age were accompanied by a proper certificate, and when not so accompanied, to report to this Department. During the epidemic sixty-three notifications of this character were received.

Twenty-four of the employes of the State Department of Health were assigned to this bureau during the outbreak in addition to its regular force, and sixteen persons not in the employ of the Department were hired for varying lengths of time. These individuals devoted a total of 952 days to this work, and examined 46,519 children, of whom 42,772 had proper certificates; 612 had certificates which were not acceptable, and 3,135 had no certificates. Of those persons who had no certificates, or whose certificates were not acceptable, it was found necessary to turn back 2,227 and 1,520 were permitted to pass and the health officers of their destinations were notified. In attempting to enforce the provisions of the Sanitary Code relating to identification certificates, it quickly developed that the method provided by law for this enforcement was inadequate in these cases. This will be referred to in another part of this report.

There is little trustworthy data to show whether or not the results of this method of dealing with poliomyelitis are sufficient to warrant the cost. Experience has shown, however, that it is by no means satisfactory, for, in spite of all precautions that can be taken, children suffering from the disease will, occasionally, travel from place to place, and it is impossible to restrict the travel of adults who may be carriers. In lessening unnecessary travel some good may have resulted from the activities of health officials. The psychological effect of this work was, doubtless, beneficial, as it gave assurance to the public that

every possible effort was being made by health officials to restrict the spread of the disease. It is probable, however, that the expenditure of the same amount of time and money in efficient and reasonable supervision over known foci of infection, and in epidemiological studies of the outbreak, would have given more valuable returns, both in actual public health protection and in adding to the present knowledge of the ways in which the disease is spread.

Aside from the work on infantile paralysis, this bureau has made field investigations in thirty-three separate outbreaks of communicable diseases, in thirty-two different municipalities. It has also investigated cases of communicable diseases on forty-four dairy premises. Three fairly extensive outbreaks of typhoid fever have occurred during the year—one, apparently due to infected milk, occurred in Smith township, Hunterdon county; one in Keyport, the infection being transmitted through milk distributed by a dealer residing in Raritan township, Monmouth county; and one in South River borough, due to an infected milk supply. During the coming year, if this bureau is able to enlarge its working force, it will be possible to render more efficient assistance to local boards of health in preventing the spread of communicable diseases. This is of the utmost importance, particularly in the rural districts and in the small towns, where the local health organizations are frequently not so constituted as to be able to satisfactorily cope with outbreaks of communicable diseases.

The Bureau of Food and Drugs supervises all work which is in any way related to the enforcement of the Food and Drugs act, and the other acts which the Department enforces along these lines. It has supervision over slaughter-houses, cold storage warehouses, canning factories, shell fisheries (in so far as the wholesomeness of this product is concerned), dairies, creameries, ice cream factories, and all other places where foods are prepared, handled or sold. This bureau also assists local health departments, which are required by law to enforce the food laws, by furnishing them with expert advice, and with trained inspectors when they need them. Attached to the bureau are fifteen employes, including the chief.

When violations of the law are discovered, the practice of the Department is to summon the violator to appear before the Director to show cause why suit should not be begun against him to recover the penalty provided for by law. These hearings serve a twofold purpose, in that they almost invariably enable the Department to secure additional information concerning the violation, and they also serve to prevent mistakes in bringing action against persons whose violations have been of a purely technical character.

The following table shows the number of hearings given by the Director to persons who were found to be violating the various laws enforced by the Bureau of Food and Drugs, the nature of the violation and the disposition of the matter:

SUBJECT OF HEARING.	NATURE OF VIOLATION.	No.	RESULT OF HEARING.		No. complied on re-inspection.	Failed to appear. Referred to Atty-Gen.	Pending re-inspection.	Referred to local board.	Out of business.
			No. agreed to abate.	Ref. to Atty-Gen.					
Bottling Est.	Insanitary Cond.	27	26	.....	16	.....	4	6	1
Non-Alcoholic Beverages.	Adulteration	12	9	3	.....	1	9	.....	.....
Bottled Water	Misbranding	7	6	1	2	.....	1	.....	.....
Bottled Water	Insanitary Cond.	1	1	.....	.....	.....	.....	.....	.....
Candy Factories	Insanitary Cond.	3	3	.....	3	.....	1	.....	.....
Canning Factories	Insanitary Cond.	4	4	.....	3	.....	.....	.....	.....
Canned Goods	Decomposed	1	1	.....	.....	.....	.....	.....	.....
Coffee	Misbranded	1	1	.....	.....	.....	.....	.....	.....
Cold Storage	Evasion of Law.	1	.....	1	.....	.....	.....	.....	.....
Cold Storage	Failure to Equip Properly.	1	1	.....	.....	.....	.....	.....	.....
Creameries	Insanitary Cond.	3	2	1	2	.....	3	.....	2
Dairy Premises	Insanitary Cond.	7	7	.....	.....	.....	6	.....	.....
Drugs	Adulteration	12	11	1	3	.....	3	.....	.....
Drugs	Misbranded	6	3	1	3	.....	2	.....	.....
Flavorings	Misbranded	1	1	.....	.....	.....	.....	.....	.....
Butter	Misbranded	24	22	2	11	.....	2	.....	.....
Eggs	Misbranded	6	6	.....	6	.....	.....	.....	.....
Egg Breaking Est.	Insanitary Cond.	1	1	.....	1	.....	1	.....	1
Ice Cream Factories	Insanitary Cond.	2	1	.....	.....	.....	4	.....	.....
Meats	Adulterated	16	15	1	11	.....	2	.....	.....
Meat Markets	Insanitary Cond.	2	2	.....	.....	.....	.....	.....	.....
Milk and Cream	Adulterated	41	15	26	8	13	6	.....	1
Olive Oil	Adulterated	2	.....	.....	.....	.....	.....	.....	.....
Shell Fish Grounds	Pollution	2	.....	1	.....	.....	1	.....	.....
Slaughter Houses	Insanitary Cond.	*17	16	.....	11	.....	5	.....	.....
Toilet Articles	Adulterated	26	22	1	15	4	10	.....	.....

* Failed to comply.

Those cases which as a result of a hearing are found to be based on substantial violations of law are referred to the Attorney-General for action.

The following summary shows the number of Food and Drug cases referred to the Attorney-General and also shows the status of such cases:

Total number of cases referred to the Attorney-General.....	96
Number of penalties paid without legal action.....	59
Number of cases discontinued by the Department.....	4
Number of cases in the possession of the Attorney-General.....	5
Number of cases in the possession of the court.....	3
Number of cases tried.....	3
Number of cases settled on date of trial.....	12
Number of cases settled after filing of papers and before the date of trial.....	5

One of the most important laws enforced by this bureau is the so-called Sanitary act, which requires that foods shall be produced, handled and sold in a cleanly manner, in clean establishments, and shall be at all times protected from contamination. During the past year 2,030 inspections were made of food-producing and handling establishments, creameries and dairies, for the purpose of ascertaining

whether or not this law is being violated. In all cases the results of these inspections were forwarded to local boards of health, and they were requested to co-operate with this Department in securing improvement in conditions. It is evident that work of this character cannot be carried on by the State Department of Health alone, nor should it be. This kind of inspection work can be done much more economically by local boards of health with inspectors who are on the ground than by the State Department of Health, whose inspectors have to travel long distances. Such work does not require the services of an expert, but can be carried on by any intelligent and conscientious sanitary inspector. This bureau is doing this work for the purposes of interesting local boards of health in it, so that they may continue it. Much has been accomplished in this direction already, and in the coming year it is planned to extend the work to a large number of places which have not yet been reached.

There is no legislation in this state requiring the inspection of meat at the time of slaughter, and with the number of inspectors in the employ of this bureau it is impossible to inspect meat, except, incidentally, when inspections of slaughter-houses are being made. During the year twenty-seven carcasses of animals and 4,243 pounds of meat have been condemned as unfit for food. This is doubtless but a small proportion of the meat on the market which should be condemned, but no progress can be made until the number of slaughter-houses in the state has been very greatly reduced. It is not commercially feasible to maintain a field veterinary inspector at each of the 273 slaughter-houses now in operation in the State of New Jersey. Twenty properly built and equipped slaughter-houses would be ample to furnish the citizens with what meat is not brought in from the outside. It would be quite possible to keep a veterinary inspector at each of these slaughter-houses at the time when the killing of animals is going on, and such a system of inspection as this would insure to the public at all times that the meat prepared within the state is just as wholesome as that which comes into the state from the outside, and is inspected by the inspectors of the Bureau of Animal Industry of the United States Department of Agriculture. Nearly 900 inspections were made of slaughter-houses during the year. Besides these, 11,610 inspections were made in various places, factories, wholesale grocers and drug houses, bottling plants, ice cream factories, and a large variety of other places where foods are handled. Six hundred and twenty-eight samples of foods and 503 samples of drugs, 2,856 samples of milk and cream were collected during the year by the inspectors of this bureau, and delivered to the laboratory of hygiene for analysis. Twenty-three thousand one hundred and fifty articles of food and drugs were examined by our inspectors and found to comply with the law, so that no samples were collected.

Owing to the infantile paralysis outbreak, the work of supervising canning factories in the state was necessarily interrupted and only ninety inspections were made of canning factories. It is planned to do this work much more thoroughly during the coming year. There

are about ninety canneries in this state, most of which are in a very satisfactory condition, manufacturing a clean and wholesome product, which consists principally of tomatoes.

Besides the canning factories, 381 inspections were made of 195 bottling establishments, where soft drinks are prepared. A number of inspections were made of the cold storage warehouses of the state for the purpose of enforcing the Cold Storage law. Considerable quantities of goods have been condemned, ordered out of storage and destroyed, because they were found to be unfit for use as food.

Under authority contained in Section 11, Chapter 101 of the Laws of 1916 (An act to regulate the cold storage of food and the sale or distribution of articles of food after cold storage), which is enforced by the Bureau of Food and Drugs, the following rules and regulations governing cold storage and refrigerating warehouses and places were adopted by the Department August 8th, 1916:

RULES AND REGULATIONS GOVERNING COLD STORAGE AND REFRIGERATING WAREHOUSES AND PLACES.

Any person, firm or corporation desiring to operate or to continue to operate a cold storage warehouse shall make application in writing to the State Director of Health for that purpose, stating the location of his plant or plants. On receipt of the application the State Director of Health shall cause an examination to be made into the sanitary condition of said plant or plants, and, if found by him to be in a sanitary condition and otherwise properly equipped for the business of a cold storage warehouse, he shall cause a license to be issued authorizing the applicant to operate such cold storage warehouse or warehouses for and during the period of one year. The license shall be issued upon the payment by the applicant of a license fee of ten dollars to the State Department of Health for each warehouse.

1. No warehouse will be considered to be properly equipped unless the rooms in which foods are to be stored can be held at temperatures sufficiently low to preserve such foods without decomposition. The temperatures of the rooms in which foods are stored must not be allowed to rise above the maximum point at which foods can be so preserved.

2. Articles of food intended for cold storage shall, when they are offered for or placed in storage, be enclosed in boxes, barrels, crates or other packages sufficiently strong and tight to prevent them from being injured by careless handling, unless the articles are of such character that it is impracticable to pack them in containers.

3. When articles of food contained in packages are placed in cold storage, each package shall be legibly marked with the words "Cold Storage" and with the word "Received" followed by the month, day and year, when said articles were placed in storage. The word "Delivered," followed by the month, day and year, when such articles are taken from storage, shall be stamped upon foods or packages before being removed therefrom.

When articles of food not contained in packages are placed in cold storage or removed therefrom, each individual article must be marked in the above manner.

All letters or figures must be in plain type not less than three-eighths of an inch in height.

The word "Received" may be written Rec'd., and the word "Delivered" may be written Del'd. Figures separated by hyphens may be used to indicate dates and will be regarded as sufficient date if following the word "Rec'd" or "Del'd" as the case may be. The last two figures of the number indicating the year when such foods were placed or taken from storage may be used, e. g.

"Received July 5, 1916," may be written Cold Storage, Rec'd. 7-5-16, or "Delivered August 5, 1916," may be written Del'd. 8-5-16.

Whenever tags or labels are used on which dates are to be marked, they must be securely fastened to the articles to which they are affixed.

4. Articles of foods held at low temperatures during the process of manufacture will not be regarded as being held in cold storage within the meaning of this act, and such articles need not be dated.

5. When articles of food have been kept in cold storage twelve calendar months, report of such fact shall be made to the State Department of Health by the persons having custody of such articles, and such articles shall be held in cold storage by such persons until they have been inspected by the agents of the State Department of Health and released by order of said Department.

6. For the purpose of facilitating the removal of articles of food from cold storage before the expiration of the statutory period of twelve calendar months, persons operating cold storage warehouses shall notify the owners of all articles of food stored by them of the date when such articles will have been in storage twelve months, at least fifteen days before such twelve months have elapsed.

7. Until further notice the following classification of foods shall be used by persons operating cold storage warehouses in making monthly reports of articles of food held in cold storage: Eggs, case; eggs, broken; butter, cheese, poultry, game, meat, fresh; fish, edible fats, miscellaneous milk products.

Shell eggs are to be reported in terms of cases and dozens, all other articles to be reported as packages, and, in so far as the same is practicable, by weight.

8. Requests for permission to store food for a longer period than twelve calendar months must be made by the owners thereof to the State Department of Health, upon blanks which will be furnished by the Department upon application. Such requests shall include statements of the kind and amounts of food and the length of extension desired. Before such requests are granted the articles of food to which they refer must be inspected by representatives of the Department of Health of the State of New Jersey. Requests should, therefore, be made at least two weeks before the statutory time limit for storage has expired.

9. No materials in a state of decomposition or putrefaction, or in any other condition which renders them unfit for food, or in any condition which may cause deterioration in other food products, shall be placed in cold storage in the same room or enclosure with articles intended for use as food.

10. When articles of food, held in cold storage, are removed from the packages in which they were contained and placed in other packages, the date of original entry into cold storage of such articles shall be placed upon the containers into which they have been transferred; and if articles of food which have been placed in cold storage on different dates are packed in the same container, the date of storage of the article longest stored shall be placed upon the container to which such articles have been transferred.

11. Any article of food, if intended for use other than human consumption, shall be plainly and legibly labeled or marked with the words "Not for Human Consumption" in letters not less than one inch in height.

12. All rooms in which food products are stored shall be provided with smooth, water-tight floors which can be readily cleansed. Floors must be kept in a clean condition at all times.

13. The sidewalls and ceilings of all rooms shall be of smooth material, free from crevices and must be kept clean at all times.

14. Waste materials must not be permitted to accumulate in or around buildings, but must be removed daily. Receptacles in which refuse material, resulting from the sorting or repacking of eggs, can be placed shall be provided. Such receptacles shall contain a suitable denaturant while in use.

15. Adequate toilet facilities shall be provided for employes, if possible these toilets should be provided with flush closets and urinals. All toilets must be kept clean at all times.

16. No employer shall require, permit or allow any person to work in a cold storage warehouse, who is affected with any communicable disease.

17. The license granted by the State Department of Health to operate a cold storage warehouse shall be framed and displayed in the warehouse.

The sale of bottled waters is also supervised by this bureau. One of the inspectors is making rounds very frequently to all the establishments in which bottled waters are prepared and sold in the state. Samples are taken and analyzed in the laboratory, and no permits to sell bottled water are issued until the Department is satisfied that the water is pure and wholesome and the equipment is adequate for bottling it under satisfactory sanitary conditions.

One of the most important lines of investigation, from a public health standpoint, is the control by this bureau of the sanitary side of the shellfish industry in this state. It is not generally realized by our people that New Jersey is one of the great oyster producing states in the country, and that the annual value of the product runs into millions of dollars. Most of these oysters are grown in the Delaware bay and along the network of sounds and thoroughfares which lie behind the beaches along the Atlantic coast. It has been established that oysters which are grown or laid out in polluted waters have become infected with typhoid bacilli, and may transmit the disease to people who eat them. It is, therefore, of the utmost importance that the waters in which oysters are grown or placed shall be pure. For the purpose of determining whether or not this is the case, the State Department of Health maintains a floating laboratory, which, for nine months in the year, travels from place to place over the oyster grounds, collects and examines bacteriologically samples of oysters and of the waters in which they are grown. Sanitary surveys of lands adjacent to these waters are made for the purpose of discovering possible sources of pollution. These investigations have now been going on systematically for over five years, and as a result of them certain areas from which shellfish were formerly taken have been found to be unsafe because of pollution, and have been condemned by the State Department of Health and abandoned as shellfish grounds. In the Maurice river district, from which most of the oysters come, the intelligent co-operation of the oystermen with this Department has resulted in a very great improvement in the methods of growing, handling and shipping oysters.

A new practice which has recently started in the shellfish industry is the shucking of oysters at the oyster grounds. Although the state has long been noted for its shellfish products, nearly all the oysters have heretofore been marketed in the shell. In view of the fact that the shucking of oysters at the oyster grounds is likely to become expensive, and in order that operations may be conducted in a cleanly manner, the Department of Health, at a meeting held August 22d, 1916, adopted the following regulations governing the operation of oyster shucking houses in this state:

1. Every building or room used as a shucking house shall be constructed and equipped as hereinafter provided and the operations carried on in such building or rooms shall be conducted in such a manner that the purity and wholesomeness of the shellfish handled therein shall not be impaired.
2. All rooms in which shucked oysters are packed, stored, washed or otherwise handled shall be separate and apart from the rooms in which oysters are opened.
3. Rooms in which oysters are shucked and in which shucked oysters are packed shall be provided with smooth, water-tight floors which can be readily cleansed, and such floors must be cleansed daily. The side walls of such rooms shall be constructed of smooth, hard material. Side walls and ceilings shall be kept in a clean condition at all times.
4. All shucking houses shall be adequately lighted and ventilated, and shall be provided with an abundant supply of hot and cold water. During the fly season all windows and doors shall be provided with screens.
5. All shucking houses must be provided with adequate drainage to lead all waste liquids outside the building and into a suitable sewer or cesspool, or to some other point where they can be disposed of without creating a nuisance. Waste liquids must not be disposed of by emptying into any stream in which shellfish are grown or floated.
6. Shucking benches constructed of smooth, hard material which can be readily cleansed must be provided, and such benches shall be kept in a clean condition.
7. Suitable receptacles for shells and waste materials, conveniently located to the benches where oysters are shucked, must be provided.
8. All utensils and containers in which shucked oysters are placed must be of such material and construction to enable them to be readily cleansed. They must be thoroughly cleansed and then scalded out with hot water or steam before beginning each day's work. Knives used by shuckers must be subjected to the same treatment.
9. Shucked oysters may be washed with clean, unpolluted water for a period not in excess of five minutes. The soaking of shucked oysters in fresh or salt water is prohibited.
10. A solid pack shall be required when shucked oysters are sold by measure. For the purpose of this rule a solid pack will be understood to mean oysters which have been drained substantially of all their adhering liquor.
11. Shucked oysters offered for shipment must be packed in closed containers and thoroughly iced. Oysters must not be packed in contact with ice.
12. Oysters must be shipped the same day they are opened unless stored at a temperature of 45° F. or below, or packed in shipping containers and thoroughly iced.
13. Cans in which shucked oysters are shipped must not be used a second time for this purpose.
14. Waste materials must not be permitted to accumulate in rooms where shucked oysters are packed and such materials must be removed daily.
15. All shucking houses shall be provided with running water, soap and clean towels to enable employes to wash their hands. Employes shall be required to wash their hands before beginning work and after visiting the toilet.
16. The outer clothing worn by persons engaged in shucking oysters shall be of material which can be readily cleansed and only clean garments shall be worn.
17. No persons with infectious wounds in the hands or arms shall be permitted to open oysters or handle the same.
18. No person afflicted with any communicable disease shall be employed in any shucking house nor shall any person so affected be permitted to enter the rooms of such shucking house where oysters are opened, packed or otherwise handled.
19. No person shall be allowed to live or sleep in any room where oysters are shucked or packed.

Within the bureau is a Division of Milk Control, which supervises the production, transportation and sale of milk. During the year this division made 2,511 inspections at dairies, 419 at milk depots, 277 at creameries, 606 at ice cream factories, and 359 at pasteurizing plants. The dairy inspection work was also hampered during the year because the inspectors were called off for a considerable period of time to assist in the control of infantile paralysis. The inspection and supervision of pasteurizing plants has been particularly interesting and important. The pasteurization of milk is rapidly becoming a general practice, and it is to be hoped that before many years have passed all market milk in the state, except that derived from certified herds, will be pasteurized. In order that pasteurization may be effective in safeguarding the milk supply, the pasteurizing apparatus must be properly constructed, must be kept clean, and the process must be intelligently carried on, particularly with respect to the control of temperature. Inspectors of the bureau have been making bacteriological tests of most of the pasteurizers in the state for the purpose of determining whether or not the process is being carried on effectively. In a surprising number of instances it was found that on account of faulty operation the degree of efficiency which the apparatus would be expected to produce was not being secured. The operator was then required to correct those conditions which were found to be objectionable. This very important work will be continued and increased during the coming year.

Chapter 78 of the Laws of 1914, which is enforced by the Bureau of Food and Drugs, provides that all persons who keep cows for the production and sale of milk and cream shall file at least once each year with the Department of Health a certificate signed by a duly-licensed veterinarian stating the results of the examination of such cows. A new veterinary certificate was therefore prepared and was adopted by the Department June 29th, 1916. The purpose of the new form is to secure a more detailed report of diseased conditions found in dairy animals.

Experience gained in other years by the Department has shown that a considerable proportion of the milk delivered to creameries during the summer months ranges in temperature from 70° to 80° F. It is also well known that the temperature and rapidity of cooling has a marked influence in keeping down bacteria. In view of these facts the Department, on March 21st, 1916, adopted the following regulation with respect to the cooling of milk:

"All milk intended for delivery to any creamery or shipping station must be cooled to a temperature of 60° F. or below, within two hours after being drawn, and kept thereafter below that temperature until delivered to such creamery or shipping station.

"This rule shall take effect May 1, 1916."

Copies of this notice were widely distributed to boards of health, milk dealers and other interested persons.

The Bureau of Engineering supervises the construction and operation of the public water supplies and sewage disposal plants in the state. Inspectors from the bureau collect samples of water from all the public water supplies at regular intervals; make periodic inspections of all the watersheds of surface water supplies for the purpose of preventing pollution of the water; make inspections of those fresh waters not used as present sources of water-supply for the purpose of preventing nuisances; examine into the possible pollution at bathing beaches, and co-operates with the Bureau of Food and Drugs in the protection of shellfish grounds. They make regular inspections of all the sewage disposal plants in the state, of which there are 189, and advise regarding the proper methods of operating the plants.

The working force of this bureau consists of one chief engineer, seven assistant engineers and two clerks. New Jersey is a thickly-settled state, and a very large proportion of its citizens are furnished with water by public water supplies. There are 259 sources of public water-supply in use in the state. The water from fifty-nine of these sources is treated before being supplied to the consumer. If the consumer is to get pure and wholesome water, the treatment plants must be so supervised that they are always kept working at their maximum efficiency. This work requires the full time of one of the assistant sanitary engineers in this bureau, and more time could profitably be devoted to it. In connection with new water supplies, applications for permission to use which are investigated by this bureau, a careful sanitary survey of the proposed source is made, and samples of the water are collected and examined to make sure it is of satisfactory quality before a recommendation is made to the Department that its use be permitted. That it pays to have good water supplies is amply shown by the typhoid fever death rate in this state, which is now one of the lowest in the United States. Water-borne typhoid fever is now very rare in New Jersey.

Much of the time of this bureau is spent in examining plans for water-supply systems and water treatment plants, sewer systems and sewage treatment plants, which the Department is required by law to approve. The bureau also makes examinations of water supplied to railroad and steamboat passengers traveling in interstate traffic, the results of which are certified to the United States Public Health Service. This is required by regulations of the United States Treasury Department, and these examinations for certificates are made at least every six months.

New Jersey has more sewage disposal plants than any state in the Union, except one, and their inspection and supervision requires much time by the assistant engineers of the bureau. Unfortunately, many of the smaller municipalities do not realize the necessity for employing competent men in sufficient numbers to properly operate the sewage disposal plants which they have constructed. As a result of this parsimonious policy many of these plants do not operate as satisfactorily as they should. This Department should be able to give more attention to them than is now possible.

The safeguarding of the public water supplies, and the proper regulation of the disposal of sewage, are becoming one of the most important and perplexing problems with which the Department has to deal. The construction of water treatment plants and sewage disposal plants requires the expenditure of large sums of money, and it is of the utmost importance that the design of these plants shall be of such a character that they shall produce the results for which they are installed, at as small a financial burden upon the municipality as possible. The engineers of this bureau have, therefore, a very important duty in passing upon these plans, not only to see to it that the health of the citizens is conserved, but also that their financial resources are conserved as far as possible.

The Bureau of Education and Publicity has two distinct functions—first, the carrying on of a news service, by which articles for publication in the daily papers are prepared and given out at short intervals, usually one or two a week; and the publication of a bulletin once a month, which contains matter of interest to the citizens of the state along public health lines, and second, the conduct of exhibits, which travel from place to place throughout the state, teaching people how to avoid disease. The large tuberculosis exhibit, which was in use for four years, was shown in all parts of the state. Its operation for the present has been discontinued. There is a smaller tuberculosis exhibit which is now traveling from one small town to another, usually making one or two night stands. During the year this exhibit has been shown ninety-seven days in fifty-three localities, and 36,605 people attended out of a total population of 251,620. One lecturer and a mechanician travel with the exhibit. There were distributed in connection with the exhibit 127,000 pieces of literature.

A large child hygiene exhibit is in preparation, and it is expected that it will be on the road some time in the spring. In addition to these exhibits, the bureau has a number of small loan exhibits, which are sent out to any responsible group of persons who desire to use them. One of these exhibits shows housing conditions in the state; another is a reproduction of the New York State exhibit on the diseases of adult life; another illustrates some of the evils attendant on the use of patent medicines, and the remaining two are miniatures of the large child hygiene exhibit prepared by the National Child Welfare Exhibit Association. These exhibits have been very popular and additional ones will be prepared as rapidly as possible. The bureau also has a large collection of lantern slides on various health subjects which are available for use in illustrating lectures.

During the year, in addition to the lectures at exhibits, forty-eight lectures were given by representatives of the bureau on public health subjects. In order that the bureau may reach its maximum usefulness, the Division of Child Hygiene, which is one of its component parts, should be provided with one or more supervising nurses, who could assist in the regulation and standardization of the public health nursing service maintained by local boards of health and philanthropic organizations. There is urgent need for work of this character.

The Laboratory of Hygiene, which is under the supervision of the Assistant Director, carries on the laboratory and research work for all the bureaus. It serves particularly the Bureau of Local Health Administration, doing for this bureau a considerable amount of research work on epidemiological problems; the Bureau of Food and Drugs, for which it analyzes large numbers of samples of food and drugs each year, the Bureau of Engineering, from which is received several thousand samples of water and sewage from public and private supplies. In addition to this work for the other bureaus, it examines specimens from suspected cases of communicable diseases which may be sent in by physicians from anywhere within the state. Most of these specimens are from suspected cases of diphtheria, tuberculosis, typhoid fever, malaria and gonorrhoea. Specimens in smaller numbers are received from a large group of other bacterial diseases. By the time this bulletin gets to press it is expected that the laboratory will be beginning the examination of specimens from suspected cases of syphilis by Wassermann's method. This is a most important line of work if this dread disease is to be controlled.

The Bureau of Vital Statistics has charge of the records of marriages, births, deaths and communicable diseases. The reports of all other bureaus are for the fiscal year beginning November 1 and ending October 31. The report of the Bureau of Vital Statistics, however, is for the calendar year ending January 1, 1915. It is necessary to make this report in this manner in order that it may be comparable with those compiled by the Bureau of the Census, and by other states, territories and countries.

During the year the bureau received 39,435 certificates of death, 66,476 certificates of birth, 27,594 certificates of marriage and 3,054 still birth certificates, making a total of 136,659. Thus the bureau handles on an average over 11,000 certificates a month, all of which are carefully examined and such as are found to be incomplete are returned for the data needed.

The bureau also receives about 8,000 requests annually for searches and certified copies of the records. Many of these copies are used to prove claims for pensions and a larger number are required for procuring passports, the settlement of estates, insurance claims, factory and workshop papers, &c.

The records of the bureau date back to 1848. These old records are very frequently consulted, but are not completely indexed and therefore very difficult to search. Some action should be taken to provide means for indexing and restoring these records as they will soon be so worn as to be practically useless if steps are not taken to insure their preservation.

Population—The total estimated mid-year population of New Jersey for the year 1915 was 2,877,532. These figures are based on estimates made from the United States Census. Heretofore in figuring estimated populations the New Jersey state census and the na-

tional census have been used jointly, but in future only the Government figures will be used for this purpose.

Deaths—The 1915 death-rate shows a decrease from the previous year, the rate per 1,000 inhabitants for 1914 being 14.02 and for 1915, 13.70. The figures just quoted are for the resident death-rate and do not include the deaths of persons from other states who died in New Jersey. The separation of these non-resident deaths began July 1, 1915, therefore the separation of non-resident deaths is only for the last six months of the year. The number of such deaths was 299, which if included in the total number of deaths for the state would give a death-rate of 13.81.

Births—The birth-rate of 23.10 for the year shows an increase over that of the previous year, which was 22.94 per 1,000. The number of births reported to the Department increased from 65,403 to 66,476.

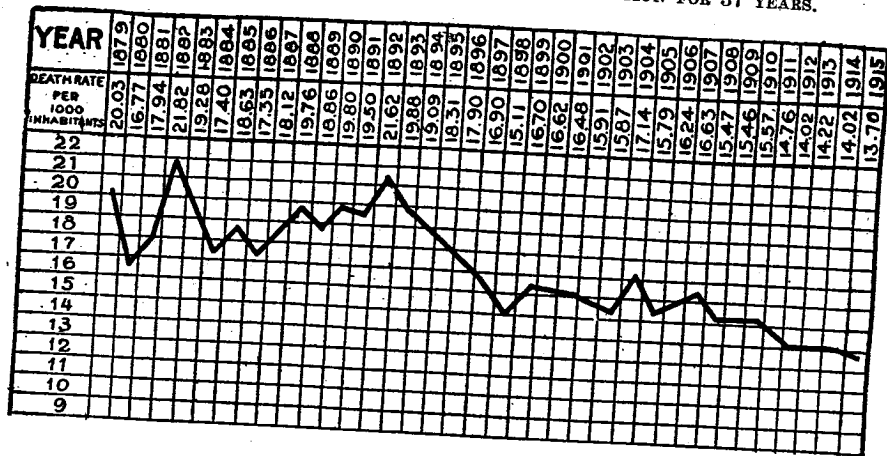
Excellent results are shown under the operation of chapter 389, laws of 1915, which makes it compulsory for local boards of health to bring prosecution against physicians for failure to report births, and during the year a large number of notices have been forwarded to local boards of health, calling their attention to violations of the law by certain physicians, and prosecutions have been ordered.

Comparative Death-Rate of White and Colored Inhabitants—The total estimated population for the state for 1915 was 2,877,532, and the estimated colored population 100,135. The death-rate among the colored inhabitants was 19.74, while the death-rate among the white inhabitants was 13.49, a difference of six points.

Marriages—The number of marriages recorded for the year 1914 was 28,528, and for 1915, 27,694, a difference of 834. The marriage-rate for 1915 was 19.25. The marked decrease in the number of marriages is not surprising, for each year that passes shows the wisdom of the effect of a rigid and well enforced marriage license law. This year we found that in Weehawken, N. J., which has apparently been a hotbed for runaway marriages, there were 657 less marriages in 1915 than in 1914. When this fact is considered and the decrease of non-resident marriages in other portions of the state added to the Weehawken figures, it would show there is no appreciable falling off of marriages of New Jersey residents.

DEPARTMENT OF HEALTH.

CHART SHOWING TOTAL DEATHS PER 1,000 POPULATION FOR 37 YEARS.



DEATHS IN NEW JERSEY BY AGE PERIODS, FOR THE YEAR 1915.

Under 1 month.	Under 1 year (exclusive of under 1 month.)	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 to 89	90 and over.	Not stated.	Total number of deaths.
2862	4215	2751	813	516	849	1204	1395	1506	1869	1900	2094	2294	2350	5185	4928	2366	335	3	39,435

DEATHS FROM CERTAIN CAUSES AND RATES PER 10,000 POPULATION WITH PROPORTION OF DEATHS OF EACH TO TOTAL DEATHS.

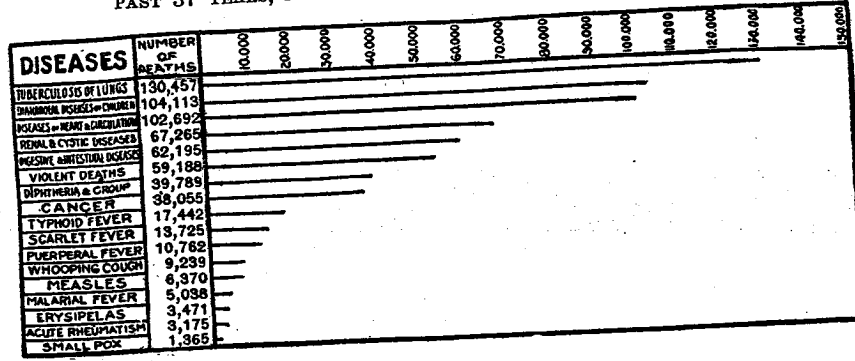
CAUSE OF DEATH.	Deaths.	Rate per 10,000 population.	Proportion to total deaths.
Typhoid fever	188	0.65	0.48
Malaria	17	0.06	0.04
Smallpox			
Measles			
Scarlet fever	205	0.71	0.52
Whooping cough	97	0.34	0.25
Diphtheria and croup	259	0.90	0.66
Tuberculosis, all forms	501	1.74	1.27
Cancer and other malignant tumors	4,377	15.21	11.10
Diabetes	2,298	7.99	5.83
Diseases of nervous system and of the organs of special sense	538	1.87	1.36
Diseases of circulatory system	3,600	12.51	9.13
Pneumonia	5,759	20.01	14.60
Diseases of respiratory system (pneumonia excepted)	3,015	10.48	7.65
Diarrhoea and enteritis (under 2 years)	2,412	8.38	6.12
Diseases of digestive system (diarrhoea and enteritis under 2 years excepted)	2,200	7.65	5.58
Acute nephritis and Bright's disease	2,314	8.04	5.87
The puerperal state	3,464	12.04	8.78
Malformations and causes due to early infancy	390	1.36	0.99
Suicide	2,795	9.71	7.09
Other violent causes	498	1.73	1.26
	2,159	7.50	5.47

DIRECTOR'S REPORT.

THE INCREASE OR DECREASE IN DEATHS FROM CERTAIN SELECTED CAUSES, FOR THE YEAR 1915, COMPARED WITH DEATHS FOR THE PREVIOUS YEAR.

SELECTED DISEASES.	1914.	1915.	Comparative mortality.
Tuberculosis of lungs	3,778	3,817	+ 41
Diseases of heart and circulation	2,296	5,759	+ 3,463
Renal and cystic diseases	454	3,836	+ 3,382
Digestive and intestinal diseases	394	2,305	+ 1,911
Diarrhoeal diseases of children	2,388	2,345	- 43
Cancer	2,216	2,298	+ 82
Diphtheria	611	501	- 110
Typhoid fever	223	188	- 35
Scarlet fever	242	97	- 145
Puerperal	416	390	- 26
Whooping cough	299	259	- 40
Erysipelas	142	109	- 33
Acute rheumatism	181	141	- 40
Measles	240	205	- 35
Malarial fever	10	17	+ 7
Smallpox	1	0	- 1

CHART SHOWING TOTAL DEATHS FROM CERTAIN SPECIFIED DISEASES FOR THE PAST 37 YEARS, ARRANGED IN ORDER OF GREATEST FREQUENCY.



NUMBER OF LIVING BIRTHS AND DEATHS UNDER ONE YEAR OF AGE IN NEW JERSEY AND PERCENTAGE OF BIRTHS LIVING ONE YEAR TO TOTAL BIRTHS.

YEAR.	Births reported.	Deaths under 1 year of age.	Percentage of living births to total births.
1906	42,677	7,773	81.79
1907	44,651	7,732	82.68
1908	47,405	7,823	83.50
1909	47,508	7,658	83.88
1910	53,942	8,352	84.52
1911	58,133	7,642	86.85
1912	60,073	7,457	87.59
1913	61,432	7,542	87.72
1914	65,403	7,431	88.64
1915	66,476	7,077	89.35

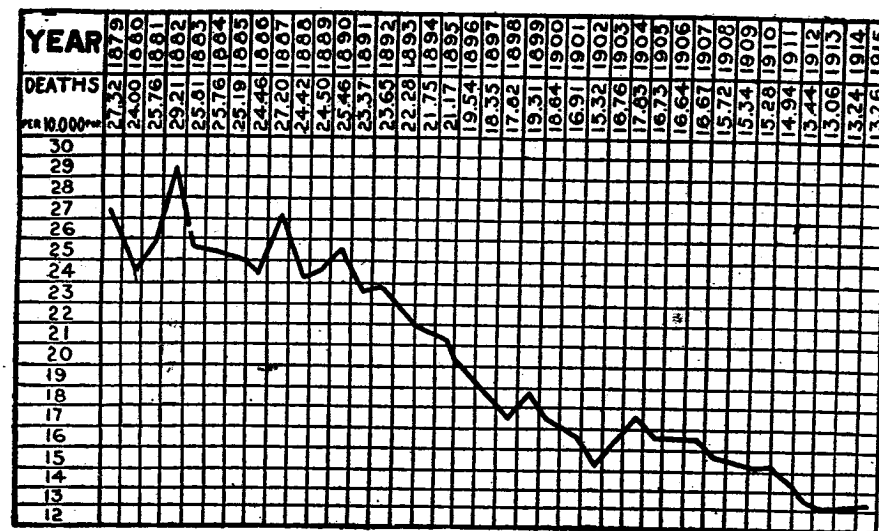
DEATHS FROM TUBERCULOSIS OF LUNGS BY AGE PERIODS FOR TEN YEARS.

	Under 1 year.	1 to 9.	10 to 19.	20 to 29.	30 to 39.	40 to 49.	50 to 59.	60 to 69.	70 to 79.	80 and over.	Not stated.	Totals.
1906	62	93	309	953	942	646	339	199	84	26	1	3,654
1907	56	61	256	978	967	682	407	229	90	29	1	3,751
1908	36	74	272	983	1,013	602	344	197	80	25	1	3,616
1909	53	68	258	917	976	657	348	220	86	22	1	3,608
1910	46	74	271	987	1,047	723	407	216	81	25	1	3,877
1911	43	76	294	1,012	1,077	661	423	211	82	11	1	3,907
1912	32	61	288	891	982	697	365	206	87	8	1	3,622
1913	24	59	268	928	953	719	411	197	55	8	1	3,622
1914	24	49	290	937	1,032	781	461	168	67	17	1	3,776
1915	26	54	289	942	1,025	799	404	189	77	12	1	3,817

AVERAGE ANNUAL DEATH-RATES, PER 10,000 POPULATION, FROM ALL CAUSES AND FROM TUBERCULOSIS OF LUNGS FOR 37 YEARS, COMPARED WITH RATE FOR 1915.

COUNTIES.	Average annual death-rate from all causes per 10,000 for 37 years.	Average annual death-rate from tuberculosis of lungs per 10,000 for 37 years.	Death-rate from all causes for year ending Dec. 31, 1915.	Death-rate from tuberculosis of lungs for year ending Dec. 31, 1915.
Atlantic County	165.5	15.34	140.1	11.62
Bergen County	99.8	19.64	119.6	8.34
Burlington County	154.7	16.71	155.3	9.03
Camden County	180.0	20.58	155.1	14.63
Cape May County	137.4	19.69	126.1	8.64
Cumberland County	139.4	19.20	146.1	9.96
Essex County	178.6	23.33	127.6	16.22
Gloucester County	143.5	16.13	144.2	13.68
Hudson County	196.1	23.16	140.1	15.57
Hunterdon County	137.7	14.13	144.2	8.16
Mercer County	172.2	21.07	151.4	16.97
Middlesex County	158.3	15.53	145.1	10.27
Monmouth County	152.5	15.42	154.9	8.19
Morris County	114.3	18.23	141.7	11.67
Ocean County	141.9	18.00	126.5	11.75
Passaic County	171.1	16.90	126.8	11.68
Salem County	144.0	17.42	166.0	11.53
Somerset County	140.7	14.19	134.2	6.92
Sussex County	127.0	13.78	134.2	7.10
Union County	135.2	14.88	130.2	13.13
Warren County	144.4	13.83	125.6	8.49
The State	167.5	19.33	137.0	13.26

DEATHS FROM TUBERCULOSIS OF LUNGS PER 10,000 POPULATION FOR 37 YEARS.



TOTAL DEATHS FROM PNEUMONIA, BY AGE PERIODS FOR THE YEAR 1915.

Under 1 month.	Under 1 year, (exclusive of under 1 month.)	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 to 89	90 and over.	Total.
66	369	350	57	41	53	79	108	125	157	170	163	192	178	423	338	121	20	3,015

Deaths Among Children—The death-rate for children under five years of age for 10,000 population for 1915 was 34.15, a decrease from the previous year, which was the lowest rate in the history of the Department. This constant lowering of the death-rate among children argues well for health work throughout the state. The campaigns for clean milk, free ice, visiting nurses, and other efforts intended to protect and prolong the life of infants constantly carried on by the State Department of Health and local boards of health is reflected in the figures referred to.

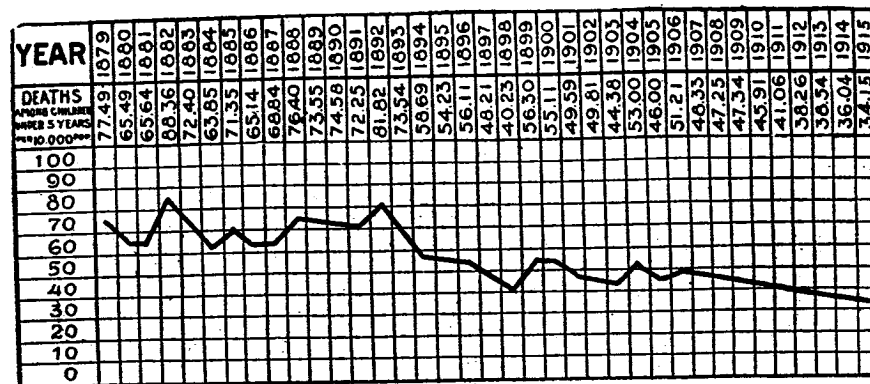
DEATHS FROM DIARRHOEAL DISEASES OF CHILDREN IN NEW JERSEY, 1915.

AGE PERIODS.	Deaths from diarrhoeal diseases.	Deaths from all causes among children under five years of age.
Under one month.....	153	2,862
Over one month and under one year.....	1,691	4,215
One to four years.....	501	2,751
Total.....	2,345	9,828

TOTAL AND INFANT DEATHS IN CERTAIN NEW JERSEY CITIES IN 1915.

NAME OF PLACE.	Total deaths.	Deaths under one year.	Percentage of deaths under one year to total deaths.	Deaths under one year per 10,000 population.
Atlantic City.....	798	100	12.53	17.96
Bayonne.....	838	198	23.63	29.36
Bloomfield.....	191	26	13.61	14.54
Bridgeton.....	240	30	12.50	20.88
Burlington.....	158	28	17.72	31.72
Camden.....	1,611	309	19.18	29.65
Dover.....	110	19	17.27	22.99
East Orange.....	393	39	9.92	9.50
Elizabeth.....	1,054	201	19.07	23.79
Englewood.....	183	40	21.86	33.79
Gloucester City.....	145	45	31.03	41.56
Hackensack.....	250	49	19.60	29.79
Harrison.....	212	51	24.06	30.85
Hoboken.....	1,102	160	14.52	21.04
Irvington.....	209	24	11.48	15.66
Jersey City.....	4,452	880	19.77	29.36
Kearny.....	278	37	13.55	16.30
Long Branch.....	244	30	12.30	19.22
Millville.....	172	30	17.44	22.34
Montclair.....	266	32	12.03	12.55
Morristown.....	185	28	15.14	21.29
Newark.....	5,318	932	17.53	23.28
New Brunswick.....	527	145	27.51	57.66
North Plainfield.....	84	15	17.86	22.40
Orange.....	477	79	16.56	24.32
Passaic City.....	887	297	33.48	43.15
Paterson.....	1,760	256	14.55	18.79
Perth Amboy.....	516	189	36.63	47.69
Phillipsburg.....	175	21	12.00	13.20
Plainfield.....	342	64	18.71	27.53
Rahway.....	117	18	15.38	17.88
Red Bank.....	123	27	21.95	32.06
Salem City.....	124	12	9.68	17.06
South Amboy.....	109	22	20.18	29.92
Summit.....	117	20	17.09	23.13
Town of Union.....	242	44	18.18	18.28
Trenton.....	1,656	369	22.28	33.83
West Hoboken.....	384	54	14.06	12.91
West New York.....	280	53	18.93	29.65
West Orange.....	113	18	15.93	13.73

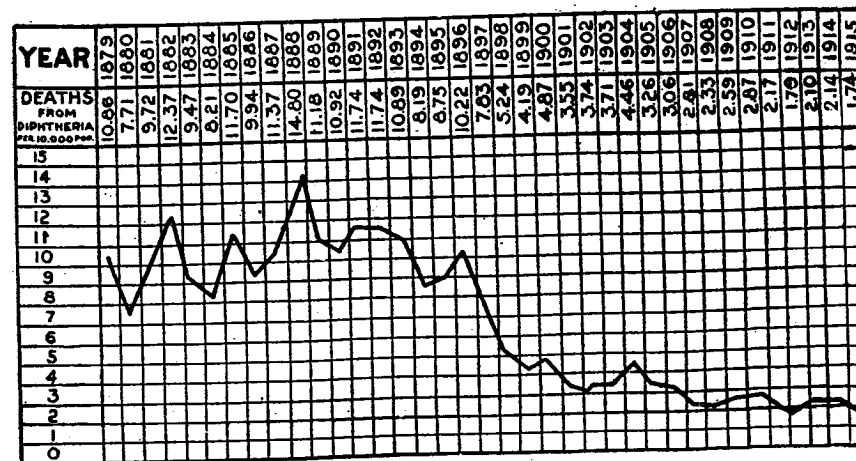
DEATHS UNDER FIVE YEARS OF AGE PER 10,000 POPULATION FOR 37 YEARS.



Diphtheria—The death-rate from diphtheria for the year 1915 was 1.74 per 10,000 inhabitants, the lowest rate shown for this disease in the history of the state. The prompt and scientific use of anti-toxin has of course been the means of reducing the rate to a minimum.

Deaths in New Jersey from diphtheria, with ages of decedents, for year ending December 31, 1915, were: under 1 month, 1; under 1 year, 33; 1 to 4, 305; 5 to 9, 114; 10 to 14, 24; 15 to 19, 7; 20 to 24, 2; 25 to 29, 3; 30 to 34, 4; 35 to 39, 3; 40 to 44, 1; 50 to 54, 1; 55 to 59, 1; 60 to 69, 2. Total, 501.

DEATHS FROM DIPHTHERIA PER 10,000 POPULATION FOR 37 YEARS.



Typhoid Fever—The number of deaths from typhoid fever in New Jersey for the year 1915 was 188, a decrease of 35 from the previous year. The death-rate per 10,000 inhabitants was .65, which is lower than any previous figure recorded for this disease.

Typhoid fever is a preventable disease, and there is no reason why, with scientific study and proper educational methods, a much lower death-rate from this disease could not be shown.

Deaths in New Jersey from typhoid fever by age periods for 1915, were: under 1 year, 2; 1 to 4, 6; 5 to 9, 2; 10 to 14, 9; 15 to 19, 18; 20 to 24, 34; 25 to 29, 34; 30 to 34, 14; 35 to 39, 16; 40 to 44, 19; 45 to 49, 7; 50 to 54, 9; 55 to 59, 7; 60 to 69, 8; 70 to 79, 1; 80 to 89, 2. Total, 188.

Deaths from typhoid fever in the counties of New Jersey for the year ending December 31, 1915, were: Atlantic, 5; Bergen, 7; Burlington, 8; Camden, 14; Cape May, 1; Cumberland, 6; Essex, 21; Gloucester, 6; Hudson, 39; Hunterdon, 2; Mercer, 12; Middlesex, 11; Monmouth, 17; Morris, 3; Ocean, 2; Passaic, 14; Salem, 3; Somerset, 1; Sussex, 1; Union, 10; Warren, 5.

COMPARATIVE DEATH-RATES FROM TYPHOID FEVER, PER 10,000 INHABITANTS, IN THE REGISTRATION AREA OF U. S. AND IN N. J. FOR 10 YEARS.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Averages for ten years.
Registration area of United States...	3.21	3.03	2.53	2.20	2.35	2.10	1.65	1.79	1.54	.....	.....
New Jersey	1.86	2.06	1.60	1.28	1.55	1.29	1.22	1.00	0.78	0.65	1.33

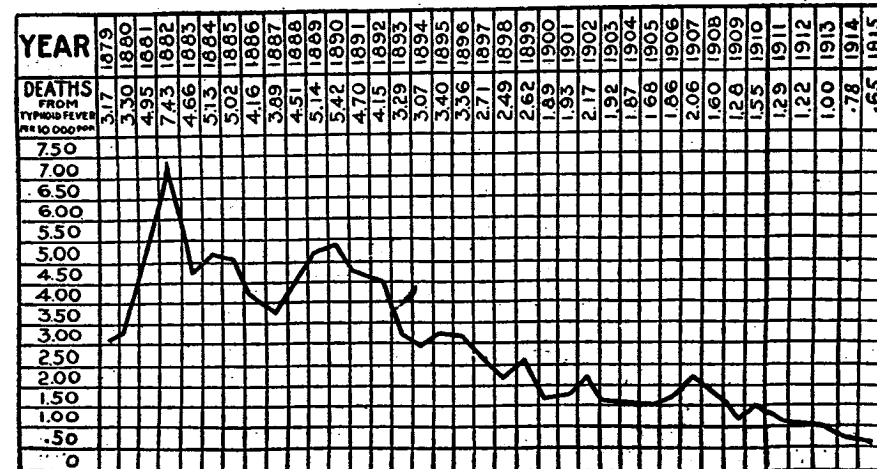
DEATHS FROM TYPHOID FEVER, BY COUNTIES, PER 10,000 POPULATION, FOR 10 YRS.

COUNTIES.	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Averages for ten years.
Atlantic County.....	1.60	2.30	1.62	1.13	1.53	2.15	1.96	1.14	1.47	0.59	1.55
Bergen County.....	1.15	1.29	0.71	0.85	1.16	0.69	0.72	1.00	0.36	0.41	0.83
Burlington County.....	3.18	4.41	4.04	2.00	3.31	1.23	3.36	1.59	1.28	1.13	2.56
Camden County.....	2.98	2.99	2.00	1.28	1.97	1.23	1.46	1.88	1.20	0.86	1.79
Cape May County.....	1.65	2.62	0.50	1.45	1.52	0.49	0.48	1.42	0.92	0.43	1.15
Cumberland County.....	1.15	2.29	1.71	1.32	1.99	1.43	1.06	0.88	1.39	1.04	1.43
Essex County.....	1.79	2.00	1.16	1.22	1.21	1.03	0.81	0.66	0.55	0.35	1.08
Gloucester County.....	3.14	1.41	1.39	1.09	1.61	3.43	2.60	1.28	1.01	1.49	1.85
Hudson County.....	1.71	1.58	1.11	0.78	0.93	0.97	0.72	0.83	0.76	0.63	1.00
Hunterdon County.....	1.80	2.44	0.62	0.62	1.49	0.80	1.73	2.37	0.30	0.60	1.23
Mercer County.....	3.26	6.69	4.43	3.10	4.14	3.89	3.26	1.86	1.45	0.85	3.29
Middlesex County.....	0.70	1.92	1.68	1.17	0.96	1.19	1.73	0.96	1.09	0.83	1.22
Monmouth County.....	2.47	1.99	2.41	2.16	2.22	2.91	2.87	1.62	1.50	1.68	2.18
Morris County.....	1.75	1.01	0.72	1.14	1.34	0.92	0.78	0.25	1.12	0.38	0.94
Ocean County.....	0.93	1.41	.....	0.92	3.28	1.40	1.40	2.32	0.46	0.90	1.30
Passaic County.....	1.33	1.19	1.06	0.99	1.16	0.76	0.65	0.63	0.52	0.57	0.89
Salem County.....	3.03	1.51	2.62	1.49	1.48	2.53	1.10	1.09	0.36	1.08	1.63
Somerset County.....	1.35	0.27	3.35	2.31	1.80	3.32	0.25	.....	0.24	0.24	1.21
Sussex County.....	1.71	1.29	3.94	1.32	1.87	0.73	0.36	.....	0.36	0.36	1.16
Union County.....	1.66	1.37	2.19	1.67	1.71	0.53	1.61	1.36	0.38	0.62	1.34
Warren County.....	1.95	1.43	0.71	1.18	2.78	0.69	0.68	0.89	0.66	1.09	1.21
The State.....	1.86	2.06	1.60	1.28	1.55	1.29	1.22	1.00	0.78	0.65	1.33

DEATHS FROM TYPHOID FEVER IN URBAN AND RURAL DISTRICTS FOR 1915.

	Aggregate population.	Deaths from typhoid fever.	Deaths from typhoid fever per 10,000 population.
State	2,877,532	188	0.65
Cities	2,043,627	131	0.64
Rural Districts	833,905	57	0.68

DEATHS FROM TYPHOID FEVER PER 10,000 POPULATION FOR 37 YEARS.



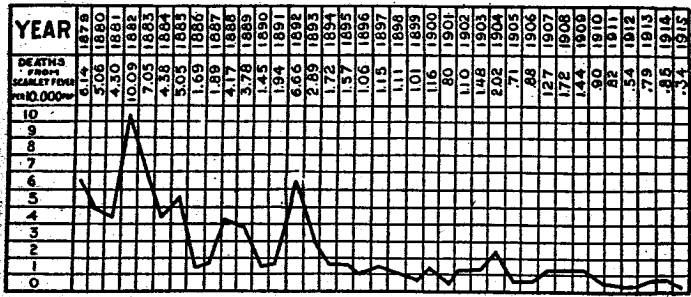
Whooping Cough—The number of deaths from whooping cough in New Jersey for the year 1915 was 259, a decrease of 40 from the previous year. The death-rate per 10,000 inhabitants for 1915 was .90 as compared with 1.05 for the previous year.

Deaths in New Jersey from whooping cough, with ages of decedents, for the year ending December 31, 1915, were: under 1 month, 10; under 1 year, 135; 1 to 4, 102; 5 to 9, 10; 10 to 14, 1; 15 to 19, 1. Total, 259.

Scarlet Fever—The total number of deaths from scarlet fever for the year 1915 was 97, a decrease of 145 from the previous year. The death-rate for 1915 was .34.

Deaths in New Jersey from scarlet fever, with age at death, for year ending December 31, 1915, were: under 1 year, 7; 1 to 4, 39; 5 to 9, 28; 10 to 14, 6; 15 to 19, 4; 20 to 24, 7; 25 to 29, 2; 30 to 34, 3; 45 to 49, 1. Total, 97.

DEATHS FROM SCARLET FEVER PER 10,000 POPULATION FOR 37 YEARS.



Measles—The number of deaths from measles for the year 1915 was 205, a decrease of 35 from the previous year. The death-rate from this disease per 10,000 for 1915 was .71.

Deaths in New Jersey from measles, with age at death, for the year ending December 31, 1915, were: under 1 month, 1; under 1 year, 58; 1 to 4, 130; 5 to 9, 13; 10 to 14, 1; 25 to 29, 1; 35 to 39, 1. Total, 205.

Malarial Fever—The number of deaths from malarial fever for the year ending December 31, 1915, was 17, and the death-rate per 10,000 inhabitants was .06, a figure slightly in excess of the rate for the two previous years.

Deaths in New Jersey from malarial fever for thirty-seven years have been, 1879, 268; 1880, 293; 1881, 431; 1882, 379; 1883, 290; 1884, 230; 1885, 209; 1886, 243; 1887, 217; 1888, 264; 1889, 203; 1890, 195; 1891, 130; 1892, 198; 1893, 148; 1894, 162; 1895, 144; 1896, 119; 1897, 132; 1898, 82; 1899, 96; 1900, 84; 1901, 50; 1902, 36; 1903, 40; 1904, 47; 1905, 21; 1906, 33; 1907, 29; 1908, 30; 1909, 25; 1910, 25; 1911, 25; 1912, 29; 1913, 11; 1914, 10; 1915, 17.

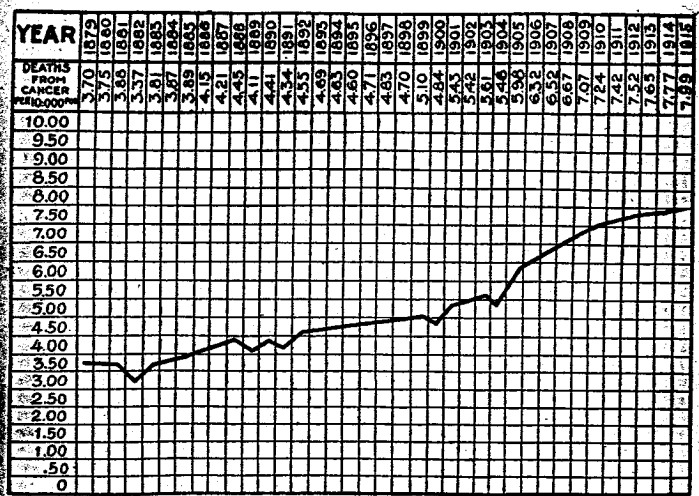
Smallpox—There were no deaths from smallpox in New Jersey during the past year, and no serious epidemics of this disease have occurred during the past decade. The State Department of Health continues to urge upon local boards of health and parents the necessity and importance of vaccination.

Cancer—The total number of deaths from cancer for the year 1915 was 2,298, an increase of 82 over the previous year. Deaths from cancer continue to show a slight increase.

TOTAL DEATHS FROM CANCER SHOWING ORGANS AFFECTED, FOR THE YEAR 1915.

CANCER.	Under 1 mo.	Under 1 year (exclusive of under 1 mo.).	1 to 4.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 69.	70 to 79.	80 to 89.	90 and over.	Age not stated.	Totals.
	Of the mouth			1																
Of the stomach and liver		1			1			2	19	25	46	80	117	118	276	164	39	4	1	894
Of the intestines and rectum					1	1	1	6	11	15	20	26	39	36	83	76	23			338
Of the female genital organs								2	16	30	43	55	49	46	66	34	6			349
Of the breast								1	4	13	20	29	32	34	53	35	15			238
Of the skin								1	1	1	1	1	1	1	14	16	18			59
Others	1	6	4	3	6	2	2	9	13	16	15	28	34	47	72	70	21	8	19	349
Total	2	6	5	5	8	4	20	66	100	148	228	284	292	586	408	125	10	1	2,298	

CHART SHOWING DEATHS FROM CANCER PER 10,000 POPULATION FOR 37 YEARS.



Suicide—The total number of deaths from suicide for the year 1915 was 496, a decrease of 8 from the previous year.

TOTAL DEATHS FROM SUICIDE, FOR THE YEAR 1915.

MODE OF DEATH.	AGE GROUPS													Totals.			
	1 to 4.	5 to 9.	10 to 14.	15 to 19.	20 to 24.	25 to 29.	30 to 34.	35 to 39.	40 to 44.	45 to 49.	50 to 54.	55 to 59.	60 to 69.		70 to 79.	80 to 89.	90 and over.	Not stated.
By poison.....	1	4	3	6	6	6	10	9	8	5	7	1	1	1	1	1	68
By asphyxia.....	3	3	3	12	13	13	10	10	16	15	24	10	1	1	1	1	134
By strangulation.....	1	1	1	3	3	3	3	3	3	3	3	3	3	3	3	3	83
By drowning.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	29
By firearms.....	2	3	17	11	11	15	11	13	19	11	15	13	4	4	1	1	141
By cutting instrument.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	25
By precipitation from height.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10
By crushing.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Others.....	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
Totals.....	3	14	34	33	47	43	55	57	48	55	71	29	5	2	2	496	

Bright's Disease—For the year ending December 31, 1915, 3,464 deaths occurred in New Jersey from Bright's disease, an increase of 403 over the previous year.

NEED FOR ADDITIONAL LEGISLATION.

The foundation of all good official public health work is good law. In the last analysis, the final responsibility for the efficiency of the work of this Department rests with the Legislature. If that body furnishes a sane and adequate system of laws, which can be quickly, efficiently and economically enforced, the Department can get the maximum results in public health protection with the minimum of labor and expense. Having this consideration in mind, a number of recommendations are made in this report, for additional legislation, mostly in the way of correcting defects in already existing laws, and of supplementing them, for the purpose of making them more directly applicable to the conditions which they aim to correct, and more readily and easily enforceable.

Chapter 288 of the Laws of 1915, which reorganized the State Department of Health, while in many respects a great advance over any previously existing public health legislation in this state, is unsatisfactory in some particulars. The law provides for a bi-partisan board of eight members, appointed by the Governor for terms of four years each, two each year. The law also provides for the appointment by the board of a director of health, who is required to be a man skilled in sanitary science, and practiced in the administration of public health problems. A reading of this act would seem to indicate that it was the intention of its framers that the director should exercise almost all, if not all, the executive functions of the health

department, leaving to the board those quasi-judicial and advisory functions which are more properly carried on by a group of men than by one. The members of the board are unpaid. They therefore cannot be expected to devote much time to their duties. The specific duties imposed upon the board by the act in question seem to be such as would merely require it to adopt policies and make rules and regulations for the director to carry out. Unfortunately, however, the drafters of the act provided that the board should "exercise all the powers and perform all the duties now exercised and performed by the Board of Health of the State of New Jersey," which this Department superseded; and upon this former board the Legislature had imposed a considerable number of duties of an executive character. This results in the board being required by law to do a number of things which might just as well be done by the director, such as the issuing of licenses, the prosecution of offenders for violation of the laws, and other executive acts of similar character. Its duties are, in fact, so burdensome, that the board has found it necessary to meet at least once in two weeks, and frequently oftener, and then to consume several hours at each meeting in passing upon matters of routine business, most of which could be handled just as satisfactorily by the director. It is recommended that the Legislature so amend this act that the board may delegate such of its executive powers as it deems proper to the director. This will relieve the board of a considerable amount of administrative detail, do away with the present division of responsibility between the board and the director, and fix more precisely and satisfactorily the duties of each.

Subdivision "d" of Section 4 of this act provides a method by which the State Department of Health is supposed to be able to compel local boards of health to do some of the things which the law requires of them. It provides that this Department shall call to the attention of local health authorities any failure on their part to enforce the laws or the State Sanitary Code, and afford them an opportunity to explain their failure. If it finds, after a hearing, that no good reason exists for this failure, it shall issue an order directing the local board of health to enforce the law, and if the local authorities fail to comply with this order, the Department itself shall take such action as may be necessary to perform the acts specified in the order, and collect the cost from the municipality in an action of debt. On the face of it, this sounds like a very satisfactory arrangement to make a negligent local board do its duty. As a matter of fact, however, its actual workings have not proven as satisfactory as was expected. The procedure is too complicated and time consuming to be effective. Such an action as is contemplated by subdivision "d" would usually be taken by the State Department in an emergency, when a local board of health had failed to do its duty, and the health of the citizens of a municipality was jeopardized because of this failure. It is obvious that such a condition as this requires prompt action. Emergencies frequently arise in public health

work where the difference between promptness and delay in carrying out restrictive measures may mean the difference between life and death.

It is therefore recommended that a more direct procedure be devised and put into effect, if this be possible. It would be well, in cases of emergency, if the State Department of Health were permitted by law to take charge of a local board of health, and require its members and employes to carry out its orders, and penalize them if they refused to do so.

Provision should also be made by which the State Department of Health for cause, and after a proper hearing, could remove a local health officer for incompetence or failure to perform his duty. During the last fiscal year a situation developed in one of the seashore cities of the state which brought to light the fact that the health officer of that city, a practicing physician, had so conducted himself as to merit the sternest condemnation, neglecting his obvious duties to the detriment of the health of the people of the city, yet the municipal authorities took no steps to remove him from office, and the State Department was powerless to do so. Power to remove a local health officer from office has been given to the State Departments of Health of Indiana and New York, and experience has shown in those states that its occasional exercise has had a most salutary effect on all the health officers of the state.

The act above referred to provides that the State Department of Health shall enact a State Sanitary Code, which shall have the force and effect of law, and supersede all local ordinances, rules and regulations, and it further provides that any person who violates any of the provisions of this Code shall be liable to a penalty, which is to be collected in an action of debt either by the State Department of Health or the local board of health, as the case may be. This is an unsatisfactory procedure, because the Act of 1887, which originally created the State Board of Health and local boards and which gives local boards the power to enact ordinances regarding various subjects, provides a different procedure for the collection of the penalty, a summary procedure, which is better adapted to the needs of both state and local boards of health than is an action of debt. This procedure broke down utterly when it was attempted to test it during the poliomyelitis outbreak, which occurred last summer. It will be realized how ineffective such a procedure is when one considers the impossibility of serving a summons on a person who enters the state without an identification certificate as required by Section 2 of the State Sanitary Code, and waiting five days for trial. The person may not have been a resident of the state, and would in all probability not be a resident of the municipality in which the offense was committed. To hold such a person five days for trial would be unjust and impracticable. What is needed in such cases, and in many others, is a procedure so summary in character that an offender against the law can be dealt with immediately.

A very confusing situation now exists. A local board of health endeavoring to enforce the State Sanitary Code must do so by an action of debt, whereas, if it endeavors to enforce its own ordinances it must do so by the procedure laid down in Chapter 68 of the Laws of 1887. It is recommended that Section 6 of Chapter 288 of the Laws of 1915 be so amended as to provide for the collection of the penalties set forth in that section by the procedure provided for in Section 18 of Chapter 68 of the Laws of 1887. It is also recommended in this connection that employes of the State Department of Health be vested with the power and authority of constables, in the same manner as employes of certain other state departments are given these powers.

In the endeavor to draft that portion of the Sanitary Code relating to the reporting of communicable and industrial diseases, it was quickly discovered that no very satisfactory uniform system could be devised for handling these reports because of certain difficulties in the law. In a number of our larger cities the registrar of vital statistics is not an official of the health department, and in second class cities there is a special act which makes the city clerk the custodian of these records. From a public health standpoint this is very unsatisfactory. It is most important that the records of vital statistics should be in the custody of the local health officer, who uses them constantly and who should supervise their collection and transmission to the State Department of Health. It is recommended that an act be passed transferring, in all cases, the vital statistics to the local health boards.

When Chapter 288 of the Laws of 1915 was under consideration by the Legislature, it was urged by representatives of this Department that a provision be included in it permitting the State Department of Health to divide the state into a certain number of sanitary districts, preferably five or six, and to provide for a district health officer who would be an employe of the State Department and would be stationed in each district. This is a plan which has worked very successfully in New York State, in Massachusetts, and in a modified form in a number of other states. Unfortunately, such a provision was not included in the act, and it is now again recommended. If a sufficient number of competent district health officers would be provided, a very great advance in the enforcement of sanitary regulations throughout the state could be brought about. These men would be a great help to the health officers in their district, and would be able to get in touch with them and aid them in the solution of their problems in a way which it is quite impossible for any representative of the State Department to do at the present time. It is also recommended that either this act, or Chapter 68 of the Laws of 1887, be amended, so as to require the services of a health officer in every sanitary district in the state. It is, of course, not feasible or desirable to provide a separate health officer for each township, but by combining those townships which are thinly settled into groups, each group having a

sufficient population to bear the financial burden of maintaining a suitably trained health officer, the rural sections of the state would be much better served than they are at present. Sanitary science has progressed to such an extent that it must be administered by persons trained in the art, and this is just as true of the rural districts as it is of the cities. In fact, our rural sanitation is lagging behind that of the cities, because trained health executives are not, as a rule, employed in rural sections. The authority already exists in law for several municipalities to combine and employ a health officer in common. This has been done in one or two instances in the state, and the practice should be encouraged.

In view of the fact that Chapter 288 of the Laws of 1915 requires the State Department of Health to publish a bulletin, which is sent to all physicians in the state, it is recommended that Section 6 of Chapter 68 of the Laws of 1887 be repealed. The section provides that a copy of the annual report of the Department must be sent to every physician in the state who makes an official report of births or deaths. Much of the information formerly contained in the annual report is now contained in the bulletin, and it is an unnecessary expenditure of money to send an edition of the annual report to physicians at large, inasmuch as the information reaches them much more promptly in the other publication.

During the past year the Department has been called upon to make quite an extensive investigation into the causes of a very objectionable fume nuisance coming from certain factories in Edgewater, Bergen county, which is immediately opposite the city of New York. This investigation required considerable time, but resulted in a great improvement in the conditions existing in the factories where these odors were produced. With the increasing industrial development in this state, particularly along chemical lines, there is danger of serious nuisances from fumes and odors in various sections of the state unless some arm of the state government be charged with the regulation and control of operations tending to produce such nuisances. As a rule they are matters which have but a remote connection with the public health, but they are so objectionable to persons living in their vicinity and are so generally believed harmful, that persons suffering from them continue to importune health departments for relief, and there is no way under the law by which any satisfactory relief can be given by these departments. It is therefore recommended that the Legislature empower some other arm of the state government to investigate and correct these nuisances, or, if it is determined that this should be the duty of the State Department of Health, then additional facilities should be provided this Department so that these investigations can be satisfactorily made, and sufficient law enacted so that when nuisances are discovered, the machinery is available to bring about their abatement.

During the last few years there has been a tendency on the part of the Legislature to impose upon the State Department of Health a

number of duties which properly should be performed by local boards. One of these is the inspection and licensing of factories where ice cream is manufactured. This is almost always a local business, the product is largely sold in the municipality in which it is made, the inspection requires no great skill and can be carried on satisfactorily by inspectors of local boards of health. It is recommended that Section 2 of Chapter 139 of the Laws of 1906, as amended in 1911, providing for the inspection and licensing of ice cream factories by this Department, be amended so as to eliminate that requirement. This is particularly desirable as these factories are also inspected and licensed by the Labor Department, and a serious overlapping of authority results. The importance of this supervision from a public health standpoint is not great, and it is believed that the local boards of health can carry on the inspection work just as satisfactorily as the State Department, and at a very much lessened cost. It is also recommended that the mandatory provisions of Section 6 of Chapter 78 of the Laws of 1914, requiring the inspection of dairies by the State Department of Health at the order of a local board of health, be repealed. As the law now stands, the State Department of Health must inspect all dairies furnishing milk to any locality, when the local board of health of that locality makes a request therefor. The State Department of Health is not provided with a sufficient number of inspectors to do this work, it is very doubtful whether it ever will be or ever should be with inspectors for this work. The law as it now stands requires the board to do something which it has not the facilities to do, and the fact that these inspections must be made when demanded by local boards of health prevents this Department from systematizing its work, and carrying it on to the best advantage.

Section 13 of the Cold Storage Law, passed by the Legislature of 1916, is defective because of a clerical error. This section should be so amended as to correct this error, as unless this is done the enforcement of the penalty section becomes inoperative.

The Department is now required by law to license slaughter-houses, cold storage warehouses, creameries, pasteurizing plants and ice cream factories. It is required, in the performance of its duties under the various food and drugs acts, to inspect a considerable number of food producing establishments of other kinds. The experience which it has had in enforcing the law in those places which are required to have a license shows that the provision requiring licenses is an exceedingly satisfactory one, and the revocation of a license, or threat to revoke, will in almost every instance bring about prompt compliance with the law. It is therefore recommended that an act be passed permitting the Department by resolution to require that licenses must be secured by the owner of any establishment in which foods are handled or produced, and that a reasonable fee may be fixed by the Department for issuing such licenses, and that all licenses shall issue annually. This would apply particularly to canning factories, oyster opening houses, meat packing establishments and other places

where perishable foods are prepared and handled. If such places were required to hold licenses, and the Department had the authority to revoke these licenses for cause, it would be very much easier and less costly to compel their operation in accordance with the provisions of law.

The provisions of the food law of this state are now enforced by an action of debt. While this is a satisfactory procedure in many cases, there are certain emergencies which arise where a prompt action would be very desirable. It is therefore recommended that an alternative procedure be provided, similar to the one provided for the enforcement of ordinances adopted by local boards of health in Chapter 68 of the Laws of 1887. If the Department could bring an action on a warrant, it would result in apprehending and punishing certain offenders against the food law who now escape because of the interval of time which must elapse between the serving of the summons and the appearance of the offender in court. This applies particularly to those irresponsible food vendors who travel about the country in wagons and who have no fixed place of business. These people usually sell adulterated and misbranded goods, and need watching all the time. They are very apt to disappear when they are caught by our inspectors selling goods in violation of the law. A procedure providing for their arrest on a warrant and prompt trial, would result in discouraging many of those persons who now fleece the public.

There are fifty-six public water supplies in this state which derive their water from streams, ponds or brooks. Surface water supplies of this kind, if they are to be kept safe, require much attention in order that their watersheds may be kept free from pollution. As the law now stands, it is the duty of the State Department of Health to inspect these watersheds, and to take the necessary steps to punish persons who pollute the water. There are something over 4,000 square miles of watersheds in this state from which water is used for potable purposes, and with its present force of six inspectors, who also have other work to do, the Department cannot hope to inspect these sheds with sufficient frequency to protect them from pollution. Some of them are thickly settled and require constant supervision. It is recommended, therefore, that Chapter 41 of the Laws of 1889 be so amended as to confer upon municipalities the power to control the watersheds from which they derive water for potable purposes, and when they discover that these sheds are being polluted, to take the necessary steps to punish the polluters. This will carry out the recommendations of the Economy and Efficiency Commission, transferring back to the municipalities the work which properly belongs to them.

It is also recommended that Chapter 215 of the Laws of 1910 be amended in such a manner as to permit local boards of health to prosecute persons found violating its provisions with respect to the pollution of water not used for water supplies. At present these actions can only be brought about by the State Department of Health, but local boards have very much better opportunities to detect such pollutions and they should have the power to prevent them.

One of the worst abuses to which the Department has to submit is the constant demand on the part of many citizens of the state for water analyses from private supplies. In some few instances there is real need for such an analysis, but in most of them the demand is made by the owner out of mere curiosity as to the quality of the water. This, in a great many instances, is a legitimate curiosity, but should not be satisfied at the expense of the state. It is therefore recommended that the State Department of Health be permitted to make analyses of private samples of water upon request, for a reasonable fee.

It is also recommended that a similar provision be made with respect to the analysis of samples of food and drugs. Many of our most reputable manufacturers and dealers wish to know whether or not the foods and drugs which they have for sale comply with the law. To require the Department to make analyses of this kind without charge would so add to the work of the laboratory that the cost of maintaining it would be increased many thousands of dollars each year. A provision which would enable the laboratory to make these analyses and to charge a reasonable fee for them, which fee would revert to the fund for the support of the laboratory, would enable all the legitimate demands to be met, without added cost to the state. Under the provisions of Chapter 49 of the Laws of 1916, the Department may now arrange with other state institutions to do analytical work for them, and to make the necessary charge, but this cannot now be done for outside parties. There is no reason why we should do this analytical work for nothing, but there is every reason why some of it should be done, if a reasonable charge for the same can be made.

It is recommended that Section 7 of the so-called Sanitary act, which provides that no person afflicted with any contagious disease shall work in any food-producing establishment, be amended. This provision as it stands is somewhat too broad, prohibiting the employment of people who can handle foods with safety. For example, under the provisions of this section a person suffering from malaria may not work in a canning factory, and yet there is absolutely no danger of transmitting the disease to the foodstuffs under these conditions. The act should be so amended as to provide that no person who is affected with any contagious, infectious or other disease, which may render such employment detrimental to the public interest, may work in any food-producing establishment, and should also provide that periodic examinations of such persons may be required for the purpose of ascertaining whether or not they are affected with such diseases, and failure to submit to such examination should debar them from working.

Much difficulty has been experienced ever since the tuberculosis exhibit has been in use, in transporting from place to place the booth which is used to contain the moving picture machine. Chapter 197 of the Laws of 1912 requires that booths which are used to hold moving picture machines must be constructed of angle iron frames and covered with asbestos boards. This Department has endeavored to

comply as closely as possible with the spirit of this law, although in a booth which is to be taken apart and set up again it is absolutely impossible to comply with the letter. In consequence, the booth which we now have weighs more than half a ton, and is exceedingly difficult and cumbersome to transport, and, being constructed of asbestos boards, it suffers severely in handling. A supplement to this act was passed in 1916 (Chapter 276 of the Laws of 1916), which provides that a somewhat lighter and more portable booth may be used for temporary service, for a period of not over three consecutive nights, in such places as are ordinarily used for public entertainment. The booth described in this supplement will give ample protection against fire, is much lighter, more portable and more durable than the booth described by the original act, but under the terms of the supplement, it will be impossible for this Department to use such a booth, because it frequently stays in one place for more than three nights. It is recommended, therefore, that this act be amended, extending the time when such a booth may be used to a period of two weeks.

Observations made by employes of the Department connected with the exhibit all over the state, show that this law is being habitually violated by persons giving moving picture exhibitions. A practice which is well nigh universal is to use an iron pipe frame covered with asbestos cloth as a booth, and in many instances no booth at all is used, the machine being used in the open without any covering whatsoever. This Department has conscientiously endeavored to comply with the requirements of law as closely as possible, even though these requirements seem at times to be unreasonable. It is earnestly recommended that such a change in the legislation regulating the construction of moving picture booths be made as to enable portable exhibitions to be given, without requiring the Department to go to the expense of carrying around and rebuilding from time to time, the moving picture booth which we now have.

If it is possible to do so, arrangements should be made under existing legislation, and if that cannot be done, legislation should be provided, so that the Department may be enabled to advance money for certain charges which now have to be paid by its employes out of their own funds. Much delay occurs in reimbursing these employes, and they are sometimes put to very serious inconvenience because of this. It hardly seems reasonable to require an employe of the state to advance money to the extent of several times his salary, as is frequently the case in connection with the employes engaged in exhibition work throughout the state, and then require him to wait long periods of time before this money is returned to him. A considerable number of the employes of the Department are of necessity required each month to contract expenditures in excess of the amount they receive for salary. Most of these men are on small salaries, and it is a hardship to require them to provide a working capital for the use of the state.

Investigations which have been made during the past year have indicated that there is being sold in the state a considerable number of preparations containing morphine and alcohol. These preparations

are recommended to be used for babies and young children. The labels on these preparations are cleverly worded to evade the misbranding sections of the Food and Drugs act. Preparations of this character are being sold in this state, particularly in those sections which are inhabited by persons of foreign birth. The dangers to children which are incurred by the use of preparations containing opium and alcohol are well known, and it is therefore suggested that legislation be secured prohibiting the sale of all patent and proprietary preparations which contain any chloral hydrate, opium, morphine, heroin, codeine, or any salts, derivatives or compounds of any of the above substances, the labels of which preparations indicate that they are to be used for the treatment of babies or young children.

Report of the Bureau of Medical Supervision.

A. CLARK HUNT, M.D., CHIEF.

With the reorganization of the State Department of Health, the Bureau of Medical Supervision was created. One of the purposes of the Bureau was to furnish assistance in making diagnoses of communicable diseases and thus aid boards of health in determining whether quarantine or other protective measures should be adopted and, as far as possible, eliminate errors of diagnosis in doubtful cases. The necessity for this assistance was very apparent during the past year when the extensive epidemic of acute poliomyelitis prevailed in nearly every portion of the state.

The disease was one with which few practitioners had had any extensive experience, and, owing to the extreme difficulty in making diagnoses in some of the more obscure types, the services of the diagnostician of the Bureau were frequently in demand during July, August, September and October. Examinations were made of cases in Newark, in company with Dr. Thomas Gray, diagnostician of the Newark Board of Health, and also in Brooklyn with the diagnostician of the city department of health. Through the courtesy of the city department of health and the Willard Parker Hospital authorities, the wards of the hospital were thrown open to physicians and advantage was taken of this opportunity for a clinical study of almost every type of the disease.

In the larger cities of the state, where physicians specializing in nervous diseases and diseases of children were located, their services were available. In the smaller communities, however, the general practitioner, if there was any doubt of diagnosis of any suspicious cases, made a request that the State Department of Health furnish a diagnostician. It was noticeable that while during the first few weeks of the epidemic physicians asked for assistance in cases in which paralysis was apparent, later on requests were only made when the symptoms were more obscure.

As the quarantine restrictions of cases of poliomyelitis were of necessity extremely rigid and entailed somewhat of a hardship and sometimes financial loss, parents of afflicted children would doubt the diagnosis of the attending physician, especially when the paralysis were absent altogether or slight in character. In such cases physicians would be unwilling to take any responsibility or report the cases without the concurrence of other physicians in the diagnosis.

During the epidemic the Bureau of Local Health Administration made request for diagnosis in 39 cases. Aside from the requests physicians asked for diagnostic assistance in 25 cases. In addition to the diagnosis of cases of infantile paralysis the Bureau has been called upon in six instances to determine whether persons were afflicted with smallpox.

Prior to the creation of the Bureau of Local Health Administration, two epidemics occurring in state institutions were under the supervision of the Chief of the Bureau of Medical Supervision. On August 18th, 1915, a case of typhoid fever was reported at the State Hospital, Trenton, and from that date to October 10th, 19 cases developed, with five deaths. As the cases appeared in several wards it was decided to immediately isolate all patients. Temperatures were taken twice daily and all the patients in the hospital subjected to Widal tests. Between the date of onset of the disease and November 1st, every patient, together with all attendants and employes, received prophylactic immunization. The result of the inquiry into the origin of cases proved that in all but two instances there was evidence of direct contact with a carrier in one of the wards. The prompt action taken by the hospital authorities, the discovery of the causative carrier case within a few days and the measures which were adopted undoubtedly prevented an extensive epidemic.

The other epidemic occurred in the School for Deaf and Mutes which is located in Trenton. The institution had at the time of the outbreak 195 pupils and 23 employes. The children ate in a common dining hall and attended chapel exercises each day. The possibilities for contact infection were greatly increased owing to the intimate relation of pupils in the school rooms and workshops. In November, when the cases occurred, the hospital connected with the institution was being used for the isolation of cases of measles, and therefore the upper floor of the main building was set aside for the isolation of diphtheria cases and carriers. Later all the carriers were removed to the main hospital. Three clinical cases were reported on November 6th and 8th, and one other case on November 10th. In each instance these persons were removed to the city contagious disease hospital. The examination of all pupils and employes in the institution was conducted systematically and during the epidemic 51 carriers were discovered and isolated. Cultures from the noses and throats were taken at regular intervals and no carrier case was released from quarantine until four negative specimens had been examined at the State Laboratory of Hygiene. Nearly all of the cases were returned to the general circulation of the school in the early part of December, although one pupil was delayed until December 24th, and another until January 5th, 1916. The removal of the clinical cases to the city hospital and the isolation of the carrier cases limited the epidemic to four clinical cases.

During the year a number of special inquiries and reports have been made. These include reports on the location of cemeteries and tuber-

culosis hospitals, investigating factory nuisances, reporting on applications for permission to conduct animal experimentation in hospitals and inquiries of a similar character.

At the request of the director, several meetings of the Mosquito Commissions in Essex and Atlantic counties were attended and also meetings of County Medical Societies.

The future work of the Bureau will include attendance upon as many meetings of county societies as possible, together with the continuance of the special work under the direction of the Department.

Another field of inquiry which should receive attention relates to the tuberculosis hospitals of the state and an inquiry as to the actual work being accomplished by local boards of health in dealing with the cases of this disease which are reported by local physicians.

Report of the Bureau of Local Health Administration.

D. C. BOWEN, CHIEF.

In the plan of organization of the State Department of Health, the Bureau of Local Health Administration was created and charged with the following duties:

"1. To make field investigations and inspections concerning communicable diseases. 2. To co-operate with local health authorities to assist them in solving their problems and in the enforcement of the State Sanitary Code. 3. To engage in studies of sanitary conditions throughout the State with the object of advising the Department as to how conditions may be improved. 4. To take charge of epidemics. It was provided in the plan that the Bureau of Medical Supervision should render such assistance in this work as might be found necessary."

In considering this report, two important facts should be borne in mind. First, the personnel of the Bureau, when it began its activities on November 1st, 1915, consisted of a chief, two inspectors and one stenographer. Six months later one additional inspector was added to the force. Second, several duties have been assigned to the Bureau to the fulfillment of any one of which it would be possible to advantageously devote practically the entire time of so limited a force, considering that the state has a population of about 3,000,000, and is divided into 495 sanitary districts, in many of which no executive officer is provided to enforce sanitary laws and regulations.

Field Investigations and Inspections Concerning Communicable Diseases—Field investigations have been made in 33 separate outbreaks of communicable diseases. These have occurred in 32 different municipalities, and are in addition to outbreaks of communicable diseases that have been investigated and supervised by this Bureau on 44 dairy premises. These are also exclusive of investigations and studies of cases and isolated outbreaks of poliomyelitis.

Epidemics and Extensive Outbreaks of Communicable Diseases of Which the Bureau Has Taken Charge—Only in epidemics or outbreaks of considerable size that have occurred in municipalities in which the local health officials were not equipped to successfully cope with the situation has the Bureau of Local Health Administration assumed control of the work. But three outbreaks of this character occurred during the past year. One, of typhoid fever, apparently due to infected milk produced in Clinton township, Hunterdon

county; one of typhoid fever in Keyport, the infection being transmitted through milk distributed by a dealer residing in Raritan township, Monmouth county, and one of typhoid fever in South River borough, also due to an infected milk supply. A detailed report has been made of each outbreak and may be consulted by reference to the files.

Other outbreaks of considerable extent, in which the Bureau assisted local officials in the investigation and control, were: Diphtheria—Hammonton town, Atlantic county; Woodland township, Burlington county, and Franklin borough, Sussex county. Scarlet fever—Upper township, Cape May county; Ramsey and Westwood boroughs, Bergen county. Typhoid fever—City of Pleasantville, Atlantic county; Northampton township, Burlington county; Gloucester City, Camden county; Lebanon township, Hunterdon county; Englishtown and Red Bank boroughs and Manalapan township, Monmouth county; Beach Haven and Seaside Park boroughs, Ocean county, and Pilesgrove township, Salem county. In all, field investigations were made in 34 outbreaks of communicable diseases, in addition to those occurring on dairy premises and exclusive of investigations in connection with the epidemic of poliomyelitis. A number of these outbreaks were quite extensive and resulted in widespread infection. A separate report has been made in each outbreak. These reports are on file and several of them contain interesting studies.

Communicable Diseases on Dairy Premises—Chapter 380 of the Laws of 1911 requires that cases of diphtheria, scarlet fever, typhoid fever, dysentery and tuberculosis occurring on premises upon which milk or milk products are produced for sale, or any of these diseases occurring in a household in which a dairy worker resides, shall be reported directly to the State Department of Health. While the law does not make it mandatory on the Department to enforce measures to prevent the transmission of infection through milk produced on such premises, ample discretionary authority is found in the statute for such action. This authority is also vested in local boards of health and, theoretically, the work should be done by them since it could be much more economically performed. However, there is a serious practical objection to this, in that most dairies are located in rural districts in many of which there is no one associated with local health administration who is sufficiently familiar with the details of this kind of work to enforce measures that would give reasonable assurance against the spread of infection. In fact, there is usually no person in the employ of local boards of health in rural districts charged with the duty of instituting precautionary measures against the spread of communicable diseases, or who can supervise these measures after they have been outlined by the State Department of Health. This makes it necessary for our inspectors to make many return trips to dairy premises before the withdrawal of an order prohibiting the sale of milk or of a modified quarantine.

With the most rigid and intelligent supervision which it is possible to maintain over dairies, under present conditions, outbreaks of communicable diseases have occasionally occurred, and doubtless will continue to occur, from time to time, from the use of milk infected at the place of production. These outbreaks would be far more numerous were it not for the prompt and effective action that is taken when such diseases are reported on dairy premises. It would therefore seem wise that the State Department of Health should continue to supervise this work until such time as a competent health officer shall be provided in each rural district where milk is produced for sale or distribution.

Only certain diseases in which the infective agent is known to be transmitted through milk are required to be reported directly to the State Department of Health when they occur on dairy premises. Hence restrictive measures against the spread of other communicable diseases is left to the supervision of the local boards.

During the past fiscal year, the Bureau has exercised supervision over the method of handling milk on 44 premises upon which cases of communicable diseases occurred. These dairies produced 4,545 quarts of milk per day. It was deemed necessary to temporarily prohibit the sale of dairy products on but eleven of these premises. On four others, where the daily production was small, the dealer chose to discontinue the sale of his product during the continuance of the disease on the premises, rather than observe the required precautionary measures. Complete reports have been made showing the action taken on each premises. These may be seen by reference to the office files. A brief summary of this work is shown in the following table:

NUMBER AND LOCATION OF PREMISES ON WHICH MILK WAS PRODUCED OR HANDLED AND ON WHICH CONTAGIOUS DISEASES WERE REPORTED AND INVESTIGATED DURING THE YEAR ENDING OCTOBER 31, 1916.

LOCATION.		COUNTY.	Diphtheria.	Scarlet fever.	Typhoid fever.	Tuberculosis.	Amount of milk produced on premises daily.	PLACE TO WHICH MILK WAS SHIPPED.	ACTION TAKEN TO PREVENT SPREAD OF INFECTION.
MUNICIPALITY.									
Hohokus Twp.	Bergen	1				460	Suffern, N. Y.	Isolation.	
Florence Twp.	Burlington		1			120	Roebing	Isolation.	
Southampton Twp.	Burlington			1		20	Camden	Sale prohibited.	
Springfield Twp.	Burlington			1		40	Camden	Isolation.	
Delaware Twp.	Camden			1		20	Camden	Sale prohibited.	
Deerfield Twp.	Cumberland			1		60	Audubon	Isolation.	
Deerfield Twp.	Cumberland			1		80	Bridgeton	Isolation.	
Deerfield Twp.	Cumberland			1		60	Daretown	Isolation.	
Doverfield Twp.	Cumberland			1		140	Bridgeton	Isolation.	
Millburn Twp.	Essex		6			200	Bridgeton	Patient removed.	
Millburn Twp.	Essex		2			160	Newark	Patient removed.	
West Caldwell Bor.	Essex			1		100	Newark	Sale prohibited.	
Deerford Twp.	Gloucester		1			500	Newark	Isolation.	
Mantra Twp.	Gloucester		1			None	Wenonah	Business removed from premises.	
Washington Twp.	Gloucester			1		90	Wenonah	Isolation.	
Clinton Twp.	Gloucester			1		40	Blackwood	Isolation.	
Clinton Twp.	Hunterdon			1		110	Clinton	Patient removed.	
Karlan Twp.	Hunterdon		5			65	Lebanon	Isolation.	
Karlan Twp.	Hunterdon		1			40	Ferth Amboy	Isolation.	
Karlan Twp.	Hunterdon		1			50	Ferth Amboy	Sale prohibited.	
Karlan Twp.	Hunterdon		1			40	Newark	Isolation.	
Readington Twp.	Hunterdon			1		50	Three Bridges	Sale prohibited.	
Readington Twp.	Hunterdon			1		500	North Branch	Isolation.	
Readington Twp.	Hunterdon			1		6	Readington	Sale prohibited by local board.	
West Amwell Twp.	Hunterdon		2			75	Rhngoes	Business removed from premises.	
West Amwell Twp.	Hunterdon		1			20	Rhngoes	Sale prohibited.	
East Windsor Twp.	Mercer		1			60	Hightstown	Sale prohibited by local board.	
Piscataway Twp.	Mercer		1			45	Trenton Junction	Patient removed.	
Piscataway Twp.	Middlesex		1			40	Duncellen	Isolation.	
Piscataway Twp.	Middlesex		1			120	Duncellen	Patient removed.	
South Brunswick Twp.	Middlesex		2			None	South River	Business removed from premises.	
Upper Freehold Twp.	Monmouth		1			100	Asbury Park	Isolation.	
Howell Twp.	Monmouth		1			30	Maxin	Sale prohibited.	
West Paterson Bor.	Passaic			1		30	West Paterson	Isolation.	
Mannington Twp.	Salem			1		80	Salem	Isolation.	
Pilesgrove Twp.	Salem			1		120	Woodstown	Isolation and condensing of milk.	
Upper Pittsgrove Twp.	Salem			1		20	Philadelphia, Pa.	Isolation.	
Branchburg Twp.	Somerset			1		14	North Branch	Isolation.	
Branchburg Twp.	Somerset			1		80	North Branch	Isolation.	
Branchburg Twp.	Somerset			1		50	Fagtown	Sale prohibited.	
Bridgewater Twp.	Somerset			1		30	Bound Brook	Isolation.	
Stillwater Twp.	Sussex			2		40	Branchville	Sale prohibited.	
Fanwood Twp.	Union		2			60	Westfield	Patient removed.	
Union Twp.	Union		1			500	Irvington and Newark.	Business removed from premises.	
Greenwich Twp.	Warren		1			100	Easton, Pa.	Business removed from premises.	
Total, 44 premises.			22	17	17	4	4,545	qts.	

CO-OPERATION WITH LOCAL BOARDS OF HEALTH.

Meetings—Representatives of the Bureau of Local Health Administration have attended 25 meetings of local boards of health during the year. Six of these were special meetings called to discuss some specific matter in which the local board desired the advice and co-operation of the State Department of Health in solving some local problem. The rest were regular meetings at which a representative of the Bureau was present by request of the local officials, or to bring some particular matter before the board that related to the enforcement of law or sanitary regulations within that municipality.

Conference with Local Health Officials—One hundred fourteen conferences were held with local health officials at various places throughout the state during the year. These were in addition to conferences with local officials who came to the office to consult on some particular phase of public health work claiming attention in the municipality which they represented.

These meetings and conferences have proved helpful in many ways, and public health work could be wonderfully stimulated throughout the state were it possible for state inspectors to meet local administrative officers in the field more frequently. This would not only afford such officers opportunity to obtain information and advice from state officials but would likewise afford an opportunity for the Department to keep informed concerning local sanitary conditions throughout the state.

Owing to the limited number of inspectors available for field service, it has been necessary to handle many subjects by correspondence in so far as this was possible. While this has not been entirely satisfactory in every case it has been possible to accomplish a large amount of work with a saving of considerable time and expense in travel.

Enforcement of the State Sanitary Code—Only two sections of the State Sanitary Code have become effective; Chapter 1, relating to nuisances, and Chapter 2, adopted as an emergency measure as a means of restricting the spread of anterior poliomyelitis. Chapter 2 was repealed when the epidemic subsided.

The nuisance section of the code has been in force since June 1st, 1916, and, to some extent, has been found useful to local health officials in districts that have no ordinances under which action could be taken for the abatement of nuisances. It has also served as one of the necessary links in the somewhat complicated and wholly unsatisfactory legal procedure provided for in Chapter 288, of the Laws of 1915, for the Director to serve an order upon local health officials requiring them to abate nuisances when they have failed to act of their own volition. Thus far, no suit has been instituted by the State Department of Health for the collection of the penalty provided by the statute for a violation of any provision of the State Sanitary Code, and, in so far as I am aware, no suit has been brought under the

code by a local board of health, although several have written for instructions as to how they should proceed.

Studies of Sanitary Conditions Throughout the State—Practically nothing has been attempted through this Bureau in the way of a state-wide health protective survey for the purpose of procuring additional data to serve as a basis for recommendations to the Department as to how existing sanitary conditions might be improved. The necessity of such a survey is apparent. It is fundamental in planning and conducting the work of this Bureau, as well as other bureaus in the Department, if their activities are to be concentrated along lines of work that will result in giving the greatest amount of public health protection for the money expended. It is also necessary in order to point out intelligently wherein work now being pursued in one direction might be wholly or in part advantageously diverted to other lines of activities. It is extremely doubtful if any appreciable work of this character can be accomplished through the Bureau of Local Health Administration during the coming year, unless it is supplied with additional help. Practically the entire time of the present force is now taken up with detail work, and with emergency cases which arise and that must be given precedence over other matters.

The work of the Bureau has been gradually but steadily increasing in volume during the year and it will doubtless be considerably augmented following the final adoption of the chapter of the State Sanitary Code that will deal with communicable diseases.

Complete surveys have been made of some municipalities, and of certain sections of others. This work has resulted in marked improvement in some instances, particularly in the municipalities in which a fairly competent health organization is in existence. In other cases the work has clearly demonstrated serious weaknesses in the existing law, notably that part of the law which makes it the mandatory duty of the State Department of Health to enforce the law and the State Sanitary Code where local officials fail to do so. The results of the work done in Penns Grove admirably illustrated this point.

Sanitary Surveys and Inspections—Exclusive of communicable diseases, special field investigations have been made as follows: Sanitary surveys; Perth Amboy city, Keyport borough. Special sanitary surveys; Penns Grove, Roselle, Allendale, Butler and Flemington boroughs, Linden, Pompton and Union townships. Inspection of school buildings; Ridgfield and Ramsey boroughs. Inspection of camps; Brick and Wall townships. Inspection of industrial plant; Rutherford borough and Roxbury township. Inspection of lock-up cells; Nutley town. Insanitary housing conditions; Hohokus township and Gloucester city. Public refuse dump; Phillipsburg town. Garbage disposal; Ocean township. Disposal of house drainage; Beverly city, North Arlington borough, two. Defective plumbing; Hasbrouck Heights borough. Insanitary privies; Wall township. Application to establish private tuberculosis sanatorium; Englewood

city. Manufacture and distribution of certain medicines; Linden borough.

Assistance Rendered the Bureau of Local Health Administration by the Bureau of Medical Supervision—At the request of this Bureau the Chief of the Bureau of Medical Supervision has made clinical diagnoses in 47 cases of communicable diseases during the year. Of these, 39 were cases or suspected cases of poliomyelitis, seven were cases of varicella and one typhoid fever. Thirteen case history blanks were filled out when making diagnoses in 32 of the 39 cases of poliomyelitis.

POLIOMYELITIS.

(Infantile Paralysis.)

By far the most extensive and widespread epidemic of poliomyelitis that New Jersey and adjoining states have ever experienced occurred during the present year. From July 1st to October 31st, 1916, 3,973 cases were reported to the State Department of Health, equivalent to 134.76 cases per 100,000 population; the highest case incidence that has thus far occurred in any state involved in this epidemic.

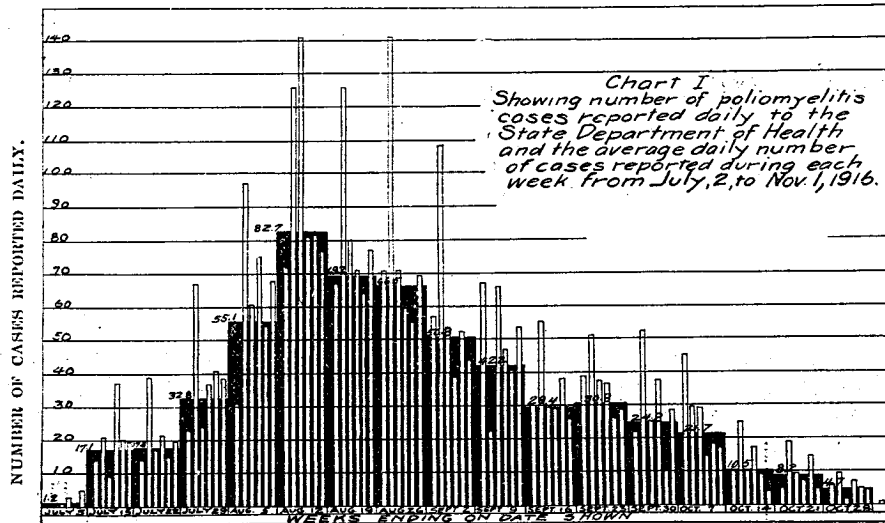
The infection was apparently first introduced into New Jersey from New York City, where the disease appeared in epidemic form prior to the occurrence of any unusual number of cases in this state.

As cases became more numerous and widespread in New York City, infected centres appeared and began to multiply in New Jersey, the disease apparently spreading from foci of infection within as well as without the state. Up to November 1st, cases had been reported from each of the 21 counties in the state and from 334 of the 495 sanitary districts in these counties.

It is quite natural that the disease should have exacted a heavy toll in New Jersey, as approximately one-third of the permanent population of the state reside in municipalities within 25 miles of New York City, and a large number of the persons residing in these municipalities commute daily to that city. It is also true that a large number of persons residing in towns in New Jersey as far distant as fifty miles are daily commuters to New York City. It must be borne in mind that the outbreak occurred in the summer, when the resorts in New Jersey normally receive their greatest influx from New York and other cities, and that as the disease became more prevalent in New York parents became alarmed and hastened from the city with their children, many taking up a temporary residence in the resorts and in the rural districts of New Jersey. It was principally in these places that the disease first appeared in this state. Furthermore, an appreciable number of cases that were recorded in New Jersey occurred in children who were residents of other states, and these cases were included in the New Jersey morbidity records

and were figured as occurring among the resident population of the state. To arrive at a correct incidence of cases, the transient summer population should have been taken into account.

A complete report of the epidemic cannot be given at this early date, as the data thus far accumulated has not yet been fully tabulated and studied. This report, therefore, will deal more with the administrative part of the work conducted by the State Department of Health, through the Bureau of Local Health Administration, for the restriction of the spread of the disease, leaving the epidemiological study to be presented in a final report which will be prepared and submitted later.



Supervision Over Travel—When the unusual prevalence of cases of poliomyelitis in New York City began to attract public attention, and before the disease had appeared in more than a few localities in New Jersey, many local boards of health, particularly those in Bergen and Hudson counties, instituted measures (sometimes ill-advised) to prevent the introduction of the disease into the municipalities under their jurisdiction. These measures consisted chiefly in regulations designed to restrict the travel of children by requiring health or identification certificates, each individual board making and enforcing independent requirements.

Regulations frequently differed in adjoining municipalities, both in respect to their requirements and to the manner of their enforcement. This resulted in confusion and unnecessary annoyance to the traveling public.

Restriction over the travel of children as a means of preventing the spread of the disease from one state or municipality to another was probably suggested by the measures instituted by the United States Public Health Service in establishing such restrictions in interstate travel between New York City and New Jersey in the early stages of the epidemic in that city. Later the Commission of Health of Pennsylvania also promulgated and enforced restrictions on interstate travel of children between Pennsylvania and adjoining states.

As foci of infection began to appear in various parts of New Jersey, regulations instituted by local boards of health to restrict the spread of the disease become more conflicting and were more rigidly enforced. As a result, the State Department of Health was besieged with complaints from persons who considered that their rights were being unduly interfered with by perniciously active health officials, while still other persons were insistent that the local officials were too lax in their efforts to protect the community against the invasion of poliomyelitis. Numerous requests were received by the Department from local health officials for instructions and advice concerning their authority to enforce hastily formulated rules and as to what they should do under various conditions that arose as the result of the outbreak. On July 11th the Bureau of Local Health Administration was charged with directing the work carried on by the Department for the restriction of the spread of poliomyelitis.

Early in the outbreak a circular was issued that contained information regarding the manner in which it is believed the infection of poliomyelitis is spread, and in which specific suggestions and recommendations were made to local officials concerning the preventive measures to be applied against the spread of the disease.

As a further means of bringing about a more uniform method of procedure by local boards of health throughout the state, and to provide regulations that might be enforced in municipalities that were without local ordinances for the control of communicable diseases, Chapter 2 of the State Sanitary Code was adopted and became effective on August 15th, 1916. This section of the code dealt exclusively with interstate and intrastate travel of children under 16 years of age, and provided for the investigation of cases of infantile paralysis by local health officials. These regulations, being a part of the State Sanitary Code, were enforceable by local boards of health as well as by the State Department of Health.

Administrative Work performed by the State Department of Health in enforcing the regulations contained in Chapter 2 of the State Sanitary Code was restricted to interstate travel. The enforcement of the regulations relating to intrastate travel was left to local boards of health, the State Department of Health co-operating with them, through the Bureau of Local Health Administration, in the enforcement of the regulations of the code and in other ways to restrict the spread of the disease. Printed matter was distributed, advice was furnished in respect to the enforcement of the law, local ordinances

and the State Sanitary Code, inspectors were sent to advise and consult with local officials, diagnosticians were furnished upon requests from local officials or from private physicians, blank forms for use in issuing the identification certificates and for recording the history of cases required by the state regulations were furnished free to local boards of health, and this office was in constant touch with the situation throughout the state.

Supervision over interstate travel was begun on August 15th and continued until and including October 3d, a period of seven weeks. Preliminary to this, information was obtained concerning the various points of entrance to the state in order that the limited number of inspectors available for this service might be distributed to the best advantage. In a number of municipalities located on the border lines of the state, and with connecting lines of travel to and from other states, local officials furnished officers to supervise both intrastate and interstate travel, thus relieving the State Department of the work at these points. The entrances to New Jersey from adjoining states are shown in the following tables:

TABLE 2—BRIDGES.
(Other than railroad.)

ENTERING STATE AT	FROM	GUARDED BY			
		State officer.	State and local officer.	Local officer.	Federal officer.
Montague Twp., Sussex Co.	Milford, Pa.	*Yes			
Sussex Co., near Bevans.	Dingman's, Pa.	*Yes			
Columbia	Portland, Pa.				
Delaware	Near Portland, Pa.	Yes			
Belvidere	Northampton Co., Pa.	*Yes			
Phillipsburg	Easton, Pa.		Yes		
Riegelsville	Riegelsville, Pa.				
Milford	Upper Black's Eddy, Pa.				
Frenchtown	Uhlertown, Pa.				
Byram	Pt. Pleasant, Pa.	*Yes			
Raven Rock	Lumberville, Pa.				
Stockton	Centre Bridge, Pa.				
Lambertville	New Hope, Pa.		Yes		
Washington's Crossing	Taylorville, Pa.		Yes		
Schmidt's Crossing (River Road)	Yardley, Pa.				
Trenton (Calhoun St.)	Morris Heights, Pa.			Yes	
Trenton (Lower Bridge)	Morrisville, Pa.			Yes	

* Guarded part of the time regulations were in effect. Released as traffic of children diminished.

TABLE 3—FERRIES.

NAME.	ENTERING STATE AT	FROM	GUARDED BY			
			State Officer.	State and local officer.	Local officer.	Federal Officer.
Pennsylvania	Jersey City	New York City				
Lackawanna	Hoboken	New York City				Yes
Erie	Jersey City	New York City				Yes
New Jersey Central	Jersey City	New York City				Yes
West Shore	Weehawken	New York City				Yes
Fort Lee	Edgewater	New York City				Yes
Fourteenth St.	Fourteenth St., Hoboken.	New York City				Yes
Englewood Cliffs	Englewood Cliffs	New York City				Yes
Alpine St.	Alpine, N. J.	New York City				Yes
Bayonne	Bayonne	Dyckman St., New York.	Yes			
Tottenville	Perth Amboy	Yonkers, N. Y.				
Elizabethport	Elizabethport	Pt. Richmond, Staten Island.				
Chrome	Chrome	Tottenville, Staten Island.			Yes	
Rosencrans'	Near Flatbrookville, Sussex Co.	Staten Island		Yes		
Albertson's	Near Delaware, Pa.	Staten Island		Yes		
Burlington	Burlington	Pike Co., Pa.				
Pennsylvania	Camden (Federal St.)	Bristol, Pa.	Yes			
Philadelphia & Reading.	Camden (Cooper's Pt.)	Philadelphia	Yes			
Gloucester	Gloucester	Philadelphia	Yes			
Penns Grove	Penns Grove	Philadelphia	Yes			
Fenton Beach	Fenton Beach	Wilmington, Del.	Yes			

TABLE 4—AUTOMOBILE AND WAGON ROADS.
(Including one trolley line.)

NAME.	ENTERING STATE AT	FROM	GUARDED BY			
			State officer.	State and local officer.	Local officer.	Federal officer.
Piermont State Road.....	Northvale, Bergen Co.....	Tappan, Sparkill and New York State points.....	Yes			
3 additional roads.....	Vicinity of Northvale.....	Tappan and other New York State points.....	*Yes			
2 minor roads.....	Vicinity of Northvale.....	Tappan and other New York State points.....				
Montvale-Pearl River Road.....	Montvale, Bergen Co.....	Pearl River and other New York State points.....	Yes			
2 additional roads.....	Vicinity of Montvale.....	New York State points.....	*Yes			
2 minor roads.....	Vicinity of Montvale.....	New York State points.....				
Mahwah-Suffern Road.....	Mahwah, Bergen Co.....	Suffern, Tuxedo and other New York State points.....	Yes			
1 trolley line.....	Mahwah, Bergen Co.....	Suffern to Paterson.....	Yes			
5 minor roads.....	Mahwah, Bergen Co.....	Suffern and other New York State points.....	Yes			
3 roads.....	Near Ringwood, Passaic Co.....	New York State.....	†			
3 roads.....	Near Greenwood Lake Glens, Passaic Co.....	New York State.....				
2 roads.....	Near DeKays, Sussex Co.....	New York State.....				
2 roads.....	Near Glenwood, Sussex Co.....	New York State.....				
12 roads.....	Upper Sussex Co., across State line.....	New York State.....				
43.....						

* Guarded part of the time.

† One of these minor roads was occasionally guarded.

TABLE 5—RAILROADS.

NAME.	ENTERING STATE AT	FROM	GUARDED BY			
			State officer.	State and local officer.	Local officer.	Federal officer.
Erie (Main Line).....	Mahwah, Bergen Co.....	New York State.....				
Erie (Piermont Branch).....	Northvale, Bergen Co.....	New York State.....				
Erie (Greenwood Lake Branch).....	Near Sterling Forest.....	New York State.....				
New Jersey & New York R. R.....	Montvale, Bergen Co.....	New York State.....				
West Shore.....	Tappan (near).....	New York State.....				
Lehigh & Hudson River.....	Near DeKays, Sussex Co.....	New York State.....				
New York, Susquehanna & Western.....	Below Liberty Corner (entering Sussex Co.)	New York State.....				
Hudson & Manhattan.....	Sussex Co., below Unionville, N. Y.....	New York State.....				
Hudson & Manhattan.....	Jersey City (Exchange Place)	New York City.....				
Pennsylvania.....	Brooklyn City (Lackawanna Station)	New York City.....				
Pennsylvania.....	Manhattan Transfer	New York City.....				
Pennsylvania.....	Dearb (to Atlantic City)	New York City.....				
Pennsylvania.....	Trenton	North Philadelphia				
Pennsylvania.....	Trenton Junction	State of Pennsylvania.....				
New Jersey Central.....	Near Hainesburg, Warren Co.....	State of Pennsylvania.....		Yes		
Lehigh Valley.....	Phillipsburg	State of Pennsylvania.....				Yes
Delaware, Lackawanna & Western (and P. R. R.).....	Phillipsburg	State of Pennsylvania.....				Yes
	Delaware	State of Pennsylvania.....				

TABLE 6—STEAMBOATS.
(Other than ferries.)

ENTERING STATE AT	TRANSPORTATION COMPANY.	FROM	GUARDED BY			
			State officer.	Local officer.	State and local officer.	Federal officer.
Cape May	Philadelphia, Lewes, Cape May & Wildwood Transp. Co.	Philadelphia		Yes		
Pennsville	Denny Line	Philadelphia				
Trenton	Delaware River Transp. Co.	Philadelphia				
Burlington	Dolphin Line	Philadelphia		† Yes		
Atlantic Highlands	Central R. R.	Philadelphia (and Bristol, Pa.)		Yes		
Highlands	New York & Long Branch Steamboat Co.	New York City		* Yes		
Seabright	Merchants' Steamboat Line	New York City				Yes
Oceanic	New York & Long Branch Steamboat Co.	New York City		Yes		
Red Bank	Merchants' Steamboat Line	New York City				
Long Branch	Merchants' Steamboat Line	New York City				
Keansburg	New York & Long Branch Steamboat Co.	New York City		Yes		
Keyport		New York City		Yes		
Newark		New York City				
		Coney Island				
		So. Beach, Staten Island.				

* Saturdays and Sundays.

† Guarded part of the time regulations were in effect.

Travel between New York City and the State of New Jersey, which is far more extensive than at any other point, was supervised by the United States Public Health Service, thereby relieving both the state as well as local municipalities in which there are connecting lines of travel to and from New York City.

Railroads—The state regulations, as originally adopted, prohibited common carriers from bringing into the State of New Jersey, except for continuous passage through the state, any child under 16 years of age, unless such child was accompanied by a certificate as provided for in the regulations. Practical difficulties of a legal character arose which made literal compliance with this regulation impossible. Following a conference between representatives of some of the trunk line railroads and the Department, the regulation was modified by substituting a requirement that the State Department of Health should be notified by railroad officials when children under 16 years, destined to points within the State of New Jersey, were found on trains without the required certificate, such notification to include a description of the individuals and to state their alleged destinations. Railroad officials gave their hearty co-operation in the enforcement of that part of the regulations relating to common carriers. When such information was received it was forwarded by the director to local health officials in the municipalities to which such children were going. During the seven weeks the regulations were operative, the Department received 63 such notifications. This number is exceedingly small and indicates a remarkable care on the part of the traveling public to meet the requirements of public officials in their efforts to restrict the spread of the disease.

Municipalities that Enforced and Assisted in the Enforcement of Interstate and Intrastate Regulations—The cities of Trenton, Perth Amboy, Elizabeth and the borough of Frenchtown enforced interstate regulations without any assistance from the State Department of Health during the entire time the regulations were in force. The cities of Lambertville and Gloucester, the boroughs of Englewood Cliffs, Stockton and Roosevelt and the town of Phillipsburg assisted in the enforcement of interstate regulations within their municipalities.

In the absence of reliable information with respect to the extent and character of travel which took place at certain points between New Jersey and adjoining states, we were unable, at the beginning of the work, to distribute our inspectors in the most advantageous manner. To correct this, rearrangements of the force were made from time to time in order to best meet local conditions.

Points at which state inspectors were stationed, during all or some period of time that the regulations were in effect, are shown in Table 7. This table also shows the number of days guards were on duty at each place, the number of children under 16 years who presented certificates regarded as substantially complying with the regulations, the number with unsatisfactory certificates and the number with no certificates at all.

TABLE 7—NUMBER OF CHILDREN INTERCEPTED AT INTERSTATE POINTS.
August 15, 1916, to October 3, 1916, inclusive.

INTERSTATE POINT.	Number children accompanied by certificates substantially complying with regulations.	Number children accompanied by certificates not acceptable under regulations.	Number children having no certificates.	Number children accompanied by unsatisfactory certificates or having no certificates who were turned back.	Number children accompanied by unsatisfactory certificates or having no certificates who proceeded.
<i>Highways.</i>					
*Mahwah	7,576	157	636	282	511
†Montvale	1,148	28	390	332	66
§Norwood	2,113	145	676	439	382
<i>Ferries.</i>					
Albertson's	36	0	7	7	0
Burlington	623	2	23	25	0
Camden (Federal)	16,956	79	594	372	301
Camden (Kaighn)	5,344	131	77	94	114
Camden (Cooper)	118	0	1	1	0
Chrome	29	3	30	30	3
Englewood Cliffs	349	3	32	34	1
Gloucester	1,498	0	162	162	0
Penns Grove	529	20	7	11	16
<i>Bridges.</i>					
Belvidere	0	0	0	0	0
Byram	54	0	4	4	0
Delaware	550	17	18	20	15
Dingman's	71	0	12	12	0
Lambertville	219	0	21	18	3
Milford, Pa.	23	0	5	5	0
Phillipsburg	5,519	27	438	357	108
Washington's Crossing	17	0	2	2	0
	42,772	612	3,135	2,227	1,520

* At Mahwah, one highway was guarded during the week; two on Sundays.

† At Montvale, two highways were guarded during the week up to Sept. 11th, and three on Sundays.

§ At Norwood, two highways were guarded during the week, and four on Sundays, up to Sept. 10th.

It will be noted that our inspectors intercepted 3,135 children under 16 years of age who were without certificates of identification, and 612 with certificates that were not acceptable under the regulations. Of these 3,747 children without proper credentials, 2,227 turned back at the requirement of our inspectors, and 1,520 insisted on proceeding, and were permitted to do so. In the latter cases a description of the child was taken, the intended destination ascertained, and the local health officials of the district in which it was going were notified. This procedure was followed upon advice from the Attorney-General, to the effect that the State Department of Health is without authority, under the present statute, to cause arrest or to take summary procedure for the enforcement of any provision of the State Sanitary Code. The only means provided by the statute for the enforcement

of a provision of the code is the institution of a suit, in an action for debt, for the collection of the penalty provided in the law—a procedure entirely inadequate to meet the conditions which arose in the enforcement of the regulations adopted to restrict the spread of infantile paralysis. It is also inadequate to meet conditions which arise in the enforcement of other measures designed to protect the public health.

Guards—Twenty-four persons regularly employed in other bureaus of the Department were assigned to the Bureau of Local Health Administration for temporary field service in the enforcement of interstate regulations during the seven weeks they were operative. Some of these were on duty but two days, others served longer periods, and still others were on duty during the entire time the regulations were in force. The combined time these men were on duty in this capacity amounted to 786 days. In addition, 16 extra men were hired to assist the regular employes of the Department. This extra service aggregated 380 days. The total time spent by regular and extra inspectors employed in the enforcement of interstate travel regulations amounted to 1,166 days.

The work of enforcing the regulations, in addition to that performed by regular employes in the Bureau of Local Health Administration and exclusive of assistance given by local officials who assisted in the work, cost the Department over \$8,000. This expense would have been much greater had it been necessary to take care of traffic between New York City and New Jersey, and had officers been stationed at the 43 points of entry to the state that remained unguarded the entire period of time the regulations were in force. A detailed report on the cost of the work will be given in the final report which will be made on the epidemic.

Epidemiological Studies of Individual Cases and of Isolated Outbreaks of Poliomyelitis—Two employes were transferred from other bureaus to the Bureau of Local Health Administration to make epidemiological studies during the outbreak. One was employed in the field on this work for 31 days and the other for 14 days. During this time 113 cases were investigated. The results of these investigations will be dealt with in the final report on the epidemic.

Diagnostic Work—Assistance in making clinical diagnoses in doubtful and suspicious cases was furnished, through the Bureau of Local Health Administration, upon the request of local health officials and private practitioners in 71 cases. Of these cases, diagnoses in 39 were made by the Chief of the Bureau of Medical Supervision, in 29 by a medical inspector attached to the Bureau of Local Health Administration, and in three by physicians especially employed for this purpose.

Results of Supervision over Interstate Travel as a Means of Restricting the Spread of Infection—In considering this question it must be taken into account that the regulations only applied to children under

16 years of age, and had the regulations been rigidly enforced only children under this age without certificates of identification would have been excluded from the state. Furthermore, the possession of such a certificate did not, in itself, offer any assurance that the child for whom it had been issued was not in fact infected and liable to transmit the infection of poliomyelitis. The correctness of this statement was proven over and over again by children who entered the state with proper certificates and who manifested symptoms of the disease a few hours or days thereafter. In fact, in some instances children traveling with certificates were found to be actually paralyzed upon reaching their destinations. This could hardly be otherwise in the absence of a method of inspection by which it is possible to tell whether or not a person is affected by poliomyelitis prior to the development of fairly well defined clinical symptoms or to tell when one is a "carrier" of the infection. Practically, therefore, the only children who could not procure certificates entitling them to travel were those known by the local health officer to be ill with, or to have been directly exposed to the infection of, poliomyelitis. Theoretically, such children would have been under quarantine, hence could not have traveled with or without certificates.

In a community where efficient control is not maintained over persons known to be affected by or exposed to communicable diseases the issuing of certificates is likely to be done in a perfunctory manner. This is known to have been the case in some instances during this outbreak. Furthermore, the regulations contained no provision for restricting the spread of infection by persons over 16 years of age, and there is ample reason to believe that this frequently occurred.

In so far as the requirement of certificates contributed toward lessening unnecessary travel, and doubtless it did this to a considerable extent so far as children were concerned, and also indirectly restricted the movements of adults to a lesser degree, some good may have resulted from the activities of health officials in this direction.

The psychological effect of this work doubtless was beneficial in giving assurance to the public that every possible effort was being made by public health officials to restrict the spread of the disease. It is probable, however, that the expenditure of the same amount of time and money in efficient and reasonable supervision over known foci of infection, and in epidemiological studies of the outbreak, would have yielded far more valuable returns both in the way of actual public health protection and in adding to our present knowledge of the ways by which the disease is spread.

The lack of uniform practice and co-operation that exists between health officials in adjoining states, as well as those in adjoining local municipalities, was clearly demonstrated during this epidemic. Officials in adjoining states, and those in adjoining municipalities in this state, independently enforced measures to prevent the introduction from one state or municipality to the other the infection of a

communicable disease prevailing in both. Pennsylvania first established restrictions over children traveling from New Jersey to points in Pennsylvania, at the same time permitting children residing in the state to leave without question. New Jersey later took the same action against children coming from Pennsylvania. This resulted in maintaining two sets of guards, one on either side of a state line, to enforce separate regulations designed to accomplish the same purpose. Uniform regulations could have been as efficiently enforced by a single group of officers at about half the cost. The same state of affairs existed in many adjoining municipalities throughout this state.

Bureau of Education and Publicity.

MILLARD KNOWLTON, CHIEF.

The Bureau of Education and Publicity was exactly one year old on November 1st, 1916. This Bureau was the outgrowth of the Tuberculosis Exhibit, which was conducted for four years previously under a special act of the Legislature, and has charge of all the health educational activities carried on by the Department.

The educational activities include the handling of educational health exhibits, the publishing of a monthly bulletin, a regular press service, lectures, printing and distribution of literature, and the preparation of articles for publications other than those issued by the Department. An especially important feature of the educational work is that relating to child hygiene and infant mortality which is conducted through the Division of Child Hygiene and Nursing, which is a part of the Bureau of Education and Publicity.

Exhibits—Having completed a tour of the state, including all the cities and towns of 4,000 or 5,000 population and over, with the large tuberculosis exhibit a small tuberculosis exhibit was constructed to use in the smaller towns and rural communities. Including a special section on milk and another on flies, this exhibit consists of 13 sections, each about six feet square and folding like a folding map to a size of about 22 by 25 inches. The entire exhibit covers nearly 80 linear feet of wall space, but weighs only about 60 pounds. The construction of an exhibit upon this plan was somewhat of an experiment, but its use in 58 locations in 53 cities and towns has fully demonstrated the practicability of this method of construction where extreme lightness and great mobility are desired.

In using the exhibit a stereopticon with which to illustrate the lectures was found entirely practicable, but a motion picture machine, owing to the great weight of the booth required, was not usually feasible.

The light weight of the exhibit made transportation easy so that all communities, no matter how isolated, could be readily reached. The year's work was confined to the small towns and rural communities in Sussex, Passaic and Bergen counties, and a part of Essex county. The campaign required visits to the following cities, towns and villages:

Sussex, Franklin (2 locations), Hamburg, Ogdensburg, Sparta, Lafayette, Andover, Branchville, Netcong-Stanhope, Mountain View, Paterson (4 places), Little Falls, Pompton Lakes. Butler, Bloomingdale, Totowa Borough, Hawthorne, North Paterson, Haledon, Midland Park, Glen Rock, Maywood, Lodi,

Clifton, Wallington, Woodridge, Hasbrouck Heights, Little Ferry, Ridgefield Park, Bogota, River Edge, Westwood, Old Tappan, Park Ridge, Northvale, Closter, Haworth, Dumont-Bergenfield, Tenafly, Cresskill, Teaneck (2 locations), Leonia, Fort Lee, Edgewater, Fairview, Cliffside Park (Grantwood), Ramsey, Allendale, Mahwah, Waldwick, Maplewood, Hilton and Palisades Park.

The exhibit was open 97 days in 58 auditoriums in these 53 localities and 181 lectures were given to the 36,605 people who attended, out of a total population of 251,620. Exclusive of the city of Paterson, where the exhibit was shown for four days during Tuberculosis Week, the total attendance was 31,105 out of a total estimated population of 126,620; thus it will be seen that about one-fourth of the people living in the smaller towns and rural communities that were visited attended the exhibit. A lecturer and a mechanic traveled with the outfit.

The unit cost was about nine cents per person attending the exhibit, as compared with six and two-thirds cents per person attending the large exhibit which visited the larger cities. Part of the increased unit cost is due to the greater difficulty in the preliminary organization work in rural communities owing to the fact that people in those communities have had little or no experience in social co-operation. Another factor that makes the unit cost higher for rural communities is the smaller audiences due to the fewer people and smaller auditoriums available. In view of the fact that people in rural communities are more in need of sanitary instruction than those in larger cities where sanitary instruction is more readily available, it is believed that the greater unit cost is justifiable and that the exhibit work should be continued in these communities. There were distributed in connection with the exhibit 127,000 pieces of literature, of which about 56,000 were educational and 71,000 advertising in character.

Small Loan Exhibits—Five small exhibits, each consisting of from 20 to 30 cards about 22 by 28 inches in size, have been secured for loaning purposes. Each exhibit is enclosed in a strong fibre case, the whole weighing not over 50 or 60 pounds, so that transportation is easy. These exhibits are loaned to persons in any community willing to pay the express charges. One of the exhibits shows housing conditions in New Jersey; another is a reproduction of an exhibit constructed by the New York State Department of Health on diseases of adult life; another is a set of cards on patent medicines secured from the American Medical Association; the remaining two are miniature reproductions of the large child hygiene exhibit constructed by the National Child Welfare Exhibit Association of New York City. These exhibits have proved quite popular, and it is believed worth while to construct other exhibits along the same lines on different health subjects.

Lantern Slides—Sets of lantern slides on tuberculosis have been loaned several times during the year, and about 300 slides on various health subjects have been secured from the United States Public Health Service that may be made available for loaning purposes as

soon as sufficient clerical help can be secured to take care of the details connected with this line of activity. It is believed that the loaning of lantern slides is an educational measure well worth developing. Already there is some demand for such slides, and with the development of sets of slides on various subjects for loaning purposes, the demand could, undoubtedly, be greatly increased.

Lectures—During the year the demand for lectures on health subjects has been somewhat increased over previous years, and 25 lectures were given by the Chief of the Bureau of Education and Publicity, and 23 by the Chief of the Division of Child Hygiene and Nursing. These lectures are in addition to those given by the bureau staff in connection with the exhibit.

Course of Study for Women's Clubs—A letter signed by the director was sent to the president of each woman's club in the state early in the summer, suggesting that the club take up the study of health topics in its program for the next year. A number of clubs have responded favorably, and a special edition of an outline for a course of study for women's clubs was obtained from the American Medical Association for distribution to the various club members in connection with this study. A further development of this line of activities is believed to be highly important, and entirely feasible if the study of health subjects is properly encouraged from this Department. A number of lecture engagements have been made as a result of this suggestion to the women's clubs.

MONTHLY BULLETIN.

The publication of the monthly bulletin, "Public Health News," begun in August, 1915, has been continued throughout the fiscal year. At first, "Public Health News" was issued as a 16-page pamphlet; the size has increased, so that by the close of the year it was usually issued as a 32-page pamphlet, and on one occasion the size had reached 40 pages. The circulation has increased from less than 3,000 for the first issue, in August, 1915, to about 8,500 for the issue of October, 1916.

The practice of devoting one number of "Public Health News" to some special subject, which was begun with the School Hygiene number, in October, 1915, has been continued. The special numbers issued for the year were the Baby Health Number for March, the Pasteurization Number for May, the Infantile Paralysis Number for July, and the Typhoid Fever Number for August. Many words of commendation have been received. Some of the material published in the bulletin has been given wide publicity, not only in the papers of New Jersey, but in those of Philadelphia and New York as well.

One of the most gratifying words of commendation, especially gratifying because it comes from so high an authority on public health education, is a letter from Prof. C. E. A. Winslow, Professor of Public Health at Yale University, who, under date of February 1st, wrote

that he had seldom seen a state publication containing so much material of value.

Another evidence that "Public Health News" is serving a useful purpose is the fact that a number of teachers in the state are using it for class room work in teaching hygiene. Some principals and teachers have asked for duplicate copies. Libraries are asking for complete files for their shelves.

Press Service—The regular press service, begun before the Bureau was organized, has been continued. Seldom has a week passed without giving out one or more press articles, which have been used widely throughout the state and also by papers in Philadelphia, New York, Wilmington and elsewhere. In the number of people reached, there is no activity of the Bureau that can compare with its press service. An article given wide publicity through the newspapers will reach hundreds of thousands while the monthly bulletin reaches its hundreds and the exhibit its tens. The press service of the Department has been of special value in disseminating information concerning infantile paralysis during the recent outbreak of that disease.

A new duplicating machine has been added to the office equipment, and it is purposed to send more material to the smaller weekly papers in the towns and rural sections in the future. If possible, it is hoped to establish a regular weekly service for these papers.

Literature—The literature put out during the year has included a special edition of the four pamphlets issued by the American Medical Association on the subjects of smallpox, measles, tuberculosis, and an outline for a course of study on public health for women's clubs. Special leaflets were issued on the care of babies for use during Baby Week, and a special leaflet for distribution to school children was issued late in the year. There were three of the Baby Week leaflets, of which there were printed 125,000 each of two and 100,000 of the third, making a total of 350,000. The leaflet for distribution to school children was entitled "How to Prevent Infantile Paralysis," and consisted of a set of "Do" rules and another set of "Do-Not" rules for the prevention of all diseases spread by the discharges from the nose and throat. Of these 600,000 were printed; thus, including the circulars on tuberculosis, about 1,000,000 pieces of educational literature were printed and distributed during the year. This, together with the monthly bulletin, "Public Health News," has required the use of fully nine or ten tons of paper. As paper has doubled, and, in some instances, trebled, in cost, it will be seen that the expense of publishing such a large amount of literature has been greatly increased.

DIVISION OF CHILD HYGIENE AND NURSING.

The Division of Child Hygiene and Nursing was created as a part of the Bureau of Education and Publicity because it was felt that the chief activity of this division would be educational in character.

Although the division was created November 1st, 1915, a chief was not secured until February 1st, 1916.

Baby Week—One of the first activities of the new division was to assist in the celebration of Baby Week, in which the State Department of Health co-operated with the New Jersey Federation of Women's Clubs, which was the organization handling the matter for New Jersey. The baby leaflets mentioned in a foregoing paragraph were prepared and published for distribution during this time, Baby Week having been set for the first week in March.

Child Hygiene Exhibit—One of the plans of the Division of Child Hygiene is the construction of a child hygiene exhibit. The plans for this exhibit are now well under way. The actual construction might have been practically completed so that the exhibit might have been on the road by the end of the year had it not been for several interruptions in the work. The principal interruption was due to the transfer of the Chief of the Division of Child Hygiene to the Bureau of Local Health Administration to do infantile paralysis work during the outbreak of that disease.

Leaflet for School Children—This leaflet, mentioned in a foregoing paragraph, was prepared in response to a request by Dr. Calvin N. Kendall, Commissioner of Education, for material for use in the Education Bulletin. When this material was prepared it was felt that it was important enough to place in the hands of all school children. Accordingly a two-page leaflet containing the material was published and distributed through the schools, both public and parochial, so that each school child in the state might receive a copy.

Supervising Nurse—In connection with the nursing part of the child hygiene work, it has been found that there is great need for the supervision and standardization of the public health nursing service now being rapidly established throughout the state. The shortage in nurses especially trained for visiting nurse work has resulted in the employment of many nurses who have had no special training in the work they are to undertake. For the purpose of increasing the efficiency of the local nursing service, plans have been made for the employment by the State Department of Health of a supervising nurse to supervise and standardize their work. It is hoped that the supervising nurse may also find time to help secure the establishment of nursing services in other cities and communities by demonstrating by actual work the need for such service.

Bureau of Food and Drugs.

WILLIAM G. TICE, ACTING CHIEF.

This Bureau was formed on November 1st, 1915, by the consolidation of the former Division of Food and Drugs with the Division of Creameries and Dairies. The Bureau enforces the Food and Drugs act (Chapter 217 of the Laws of 1907) and its amendments and supplements, which include the Sanitary act of 1909; the law relating to the production and distribution of shellfish (Chapter 24 of the Laws of 1912); the law relating to the distribution and sale of oleomargarine (Chapter 84 of the Laws of 1886), its amendments and supplements; the act governing the sale and distribution of milk (Chapter 78 of the Laws of 1914); the law controlling the pasteurization of milk and its products (Chapter 285 of the Laws of 1915); the Slaughter-House act (Chapter 295 of the Laws of 1910); the Cold Storage act (Chapter 101 of the laws of 1916); the act regulating the sale and breaking of eggs (Chapter 30 of the Laws of 1914), and the Methyl Alcohol act (Chapter 286 of the Laws of 1912).

Sanitary Act—The preparation and distribution of clean foods and the regulation of the sanitary conditions of those places where food is handled have received the attention of the Bureau to a greater extent than ever before. Two thousand and thirty inspections have been made of food producing establishments, other than creameries and dairies, for the purpose of ascertaining the condition of such places. While unclean conditions were observed in certain instances there has been a marked improvement during the year which has demonstrated that there is a desire on the part of the trade to maintain clean establishments and to handle food products in a cleanly manner.

In previous reports the impossibility of inspecting all business places in the state where food products are prepared by representatives of this Bureau has been pointed out. It is necessary, therefore, for a considerable proportion of this work to be done by local boards of health. This year, when violations of the Sanitary act have been found to exist in food producing establishments, copies of orders sent to proprietors of such places have been forwarded to the local boards of health with a request that reinspections be made by their representatives. This procedure was adopted for the purpose of interesting local boards of health in work of this character, and securing a more prompt follow up than was possible by the use of our inspectors alone.

Meat inspection—There is no legislation in force in this state requiring the inspection of meat at the time of slaughter, and while sufficient authority is contained in the food law to prevent the sale of diseased meat, it is obvious that no far reaching results will be obtained until a comprehensive system of meat inspection is in effect. The following table shows the amounts and kinds of meat which have been inspected during the year:

	CARCASSES.		PARTS OF CARCASSES.	
	Passed.	Condemned.	Passed lbs.	Condemned lbs.
Beef	306	17	4,805	3,788
Hogs	181	8	1,230	351
Calves	355	2	606	74
Sheep	167		170	
Totals	1,039	27	811	4,243
			Poultry	20 lbs.
			Bologna	50 lbs.
				881 lbs.

An examination of this table will show that 27 carcasses and 4,243 pounds of meat were condemned as unfit for food. These investigations do not represent any attempt at systematic meat inspection but are the results in most instances of co-operative work with local boards of health.

Slaughter-House Inspection—The inspection of places where animals are slaughtered for food purposes, begun in 1910 has been continued for the purpose of obtaining better and cleaner slaughter-houses. Our investigations show that the majority of slaughter-houses in the state are being operated in substantial compliance with the Slaughter-House Act.

The following summary shows the results of inspections of slaughter-houses during the year:

Slaughter-houses operating October 31, 1916.....	273
Licenses issued during the year.....	36
Number of slaughter-houses now operating under license.....	268
Slaughter-houses in course of construction.....	5
Inspections made of small establishments not holding a license which have discontinued business.....	53
Total number of slaughter-house inspections during year.....	866

The above summary does not include farmers who may slaughter animals raised on their premises. It also does not show small dealers who slaughter animals occasionally on farms where such animals are purchased.

The following table shows the kinds of places visited and the number of visits made to such places by inspectors of the Bureau during the year, for the purpose of collecting samples and gathering information regarding their sanitary condition:

Bakeries	37
Bottling plants (non-alcoholic beverages).....	381
Bottling plants (water).....	43
Butter stores.....	17
Candy factories.....	84
Cold storage plants.....	280
Confectionery stores.....	433
Creameries	277
Dairies	2,511
Drug stores.....	206
Canning factories.....	90
Egg breaking establishments.....	52
Establishments where toilet articles are manufactured.....	189
Establishments where flavoring extracts are manufactured.....	12
Fish markets.....	7
Grocery stores.....	2,782
Ice cream factories.....	606
Macaroni factories.....	28
Meat markets.....	1,104
Milk depots.....	419
Milk wagons.....	715
Pasteurizing plants.....	359
Pickling establishments.....	6
Produce stands.....	44
Restaurants	33
Slaughter-houses	866
Miscellaneous inspections.....	29
Total	11,610

NUMBER AND KINDS OF SAMPLES OF FOOD COLLECTED DURING THE YEAR OTHER THAN MILK AND CREAM.

Article.	Above Standard.	Below Standard.	Total.
Allspice, ground	1		1
Almond extract	1		1
Baking powder	5	1	6
Butter	1		1
Candy	121	30	151
Chocolate (powder)	4	1	5
Cherries, canned	1		1
Cider, sweet	1		1
Cinnamon, ground	10	5	15
Clams, canned	1		1
Cocoa	1		1
Coffee	1		1
Cordials	3	1	4
Eggs	2	1	3
Flour, buckwheat	12	8	20
Ginger, ground	2		2
Hamburg steak	1		1
Lemon extract	35	7	42
Macaroni	22	12	34
Maple syrup	3		3
Meat pickle	1		1
Molasses	1	1	2
Mustard, ground	5		5
Noodles	1		1
Oleomargarine	1		1
Olive oil	3		3
Orange extract	5	5	10
Orange color	5		6
Peanut butter	1		1
Pepper, black	1		1
Preservatives (used in meat).....	2		2
Salad oil	1	1	2

Article.	Above Standard.	Below Standard.	Total.
Sausage	46	7	53
Soft drinks	113	13	126
Soft drink flavors and extracts	28	1	29
Syrup, rock candy	1	...	1
Tomato pulp	10	...	10
Tomato chili	1	...	1
Tomato catsup	1	...	1
Vanilla extract	15	2	17
Vinegar, cider	43	...	43
Vinegar, distilled	3	...	3
Vinegar, red	2	...	2
Vinegar, syrup	1	1	2
Wine	1	...	1
Miscellaneous samples	7	...	7
Totals	526	102	628

NUMBER AND KINDS OF SAMPLES OF DRUGS COLLECTED DURING THE YEAR.

Article.	Above Standard.	Below Standard.	Total.
Acetanilid tablets	9	...	9
Alcohol, grain	1	...	1
Antiseptic tablets	2	...	4
Aqua hamamelidis	28	3	31
Camphorated ginger	1	...	1
Children's remedy	...	1	1
Cholera drops	...	1	1
Cochineal	1	...	1
Corn remedy	...	1	1
Cough and cold remedies	8	8	16
Ear drops	1	1	2
Egueterro	1	...	1
Eye powder	...	1	1
Face lotion	1	...	1
Family medicine	...	1	1
Fluid extractum	...	...	...
Sarsaparilla	...	...	...
Compositus	...	1	1
Fluid extractum zingiberis	3	4	7
Glycerol	1	...	1
Hair tonics	66	13	79
Headache remedies	4	...	4
Heart and nerve remedy	...	1	1
Liquor hydrogenii dioxide	3	1	4
Linimentum camphoræ	9	...	9
Liniments	6	2	8
Liquid life	...	2	2
Lithium salts	2	...	2
Magma magnesiae	2	1	3
Malaria remedy	1	...	1
Oleum amygdale expressum	1	1	2
Oleum ricini	4	...	4
Pills	1	...	1
Potassii bitartras	1	...	1
Seltzer salt	10	...	10
Soap	1	...	1
Soothing syrups	1	1	2
Spiritus menthæ piperitæ	22	13	35
Spiritus myrciæ	80	18	98
Tinctura arnicæ	1	...	1
Tinctura iodii	47	57	104
Tinctura delphinii	2	...	2
Toilet waters	32	3	35
Tonics	6	...	6
Toothache wax	2	...	2
Worm powder	1	...	1
Miscellaneous samples	1	3	4
Totals	362	141	503

Milk and Cream—During the year 2,856 samples of milk and cream were collected, of which 160 were found to vary from the legal standard. The samples found to differ from the standard may be divided into the following classes:

	Samples.
Milk below the legal standard with respect to solids	108
Milk containing added water	40
Milk having been skimmed	4
Cream below the legal standard with respect to fat	8
Total	160

Samples of Food Examined of Which no Samples were Taken—The following table shows the number of samples examined by inspectors of the bureau during the year which were found to comply with the law, and therefore no samples were collected:

	Samples.
Milk	2,406
Butter	3,885
Eggs	2,052
Non-alcoholic beverages	666
Syrups and flavors used in the preparation of non-alcoholic beverages	60
Other foods	11,812
Bottled water	120
Drugs	2,097
Bay rum, witch hazel and other toilet preparations	52
Total	23,150

Canning Factory Inspection—The canning of food products is one of the largest industries which the Department is required to supervise. During the busy season, several thousand persons are engaged in packing peas, lima beans, tomatoes and tomato pulp, together with certain other fruits and vegetables.

This year, because of the necessity of using all of the inspectors for quarantine duty during the epidemic of infantile paralysis, only 90 inspections of canning factories were made. These inspections indicated that most of the factories were being operated in compliance with the law and the regulations of the Department and that cleanly products were being packed.

New Jersey ranks second in the amount of tomato pulp produced, and the packing of this material and its products requires peculiar care if a good product is to result. One of the greatest wastes which occur in every tomato cannery is the loss of tomato juice and trimmings, by-products of the peeling table. The desire to utilize the trimmings in the manufacture of tomato pulp, a satisfactory procedure, if properly carried out, has and will continue to cause the canner considerable trouble unless this phase of the business is so supervised that only sound stock is used. The average packer fails to realize that if tomato pulp is to be successfully packed, all tomatoes must be thoroughly sorted before entering the washer, and the stock after sorting must be thoroughly washed.

Patent Medicines—An attempt has been made this year to enforce that section of the Food and Drug act which provides that an article shall be deemed to be misbranded, if its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effect of such article or any ingredients or substances contained therein which is false or misleading. The investigation has been confined principally to those preparations known to be manufactured within the state. The work of inspection has consisted of an examination of the labels and advertising literature accompanying the preparations when sold. Five hundred and ninety-eight articles were examined, from which 53 samples were collected for analysis. The manufacture of two preparations, one alleged to be a cure for diphtheria and the other to be a cure for tuberculosis, were caused to be discontinued. Our investigations have shown that the wording of the labels of a majority of preparations examined have been so carefully prepared that under the law it is doubtful if any action against the vendor of such goods could be taken, although in many cases the preparation possessed but little value.

The work has been marked by the helpful co-operation of the United States Department of Agriculture, Bureau of Chemistry, with respect to interstate shipments of medicinal preparations manufactured in other states and sold in New Jersey. In several instances samples of misbranded medicinal products have been collected by representatives of this bureau, evidence of interstate shipment secured and the facts referred to the United States Department of Agriculture, Bureau of Chemistry, who have agreed, if possible, to bring prosecution against the manufacturers of the preparations.

Non-Alcoholic Beverages—This is the second year that the act regulating the sale of non-alcoholic beverages has been in effect. Since the beginning of the fiscal year, 381 inspections have been made of 195 bottling establishments, as a result of which it has been learned that there has been a marked improvement in the sanitary condition of such places.

When the Department first undertook the inspection of bottling establishments, dirty factories and factories provided with ill-cared-for machinery and inadequate apparatus for the washing of containers were found in the majority of cases. Inspections made this year show that 168 places have concrete floors, 27 have wooden floors, and that 85 per cent. of the floors in the latter places were clean and in good condition. Separate rooms for the mixing and compounding of syrups were provided in 136 of the establishments and adequate drainage systems were provided at 183 places. The methods of washing containers and other utensils were found to have improved, running hot water having been provided at 173 places. This is particularly gratifying because a satisfactory product cannot be bottled unless clean containers are used. The objectionable practice of stabling horses in close proximity to rooms in which bottling is carried on has been entirely discontinued.

An inspection made soon after the act was passed showed that of those establishments where non-alcoholic drinks were prepared, 20 per cent. were graded as good, 32 per cent. as fair and 48 per cent. as bad. Investigations which have been made during the past year show the ratings to be: 54 per cent., good; 30 per cent., fair, and 16 per cent., bad.

One of the difficulties with which the Bureau has had to contend relates to the labelling of non-alcoholic beverages. The point that the bottler does not seem to fully comprehend is that his label should be accurately descriptive of the product that he manufactures. The section of the law which permits the bottler to designate the character of the product which he manufactures upon the cap without further use of a label is practically valueless, because such marking is not given sufficient prominence to the purchaser. Nevertheless, it is believed that the practice of using grossly misleading and deceptive labels, in the majority of instances at least, has been discontinued.

Cold Storage—Several defects in the act relating to cold storage (Chapter 189 of the Laws of 1911), approved April 21st, 1911, have been pointed out in previous reports of this Department. In order to correct these faults and also to bring legislation in this state into harmony with cold storage legislation passed or proposed in other states, the so-called "Uniform Cold Storage act" was passed by the Legislature of 1916. This law became effective July 1st, 1916.

The act provides that any person, firm or corporation desiring to operate a cold storage warehouse shall make application in writing to the State Director of Health. If the warehouse is found to be in a sanitary condition and otherwise properly equipped for the business of a cold storage warehouse, the State Director of Health shall cause a license to be issued upon the payment by the applicant of \$10 for each warehouse. The act defines the term "Cold Storage Warehouse," as a place artificially cooled to or below a temperature above zero of 45 degrees Fahrenheit, in which articles of food are placed or held for 30 days or more, and also defines the term "Articles of Food" as fresh meat products, except in process of manufacture, fresh food fish, game, poultry, eggs, milk and milk products and edible fats and oils. The act further provides that every person, firm or corporation shall submit a monthly report to the State Director of Health setting forth the quantities of the different articles of food held in the cold storage warehouse on the last day of each month. A summary of these reports is made by the Director of Health and is open to public inspection on the 10th day of each month.

Section 7 of the act provides that articles of food shall be plainly marked or stamped either upon the container or upon the article itself with the date of entrance into cold storage and also with the dates of removal from cold-storage. The period of storage is limited to 12 calendar months excepting that the State Director of Health may extend this period during the twelfth month upon application.

Section 9 of the act provides that it shall be unlawful to sell or to offer or expose for sale, articles of food which have been held in a

cold storage warehouse for a period of 30 days or more without notifying purchasers that the articles have been so kept by the display of a placard conspicuously marked "Cold Storage Goods" on the bulk mass or articles of food. It shall also be unlawful to represent or advertise as fresh articles of food which have been held in any cold storage warehouse for a period of 30 days or more.

Nineteen warehouses have been granted licenses for a period of one year in accordance with Section 2 of this act. One warehouse was found to be improperly equipped for the business intended and is being operated for a stated time under permission from the State Director of Health.

The following summary shows the amounts of foods held in cold storage warehouses in the state during the years 1915 and 1916:

ARTICLE.	Jan. 1, 1913.	Jan. 1, 1916.	April 1, 1913.	April 1, 1916.	July 1, 1913.	July 1, 1916.	Aug. 31, 1916.	Oct. 1, 1915.	Sept. 31, 1916.	Oct. 31, 1916.
Eggs, doz.	5,000,700	5,921,640	1,738,500	286,220	21,825,240	18,059,130	17,834,610	19,445,880	15,075,840	11,885,580
Cheese, broken, lbs.	115,900	100,305	66,936	292,485	166,055	457,505	321,487	137,765	213,680	267,664
Butter, lbs.	405,376	536,327	107,109	111,534	126,180	477,390	819,651	857,720	1,140,200	1,009,972
Poultry, lbs.	2,663,215	3,779,048	369,418	216,849	5,596,018	6,096,229	8,650,816	9,128,754	8,008,977	7,154,244
Meats, fresh, lbs.	6,833,940	6,117,873	6,264,841	4,882,144	4,220,161	2,308,719	2,443,449	3,474,586	4,708,740	6,065,631
Meats, cured, lbs.	6,853,052	6,788,344	16,223,115	13,151,410	7,081,725	6,396,724	6,390,352	4,107,078	5,203,455	4,601,166
Fish, fresh, lbs.	17,851	502,935	614,638	326,118	1,754,213	1,342,171	1,097,372	1,097,372	1,097,372	1,097,372
Fish, cured, lbs.	1,233,541	844,507	258,589	76,240	840,643	572,001	1,659,103	903,606	1,971,847	2,316,701
Fruits, dried, lbs.	274,014	186,400	198,400	230,800	11,470	273,318	114,220	114,220	220,275	220,275
Nuts, lbs.	35,555	53,833	20,100	44,675	307,153	569,968	.....	8,620	.....	.....
Fruits, green, pkgs.	2,220	1,560	100	44,675	7,525	5,185	.....	.....	.....	.....
Vegetables, pkgs.	240,059	255,488	61,044	48,796	303	4,117	.....	136,686	.....	.....
Miscellaneous, pkgs.	6,640	8,378	23,243	10,165	2,818	753	.....	20,922	.....	.....
Milk and milk products, lbs.	5,410	20,864	4,614	8,139	7,186	278	1,927	8,815	6,225	121,286
Edible fats and oils, lbs.	.....	.....	.....	.....	.....	.....	275,240	.....	453,260	105,620
	.....	.....	.....	.....	.....	3,129,713	4,241,460	.....	5,203,014	2,911,643

The following table shows the kinds and amounts of foods held in cold storage in the state in a condition unfit for food purposes, and the disposition of such goods:

ARTICLE.	Quantity.	Condition.	Disposition.
Celery	400 crates.	Partly decayed.....	Removed.
Poultry	25 lbs.	Decomposed	Destroyed.
Egg yolk	800 lbs.	"	"
Veal	600 lbs.	"	"
Poultry	200 lbs.	"	"
Poultry	15 lbs.	"	"
Fish	720 lbs.	"	"

No applications for extensions of storage have been received by the Department during the period from July 1st, 1916, to the end of the fiscal year.

During the year 280 inspections have been made of cold storage warehouses. Under the present act which requires a license from the Department to operate a cold storage warehouse a more satisfactory control over such establishments is possible.

The section of the act which regulates the sale of cold storage foods and makes it unlawful to represent or advertise as fresh, articles of food which have been held in cold storage, should be enforced by local boards of health. The numerous inquiries received from such boards regarding this section show that much activity may be expected in its enforcement during the fall and winter when most cold storage foods are consumed.

Egg Breaking Establishments—During the present year it has been found that establishments where the breaking of eggs is conducted have been operated in compliance with the law and regulations governing such places. This is due to the fact that all such places must secure licenses from this Department, which may be revoked for cause.

Six establishments in this state now hold licenses to break eggs. Fifty-two inspections have been made of these places during the year. In only one instance was an establishment found operating in a manner which did not comply with the law. In this instance the operator was cited to appear before a committee of the Department to show cause why his license should not be revoked. This establishment has since been operated in a cleanly manner.

The following table gives the names of concerns, the addresses, the kind of business for which the license was granted and the condition of egg breaking establishments at the time of last inspection:

OWNER.	Address.	License granted to break eggs for	Condition of establishment.
Great Atlantic and Pacific Tea Co.	Jersey City ..	Food purposes only..	Good.
Louis Meyer	Jersey City ..	Food purposes only..	Fair.
Philip Weber	Jersey City ..	Mfg. purposes only..	Good.
Droste & Snyder	Newark	Food purposes only..	Good.
Swift & Co.	Newark	Food purposes only..	Good.
Holcombe & Wilson	Trenton	Food purposes only..	Good.

Bottled Waters—The consumption and sale of bottled waters is largely dependent upon the belief in the purity and wholesomeness of the water. We have in this state three classes of bottled waters, those derived from springs or wells, artificially carbonated waters obtained from similar sources and mineral waters, either natural or artificially prepared by addition of certain salts.

Bottled waters may show dangerous pollution originating from contaminated wells or springs, dirty bottles or unsanitary handling of the product. Realizing the desirability of systematic supervision, 46 of the 49 establishments in the state where natural or uncarbonated water is bottled have been visited. The work of supervision has included an inspection of the source of the water and its surroundings and the collection and bacteriological examination of samples of water from the source, storage tank, outlet of filter, filling tap and from the final container. Careful observations are also made of the structural arrangement and condition of the building, method of bottling, cleansing of bottles and the health and habits of employees. During the year investigations have also been made at various plants where mineral waters such as seltzer and lithia waters are bottled. In some instances such waters have been found to be grossly misbranded by reason of the fact that they either contained no lithium salts of any kind, and further, because when such salts had been used the waters were so labelled as to indicate that they were natural spring waters. Seventy-four inspections have been made at those places where mineral waters are bottled.

The rather limited amount of work which has been done in connection with the bottling and sale of mineral waters indicates that there is much fraud associated with this branch of the business. A more extensive investigation is planned for the coming year.

Shellfish—Modern scientific research has shown that shellfish are capable of becoming infected with certain disease producing organisms, notably the typhoid bacillus, and of transmitting these organisms to persons consuming such shellfish. The primary object of the Department in its supervision of the shellfish industry is to render the shellfish produced in this state safe for human consumption. The work of supervision consists in making sanitary surveys of the watersheds adjacent to the oyster beds and floating grounds and bacteriological examinations of the shellfish and of the waters from which they are collected.

One phase of the oyster business which has developed during the last year relates to the shucking of oysters. Because of the increased importance of this branch of the industry regulations governing the operation of oyster shucking houses were prepared and adopted by the Department. Such regulations will be found in the report of the Director.

MAURICE RIVER SECTION: The work in this section has been continued along the lines followed in previous years. Since the scavenger pail system for the oyster boats has been in effect and enforced, the principal source of pollution

in this section, other than surface drainage from pasture lands, has been due to the imperfectly treated sewage from the disposal plant at Millville. During the year a liquid chlorine apparatus has been put in operation at this plant so that the effluent from the plant is disinfected before reaching the river. Further information regarding this plant will be found in the report of the Bureau of Engineering.

The total number of water samples collected from the Maurice river was 416. Of these eighty-one samples were collected between the dam at Millville and a point about two miles below the sewage disposal plant—Section 4. The bacteriological results were as follows:

Number of samples collected.....	81
Number of samples showing B. coli in 1 c.c.....	81—100%
Number of samples showing B. coli in 0.1 c.c.....	73—90.1%
Number of samples showing B. coli in 0.01 c.c.....	35—43.2%

In Section 3, which extends from a point approximately two miles below the sewage disposal plant to about a mile above the Manumuskin creek, seventy samples were collected. The results on these samples were as follows:

Number of samples collected.....	70
Number showing B. coli in 1 c.c.....	64—90.1%
Number showing B. coli in 0.1 c.c.....	32—45.0%
Number showing B. coli in 0.01 c.c.....	6—8.5%

In Section 2, which includes Manumuskin creek and extends to a point just above Leesburg, sixty-four samples were collected with the following results:

Number of samples collected.....	64
Number showing B. coli in 1 c.c.....	54—84.4%
Number showing B. coli in 0.1 c.c.....	18—28.1%
Number showing B. coli in 0.01 c.c.....	1—1.5%

From Leesburg to the beginning of Long Reach, seventy-one samples were collected—Section 1. The result of the examination of these samples follows:

Number of samples collected.....	71
Number of samples showing B. coli in 1 c.c.....	58—81.7%
Number of samples showing B. coli in 0.1 c.c.....	16—22.5%
Number of samples showing B. coli in 0.01 c.c.....	0—0.0%

In Long Reach seventy samples were collected on ebb tide and sixty on flood tide. The bacteriological results obtained on these samples were as follows:

Ebb Tide.

Number of samples collected.....	70
Number of samples showing B. coli in 1 c.c.....	60—85.7%
Number of samples showing B. coli in 0.1 c.c.....	14—20.0%
Number of samples showing B. coli in 0.01 c.c.....	2—2.9%

Flood Tide.

Number of samples collected.....	60
Number of samples showing B. coli in 1 c.c.....	28—46.7%
Number of samples showing B. coli in 0.1 c.c.....	4—6.7%
Number of samples showing B. coli in 0.01 c.c.....	0—0.0%

A comparison by these bacteriological results is interesting. It will be seen by consulting the table, Section 4, that the bacillus coli communis was found to be always present in dilutions of 1 c.c. and in 0.1 c.c., and that in dilutions of 0.01 c.c. it occurred in 43% of the examinations.

Float experiments have shown that it takes from five to six days for water from Millville to reach the oyster floats at Bivalve. If the river received no polluting material other than that which enters in Section 4, it would be expected that B. coli would be found less frequently in the river at Long Reach than our results indicate is actually the case, as there is considerable opportunity for sedimentation and much dilution between Millville and Long Reach. In Section 3 it will be seen that B. coli seldom occurs in 0.01 c.c. dilutions and is only present half as frequently in dilutions of 0.1 c.c. as in Section 4. These results are to be expected. When the results obtained in Sections 1 and 2 are compared with those obtained in Section 3, it would seem that a much greater diminution of the B. coli content should be noticeable because of the dilution due to incoming streams. Section 1 is eight miles further down the river than Section 2, yet the B. coli content has not diminished in the ratio that would be expected.

The sanitary surveys show that both banks of the river are free from polluting substances of human origin. This fact together with information obtained from examinations of the waters of Maurice river collected by sections, taken in conjunction with data obtained from floating experiments, we believe confirm the hypothesis advanced in the reports of other years that most of the B. coli found in Section 1 and Long Reach result from the drainage of farm or pasture lands which enters the river to a very considerable extent in Section 2.

During the present year 111 samples of oysters were collected in the Maurice river section, of which eighteen were salt and ninety-three floated for various periods of time. The results of these examinations are summarized as follows:

Number of samples of salt oysters collected.....	18
Number of samples having a score 0.....	12—67%
Number of samples having a score under 5.....	6—33%
Number of samples of floated oysters collected.....	93
Number of samples having a score of 23 or under.....	73—78.5%
Number of samples having a score of 32 to 50.....	16—17.2%
Number of samples having a score above 50.....	4—4.3%

The table shows that over 73% of the floated oysters have scores of twenty-three or under and that in only four instances does the score exceed fifty. In the case of salt oysters 67% of those examined were found to have a score of zero and 33% scored five or under. During the past year the oyster wharves on the Bivalve side of the river were entirely rebuilt, and while this has resulted in a marked improvement, it was the cause of bringing into Maurice river for a temporary period a class of men who were careless in their habits and had no interest or desire to prevent polluting material gaining access to the river. While these men were at Bivalve the high oyster scores shown in the above tables were obtained.

Experiments relating to the total solid content of salt and floated oysters:

The necessity for obtaining data relating to the total solid content of oysters, both salt and floated, led the bureau during the year to undertake certain investigations at Bivalve. Through the courtesy of the Shellfish Commission a small laboratory was installed in the office of the commission's representative. The oysters used in the experiment were collected from the various boats as they came in from the Cove. In each instance the location of the grounds from which the oysters had been collected was ascertained. A sufficient number of oysters were retained for chemical analysis and the remainder placed on specially constructed floats from which further samples were taken for analysis after floating for various lengths of time.

The following analytical procedure was used: Approximately twenty oysters were shucked into a 200 c.c. evaporating dish and then placed in a colander and allowed to drain for two minutes. After draining the oysters were ground twice by means of a meat chopper, care being taken not to lose any of the oyster liquor. The mass was then thoroughly mixed and a representative sample placed in a four-ounce bottle. From two to three grams of ground oysters were placed in a tared lead dish which contained a small glass pestle and twenty grams of sand. The lead dishes were permitted to remain on a water bath for three hours, after which they were weighed and the solid content estimated.

Salinity of Maurice River Cove Water—The following table shows the results of examinations of various samples of water collected from Maurice river:

LOCATION WHERE SAMPLE WAS COLLECTED.	Condition of tide.	Temp. H ₂ O.	Cl. P.P.M.	NaCl. Gms. 100 c.c.
Sec. C, Ground 538.....	½ hr. before low water..	14.75° C.	10,450	1.73
Sec. C, Ground 538.....	1½ hrs. flood.....	15.75° C.	11,950	1.99
Sec. B, Ground 172.....	Low water.....	15.50° C.	11,250	1.87
Sec. A, Ground 269, near Pierce's Point.....	1 hr. flood.....	15.50° C.	11,450	1.90
Sec. A, Ground 109.....	1½ hrs. flood.....	15.50° C.	10,975	1.83
Sec. A, Ground 221.....	1½ hrs. flood.....	15.50° C.	11,350	1.88
Sec. B, Ground 119.....	1½ hrs. flood.....	15.50° C.	11,500	1.93
Sec. B, near Dead Man's shoals.....	2 hrs. flood.....	16.00° C.	12,150	2.01
Sec. C, Ground 405.....	2 hrs. flood.....	16.00° C.	12,500	2.07
Sec. C, Ground 285.....	2¼ hrs. flood.....	17.50° C.	12,700	2.10
Sec. D, Ground 421, near Miah Mauh Light, close to ship channel.....	3¼ hrs. flood.....	17.00° C.	14,500	2.42
Sec. D, Ground 60, off Egg Island Light.....	3½ hrs. flood.....	16.75° C.	12,800	2.12
Sec. C, Ground 89.....	4 hrs. flood.....	15.75° C.	12,050	2.00

These results show that in the vicinity of the ship channel the highest salinity obtained, while in the sections designated as C and B, a lower salt content was found. The effect of the water from Maurice river can be seen by reference to the table, Section C ground No. 538.

The following table shows the per cent. of total solids of twenty-seven samples of salt oysters together with the solid content of oysters of the same lot after floating in the Maurice river for two and four tides respectively:

Sample No.	LOCATION IN MAURICE RIVER COVE.	OYSTERS—TOTAL SOLID CONTENTS.				
		Salt oysters.	Wind.	Floated. Two low tides.	Wind.	Floated. Four low tides.
1	Sec. A 166, Pierce's Point grounds.....	22.37%	N. E.	14.34%	S. E.	*16.62%
2	Sec. D 409, Miah Mauh grounds.....	23.10	"	16.10	"	*14.03
3	Sec. A 221, Dead Man's shoals.....	21.27	"	13.93	"	*15.28
4	Sec. D 252, Egg Island.....	21.46	"	14.57	"	*15.65
5	Sec. A 52, Paris Green.....	19.87	"	14.83	"	*15.45
6	Sec. D 449, outer deep water.....	24.70	"	16.26	"	*16.60
7	Sec. D 505, Ledge Gr.....	22.68	N. W.	16.61	N. W.	16.10
8	Sec. D 493, Miah Mauh.....	21.29	"	16.81	"	15.63
9	Sec. D 411, outer deep water.....	20.86	"	15.10	"	14.51
10	Sec. C 152, in shore Gr.....	20.59	"	13.51	"	14.00
11	Sec. C 393, Fisher Gr.....	22.37	"	14.42	"	15.16
12	Sec. C 275, Middle Gr.....	16.61	"	12.57	"	12.91
13	Sec. D 398, Miah Mauh.....	22.33	N. E.	15.78	"	"
14	Sec. D 606, Miah Mauh.....	22.95	"	15.96	"	"
15	Sec. D 510, outer deep water.....	22.80	"	16.92	"	"
16	Sec. D 292, Miah Mauh.....	21.04	"	15.53	"	"
17	Sec. C 244, Middle Gr.....	16.75	"	13.27	"	"
18	Sec. A 34, Dennis Cr.....	17.95	"	13.72	"	"
19	Sec. D 208, Sands.....	21.20	N.-N. E.	15.12	"	"
20	Sec. D 460, Miah Mauh.....	22.42	"	16.80	"	"
21	Sec. B 205, Inner Dead Land.....	17.77	"	13.83	"	"
22	Sec. D 574, Ledge Gr.....	22.85	"	15.41	"	"
23	Sec. D 541, Sands.....	21.20	"	17.00	"	"
24	Sec. D 552, upper deep water.....	19.22	"	14.82	"	"
25	Sec. C 440, outer deep water.....	24.00	South	16.89	"	"
26	Sec. D 252, Egg Island.....	19.33	"	14.91	"	"
27	Sec. A 52, Paris Green.....	18.65	"	13.73	"	"
Average.....		21.02%		15.21%		15.32%

The average total content was found to be 21.02%. The lowest figure obtained 16.61% and the highest 24.7%. In each case where the solid content was found to be considerably below the average figure the oysters would be regarded as "Very Poor" on physical examination. An examination of the tables will show that the oysters giving the lowest solid content were collected from Sections C and B, which are the ones most affected by water from Maurice river. The oysters which give the total solid content higher than the average usually were found to come from the waters in Section D, where the salinity is highest.

The average solid content of oysters floated two low tides were 15.21%, and the average for those floated four low tides were 15.32%.

At the time of this experiment it appeared that oysters would drink as much on two tides as when permitted to remain in the water for four tides. By consulting the above table it will be seen that the samples designated as 1-2-3-4-5-6, which were floated four tides, had increased their solid content on the last two tides in excess of the solid content which oysters of the same lot were found to have when floated two tides. There seems to be but little doubt that the wind affects the drinking of oysters to a considerable extent. During the last two tides that oysters designated as 4-5-6 were floated, the wind changed from northeast to southeast and a gale blew almost the entire time. It appears that southeast winds cause high flood and correspondingly small ebb tides in Maurice river; under these conditions the water at low tide has a greater salinity which results in oysters floated at this time having a higher salt content.

The following table shows the solid content of certain oysters floated two low tides, the salt content of the water, and the solid content of the oysters of the same lot after having remained in the water two low tides plus three hours and five hours of flood tides respectively :

Sample number.	LOCATION.	Wind.	On floats.	% salt in water when taken up.	% solids.
41 S	Sec. G, Gr. 440	S	2 low tides	0.495%	24.00%
41 FF	Sec. G, Gr. 440	S	2 low tides and 3 hrs. flood	1.379	16.89
41 FFF	Sec. G, Gr. 440	S	2 low tides and 5 hrs. flood	1.709	20.65
42 S	Sec. D, Gr. 252	S	2 low tides	0.495%	22.84
42 FF	Sec. D, Gr. 252	S	2 low tides and 3 hrs. flood	1.379	19.33
42 FFF	Sec. D, Gr. 252	S	2 low tides and 5 hrs. flood	1.709	14.91
43 S	Sec. A, Gr. 52	S	2 low tides	0.495%	15.71
43 FF	Sec. A, Gr. 52	S	2 low tides and 3 hrs. flood	1.379	18.90
43 FFF	Sec. A, Gr. 52	S	2 low tides and 5 hrs. flood	1.709	18.65
43 S	Sec. A, Gr. 52	S	2 low tides	0.495%	15.00
43 FF	Sec. A, Gr. 52	S	2 low tides and 3 hrs. flood	1.379	17.24
43 FFF	Sec. A, Gr. 52	S	2 low tides and 5 hrs. flood	1.709	

The results in this table indicate that oysters will drink at all stages of the tide and tends to disprove the contention of practical oystermen that oysters "drink" only at low water and remain closed during the flood tide. An examination of the table will also show that as the salt content of the water increases the solid content of the oysters also increases.

The following table shows the effect upon the solid content of soaking shucked oysters in fresh water :

	% Solids.
51 F. As opened by the shuckers, said to have been floated three low tides	17.31%
52 F. Taken from five-gallon can ready for shipment, floated three low tides	17.60%
53 F. Mixture of 51 F and 52 F, soaked over night. Frequent change of water	11.55%

It will be seen that in the twelve hour period there has been a decrease of solid content from 17.45% to 11.55%. This decrease was accompanied by a pronounced increase in the bulk of the oysters.

COHANSEY RIVER: Experiment to determine time for water from Bridgeton to reach oyster floats at Greenwich Pier.

For the purpose of obtaining data on the length of time required for water in the Cohansey river at Bridgeton to reach the oyster floats at Greenwich Pier, a distance of approximately sixteen miles, floats were placed in the river at a point opposite the lower disposal plant at Bridgeton and followed down the river. Because of lack of time it was impossible to carry the floats all the way down to Greenwich Pier, but the results indicate that, in ordinary dry weather about twenty-four days is required for a float to travel from Bridgeton to Greenwich Pier.

Conditions in the Cohansey river are quite favorable for sedimentation. This, together with the dilution, makes it unlikely that the disinfected sewage effluent from the Bridgeton disposal plants will have any detrimental effect upon the shellfish floated at Greenwich Pier.

The following table shows the results of certain dissolved oxygen determinations of Cohansey river water made during August, 1916. The bacteriological findings are also given :

COHANSEY RIVER—DISSOLVED OXYGEN RESULTS.

LOCATION ON COHANSEY RIVER.	Dissolved oxygen parts per million.		Dissolved oxygen per cent. of saturation.		Bacteriological results.	
	Ebb tide.	Flood tide.	Ebb tide.	Flood tide.	Ebb tide. B. coli present in	Flood tide. B. coli present in
Below disposal plant	2.60	5.60	31.7%	68.1%	0.01 c.c.	0.01 c.c.
Half way between Bridgeton and Fairton	2.25	5.10	28.0	63.1	0.01 c.c.	0.01 c.c.
	4.80	6.15	58.4	74.8	0.01 c.c.	0.01 c.c.
	4.80	6.00	59.4	74.3	0.01 c.c.	0.1 c.c.
Below Fairton mills creek	5.20	5.40	63.3	65.7	0.01 c.c.	0.1 c.c.
	5.30	5.40	65.6	66.8	0.1 c.c.	0.1 c.c.
Tindall's wharf	5.20	5.35	63.3	65.0	0.1 c.c.	1.0 c.c.
	5.25	5.20	65.0	64.4	1.0 c.c.	1.0 c.c.
First club house from Bridgeton	4.90	4.65	59.7	56.6	0.1 c.c.	1.0 c.c.
	5.00	4.80	61.9	59.40	1.0 c.c.	0.1 c.c.
Half way between club houses	5.00		60.1		0.1 c.c.	
Wetherill's farm and club house	4.80	4.85	58.4	59.0	0.01 c.c.	0.1 c.c.
	4.30	4.55	53.2	56.3	0.1 c.c.	0.1 c.c.
Greenwich	4.60	5.4	55.9	65.7	0.1 c.c.	absent in 1 c.c.
	4.60	5.2	56.9	64.5	absent in 1 c.c.	0.1 c.c.
Greenwich pier	4.80	5.5	58.4	66.9	0.01 c.c.	1.0 c.c.
	4.80	5.20	59.4	64.5	1.0 c.c.	1.0 c.c.
Half way between Greenwich pier and mouth of Cohansey river	5.10	6.0	62.1	71.7	1.0 c.c.	0.1 c.c.
	5.00	5.80	62.0	71.6	1.0 c.c.	absent in 1 c.c.
Delaware bay, 100 yds. from Cohansey river	6.35	6.40	78.6	78.0		absent in 1 c.c.
		6.55		81.2	absent in 1 c.c.	absent in 1 c.c.

TUCKERTON CREEK: A sanitary survey made of Tuckerton creek during the month of August disclosed the fact that certain conditions existed resulting in the pollution of the stream. The cause of this pollution was found to be due to leaking cesspools, overflowing privies and lack of adequate toilet facilities at some of the oyster houses and other business places adjacent to the creek. Polluting matter was also added to the stream by persons living on houseboats and other pleasure craft, and with the drainage from pasture lands along the creek.

Forty samples of water were collected at points located at intervals from the dam to the mouth of the creek. The results of the examinations of these samples were as follows :

Total number of samples	44
Number showing presence of B. coli in 1 c.c.	41—93.1%
Number showing presence of B. coli in 0.1 c.c.	24—54.5%
Number showing presence of B. coli in 0.01 c.c.	10—22.7%
Number showing absence of B. coli	3

A further sanitary survey was made during the month of September as a result of which it was found that a number of the most serious pollutions have been abated.

The entire matter has been brought to the attention of the local board of health of Tuckerton, and that body has agreed to take the necessary action to prevent further pollution of the creek. An ordinance has already been prepared to meet the needs of the situation, which will be enacted by the local board of health, and an inspector is to be appointed among whose duties shall be the discovery and abatement of all nuisances which tend to pollute Tuckerton creek.

Further investigations will be made by the bureau during the months of November and December, the results of which cannot be incorporated in this report.

BEACH HAVEN: The waters of Little Egg Harbor lying within a radius of one-half mile of the Beach Haven Yacht Club were condemned in 1915, because it was shown that such waters were polluted and therefore unsuited for the growing of oysters. Investigations made in this vicinity during the present year led the Department to also place all of Liberty Thorofare in the condemned area. Except in one instance no difficulty has been met in preventing the gathering and sale of shellfish from the condemned sections. In this case it became necessary for the Department to institute legal proceedings against one oyster dealer for the collection of a penalty.

RARITAN BAY: In 1914 an order was issued by the United States Department of Agriculture, Bureau of Chemistry, condemning all the waters on the New Jersey side of Raritan bay, on the ground that those waters were polluted, and, therefore, not suitable for the growing of shellfish. This ruling was accepted and enforced by the Department of Health of the City of New York, and this enforcement resulted in nearly a complete cessation of the oyster business in this section.

During the year 1914 an investigation was made by this bureau of the shellfish grown in Raritan bay, and in 1915 considerable time was spent in co-operation with the United States Public Health Service in making a sanitary survey of Raritan bay and its tributaries, and in the examination of samples of water and shellfish. The opinion formed by this Department as a result of the work was that oysters grown on the New Jersey side of Raritan bay were safe for human consumption. For the purpose of arriving at a definite understanding regarding the Raritan bay shellfish industry a joint investigation was made this year by representatives of the United States Department of Agriculture, Bureau of Chemistry; the United States Public Health Service, the Department of Health of the City of New York and this Department. The work consisted in making bacteriological examinations of salt oysters and waters collected at the beds of oysters floated for varying periods of time in Luppaccong and Cheesequake creek, and of water samples obtained therefrom. In addition a sanitary survey was made of both Luppaccong and Cheesequake creeks. Further investigations were also conducted by this Department of Marquis, Whale, Conoskonk and Flat creeks, all of which are tributary to the Raritan bay.

The total number of salt oysters collected in the Raritan bay section were forty. The results of the examinations of these oysters are as follows:

Total number of samples examined.....	40
Number giving score below 32.....	37—92.2%
Number giving score between 32 and 50.....	3— 7.8%
Number giving score over 50.....	0— 0.0%

Forty samples of water were collected in Raritan bay above the oyster beds. The bacteriological results obtained on these samples are as follows:

Number of samples showing presence of B. coli in 1.0 c.c.....	2— 5%
Number of samples showing presence of B. coli in 0.1 c.c.....	1—25%
Number of samples showing presence of B. coli in 0.01 c.c.....	0— 0%
Number of samples showing absence of B. coli.....	38—95%

LUPPATCONG CREEK: This stream, which has been the principal floating grounds in this section, is a tributary of Raritan bay. It has a drainage area of about four square miles and extends back from the bay a distance of about four miles. The sanitary survey which was made of the creek this year indicated that it was still receiving some polluting material. For the purpose of showing the effect of the waters of Luppaccong creek upon oysters floated in it the following experiment was made: Approximately 300 salt oysters were collected and six samples, or thirty oysters, were examined bacteriologically. The remaining oysters were floated in Luppaccong creek and representative samples collected from time to time and tested. The results of the experiments showing scores of salt and floated oysters of the same lot follow:

SALT OYSTERS.	FLOATED OYSTERS.			
	Score.	Time floated.	Oyster score.	
32-14	1 low water.	50	23	.....
5-4	2 " "	140	41	.....
5-4	8 " "	140	230	.....
5-4	10 " "	500	500	500 410

In the samples of water collected the B. coli communis was found to be present in 94.4% of the specimens in 1 c.c., positive in 27.7% in dilutions of 0.1 c.c. and found to occur in 5.5% of the samples in dilutions of 0.01 c.c.

CHEESEQUAKE CREEK: This stream is a tidal estuary of Raritan bay and is about three miles long. For the purpose of showing the effect of the waters of Cheesequake creek upon shellfish floated in it, an experiment similar to the one made regarding Luppaccong creek was conducted. The results of these experiments, showing the scores of salt and floated oysters of the same lot, follow:

SALT OYSTERS.	FLOATED OYSTERS.			
	Score.	Time floated.	Oyster score.	
5-14-5-32-3-4	4 low waters.	5	5	
"	12 " "	50	50	
"	16 " "	41	23	

Cheesequake creek, except near its mouth, where there is a small summer colony, flows through an uninhabited marsh. Two complete sanitary surveys were made which indicated that the possibility of the creek receiving pollution of human origin was exceedingly remote. It was found, however, that during certain periods of the year, horse manure is carried by barges from New York City to the head waters of Cheesequake creek, where it is unloaded and subsequently carted to near-by farms. It is quite possible that at times small quantities of the manure gains access to the creek resulting in a minor pollution.

In our judgment the sanitary surveys which have been made of Cheesequake creek and the bacteriological examinations of oysters and water collected therefrom, indicate that this creek may be safely used for the floating and storage of shellfish. We understand that the United States Department of Agriculture, Bureau of Chemistry, and the Department of Health of the City of New York do not concur in this opinion.

The results of the co-operative investigation indicate that oysters growing on the New Jersey side of Raritan bay, off Conoskonk Point, are safe for human consumption.

Luppatcong creek, because of its location, may at times become dangerously polluted. The results of the examination of oysters floated therein showed marked evidences of pollution. A report recommending that this creek be condemned as a floating ground for shellfish was made to the Department, and subsequently the creek was condemned.

Division of Milk Control—George W. McGuire, Chief. The number of inspections made by inspectors of the division since November 1st, 1916, were as follows: Dairies, 2,511; milk depots, 419; creameries, 277; ice cream factories, 606; pasteurizing plants, 359. During the year requests were made, under authority contained in Chapter 78 of the Laws of 1914, for inspection of their milk supplies by the following towns: Asbury Park, Atlantic City, Atlantic Highlands, Bayonne, Bernards Township, Bernardsville, Bordentown, Dover, Elizabeth, Englewood, Fair Haven, Franklin, Hightstown, Hoboken, Jersey City, Kearny, Lakewood, Lawrenceville, Long Branch, Madison, Millburn, Morristown, Newton, North Bergen, Passaic, Paterson, Peapack, Princeton, Red Bank, Ridgewood, Roselle, Roselle Park, Westfield, West Hoboken, Wenonah, Westwood and Woodbury.

Ninety-nine dairy owners were given a time limit during the year within which to improve conditions on their premises. Eighteen of them failed to comply with the requirements of the Department and were ordered to discontinue the production of milk for public distribution. One producer voluntarily relinquished the business rather than meet the Department's requirements.

Before excluding the milk from these defective dairies the owners were given an opportunity to be heard by the Director. Seven of them appeared and failed to satisfy the Department that they were able to conduct their business in a satisfactory manner, and were consequently ordered to stop producing milk for human consumption. The work of dairy inspection has been hampered this year owing to the epidemic of infantile paralysis which commenced in August, from which time to almost the end of the fiscal year no inspectors were available for work of dairy inspection. It was, therefore, necessary to postpone the inspection of dairies requested by Asbury Park, Atlantic City, Atlantic Highlands, Dover, Morristown, Red Bank, Roselle, Passaic, Trenton, until the close of the fiscal year.

The temperature to which milk is cooled and held has such an important bearing on its hygienic and keeping qualities that the Department during the year adopted a regulation providing that all milk shall be cooled to a temperature of 60° F. or below, within two hours after being drawn from the cow. The regulation which became effective June 1st, 1916, can be found in the report of the Director. It has only been possible this year to make a start in the enforcement of the regulation. The following table shows certain information obtained relating to the temperatures of milk as delivered to certain shipping stations during the summer months in various counties of the state:

County.	No. Producers Milk Examined.	Morning Milk. % Cooled Below 60° F.	Night Milk. % Cooled Below 60° F.
Camden	37	0.0	11.0
Cumberland	15	0.0	0.0
Gloucester	8	25.0	88.0
Hunterdon	238	6.0	56.0
Monmouth	20	95.0	95.0
Salem	22	0.0	0.0
Somerset	10	25.0	90.0
Sussex	398	72.0	99.0
Warren	89	15.0	82.0
*Warren	107	10.0	28.0

* Milk carted in wagons from Warren County, New Jersey, to Easton, Pa.

Veterinary Inspection of Dairy Herds—Healthy cows are one of the most important factors in the production of a safe milk, and while this fact has perhaps been realized, this phase of the milk problem has never received the attention it deserves. Chapter 78 of the Laws of 1914 deals with the situation to some extent by providing that all dairymen shall have their cows physically examined by a duly-licensed veterinary surgeon at least once each year, and that the results of such examinations shall be filed in the office of the Department of Health of the State of New Jersey. This law serves the purpose of bringing to the Department some useful information and aids to a limited extent in the exclusion of diseased cattle from dairy herds. Unfortunately, a great deal of the information so obtained has been shown to be incomplete and unreliable.

This year an investigation in co-operation with local boards of health was made by the veterinary inspector of the bureau of the dairy animals supplying milk to three of the cities in the state. Two of these cities have ordinances which provide that no raw milk shall be sold unless obtained from tuberculin-tested cattle. The other city, while not requiring the tuberculin test, has made it the practice to have bacteriological examinations made of the milk supplied by individual dairies, and in this way attempted to regulate the character of its milk supply.

The following table shows the information obtained by veterinary examination of dairy animals, the milk from which was supplied to the cities of Perth Amboy, Plainfield and Newark. In certain instances the results of the tuberculin test and post-mortem findings are also indicated:

CITY WHERE MILK IS SOLD.	Kind of examination.	Number of herds.	Number of cows in the herds.	Suspected cases of tuberculosis.	Reactors reported.	Acute mastitis.	Abscesses in udder.	Open sores in udder.	Tumorous growths in udder.	Simple induration of udder.	Atrophied quarters in udder.	Abnormal lymphatic glands.	Septic metritis.	Other diseases unclassified.	No. of cattle slaughtered under inspection.	No. found tuberculous at post mortem.	No. condemned for fertilizer.	No. passed for food.
Perth Amboy...	Physical	8 herds	237	7	0	5	1	8	13	1	2	0	0
	Tuber. test..	5 herds	184	16
Plainfield	Physical	26 herds	350	18	0	5	1	7	12	6	14	1	1	11	11	3	8	
	Tuber. test..	4 herds	105	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	7	5	1	6
Newark	Physical	22 herds	821	82	44	23	2	30	29	13	67	2	4	8	8	6	2	
	Tuber. test..	14 herds	607	57	.....	.....	.....	.....	.....	.....	.....	.....	.....	31	31	12	19
Total	Physical	56 herds	1,408	107	44	33	4	45	54	20	83	3	5	19	19	9	10	
Total	Tuber. test..	23 herds	896	83	.....	.....	.....	.....	.....	.....	.....	.....	.....	38	36	13	25
Combined total of slaughtered animals.		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	57	55	22	35

By consulting the table it will be seen that of the total of 56 herds physically examined, diseased conditions were detected in 43 and that of the 1,408 cows comprising these herds, 107 or 8 per cent. showed physical symptoms of tuberculosis, and 180 or 13 per cent. showed evidences of diseased conditions of the udder. A further examination of the table will show that out of 23 herds tuberculin tested, animals reacting to this test were found in 16 herds. Of the 896 cattle examined 83 or 9 per cent. were found to be tubercular.

Thirty-eight of the 83 reactors above mentioned were slaughtered under inspection, and 36 on post-mortem examination displayed extensive lesions of tuberculosis. Thirteen or 34 per cent. were so badly affected that it was necessary to destroy the entire carcass in each case. Nineteen other animals which had not been tuberculin tested but which showed diseased conditions by physical examination, exhibited lesions of tuberculosis when slaughtered. Nine or 47 per cent. were in such a condition as to make their use for food purposes impossible.

Some of the carcasses which were destroyed were of cows regarded by their owners as their very best stock, which bears out the fact (already abundantly proven) that it is not at all necessary that a tuberculous cow should be emaciated or show clinical symptoms in order to indicate the presence of disease. If no clinical evidence is available the only remaining test of value is the tuberculin test.

The results of our investigations indicate that in order to secure a safe milk supply, free from living tubercle bacilli, some better system of controlling the health of dairy cows must be adopted. This is especially true if the major portion of the milk produced is to be

continued to be sold raw. It is obvious that a state-wide requirement should be made and enforced which would provide that all milk offered for sale should be pasteurized, except that obtained from cows which are tuberculin tested at regular intervals and reactors excluded from the herds. Such a regulation as this conscientiously enforced will prevent the sale of milk containing living tubercle bacilli.

Milk Pasteurizing Plants—At the beginning of the present fiscal year a plan was devised for a more thorough investigation of all milk pasteurizing plants. Although the so-called "flash" system of pasteurizing milk and cream has given way to the more reliable "holder" method, it is now universally conceded that a commercially-pasteurized product requires frequent official inspection and control in order to make it safe.

A bacteriological test of the efficiency of the various pasteurizing processes was begun in 1915, the samples being collected in sterile vials and brought, properly iced, to the laboratory. On account of certain difficulties, the work progressed rather slowly, the examination of milk being confined chiefly to those establishments located within short distances of Trenton. How to reach the more remote pasteurizing plants in the state and transport the samples to the laboratory within a minimum time presented a more difficult problem. The plan was therefore adopted of having the inspector collect the samples and also make the necessary dilutions and agar plates while at the creamery, finally bringing the plates to the laboratory for incubation and counting. It is believed that this method has considerably increased the efficiency of the entire inspection work, samples being collected at more frequent intervals and a better opportunity afforded for observing the different milk handling operations.

It is estimated that 31 per cent. of the entire milk supply of the state is pasteurized, and the indications are that this figure will be considerably increased during the next few years. Fourteen new plants were established during the year, four others are now being equipped and only two discontinued the process. At present there are 105 pasteurizing plants in New Jersey, receiving nearly 360,000 quarts of milk daily from 3,000 producers. Ninety-two per cent. of this supply is pasteurized, the balance being sold raw or manufactured into other products. It is to be regretted that in 13 establishments equipped for the pasteurization of milk, the process is not used except during the warm weather, and is then employed for commercial purposes only.

Of the several methods of pasteurization in the state, 50 creameries employ the continuous-holder system; 51, the absolute or "batch" system; 3, pasteurization in-the-bottle, and one, the "flash" system. The last-mentioned type is about to be replaced by a suitable holding apparatus. Ninety per cent. of the pasteurizers are equipped with recording thermometers, the temperature records of which were periodically inspected. Sixty-two per cent. of the plants maintained uniform pasteurizing temperatures, as shown by the daily charts; 18 per cent. presented fairly satisfactory records, while in

20 per cent. the temperatures were so irregular as to offer no assurance whatever that the milk had been properly pasteurized. In some instances it was necessary to adjust these instruments to conform to an accurate thermometer.

In 50 establishments milk is pasteurized at a temperature of 142-145 degrees F. for 30 minutes, while the remaining plants heat the milk to a lower degree and for a shorter period. Although the present rule of the Department requires that milk be heated to only 140 degrees F. for 20 minutes, investigations have shown that more efficient results can be obtained by increasing this temperature to 142-145 degrees F. and the holding time to 30 minutes.

The cooling of milk after pasteurization has been found to be satisfactory at most plants, 78 per cent. reducing the temperature to 50 degrees F. or below, 14 per cent. between 50 and 60 degrees, and 8 per cent. to temperatures above 60 degrees F.

One inspector was detailed by the bureau to make a complete survey, including physical and bacteriological aspects, of each of the 105 pasteurizing plants in the state. Three days each week were spent investigating the sanitary condition of certain creameries and in the collection of samples of milk before and after pasteurization. These samples were taken as follows, the temperature of the milk and the time of sampling being noted in each case:

1. Mixed raw milk (from receiving vat).
2. Mixed raw milk (at outlet of milk clarifier).
3. Pasteurized milk (after heating and holding).
4. Pasteurized milk (after being cooled).
5. Pasteurized milk (from bottle-filler).
6. Pasteurized milk (from the first bottle filled).
7. Pasteurized milk (second sample from pasteurizer).
8. Pasteurized milk (second sample from cooler).
9. Pasteurized milk (second sample from bottle).
10. Pasteurized milk (third sample from pasteurizer).
11. Pasteurized milk (third sample from cooler).
12. Pasteurized milk (third sample from bottle).
13. Empty bottle (check on cleansing and sterilization).
14. Wash water (check amount of alkali used).

This line of work was continued until the month of August, when the epidemic of poliomyelitis caused its temporary abandonment.

The efficiency of pasteurization, as determined by bacteriological tests at 77 plants, may be summarized as follows:

Number of pasteurizing plants where samples were collected for bacteriological examination.	Per cent. of plants showing a satisfactory reduction of bacteria after pasteurization with no subsequent contamination.	Pasteurization satisfactory, but first milk running over cooler high in bacteria.	Pasteurization satisfactory, but bacteria increased by contaminated bottle-filler.	Unsatisfactory pasteurization.
77	52%	21%	6%	21%

The high bacterial count of milk leaving the cooling apparatus may be caused by (1) the absence of a tight cover on many cooling devices, our investigations showing that 59 per cent. of the plants have exposed coolers; (2) by a lack of thoroughness in cleansing said coolers before and after use.

The conditions found to be responsible for unsatisfactory pasteurization may be briefly outlined as follows:

	No. Plants.
Insufficient bacterial reduction (minimum temperature and holding period) ..	4
High bacteria in raw milk	3
Irregular heating, holding and contaminated bottles	2
Irregular heating, holding and cooling of milk	1
Warm raw milk in pipes leading from pasteurizer to cooler, causing the first milk running over cooler to be high in bacteria	1
Heating raw milk while batch pasteurizer was being filled	1
Sour milk accidentally dumped into pasteurizer before heating	1
Trouble with coil packing	1
Contamination by molds	2
Total	16

Six of the above creameries were promptly revisited and a second series of samples collected. In five cases the retest showed a marked bacterial reduction after pasteurization and no subsequent contamination. In one instance, the bacterial results obtained on reinspection were no better than on the first visit, and the owner was required to discontinue the pasteurization of milk.

In 83 pasteurizing plants, either all or part of the milk supply is bottled. In 28 per cent. the filled bottles are capped mechanically, while in 72 per cent. the creamery employes place the caps on the bottles. Thirty-five per cent. have good facilities for cleansing milk containers; 20 per cent. fair, and 45 per cent. poor. The analyses of numerous samples of wash water indicated that at many establishments an insufficient amount of alkali is used to properly cleanse milk containers. The solutions tested varied in strength between seven-tenths of one per cent. and two hundredths of one per cent. total alkali.

As a result of 359 inspections, the following defects in the equipment and management of pasteurizing plants were found:

Construction.	No. Defects.	Cooling.	No. Defects.
Broken floors	6	Inadequate cooling	9
Rough walls and ceiling	5	No covers on coolers	43
Dirty interior surfaces	12	Cooler too small	1
Imperfect ventilation	2	Brush to start first flow of milk over cooler	2
Communication with dwelling	1	Cooler not well cleaned	16
Steam boiler in pasteurizing room, No fly screens	19	Storage of milk not adequate	1
<i>Surroundings.</i>		Dirty water in storage vats	1
Drainage imperfect	4	<i>Bottling.</i>	
Manure-pit not fly-tight	10	Bottle-filler not properly cleaned, Bottle-filler in poor repair	4
Privy not fly-tight	12	No cover on bottle filler	3
Privy not clean	5	Drip milk poured back into filler, Caps for bottles not protected from contamination	3
<i>Receiving of Milk.</i>			13
Receiving vats out of repair	2	<i>Utensils.</i>	
Receiving and storage vats uncovered	5	Interior of pipes not smooth	3
Slowness of milk handling	1	Pipe joints tied with cloth	3
<i>Pasteurization.</i>		Pipes not properly cleaned	13
Apparatus not satisfactory	4	Milk pails corroded	1
Pasteurizer uncovered	1	Dirty strainer-cloths	3
Irregular heating and holding of milk	17	<i>Sterilization of Containers.</i>	
Cream pasteurized by flash system	2	Inadequate facilities for washing and sterilizing bottles	35
Re-pasteurization of milk	4	Inadequate facilities for cleansing cans	7
No recording thermometer	10	No draining racks for cans	4
Thermometer not placed at appropriate point	4	<i>Employees.</i>	
Temperature records not dated	13	Dirty clothing	1
		No soap or towel provided	39
		<i>Misbranding.</i>	
		Placing "pasteurized" caps on raw milk containers	2
			352

Some of the defects mentioned in the above table have little bearing upon the quality of the milk, but, if allowed to exist, tend to foster indifference or carelessness in the more important phases of milk-handling.

The survey made of pasteurizing plants during the year has shown the need of more comprehensive rules and regulations. Such rules are now being prepared. It is believed that the enforcement of these rules when adopted, and a more vigorous follow-up system contemplated by the bureau, will increase the efficiency in pasteurization and handling of milk.

Ice Cream Factories—Six hundred and six ice cream factory inspections were made during the year. A time limit was given to the owners of 17 establishments to improve conditions on their premises. At the end of the time limit nine of them had complied with the orders of the Department and were permitted to continue business. Eight were prohibited from manufacturing, two of whom were subsequently permitted to resume business after it was shown that they had met all the Department's requirements. Four permanently retired from the business.

Report of the Bureau of Engineering.

CHESTER G. WIGLEY, CHIEF.

In reviewing the year's work of the Bureau of Engineering, one fact stands out prominently. The work of this bureau covers such a wide and constantly growing field that no one branch can be given proper attention. The duties of the bureau are listed below with data giving some idea as to the quantity and importance of each.

Duties of the Bureau of Engineering—1. Prevention of the pollution of streams on watersheds from which water is taken for potable purposes: To satisfactorily carry out this work it is necessary to make investigations as to the disposal of excreta, garbage and manure at every house on the watershed; also obtain information as to whether or not hog pens and privies are so located as to pollute the stream. It also requires an investigation of all manufacturing plants on the watershed. This information is obtained on the first inspection. Notices are then served upon persons from whose property polluting material reaches the stream. Another inspection must later be made to ascertain whether or not the pollutions have been abated; if not, the case is referred to the Attorney-General for prosecution, or a hearing is given to the polluters, after which another inspection is required. Therefore, at least two, and more often three, inspections must be made of each pollution.

The state has a total area of 8,824 square miles, of these there are slightly more than 3,660 square miles of territory from which water is obtained for potable purposes. It can be readily seen that with an inspection force of six men all their time could be spent in this work alone.

2. The proper operation of water distributing plants: This work includes the inspection of water stations for the purpose of seeing that the water filtration and disinfection plants are properly operated, and that new sources of water supplies have not been used without the approval of the Department. It also includes special work relating to water-borne epidemics of disease, as well as special investigations, when complaints are filed with the Department. It necessitates the making of special inspections when unsatisfactory emergency supplies of water are used for fire purposes, and quite a number of water companies follow this practice whenever there is a large conflagration. The practice may be dangerous at times and needs to be carefully investigated.

In April, 1916, there were 259 sources of public water-supply in use

in the state, and this number has been slightly increased recently. The water from 59 of these sources is treated before being supplied to the consumer, and the proper supervision of these treatment plants alone requires the services of one man for the full working year, and allows only four inspections per year per plant.

3. Supervise the collection of samples from all public water supplies at least four times a year, distribute copies of analyses, and make special investigations as soon as the analyses indicate that the water is of doubtful quality.

4. The approval of all new sources of water-supply requiring special investigation as to the sanitary conditions of the watershed or vicinity of the source of supply.

5. Approval of plans for water-supply systems and water treatment plants. This work usually requires a special investigation of the site of the works and point of installation of the treatment works. In some cases two or three days are required to acquire the necessary data and check up the plans.

6. Examination and certification of water supplied to railroad and steamboat passengers in interstate traffic. There are 40 sources of such water, the quality of which must be certified to the Federal Public Health Service twice a year. Because of the requirements of this service it is necessary to collect and plate the samples of water at the source of supply. This work on a slightly different basis should be extended to cover water supplied to passengers in intrastate traffic.

7. Investigate the various methods of sewage disposal in order that the Department may make proper recommendations in regard thereto. Practically, nothing is done in reference to this work, except to acquire such information as may be obtained from the technical papers. Much good work could be done along this line by establishing small experimental treatment plants to treat special manufacturing and trade wastes, so that the Department could advise as to their future treatment. At the present time the Department is required to advise as to the treatment of these wastes, no two of which are exactly alike, without the opportunity to obtain any practical knowledge as to the efficiency of the plant already in operation.

8. When any complaints are made relating thereto, the Bureau of Engineering is required to investigate the pollution of any waters of the state, including tidewater and the ocean. This places a great burden upon the bureau which it is impossible to meet with the present number of employes.

Related to this work is the investigation and prosecution of pollutions reported by the State Fish and Game Commission, who claim that they cannot successfully prosecute such pollutions because of the particular wording of the act relating to this matter.

9. The approval of plans for sewers and sewage treatment plants is also required. This work necessitates a visit to the site of the proposed treatment works, examination and criticism of the design, and

submission to the Department with recommendations. It often happens that plans for sewage treatment works are taken up with the designing engineer four or five times before they are considered satisfactory and submitted to the Department for action.

10. To supervise the operation of sewage treatment plants: Experience in the past has shown that in many cases frequent inspections are required, as otherwise the attendant, because of neglect or insufficient knowledge, so operates the plant as to produce an unsatisfactory effluent, and at times endangers the works themselves. The neglect of sand filters for two months may mean that some of them will have to be reconstructed. At the present time there are 219 sewage disposal plants in the state and eight more are under construction. Many of the sewage plants are in watersheds from which water is taken for potable purposes, and should be inspected at least once every two months; at the present time the maximum number of visits per year to any sewage plant is limited to four, and other special work has interfered with making even this limited number of inspections. This work also requires the making of extended studies of sewage treatment plants in order to advise as to improvements in their operation and as to the construction of additional works and units when needed. It is not uncommon to find a sewage works treating sewage from twice the number of persons for which it was originally designed.

11. To the above work has recently been added the examination of plans for tuberculosis sanatoriums. While not a great number of such plans are submitted each year, each plan requires at least a day's work in order to satisfactorily examine into the design, construction and provisions of the specifications.

12. Miscellaneous work of the bureau includes talks relative to water or sewage works at public meetings, special investigations of various kinds, days in court, attendance at hearings, state engineers' conference, &c.

The following table gives a brief summary as to the number of days and percentage of the total working time devoted to each branch of the work:

TABLE NO. 1.

Working force: 1 chief engineer, 7 assistant engineers.
Total number of working days, 2,080.

Class of Work.	Days Devoted to Each	Per Cent. of Whole Working Time.
Full time of one man and one-third of time of one assistant required for office work replying to correspondence, and inquiries, &c.....	345	16.6
Routine inspections of water supply plants.....	166	8.0
Special inspections of water supply plants made in accordance with complaint or request.....	105	5.0
Required for examination and certification of water supplies used in interstate traffic.....	31	1.5
Inspection of watersheds for the prevention of pollution.....	139	6.7
Routine inspection of sewage treatment plants....	197	9.5
Special inspections relating to pollution of streams complained of.....	257½	12.4
Time spent in office writing reports, drawing maps, writing annual report, &c. Of this time 88 days or 4.2% of the whole working time were spent in the office largely in writing the annual report due to the failure of the annual appropriation.....	475½	22.9
Time spent in quarantine work.....	268	12.9
Time men absent due to illness.....	40	1.9
Time spent in court.....	3	0.1
Days lost in appointing new men to fill vacancies,	53	2.5
Total	2,080	100. %

In the following table, number 3, is given a list of the municipalities in which there are public supplies of potable water, and information is given as to the water company or water department supplying the water. In subsequent tables will be found, under the name of the water company or water department, a brief description as to the source of supply and method of treating the water:

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY.

MUNICIPALITY.	SUPPLIED BY
Absecon	Atlantic County Water Company of N. J.
Acquackanonk Twp. (Athenia)	Montclair Water Company.
(Clifton)	Montclair Water Company.
(Delawanna)	Yantacaw Water Company.
Alexandria Twp. (Little York)	Community Supply.
Allendale Boro.	Boro. of Ramsey.
Allenhurst Boro.	Boro. of Allenhurst.
Allentown Boro.	Boro. of Allentown.
Asbury Park	City of Asbury Park.
Atlantic City	Monmouth County Water Company.
Atlantic Highlands Boro.	Tintern Manor Water Company.
Audubon Boro.	City of Atlantic City.
Avalon Boro.	Boro. of Atlantic Highlands.
Avon Boro.	New Jersey Water Service Company.
Barneget City Boro.	Merchantville Water Company.
Bayhead Boro.	Boro. of Avalon.
Bayonne	Monmouth County Water Company.
Beach Haven Boro.	Barneget Water Company.
Belleville Town	Bayhead Artesian Water Company.
Belmar Boro.	Montclair Water Company.
Belvidere Town	Boro. of Beach Haven.
Bergenfield Boro.	City of Newark.
Berkley Twp. (Ocean Gate)	Boro. of Belmar.
Bernards Twp.	Buckhorn Springs Water Company.
(Basking Ridge)	Belvidere Water Company.
(Bernardsville)	Hackensack Water Company.
(Far Hills)	New Jersey Coast Water Company.
Beverly City	Bernards Water Company.
Beverly Twp.	Bernards Water Company; Frank B. Allen.
(Delanco)	Boro. of Peapack-Gladstone.
(Edgewater Park)	Delaware River Water Company.
Blairstown Twp. (Blairstown)	Delaware River Water Company.
Bloomfield Town	Blairstown Water Company.
Bloomsbury Boro.	Montclair Water Company.
Bogota Boro.	Bloomsbury Water Company.
Boonton Town	Bogota Water and Light Company.
Bordentown City	United Water Supply Company.
Bound Brook Boro.	City of Bordentown.
Bradley Beach Boro.	Bound Brook Water Company.
Branchville Boro.	Monmouth County Water Company.
Brick Twp. (W. Point Pleasant)	Boro. of Branchville.
Bridgewater Twp. (Pluckemin)	Point Pleasant Water Company.
Bridgeton City	Superior Thread and Yarn Company.
Burlington City	City of Bridgeton.
Butler Boro.	City of Burlington.
Caldwell Boro.	Butler Water Company.
Caldwell Twp. (Overbrook Hospital)	Essex Fells Electric Light and Water Company.
Camden City	Montclair Water Company.
Cape May City	City of Camden.
Cape May Point Boro.	Merchantville Water Company.
Carlstadt Boro.	Stockton Water Company.
Chatham Boro.	City of Cape May.
Chesterfield Twp. (Crosswicks)	Boro. of Cape May Point.
Chester Twp. (Maple Shade)	Hackensack Water Company.
(Moorestown)	Boro. of Chatham.
(Stanwick)	Crosswicks Water Company.
Cinnaminson Twp.	Maple Shade Water Company.
Clayton Boro.	Moorestown Water Department.
	Moorestown Water Department.
	Riverton-Palmyra Water Company.
	Clayton-Glassboro Water Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Clementon Twp. (Clementon)	Clementon Spring Water Company.
(Overbrook)	Laurel Springs Water Supply Company.
(Stratford)	Laurel Springs Water Supply Company.
(Somerdale)	Laurel Springs Water Supply Company.
(Lindenwald)	New Jersey Water Service Company.
(Kirkwood)	Lakeside Park Water Company.
(Watson town)	Clementon Spring Water Company.
Cliffside Park Boro.	Hackensack Water Company.
(Grantwood)	Hackensack Water Company.
Clinton Boro.	Clinton Water and Water Supply Company.
Clinton Twp. (Annandale)	Clinton Water and Water Supply Company.
Closter Boro.	Hackensack Water Company.
Collingswood Boro.	Merchantville Water Company.
Cranbury Twp. (Cranbury)	Cranbury Water Company.
Cranford Twp. (Cranford)	Plainfield-Union Water Company.
Cresskill Boro.	Hackensack Water Company.
Deal Boro.	New Jersey Water and Light Company. Tintern Manor Water Company.
Delford Boro. (New Milford)	Hackensack Water Company.
(Oradell)	Hackensack Water Company.
Demarest Boro.	Hackensack Water Company.
Dover Town	Town of Dover.
Dover Twp. (Toms River)	Toms River Water Company.
Dumont Boro.	Hackensack Water Company.
Dunellen Boro.	Watchung Water Company.
(Beechwood Heights)	Watchung Water Company.
East Greenwich Twp. (Clarksboro)	Mrs. Charles B. Stewart.
(Mickleton)	Jeremiah Haines; August Elchler.
East Newark Boro.	Montclair Water Company.
Easthampton Twp. (Smithville)	H. B. Smith Machine Company.
East Orange City (Ampere)	City of East Orange.
(Brick Church)	City of East Orange.
East Rutherford Boro.	City of East Orange.
(Carlton Hill)	Hackensack Water Company.
Eatontown Twp. (Eatontown)	Hackensack Water Company.
(Oceanport)	Tintern Manor Water Company.
Edgewater Boro.	Tintern Manor Water Company.
Egg Harbor City	Hackensack Water Company.
Egg Harbor Twp.	Egg Harbor City Water Company.
Elizabeth City	Atlantic County Water Company.
	Elizabethtown Water Company.
	Middlesex Water Company.
	Short Hills Water Company.
	Plainfield-Union Water Company.
	City of Newark.
Elmer Boro.	Elmer Water Company.
Emerson Boro.	Hackensack Water Company.
Englewood City (Nordhoff)	Hackensack Water Company.
Englewood Cliff Boro.	Hackensack Water Company.
Essex Fells Boro.	Hackensack Water Company.
Evesham Twp. (Marlton)	Essex Fells Electric Light and Water Company.
Fair Haven Boro.	Marlton Water Company.
Fairview Boro.	Tintern Manor Water Company.
Fanwood Boro.	Hackensack Water Company.
Fanwood Twp. (Scotch Plains)	Plainfield-Union Water Company.
Flemington Boro.	Flemington Water Company.
Florence Twp. (Roebing)	John A. Roebing's Sons Company.
Franklin Boro.	New Jersey Zinc Company.
Freehold Town	Town of Freehold.
Frenchtown Boro.	Frenchtown Water Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Galloway Twp. (South Egg Harbor)	Egg Harbor City Water Company.
Garfield Boro.	Borough of Garfield.
Garwood Boro.	Plainfield-Union Water Company.
Glassboro Boro.	Clayton-Glassboro Water Company.
Glen Rock Boro.	Bergen Water Company.
Gloucester City	City of Gloucester.
Gloucester Twp. (Blackwood)	Blackwood Water Company.
(Grenloch)	Bateman Manufacturing Company.
(Asyla, Camden Co. Institution)	Camden County Institution.
Greenwich Twp. (Gibbstown)	E. I. du Pont de Nemours & Co.
Guttenberg Town	Hackensack Water Company.
Hackensack Town	Hackensack Water Company.
Hackettstown Town	Town of Hackettstown.
Haddonfield Boro.	New Jersey Water Service Company. Borough of Haddonfield.
Haddon Heights Boro.	New Jersey Water Service Company.
Haddon Twp. (Westmont)	Merchantville Water Company.
Haledon Boro.	Boro. of Haledon.
Hamilton Twp. (Atlantic Co.) (Mays Landing)	Mays Landing Water Department. Mays Landing Water Power Company.
Hamilton Twp. (Mercer Co.) (Lakeside Park)	Lakeside Park Land Company.
(White Horse)	W. V. McGalliard.
(Yardville Heights)	C. A. Comp.
Hammontown Town	Town of Hammonton.
Hampton Twp.	Junction Water Company.
Hanover Twp. (Morris Plains)	Morris Aqueduct Company.
(Mountain Lakes)	Hillcrest Water Company.
(Mount Tabor)	Camp Meeting Association of Newark Conference, M. E.
Harrington Park Boro.	Hackensack Water Company.
Harrison Twp. (Mullica Hill)	Harrison Heights Improvement Company.
Harrison Town	Montclair Water Company.
Hasbrouck Heights Boro.	Hackensack Water Company.
Haworth Boro.	Hackensack Water Company. Haworth Water and Light Company.
Hawthorne Boro.	Boro. of Hawthorne.
Helmetta Boro.	George W. Helme Company.
High Bridge Boro.	Boro. of High Bridge.
Highland Park Boro.	City of New Brunswick.
Highlands Boro.	Boro. of Highlands; J. M. Johnson.
Hightstown Boro.	Boro. of Hightstown.
Hillsdale Boro.	Hackensack Water Company.
Hillside Twp. (Lyons Farm)	Elizabethtown Water Company.
Hoboken City	Hackensack Water Company.
Hohokus Boro.	Bergen Water Company.
Hohokus Twp. (Mahwah)	Cragmere Water Company. Albert Winters; John Winters. Boro. of Hopewell.
Hopewell Boro.	Commonwealth Water and Light Company.
Irvington Town	Island Heights Water, Power, Gas and Sewer Company.
Island Heights Boro.	Island Heights Water, Power, Gas and Sewer Company.
Jamesburg Boro.	Jamesburg Water Company.
Jersey City	City of Jersey City.
Kearny Town (Arlington)	Montclair Water Company.
Kenilworth Boro.	Montclair Water Company. New Orange Park Water, Light, Heat and Power Company.
Keyport Boro.	Plainfield-Union Water Company.
Knowlton Twp. (Delaware)	Boro. of Keyport. Delaware, Lackawanna and Western Railroad Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Lakewood Twp. (Lakewood)	Lakewood Water Company.
Lambertville City	Lambertville Water Company.
Landis Twp. (Training School)	Institution.
(Institution for Insane)	Institution.
Laurel Springs Boro.	Laurel Springs Water Supply Company.
Lawrence Twp. (Lawrenceville)	James Hullfish.
(Fairfield Ave.)	C. F. Reid.
Lebanon Twp. (Glen Gardner)	John Hornby.
(Glen Gardner)	Glen Gardner Water Company.
(Glen Gardner Sanatorium)	Institution at Glen Gardner.
Leonia Boro.	Hackensack Water Company.
Linden Boro.	Elizabethtown Water Company.
Linden Twp. (Grasselli)	Elizabethtown Water Company.
Linden Boro.	Atlantic County Water Company.
Little Falls Twp. (Little Falls)	Montclair Water Company.
Little Ferry Boro.	Hackensack Water Company.
Lodi Boro	Boro. of Lodi.
	Hackensack Water Company.
Logan Twp. (Bridgeport)	Bridgeport Water Company.
Long Beach Twp. (Beach Haven Terrace)	Fidelity Land Company.
(Brant Beach)	Beach Haven North Company.
Long Branch City	Tintern Manor Water Company.
Longport Boro.	Boro. of Longport.
Lopatcong Twp.	Lopatcong Water Company.
Lumberton Twp. (Lumberton)	Lumberton Light, Water and Sewerage Company.
	Boro. of Madison.
Madison Boro.	Boro. of Madison.
Madison Twp. (Runyon)	City of Perth Amboy.
Manasquan Boro.	Boro. of Manasquan.
Manchester Twp. (Lakehurst)	Lakehurst Sewer Company.
Mansfield Twp. (Columbus)	Columbus Water Company.
Mantoloking Boro.	Louis Downer.
Mantua Twp. (Mantua)	Job Scott.
(Sewell)	Sewell Water Company.
Margate City	Margate City.
Matawan Boro.	Boro. of Matawan.
Maywood Boro.	Hackensack Water Company.
Medford Twp. (Medford)	Medford Water Company.
Mendham Boro.	Boro. of Mendham.
Merchantville Boro.	Merchantville Water Company.
Metuchen Boro.	Middlesex Water Company.
Middle Twp. (Cape May Court House)	Neptunus Water Company.
Middlesex Boro.	Watchung Water Company.
Middletown Twp. (Navestink)	Tintern Manor Water Company.
Midland Twp. (Midland)	Hackensack Water Company.
Midland Park Boro.	Bergen Water Company.
(Wortendyke)	Bergen Water Company.
Millburn Twp. (Short Hills)	Short Hills Water Company.
(Wroming)	Commonwealth Water and Light Company.
Millford Boro.	Commonwealth Water and Light Company.
	Mine Springs Water Company.
	Warren Manufacturing Company.
Milltown Boro.	Boro. of Milltown.
Millville City	Millville Water Company.
	Peoples Water Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Monmouth Beach Boro.	Tintern Manor Water Company.
Monroe Twp. (Gloucester Co.) (Williamstown)	C. D. Tice & Son; Monroe Water Company.
Monroe Twp. (Middlesex Co.) (Jamesburg Institution)	Institution.
Montclair Town	Montclair Water Company.
Montgomery Twp. (Skillman Institution)	State Institution at Skillman.
Montville Twp. (Towaco)	Plausha Park Land Company.
Moonachie Boro.	Hackensack Water Company.
Morris Twp.	Morris Aqueduct Company.
(Normandy Heights)	Normandy Water Company.
Morristown Town	Morris Aqueduct Company.
Neptune Twp. (Ocean Grove Heights)	Monmouth County Water Company.
(Wanamassa)	Monmouth County Water Company.
(West Grove)	Monmouth County Water Company.
(Whitesville)	Monmouth County Water Company.
Neptune City Boro. (West Avon)	Monmouth County Water Company.
Netcong Boro.	Boro. of Netcong.
Newark City (Elizabeth Park)	City of Newark.
New Brunswick City	City of New Brunswick.
New Hanover Twp. (Wrightstown)	Wrightstown Water, Electric Light and Sewer Company.
New Providence Boro.	Commonwealth Water and Light Company.
New Providence Twp. (Murray Hill)	Commonwealth Water and Light Company.
Newton Town	Town of Newton.
Northampton Twp. (Mount Holly)	Mount Holly Water Company.
North Arlington Boro.	City of Jersey City.
North Bergen Twp.	Hackensack Water Company.
(New Durham)	Hackensack Water Company.
North Caldwell Boro.	Essex Fells Electric Light and Water Company.
Northfield City	Atlantic County Water Company.
North Plainfield Boro.	Plainfield-Union Water Company.
North Wildwood Boro.	City of Wildwood.
Norwood Boro.	Hackensack Water Company.
Nutley Town	Montclair Water Company.
(Avondale)	Montclair Water Company.
Oaklyn Boro.	New Jersey Water Service Company.
Ocean City	Ocean City Water Company.
Ocean Twp. (Interlaken)	Monmouth County Water Company.
(Loch Arbor)	Monmouth County Water Company.
(West Allenhurst)	Monmouth County Water Company.
(West Asbury Park)	Monmouth County Water Company.
Ocean Grove Boro.	Ocean Grove Camp Meeting Association.
Oldmans Twp. (Pedricktown)	Penns Grove Water Supply Company.
Orange City	City of Orange.
Overpeck Twp. (Overpeck)	Hackensack Water Company.
(Ridgefield Park)	Hackensack Water Company.
Oxford Twp. (Oxford)	Empire Steel and Iron Company.
Palisades Twp.	Hackensack Water Company.
(Highwood)	Hackensack Water Company.
(Peetsburg)	Hackensack Water Company.
Palisades Park Boro.	Hackensack Water Company.
Palmyra Twp. (Palmyra)	Riverton-Palmyra Water Company.
Passaic City	Montclair Water Company.
Passaic Twp. (Gillette)	Gillette Water Company.
(Lozansville)	Bernards Water Company.
(Millington)	Millington Water Company.
(Stirling)	Stirling Water Supply Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Paterson City	Montclair Water Company.
Paulsboro Boro.	Paulsboro Water Company.
Peapack-Gladstone Boro.	Boro. of Peapack-Gladstone.
Pemberton Boro.	Dr. M. C. Smalley; J. L. Peapack. Pemberton Twp. Water, Sewerage and Light Company.
Pemberton Twp. (Brown's Mills)	Brown's Mills Water Company.
(New Lisbon)	Burlington County Water Company.
Pennington Boro.	Pennington Spring Water Company.
Pennsgrove Boro.	Pennsgrove Water Supply Company.
Pensauken Twp. (Delair)	J. N. Wilkins.
(Pensauken)	Merchantville Water Company.
Perth Amboy City	Merchantville Water Company.
Phillipsburg Town	City of Perth Amboy. Lehigh Water Company. Lopatcong Water Company. Peoples Water Company.
Piscataway Twp.	Middlesex Water Company. Bound Brook Water Company.
(South Plainfield)	Middlesex Water Company.
(East Bound Brook)	Bound Brook Water Company.
(New Market)	Watchung Water Company.
(Piscataway)	Plainfield-Union Water Company.
Pitman Boro.	Pitman Water Company. N. J. Conference Camp Meeting Association. C. G. Justice.
(Glen Lake)	Middlesex Water Company.
Plainfield City	Plainfield-Union Water Company.
(Netherwood)	Plainfield-Union Water Company.
Pleasantville City	Atlantic County Water Company.
Plumstead Twp. (New Egypt)	Atlantic County Water Company. New Egypt Light, Heat, Power and Water Company.
Pohatcong Twp. (Riegelsville)	Mrs. Lee S. Clymer.
Point Pleasant Beach Boro.	Point Pleasant Water Works Company.
Pompton Lakes Boro.	Boro. of Pompton Lakes.
Pompton Twp. (Bloomingdale)	Butler Water Company.
(Haskell)	E. I. du Pont de Nemours & Co.
Princeton Boro.	Princeton Water Company.
Prospect Park Boro	Montclair Water Company.
Quinton Twp. (Quinton)	City of Salem.
Rahway City	City of Rahway. Middlesex Water Company.
Ramsey Boro.	Boro. of Ramsey.
Raritan Town	Somerville Water Company.
Raritan Twp. (Keansburg)	Middlesex Water Company. Ideal Beach Water Company. Keansburg Beach Water Company. Keansburg Heights Water Company. Keansburg Water Company.
Red Bank Boro.	Boro. of Red Bank. Tintern Manor Water Company.
Ridgefield Boro.	Hackensack Water Company.
(Fort Lee)	Hackensack Water Company.
(Cortsville)	Hackensack Water Company.
(Morsemere)	Hackensack Water Company.
Ridgewood Village	Hackensack Water Company.
Riverside Boro.	Bergen Water Company.
(North Hackensack)	Hackensack Water Company.
(Riveredge)	Hackensack Water Company.
Riverside Twp.	Hackensack Water Company.
(Riverside)	Delaware River Water Company.
Riverton Boro.	Riverton-Palmyra Water Company.
Rockaway Boro.	Boro. of Rockaway.
Roosevelt Boro.	Middlesex Water Company.
Roseland Boro.	Essex Fells Electric Light and Water Company.
Roselle Boro.	Plainfield-Union Water Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Roselle and Cranford Boro. (Aldene)	Plainfield-Union Water Company.
Roselle Park Boro.	Plainfield-Union Water Company.
Rumson Boro.	Rumson Improvement Company. Tintern Manor Water Company.
(Oceanic)	Tintern Manor Water Company.
Rutherford Boro.	Hackensack Water Company.
Saddle River Boro. (Rochelle Park)	William Colling; Deeks & Peake. Arthur Brooks; Mrs. Henry Theim. City of Salem.
Salem City	City of Salem.
Sea Bright Boro. (Normandie)	Tintern Manor Water Company.
Sea Isle City	Tintern Manor Water Company.
Seaside Heights Boro.	Sea Isle City Water Company.
Seaside Park Boro.	Peninsula Water Company.
Secaucus Boro.	Boro. of Seaside Park. Hackensack Water Company.
Shrewsbury Twp. (Little Silver)	Hackensack Water Company.
(Shrewsbury)	Tintern Manor Water Company.
Somers Point City	Atlantic County Water Company.
Somerville Boro.	Somerville Water Company.
South Amboy	City of Perth Amboy.
South Bound Brook Boro.	Bound Brook Water Company.
South Cape May Boro.	City of Cape May.
South Orange Village	Village of South Orange.
South Orange Twp. (Maplewood)	Commonwealth Water and Light Company.
(Hilton)	Commonwealth Water and Light Company.
South River Boro.	Commonwealth Water and Light Company.
Southampton Twp. (Vincentown)	Boro. of South River. Vincentown Water Company.
Sparta Twp. (Sparta)	Andrew Foulds; David Fisher; R. M. Smith.
Springfield Twp. (Springfield)	Short Hills Water Company.
Spring Lake Boro.	Boro. of Spring Lake.
Stanhope Boro.	Boro. of Stanhope.
Stockton Boro.	Boro. of Stockton.
Stone Harbor Boro.	Boro. of Stone Harbor.
Summit City	Commonwealth Water and Light Company.
Surf City Boro.	Surf City Water Company.
Sussex Boro.	Boro. of Sussex.
Swedesboro Boro.	Woolwich Water Company.
Teaneck Twp. (Teaneck)	Hackensack Water Company.
Tenafly Boro.	Hackensack Water Company.
Tewksbury Twp. (Califon)	Dr. I. Topkins; Califon Water Company.
Trenton City	City of Trenton.
(State Home for Girls)	Institution.
(State Hospital)	Institution.
Tuckerton Boro.	Tuckerton Water Company.
Union, Town of	Hackensack Water Company.
Union Twp. (Union Co.) (Union)	Elizabethtown Water Company.
Union Twp. (Bergen Co.) (Lyndhurst)	City of Jersey City.
Upper Twp. (Corson's Inlet)	Corson's Inlet Water Company.
(Strathmere)	Corson's Inlet Water Company.
Ventnor City	City of Ventnor.
Verona Boro.	Essex Fells Electric Light and Water Company.
Vineland Boro.	Boro. of Vineland. (Soldiers' Home)
Voorhees Twp. (Gibbsboro)	Institution. John Lucas & Co.
Wall Twp. (Sea Girl)	Sea Girl Water Company.
Wallington Boro.	Boro. of Wallington.
Washington Boro.	Washington Water Company.

TABLE NO. 3.—PUBLIC WATER SUPPLIES OF MUNICIPALITIES IN NEW JERSEY—
Continued.

MUNICIPALITY.	SUPPLIED BY
Washington Twp. (German Valley)	German Valley Water Company; M. T. Welsh.
Weehawken Twp.	Hackensack Water Company.
Wenonah Boro.	Boro. of Wenonah.
West Caldwell Boro.	Essex Fells Electric Light and Water Company.
West Cape May Boro.	City of Cape May.
Westfield Twp.	Plainfield-Union Water Company.
West Hoboken Twp.	Hackensack Water Company.
West Long Branch Boro.	Tintern Manor Water Company.
West Milford Twp. (Awosting)	The Ringwood Company.
West New York Twp.	Hackensack Water Company.
West Orange Twp.	Montclair Water Company.
West Paterson Boro.	Hugh Stewart.
Westville Boro. (Newbold)	Westville-Newbold Water Company.
Wharton Boro.	Westville-Newbold Water Company.
Wildwood City.	R. M. Oram.
Wildwood Crest Boro.	City of Wildwood.
Woodbine Boro.	City of Wildwood.
Woodbridge Twp.	Boro. of Woodbine.
(Woodbridge)	Middlesex Water Company.
(Keasby)	City of Perth Amboy.
(Fords)	Middlesex Water Company.
(Carteret)	Middlesex Water Company.
(Chrome)	Middlesex Water Company.
(Colonia)	Middlesex Water Company.
(Port Reading)	Middlesex Water Company.
(Sewaren)	Middlesex Water Company.
Woodbridge Twp. (N. J. Reformatory)	Middlesex Water Company.
Woodbury City.	City of Rahway.
Woodbury Heights Boro.	City of Woodbury.
Woodcliff Lake Boro.	City of Woodbury.
Woodlynne Boro.	Hackensack Water Company.
Woodbridge Boro.	Merchantville Water Company.
Woodstown Boro.	Hackensack Water Company.
	Boro. of Woodstown.

TABLE NO. 4.—PUBLIC WATER SUPPLIES DERIVED FROM WELLS OVER 35 FEET IN
DEPTH.

OWNER.	Source and average depth.	Emergency Supply.	Treatment.	Average daily consumption.
Allenhurst. (Municipal)	5 wells		Lime, sedimentation, pressure filters for iron removal..	300,000 See surface supply. 800,000
Atlantic City. (Municipal)	24 wells, 100-200 ft.			
Atlantic Highlands. (Municipal)	13 wells		Pressure filters for iron removal	150,000
Asbury Park. (Municipal)	9 wells, 1,100 ft.		Pressure filters and sedimentation for iron removal	520,000
Avalon. (Municipal)	2 wells, 934 ft.			60,000
Barneget Water Co. (Barneget)	1 well, 152 ft.			40,000
Bateman Mfg. Co. (Grenloch)	2 wells, 110-126 ft.			39,000
Bay Head Artesian Water Co. (Bay Head)	4 wells, 700-900 ft.			25,000 to 265,000
Beach Haven Terrace. (Fidelity Land Co.)	1 well, 595 ft.			70,000 to 225,000
Beach Haven. (Municipal)	2 wells, 575 ft.			3,000
Beach Haven North Co. (Brant Beach)	1 well			150,000 to 665,000
Belmar. (Municipal)	8 wells, 650 ft.		Hypo. disinfection	1,750,000
Bergen Water Co. (Ridgewood)	8 wells, 200-260 ft.			
Blackwood Water Co. (Blackwood)	4 wells, 45-60 ft.		Aerator & sand filter for iron removal	75,000
Blairstown Water Co. (Blairstown)	1 well, 300 ft.	Paulins Kill		100,000
Bogota Water & Light Co. (Bogota)	1 well, 100 ft.			50,000
Bridgeport Water Co. (Bridgeport)	4 wells, 35 ft.			2,000
Brooks, Arthur. (Rochelle Park)	1 well, 90 ft.			7,000
Brown's Mills Water Co. (Brown's Mills)	1 well, 300 ft.			50,000
Camden. (Municipal)	106 wells, 96-130 ft.			12,000,000
Camden County Asylum & Almshouse (Asyla). (Gloucester Twp.)	2 wells, 150-247 ft.			
Cape May City. (Municipal)	18 wells, 30-575 ft.			975,000
Cape May Point. (Municipal)	4 wells, 21 ft.			12,000
Chatham. (Municipal)	5 wells, 90-120 ft.			270,000
Clayton-Glassboro Water Co. (Clayton)	6 wells, 100 ft.			200,000
Clementon Spring Water Co. (Clementon)	2 wells, 172-178 ft.	North side, Bottom lake.		100,000
Colling, Wm. (Rochelle Park)	1 well, 112 ft.			5,000
Columbus Water Co. (Columbus)	2 wells, 225-250 ft.			10,000
Commonwealth Water & Light Co. (Summit)	38 wells, 100-130 ft.			2,600,000
Corson's Inlet Water Co. (Corson's Inlet)	1 well, 856 ft.			20,000

TABLE NO. 4.—PUBLIC WATER SUPPLIES DERIVED FROM WELLS OVER 35 FEET IN DEPTH—Continued.

OWNER.	Source and average depth.	Emergency Supply.	Treatment.	Average daily consumption.
Cragmere Water Co. (Cragmere Park, Mahwah)...	1 well, 585 ft...			30,000
Cranbury Water Co. (Cranbury)	1 well, 260 ft...		Carbon dioxide removal	22,000
Delaware River Water Co. (Beverly)	11 wells, 55 ft...			500,000
Deeks & Peeks, Messrs. (Rochelle Park)	1 well, 200 ft...			4,000
Dover. (Municipal)	7 wells, 86-200 ft...		Hypo. disinfection	500,000
Downer, Louis D. F. (Mantoloking)	3 wells, 900-1,000 ft...			3,000 to
Egg Harbor City Water Co. (Egg Harbor)	3 wells, 132-432 ft...			20,000
East Orange. (Municipal)	40 wells, 115-260 ft...			190,000
Eichler, August. (Mickleton)	1 well, 170 ft...			2,735,000
Elizabethtown Water Co. (Elizabeth)	110 wells, 125-135 ft...			2,000
Elmer Water Co. (Elmer)	1 well, 110 ft...		See surface supplies.	17,800
Essex Fells Elec. Light & Water Co. (Essex Fells)	6 wells, 36-242 ft...			212,000
Flemington Water Co. (Flemington)	1 well, 405 ft...		See surface supplies.	
Freehold. (Municipal)	16 wells, 60-500 ft...			350,000
Garfield. (Municipal)	12 wells, 200-500 ft...			750,000
Gillette Water Co. (Gillette)	1 well, 410 ft...			1,500
Gloucester City. (Municipal)	16 wells	Newton creek...	Aeration, rapid sand filtration for iron removal. Chlorine gas disinfection for emergencies..	1,600,000
Haddonfield. (Municipal)	4 wells, 218-227 ft...			300,000
Haines, Jeremiah. (Mickleton)	1 well, 238 ft...			1,000
Hammonton. (Municipal)	6 wells, 130-148 ft...			150,000
Harrison Heights Imp. Co. (Mullica Hill)	2 wells, 260 ft...			20,000 to
Haworth Water & Light Co. (Haworth)	1 well, 185 ft...			208,000
Hawthorne. (Municipal)	1 well			10,000
Helme, Geo. W. & Co. (Helmetta)	1 well, 280 ft...			15,000
Highlands. (Municipal)	3 wells, 213-287 ft...		Iron removal..	100,000
Hightstown. (Municipal)	4 wells, 206 ft...		Iron removal..	520,000
Hillcrest Water Co. (Mountain Lakes)	3 wells, 341-469 ft...			20,000
Hopewell. (Municipal)	4 wells, 320-400 ft...			15,000
Hullfish, James. (Lawrenceville)	2 wells, 65 ft...			10,000
Ideal Beach Water Co. (Keansburg)	1 well		Iron removal..	35,000
Island Heights Water Power, Gas & Sewer Co. (Island Heights)	2 wells, 345-360 ft...			24,000 to
Jamesburg. (State Home for Boys)	2 wells, 500 ft...			150,000
				75,000

TABLE NO. 4.—PUBLIC WATER SUPPLIES DERIVED FROM WELLS OVER 35 FEET IN DEPTH—Continued.

OWNER.	Source and average depth.	Emergency Supply.	Treatment.	Average daily consumption.
Jamesburg Water Co. (Jamesburg)	2 wells, 75 ft...			60,000
Johnson, J. M. (Highlands)	1 well, 253 ft...		Iron removal..	
Justice, C. G. (Pitman)	1 well, 250 ft...			163,000
Junction Water Co. (Hampton)	1 well, 327 ft...			164,000
Keansburg Beach Water Co. (Keansburg)	1 well, 321 ft...		Iron removal..	10,000 to
Keansburg Water Co. (Keansburg)	Wells		Iron removal..	35,000
Keansburg Heights Water Co. (Keansburg)	Wells		Iron removal..	
Kearny. (Soldiers' Home)	1 well, 612 ft...			230,000
Keypport. (Municipal)	4 wells, 140 ft...		Iron removal..	400,000
Lakehurst Sewer Co. (Lakehurst)	1 well, 125 ft...			10,000
Lakeside Park Land Co. (Mercer County)	1 well			3,000
Lakeside Park Water Co. (Kirkwood)	1 well, 106 ft...		Aeration, rapid sand filter for iron removal..	6,000
Lakewood Water Co. (Lakewood)	3 wells, 650 ft...	So. branch of Metedeconk Riv.		784,000
Laurel Springs Water Co. (Laurel Springs)	8 wells, 96-500 ft...			100,000
Lodi. (Municipal)	1 well, 320 ft...			150,000
Longport. (Municipal)	2 wells, 850-855 ft...			144,000
Lucas, John & Co. (Gibbsboro)	2 wells, 160 ft...			123,000
Madison. (Municipal)	9 wells, 80-140 ft...			350,000
Mansquan. (Municipal)	3 wells, 150 ft...			45,000 to
Maple Shade Water Co. (Maple Shade)	1 well, 385 ft...		Aeration and rapid sand filter for iron removal	125,000
Margate City. (Municipal)	2 wells, 815 ft...			90,000
Marlton Water Co. (Marlton)	1 well, 216 ft...			44,000 to
Matawan. (Municipal)	3 wells, 200-325 ft...		Iron removal..	130,000
Mays Landing. (Municipal)	2 wells, 250 ft...			20,000
McGaillard, W. V. (White Horse)	1 well, 70 ft...			150,000
Merchantville Water Co. (Merchantville)	10 wells, 75-250 ft...		Iron removal..	60,000
Middlesex Water Co. (Plainfield)	13 wells, 300 ft...			750,000
Millville Water Co. (Millville)	14 wells, 135-400 ft...			See surface supplies.
Monmouth County Water Co. (Neptune Twp.)	1 well, 430 ft...		Lime sedimentation	See surface supplies.
Monroe Water Co. (Williamstown)	3 wells, 112-134 ft...			30,000
Moorestown. (Municipal)	Wells	Pensauken creek,	Iron removal..	300,000
Morris Aqueduct Co. (Morristown)	8 wells, 45-60 ft. and springs...			300,000
Neptunus Water Co. (Cape May Court House)	3 wells, 35 ft...			30,000

TABLE NO. 4.—PUBLIC WATER SUPPLIES DERIVED FROM WELLS OVER 35 FEET IN DEPTH—Continued.

OWNER.	Source and average depth.	Emergency Supply.	Treatment.	Average daily consumption.
New Egypt Light, Heat, Power & Water Co. (New Egypt)	1 well, 270 ft.			70,000
N. J. Con. Camp Meeting Asso. (Pitman)	2 wells, 185 ft.			15,000 to 45,000
N. J. Coast Water Co. (Ocean Gate)	1 well, 396 ft.			20,000
N. J. Water Service Co. (Haddonfield)	2 wells, 160-250 ft.			3,500,000
N. J. Water & Light Co. (Deal)	5 wells, 250-685 ft.			150,000 to 900,000
New Orange Park Water, Heat, Light & Power Co. (Kenilworth)	1 well, 275 ft.			10,000
Normandy Water Co. (Normandy Heights)	27 wells, 80-90 ft.			78,000
Ocean City Water Co. (Ocean City)	4 wells, 840 ft.			200,000
Ocean Grove Camp Meeting Asso. (Ocean Grove)	14 wells, 400-600 ft.			1,000,000
Paulsboro Water Co. (Paulsboro)	7 wells, 65 ft.			96,000
Pennington Spring Water Co. (Pennington)	2 wells, 156-186 ft.			See springs. 20,000
Pennsgrove Water Supply Co. (Pennsgrove)	4 wells, 158 ft.		Iron removal.	200,000
Peninsula Water Co. (Seaside Heights)	1 well, 460 ft.			89,000 to 134,000
Peoples Water Co. (Millville)	6 wells, 112 ft.		Iron removal.	720,000
Piscataway Water Co. (Middlesex Twp.)	14 wells, 125 ft.		Chlorine disinfection	1,800,000
Pitman Water Co. (Pitman)	2 wells, 220-500 ft.		Aeration	58,000
Plainfield-Union Water Co. (Netherwood)	38 wells, 70-400 ft.			6,000,000
Plausha Park Land Co. (Towaco)	1 well, 200 ft.			
Pt. Pleasant Water Works Co. (Pt. Pleasant)	12 wells, 37 ft.			62,000 to 300,000
Princeton Water Co. (Princeton)	4 wells, 300-500 ft.			600,000
Ramsey Boro. (Municipal)	3 wells, 127-203 ft.			10,000
Red Bank. (Municipal)	3 wells, 190-260 ft.		Aeration	10,000 to 400,000
Ringwood Co., The. (Awosting)	1 well, 130 ft.			
Riverton-Palmyra Water Co. (Riverton)	4 wells, 20-260 ft.			600,000
Reed, C. F. (Lawrence Twp.)	2 wells			
Rockaway. (Municipal)	2 wells, 300-245 ft.	Mt. Hope brook, Crossway brook.		200,000
Rumson Improvement Co. (Rumson)	5 wells, 191-335 ft.		Iron removal.	60,000 to 160,000
Salem. (Municipal)	28 wells, 127-286 ft.	Ponds		700,000
Scott, Job. (Mantua)	4 wells, 197-201 ft.			20,000
Sea Isle City Water Co. (Sea Isle City)	1 well, 863 ft.			190,000
Sea Side Park. (Municipal)	3 wells, 139-450 ft.			96,600
Sewell Water Co. (Sewell)	1 well, 80 ft.			17,000
Short Hills Water Co. (Short Hills)	13 wells, 60-80 ft.			1,250,000
Smith, H. B., Machine Co. (Smithville)	2 wells, 108 ft.		Iron removal.	30,000

TABLE NO. 4.—PUBLIC WATER SUPPLIES DERIVED FROM WELLS OVER 35 FEET IN DEPTH—Continued.

OWNER.	Source and average depth.	Emergency Supply.	Treatment.	Average daily consumption.
South River. (Municipal)	1 well, 150 ft.			40,000
South Orange. (Municipal)	7 wells, 274-300 ft.			570,000
Spring Lake. (Municipal)	7 wells, 700 ft.			200,000 to 600,000
Stanhope. (Municipal)	1 well, 50 ft.			16,000
State Camp. (Sea Girt)	1 well, 750 ft.			30,000 to 90,000
Stewart, Mrs. Chas. B. (Clarksboro)	1 well, 100 ft.			1,000
Stirling Water Supply Co. (Stirling)	6 wells, 70-252 ft.			70,000
Stockton. (Municipal)	2 wells, 160 ft.	Canal		25,000
Stockton Water Co. (Camden)	26 wells, 52-176 ft.			1,750,000 to 40,000 to 140,000
Stone Harbor. (Municipal)	1 well, 858 ft.			
Surf City Water Co. (Surf City)	1 well, 564 ft.			
Theim, Mrs. Henry. (Rochelle Park)	1 well, 204 ft.			4,000
Tice, C. D. & Son. (Williamstown)	Wells			
Toms River Water Co. (Toms River)	4 wells, 47 ft.			60,000
Trenton. (Home for Girls)	2 wells, 180 ft.			27,000
Trenton. (State Asylum)	9 wells, 250-588 ft.			286,000
United Water Co. (Haddonfield)	Buys water from Haddonfield. (N. J. Water Service Co.)			
Ventnor. (Municipal)	4 wells, 817-825 ft.			1,300,000
Vineland. (Municipal)	6 wells, 120 ft.			300,000
Vineland (Home for Feeble-Minded Women)	2 wells, 136 ft.			
Vineland. (Soldiers' Home)	1 well, 124 ft.			35,000
Vineland. (Training School)	3 wells, 110 ft.			60,000
Watchung Water Co. (Dunellen)	7 wells, 20-95 ft.			200,000
Wallington. (Municipal)	2 wells, 270-290 ft.			275,000
Wenonah. (Municipal)	6 wells, 96-128 ft.			40,000
Westville-Newbold Water Co. (Westville)	2 wells, 113-117 ft.			134,000
Wildwood (Rio Grande). (Municipal)	22 wells, 50-365 ft.	Wildwood plant, Anglesea plant.		1,000,000
Wilkins, J. M. (Pensauken Twp.)	1 well, 120 ft.			16,000
Winters, John. (Mahwah)	1 well, 84 ft.			1,500
Woodbine. (Municipal)	4 wells, 150-160 ft.			80,000
Woodbury. (Municipal)	Wells	Mantua creek		600,000
Woodstown. (Municipal)	6 wells, 165-175 ft.			107,000
Woolwich Water Co. (Swedesboro)	4 wells, 138-150 ft.			115,000
Yantacaw Water Co. (Delawanna)	1 well, 175 ft.			13,000

TABLE NO 5.—PUBLIC WATER SUPPLIES DERIVED FROM SPRINGS AND WELLS UNDER 35 FEET IN DEPTH.

OWNER.	Source and depth.	Emergency Supply.	Treatment.	Average daily consumption.
Allen, Frank B. (Bernardsville)	2 springs			46,000
Bartley, Wm. & Sons. (Bartley)	Spring			
Bordentown. (Municipal)	Spring and well, 30 ft.			
Bloomsbury Water Co. (Bloomsbury)	Spring	Pine Hollow brook.		400,000
Califon Water Co. (Califon)	2 springs			70,000
Comp, C. A. (Yardville)	Spring			1,500
Camp Meeting Asso. of Newark Conference, M. E. (Mt. Tabor)	2 springs and 2 wells, 22-30 ft.			100,000
Clymer, Mrs. Lee S. (Riegelsville)	6 springs			
Crosswicks Water Co. (Crosswicks)	Springs			7,000
du Pont de Nemours Co., E. I. (Haskell)	Springs, wells, 25-30 ft.			300,000
du Pont de Nemours Co., E. I. (Gibbstown)	2 wells, 16 ft.			20,000
D. L. & W. R. R. Co. (Delaware)	1 spring			
Eckle, Stewart. (Little York)	Springs			1,400
Empire Steel & Iron Co. (Oxford)	Springs			
Fisher, David. (Sparta)	Springs			
Flemington Water Co. (Flemington)	Springs	Raritan river.		200,000
Foulds, A. W. (Sparta)	Spring			
German Valley Water Co. (German Valley)	Spring field and underdrains.			
Glen Gardner Water Co. (Glen Gardner)	Springs			
Haledon. (Municipal)	Springs	Brook	Filtration	350,000
Helme, George W., Co. (Helmetta)	2 wells, 24-32 ft.		Iron removal	15,000
High Bridge. (Municipal)	Springs		Chlorine disinfection	See surface supplies. 100,000
Hornby, John. (Glen Gardner)	Springs			
Johnson, J. M. (Highlands)	Spring		Iron removal	
Junction Water Co. (Hampton)	12 springs			See deep wells.
Lakewood Water Co. (Lakewood)	3 dug wells, 7-32 ft.			784,000
Lambertville Water Co. (Lambertville)	Springs	Delaware river.	Slow sand filt.	300,000
Millington Water Co. (Millington)	2 wells, 16-20 ft.			12,000
Milltown. (Municipal)	Springs			22,000
Mine Spring Water Co. (Milford)	1 dug well, 20 ft.			26,000
Mendham. (Municipal)	3 springs			43,000
Morris Aqueduct Co. (Morristown)	6 springs			See deep wells.
Morris Plains. (State Hospital)	Springs			See surface supplies.
New Jersey Water Service Co. (Haddonfield)	Springs and 4 wells.			See deep wells.

TABLE NO 5.—PUBLIC WATER SUPPLIES DERIVED FROM SPRINGS AND WELLS UNDER 35 FEET IN DEPTH—Continued.

OWNER.	Source and depth.	Emergency Supply.	Treatment.	Average daily consumption.
Netcong	Spring swamp underdrains.	Small brook.		50,000
Oram, R. F. (Wharton)	2 springs			20,000
Peapack, J. L. (Peapack)	Springs			
Pennington Spring Water Co. (Pennington)	2 springs			See deep wells.
Perth Amboy (Runyon). (Municipal)	86 ground storage wells.			820,000
Pompton Lakes. (Municipal)	2 storage wells, 15 ft.			
Smalley, Dr. M. C. (Gladstone)	Spring			
Sea Girt Water Co. (Sea Girt)	1 well, 30 ft.			1,000 to 30,000
Stewart, Hugh. (West Paterson)	Spring			
Topkins, Dr. I. (Califon)	Springs			
Warren Mfg. Co. (Milford)	8 wells, 30-36 ft.			
Wallington. (Municipal)	1 spring			275,000
Welsh, M. T. (German Valley)	Spring			
Winters, Albert. (Mahwah)	Spring			7,500
Wrightstown Water, Elec. Light & Sewer Co. (Wrightstown)	1 well, 24 ft.			10,000 to 80,000

TABLE NO. 6.—PUBLIC WATER SUPPLIES DERIVED FROM SURFACE SOURCES.

OWNER.	Supply.	Emergency.	Treatment.	Average daily consumption.
Allenhurst. (Municipal)	Indian river.		Filtration	27,000
Atlantic City. (Municipal)	Absecon creek.		Chlorine disinfection	3,000,000
Atlantic County Water Co. (Pleasantville)	Bargaintown pond.			
Belvidere Water Co. (Belvidere)	Delaware river.	2 wells	Chlorine disinfection	150,000 to
Bernards Water Co. (Bernardsville)	Passaic river.	By-pass	Chlorine disinfection	200,000
Bound Brook Water Co. (Bound Brook)	Middle brook.	By-pass	Filtration and chlorine disinfection	65,000
Branchville. (Municipal)	Dry brook			1,800,000
Bridgeton. (Municipal)	West branch, Cohansey river.	By-pass	Filtration and chlorine disinfection	
Buckhorn Springs Water Co. (Belvidere)	Buckhorn creek.			2,000,000
Burlington. (Municipal)	Delaware river.	By-pass	Filtration and hypo. disinfection	125,000
Burlington County Water Co. (New Lisbon)	Rancocas creek.			1,200,000
Butler Water Co. (Butler)	Stone House Cr., Aphsawa brook.			45,000
Clinton Water & Water Supply Co. (Clinton)	Beaver brook.			240,000
Elizabethtown Water Co. (Elizabeth)	Elizabeth river.		Sedimentation and chlorine disinfection	85,000
Flemington Water Co. (Flemington)	So. branch of Raritan river, Copper Mines' spring.	By-pass	Filtration and hypo. disinfection	16,000,000
Frenchtown Water Co. (Frenchtown)	Nishisakawick creek.			325,000
Gladstone-Peapack. (Municipal)	Emerson pond.			100,000
Glen Gardner. (N. J. Sanatorium)	Rocky Run brook.		Filtration and hypo. disinfection	150,000
Hackensack Water Co. (New Milford)	Hackensack river.		Filtration and hypo. disinfection	75,000
Hackettstown. (Municipal)	Mine Hill brook.			30,000,000
High Bridge. (Municipal)	Mine brook.			425,000
Jersey City (Municipal). (Boonton & Dover)	Willoughby brook.		Chlorine disinfection	125,000
Lambertville Water Co. (Lambertville)	Rockaway river.		Chlorine disinfection	47,000,000
Lehigh Water Co. (Phillipsburg & Easton, Pa.)	Tributary to Delaware river.		Slow sand filtration	See springs.
Lopatcong Water Co. (Phillipsburg)	Delaware river.		Hypo. disinfection	300,000
Lumberton Light, Water & Sewerage Co. (Lumberton)	Merrill brook.			25,000
Mays Landing Water Power Co. (Mays Landing)	South branch, Rancocas creek.			800,000
Medford Water Co. (Medford)	Great Egg Harbor river.			20,000
Mendham. (Municipal)	Lake Lenape.			
	Rancocas creek.			40,000
	Brook			See springs. 25,000

TABLE NO. 6.—PUBLIC WATER SUPPLIES DERIVED FROM SURFACE SOURCES—Continued.

OWNER.	Supply.	Emergency.	Treatment.	Average daily consumption.
Middlesex Water Co. (Rahway) (So. Plainfield)	Rahway river (Robinson branch)		Filtration and hypo. disinfection	See wells. 5,000,000
Millville Water Co. (Millville)	Union lake.		Filtration and hypo. disinfection	3,300,000
Monmouth County Water Co. (Neptune Twp.)	Jumping brook.		Filtration	1,000,000
Montclair Water Co. (Little Falls)	Passaic river.		Filtration and chlorine disinfection	41,000,000
Mount Holly Water Co. (Mount Holly)	Rancocas creek.		Filtration and hypo. disinfection	420,000
Morris Plains. (N. J. State Hospital)	Tributary to Whippany river, Peguannock river.		Chlorine disinfection	See springs. 125,000
Newark. (Municipal)			Chlorine disinfection	42,000,000
New Brunswick. (Municipal)	Lawrence brook.		Chlorine disinfection	3,500,000
Newton. (Municipal)	Morris lake.			750,000
N. J. Zinc Co. (Franklin)	Walkkill river.		Filtration and hypo. disinfection	290,000
Orange. (Municipal)	West branch, Rahway river.			1,880,000
Pemberton Twp. Water, Sewerage & Light Co. (Pemberton)	North branch, Rancocas creek.			70,000
People's Water Co. (Phillipsburg)	Delaware river.			1,500,000
Rahway. (Municipal)	Rahway river.		Filtration and chlorine disinfection	1,800,000
Roebing, John A. Sons' Co. (Roebing)	Delaware river.		Filtration and chlorine disinfection	350,000
Salem. (Municipal)	Tributary of Alloway creek.			See deep wells.
Skillman. (N. J. State Village)	Rock brook.		Filtration and hypo. disinfection	80,000
Smith, R. M. (Sparta)	Glen brook.			
Somerville Water Co. (Raritan)	Raritan river.	By-pass	Filtration and hypo. disinfection	1,800,000
Superior Thread & Yarn Co. (Pluckemin)	Echo lake.			6,600
Sussex. (Municipal)	Lake Rutherford, Hop & Yellow brooks.			75,000
Tintern Manor Water Co. (Long Branch)			Filtration	3,500,000
Trenton. (Municipal)	Delaware river.		Filtration and chlorine disinfection	17,000,000
Tuckerton Water Co. (Tuckerton)	Pohatcong lake, Gifford Mill brook.			
	Shord Mill brook.			60,000
United Water Supply Co. (Boonton)	Stony brook.			356,000
Vincetown Water Co. (Vincetown)	South branch, Rancocas creek.			90,000
Washington Water Co. (Washington)	Roaring brook & mountain watershed.			300,000

During the year the quality of several of the water supplies has been improved by the installation of treatment devices. These improvements have been made at Atlantic City, Belvidere, Jersey City, Elizabeth, High Bridge and Morris Plains. The most important work is the construction of a water filtration plant for the city of New Brunswick. A list of the water treatment plants and character of the treatment is given in Table 7:

TABLE NO. 7.—TABLES SHOWING THE VARIOUS WATER TREATMENT PLANTS. Disinfection Plants.

CALCIUM HYPOCHLORITE.	LIQUID CHLORINE.
Dover. Easton (Lehigh Water Company). Midland Park.	Atlantic City. Belvidere (Belvidere Water Company). Bernardsville (Bernards Water Company). Boonton (Jersey City). Bound Brook (Piscataway Water Company). Dover (Jersey City). Elizabeth (Elizabethtown Water Company). High Bridge. Morris Plains (Institution). Newark. New Brunswick. ¹

¹ Filtration plant being installed.

Filter Plants (Removal of Pollution).

SLOW SAND.	RAPID SAND.					
	PRESSURE.			GRAVITY.		
	No disinfectant.	Hypo-chlorite.	Liquid chlorine.	No disinfectant.	Hypo-chlorite.	Liquid chlorine.
Haledon. Lambertville.	Neptune Twp. Long Branch. ² (West End.)	Rahway. (Middlesex.) Raritan. (Somerville Water Co.)	Bound Brook. Rahway.	Allentown. Long Branch.	Burlington. Franklin. Glen Gardner. Millville. Mount Holly. New Milford. Skillman.	Bridgeton. Flemington. Little Falls. Roebing. Trenton.

² Liquid chlorine to be installed.

Filter Plants (Removal of Iron).

SLOW SAND.	RAPID SAND.	
	Pressure.	Gravity.
Matawan. Rumson.	Allenhurst. Asbury Park. Atlantic Highlands. Helmetta (Permutit Filter). Keansburg (Beach Water Company). Merchantville. Millville (People's Water Company). Neptune Township.	Blackwood. Gloucester. Highlands (Johnson's). Hightstown. Keansburg (Ideal Beach Water Company). Keansburg (Keansburg Heights Water Company). Keansburg (Keansburg Water Company). Keyport. Lakeside Park (Kirkwood). Maple Shade. Moorestown. Pennsgrove. Smithville.

In Table No. 8 there is given a brief summary of the results obtained when testing the water treatment plants:

TABLE NO. 8.—SUMMARY OF THE INSPECTIONS OF THE WATER TREATMENT PLANTS.

PLANT OR LOCATION.	Date of inspection.	Character of sample.	Iron in P. P. M.	37° C.		B. coli in 10 c.c.	20° C. Bacteria per c.c.	Remarks.
				Total.	Red Colonies.			
Allenhurst	April 3, '16.	Raw	0.5	.....	.....	.....	.....	Alk. 4.0.
Allentown	Feb. 11, '16.	Aerated	0.1	.....	.....	.....	.....	Alk. 7.0.
	April 26, '16.	Filtered	.....	60	5	0	700	
	Aug. 21, '16.	Filtered	.....	15	0	0	120	Alk. 10.
	Sept. 11, '16.	Filtered	.....	268	0	0	600	Alk. 22.0.
	Feb. 7, '16.	Filtered	14.0	245	0	4	2,800	Alk. 18.0.
Asbury Park	Feb. 7, '16.	Raw	.....	195	0	0	1,000	Alk. 46.0.
Atlantic City	Aug. 15, '16.	Aerated	0.2	.....	.....	.....	4,000	New well constructed.
	Aug. 31, '16.	Treated	.....	32	0	0	300	Liquid chlorine apparatus installed in August, 1916.
	Oct. 3, '16.	Treated	.....	16	1	0	420	
Atlantic Highlands	July 7, '16.	Raw	.....	6	0	0	.....
	July 17, '16.	Aerated	0.0	100	0	0	.....
Bernardsville	Feb. 4, '16.	Aerated	0.0	13	1	0	.....	Chlorine apparatus defective.
	Jan. 25, '16.	Treated	.....	28	1	0	570	
Bound Brook (Water Company)	Jan. 8, '16.	Raw	.....	45	2	0	4,000	
Bound Brook (Piscataway Water Company)	Jan. 8, '16.	Filtered	.....	9	1	0	220	
Bridgeton	Feb. 10, '16.	Raw	.....	1	0	0	300	
	Aug. 2, '16.	Filtered	.....	6	0	0	1,300	
	Feb. 10, '16.	Filtered	.....	2	0	0	.....
	April 18, '16.	Raw	.....	48	16	0	1,700	
	June 10, '16.	Filtered	.....	100	18	0	6	
		Raw	.....	1	0	0	.....
		Filtered	.....	100	0	0	12,000	
		Raw	.....	1	0	0	2,400	

TABLE NO. 8.—SUMMARY OF THE INSPECTIONS OF THE WATER TREATMENT PLANTS—Continued.

PLANT OR LOCATION.	Date of inspection.	Character of sample.	Iron in P. P. M.	37° C. Bacteria per c.c.		B. coli in 10 c.c.	20° C. Bacteria per c.c.	Remarks.
				Total.	Red. Colonies.			
Dover	Jan. 17, '16	Raw						
Elizabeth (Elizabethtown Water Company.)	Jan. 10, '16	Treated		100	50	10	85,000	Liquid chlorine disinfection used.
	July 5, '16	Treated		90	0	0	120	
	March 9, '16	Raw				4		
	March 10, '16	Treated		110	0	3		
	March 10, '16	Raw		30	0	0		Avg. of 9 tests.
	March 13, '16	Treated		90	5	3	2,700	Avg. of 9 tests.
	March 13, '16	Raw		60	3	0	900	
Flemington	Sept. 27, '16	Treated		50	0	3		Avg. of 10 tests.
	Feb. 8, '16	Raw				20	900	
	Feb. 8, '16	Filtered				6	800	
	May 16, '16	Raw		15	0	0	270	
	May 16, '16	Filtered		0	0	0	26	
	Jan. 27, '16	Raw		30	0	0	4,500	
Glen Gardner (State Institution.)	Jan. 27, '16	Filtered		3	0	0	2,700	
	Aug. 9, '16	Raw		290	20	5		
	Oct. 27, '16	Filtered		3	0	0		
	Nov. 15, '16	Raw		110	20	10	40	
	Dec. 16, '16	Filtered		13	0	0	30	
	Jan. 26, '16	Raw		0	0	0	2,100	
Gloucester	Nov. 15, '16	Filtered				86		
	Dec. 16, '16	Raw	4.0			5		Avg. of 280 tests. Creek water being used.
	March 16, '16	Filtered	2.2			0		Chlorine treatment installed in December, 1916.
	July 10, '16	Raw	4.0			0		
	July 26, '16	Filtered	1.9			4		
	Aug. 29, '16	Raw				2		
		Pump				0		
		Tap				0		
		Raw				0		
		Pump				4		
		Tap				2		

TABLE NO. 8.—SUMMARY OF THE INSPECTIONS OF THE WATER TREATMENT PLANTS—Continued.

PLANT OR LOCATION.	Date of inspection.	Character of sample.	Iron in P. P. M.	37° C. Bacteria per c.c.		B. coli in 10 c.c.	20° C. Bacteria per c.c.	Remarks.
				Total.	Red. Colonies.			
Haledon	Feb. 17, '16	Filtered		10	0	0	90	
Hightstown	March 7, '16	Raw	1.2			0		
	March 7, '16	Filtered	0.2			0		
Keensburg (Keensburg Water Company.)	March 20, '16	Raw	2.1			0		
Keyport	March 5, '16	Filtered	1.1			0		
	Jan. 11, '16	Raw	0.3			0		Filters remodeled.
Lambertville	Jan. 11, '16	Filtered		60	4	5	1,700	
	Aug. 4, '16	Raw		28	0	0	350	
	Feb. 15, '16	Filtered		40	0	0	8	
Long Branch (West Ind.)	July 5, '16	Raw		23	1	0	800	
Maple Shade	July 28, '16	Filtered		3	0	0	330	
	May 10, '16	Raw	2.8			0		
Matawan	May 10, '16	Filtered	0.1			0		
	April 13, '16	Raw	0.25			0		
Millville	April 13, '16	Filtered	0.05			0		
Millville (Peoples Water Company.)	April 13, '16	Raw				0		
Morris Plains (State Institution.)	Oct. 18, '16	Raw		170	0	0	400	Chlorine gas applied.
Mount Holly	Nov. 13, '16	Treated		8	0	10	70	
	Feb. 15, '16	Raw		16	2	9	370	
	April 19, '16	Filtered		2	0	0	28	
Neptune Township (Monmouth Co. Water Company.)	Oct. 12, '16	Raw		13	3	8	10	
New Brunswick	Feb. 9, '16	Filtered		15	0	0		
	May 16, '16	Raw		65	2	10	950	
		Treated		30	0	4	2,800	
		Raw				0		

TABLE NO. 8.—SUMMARY OF THE INSPECTIONS OF THE WATER TREATMENT PLANTS—Continued.

PLANT OR LOCATION.	Date of inspection.	Character of sample.	Iron in P. P. M.	37° C.		B. coli in 10 c.c.	20° C. Bacteria per c.c.	Remarks.
				Total.	Colones.			
Rahway	Jan. 24, '16	Raw		110	0	0	5,000	
	Feb. 3, '16	Filtered		14	0	0	3,300	
	Oct. 24, '16	Raw		75	0	0	1,700	
	Feb. 3, '16	Filtered		4	0	0	660	
Rahway (Middlesex Water Company.)	Feb. 3, '16	Raw		75	10	10	2,700	
	April 28, '16	Filtered		14	0	0	660	
	June 6, '16	Raw		400	30	0	7,500	
	Feb. 11, '16	Filtered		11	0	0	900	
Raritan (Somerville Water Company.)	Feb. 11, '16	Raw		22	0	0	2,900	
	July 15, '16	Filtered		2,000	200	1,000	50,000	
	Oct. 6, '16	Raw		400	10	40	8,100	
	Jan. 28, '16	Filtered		20	6	0	280	
	March 17, '16	Raw		55	0	0	4,500	
	April 17, '16	Filtered		50	0	100	90	
	May 12, '16	Raw	1.8	0	0	0	0	
	Feb. 24, '16	Filtered	0.2	100	0	0	200	
	July 27, '16	Raw		18,000	0	10	60,000	
	July 28, '16	Filtered	1.2	160	0	0	300	
Smithville	July 28, '16	Filtered	0.1	0	0	0	0	

TABLE NO. 9.—SUMMARY OF INSPECTIONS OF WATERSHEDS FROM WHICH POTABLE WATERS ARE TAKEN.

NAME OF SUPPLY.	Treatment.	Pollutions Reported.	Notices served.	Sewage treatment plants.	Area of watershed (Square miles).	Total population.	Average population per square mile.	Remarks.
Atlantic County Water Co. (Bargaintown Pond)	None	0			10.2	155	15	Shed mostly forest land.
Bound Brook Water Co. (Middle Brook)	Filtration and Disinfection	2	1		18.1	1,720	95	Fields; mostly pastures (10 dairies).
Bloomersbury Water Co. (Brook)	None	0			1.0			Emergency supply. Included in Mt. Holly watershed inspection.
Burlington County Water Co. (Rancocas Creek, N. Branch)	None	0						75 per cent. of area forest.
Butler Water Co. (Stonehouse Brook)	None	1	0	2	5.0	124	25	Company ordered to abandon this supply.
Elizabeth Water Co. (Elizabeth River)	Disinfection	1	0		1.5	46	30	Hilly farming country.
Frenchtown Water Co. (Neshakawick Creek)	None	0	4		17.4	66,470	3,820	Inspection partly completed.
Hockensack Water Co. (Hockensack River)	Filtration and Disinfection	5	5		10.5	425	40	
High Bridge, Jersey City. (Willoughby Brook)	Disinfection	1	1		65.4			
Lehigh Water Co. (Phillipsburg)	Disinfection	52	52		0.7	10	14	
Lumberton Light, Water and Sewerage Co. (Rancocas Creek, So. Branch)	Disinfection	2	0		193.0			
Medford Water Co. (Rancocas Creek)	None	3	1	1	139.2	5,435	39	
Middlesex Water Co. (Rahway River, Robinson Branch)	None	1	0		25.0	125	5	
Millsville Water Co. (Union Lake)	Filtration and Disinfection	5	0	1	18.3	2,805	153	Mostly farming and grazing land; 8 dairies.

Table No. 9 gives a brief summary of the conditions found on the watersheds which were inspected during the year:

TABLE NO. 9.—SUMMARY OF INSPECTIONS OF WATERSHEDS FROM WHICH POTABLE WATERS ARE TAKEN—Continued.

NAME OF SUPPLY.	Treatment.	Pollutions Reported.	Notices served.	Sewage treatment plants.	Area of watershed (Square miles.)	Total population.	Average population per square miles.	Remarks.
Monmouth County Water Co. (Jumping Brook)	Filtration and Disinfection	0	0	0	5.8	257	44	
Montclair Water Co. (Passaic River)	Filtration and Disinfection	23	22	0	646.0	0	0	
Morris Plains (State Hospital)	Disinfection	0	0	0	1.7	0	0	
Mount Holly Water Co. (Whippany to Whippany River)	Filtration and Disinfection	1	0	5	135.0	3,380	25	16 cranberry bogs.
Orange (Rancocas Creek)	None	16	10	0	6.5	828	127	
Orange (Orange Reservoir and Campbell's Pond)	None	0	0	3	112.0	1,124	10	16 cranberry bogs. Mostly swamp and scrub timber.
Pemberton Twp. Water, Sewerage and Light Co. (Rancocas Creek, No. Branch)	None	0	0	0	4.0	130	32	Emergency supply.
Pennsgrove Water Supply Co. (Beaver Creek)	None	0	0	0	3.0	20	7	Pollution from farm land.
Pluckemin. (Echo Lake)	Filtration and Disinfection	26	24	0	40.0	0	0	Inspection completed; data not tabulated.
Rahway. (Rahway River)	None	1	0	0	493.0	0	0	
Somerville Water Co. (Raritan River)	Filtration and Disinfection	1	1	0	1.3	14	10	
Sparta (3 supplies)	None	6	5	0	50.0	2,005	40	85 per cent. cultivated land.
Tinton Manor Water Co. (Glen Brook)	Filtration	1	1	0	5.3	1,235	233	7 dairies.
Tinton Manor Water Co. (Hon and Yellow Brooks)	Filtration and Disinfection	4	0	0	0	0	0	
Tinton Manor Water Co. (Whale Pond Brook)	None	0	0	0	2.0	140	70	2 cranberry bogs on one shed; other shed depopulated.
Trenton. (Delaware River)	None	0	0	0	8.5	0	0	
Tuckerton. (Pohatcong Lake, Gifford Mill) (and Shord Mill Brooks)	None	0	0	0	3.0	63	21	Much stagnant water.
United Water Supply Co. (Stony Brook)	None	5	3	0	45.2	501	11	13 cranberry bogs.
Vincetown Water Co. (Rancocas Creek, So. Branch)	None	0	0	0	2.4	81	33	
Washington. (Roaring Rock Brook)	None	4	4	0	0	0	0	

WATER WORKS, THE PLANS FOR WHICH HAVE BEEN APPROVED OR THE WORKS CONSTRUCTED.

ATLANTIC CITY.—At the Absecon Pumping Station a liquid chlorine apparatus, dry feed type, has been installed for the treatment of the surface water.

ASBURY PARK.—A new well, with a diameter of eight inches and a depth of 1,100 feet, has been constructed.

BELVIDERE (Belvidere Water Co.).—Ordered to disinfect water supply from river on February 15th, 1916. At the pumping station of the Belvidere Water Company there has been installed a liquid chlorine apparatus, dry feed type, for the treatment of the surface and the well water supplies.

BUTLER (Butler Water Co.).—Supply approved May 16th, 1916. The watershed of the Butler Water Company has been increased by the addition of the Apschawa Watershed. The following is the summary of this watershed inspection made in April, 1916: Houses, 14; privies, 14; barns, 10; chicken houses, 12; hog pens, 4; area of shed, 1½ square miles; length of roads, 2½ miles; number of reported pollutions, 1.

ELIZABETH (Elizabethtown Water Co.).—Plans approved March 21st, 1916. A liquid chlorine apparatus, solution feed type, has been installed at the Irvington Avenue Reservoir. This apparatus replaced that of the hypochlorite of lime treatment.

GLOUCESTER.—The capacity of the pumping station has been increased by new equipment. The filters for iron removal have been cleaned and repaired and new aerating troughs installed. A liquid chlorine apparatus, solution feed type, was installed for the treatment of the combined waters from the wells and the surface supply, but with the discontinuance of the surface supply no disinfection is applied.

HAMPTON (Junction Water Co.).—A new well, with a diameter of eight inches and a depth of 327 feet, has been constructed.

HIGH BRIDGE.—A liquid chlorine apparatus, dry feed type, has been installed for the treatment of the water.

JERSEY CITY.—A liquid chlorine apparatus has been installed at Boonton for the disinfection of the water. This apparatus replaced that of the hypochlorite of lime treatment.

KEANSBURG (Ideal Beach Water Co.).—New pumping equipment has been installed at this plant.

MANTUA (J. Scott).—A new well, with a diameter of 4½ inches and a depth of 201 feet, was constructed.

MORRIS PLAINS (New Jersey State Hospital).—Liquid chlorine apparatus consisting of six chlorinators, four of the solution feed type and two of the dry feed type, two chlorine pumps, and three recording gauges have been installed.

NEW BRUNSWICK.—Plans for a water filtration plant consisting of two coagulation basins and eight rapid sand filter units, the filtered water to be treated with chlorine gas, were approved May 16th, 1916. This plant is now being constructed.

NEW EGYPT.—The application of the New Egypt Water Company for permission to use water from a branch of the Crosswicks Creek for an emergency supply was denied on September 5th, 1916.

PEAPACK (Peapack-Gladstone).—This water supply, which is nearly completed, will supply Peapack, Gladstone, Far Hills, and a portion of Bedminster. The area of the watershed is about 1½ square miles, with a population of about 80 people. A storage reservoir with an estimated capacity of 6,000,000 gallons is constructed. It is a gravity system.

PENNSGROVE (Pennsgrove Water Supply Company).—A rapid sand filtration plant for iron removal has been built, and a new well, eight inches in diameter and 158 feet in depth, has been constructed.

ROEBLING (John A. Roebbling's Sons' Co.).—A liquid chlorine apparatus was installed for the treatment of the water at this place. This apparatus replaced that of the hypochlorite of lime treatment.

TOWACO (Plausha Park Land Co.).—Construction work upon this supply is practically completed. The well is six inches in diameter with a depth of 200 feet. The well water is pumped to a concrete reservoir with a capacity of 60,000 gallons; distribution through the system is by gravity.

WILDWOOD.—At the Rio Grande Water Pumping Station additional 8-inch wells are being constructed to yield over 1,000,000 gallons per day.

SUMMARY OF THE INSPECTIONS OF SEWAGE TREATMENT PLANTS.

The following tables, numbers 10, 11, 12, 13 and 14, give a brief summary of the work of inspecting sewage treatment plants, indicating the condition of each of the units as found at the time of inspection.

Thirty-three new sewage disposal plants have been constructed, and alterations and improvements have been made at seven of the older sewage plants.

TABLE NO. 10.—SEWAGE TREATMENT PLANTS HAVING SEDIMENTATION WITHOUT SUBSEQUENT TREATMENT.

NAME OR LOCATION.	Number of Inspections.	Condition of tank effluent.	Remarks.
Allenhurst	2	Fair	Tank cleaned in Spring.
Asbury Park	3	Very good	New outfall pipe installed.
Avalon	2	Fair	New plant.
Avon	2	Fair	Tank cleaned in Spring.
Beach Haven	4	Fair	Portion of old outfall pipe replaced with new pipe. Raw sewage discharged through by-pass.
Belmar	2	Very good	
Beverly	4	Fair	Several of the compartments of the tank require cleaning.
Bradley Beach (2 tanks.)	2	Very good	Outfall pipes repaired. Both tanks cleaned in Spring.
Bogota	3	Poor	Tank requires cleaning.
Burlington (U. S. Cast Iron Pipe and Foundry Co.)			New installation.
Carlton Hill	2	Fair	Connection to be made with Passaic Valley Trunk Sewer.
Carlstadt	2	Good	Tank cleaned.
Cliffside Park	2	Fair	Not receiving proper attention.
Deal Beach	2	Good	Tank in good condition.
Delford	1	Poor	Does not receive proper attention.
East Rutherford	2	Fair	Tank requires cleaning.
Englewood			No inspection.
Interlaken	2	Good	Tank cleaned in Spring.
Kenilworth (American Circular Loom Co.)	4	Fair	
Leonia	2	Poor	Requires better attention.
Loch Arbour	2	Good	Tank cleaned.
Manasquan	2	Good	Emergency outfall pipe used. New outfall pipe constructed.
Neptune Township	4	Good	At times of heavy rainfall sewage backs up in tank and manholes overflow.
Ocean Grove (2 tanks.)	2	Very good	Tanks cleaned every Spring.
Point Pleasant	2	Good	Additional tank to be installed.
Salem	1	Poor	Better disposal of screening required.
Spring Lake (3 tanks.)	2	Very good	Tanks receive careful attention.
Sea Girt	2	Fair	Tank operation not satisfactory.
Sea Girt (State Camp.)	4	Good	In late summer it was necessary to by-pass tank effluent due to clogging of outfall pipe.
Secaucus	1	Fair	
Secaucus (H. Borne Estate.)			Not inspected.
Trenton (P. R. R. Shops.)	1	Good	Long storage period.
Trenton (Thermoid Rubber Co.)	1	Fair	
Waterwitch	1	Good	Long storage period.
West Englewood (2 tanks.)	1	Good	
Woodbridge (4 tanks.)	1	Fair	Port Reading tank required cleaning.
Woodbury	2	Poor	Sewage discharged on flood tide is carried by Woodbury Creek into town. Tank is of too small capacity.

TABLE NO. 11.—SEWAGE TREATMENT PLANTS HAVING SEDIMENTATION WITH SUB-SURFACE IRRIGATION OR BROAD IRRIGATION.

NAME OR LOCATION.	Number of inspections.	CONDITION OF				Remarks.
		Sedimentation.	Dosing apparatus.	Sub-surface system.	Broad irrigation or ground absorption area.	
Ancora (Camden County Institution.)	1	Good	Good	Very good		Irrigation area changed every two days.
Burlington	4	Good			Fair	More drainage tile needed.
Cape May Court House (County Building.)	1	Good		Good		Grit chamber cleaned every two weeks.
Cape May Point.	1	Good			Very good	No sedimentation.
Clinton (State Reformatory.)	1	Good			Good	
Cresskill	1	Poor		Poor		Plant requires better attention.
Far Hills	3	Poor		Poor		Plans received for new plant.
Far Hills (G. B. Schley Estate.)	2	Poor		Fair		
Gibbsboro (3 plants.)	1	Good	Good	Very good		Plants receive careful attention.
Haskell (du Pont Factory.)	3	Good	Good	Good		New installation.
Haworth	1	Good		Very bad		New plant required.
Hopatcong (Breslin Hotel.)	1	Good	Good			
Lawrenceville (School.)	3	Poor			Fair	Tank requires cleaning. Distribution could be improved.
Macopin	2	Good			Fair	No inspection made.
Morris Plains (State Hospital for Insane.)	1	Good		Good		
Mullica Hill (2 plants.)	1	Good		Good		
New Brunswick (Marconi Wireless Station.)	1					No inspection made.
New Lisbon (Almshouse.)	2	Good		Fair		Several drains need repairing.
Oakhurst (School.)	1	Fair		Good		Tank needs cleaning. Dosing device should be installed.
Oradell (Isolation Hospital.)	1	Good	Good	Good		New installation.
Pemberton	3	Poor			Good	
Princeton (N. W. Field.)	5				Poor	Considerable raw sewage gets into brook during winter.
Ralston (St. Margaret's School.)	2	Fair			Fair	Plant requires better attention.
Smithville	2	Good		Very good		
Tuckerton (Radio Station.)	1	Fair		Poor		
Verona (Eagle Rock Mfg. Co.)	3	Good	Good	Fair		Plant overloaded during last year. Sub-surface tile installed in wet ground.
Vineland (Home for Feeble-Minded Women.)	2	Good			Fair	Distribution should be improved.
Vineland (Home for Feeble-Minded Children.)	2	Good			Fa.	Irrigation area should be under-drained.

TABLE NO. 12.—SEWAGE TREATMENT PLANTS WITH PROVISION FOR DISINFECTION WITH CALCIUM HYPOCHLORITE OR LIQUID CHLORINE.

NAME OR LOCATION OF PLANT.	Number of inspections.	CONDITION OF					Disinfecting agents.	Remarks.
		Settling tank.	Contact bed.	Sprinkling filter.	Sand filter.	Final effluent.		
Atlantic City (Raleigh Avenue)	1	Good				Very good	Ca(OCl) ₂	Screened sewage treated. New liquid chlorine apparatus installed. Tank requires cleaning; poor attention. Contact beds require cleaning; poor attention. Excessive flow during heavy rain; chlorine is then used.
Bridgeton (Glass St.)	6	Fair				Fair	Cl	Plant not completed; only tank constructed and used.
Brown's Mills.	1	Good				Poor	Ca(OCl) ₂	Poor attention.
Chatham-Madison	2	Good				Good	Cl	New plant; receives careful attention.
Closter (Color Factory)	1	Good				Good	Ca(OCl) ₂	Tank cleaned; receives careful attention.
Galloway Twp. (Sen View Golf Club)	1	Fair				Poor	Ca(OCl) ₂	Disinfection apparatus requires better attention.
Glen Gardner (State Institution)	8	Good		Good		Very good	Ca(OCl) ₂	Chlorine apparatus not yet installed. Plants require better attention.
Keypoint	1	Good				Fair	Ca(OCl) ₂	Chlorine apparatus installed.
Longport (2 plants)	1	Good				Fair	Cl	New plant.
Malwah (11 houses)	1	Good				Fair	Ca(OCl) ₂	Tank requires cleaning. Method of applying disinfectant requires improvement.
Margate City (2 plants)	6	Fair				Very good	Cl	New plant.
Millville	2	Good				Good	Ca(OCl) ₂	No inspection made. Receives careful attention.
Oaklyn	2	Good				Poor	Cl	Disinfection unsatisfactory.
Ocean City	3	Poor				Very poor	Ca(OCl) ₂	Disinfection unsatisfactory.
Princeton (Hockefeller Inst.)	1	Good				Good	Cl	Plant requires better attention. More Ca(OCl) ₂ required; operation of settling tank is not satisfactory.
Rahway (State institution)	6	Good		Good		Very good	Ca(OCl) ₂	Method of applying disinfectant should be improved.
Red Bank	1	Fair				Poor	Ca(OCl) ₂	New plant. Itensch Wurl screens installed.
Rumson	1	Fair				Fair	Ca(OCl) ₂	
Sea Isle City	1	Good				Very good	Ca(OCl) ₂	
Seaside Park.	2	Good				Fair	Ca(OCl) ₂	
Sewell's Point.	1	Poor				Very poor	Cl	
Smith's Landing (County Institution)	3	Fair				Fair	Ca(OCl) ₂	
Stone Harbor.	2	Poor				Poor	Ca(OCl) ₂	
Ventnor	4	Good				Good	Cl	
Vineland	6	Good				Very good	Ca(OCl) ₂	
Wildwood Crest.	3	Fair				Fair	Ca(OCl) ₂	
Wildwood	1	Poor				Poor	Cl	

TABLE NO. 13.—MISCELLANEOUS SEWAGE TREATMENT PLANTS.

NAME OR LOCATION OF PLANT.	Number of Inspections.	CONDITION OF						Remarks.
		Settling tanks.	Contact beds.	Spring-filing filters.	Sand filters.	Final effluent.		
Aldens (Watson-Shillman Co.)	1	Good	Poor	.....	.....	Fair	.....	Stone beds need cleaning.
Asbury Park (Ross-Penton Farms)	2	Fair	Fair	.....	Poor	Good	.....	To be connected to Asbury Park Sewerage System. Contact beds.
Asylia	2	Good	Fair	.....	.....	Good	.....	Secondary settling tank needs cleaning.
Autouion	2	Good	Fair	.....	.....	Good	.....	New installation.
Barnesville	1	Good	Very good	.....	Very good	Very good	.....	Sand beds not used part of year.
Branchville (Sussex Almshouse)	2	Fair	.....	.....	Poor	Poor	.....	Only one sand bed installed; fills bed overworked.
Burlington (Phos. Devlin Mfg. Co.)	3	Good	.....	Fair	.....	Fair	.....	Effluent seeps away before reaching stream.
Butler (Kinney Estate)	4	Good	Fair	.....	.....	.....	.....	Plant cleaned in Spring. New sludge bed constructed.
Butler (Piquanock Rubber Co.)	4	Good	.....	.....	.....	.....	.....	No inspection made.
Chamewater	4	Good	Very good	.....	.....	.....	.....	Tanks cleaned; plant receives careful attention.
Cliffwood (G. Riordan)	2	Fair	.....	.....	Fair	.....	.....	Secondary settling tank has replaced contact bed.
Collingswood	4	Good	.....	.....	.....	.....	.....	Plant put in operation Sept. 24, 1916.
Deni Golf Club	2	Fair	.....	.....	.....	.....	.....	Flushing device out of order.
Dorset Falls	2	Good	.....	.....	.....	.....	.....	Sand beds used by improper disposal of sludge.
Farm Hills (Troheim Farms)	3	Good	.....	.....	.....	.....	.....	New installation.
Flemington	3	Good	.....	.....	.....	.....	.....	New distribution on filters.
Freeland	3	Good	.....	.....	.....	.....	.....	Sand filters not used; tank requires cleaning.
Gladsstone (J. C. Brady Estate)	1	Good	.....	.....	.....	.....	.....	Sole strainers not used. Additional underdrains to be laid. Plant receives good attention.
Haddonfield	2	Good	.....	.....	.....	.....	.....
Haddon Heights	3	Good	.....	.....	.....	.....	.....
Hammonton	2	Good	.....	Very good	Fair	.....	.....
Hamlet (domestic)	1	Good	.....	.....	.....	.....	.....
Hamlet (trade wastes)	1	Good	.....	.....	.....	.....	.....
Innschel (trade wastes)	2	Fair	.....	.....	.....	.....	.....
Island (E. I. du Pont)	1	Good	.....	.....	.....	.....	.....
Helmetsa	1	Fair	.....	.....	.....	.....	.....
Hopewell (Institution)	3	Good	.....	.....	.....	.....	.....
Island Heights	3	Poor	.....	.....	.....	.....	.....	New plant to be constructed.
Jamesburg (Institution)	3	Good	.....	.....	.....	.....	.....	Sand beds need cleaning.
Kenilworth (American Can Co.)	3	Good	.....	.....	.....	.....	.....	Poor attention.
Lakewood	3	Poor	.....	.....	.....	.....	.....
Lakehurst	2	Poor	.....	.....	.....	.....	.....	New plant being constructed.
Lakewood (J. Huber Estate)	1	Good	.....	.....	.....	.....	.....	New plant being constructed.

TABLE NO. 13.—MISCELLANEOUS SEWAGE TREATMENT PLANTS—Continued.

NAME OR LOCATION OF PLANT.	Number of Inspections.	CONDITION OF						Remarks.
		Settling tanks.	Contact beds.	Spring-filing filters.	Sand filters.	Final effluent.		
Locust Point (E. R. Welsh Estate)	1	Good	.....	.....	.....	.....	.....	New installation.
Milwau (American Brake Shoe and Machinery Co.)	2	Poor	.....	.....	.....	.....	.....	Plant receives poor attention.
Milwau (W. W. Smith, Seed Co.)	2	Good	.....	.....	.....	.....	.....	New installation. Better attention required.
Merchantsville	1	Good	.....	.....	.....	.....	.....	More filtering area and dosing device required.
Moorestown	1	Fair	.....	.....	.....	.....	.....	Poor operation.
Moorestown (State Hospital)	2	Good	.....	Fair	.....	Fair	.....	Initial tank filter does not secure sufficient attention.
Morrisburg	2	Good	.....	.....	.....	.....	.....	Tanks should be underdrained.
New Lisbon	2	Good	.....	.....	.....	.....	.....	Tank requires more frequent cleaning.
Newtown (Sparta Street)	1	Good	.....	.....	.....	.....	.....	Good attention.
Newton (Clinton Street)	1	Poor	.....	.....	.....	.....	.....	Good attention to sand beds responsible for good effluent.
Ovenbrook (Institution)	1	Good	.....	.....	.....	.....	.....	Ordered to install sedimentation tank.
Plainboro (Standard Fuse Corp.)	3	Fair	.....	.....	.....	.....	.....	No inspection made.
Plainfield (Hotel)	4	Fair	.....	.....	.....	.....	.....	Tank is not operating satisfactorily.
Pleasantville (Hotel)	4	Good	.....	.....	.....	.....	.....	Sewage flows directly into creek over frozen fields during Winter months.
Princeton (N. E. Field)	6	Good	.....	.....	.....	.....	.....
Pompton Lakes (E. I. du Pont Cap Works)	2	Good	.....	Fair	.....	.....	.....
Pompton Lakes (E. I. du Pont Fuse Works)	2	Good	.....	Fair	.....	.....	.....
Powerville (Field & White Paper Co.)	1	Fair	.....	.....	.....	.....	.....	Flaw small. Poor attention.
Ridgewood	4	Good	.....	.....	.....	.....	.....	Sand filters not being used.
Roebuck	4	Fair	.....	.....	.....	.....	.....	Tanks need cleaning.
Scotch Plains (Honnle Burn Sunnortum)	2	Good	.....	.....	.....	.....	.....	Sub-surface filters fair.
Scotch Plains (Snyder Mfg. Co.)	1	Good	.....	.....	.....	.....	.....	New plant being constructed.
Trenton (Agricola Millboard Co.)	1	Good	.....	.....	.....	.....	.....	Trade wastes not treated.
Trenton (De Laval Steam Turbine Co.)	1	Good	.....	.....	.....	.....	.....	Plant not large enough to carry excess water leakage.
Union (2 plants)	5	Good	.....	.....	.....	.....	.....	No inspection made.
Westfield (Golf Club)	3	Good	.....	.....	.....	.....	.....	Beach badly clogged; area should be increased.
West Orange (L. F. Loree)	1	Poor	.....	.....	.....	.....	.....	Better attention required.
Woodstown	3	Good	.....	.....	.....	.....	.....	New siphon installed.
Woodbury	1	Good	.....	.....	.....	.....	.....	No inspection made.

TABLE NO. 14.—PLANTS FOR THE TREATMENT OF CREAMERY WASTES.

NAME OR LOCATION OF PLANT.	Number of Inspectors.	Condition of settling tank.	Regularity of lime application.	Appearance of effluent.	General condition of plant.	Remarks.
Branchville	1	Good		Good	Good	Long storage period in settling tank.
Clinton	1	Good	Once a day.	Good	Good	
Colt's Neck						No inspection made.
Metuchen	1	Good		Fair	Fair	No lime used.
Neshanic	2	Good	Once a day.	Fair	Fair	
Quarryville						No inspection made.
Sharptown	2	Poor		Poor	Poor	No lime used.
Sunnyside	1	Poor		Poor	Poor	No lime used.
Three Bridges	3	Good	Once a day.	Fair	Fair	Better attention required.
Woodstown	3	Good	Once a day.	Very good	Very good	Plant receives careful attention.

SEWERAGE WORKS, PLANS FOR WHICH HAVE BEEN APPROVED OR THE WORKS CONSTRUCTED.

The plans for sewer extensions approved by the Department have been for the following places: Audubon, Bayonne, Belmar, Bound Brook, Burlington, Caldwell, Collingswood, Deal, Fairview, Flemington, Helmetta, Hightstown, Lakewood, Linden township, Long Branch, Neptune township, New Brunswick, Plainfield, Princeton, Phillipsburg, Rahway, Ridgefield Park, Ridgewood, Roselle, Somerville, Summit, Trenton, Verona, Westfield, Woodbridge.

AVALON.—The sewage treatment plant and about 1¼ miles of the 18-inch intercepting sewer in Second avenue have been completed. The receiving basin at the pump station is 6 feet in width, 14½ feet in length, with a total depth of 13 feet. The pumping equipment consists of two 10-inch centrifugal pumps, operated by gas engines. The settling tank is rectangular in design and contains four compartments. The tank has the following dimensions: width, 35 feet; length, 62 feet; depth, 10 feet. The sterilization tank has the following dimensions: width, 5 feet; length, 35 feet; effective depth, 6 feet. Provision has been made for the installation of a liquid chlorine gas apparatus, to be installed when required by this Department.

ATLANTIC CITY.—Plans approved May 5th, 1916. At the Raleigh avenue sewage treatment plant an 18-inch tidal gate has been installed. In the manhole at Raleigh and Sunset avenues the necessary alterations have been made so that the outfall pipes are now three in number, one 18-inch and two 12-inch pipes.

BABBITT.—Plans for a sewage treatment plant consisting of a settling tank for the B. T. Babbitt, Inc., were approved October 3d, 1916.

BAY HEAD.—Plans for a sewerage system and sewage treatment plant, consisting of settling tanks, sprinkling filter and a secondary settling tank were approved May 2d, 1916.

BERNARDSVILLE (Parochial School and Convent).—Plans approved March 21st, 1916. At this institution there has been constructed a sewage treatment plant consisting of one settling tank, "Duplex" type, diameter 10 feet, depth 5½ feet; one dosing tank, diameter 7 feet, depth 18 inches, and two sand filters each 14½ feet by 145 feet width and a depth of 3 feet.

BRIDGETON.—At the Glass street treatment plant a liquid chlorine gas apparatus has been installed for the treatment of the settling tank effluent.

BURLINGTON (Neidich Process Co.).—Plans approved July 11th, 1916. There is installed at this place, for the disposal of toilet wastes, two leaching cess-pools, each 6 feet in diameter and 8 feet in depth.

BURLINGTON (U. S. Cast Iron Pipe and Foundry Co.).—Plans approved June 20th, 1916. At this place a sewage treatment plant has been constructed, the effluent from which is discharged into the Delaware river. The screened sewage passes into a storage well 12 feet square with an effective depth of 5 feet. The pumping equipment consists of two 4-inch centrifugal pumps operated by electric motors. The settling tank is rectangular in design with two compartments. The tank has the following dimensions: width, 27 feet; length, 31½ feet; average depth, 9 feet. Provision has been made for the installation of a disinfection apparatus, when required by this Department.

CLIFFWOOD.—Plans for a settling tank and sand filters for the treatment of wastes from a cannery factory of Gabriel Biondi were approved August 8th, 1916.

CLOSTER (E. Ullman & Co.).—Plans approved September 5th, 1916. In October, 1916, it was reported that the settling tank had been completed. When the plant is completed it will consist of a rectangular settling tank; width, 10 feet; length, 14 feet; depth, 5½ feet; a dosing tank, width, 5 feet; length, 8 feet; effective depth, 3 feet; a sand filter, 10 feet by 90 feet, with a depth of 3 feet. The sand filter effluent is to be treated with chlorine. The dosing tank will contain a 2-inch centrifugal pump operated by an electric motor.

FAIRVIEW.—Plans approved December 7th, 1915. During the year the sewage disposal plant at this place has been practically rebuilt because of the faulty original construction. The contact bed walls and floor have been strengthened and improvements made in the settling tanks.

GLADSTONE (J. C. Brady Estate).—Plans approved March 21st, 1916. The sewage treatment plant constructed consists of a rectangular settling tank; width, 6 feet; length, 15 feet; depth, 10 feet; a dosing tank, width, 6 feet; length, 7 feet; depth, 2 feet; and two sand filters, each 16 feet by 50 feet, and 3½ feet deep.

GLEN GARDNER (N. J. Sanatorium for Tuberculous Diseases).—The sewage treatment plant constructed at this institution consists of a rectangular tank, 37½ feet long, 16 feet wide, with a maximum depth of 17 feet; a sprinkling filter, 24 feet wide, 132 feet long, and 7 feet deep; a tapering dosing tank, 4½ feet wide, 5 feet long, with a maximum depth of 4½ feet; a secondary settling tank, 6½ feet wide, 22 feet long, and 7 feet deep; a sludge bed, 15 feet square. A liquid chlorine gas apparatus is used for the disinfection of the secondary settling tank effluent.

HACKENSACK.—Plans for the reconstruction of the sewerage system and the construction of the three sewage treatment plants were approved December 7th, 1915.

HASKELL (E. I. du Pont de Nemours & Co.).—Plans approved September 5th, 1916. At this place an acid treatment plant has been installed as well as a sewage treatment plant consisting of the following units: A rectangular settling tank, 3 feet in width, 25 feet in length, and 6½ feet in depth; a dosing tank, 8 feet in width, 10½ feet in length, and 5½ feet in depth; a subsurface irrigation field with 5,000 feet of tile.

HASKELL (E. I. du Pont de Nemours & Co.).—Plans approved April 18th, 1916. The sewage treatment plant as constructed consists of the following: A rectangular settling tank with two compartments, 10 feet in width, 27 feet in length, and 13½ feet in total depth; a pump well, 9 feet by 10 feet, with an effective depth of 5½ feet; trickling filters, two in number, each 10 feet wide, 15 feet long, and 5 feet deep. The pumping equipment consists of two 3-inch centrifugal pumps, operated by electric motors.

HASKELL (E. I. du Pont de Nemours & Co.).—On September 5th, 1916, plans were approved for a sewage treatment plant consisting of a settling tank and subsurface irrigation system to be installed by the E. I. du Pont de Nemours & Company. These works have been constructed.

HOPWELL.—On June 6th, 1916, the Department approved the plans for a sewage treatment plant at the St. Michael's Orphan Asylum. The plant is to consist of settling tanks, dosing tank, and sand filters. This plant is now being constructed.

ISLAND HEIGHTS.—Plans for a sewerage system and a sewage treatment plant, consisting of settling tanks, dosing chamber, and two sand filters, were approved June 29th, 1916.

KENILWORTH (American Can Co.)—Plans approved December 7th, 1915. The sewage treatment plant at this industrial works was placed in operation in May, 1916. It consists of a rectangular Imhoff tank, 12 feet square, with a total depth of 16½ feet; a dosing tank with a capacity of 650 gallons; two sand filters, each 30 feet by 40 feet, with a depth of 3 feet; and a sludge bed, 16 feet by 24 feet.

KINGSTON (St. Joseph's College)—Plans approved August 8th, 1916. It was reported in October, 1916, that the sewage treatment plant at this institution is being constructed. The plant when completed will have a rectangular settling tank 9½ feet wide, 14 feet long, and 7 feet deep; a tapering dosing tank of 180 gallons capacity; a trickling filter, 15 feet wide, 33 feet long, and 6 feet deep; and a sludge bed 10 feet square. The effluent will be discharged into the Delaware and Raritan canal.

LOCUST (J. Huber Estate)—Plans approved August 8th, 1916. A private sewage treatment plant consisting of a circular settling tank 8 feet in diameter and 6½ feet deep; a dosing tank 4½ feet in diameter and 18 inches deep; and two sand filters, 10 feet by 15½ feet, and 3 feet deep, was placed in operation in September, 1916.

LOCUST (Estate of Miss E. R. Welsh)—Plans approved December 7th, 1915. On this estate is constructed a sewage treatment plant consisting of a circular settling tank, the diameter of which is 6 feet, and depth 3½ feet; a dosing tank 4½ feet in diameter and 12 inches in depth; and two sand filters, each 10 feet by 10 feet, and 3 feet deep.

LODI—An inspection made in October, 1916, shows that construction has begun upon the sewerage system.

LONG BRANCH—Plans approved June 6th, 1916. At this sewage treatment plant the former screens and coke strainers have been removed and new screens installed. These screens are of 1-inch mesh, ½-inch to ¼-inch mesh, and 240 mesh to the square inch.

MAHWAH—Plans approved December 7th, 1915. A sewage treatment plant to handle the wastes from eleven houses has been installed. The settling tank is 5 feet by 8 feet, and 6½ feet deep. The sterilization tank is 5 feet square and 6½ feet in depth. The liquid chlorine gas apparatus is not installed.

MANASQUAN—Plans approved March 7th, 1916. A new sea outfall pipe of wrought iron, 10 inches in diameter and 900 feet in length, has been placed as the outlet pipe of the settling tank.

MATAWAN—Plans for a sewerage system and activated sludge sewage treatment plant were approved June 20th, 1916.

MATAWAN (Monmouth Seed Co.)—Plans approved April 18th, 1916. On the premises of this company two treatment plants have been constructed. One plant has been installed as an experimental plant to treat the wash water from the cannery. After passing through a wire screen of ½-inch mesh the wash water is discharged upon one of two sand filters, each of which is 70 feet by 138 feet. The second plant is for the treatment of sewage and consists of a rectangular settling tank, 8 feet wide, 12 feet long, and 7 feet deep; a dosing tank, 5 feet wide, 8 feet long, and 2 feet deep. The tank effluent is discharged into a subsurface irrigation field, 0.9 acres in area.

MAYWOOD—The sewage treatment plant as constructed consists of an Imhoff tank, 26 feet in diameter, with a total depth of 31 feet. Provision has been made for the installation of a disinfection apparatus when required by this Department. The effluent is discharged into the Hackensack river.

MILLVILLE—Plans approved December 21st, 1915. At this sewage treatment plant a liquid chlorine gas apparatus has been installed. The chlorine gas is applied to the effluent from the settling tank.

MILLVILLE—Plans for a pumping station and sewer extension were approved May 16th, 1916.

NORTH ARLINGTON—Plans for a sewerage system in a portion of the above borough were approved May 2d, 1916.

ORADELL (Bergen County Isolation Hospital)—Plans approved May 16th, 1916. At this institution a sewage plant was installed to serve a population of 30. The settling tank is of the "Duplex" type, with a diameter of 9 feet and a depth of 8 feet. The diameter of the dosing tank is 6 feet, and the depth is 18 inches. The sewage passes from the dosing tank to one of the three sections of the subsurface irrigation field which contains 4,000 feet of tile.

PALISADES PARK—The sewage treatment plant is completed and the sewerage system is partly completed. The treatment plant as constructed consists of a circular Imhoff tank, 37 feet in diameter and 25 feet in depth. The effluent is discharged into the Overpeck creek.

PAULSBORO—Plans for a sewage treatment plant to be installed by the Standard Fuse Corporation were approved March 7th, 1916, subject to the installation of a proper settling tank and dosing tank. The sand filters have been constructed.

PICTON—Plans for a sewage treatment plant for the American Felt Company were disapproved on February 15th, 1916.

PITMAN—Plans for a sewerage system and two sewage treatment plants were approved on December 21st, 1915. One plant consists of a settling tank and a sprinkling filter; the other plant, of a settling tank, sprinkling filter, and chlorine disinfection apparatus.

POINT PLEASANT—Plans approved April 4th, 1916. The construction work upon this sewerage system consisting of a new outfall pipe and an additional settling tank is expected to be completed in December, 1916.

POINT PLEASANT—Plans for a sewage treatment plant, consisting of a settling tank and sand filters for the Beacon Hotel, were approved May 2d, 1916.

POMPTON LAKES (E. I. du Pont de Nemours & Co.)—Plans approved March 21st, 1916. **CAP WORKS**—The sewage treatment plant consists of a settling tank with two compartments, a dosing tank and a trickling filter. The settling tank has the following dimensions: width, 9 feet; length, 20 feet; depth, 7 feet. The dosing tank is 9 feet wide, 10½ feet long, and the effective depth is 5½ feet. In the dosing tank are located two 2½-inch centrifugal pumps which discharge the tank effluent upon a sprinkling filter, 20 feet wide, 30 feet long, and 6 feet deep.

FUSE WORKS—Three sewage treatment plants are constructed and each plant contains a rectangular settling tank 4 feet wide, 11 feet long, and 5 feet deep; a dosing tank, 4 feet wide, 7 feet long, and 3½ feet deep; and a trickling filter, 6 feet wide, 10 feet long, and 4 feet deep.

PRINCETON (Rockefeller Institute)—Plans approved January 4th, 1916. At this institution there has been completed a sewage treatment plant consisting of the following units: One circular settling tank, 15 feet in diameter and 21 feet deep; one dosing tank, with a capacity of 2,800 gallons; and two sand filters, each 80 feet square and 3 feet deep. Provision has been made to treat the sand filter effluent by liquid chlorine, when required by this Department.

PRINCETON—On April 18th, 1916, the Department approved the plans for an additional settling tank to be constructed at the Princeton University sewage treatment plant.

PROSPECT PARK—Supplementary plans for the sewage treatment plant, showing an additional set of contact beds to be installed when required, were approved December 21st, 1915.

RIDGEFIELD—Plans approved November 9th, 1915. Work has begun upon the sewerage system and a part of the sewage treatment plant is completed. The work done at the treatment plant consists of two sludge beds, each 20 feet by 40 feet, and the placing of 300 feet of the 20-inch cast iron outfall pipe.

RIDGEFIELD PARK—Plans approved March 7th, 1916. In that section known as the West View section about two miles of sewers have been constructed and the sewerage system there is now completed. Construction work has begun upon the East Side Sewage Treatment Plant.

RIVERSIDE (Bergen county).—The plans of a sewerage system and sewage treatment plant for this borough were approved by this Department in 1915. On October 6th, 1916 an inspector of this Division reported that the sewerage system and the treatment plant are about 75 per cent. completed. The sewage treatment plant when completed will consist of a circular Imhoff tank, 25 feet in diameter and 16½ feet deep; and a sludge bed, 25 feet square. The effluent will be discharged into the Hackensack river.

RIVERTON.—On August 8th, 1916, plans for a sewerage system and a sewage treatment plant, consisting of a settling tank, dosing tank, and sprinkling filter, were approved.

ROCKAWAY.—Plans for a sewage treatment plant, activated sludge process, at the Liondale Bleach, Dye and Print Works, were approved September 5th, 1916.

SEASIDE PARK.—The sewage treatment plant and about 1½ miles of sewers have been constructed. The sewage treatment plant consists of a circular Imhoff tank, 24 feet in diameter and 26 feet deep; a liquid chlorine gas disinfection apparatus, and a sludge bed 18 feet by 28 feet. The sewage is discharged from a storage basin into the Imhoff tank by two 6-inch centrifugal pumps. The storage basin is 20½ feet in diameter, with an effective depth of 5 feet.

SKILLMAN.—Plans for the reconstruction of the sewage treatment plant at the New Jersey State Village for Epileptics were approved June 6th, 1916. These works are now being constructed.

SOUTH BOUND BROOK.—At this place the sewerage system and sewage treatment plant are practically completed. The settling tank is rectangular with two compartments, each compartment has two divisions, arranged so that the flow can be passed through them, either in series or in parallel. The tank is 51 feet in width, 62 feet in length, and the average depth is 7 feet. The tank effluent is to be treated with liquid chlorine gas. The sludge bed is 30 feet square.

SPRING LAKE.—Plans approved February 15th, 1916. An outfall pipe 12 inches in diameter and 800 feet in length, of extra heavy wrought iron, was placed at the Pennsylvania avenue settling tank.

SPRING LAKE.—Plans for a sewage pumping station and sewer extension were approved October 3d, 1916.

SWARTZWOOD (C. D. Rice Estate).—The sewage treatment plant on this estate consists of a rectangular settling tank, 4½ feet wide, 8½ feet long, with an average depth of 5 feet; a dosing tank, 4 feet wide, 4½ feet long, and 3 feet deep; and one sand filter, 12 feet wide, 15 feet long, and with a depth of 3 feet.

TOMS RIVER.—Plans for a sewerage system and sewage treatment plant to consist of a settling tank and liquid chlorine disinfection apparatus were approved June 20th, 1916.

TRENTON.—Plans for the proposed sewage treatment plant at the Thermoid Rubber Company were not approved August 8th, 1916.

UNION TOWNSHIP.—Plans for a sewerage system and a sewage treatment plant were approved April 18th, 1916.

VENTNOR.—About 1½ miles of a 14-inch cast iron force main has been placed from the sewage pumping station at Cornwall avenue to the sewage treatment plant on Washington avenue near Beach Thorofare. The receiving basin at the pump station is 8½ feet wide by 24 feet long, effective depth, 6 feet. The screened sewage is raised by two 8-inch centrifugal pumps to the above force main. At the sewage treatment plant three rectangular Imhoff tanks have been installed; length, 56 feet; width, 41 feet; depth, 22½ feet. The sewage passes from the Imhoff tanks to the storage tanks, 43 feet wide, 90 feet long, and having a depth of 6½ feet. The disinfection tank is 10 feet wide, 42 feet long, and 9 feet deep. A concrete building, for the housing of the liquid chlorine gas apparatus, is constructed upon the disinfection tank. The area of the sludge bed is 1,000 square feet.

VERONA.—Plans approved November 9th, 1915. The sewerage system and sewage treatment plant are partly constructed. When the sewage treatment plant is completed the screened sewage will be raised from the receiving basin, 6 feet by 16 feet, with an effective depth of 6 feet, by means of two 6-inch centrifugal pumps and will be discharged into the settling tank. The settling tank will be 47½ feet wide, 81 feet long, and with an average depth of 12 feet. The tank will have four compartments. The plans call for four contact beds, each 60 feet square, and with a depth of 6½ feet; four sand filters, each 50 feet by 100 feet, and with a depth of 3½ feet; and one sludge bed, 40 feet by 60 feet, the sand therein to be 18 inches deep.

WARRENVILLE.—Plans for a sewage treatment plant on the premises of Arthur Hoffheimer were approved October 3d, 1916.

WEST ENGLEWOOD.—Plans for a private sewage treatment plant to be constructed on the premises of R. T. Davidson were approved January 4th, 1916.

WILDWOOD.—Plans approved December 21st, 1915. There is now installed at this place a sewage treatment plant discharging a screened and disinfected effluent. The removal of solids is accomplished by two Riensch Wurl screens. The screens are 8 feet in diameter, with ¼-inch slots, and are placed at an angle of 25 degrees. The screened sewage is treated with liquid chlorine gas, and the sewage then flows into a pump well, 8 feet by 18 feet and 18 feet in depth. From this pump well the effluent is discharged into the Thorofare by two 10-inch centrifugal pumps.

HEARINGS ON MATTERS RELATING TO SEWERAGE.

DOVER.—On August 8th, 1916, a hearing was given relative to the application of the town of Dover for permission to establish a sewage treatment plant in Rockaway township.

MATAWAN.—On February 2d, 1916, a hearing was given at Matawan relative to pollutions of the Matawan creek and the installation of a sewerage system and a sewage treatment plant.

PLEASANTVILLE.—On November 16th, 1915, a hearing was held relative to the proposed installation of a sewage treatment plant.

PROSPECT PARK.—On November 23d, 1915, a hearing was given to the officials of Prospect Park and residents of said borough and the city of Paterson in reference to the proposed installation of a sewage treatment plant in Prospect Park.

ROCKAWAY.—On March 21st, 1916, a hearing was given relative to the disposal of waste liquids from the Liondale Bleach, Dye and Print Works into the Rockaway river.

SOUTH ORANGE.—On April 7th, 1916, a hearing was given relative to the application of the township of South Orange for permission to establish and maintain a sewage treatment plant in the townships of Millburn and Union.

Report of the Laboratory of Hygiene.

R. B. FITZ-RANDOLPH, CHIEF.

The reorganization of the State Department of Health in 1915 re-established the Laboratory of Hygiene as a separate bureau, assigning to it, in addition to the bacteriological diagnostic work, all laboratory investigations relating to food and drugs, water and sewerage. The work of the laboratory, therefore, falls naturally into three main divisions—(1) the examination of specimens from suspected cases of communicable diseases and other bacteriological examinations; (2) the analysis of samples of food and drugs collected by inspectors of the Bureau of Food and Drugs, and (3) the analysis, bacteriological and chemical, of samples of water and sewage collected by the Bureau of Engineering from public and private water supplies, and by local boards of health from wells and other sources of water-supply suspected of being polluted.

Besides these main lines of investigation the laboratory is charged by the Department with the duty of carrying on any line of investigation within its scope for any of the other bureaus. Under this ruling it makes numerous bacteriological investigations for the Bureau of Local Health Administration, the Bureau of Engineering and the Bureau of Publicity and Education.

The routine work carried on by the laboratory, described in previous reports, does not vary greatly from year to year. The number of specimens examined increases steadily, and every year the entirely inadequate amount of space available for laboratory uses becomes more crowded and less suitable for our uses. Our work is now crippled in many directions because of our crowded quarters. Many of the newer diagnostic procedures which should be carried on by a state laboratory cannot be undertaken because we have no place in which to work. With the beginning of the examination of specimens from suspected cases of syphilis by Wasserman's method—which will be undertaken about February 1st, 1917—we will be still more seriously hampered. A building adapted to laboratory purposes located outside the State House should be provided without delay. Laboratory space can be provided much more cheaply in a building erected for the purpose, and devoid of luxury of finish and ornamentation, than in the State Capitol, which is necessarily monumental in character. A laboratory is only a particular kind of a factory, and should be built like one. The principal requisites are substantial construction, adequate light and ventilation, and plenty of room.

We have reached the limit in economizing space in our present quarters. It was only by a readjustment which uses every available inch of space that room could be found to carry on the Wasserman tests.

With the beginning of the complement fixation test for syphilis it will be possible to carry on complement fixation tests for other diseases when it has been shown that tests of this character are of value.

The value of typhoid immunization has been so thoroughly demonstrated that the laboratory should prepare and distribute anti-typhoid vaccine. This can be easily and readily made. Another line of work for which we are likely to receive many requests is the identification of particular strains of pneumococci, as a preliminary to more precise treatment by specific sera. This work can also be undertaken without difficulty if space could be made available.

During the present epidemic of acute anterior poliomyelitis the laboratory has been called upon to make examinations of specimens of spinal fluid from obscure cases in which the clinical symptoms were not well marked. These examinations appear in the miscellaneous table. A considerable number of specimens of faeces and urine have also been examined for the Bureau of Local Health Administration from persons suspected of being typhoid carriers and of being responsible for outbreaks of typhoid fever. In several instances the person responsible for the outbreak has been discovered by this method.

During the past year there were examined in the bacteriological laboratory 13,292 throat and nose specimens for diphtheria, 6,225 sputum specimens for tuberculosis, 3,366 blood specimens for typhoid fever by agglutination tests, 460 blood specimens for malaria, 1,132 urethral discharges for gonorrhoea, and 511 miscellaneous specimens, which included examinations of a special character.

The following table shows a comparison of the work done each year since the laboratory was organized:

	1896 and 1897	1898	1899	1900	1901	1902	1903
Diphtheria	627	600	577	974	1,864	1,847	2,000
Tuberculosis	253	516	766	892	1,211	1,467	1,853
Typhoid Fever	27	175	339	431	739	884	1,333
Malaria		4	*	53	113	196	151
Miscellaneous	7	18	*	30	28	55	132
Totals	914	1,313	1,682	2,380	3,955	4,080	5,559

	1904	1905	1906	1907	1908	1909	1910
Diphtheria	2,949	2,896	3,277	3,348	6,090	14,688	8,234
Tuberculosis	2,344	2,691	2,948	2,402	3,637	4,208	4,520
Typhoid Fever	1,272	1,263	1,556	1,975	2,543	2,261	3,028
Malaria	98	109	126	149	178	197	244
Miscellaneous	67	84	126	119	170	240	398
Totals	6,730	7,048	8,033	8,993	12,618	21,594	16,424

	1911	1912	1913	1914	1915	1916
Diphtheria	4,529	4,856	7,083	10,802	25,297	13,292
Tuberculosis	4,938	5,427	6,136	6,589	6,346	6,225
Typhoid Fever	3,342	3,899	3,582	3,205	4,426	3,366
Malaria	320	355	403	399	413	460
Gonorrhoea						1,132
Miscellaneous	589	796	1,138	1,277	1,566	511
Totals	13,718	15,313	18,342	22,272	38,048	24,986

* The number of these specimens have not been recorded.

In previous reports specimens to be examined for gonorrhoeal urethritis have been included in the miscellaneous table, but this year they have been classified separately. It will be noted that 27 tests for the virulence of the diphtheria bacillus were made during the year. Physicians desiring this test made in cases where the diphtheria bacillus persists for an unusually long time, can have it done by making a request therefor on the slip accompanying the specimen, but they should understand that it takes considerable time to finish such a test, and that a report as to the virulence of the organism cannot be expected before a week after such request is made.

The following table shows the number and various kinds of miscellaneous specimens examined in the laboratory from November 1st, 1915, to October 31st, 1916, inclusive:

Specimen for	Positive.	Negative.
Rabies	26	37
Acute anterior poliomyelitis (spinal fluid)	2	2
Anthrax (animals)		2
B. Tuberculosis (spinal fluid)		7
B. tuberculosis (urine)	2	44
B. tuberculosis (various lesions)	1	37
B. typhosus (faeces)	8	69
B. typhosus (urine)	1	29
B. typhosus (water)		5
B. para-typhosus (agglutination test)		22
Bacterial infection (bile)	1	2
Bacterial infection (blood)	2	3
Bacterial infection (faeces)	7	7
Bacterial infection (milk)	2	8
Bacterial infection (pus)	89	16
Bacterial infection (sputum)	4	
Bacterial infection (synovial fluid)	3	1
Bacterial infection (urine)	6	4
Diphtherial infection (eye)	2	2
Diphtherial infection (vagina)		3
Glanders (animals)	1	2
Gonococcus infection (eye)	3	11
Gonococcus infection (urine)	1	23
Meningitis (spinal fluid)	9	5
Totals	170	341

This table shows the kind of special examinations the laboratory is called upon to make, specimens from suspected cases of any disease of a bacterial nature being examined if received in a satisfactory condition.

The following table shows the number and species of animals examined for rabies from November 1st, 1915, to October 31st, 1916, inclusive:

Dogs—positive, 25; negative, 30; unsatisfactory, 2.
 Cats—positive, 1; negative, 3; unsatisfactory, 1.
 Cows—negative, 1. Total, 63.

The number of positive cases shows a decided decrease over previous years. This decrease may be due to the passage of an act entitled "An act for the prevention and control of rabies," approved April 14th, 1915, which prescribes certain regulations and penalties for failure to report all cases of rabies to the local board of health, who can then take precautionary measures to prevent the spread of this disease.

Following is shown the towns arranged by counties from which animals found to be positive were received:

ATLANTIC COUNTY—Atlantic City, 1. BERGEN COUNTY—Englewood, 1; Hackensack, 3; Midland Park, 2. BURLINGTON COUNTY—Indian Mills, 1; Marlton, 1; Masonville, 1; Mt. Holly, 1. CAMDEN COUNTY—Camden 5; Haddonfield, 1. CUMBERLAND COUNTY—Vineland, 1. ESSEX COUNTY—Irvington, 1. MORRIS COUNTY—Madison, 1. PASSAIC COUNTY—Clifton, 1; Paterson, 1; Smith's Mills, 1. SALEM COUNTY—Daretown, 1; Woodstown, 1. UNION COUNTY—Elizabeth, 1. Total—26.

Contrary to the popular belief, the following table indicates that rabies is no more frequent in the warmer months than at other times:

Month.	Positive.	Negative.	Unsatis- factory.
November, 1915	3	2	
December, 1915	5	2	1
January, 1916		2	
February	4	1	
March		4	
April	6	3	
May	3	9	
June	1	1	1
July	1	3	
August	2	4	1
September		3	
October	1		
Totals	26	34	3

The following table shows the various kinds and amounts of culture media and reagents supplied by the laboratory to persons engaged in public health work throughout the state. These products are supplied at cost prices in order to assist local boards of health, water and sewerage plant laboratories and other persons engaged in this work. Experience has shown that this service is a great convenience to the small or local board of health laboratories—the preparation of culture media on a small scale is a tedious operation requiring considerable skill, experience and equipment. This is particularly true with respect to Loeffler's serum, as blood serum is frequently difficult to get in the smaller towns. Numerous requests for special media of various kinds are frequently received, but under present conditions the laboratory cannot undertake to prepare and distribute any varieties of media not specified in this table.

Media and Reagents.	Tubes.	Grams.
Blood Serum	3,475	
Plain Agar	12	226,000
Nutrient Broth		53,000
Peptone Bile		40,000
Endo Media		32,500
Nessler's Reagent		1,000
Lactose Fuchsine Sulphite Solution		5,650
N/20 Sulphuric Acid		1,000
Phenol Sulphonic Acid		500
N/10 NaOH Solution		1,000

The following table shows the number of outfits supplied to repositories maintained throughout the state and to physicians who are not conveniently located near repositories:

Diphtheria—Regular outfits	10,254
Serum tubes	4,350
Swab tubes	825
Total	15,429
Tuberculosis outfits	8,577
Typhoid Fever outfits	4,771
Malaria outfits	1,347
Gonorrhœa outfits	1,908
Fæces and Urine outfits	97
Silver Nitrate outfits	320
Total	32,449

CHEMICAL DIVISION.

Throughout the past year the efforts of the Chemical Division of the Laboratory of Hygiene have been devoted, for the most part, to the analysis of samples submitted by the Bureau of Food and Drugs and the Bureau of Engineering.

A considerable amount of time has been spent upon the investigation and evaluation of new analytical methods appearing in the current chemical literature, and various procedures for the detection or determination of given substances, carefully studied in order to ascertain the merits and defects of each. These studies have yielded particularly valuable information with regard to the limitations of many of the methods in general use for the examination of foods and drugs. In the light of the knowledge so obtained these procedures in use in the laboratory have been revised to make them more generally applicable.

New or modified methods have been devised for the detection of added water in milk; the detection of small amounts of foreign fats in butter; the detection of sweetening agents, other than sugar, in beverages; the detection of preservatives in meat; the determination of cereals in sausage and the determination of fat in ice cream.

In the field of pharmaceutical chemistry much time has been spent in investigating and comparing various alkaloidal assay processes with particular reference to the determination of these substances in proprietary medicines. An attempt has been made to discover new and typical reactions for many of the commonly-used "synthetics" by observing their behavior, in various states, toward a wide variety of reagents. This work has been fruitful, giving us new qualitative tests which have proved to be of value.

The methods of inorganic qualitative analysis have undergone radical changes in the past few years. In order to fix up a system of analysis which would include all that was best in the procedures, the literature was examined and the methods of various authors compared experimentally. As a result of this work, a scheme of analysis has been compiled, embodying the procedures and tests deemed to be of greatest value.

Analyses of a large number of samples have been made for local boards of health; the samples submitted covering a wider range of substances than have been received in previous years. Advice and instruction in analytical procedures have been given to a number of health officers and city chemists. The experience and facilities of the laboratory are at the service of such officials, and we are at all times glad to advise as to the most satisfactory methods for carrying on chemical investigations of foods and drugs.

Because of conditions noted elsewhere in this report, the number of samples of foods and drugs presented for analysis during the past year falls short of the number submitted in 1915. The time thus gained has been of great value to the laboratory, as it has given opportunity for a reorganization of the work and for studying and revising methods of analysis.

The following table shows the number and character of the samples examined:

FOODS.	
Character of Sample.	Number Examined.
Milk and cream, chem. exam.....	1,585
Milk, bact. exam.	1,431
Spices	6
Flavoring extracts	92
Butter and oleomargarine	154
Cider and vinegar	67
Eggs	20
Meat products	95
Salad oils	13
Soft drinks	126
Tomato condiments	12
Other foods (20 varieties).....	43
Total	3,644

DRUGS AND TOILET PREPARATIONS.

Character of Sample.	Number Examined.
U. S. P. (Sth) and N. E. (3d) preparations.....	305
Proprietary medicines	56
Hair tonics and toilet waters.....	114
Other drugs	28
Total	503
Total Foods and Drugs.....	4,147

During the past fiscal year the water and sewage laboratory has analyzed 2,915 samples, an increase of 42 per cent. over the figures for the preceding year. This expansion of the work has been due principally to an increase in the number of sewage samples submitted for analysis by the Bureau of Engineering and by an augmentation in the number of samples of bottled waters received from the Bureau of Food and Drugs.

Numerous changes in the mode of handling samples have served to facilitate work and bring about a marked increase in the efficiency of the laboratory organization. Very few changes have been made in the procedure for the analysis of water, but the methods of sewage examination have been radically altered.

The "nitrogen" methods of sewage analysis have been abandoned and the "oxygen demand" method of Lederer substituted therefor. Opportunity has not been afforded for the complete development and adaptation of this later method to all conditions encountered, but enough has been done to amply demonstrate its superiority over the older procedures, in the majority of cases.

SUMMARY OF SAMPLES ANALYZED.

Character of Sample.	Number Examined.
Public water supplies	1,519
Private water supplies	257
State institution water supplies.....	57
Bottled waters	210
Sewage	827
Miscellaneous	45
Total	2,915

The laboratory is now working up to its capacity, and any increase in the amount of work must of necessity be accompanied by an increase in the number of analysts and in the working space.

The analytical work has been seriously hampered during the past year, because of the necessity of temporarily transferring one of the analysts to the Bureau of Food and Drugs for several months. This was made necessary because of a vacancy on the shellfish boat "Inspector," and no bacteriologist with a satisfactory training could be secured who would accept this position.

Report of the Bureau of Vital Statistics.

DAVID S. SOUTH, CHIEF.

An important change has been made in the manner of tabulating deaths in New Jersey. However, the change in question will not be fully apparent in the figures presented in this report. The new method consists in the classification of non-resident deaths, charging them to the district where the deceased person usually resided, and hereafter such deaths as occur in New Jersey among people residing in other states will not be included in any municipality of this state.

Beginning July 1st, 1915, the non-resident classification was started, and therefore only six months of the year have been separated in this manner. However, the six months in question probably contain fully two-thirds of the non-resident deaths, for the reason that many of these deceased persons were visitors to the various summer resorts located along the Jersey coast, and in other portions of the state which neglected so to report them.

No definite rules for the transfer of non-resident deaths have as yet been decided upon. However, the following is a tentative outline of what is being used at present:

"TENTATIVE RULES FOR THE TRANSFER OF NON-RESIDENT DEATHS IN NEW JERSEY.

"Deaths of non-residents occurring in the various sanitary districts of the State of New Jersey are transferable if the usual residence of the deceased is in another district.

"In judging as to whether a death certificate refers to a non-resident, the following tentative rules will be found to cover most cases. The State Department of Health will not at present approve a definite set of rules covering this subject, and there will be found many cases where no rules can be rigidly applied. However, in such cases the statistical treatment must be given according to the best judgment of the person tabulating the record.

"I. DEATHS IN STATE INSTITUTIONS, COUNTY ALMSHOUSES, HOMES FOR AGED, ETC.

"All deaths in institutions above mentioned should be charged to the usual residence of the deceased at the time of admission to the institution, if such data is obtainable.

II. DEATHS IN HOSPITALS AND SANITARIUMS.

"In cases of chronic diseases, such as cancer, tuberculosis, chronic nephritis or Bright's disease, &c., though the duration be not given, classify as a non-resident and charge the death to the usual residence of deceased.

"Deaths of persons admitted for operations should in all cases be charged to the usual residence of deceased.

"When the length of residence at the place of death is given as less than the duration of the disease or about the same as the length of the stay at hospital or sanitarium (judging from the dates of treatment), transfer to the usual or former residence, if such data is ascertainable from the certificate as different from the place where the hospital or sanitarium is located.

"III. DEATHS FROM VIOLENCE OR WHILE IN TRANSIT.

"Deaths from violence, accidental causes, or while in transit, as railroad accidents, automobile accidents, drownings or suicides, should be charged to the usual place of residence, if known; if not known, to the place where the accident or death is believed to have occurred. Failing any of these to the place where the body was first found dead.

"IV. DEATHS OF INFANTS.

"Deaths in infant homes or maternity hospitals of infants who had been there a short time (judging from the dates of treatment), and whose birth-place is given as elsewhere; which is usually the same as the mother's or informant's address, should be charged back to the place of birth.

"Infants dying within a year in an institution where the mother was admitted for her confinement, should be charged to the mother's place of residence at time of admission, if that is ascertainable from the certificate as different from the place where the institution is located. To make the transfer complete, the corresponding births of such non-resident infants should be located and transferred to the mother's usual place of residence, in the same manner as the deaths.

"V. DEATHS OF VISITORS, VACATIONISTS, TRAVELERS, ETC.

"Deaths of persons traveling, visiting or sojourning in any municipality, whether for business, pleasure or convalescence, should, regardless of the cause of death, be charged to the usual residence of deceased."

Beginning January 1st, 1916, the Hollerith tabulating machines were installed in the Bureau of Vital Statistics, and statisticians are familiar with the manner in which the facts are tabulated by these machines. However, this data cannot be properly utilized unless all of the facts which are punched on the tabulating card are summarized and published.

The same method is being followed in reference to morbidity statistics, and cards are being prepared showing all of the data in connection with each case of communicable disease made reportable by law. Extremely valuable data is therefore on file in connection with morbidity work, but this, too, in order to be useful, must be published so as to be available for ready reference for those in charge of administrative health work.

The present complete office machinery for the preparation of statistical tables, and the constant demands on the bureau for this data, prompts the recommendation of a separate report being published for the Bureau of Vital Statistics; the said report to contain only mortality and morbidity data, for the state, for each calendar year. This method would probably save considerable money in the publication of the annual report, as 1,000 copies are probably all that would be required at the present time. There would also be an additional saving

in postage, and when application is made to the bureau for certain tables, it would not be necessary to forward the entire report of the Department. Such a report as referred to could be made complete with about 300 pages of statistical matter, which is only a fair proportion when the size of the state is considered. Many states publish similar reports containing six and seven hundred pages, while other states, less than half the size of New Jersey, such as Connecticut, for instance, publish a report fully as large as is recommended for New Jersey.

The time has come when the statistical data which has been accumulating in the bureau should be utilized, and with this end in view additional help should be provided to prepare these publications which should consist of attractive charts and tables. Attention is called to the fact that the growth of the Bureau of Vital Statistics has been great during the past few years, and when it is considered that no additional help has been provided to correspond with this increase during the past ten years, some realization may be had of the work being cared for by the present office force.

COMMUNICABLE DISEASES.

During the outbreak of infantile paralysis in the state during the past year the Bureau of Vital Statistics made an effort to check up physicians who failed to report cases occurring in their practice, and the month of July only was checked up. A list of apparent violations was prepared, but, after each one of the cases had been investigated, it was found that no actual violations of the law had occurred. The correspondence in relation to this matter is on file in the Department. Supposed violations of the law in reference to reporting this disease for the months of August, September or October will be given attention in due time.

On April 1st a communication was forwarded to the Department containing the names of several physicians who, according to the records of this office, had failed to report communicable diseases (mostly tuberculosis) occurring in their practice, and the list was returned to the bureau with instructions that a circular notice be sent to all physicians in the state informing them that the law regarding the reporting of cases of communicable diseases is now being strictly enforced.

It appears that in most of the cases where violations of the law occurred, tuberculosis was the disease from which the patient was suffering, and it is a well-known fact that persons suffering from this disease sometimes go from one physician to another for treatment, which results in confusion as to who shall make a report of the case. However, the law makes no exceptions, but requires every physician to report a case of communicable disease coming under his observation for treatment, and, if duplicate reports are made, they are checked up in the Bureau of Vital Statistics.

There is every reason to suppose that the law in reference to reporting communicable diseases is being reasonably complied with. However, it is recommended that the Department urge the passage of an act similar to chapter 389, laws of 1915, which makes it compulsory for local boards of health to prosecute physicians for failure to report births. If a similar act in reference to communicable diseases were placed on the statute books, it would no doubt result in a full and complete registration of morbidity records.

That branch of the public health work relating to morbidity statistics was, during the recent reorganization of the Department, placed in the Bureau of Vital Statistics, and while sufficient help was not supplied to carry on the work as had previously been done, fair progress has been made under the existing conditions. However, it was found necessary to discontinue some lines of the clerical work which seemed at the time to be the least important, and, therefore, the copying of death certificates on cards provided for that purpose and checking them up with reports of communicable diseases to ascertain the names of physicians violating the law was temporarily discontinued. If it is the desire of the Department that this work be again taken up, additional clerical service must necessarily be provided for the same.

A continuation of the tables recently appearing in the report of communicable diseases of the Division of Medical and Sanitary Inspection, which division has now been discontinued, appears in the following pages of this report.

SUMMARY.

The morbidity and mortality records now received in the Bureau of Vital Statistics of the State Department of Health are recorded on cards known as the Hollerith Tabulating System, which consists in punching a card with a series of holes, the position of which indicates a fact on the original record, and these cards are available at the end of the year to prepare any fact, or group of facts, concerning morbidity and mortality in the state. However, in order to make them available, it is absolutely necessary that some additional clerical assistance be given the bureau to prepare the data. Each year new work has been added and new laws have been enacted increasing the duties of those connected with the bureau, and, as no additional help has been given for the past ten years, either additional assistance must be provided or the work of the bureau curtailed in such a manner as will permit the present office force to look after it in a competent manner.

TABLE 1.—BIRTHS, MARRIAGES AND DEATHS BY COUNTIES, CITIES, BOROUGHS AND TOWNSHIPS FOR THE YEAR 1915.

ATLANTIC COUNTY.				<i>Bergen County—Continued.</i>			
NAME OF PLACE.	B.	M.	D.	NAME OF PLACE.	B.	M.	D.
Absecon City.....	11	5	8	Moonachie Boro.....	27	4	7
Atlantic City.....	862	633	798	North Arlington Boro.....	32	3	12
Buena Vista Twp.....	124	46	35	Northvale Boro.....	18	6	7
East Atlantic City.....	0	0	0	Norwood Boro.....	14	1	7
Egg Harbor City.....	71	22	36	Oakland Boro.....	13	2	13
Egg Harbor Twp.....	33	11	40	Old Tappan Boro.....	7	2	1
Folsom Boro.....	5	0	2	Orvil Twp.....	22	11	15
Galloway Twp.....	41	7	24	Overpeck Twp.....	115	39	49
Hamilton Twp.....	57	14	32	Palisades Twp.....	34	8	17
Hammonton Town.....	187	58	69	Palisades Park Boro.....	56	11	15
Linwood Boro.....	0	0	2	Park Ridge Boro.....	21	14	19
Longport Boro.....	0	0	2	Ramsey Boro.....	34	11	27
Margate City.....	4	1	2	Ridgefield Boro.....	20	5	17
Mullica Twp.....	15	5	17	Ridgewood Village.....	102	51	105
Northfield City.....	12	0	29	Riverside Boro.....	10	0	6
Pleasantville City.....	97	65	59	Rivervale Twp.....	2	1	4
Port Republic City.....	0	3	6	Rutherford Boro.....	117	59	86
Somers Point City.....	14	3	9	Saddle River Boro.....	15	4	11
Ventnor City.....	24	1	15	Saddle River Twp.....	90	17	41
Weymouth Twp.....	17	0	8	Teaneck Twp.....	62	7	32
				Tenafly Boro.....	49	17	28
				Union Twp.....	207	37	57
				Upper Saddle River Boro.....	1	3	3
				Washington Boro.....	2	0	7
				Washington Twp.....	4	1	3
				Westwood Boro.....	36	17	27
				Woodcliff Boro.....	7	0	6
				Woodridge Boro.....	35	8	16
BERGEN COUNTY.				BURLINGTON COUNTY.			
NAME OF PLACE.	B.	M.	D.	NAME OF PLACE.	B.	M.	D.
Allendale Boro.....	18	10	23	Bass River Twp.....	8	1	12
Alpine Boro.....	1	0	4	Beverly City.....	60	28	40
Bergenfield Boro.....	56	16	28	Beverly Twp.....	40	17	31
Bogota Boro.....	56	7	17	Bordentown City.....	73	41	75
Carlstadt Boro.....	91	29	49	Bordentown Twp.....	13	0	5
Cliffside Park Boro.....	192	33	46	Burlington City.....	215	121	158
Closter Boro.....	31	9	13	Burlington Twp.....	20	3	25
Cresskill Boro.....	9	2	10	Chester Twp.....	111	51	66
Delford Boro.....	18	8	11	Chesterfield Twp.....	18	4	8
Demarest Boro.....	16	1	5	Cinnaminson Twp.....	15	6	17
Dumont Boro.....	38	8	23	Delran Twp.....	32	2	16
East Rutherford Boro.....	122	60	60	Easthampton Twp.....	6	0	2
Edgewater Boro.....	83	20	38	Evesham Twp.....	26	4	17
Emerson Boro.....	19	8	10	Fieldsboro Boro.....	12	2	14
Englewood City.....	281	86	183	Florence Twp.....	183	24	92
Englewood Cliffs Boro.....	2	1	5	Lumberton Twp.....	31	8	29
Fairview Boro.....	124	25	46	Mansfield Twp.....	15	5	16
Fort Lee Boro.....	84	38	64	Medford Twp.....	43	17	21
Franklin Twp.....	29	12	23	Mt. Laurel Twp.....	34	6	21
Garfield Boro.....	512	100	187	New Hanover Twp.....	14	11	16
Glen Rock Boro.....	26	2	8	Northampton Twp.....	105	62	130
Hackensack Twp.....	451	182	250	North Hanover Twp.....	7	1	7
Harrington Park Boro.....	13	1	9	Palmyra Twp.....	51	29	40
Hasbrouck Heights Boro.....	21	7	16	Pemberton Boro.....	13	12	18
Haworth Boro.....	6	2	2	Pemberton Twp.....	5	14	72
Hillsdale Twp.....	29	10	15	Riverside Twp.....	169	66	69
Hohokus Boro.....	13	9	5	Riverton Boro.....	22	16	16
Hohokus Twp.....	65	15	29	Shamong Twp.....	4	1	5
Leonia Boro.....	18	13	16				
Little Ferry Boro.....	55	9	28				
Lodi Boro.....	213	19	93				
Lodi Twp.....	23	1	7				
Maywood Boro.....	20	6	10				
Midland Twp.....	24	7	28				
Midland Park Boro.....	64	27	16				
Montvale Boro.....	13	3	9				

Burlington County—Continued.

NAME OF PLACE.	B.	M.	D.
Southampton Twp.	26	8	24
Springfield Twp.	5	0	15
Tabernacle Twp.	7	2	0
Washington Twp.	18	2	6
Westhampton Twp.	9	3	5
Willingboro Twp.	8	4	5
Woodland Twp.	18	0	8

CAMDEN COUNTY.

NAME OF PLACE.	B.	M.	D.
Audubon Boro.	64	15	32
Berlin Twp.	38	25	39
Camden City	2281	1284	1611
Centre Twp.	82	23	59
Cheshilhurst Boro.	5	2	6
Clementon Twp.	43	10	28
Collingswood Boro.	95	41	82
Delaware Twp.	34	8	10
Gloucester City	229	128	145
Gloucester Twp.	54	10	104
Haddon Twp.	35	14	32
Haddonfield Boro.	86	28	76
Haddon Heights Boro.	24	24	20
Laurel Springs Boro.	9	4	11
Magnolia Boro.	3	1	3
Merchantville Boro.	33	47	52
Oaklyn Boro.	10	5	6
Pensauken Twp.	63	15	52
Voorhees Twp.	25	2	12
Waterford Twp.	51	14	17
Winslow Twp.	104	1	79
Wood Lynne Boro.	14	5	5

CAPE MAY COUNTY.

NAME OF PLACE.	B.	M.	D.
Avalon Boro.	2	1	7
Cape May City	51	34	29
Cape May Point Boro.	3	1	2
Dennis Twp.	38	13	30
Lower Twp.	18	11	12
Middle Twp.	34	17	50
North Wildwood Boro.	23	8	10
Ocean City	66	26	46
Sea Isle City	17	2	7
Stone Harbor Boro.	0	0	0
Upper Twp.	22	11	21
West Cape May Boro.	15	5	13
Wildwood City	55	44	48
Wildwood Crest Boro.	14	0	7
Woodbine Boro.	44	5	10

CUMBERLAND COUNTY.

NAME OF PLACE.	B.	M.	D.
Bridgeton City	283	128	240
Commercial Twp.	42	22	44
Deerfield Twp.	41	11	35

Cumberland County—Continued.

NAME OF PLACE.	B.	M.	D.
Downs Twp.	14	9	26
Fairfield Twp.	28	2	21
Greenwich Twp.	27	11	9
Hopewell Twp.	26	0	35
Landis Twp.	94	13	91
Lawrence Twp.	37	13	20
Maurice River Twp.	45	18	25
Millville City	311	112	172
Stow Creek Twp.	15	6	7
Vineland Boro.	157	119	111

ESSEX COUNTY.

NAME OF PLACE.	B.	M.	D.
Belleville Town.	343	109	131
Bloomfield Town.	328	162	191
Caldwell Boro.	54	34	44
Caldwell Twp.	14	3	8
Cedar Grove Twp.	15	6	85
East Orange City	615	257	393
Essex Fells Boro.	10	3	7
Glen Ridge Boro.	178	15	50
Irvington Town.	421	97	209
Livingston Twp.	22	6	11
Millburn Twp.	100	41	49
Montclair Town.	458	197	266
Newark City	10926	3936	5318
North Caldwell Boro.	9	1	4
Nutley Town.	133	45	71
Orange City	1072	257	477
Roseland Boro.	9	0	7
South Orange Twp.	54	22	25
South Orange Village.	136	54	68
Verona Boro.	46	13	26
West Caldwell Boro.	18	3	13
West Orange Town.	271	54	113

GLOUCESTER COUNTY.

NAME OF PLACE.	B.	M.	D.
Clayton Boro.	21	16	18
Deptford Twp.	49	3	14
East Greenwich Twp.	27	4	29
Elk Twp.	19	2	12
Franklin Twp.	61	5	45
Glassboro Twp.	58	30	44
Greenwich Twp.	33	16	16
Harrison Twp.	29	3	27
Logan Twp.	22	2	26
Mantua Twp.	35	8	25
Monroe Twp.	42	19	49
National Park Boro.	8	4	6
Paulsboro Boro.	83	27	44
Pitman Boro.	30	26	36
South Harrison Twp.	16	4	4
Swedesboro Boro.	33	22	34
Washington Twp.	32	6	16
Wenonah Boro.	12	8	4
West Deptford Twp.	31	7	16
Westville Boro.	33	9	28
Woodbury City	71	50	71
Woodbury Heights Boro.	4	0	0
Woodwich Twp.	16	0	16

HUDSON COUNTY.

NAME OF PLACE.	B.	M.	D.
Bayonne City	2235	648	838
East Newark Boro.	46	17	38
Guttenberg Town	200	39	77
Harrison Town	290	138	212
Hoboken City	1797	1580	1102
Jersey City	6132	3318	4452
Kearny Town	483	120	273
North Bergen Twp.	518	182	248
Secaucus Boro.	54	16	235
Town of Union	374	339	242
Weehawken Twp.	203	161	246
West Hoboken Town	827	366	384
West New York Town	635	254	280

HUNTERDON COUNTY.

NAME OF PLACE.	B.	M.	D.
Alexandria Twp.	15	7	14
Bethlehem Twp.	22	1	22
Bloomsbury Boro.	12	6	10
Clinton Boro.	3	8	21
Clinton Twp.	39	5	39
Delaware Twp.	31	8	14
East Amwell Twp.	29	3	11
Flemington Boro.	47	13	29
Franklin Twp.	16	9	16
Frenchtown Boro.	16	11	17
Hampton Boro.	13	10	13
High Bridge Boro.	42	16	21
Holland Twp.	14	3	14
Kingwood Twp.	30	5	8
Lambertville City	107	36	68
Lebanon Twp.	29	10	38
Milford Boro.	13	1	9
Raritan Twp.	23	6	23
Readington Twp.	36	12	46
Stockton Boro.	4	2	1
Tewksbury Twp.	12	12	26
Union Twp.	17	4	9
West Amwell Twp.	10	1	8

MERCER COUNTY.

NAME OF PLACE.	B.	M.	D.
East Windsor Twp.	12	0	13
Ewing Twp.	62	8	34
Hamilton Twp.	255	27	155
Hightstown Boro.	39	22	47
Hopewell Boro.	32	14	32
Hopewell Twp.	50	4	40
Lawrence Twp.	48	9	36
Pennington Boro.	14	10	15
Princeton Boro.	100	47	76
Princeton Twp.	27	2	12
Trenton City	3128	1192	1656
Washington Twp.	24	1	12
West Windsor Twp.	24	5	13

MIDDLESEX COUNTY.

NAME OF PLACE.	B.	M.	D.
Cranbury Twp.	27	6	18
Dunellen Boro.	63	20	31
East Brunswick Twp.	11	0	16
Helmetta Boro.	45	12	3
Highland Park Boro.	39	7	30
Jamesburg Boro.	18	10	17
Madison Twp.	44	6	15
Metuchen Boro.	21	22	43
Middlesex Boro.	32	3	19
Milltown Boro.	36	17	15
Monroe Twp.	20	3	15
New Brunswick City	733	356	527
North Brunswick Twp.	3	1	0
Perth Amboy City	1277	533	516
Piscataway Twp.	75	17	32
Raritan Twp.	28	7	34
Roosevelt Boro.	429	110	107
Sayreville Twp.	247	57	75
South Amboy City	208	42	109
South Brunswick Twp.	78	12	32
South River Boro.	243	156	104
Spottwood Boro.	16	4	9
Woodbridge Twp.	340	45	153

MONMOUTH COUNTY.

NAME OF PLACE.	B.	M.	D.
Allenhurst Boro.	5	4	11
Allentown Boro.	9	10	15
Asbury Park City	221	164	150
Atlantic Twp.	16	1	9
Atlantic Highlands Boro.	32	15	24
Avon Boro.	13	3	5
Belmar Boro.	41	21	36
Bradley Beach Boro.	43	22	18
Deal Boro.	9	7	8
Eatontown Twp.	25	10	34
Englishtown Boro.	7	10	27
Fair Haven Boro.	24	10	14
Farmingdale Boro.	4	6	15
Freehold Twp.	83	55	77
Freehold Twp.	22	4	42
Highlands Boro.	45	21	30
Holmdel Twp.	8	2	21
Howell Twp.	20	6	41
Keypoint Boro.	73	53	54
Long Branch City	34	114	244
Manalapan Twp.	21	7	20
Manasquan Boro.	27	27	27
Marlboro Twp.	19	7	11
Matawan Boro.	30	21	36
Matawan Twp.	29	3	24
Middletown Twp.	103	27	92
Millstone Twp.	19	5	8
Monmouth Beach Boro.	17	0	0
Neptune Twp.	130	32	119
Neptune City Boro.	13	1	7
Ocean Twp.	16	14	27
Raritan Twp.	36	18	40
Red Bank Boro.	158	112	123
Rumson Boro.	27	14	16
Sea Bright Boro.	15	0	16
Shrewsbury Twp.	23	7	28
Spring Lake Boro.	38	11	43
Upper Freehold Twp.	40	12	38
Wall Twp.	45	19	38
West Long Branch Boro.	1	0	2

MORRIS COUNTY.

NAME OF PLACE.	B.	M.	D.
Boonton Town.....	121	78	67
Boonton Twp.....	4	3	12
Butler Boro.....	57	28	42
Chatham Twp.....	7	1	7
Chester Twp.....	13	9	19
Denville Twp.....	20	6	11
Dover Town.....	208	110	110
Florham Park Boro.....	3	1	7
Hanover Twp.....	70	23	174
Jefferson Twp.....	21	2	14
Madison Boro.....	122	34	67
Mendham Boro.....	30	8	18
Mendham Twp.....	13	0	10
Montville Twp.....	30	5	13
Morris Twp.....	24	7	47
Morristown Town.....	276	121	185
Mt Arlington Boro.....	6	0	5
Mt. Olive Twp.....	15	2	10
Netcong Boro.....	55	10	23
Passaic Twp.....	39	11	22
Pequanock Twp.....	27	7	35
Randolph Twp.....	19	7	31
Rockaway Boro.....	68	28	23
Rockaway Twp.....	36	2	49
Roxbury Twp.....	55	13	51
Washington Twp.....	14	10	23
Wharton Boro.....	58	21	32

OCEAN COUNTY.

NAME OF PLACE.	B.	M.	D.
Barnegat City Boro.....	4	3	7
Bay Head Boro.....	4	3	5
Beach Haven Boro.....	7	1	5
Berkeley Twp.....	14	2	14
Brick Twp.....	18	12	38
Dover Twp.....	38	15	40
Eagleswood Twp.....	3	5	7
Harvey Cedars Boro.....	0	0	0
Island Heights Boro.....	0	4	7
Jackson Twp.....	8	2	7
Lacey Twp.....	8	2	8
Lakewood Twp.....	68	69	76
Lavalette Boro.....	1	0	1
Little Egg Harbor Twp.....	4	1	4
Long Beach Twp.....	3	0	0
Manchester Twp.....	26	2	12
Mantoloking Boro.....	0	0	0
Ocean Twp.....	1	3	3
Plumstead Twp.....	15	9	13
Pt. Pleasant Beach Boro.....	20	13	12
Sea Side Heights Boro.....	5	0	1
Sea Side Park Boro.....	2	1	5
Stafford Twp.....	3	5	3
Surf City Boro.....	0	0	0
Tuckerton Boro.....	14	3	7
Union Twp.....	14	1	5

PASSAIC COUNTY.

NAME OF PLACE.	B.	M.	D.
Acquackanonk Twp.....	498	89	179
Haledon Boro.....	33	51	24
Hawthorne Boro.....	34	29	35
Little Falls Twp.....	72	22	35

Passaic County—Continued.

NAME OF PLACE.	B.	M.	D.
North Haledon Boro.....	8	6	7
Passaic City.....	2184	1310	887
Paterson City.....	2847	1350	1760
Pompton Twp.....	142	58	75
Pompton Lakes Boro.....	27	16	16
Prospect Park Boro.....	76	21	35
Totowa Boro.....	15	6	11
Wayne Twp.....	30	13	23
West Milford Twp.....	34	13	27
West Paterson Boro.....	38	4	25

SALEM COUNTY.

NAME OF PLACE.	B.	M.	D.
Alloway Twp.....	25	6	24
Elmer Boro.....	19	14	21
Elsinboro Boro.....	2	3	3
Lower Alloways Creek Twp.....	23	7	14
Lower Penns Neck Twp.....	32	15	21
Mannington Twp.....	30	6	28
Oldmans Twp.....	27	15	22
Penns Grove Boro.....	80	36	66
Pilesgrove Twp.....	42	18	23
Pittsgrove Twp.....	29	4	10
Quinton Twp.....	16	1	14
Salem City.....	171	81	124
Upper Penns Neck Twp.....	38	4	27
Upper Pittsgrove Twp.....	33	5	24
Woodstown Boro.....	22	16	39

SOMERSET COUNTY.

NAME OF PLACE.	B.	M.	D.
Bedminster Twp.....	20	4	16
Bernards Twp.....	92	36	42
Bound Brook Boro.....	181	69	53
Branchburg Twp.....	9	2	16
Bridgewater Twp.....	18	4	27
Franklin Twp.....	30	17	25
Hillsborough Twp.....	45	11	42
Millstone Boro.....	0	1	1
Montgomery Twp.....	10	5	34
North Plainfield Boro.....	103	34	84
North Plainfield Twp.....	9	1	9
Peapack-Gladstone Boro.....	22	10	14
Raritan Town.....	130	59	38
Rocky Hill Boro.....	13	4	8
Somerville Boro.....	145	57	113
South Bound Brook Boro.....	19	11	25
Warren Twp.....	7	7	15

SUSSEX COUNTY.

NAME OF PLACE.	B.	M.	D.
Andover Boro.....	12	3	10
Andover Twp.....	7	3	5
Branchville Boro.....	5	4	11
Byram Twp.....	18	0	4
Frankford Twp.....	9	1	12
Franklin Boro.....	92	23	57

Sussex County—Continued.

NAME OF PLACE.	B.	M.	D.
Fredon Twp.....	2	3	5
Green Twp.....	10	2	4
Hampton Twp.....	13	4	13
Hardyston Twp.....	48	18	26
Hopatcong Boro.....	1	1	3
Lafayette Twp.....	11	0	8
Montague Twp.....	7	1	11
Newton Town.....	83	35	61
Ogdensburg Boro.....	16	5	11
Sandyston Twp.....	18	6	11
Sparta Twp.....	18	11	21
Stanhope Boro.....	24	7	19
Stillwater Twp.....	17	5	10
Sussex Boro.....	23	21	15
Vernon Twp.....	34	1	20
Walpack Twp.....	2	1	9
Wantage Twp.....	25	4	32

UNION COUNTY.

NAME OF PLACE.	B.	M.	D.
Clark Twp.....	3	5	8
Cranford Twp.....	98	31	32
Elizabeth City.....	2010	844	1054
Fanwood Boro.....	6	3	6
Fanwood Twp.....	28	11	18
Garwood Boro.....	54	4	18
Hillside Twp.....	62	5	24
Kenilworth Boro.....	31	1	9
Linden Boro.....	30	10	23
Linden Twp.....	71	4	30
Mountainside Boro.....	1	1	1
New Providence Boro.....	29	6	9
New Providence Twp.....	9	4	67

Union County—Continued.

NAME OF PLACE.	B.	M.	D.
Plainfield City.....	678	223	342
Railway City.....	164	68	117
Roselle Boro.....	59	34	39
Roselle Park Boro.....	91	23	34
Springfield Twp.....	33	6	23
Summit City.....	237	62	117
Union Twp.....	56	19	49
Westfield Town.....	151	53	82

WARREN COUNTY.

NAME OF PLACE.	B.	M.	D.
Allamuchy Twp.....	19	11	7
Alpha Boro.....	70	24	32
Belvidere Town.....	32	24	16
Blairstown Twp.....	13	12	19
Franklin Twp.....	24	8	13
Frelinghuysen Twp.....	15	1	8
Greenwich Twp.....	25	7	16
Hackettstown Town.....	79	23	43
Hardwick Twp.....	6	3	4
Harmony Twp.....	38	5	19
Hope Twp.....	48	8	12
Independence Twp.....	16	2	12
Knowlton Twp.....	17	22	16
Lopatcong Twp.....	14	0	9
Mansfield Twp.....	19	3	33
Oxford Twp.....	65	26	25
Pahaquarry Twp.....	4	1	4
Phillipsburg Town.....	327	154	175
Pohatcong Twp.....	34	4	18
Washington Boro.....	38	36	58
Washington Twp.....	10	2	10
White Twp.....	15	7	14

DEPARTMENT OF HEALTH.

TABLE 2.—SHOWING NUMBER OF DEATHS FROM EACH OF THE CLASSIFIED CAUSES, BY COUNTIES, FOR THE YEAR 1915.—Continued.

	Atlantic.	Bergen.	Burlington.	Camden.	Cape May.	Cumberland.	Essex.	Gloucester.	Hudson.	Hunterdon.	Mercer.	Middlesex.	Monmouth.	Morris.	Ocean.	Passaic.	Salem.	Somerset.	Sussex.	Union.	Warren.	Total.
Other diseases of the nervous system.....74	1	2	5	8	1	7	16	1	13	1	10	3	5	1	1	3	2	1	1	6	3	90
Other diseases of the eyes and their adnexa.....75	1	3	1	1	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1	2	1	4
Diseases of the ears.....76	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	37
Pericarditis.....77	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
Acute endocarditis.....78	10	11	10	21	5	5	79	1	107	2	15	15	4	5	36	1	9	1	29	4	365	
Organic diseases of the heart.....79	166	253	154	286	45	103	849	63	820	69	203	157	207	140	44	365	45	77	45	218	62	4371
Angina pectoris.....80	11	9	8	9	1	9	38	9	45	4	18	8	10	5	1	1	1	1	1	1	3	330
Diseases of the arteries, atheroma aneurysm, etc.....81	19	42	12	25	5	20	118	17	134	16	43	19	31	26	8	22	6	7	4	21	9	607
Embolism and thrombosis.....82	9	5	3	3	1	2	19	1	23	3	9	10	5	3	1	7	3	1	1	2	5	110
Diseases of the veins (varices, hemorrhoids, phlebitis, etc.).....83	1	1	1	1	1	1	3	2	4	1	1	1	1	1	1	2	1	1	1	1	1	17
Diseases of the lymphatic system (lymphangitis, etc.).....84	2	1	1	1	1	1	4	4	4	4	2	2	1	1	1	2	1	1	1	3	1	21
Hemorrhage; other diseases of the circulatory system.....85	1	1	1	1	1	1	2	3	3	3	1	1	1	1	1	1	1	1	1	1	1	8
Diseases of the nasal fossae.....86	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Diseases of the larynx.....87	1	2	1	2	1	1	5	1	5	3	3	3	1	2	3	1	1	1	1	2	1	31
Diseases of the thyroid body.....88	1	1	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	13
Acute bronchitis.....89	8	18	10	15	3	2	53	5	83	5	13	17	11	11	3	27	4	8	5	14	8	323
Chronic bronchitis.....90	5	10	7	4	2	5	26	8	48	3	13	4	4	7	1	3	12	6	1	1	1	169
Bronchopneumonia.....91	23	87	40	110	9	9	358	17	432	8	113	79	35	51	156	16	16	6	81	20	1576	
Pneumonia.....92	107	161	97	215	17	70	532	46	731	24	178	128	95	79	20	228	33	48	29	144	43	3015
Pleurisy.....93	1	5	3	5	1	5	20	1	19	1	3	1	1	3	1	9	1	1	1	6	1	87
Pulmonary congestion, pulmonary apoplexy.....94	8	5	3	4	1	2	12	1	19	3	2	5	1	4	1	1	1	1	1	3	1	79
Gangrene of the lung.....95	1	4	3	1	1	2	15	2	12	1	5	2	5	1	7	7	1	1	1	1	3	5
Asthma.....96	1	1	1	1	1	1	2	2	12	1	1	1	1	1	1	1	1	1	1	1	1	63
Pulmonary empysema.....97	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	12
Other diseases of the respiratory system (tuberculosis excepted).....98	1	4	1	5	1	1	8	2	8	1	7	2	1	1	1	2	2	1	1	2	1	51
Other diseases of the mouth and annæa.....99	1	1	1	1	1	1	1	1	5	1	2	1	1	1	1	1	2	1	1	1	1	18

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Diseases of the pharynx.....100	1	3	1	3	1	1	6	1	13	1	3	5	1	4	1	5	1	1	1	3	2	51
Diseases of the esophagus.....101	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Diseases of the stomach.....102	5	5	3	6	1	1	27	1	36	1	7	5	3	6	1	10	2	1	1	3	1	123
Other diseases of the stomach (cancer excepted).....103	18	23	22	27	7	10	36	3	54	6	19	12	22	12	1	30	7	7	4	20	8	348
Dysentery and enteritis (under 2 years).....104	48	118	54	123	4	28	342	30	511	12	133	277	71	27	3	178	15	35	18	153	20	2200
Dysentery and enteritis (2 years and over).....105	17	23	10	22	5	11	80	2	113	4	23	15	14	11	3	32	4	4	5	27	7	422
Ankylostomiasis.....106	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Intestinal parasites.....107	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
Appendicitis and typhlitis.....108	10	13	4	16	1	6	59	4	77	3	20	8	10	13	36	2	3	2	16	1	303	
Hernias, intestinal obstructions.....109	5	7	9	10	1	15	49	4	64	4	16	8	13	7	1	18	1	2	1	13	2	250
Other diseases of the intestines.....110	4	5	3	5	1	3	18	1	18	2	6	7	6	1	1	9	1	1	1	1	1	100
Acute yellow atrophy of the liver.....111	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6
Hydatid tumor of the liver.....112	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cirrhosis of the liver.....113	12	23	5	23	2	8	101	5	138	6	23	10	15	15	2	23	4	4	21	5	435	
Biliary calculi.....114	1	6	2	7	1	1	31	1	21	2	3	1	2	2	3	11	2	1	3	1	101	
Other diseases of the liver.....115	5	2	4	3	1	5	21	4	14	1	3	4	4	4	2	10	1	2	3	8	98	
Diseases of the spleen.....116	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
Simple peritonitis (nonpuerperal).....117	1	1	1	1	1	1	3	1	3	1	1	1	1	1	1	1	2	2	1	1	20	
Other diseases of the digestive system (cancer and tuberculosis excepted).....118	2	1	1	1	1	1	1	1	9	1	1	1	1	2	1	2	1	1	1	1	29	
Acute nephritis.....119	14	18	9	20	3	9	60	2	96	10	12	16	11	8	3	44	3	1	3	25	7	375
Bright's disease.....120	85	168	95	245	34	63	656	54	625	45	137	89	174	89	39	221	38	33	36	126	37	3089
Chyluria.....121	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7
Other diseases of the kidneys and annæa.....122	1	1	1	1	1	1	20	1	12	1	3	1	3	1	3	1	1	1	3	1	54	
Calculi of the urinary passages.....123	1	1	1	1	1	1	3	1	3	1	1	1	1	1	2	2	1	1	1	1	13	
Diseases of the bladder.....124	1	1	2	1	1	2	13	9	4	1	4	1	7	1	3	3	1	1	2	1	51	
Other diseases of the urethra, urinary abscesses, etc.....125	1	4	5	3	2	4	20	1	15	2	4	2	4	2	3	2	3	2	4	1	84	
Diseases of the prostate.....126	1	4	1	3	1	1	4	1	4	1	1	1	1	1	1	1	1	1	1	1	1	8
Nonvenereal diseases of the male genital organs.....127	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Uterine hemorrhage (nonpuerperal).....128	4	4	1	3	1	4	15	6	1	3	2	2	2	2	9	1	1	1	2	2	2	
Uterine tumor (noncancerous).....129	2	2	1	1	1	1	5	5	1	1	2	1	3	1	1	1	1	1	1	1	8	
Other diseases of the uterus.....130	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
Cysts and other tumors of the ovary.....131	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
Salpingitis and other diseases of the female genital organs.....132	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
Nonpuerperal diseases of the breast (cancer excepted).....133	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	6	
Accidents of pregnancy.....134	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	32
Puerperal hemorrhage.....135	2	4	2	2	1	1	10	1	4	1	4	6	3	2	2	4	2	1	1	1	1	46

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TABLE 2.—SHOWING NUMBER OF DEATHS FROM EACH OF THE CLASSIFIED CAUSES, BY COUNTIES, FOR THE YEAR 1915—Continued.

	Atlantic	Bergen	Burlington	Camden	Cape May	Cumberland	Essex	Gloucester	Hudson	Hunterdon	Mercer	Middlesex	Monmouth	Morris	Ocean	Passaic	Salem	Somerset	Sussex	Union	Warren	Total	
Other accidents of labor.....	136	1	2	2	1	10	1	8	2	1	6	1	6	1	10	2	2	2	2	2	2	37	
Puerperal septichemia.....	137	6	1	20	1	3	32	1	45	1	9	9	7	3	1	2	13	1	2	13	1	170	
Puerperal albuminuria and convulsions.....	138	5	1	6	2	2	17	2	23	2	6	2	2	2	7	2	2	2	4	4	2	85	
Puerperal phlegmasia alba dolens, embolus, sudden death.....	139	1	1	1	1	7	7	1	1	1	1	1	1	1	1	1	1	1	1	3	1	17	
Following childbirth (not otherwise defined).....	140	1	1	1	1	4	4	7	3	3	4	1	1	1	1	1	1	1	1	3	1	2	
Puerperal diseases of the breast.....	141	2	7	1	2	9	6	6	5	3	7	3	7	3	1	1	1	1	3	1	1	60	
Gangrene.....	142	3	1	1	1	4	1	3	1	5	2	1	5	2	1	2	1	1	1	1	1	20	
Furuncle.....	143	2	2	1	1	4	4	8	1	3	1	3	1	1	1	1	1	1	1	1	1	27	
Acute abscess.....	144	1	3	1	1	4	4	7	3	3	4	1	1	1	1	1	1	1	1	1	1	33	
Other diseases of the skin and annexa.....	145	2	4	1	5	12	12	1	22	1	4	3	2	1	3	1	1	1	1	5	1	67	
Diseases of the bones (tuberculosis excepted).....	146	1	1	1	1	2	2	4	4	1	1	1	1	1	1	1	1	1	1	1	1	10	
Diseases of the bones (tuberculosis and rheumatism excepted).....	147	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Amputations.....	148	2	2	1	1	4	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Other diseases of the organs of locomotion.....	149	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Congenital malformations (stillbirths not included).....	150	12	20	16	46	1	10	77	10	98	4	35	41	12	14	4	37	6	2	5	25	481	
Congenital debility, icterus and sclerema.....	151	37	102	56	102	9	38	395	29	368	14	98	139	51	46	12	166	25	35	24	100	22	1868
Other diseases peculiar to early infancy.....	152	9	20	11	22	5	7	86	4	103	3	22	26	13	10	3	53	5	6	2	29	5	443
Lack of care.....	153	2	2	2	2	10	48	5	57	10	13	18	12	18	1	30	5	13	8	20	8	363	
Senility.....	154	4	5	2	2	3	20	1	10	1	2	3	2	2	6	1	6	1	1	4	1	68	
Suicide by poison.....	155	10	8	3	1	32	1	46	46	46	2	2	7	3	16	1	16	1	1	5	1	134	
Suicide by asphyxia.....	156	3	7	1	8	3	8	4	18	3	4	4	3	1	2	1	2	1	2	4	1	88	
Suicide by hanging or strangulation.....	157	2	2	4	1	1	3	2	2	3	1	1	1	1	1	1	1	1	1	1	1	29	
Suicide by drowning.....	158	6	15	4	12	1	5	18	2	22	4	8	7	6	2	8	2	3	4	4	4	141	
Suicide by firearms.....	159	2	2	1	1	1	7	1	7	4	4	8	1	1	1	2	1	1	1	1	1	25	
Suicide by cutting or piercing instruments.....	160	1	1	1	1	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	10	
Suicide by jumping from a high place.....	161	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	
Suicide by crushing.....	162	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	
Other suicides.....	163	2	3	1	1	2	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1	2	
Poisoning by food.....	164	2	3	2	2	10	7	7	7	7	5	5	2	8	1	2	1	1	1	1	1	4	
Other acute poisonings.....	165	1	1	1	1	13	13	4	4	4	2	2	2	3	2	2	1	1	1	1	1	18	
Conflagration.....	166	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	43	
Burns (conflagration excepted).....	167	1	14	6	25	3	35	5	50	1	10	14	7	11	42	3	5	5	19	3	3	35	
Absorption of deleterious gases (conflagration excepted).....	168	6	3	1	1	1	26	48	48	48	1	4	4	5	11	4	4	4	8	8	8	124	
Accidental drowning.....	169	16	18	15	19	14	25	8	67	3	17	27	25	13	5	16	8	8	15	3	3	332	
Traumatism by firearms.....	170	5	2	2	1	1	2	1	1	1	1	1	1	1	4	1	1	1	3	2	1	29	
Traumatism by cutting or piercing instruments.....	171	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	
Traumatism by fall.....	172	8	14	7	20	3	76	7	86	1	16	17	12	14	26	4	4	4	4	17	3	346	
Traumatism in mines and quarries.....	173	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	
Traumatism by machines.....	174	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	43	
Traumatism by other crushing (vehicles, railroad, landslides, etc.).....	175	26	38	9	50	3	7	102	2	156	2	28	43	33	31	6	73	5	10	3	46	18	691
Injuries by animals.....	176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	
Starvation.....	177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	
Excessive cold.....	178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	
Effects of heat.....	179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Lightning.....	180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	
Electricity (lightning excepted).....	181	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
Homicide by firearms.....	182	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	14	
Homicide by cutting or piercing instruments.....	183	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	55	
Homicide by other means.....	184	3	2	1	5	1	11	11	11	11	2	3	3	4	8	1	1	1	1	1	1	17	
Fractures (cause not specified).....	185	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	47	
Other external violence.....	186	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	15	
Ill-defined organic disease.....	187	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	47	
Sudden death.....	188	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
Cause of death not specified or ill-defined.....	189	3	2	3	3	1	4	3	14	4	6	4	2	1	5	4	1	1	1	3	1	2	
Total deaths by counties.....	1193	2021	1101	2481	292	836	7566	580	8627	477	2141	1922	1570	1159	280	3139	461	562	378	2103	577	39485	

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TABLE 3.—SHOWING AGES AT DEATH AND OCCUPATIONS OF DECEDENTS FROM

All other diseases and causes of death.	Agents.	Architects.	Artists.	Bakers.	Bankers, &c.	Barbers.	Bartenders, &c.	Blacksmiths.	Boatmen.	Boiler makers.	Bookkeepers.	Brass and iron workers.	Brick makers.	Butchers.	Button makers.	
																Summary of decedents from all causes.
10 to 19.....				1												
20 to 29.....				2												
30 to 39.....	3			2	1		1	1				1				1
40 to 49.....	1			2	1		2	1				1				
50 to 59.....	2			2	1		2	1				1				
60 to 69.....				1			2	1				1				
70 to 79.....	2			1			2	1				1				
80 to 89.....							2	1				1				
90 and over.....							2	1				1				
Totals.....	8			10	4		7	17	5	6		11	9		11	1
10 to 19.....		1		4			1			1		2		1		1
20 to 29.....	4		3	2			13	13		5		23		16		1
30 to 39.....	10		18	3			11	68	10	14		29	26	1	15	1
40 to 49.....	15		1	19	10		16	56	18	9		27	27	1	25	3
50 to 59.....	11	4	5	16	12		21	38	12	7		23	24	2	22	3
60 to 69.....	10		2	12	13		10	22	21	12		12	19	3	35	4
70 to 79.....	8		2	10	12		3	33	13	3		12	22	2	25	
80 to 89.....		1		1			2	10	5	1		2	2	1	12	
90 and over.....				4			2	3	1			1	1		4	
Totals.....	58	13	18	86	58	79	202	120	79	35	129	130	18	132	9	

CERTAIN SELECTED CAUSES IN NEW JERSEY FOR THE YEAR 1915—Continued.

Chaufeurs.	Chemists.	Cigar makers.	Civil engineers.	Clergymen.	Clerks.	Constables and policemen.	Contractors and carpenters.	Cooks.	Coopers.	Dentists.	Dressmakers.	Drivers, &c.	Druggists.	Dyers.	Editors and Journalists.	Electricians.	Engineers.	Engravers.	Expressmen.	FACTORY EMPLOYEES.		
																				Males.	Females.	
1					2							6	1	1							2	7
1		1		1	2							6	1	1							3	9
					7							11	1	1	2	3					3	4
					17							2	1	1	1	1					1	
		1			5							2	2	1	1	1						3
					2							3	3	1	1	1	4					
					2							1	1	1	1	2	2			1		
					7							1								1		
					2															1		
					7															1		
					1															1		
					6															1		
					8															1		
2		3	1	5	63	2	49	8			10	32	2	4	5	5	18		2		10	23
4		6			67		3	1			4	10	2	2	2	16	2	1	1		19	29
20	1	7	4	3	144	2	41	8	4	1	15	66	3	2	2	10	2	2	1		49	36
11	1	3	1	6	120	12	57	25	1	1	10	118	1	1	1	16	10	2	4		39	15
7	2	6		9	95	15	97	17	2	2	16	105	2	2	2	23	26	4	10		25	8
2	7	13	1	14	87	15	111	20	3	2	14	62	3	3	3	42	4	4	6		34	9
1	6	8	1	17	70	10	175	13	6	3	16	60	2	2	2	38	1	1	4		18	4
	2	7	2	25	45	4	163	7	5	2	12	26	1	1	1	35	5	5	5		11	
		3		7	9	1	63	2	1		5	4	3	1	2	9	1	1	1		1	
				1	1		4	2			3											
45	19	53	9	82	638	59	714	93	22	11	95	452	26	36	17	67	205	23	34		196	101

TABLE 3.—SHOWING AGES AT DEATH AND OCCUPATIONS OF DECEDENTS FROM

	Farmers.	Firemen.	Fishermen.	Florists, &c.	Foundrymen.	Glassblowers.	Glassworkers.	Grinders, &c.	Grocers.	Hatters.	Hotel keepers.	Housekeepers and housewives.	Ice-men.
All other diseases and causes of death.													
10 to 19.....	2	1	1	1	1	1	1	1	1	1	1	26	1
20 to 29.....	2	1	1	1	1	1	1	1	1	1	1	241	1
30 to 39.....	4	1	1	1	1	1	1	1	1	1	1	218	1
40 to 49.....	6	1	1	1	1	1	1	1	1	1	1	147	1
50 to 59.....	9	1	1	1	1	1	1	1	1	1	1	162	1
60 to 69.....	16	1	1	1	1	1	1	1	1	1	1	153	1
70 to 79.....	11	1	1	1	1	1	1	1	1	1	1	152	1
80 to 89.....	19	1	1	1	1	1	1	1	1	1	1	62	1
90 and over.....	3	1	1	1	1	1	1	1	1	1	1	19	1
Totals.....	81	6	3	6	2	4	5	3	7	6	10	1180	1
Summary of decedents from all causes.													
10 to 19.....	13	1	1	1	1	1	1	1	1	1	1	114	1
20 to 29.....	46	11	12	5	4	4	4	6	10	2	2	841	1
30 to 39.....	45	26	33	9	10	3	7	6	15	16	9	1164	1
40 to 49.....	58	25	44	12	15	3	7	8	17	19	17	1237	5
50 to 59.....	140	27	55	14	17	7	12	3	23	17	26	1556	2
60 to 69.....	195	15	8	24	20	4	5	4	18	21	25	1751	2
70 to 79.....	277	3	13	29	9	5	5	2	21	15	13	1491	2
80 to 89.....	163	1	2	9	2	3	2	1	4	2	5	536	1
90 and over.....	19	1	1	1	1	1	1	1	1	1	1	71	1
Totals.....	956	108	37	102	78	28	42	30	105	102	98	8761	13

CERTAIN SELECTED CAUSES IN NEW JERSEY FOR THE YEAR 1915—Continued.

Janitors, &c.	Japanese.	Jewelers.	Laborers.	Laundresses.	Laundrymen.	Lawyers.	Leather workers.	Letter carriers.	Linemen.	Linoleum workers.	Locksmiths.	Machinists.	Managers, &c.	Manufacturers.	Masons.	Merchants.	Milkmen.	Millers.	Miners.	Musicians.
1			11																	
1			41																	
1			46	1																
2			30																	
2			35	1																
2		1	17	1																
3		2	33																	
3		1	6																	
3		1	1																	
11	1	4	220	3	2	7	1	2				26	18	14	13	34	1	1	1	2
5		1	46	1		1	1	1				5		1	1					2
9	3	9	221	6	2	1	1	4				19	8	2	6	13	3			2
35	3	16	479	12	3	13	3	5				55	50	16	25	66	9			3
65	2	14	551	12	1	12	19	1	1	1	1	51	73	28	45	101	7	1	2	3
53		17	465	4	3	12	19	4	2			56	40	32	43	92	12	3	6	3
30		12	334	5	9	15	5	2				30	24	24	42	91	4	5	6	6
2		6	94		6	6	3					8	3	4	12	41	3	3	1	2
			20			1						1		2	4	2				
199	8	77	2601	49	8	49	90	27	19	1	8	265	220	115	194	433	41	13	39	36

TABLE 3.—SHOWING AGES AT DEATH AND OCCUPATIONS OF DECEDENTS FROM

	Nurses.	Painters.	Paperhangers.	Photographers.	Physicians.	Plumbers.	Porters, &c.	Potters.	Printers.	Railroad employes.	Real estate and insurance	Rubber workers.	Sailors.	Salesmen.
	All other diseases and causes of death.													
10 to 19.....	2	2	1						1					4
20 to 29.....	1	2							2	6				
30 to 39.....	1	7				1	1	1	2	4				10
40 to 49.....		7	2						1	2				4
50 to 59.....	1	6							3	6				4
60 to 69.....		5			1				1	3				4
70 to 79.....	1	2				1				1				2
80 to 89.....		1			2					1				
90 and over.....										1				
Totals.....	5	25	3		3	5	4	3	10	23	10	5	6	25
Summary of decedents from all causes.														
10 to 19.....	1	1					1		2	1				3
20 to 29.....	5	9	1			17	6	2	10	24	6	3		17
30 to 39.....	2	28		1	2	21	7	7	17	51	9	7		37
40 to 49.....	13	51	10	2	6	36	12	17	17	45	13	13		45
50 to 59.....	13	61	6	4	16	33	19	23	23	68	28	12		51
60 to 69.....	16	59	3	3	12	17	3	14	17	42	41	12		54
70 to 79.....	11	35	1	2	13	10	3	4	8	19	20	3	15	21
80 to 89.....		5			2			3	4	5	8	1	7	5
90 and over.....	1									1				
Totals.....	68	249	21	12	59	135	51	70	94	269	137	44	55	233

CERTAIN SELECTED CAUSES IN NEW JERSEY FOR THE YEAR 1915—Continued.

	Shipbuilders.	Shoemakers.	Silk workers.	Stone cutters.	Tailors.	Tanners.	Teachers.	Telegraphers.	Tile workers.	Tinsmiths.	Trunk makers.	Undertakers.	Upholsterers.	Waiters.	Watchmakers.	Weavers.	Wheelwrights.	Wire workers.	All other occupations.	All other professions.	All other trades.	
1	1	1	3		1		2					1		1		2			3			
2		1	5		3				1			1		2		1			7		1	
3		1	1				1		1					1		3			1		2	
4		1	1				2		1					1		1			9		1	
5	1		1							1				2		1			10		2	
6		1	1				2					1		1		1			5		3	
7		1	1				2					1		1		1			3		1	
8		1										1							3		2	
9																						
10	2	8	15		4		10	2	1	1	1	5		10	2	9		1	58	6	7	
11		1	7	1	3		1			1				3		4			18	2	1	
12	1	9	24		5		12			4		2	1	11	1	6			1	75	4	3
13	2	17	18		10		20	3	4	14		1	3	26	1	19		5	106	3	9	
14	2	15	26	5	18	3	21	2	2	14		3	2	14	4	18	1	6	104	9	11	
15	1	18	26	7	26	4	32	9	2	10	4	5	2	13	2	7	2	3	97	7	15	
16	7	29	32	9	21	8	21	4	10	3	7	4	12	2	11	5	4	4	87	10	13	
17	4	33	13	2	14		20	1		10	3	2	3	2	12	6		2	58	8	13	
18	2	11	2		9	1	10				1	5			2	3			18	2	7	
19	1	2			2		1												1		2	
20	20	135	148	24	108	11	138	20	6	63	11	25	15	83	12	80	17	21	564	45	74	

MORBIDITY AND MORTALITY TABLE.
BY COUNTIES FOR THE YEAR ENDING DECEMBER 31, 1915.

COUNTIES.	Population, State Census 1915.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken-pox.		Small-pox.	
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
		Atlantic	82,840	56	5	65	8	54	1	183	120	140	
Bergen	173,596	97	7	130	3	405	10	245	166	284			
Burlington	74,737	79	2	130	14	22		138	77		1		
Camden	163,221	133	14	247	36	189	3	432	262	175	1	5	
Cape May	24,407	7	1	39	3	13		19	21	34			
Cumberland	59,481	24	6	74	12	32		97	71	155		133	
Essex	598,324	172	21	1,613	64	1,002	21	2,695	1,101	2,288		1	
Gloucester	43,587	51	6	35				78	60	67	1		
Hudson	571,371	149	39	2,131	161	1,493	28	2,332	1,093	510	1	2	55
Hunterdon	34,697	21	13	46	9	29		51	32	17			
Mercer	139,812	96	12	368	30	137	3	491	283	90	1		
Middlesex	144,718	105	11	508	28	110	3	265	155	65			
Monmouth	107,636	139	17	122	14	84	1	162	102	267			
Morris	81,514	31	1	103	9	19		145	109	24		1	
Ocean	23,011	23	12	38	14	15		38	29				
Passaic	236,364	53	14	541	40	752	19	571	326	217	1		
Salem	30,292	25	3	27	4	36	2	39	39	16		2	
Somerset	44,123	38	1	59	2	60		71	32	37			
Sussex	25,977	20	1	34	2	18		16	25	53			
Union	167,322	72	10	444	26	188	4	524	259	517		2	
Warren	44,314	39	3	42	8	31	4	47	47	6			
Totals	2,844,342	1,450	188	6,932	501	4,688	97	8,636	4,377	5,053	5	152	

MORBIDITY AND MORTALITY TABLE.
BY COUNTIES FOR THE YEAR ENDING DECEMBER 31, 1915—Continued.

COUNTIES.	Malaria.		Anterior poliomyelitis.		Trachoma.		Ophthalmia.		Hydrophobia.		Anthrax.		Typhus fever.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Atlantic		1		2									
Bergen	16	1	1	1										
Burlington	1													
Camden	4	1		1				5				2		
Cape May	1													
Cumberland														
Essex	7	2	18	3	57		31	1	1					
Gloucester			1	1										
Hudson	6	5	3	4	4		2	1						
Hunterdon														
Mercer	7	1		2										
Middlesex			1											
Monmouth		2		3	1		1							
Morris	11													
Ocean														
Passaic	40	1	5	3	7		1							
Salem	1	1												
Somerset	37													
Sussex	149													
Union	21													
Warren	5	1	1											
Totals	456	17	36	22	79		52	4	3	3	4	2	2	

Total cases 27,523
Total deaths 5,216

Population of each district in tables that follow will be found under List of Sanitary Districts.
Figures for non-residents eliminated for only half year.

MORBIDITY AND MORTALITY TABLE FOR ATLANTIC COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Absecon City	37	4	1	7	3		145	84	94		
Atlantic City	2		40	1	22		1	5	1			
Buena Vista Twp.			1									
East Atlantic City												
Egg Harbor City	1		5	1	13		9	4				
Egg Harbor Twp.												
Folsom Boro.												
Gateway Twp.	2				3		1	12				
Hamilton Twp.	1		1									
Hammonton Town	6		5		2		6	5	10			
Linwood Boro.												
Longport Boro.												
Margate City												
Mullica Twp.												
Northfield City					1	1	2	2				
Pleasantville City	5		10				16	11	14			1
Port Republic City		1							21			
Ventnor City	1				3			1				
Somers Point City												
Weymouth Twp.			1									
Totals	56	5	65	8	54	1	183	120	140		1	2

One death from malaria in Atlantic City.

MORBIDITY AND MORTALITY TABLE FOR BERGEN COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Allendale Boro.			2				2	3					
Alpine Boro.														
Bergenfield Boro.	2		3	1	4		7	4	4					
Bogota Boro.	4		2	1	10		4	4	2					
Carlstadt Boro.			16	1	4								1	
Cliffside Park Boro.	1		6		13		3	12						
Closter Boro.					1									
Cresskill Boro.	1													
Delford Boro.	3						3	1						
Demarest Boro.							1	1						
Dumont Boro.			3		5		3	3						
East Rutherford Boro.														
Edgewater Boro.	1		17	4	13		12	3	1					
Emerson Boro.	3		9		4		1	2	1					
Englewood City	21	2	4	1	1		20	14	53					

MORBIDITY AND MORTALITY TABLE FOR BERGEN COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915—Continued.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Englewood Cliffs Boro.														
Fairview Boro.			2	2	2									
Port Lee Boro.			3		2		1	10						
Franklin Twp.			1		1		1							
Garfield Boro.	4		21	1	45	4	2	17	9					
Glen Rock Boro.			1		1		2	3	4					
Hackensack Town.	11	1	30	3	36		23	14	77	1				
Harrington Park Boro.			1				1	1		2				
Hasbrouck Hts. Boro.					3		3	2	44					
Haworth Boro.	1						2	1						
Hillsdale Twp.	1						3	1		3				
Hohokus Boro.					3		2	1						
Hohokus Twp.			7		6		1	1						
Leonia Boro.	1		2		11	1	1	1	1					
Little Ferry Boro.			7	2	8		3	2	2					
Lodi Boro.			19	6	29	1	12	11	9					
Lodi Twp.	1		1	1	1									
Maywood Boro.					4		1	1	1					
Midland Twp.	4		3		3		6	2						
Midland Park Boro.	1		1		9		4	1	6	1				
Montvale Boro.					1		2	1						
Moonachie Boro.					1		4	2						
N. Arlington Boro.					1		2	2						
Northvale Boro.														
Norwood Boro.			2		1									
Oakland Boro.	1				1				1					
Old Tappan Boro.									1					
Orvil Twp.			1		5			7						
Overpeck Twp.	2		13	1	24	1	2	4						
Palisades Twp.	3	1	6		1		5	4						1
Palisades Park Boro.			1	1	1		1	1						1
Park Ridge Boro.					1		1	1						
Ramsey Boro.					6		1	3	1					
Ridgefield Boro.			3		1		1	1						
Ridgewood Village.	5		4		9		10	11	27					
Riverside Boro.	2						1	1					1	1
Rivervale Twp.													1	1
Rutherford Boro.	6	2	6		21	1	11	2	2					1
Saddle River Boro.			1		2		2	2						
Saddle River Twp.	2		1		7		2	2						
Teaneck Twp.	1		5	1	7		2	1	9					
Tenafly Boro.	2		14		1		1	3		2				
Union Twp.	6		32	5	39		7	5						
Upper Saddle River Boro.							1							
Wallington Boro.	3	1	8		16		5		2					
Washington Twp.					1			1						
Westwood Boro.			4		5		7	4			6			
Woodcliffe Lake Boro.					2			1						
Wood Ridge Boro.			3		14		3		1					
Totals	97	7	291	32	405	10	245	166	284	16	1	1	1	3

One death from hydrophobia in Franklin Township. One case trachoma in Hackensack Town. One case ophthalmia in Garfield Boro.; one Hackensack Town.

MORBIDITY AND MORTALITY TABLE FOR BURLINGTON COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Bass River Twp.										
Beverly City	1		2	1			3	2		
Beverly Twp.	1		1					1		
Bordentown City	4		12	1			7	1	6	
Bordentown Twp.			5	1				1		
Burlington City	17	1	33	3	4		18	2	2	1
Burlington Twp.	2		4	1	1		11	6	24	
Chester Twp.	1		1	1						
Chesterfield Twp.	1		1				5	3	1	
Cinnaminson Twp.										
Delran Twp.	1									
Eastampton Twp.										
Evesham Twp.			6	1	1		2	2	2	
Fieldsboro Boro.										
Florence Twp.	28	2			1		23	5		
Lumberton Twp.					2		5	2		
Mansfield Twp.					1		1			
Medford Twp.	1		3				4	1	1	
Mt. Laurel Twp.	1		1				4	1	1	
New Hanover Twp.										
Northampton Twp.	9	3	13				18	11	11	
North Hanover Twp.	1				10			1		
Palmyra Twp.	1		1				1	3		
Pemberton Boro.			1					2		
Pemberton Twp.	2						21	10		
Riverside Twp.	2		4	1	5		9	6	39	
Riverton Boro.	2		5				4	2		
Shamong Twp.										
Southampton Twp.	1						3			
Springfield Twp.				1						
Tabernacle Twp.	1									
Washington Twp.										
Westampton Twp.	1						1			
Willingboro Twp.			1							
Woodland Twp.			5	1						
Totals	79	8	130	14	28		138	77	79	

One case of malaria in Mt. Laurel Township. One case of smallpox in Pemberton Township. One death from hydrophobia in Medford Township.

MORBIDITY AND MORTALITY TABLE FOR CAMDEN COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Ophthalmia.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Audubon Boro.	2		2	1			10	6						
Berlin Twp.			5	1			4	2						
Camden City	53	10	191	29	30	3	143	118						
Centre Twp.	8		3	2	2	3	9	1	3	1			2	
Chesilhurst Boro.				1	1		2	2						
Clementon Twp.	5	1	6	1	2		3						1	
Collingswood Boro.	2		7	2	2		3							
Delaware Twp.	2		2	1	2		4			1				
Gloucester City	36	2	12				21	13					1	
Gloucester Twp.	10	1	1		9		10	3					1	
Haddon Twp.	2		1		1		5	4						
Haddonfield Boro.	2		1		1		4	9						
Haddon Heights Boro.	2				1		3	1						
Laurel Springs Boro.							1	1						
Magnolia Boro.	1						1							
Merchantville Boro.	1		2		1		3	8	11					
Oaklyn Boro.	2													
Pensauken Twp.	2		5	1	4		7	9	21					
Voorhees Twp.								1						
Waterford Twp.			2				1	1						
Winslow Twp.	4		2		1		4	1						
Woodlyne Boro.					1		1	1						
Totals	133	14	247	36	55	3	432	262	175	1	4	1	5	

Two cases anthrax, five cases smallpox and one death from anterior poliomyelitis in Camden.

MORBIDITY AND MORTALITY TABLE FOR CAPE MAY COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Avalon Boro.										
Cape May City	3				1				1	4
Cape May Point Boro.										
Dennis Twp.			3						3	2
Lower Twp.			1							
Middle Twp.	1		1							
North Wildwood Boro.									2	5
Ocean City Boro.	1		3	1	8		6	5	21	5
Sea Isle City Boro.										4
South Cape May Boro.										
Stone Harbor Boro.										
Upper Twp.					1					1
West Cape May Boro.									4	4
Wildwood City	1		11	1	2		3	1		
Wildwood Crest Boro.	1									
Woodbine Boro.			16	1					2	
Totals	7	1	39	3	12		19	21	34	

MORBIDITY AND MORTALITY TABLE FOR CUMBERLAND COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Small-pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Bridgeton City	8	2	12		3		34	19	29			
Commercial Twp.			4				1	2	6			
Deerfield Twp.	2				2		1	2				
Downe Twp.							1	1				
Fairfield Twp.			2		3		2	1	11			
Greenwich Twp.							3	3				
Hopewell Twp.	1						3	3	1			
Landis Twp.							1	1				
Lawrence Twp.			8		4		14	15	37			4
Maurice River Twp.	1		1				3	1				
Millville City	11	3	34	1	18		20	14	63			127
Stowe Creek Twp.	1		1		1		1	1				
Vineland Boro.	1	1	10	1	1		16	14				
Totals	24	6	74	2	32		97	71	155			133

One death from malaria in Landis Township.

MORBIDITY AND MORTALITY TABLE FOR ESSEX COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Cases Chicken pox—	Malaria.		Anterior poliomyelitis.		Trachoma—Cases.		Ophthalmia.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Belleville Town	6	1	50	2	23	1	31	16	33								
Bloomfield Town	10	2	39	3	12		39	11	7								
Caldwell Boro.			1		3	1	26	11									
Caldwell Twp.							2	1									
Cedar Grove Twp.							2										
East Orange City	16	1	23	1	10	2	30	17	3								
Essex Fells Boro.							1	1									
Glen Ridge Boro.							3	3									
Irvington Twp.	5		67		51	2	45	33	101	1							
Livingston Twp.							2										
Millburn Twp.	1						3		17								
Montclair Town	8	3	43		30		36	137	10								
Newark City	106	10	1193	52	618	12	2160	845	1374	53	1	10		153	26	1	
North Caldwell Boro.							1	1									
Nutley Town	2		3	1	18	1	9	3									
Orange City	14	4	66	2	60	1	103	58	143	5							
Roseland Boro.							1										
South Orange Twp.	2		4	1	9		8	2	60	3							
South Orange Village																	
Verona Boro.			4		8		8	6	70								
West Caldwell Boro.			3		4		9	6									
West Orange Twp.	2		22		46	1	44	18	5								
Totals	172	21	1613	64	1008	21	2695	1101	2288	77	2	18		357	31	1	

One case of smallpox in East Orange. One case of hydrophobia in Newark.

MOBILITY AND MORTALITY TABLE FOR GLOUCESTER COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Small-pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Clayton Boro.	3	2			1		4				2	
Deptford Twp.	1		3				5					
East Greenwich Twp.					1		1					
Elk Twp.	1											
Franklin Twp.	1											
Glassboro Twp.	1		1				11					
Greenwich Twp.							4					
Harrison Twp.	3		1		1		3					
Logan Twp.							6					
Mantua Twp.	1		4		1		5				1	
Monroe Twp.	1		1		1		4					
National Park Boro.							4					
Paulsboro Boro.	1		1				3					
Pitman Boro.	1		1				6					
South Harrison Twp.	1		1				5					
Swedesboro Boro.			1				2					
Washington Twp.	1		1				1					
Wenonah Boro.							1					
West Deptford Twp.	1		1				1					
Westville Boro.	1		4				6					
Woodbury City	3		3		1		11					
Woodbury Hts. Boro.							5					
Woolwich Twp.	1						3					
Totals	51	6	35	5	6		78	60	87	1	5	

One case of ophthalmia in Monroe Township. One death from anterior poliomyelitis in Westville Borough.

MOBILITY AND MORTALITY TABLE FOR HUDSON COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Baronne City	14		165	18	1		213	108						
East Newark Boro.	3		4	1	1		19	1	1					
Guttenberg Town	1		24	2	1		19	4						
Harrison Town	4		21	4	14		68	29						
Hoboken City	39	12	442	36	143	5	352	156	120					
Jersey City	53	18	982	60	767	15	1169	578	217	1	1		2	
Kearny Town	2		63	5	58		48	26	86	1	4	1		1
North Bergen Twp.	2		1		4		8	2	2					
Secaucus Boro.	1		10		1		27	3						1
Town of Union	5		98	5	87	3	99	37	6					
Weehawken Twp.	15		40	2	30		40	23	6					
West Hoboken Town.	1		134	11	47		119	42	10					
West New York Town	8		108	8	178	2	89	46	18					
Totals	149	39	2131	161	1493	26	2332	1093	510	1	6	5	3	4

Two cases of smallpox in Hoboken. One case trachoma in Kearny; three in West Hoboken. One case ophthalmia, one death in Jersey City; one case in Kearny.

MOBILITY AND MORTALITY TABLE FOR HUNTERDON COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alexandria Twp.					1					
Bethlehem Twp.					1					
Bloomsbury Boro.					1					
Clinton Boro.					1					
Clinton Twp.					1					
Delaware Twp.	5	1	9							
East Amwell Twp.					1					
Flemington Boro.										
Franklin Twp.										
Franchtown Boro.	1									
Hampton Boro.										
High Bridge Boro.			1		1		6			
Holland Twp.										
Kingwood Twp.										
Lambertville City	3		15		5		13			
Lebanon Twp.	3		5		2		5			
Milford Boro.	1		1		2		2			
Raritan Twp.	3	1	1		1		1			
Readington Twp.	1		1		1		1			
Stockton Boro.										
Tewksbury Twp.	1				1		1			
Union Twp.					1		1			
West Amwell Twp.					3		1			
Totals	21	2	46	5	29		51	32	17	

MOBILITY AND MORTALITY TABLE FOR MERCER COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
East Windsor Twp.					1		3		3					
Ewing Twp.	4						3		4					
Hamilton Twp.	2	1	25	1	6		31		44					1
Hightstown Boro.					2		1		1					
Hopewell Boro.	3				3		3		4					
Hopewell Twp.					3		3		2					
Lawrence Twp.									3		17			
Pennington Boro.	1		1				6							
Princeton Boro.	13		7		14		20		6		13		64	1
Princeton Twp.											12			
Trenton City	68	11	318	27	98	3	408	192	148	1	6	1	9	1
Washington Twp.			3						1				2	2
West Windsor Twp.	1				2		1		1					
Totals	96	12	368	30	137	3	491	263	90	1	79	1	4	2

One case of trachoma in Lawrence Township; two in Trenton. One case ophthalmia in Princeton Borough; four in Trenton.

MORBIDITY AND MORTALITY TABLE FOR MIDDLESEX COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Anthrax.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cranbury Twp.	49	2	1					1				
Dunellen Boro.	1	1						3				
East Brunswick Twp.			2				4	1				
Helmetta Boro.			1									
Highland Park Boro.	1				7		1	4				
Jamesburg Boro.			5	2	2	1	4	1				
Madison Twp.					5		2	1				
Metuchen Boro.	1		1				2	2				
Middlesex Boro.			2		1		2	2	1			
Milltown Boro.	3		4		4		2	2				
Monroe Twp.	1		3		3		2	1				
New Brunswick City.	21	5	33	3	15	1	71	52				
North Brunswick Twp.												
Perth Amboy City.	6		342	15	40		85	40	38			
Piscataway Twp.	5	1	14		5		1	1				
Raritan Twp.	2		4		3		5	6	3			
Roosevelt Boro.	2		3	2	3		14	3	3			
Sayreville Twp.	1		9		3		7	7	7			
South Amboy City.	2	1	1		6		5	4	3			
South Brunswick Twp.	1	1	1		6		2	2	5			
South River Boro.	2		4	1	3		23	8				
Spotswood Boro.			3		1		1	1			1	
Woodbridge Twp.	5		75	1	4		31	17	8			
Totals	105	11	508	28	110	3	265	155	65	1		

One case anterior poliomyelitis in Perth Amboy. Two cases ophthalmia in New Brunswick. One case of trachoma in Perth Amboy. One case of malaria in Middlesex Borough; one in Woodbridge Township.

MORBIDITY AND MORTALITY TABLE FOR MONMOUTH COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Allenhurst Boro.								1				
Allentown Boro.								1				
Asbury Park City.	6		5				16	8	74			
Atlantic Twp.	7				3							
Atlantic Highlands Boro.	2		3		1		7	2				
Avon Boro.												
Belmar Boro.			2		2		6	5	2			
Bradley Beach Boro.		1	1		3				29			
Deal Boro.												
Eatontown Twp.	2		6	2	2		2	1	1			
Englishtown Boro.	1						4	4				
Fair Haven Boro.			1		1		1	1				
Farmingdale Boro.												
Freehold Town.	15	1	4	1	4		11	7	2			
Freehold Twp.	3		3	1			3	2	2			
Highlands Boro.							2	2	34			
Holmdel Twp.	1							1				
Howell Twp.				1				4				
Keypoint Boro.	6	2	2		2		2	4				
Long Branch City.	32	3	44	1	15		36	17	82		6	1
Manalapan Twp.	2		2				1	1				
Manasquan Boro.	1		2		1							
Marlboro Twp.	1	1										
Matawan Boro.	4	1			5		2	3				
Matawan Twp.	9							5				1
Middletown Twp.	4	2	6	1	10	1	10	4	33			
Millstone Twp.												
Monmouth Beach Boro.	2											
Neptune City Boro.												
Neptune Twp.	2	1	1		3		7	3	5			
Ocean Twp.	1		2				4					
Raritan Twp.	4		4				2					
Red Bank Boro.	40	2	17	1	12		20	12				
Rumson Boro.	1				3			1	2			
Sea Bright Boro.	1						2					
Shrewsbury Twp.							2					1
Spring Lake Boro.	3	1					6	3				
Upper Freehold Twp.	3		1	2				3				
Wall Twp.	4	1	13	2	3		9	4	1			
West Long Branch Boro.	2	1	2		1		1	1				
Totals	159	17	122	14	84	1	162	102	267		7	2

One case of anthrax in Asbury Park. One case of ophthalmia in Belmar. One case of trachoma in Long Branch. One death from anterior poliomyelitis in Freehold Town; one in Neptune City Borough, and one in Red Bank.

DEPARTMENT OF HEALTH.

MORBIDITY AND MORTALITY TABLE FOR MORRIS COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Small-pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Boonton Town	1		13	1	8		2	6					
Boonton Twp.			1	1										
Butler Boro.	1		2		3		3		4				1	
Chatham Boro.					2		2							
Chatham Twp.					2		2							
Chester Twp.					2		2							
Denville Twp.			1				1							
Dover Town			8		9		23	6	15		1		6	
Florham Park Boro.							1							
Hanover Twp.	4		7		4		45	19						
Jefferson Twp.														
Madison Boro.			3	1	11		18	13						
Mendham Boro.					11			2	1					
Mendham Twp.														
Montville Twp.			1											
Morristown Town	19	2	19	1	29		21	10						
Morris Twp.			1	2	2		2	14	1					
Mt. Arlington Boro.														
Mt. Olive Twp.	2		1		1		1	1						
Netcong Boro.														
Passaic Twp.	1	1	3		8		3	3						
Pequannock Twp.														
Randolph Twp.				1	1									
Rockaway Boro.														
Rockaway Twp.			13		2		3	3					3	
Roxbury Twp.	1		4		4		4	4	1					
Washington Twp.	2		8		5		1	1					1	
Wharton Boro.			12	2	7		2	5	1					
Totals	31	3	102	9	120		145	100	24		1		11	

One case of anthrax in Madison Borough.

MORBIDITY AND MORTALITY TABLE FOR OCEAN COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Barneget City Boro.									
Bay Head Boro.					1		1			
Beach Haven Boro.							1			
Berkeley Twp.	2								3	
Brick Twp.							2		1	3
Dover Twp.	4		4						2	
Eagleswood Twp.									2	
Harvey Cedars Boro.									1	1
Island Heights Boro.										
Jackson Twp.			2				1			
Lacey Twp.							1		16	8
Lakewood Twp.	6		1		2		22			
Lavalette Boro.										
Little Egg Harbor Twp.										
Long Beach Twp.	1								1	1
Manchester Twp.	1								1	
Mantoloking Boro.										
Ocean Twp.										
Plumstead Twp.	4				2		2			
Pt. Pleasant Beach Boro.	1	1					1		1	
Seaside Hts. Boro.							1			
Seaside Park Boro.										
Stafford Twp.	1				2					
Surf City Boro.							1		1	
Tuckerton Boro.					6		2		1	
Union Twp.	3	1	7	1			2		2	
Totals	23	2	14	1	15		35	29	13	

MORBIDITY AND MORTALITY TABLE FOR PASSAIC COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.		Anterior poliomyelitis.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Acquackanonk Twp.	2	2	18	4	36	2	20	19						
Haledon Boro.			2		2		4	2						
Hawthorne Boro.			2		16		2	2						
Little Falls Twp.	4		2		49	1	1	1	3					
North Haledon Boro.			1		1		1	1						
Passaic City	11	5	153	17	452	12	149	101	121	3	1			1
Paterson City	34	6	330	19	184		366	180	76	1	25		3	2
Pompton Twp.	2		16		2	1	6	7	4		8		3	2
Pompton Lakes Boro.			4		4		4	1	1		3			
Prospect Park Boro.			2		3		4	4						
Totowa Boro.			2		2		3	1	11					
Wayne Twp.			1		1		1	1			1			
West Milford Twp.	1				1		1	3	3					
West Paterson Boro.			2		1	1	4	1						
Totals	53	14	541	40	752	19	571	326	217	1	40	1	5	3

One case of ophthalmia in Passaic City. Seven cases of trachoma in Paterson.

MORBIDITY AND MORTALITY TABLE FOR SALEM COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Alloway Twp.				1	1	3		1	4			
Elmer Boro.							2	1	1			
Elsinboro Twp.							1	1				
Lower Alloway Creek Twp.									1			
Lower Penns Neck Twp.			1	1	1				1			
Mannington Twp.	2		1	1	1		1	2				
Oldmans Twp.	3		3	3	3		2	4				
Penns Grove Boro.	9		4	1	1		1	3	6			
Piles Grove Twp.	3	1	1		3							
Pitts Grove Twp.								2				
Quinton Twp.							3	1				
Salem City	3	1	19		16	1	21	14	2		1	
Upper Penns Neck Twp.	2						2	2				1
Upper Pitts Grove Twp.	1	1					3	2	6			
Woodstown Boro.	2				2		5	4				
Totals	25	3	27	4	36	2	39	39	16		1	1

One case of typhus fever in Salem City. One case of smallpox in Salem City; one in Elmer Borough.

MORBIDITY AND MORTALITY TABLE FOR SOMERSET COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Bedminster Twp.	2		2		1		1		1		1	
Bernards Twp.			13		2		2		1		1	
Bound Brook Boro.	10		4		10		28		3		18	
Branchburg Twp.			1		1		1					
Bridgewater Twp.			1				2		3			
Franklin Twp.	3						2		1			
Hillsborough Twp.	1	1	3	1	1		1		7			2
Millstone Boro.												
Montgomery Twp.			11		1		3		3			
North Plainfield Boro.	1		5	2	3		11	12				
North Plainfield Twp.			4				1					
Peapack-Gladstone Boro.			4		9				1			
Raritan Town							1					
Rocky Hill Boro.							1		3			
Somerville Boro.	11		2		3		16	4	1			3
South Bound Brook Boro.	7				9		1	2	1			14
Warren Twp.			1	2								
Totals	38	1	59	8	60		71	32	37			37

Two cases of ophthalmia in Bernards Township; two in South Bound Brook Borough.

MORBIDITY AND MORTALITY TABLE FOR SUSSEX COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Andover Boro.											1	
Andover Twp.											3	
Branchville Boro.											1	
Byram Twp.	5		3				1					
Frankford Twp.	1		4									
Franklin Boro.			13	1			2		33			110
Fredon Twp.												
Green Twp.			1				1		1			
Hampton Twp.	1				2		2		2			
Hardyston Twp.							1		2			16
Hopatcong Boro.			1		1							
Lafayette Twp.												
Montague Twp.					2							
Newton Town	12	1	4	1	3		4	5	2			
Ogdensburg Boro.												12
Sandyston Twp.											3	
Sparta Twp.												
Stanhope Boro.			7		1		1	2				
Stillwater Twp.							1					
Sussex Boro.	1				2							
Vernon Twp.			1	1	2		3	2	18			9
Walpack Twp.									1			
Wantage Twp.									3			
Totals	20	1	34	3	13		16	25	53			149

One case trachoma in Franklin Borough.

MORBIDITY AND MORTALITY TABLE FOR UNION COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Small-pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Clark Twp.	6	1	1	...	5	1	15	6	8
Cranford Twp.	31	4	338	14	97	1	289	112	163	...	...	...	2	...
Elizabeth City ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fanwood Boro. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fanwood Twp.	1	...	1	...	7	...	1	4	3	...	...	...	...	...
Garwood Boro.	1	...	1	...	3	...	5	3	...	...	...	...	...	...
Hillside Twp.	1	...	1	...	3	...	2	...	...	...	...	...	...	...
Kenilworth Boro.	1	1	1	...	...	...	...	3	...	...	...	...	...	...
Linden Boro.	2	...	1	...	2	...	5	4	3	...	...	...	1	...
Linden Twp.	5	...	7	...	3	...	4	4	7	...	...	...	...	...
Mountainside Boro. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Providence Boro. ....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
New Providence Twp. ....	...	...	1	...	...	...	8	60	1	...	...	...	4	...
Plainfield City	10	3	34	6	30	...	71	26	142	1	...	...	10	...
Rahway City	6	...	25	10	...	...	37	14	19	1	...	...	3	...
Roselle Boro. ....	...	...	3	1	3	...	4	3	6	...	...	...	...	...
Roselle Park Boro.	1	...	3	...	5	2	2	...	12	...	...	...	...	...
Springfield Twp. ....	...	...	1	...	3	...	3	...	...	...	...	...	...	...
Summit City	5	...	12	2	10	...	48	15	87	...	...	...	...	...
Union Twp.	2	...	6	2	...	...	17	6	2	...	...	...	1	...
Westfield Town	2	1	6	...	8	...	13	6	61	...	...	...	...	...
Totals	72	10	444	26	188	4	524	259	517	2	...	...	21	...

One case of typhus fever in Elizabeth. Three cases of trachoma in Elizabeth; one in Plainfield. One case of anterior poliomyelitis in Garwood Borough.

MORBIDITY AND MORTALITY TABLE FOR WARREN COUNTY.
BY SANITARY DISTRICTS FOR THE YEAR ENDING DECEMBER 31, 1915.

SANITARY DISTRICTS.	Typhoid fever.		Diphtheria.		Scarlet fever.		Tuberculosis.		Chicken pox.		Malaria.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
	Allamuchy Twp.	2
Alpha Boro.	1	2	3	1	12	2	...	1	...	...	1	...
Belvidere Town	9	...	4	...	...	...	1	...	...	...	...	...
Blairstown Twp. ....	...	...	...	...	1	...	...	...	...	...	...	...
Franklin Twp. ....	...	...	...	...	2	...	1	...	1	...	...	...
Frelinghuysen Twp. ....	...	...	...	...	...	...	...	...	...	...	...	...
Greenwich Twp. ....	...	...	...	...	...	...	...	...	...	...	...	...
Hackettstown Town	2	1	9	2	...	...	4	3	...	...	...	...
Hardwick Twp. ....	...	...	...	...	...	...	1	1	...	...	...	...
Harmony Twp. ....	...	...	1	...	...	...	...	1	...	...	...	...
Hope Twp. ....	...	...	...	...	...	...	...	...	...	...	...	...
Independence Twp. ....	...	...	1	1	...	...	...	...	...	...	4	...
Knowlton Twp. ....	...	...	...	...	1	...	...	...	...	...	...	...
Lopatcong Twp. ....	...	...	...	...	...	...	...	...	...	...	...	...
Mansfield Twp. ....	...	...	1	...	...	...	1	2	2	...	...	...
Oxford Twp. ....	...	...	1	...	...	...	2	2	1	...	...	1
Pahaquarry Twp. ....	...	...	...	...	...	...	...	...	...	...	...	...
Phillipsburg Town	20	1	19	4	14	2	23	19	4	...	...	...
Pohatcong Twp.	2	1	...	...	...	...	5	2	...	...	...	...
Washington Boro.	3	...	1	...	1	...	7	8	...	...	...	...
Washington Twp. ....	...	...	2	...	...	...	2	2	...	...	...	...
White Twp. ....	...	...	...	...	...	...	...	1	...	...	...	...
Totals	39	5	42	8	31	4	47	44	5	...	5	1

One death from hydrophobia in Phillipsburg. One case anterior poliomyelitis in Washington Borough.

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915.

DISEASES IN ASBURY PARK.*	AGE PERIODS.												SEX.		COLOR.		NATIVITY.									
	Under 1 month.		Under 1 year, "not including under 1 mo."		1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 to 89	90 and over	Not stated.	Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Dissewhere.
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to						
Measles	1																									
Influenza																										
Purulent infection and septichæmia																										
Tuberculosis of the lungs																										
Syphilis																										
Cancer and other malignant tumors of the buccal cavity																										
Cancer and other malignant tumors of the stomach, liver																										
Cancer and other malignant tumors of the peritoneum, intestines, rectum																										
Cancer and other malignant tumors of the female genital organs																										
Cancer and other malignant tumors of the breast																										
Cancer and other malignant tumors of other organs or of organs not specified																										
Chronic rheumatism and gout																										
Diabetes																										
Anæmia chlorosis																										
Alcoholism (acute or chronic)																										
Encephalitis																										
Simple meningitis																										
Cerebral hemorrhage, apoplexy																										
Paralysis without specified cause																										
Convulsions of infants																										
Acute endocarditis																										
Organic diseases of the heart																										

DEATHS IN ASBURY PARK.*

Angina pectoris																											
Diseases of the arteries, atheroma aneurysm, etc.																											
Embolism and thrombosis																											
Bronchopneumonia																											
Pneumonia																											
Asthma																											
Ulcer of the stomach																											
Other diseases of the stomach (cancer excepted)																											
Diarrhea and enteritis (under 2 years)																											
Diarrhea and enteritis (2 years and over)																											
Appendicitis and typhlitis																											
Hernias, intestinal obstructions																											
Simple peritonitis (nonpuerperal)																											
Acute nephritis																											
Bright's disease																											
Diseases of the bones (tuberculosis excepted)																											
Congenital malformations (stillbirths not included)																											
Congenital debility, icterus and sclerema																											
Other diseases peculiar to early infancy																											
Suicide by asphyxia																											
Traumatism by fall																											
Traumatism by other crushing (vehicles, railroad, landslides, etc.)																											
Starvation																											
Cause of death not specified or ill-defined																											

Total deaths, 150. Death-rate, 11.30.

* The death-rate in summer resorts is calculated on the basis of the resident population, whereas the actual population is often several times larger, and on account of this floating population and the large number of invalids in it, the death-rate is not a criterion of health conditions. This applies to all resort towns and others which follows in these statistics. Beginning July 1st, 1915, the deaths of non-residents are charged to their places of residence.

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915—Continued.

DEATHS IN ATLANTIC CITY.	AGE PERIODS.													SEX.		COLOR.	NATIVITY.						
														Male.	Female.								
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54			55 to 59	60 to 69	70 to 79	80 and over.	Not stated.	Number of decedents rated by figure in this column.	United States.	Elsewhere.
Simple peritonitis (nonpuerperal).....						1													1	1	1	1	
Other diseases of the digestive system (cancer and tuberculosis excepted).....																				1	1	1	1
Acute nephritis.....		1																		1	1	1	2
Bright's disease.....		2																		1	1	1	5
Chylouria.....						1	1		4	3	6	12	18	11	3				30	23	9	47	
Diseases of the prostate.....																			1	1	1	1	
Diseases of the testis.....																			4	4	1	4	
Uterine tumor (noncancerous).....						2													2	2	1	2	
Other diseases of the uterus.....																			1	1	1	1	
Salpangitis and other diseases of the female genital organs.....																			1	1	1	1	
Accidents of pregnancy.....																			1	1	1	1	
Puerperal hemorrhage.....																			1	1	1	1	
Puerperal septicemia.....						3													4	4	1	3	
Other diseases of the skin and annexa.....																			1	1	1	1	
Diseases of the bones (tuberculosis excepted).....																			1	1	1	1	
Other diseases of the organs of locomotion included.....																			1	1	1	1	
Congenital malformations (stillbirths not included).....																			2	4	1	6	
Congenital debility, icterus and sclerema.....	5	1																	17	11	7	27	
Other diseases peculiar to early infancy.....	21	7																	4	2	1	6	
Other diseases occurring in early infancy.....	152	6																	1	1	1	3	
Senility.....	154																		2	2	1	2	
Suicide by poison.....	155																		7	3	1	10	
Suicide by asphyxia.....	156																		1	1	1	3	
Suicide by drowning.....	158																		1	1	1	3	
Suicide by firearms.....	159																		6	6	1	13	
Suicide by jumping from a high place.....	161																		1	1	1	3	

DEATHS IN ATLANTIC CITY.

Other acute poisonings.....	165																		2			1	1
Confagration.....	166																						1
Burns (confagration excepted).....	167																						1
Absorption of deleterious gases (confection excepted).....	168																						1
Accidental drowning.....	169																		5	1	2	5	1
Traumatism by firearms.....	170																		9	2	2	9	2
Traumatism by fall.....	171																		1	1	1	2	2
Traumatism by other crushing (vehicles, railroad, avalanches, etc.).....	175																		4	3	1	6	1
Homicide by firearms.....	182																		14	1	1	12	2
Homicide by other means.....	184																		1	1	1	1	1
Fractures (cause not specified).....	185																		1	1	1	2	2
Ill-defined organic disease.....	187																		1	1	1	1	1

Total deaths, 798. Death-rate, 14.33.

DEATHS IN BAYONNE.

Malaria.....	4																							1
Measles.....	6																							1
Scarlet fever.....	7																		2	4			6	
Whooping cough.....	8																		1	1			2	
Diphtheria and croup.....	9																		6	5			11	
Influenza.....	10																		7	11			18	
Dysentery.....	14																		2	1			3	
Erysipelas.....	18																		1	1			2	
Purulent infection and septicemia.....	20																		2	1			3	
Tuberculosis of the lungs.....	28																		63	27	3	41	49	
Acute miliary tuberculosis.....	29																		1	1			2	
Tuberculous meningitis.....	30																		6	4	1	9	1	
Abdominal tuberculosis.....	31																		1	1			2	
Pott's disease.....	32																		1	1			2	
Tuberculosis of other organs.....	34																		1	1			2	
Syphilis.....	37																		1	1			2	
Cancer and other malignant tumors of the buccal cavity.....	39																		1	8			9	
Cancer and other malignant tumors of the stomach, liver.....	40																		1	1			2	
Cancer and other malignant tumors of the peritoneum, intestines, rectum.....	41																		1	2	8	2	6	
Cancer and other malignant tumors of the female genital organs.....	42																		3	2			5	

DEATHS IN BAYONNE.

DISEASE	AGE PERIODS.														SEX.		NATIVITY.			
	AGE PERIODS.														Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Elsewhere.	
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59						60 to 69	70 to 79	80 and over.	Not stated.
Cancer and other malignant tumors of the breast.....	43																	1	1	
Cancer and other malignant tumors of other organs or of organs not specified.....	45																	3	1	2
Other tumors (tumors of the female genital organs excepted).....	46																	1		1
Acute articular rheumatism.....	47																	8		8
Diabetes.....	50																	7		7
Leukemia.....	53																	2		2
Other general diseases.....	55																	3		3
Alcoholism (acute or chronic).....	56																	1		1
Chronic lead poisoning.....	57																	1		1
Encephalitis.....	60																	1		1
Simple meningitis.....	61																	3		3
Other diseases of the spinal cord.....	63																	1		1
Cerebral hemorrhage, apoplexy.....	64																	13		13
Paralysis without specified cause.....	66																	17		17
General paralysis of the insane.....	67																	3		3
Epilepsy.....	69																	1		1
Convulsions of infants.....	71																	2		2
Diseases of the ears.....	76																	1		1
Acute endocarditis.....	78																	1		1
Organic diseases of the heart.....	79																	4		4
Angina pectoris.....	80																	1		1
Diseases of the arteries, atheroma aneurysm, etc.....	81																	2		2
Embolism and thrombosis.....	82																	1		1

Diseases of the lymphatic system (lymphangitis, etc.).....	84																	1		1
Acute bronchitis.....	89	1																5		5
Chronic bronchitis.....	90	6																8		8
Chronic bronchopneumonia.....	91	21	16															29		29
Pneumonia.....	92	1	13	11	8	2	2	1	6	6	5	5	8	8	1	1	1	43		43
Pleurisy.....	93	1																3		3
Pulmonary congestion, pulmonary apoplexy.....	94	1																3		3
Asthma.....	96																	1		1
Other diseases of the respiratory system (tuberculosis excepted).....	98																	1		1
Other diseases of the mouth and annæxæ.....	99	1																1		1
Diseases of the pharynx.....	100																	1		1
Ulcer of the stomach.....	102																	3		3
Other diseases of the stomach (cancer excepted).....	103	1	4	2														6		6
Diarrhœa and enteritis (under 2 years).....	104	7	49	20														39		37
Diarrhœa and enteritis (2 years and over).....	105	9	2															12		9
Appendicitis and typhlitis.....	108	2	1	2	1	2	1	1	2	1	1	1	1	1	1	1	1	10		11
Hernias, intestinal obstructions.....	109	2																2		2
Other diseases of the intestines.....	110																	1		1
Cirrhosis of the liver.....	113																	4		4
Biliary calculi.....	114																	1		1
Other diseases of the liver.....	115																	1		1
Cancer and tuberculosis of the digestive system (cancer and tuberculosis excepted).....	118																	2		2
Acute nephritis.....	120	1	1															6		6
Bright's disease.....	120																	6		6
Other diseases of the kidneys and annæxæ.....	122	1																2		2
Diseases of the bladder.....	124																	8		8
Other diseases of the uterus.....	130																	2		2
Salpingitis and other diseases of the female genital organs.....	132																	1		1
Accidents of pregnancy.....	134																	1		1
Fœtural hemorrhage.....	135																	1		1
Fœtural septicæmia.....	137																	4		4
Fœtural albuminuria and convulsions.....	138																	1		1
Acute abscess.....	144	1																2		2
Other diseases of the skin and annæxæ.....	145	1																1		1
Diseases of the bones (tuberculosis excepted).....	146																	1		1
Congenital malformations (stillbirths not included).....	150	4	2															4		4
Congenital debility, lacerus and sclerema.....	151	36	6															28		19
Other diseases peculiar to early infancy.....	152	14																8		6
Senility.....	154																	1		1
Suicide by asphyxia.....	156																	1		1
Suicide by hanging or strangulation.....	157																	2		2

DEPARTMENT OF HEALTH.

DEATHS IN BLOOMFIELD.

DISEASE	AGE PERIODS.														SEX.		COLOR.		NATIVITY.								
	Under 1 month.		Under 1 year, "not including under 1 mo."		1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 to 89	90 and over.	Not stated.	Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Elsewhere.	
Other diseases of the intestines.....																											
Biliary calculi.....																											
Acute nephritis.....																											
Bright's disease.....																											
Diseases of the prostate.....																											
Puerperal hemorrhage.....																											
Puerperal septicæmia.....																											
Puerperal albuminuria and convulsions.....																											
Acute abscess.....																											
Congenital debility, icterus and sclerema.....																											
Other diseases peculiar to early infancy.....																											
Senility.....																											
Suicide by poison.....																											
Suicide by asphyxia.....																											
Suicide by drowning.....																											
Suicide by firearms.....																											
Burns (conflagration excepted).....																											
Absorption of deleterious gases (conflagration excepted).....																											
Accidental drowning.....																											
Traumatism by firearms.....																											
Traumatism by fall.....																											
Traumatism by machines.....																											
Traumatism by other crushing (vehicles, railroad, handtrucks, etc.).....																											
Homicide by firearms.....																											

Total deaths, 191. Death-rate, 10.68.

BUREAU OF VITAL STATISTICS.

DEATHS IN BORDENTOWN.

Diphtheria and croup.....																													
Trypanosoma.....																													
Tuberculosis of the lungs.....																													
Abdominal tuberculosis.....																													
Cancer and other malignant tumors of the stomach, liver.....																													
Cancer and other malignant tumors of the peritonæum, intestines, rectum.....																													
Cancer and other malignant tumors of the breast.....																													
Simple meningitis.....																													
Cerebral hæmorrhage, apoplexy.....																													
General paralysis of the insane.....																													
Epilepsy.....																													
Organic diseases of the heart.....																													
Angina pectoris.....																													
Diseases of the arteries, atheroma aneurysm, etc.....																													
Chronic bronchitis.....																													
Bronchopneumonia.....																													
Pneumonia.....																													
Ulcer of the stomach.....																													
Other diseases of the stomach (cancer excepted).....																													
Diarrhœa and enteritis (under 2 years).....																													
Biliary calculi.....																													
Bright's disease.....																													
Other diseases of the kidneys and annexa.....																													
Diseases of the bladder.....																													
Other diseases of the skin and annexa.....																													
Congenital debility, icterus and sclerema.....																													
Other diseases peculiar to early infancy.....																													
Senility.....																													
Accidental drowning.....																													
Traumatism by machines.....																													

Total deaths, 76. Death-rate, 17.35.

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915.

	AGE PERIODS.												SEX.		COLOR. Number of decedents "color black" designated by figure in this column.	NATIIVITY.					
													Male.	Female.		United States.	Elsewhere.				
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59		60 to 69	70 to 79	80 to 90 and over.	Not stated.		
Typhoid fever																					
Influenza	1			1														1	1		3
Cholera nostras	10			2														1	1		3
Dysentery	13	1																			1
Tuberculosis of the lungs	14																				1
Acute military tuberculosis	28																				1
Tuberculous meningitis	20			1		1	3	2	2	3	2	3	2	3	2	3	10	6			2
Abdominal tuberculosis	30																				2
Syphilis	31																				1
Cancer and other malignant tumors of the buccal cavity	37																				1
Cancer and other malignant tumors of the stomach, liver	39																				2
Cancer and other malignant tumors of the peritoneum, intestines, rectum	40																				2
Cancer and other malignant tumors of the female genital organs	41																				9
Cancer and other malignant tumors of other organs or of organs not specified	42																				8
Diabetes	45						2	1	1	1	2										7
Exophthalmic goitre	50										1	2									3
Alcoholism (acute or chronic)	51																				1
Locomotor ataxia	56																				1
Other diseases of the spinal cord	62																				1
Cerebral hemorrhage, apoplexy	63																				1
Paralysis of the brain	64																				1
Softening of the brain	65										5	4	5	2							3
Paralysis without specified cause	66																				7
Other forms of mental alienation	68																				9
Convulsions of infants	71	1																			1

DEATHS IN BRIDGETON.

Other diseases of the nervous system	74	1					1															1
Acute endocarditis	75																					1
Organic diseases of the heart	78																					1
Angina pectoris	79					1	2		1	1	1	4	6	6	2							2
Diseases of the arteries, atheroma aneurysm, etc.	80																					1
Embolism and thrombosis	81																					4
Chronic bronchitis	82															5	1					1
Bronchopneumonia	90															2	2					1
Pneumonia	91																					1
Pleurisy	92	1																				1
Pulmonary congestion, pulmonary apoplexy	94														3	2	2	1				1
Diseases of the pharynx	100																					1
Ulcer of the stomach	102																					1
Other diseases of the stomach (cancer excepted)	103																					1
Diarrhea and enteritis (under 2 years)	104																					1
Diarrhea and enteritis (2 years and over)	105	3																				2
Appendicitis and typhilitis	108																					1
Hernias, intestinal obstructions	109																					1
Cirrhosis of the liver	113																					2
Other diseases of the liver	118																					1
Acute nephritis	119																					1
Bright's disease	120																					1
Diseases of the bladder	124																					1
Diseases of the prostate	136																					1
Uterine tumor (noncancerous)	137																					1
Salpingitis and other diseases of the female genital organs	138																					1
Puerperal septicæmia	137																					1
Gangrene	142																					1
Congenital malformations (stillbirths not included)	150	3																				2
Congenital debility, icterus and sclerema	151	8	2																			1
Other diseases peculiar to early infancy	152	3																				2
Senility	154																					1
Suicide by poison	155																					1
Suicide by hanging or strangulation	157																					1
Suicide by firearms	159																					1
Burns (conflagration excepted)	167																					1
Accidental drowning	169																					1
Traumatism by fall	172	1																				2
Traumatism by other crushing (vehicles, railroad, landslides, etc.)	175																					1
Starvation	177																					1
Homocide by firearms	182																					1
Homocide by cutting or piercing instruments	183																					1

Total deaths, 240. Death-rate, 16.70.

DEATHS IN DOVER.

Table with columns for Under 1 month, Under 1 year, and Age Periods (1-89). Rows list various diseases such as General paralysis of the insane, Burns, and Tuberculosis. Includes columns for Sex, Color, Nativity, and Number of decedents.

Confagration 166, Burns (conflagration excepted) 167, Accidental drowning 169, Traumatism by fall 172, Traumatism by other crushing vehicles, railroad, land-slides, etc.) 175, Total deaths, 110. Death-rate, 13.31.

DEATHS IN EAST ORANGE.

Table with columns for Under 1 month, Under 1 year, and Age Periods (1-89). Rows list various diseases such as Typhoid fever, Scarlet fever, Whooping cough, Diphtheria, and Tuberculosis. Includes columns for Sex, Color, Nativity, and Number of decedents.

DEPARTMENT OF HEALTH.

DEATHS IN ELIZABETH.

DISEASE	AGE PERIODS.												SEX.		COLOR, NATIVITY.								
	AGE PERIODS.												Male.	Female.									
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49			50 to 54	55 to 59	60 to 69	70 to 79	80 and over.	Not stated.	Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Elsewhere.
Puerperal hemorrhage									1											1		1	
Other accidents of labor																				1		1	
Puerperal septicemia									1											1		1	
Puerperal albuminuria and convulsions									2	4										9		3	7
Puerperal phtegmasia alba dolens, embolus, sudden death									1											2		2	
Acute abscess									1										2		1	1	1
Other diseases of the skin and annexa																			1		1	1	
Diseases of the bones (tuberculosis excepted)									1										1		2	2	1
Diseases of the bones (tuberculosis and rheumatism excepted)																			1		1	1	
Congenital malformations (stillbirths not included)																				4		8	
Congenital debility, icterus and sclerema																			25	20	12	45	
Other diseases peculiar to early infancy																			12	8	17	20	
Senility																			12	6	1	8	
Suicide by poison																			2		2	1	
Suicide by asphyxia																			2		2	2	
Suicide by hanging or strangulation																			1		1	1	
Suicide by firearms																			2		1	2	
Suicide by cutting or piercing instruments																			1		1	1	
Conflagration																			1		1	1	
Burns (conflagration excepted)																			1		3	3	
Absorption of deleterious gases (conflagration excepted)																			4		7	11	
Accidental drowning																			6		2	5	
Traumatism by fall																			8		1	7	
Traumatism by machines																			6		4	3	
Traumatism by other crushing (vehicles, railroad, landslides, etc.)																			1		1	1	
Effects of heat																			3		4	3	
Electricity (lightning excepted)																			2		2	1	
Homicide by firearms																			1		1	1	
Homicide by other means																			1		1	1	
Other external violence																			1		1	1	
Cause of death not specified or ill-defined																			1		1	1	

Total deaths, 1,054. Death-rate, 12.47.

DEATHS IN ENGLEWOOD.

DISEASE	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 and over.	Not stated.	Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Elsewhere.		
Typhoid fever																							1		
Whooping cough																								1	
Including: Croup																								3	
Tuberculosis of the lungs																								1	
Acute miliary tuberculosis																								3	
Tuberculous meningitis																								1	
Cancer and other malignant tumors of the peritoneum, intestines, rectum																								2	
Cancer and other malignant tumors of the female genital organs																								1	
Cancer and other malignant tumors of the breast and other malignant tumors of other organs or of organs not specified																								2	
Other tumors (tumors of the female genital organs excepted)																								3	
Acute articular rheumatism																								1	
Anemia, chlorosis																								1	
Other diseases of the spinal cord																								1	
Cerebral hemorrhage, apoplexy																								1	
Epilepsy																								1	
Other diseases of the nervous system																								1	
Diseases of the ears																								1	
Pericarditis																								1	
Acute endocarditis																								1	
Organic diseases of the heart																								1	
Angina pectoris																								1	
Diseases of the arteries, atheroma aneurysm, etc.																								1	
Embolism and thrombosis																								1	

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915—Continued.

DEATHS IN HACKENSACK.	AGE PERIODS.																SEX.		COLOR. Number of "color black" deaths in this column.	NATIVITY. United States. Elsewhere.				
	AGE PERIODS.																Male.	Female.						
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69					70 to 74	75 to 79	80 and over.	Not stated.
Organic diseases of the heart.....	79	1				1	1												11	14	8	17	8	
Angina pectoris.....	80																		1			1	1	1
Diseases of the arteries, atheroma aneurysm, etc.....	81													1					1			3	3	1
Diseases of the nasal fossae.....	84																					1	1	1
Bronchopneumonia.....	91	3																				4	4	6
Pneumonia.....	92	1			2	1	1	1											13	9	1	16	6	
Pulmonary emphysema.....	97	4																	1			1	1	1
Other diseases of the stomach (cancer excepted).....	103	1																				1	1	1
Diarrhea and enteritis (under 2 years).....	104	12										2							8			3	16	1
Diarrhea and enteritis (2 years and over).....	105				1														1			1	2	2
Appendicitis and typhlitis.....	108																		3	2		4	4	1
Hernias, intestinal obstructions.....	109	1																	2			2	3	1
Other diseases of the intestines.....	110																					2	2	2
Cirrhosis of the liver.....	113																					3	3	2
Acute nephritis.....	119	2																	15	9	1	17	7	
Bright's disease.....	120																		1			1	1	
Diseases of the prostate.....	126																						1	1
Other diseases of the uterus.....	130																						2	1
Traumatic injuries of the uterus.....	131																		1	2		1	1	
Puerperal hemorrhage.....	135																		1			1	1	1
Puerperal albuminuria and convulsions.....	138																					1	1	1
Jaundice.....	142																					2	2	1
Gangrene.....	144	1																				1	1	1
Furuncle.....	145																					3	4	1
Congenital malformations (stillbirths not included).....	150	4																					4	1
Congenital debility, icterus and sclerema.....	151	9																				7	11	3
Other diseases peculiar to early infancy.....	152	2																				1	1	2
Suicide by asphyxia.....	156																						2	2

Total deaths, 250. Death-rate, 15.20.

DEATHS IN HAMMONTON.

Measles.....	6																							1	1
Whooping cough.....	8																							1	1
Influenza.....	40																							1	1
Cholera nostras.....	3																							1	1
Tuberculosis of the lungs.....	28		1		1																			3	2
Gonococcus infection.....	35																								1
Diabetes.....	50																								1
Locomotor ataxia.....	62																								1
Cerebral hemorrhage, apoplexy.....	64																								1
Other diseases of the nervous system.....	74																								3
Acute endocarditis.....	78																								1
Organic diseases of the heart.....	79																								1
Embolism and thrombosis.....	82																								6
Bronchopneumonia.....	91																								4
Pneumonia.....	92																								2
Pulmonary congestion, pulmonary apoplexy.....	94	1																							3
Asthma.....	90																								1
Other diseases of the stomach (cancer excepted).....	103	1																							2
Diarrhea and enteritis (under 2 years).....	104	5																							10
Diseases of the bones (tuberculosis excepted).....	146																								1
Other diseases of the organs of locomotion.....	149	1																							1
Congenital malformations (stillbirths not included).....	150	1																							1
Congenital debility, icterus and sclerema.....	151	2																							1
Other diseases peculiar to early infancy.....	152	1																							1
Poisoning by food.....	164	1																							2
Conflagration.....	160																								1

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915—Continued.

	AGE PERIODS.													SEX.		COLOR.	NATIVITY.					
	AGE PERIODS.													Male.	Female.							
	Under 1 month.	Under 1 year, "not in- cluding under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54			55 to 59	60 to 69	70 to 79	80 and over.	Not stated.	Male.	Female.	Number of decedents "color black," designated by figure in this column.	United States.	Elsewhere.
DEATHS IN HAMMONTON.	169	175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accidental drowning																						
Traumatism by other crushing (vehicles, railroad, landslides, etc.)																						

Total deaths, 69. Death-rate, 11.64.

DEATHS IN HARRISON.

Typhoid fever	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1
Measles	6	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Whooping cough	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	4
Diphtheria and croup	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Influenza	38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tuberculosis of the lungs	29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	20	5	1	1	1	8
Acute miliary tuberculosis	30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tuberculous meningitis	31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Abdominal tuberculosis	34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Tuberculosis of other organs	36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rickets	37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Syphilis	39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cancer and other malignant tumors of the buccal cavity	40	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cancer and other malignant tumors of the stomach, liver	41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Cancer and other malignant tumors of the peritoneum, intestines, rectum...41
 Cancer and other malignant tumors of the female genital organs...42
 Cancer and other malignant tumors of the breast...43
 Cancer and other malignant tumors of other organs or of organs not specified...45
 Diabetes...50
 Alcoholism (acute or chronic)...56
 Encephalitis...60
 Simple meningitis...61
 Cerebral hemorrhage, apoplexy...64
 Paralysis without specified cause...66
 General paralysis of the insane...67
 Epilepsy...69
 Convulsions of infants...71
 Acute endocarditis...78
 Organic diseases of the heart...79
 Angina pectoris...80
 Hemorrhage; other diseases of the circulatory system...85
 Acute bronchitis...89
 Bronchopneumonia...91
 Pneumonia...92
 Pleurisy...93
 Asthma...96
 Other diseases of the respiratory system (tuberculosis excepted)...98
 Diarrhea and enteritis (under 2 years)...104
 Diarrhea and enteritis (2 years and over)...105
 Appendicitis and typhlitis...108
 Hernias, intestinal obstructions...109
 Other diseases of the intestines...110
 Cirrhosis of the liver...113
 Other diseases of the digestive system (cancer and tuberculosis excepted)...118
 Acute nephritis...119
 Bright's disease...120
 Other diseases of the kidneys and annexa...122
 Diseases of the prostate...126
 Other diseases of the uterus...130
 Other accidents of labor...136
 Puerperal albuminuria and convulsions...138
 Congenital malformations (stillbirths not included)...150
 Congenital debility, icterus and sclerema...151
 Other diseases peculiar to early infancy...152

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915—Continued.

DEATHS IN MILLVILLE.	AGE PERIODS.													SEX.		COLOR. Number of decedents "color black" desig- nated by figure in this column.	NATIVITY. United States. Elsewhere.			
	AGE PERIODS.													SEX.						
	Under 1 month.	Under 1 year, "not in- cluding under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69			70 to 79	80 and over.	Not stated.	Male.	Female.
Congenital malformations (stillbirths not included).....	2	1																1	1	2
Congenital debility, icterus and sclerema.....	150																	3	4	7
Other diseases peculiar to early infancy.....	151	4																1	3	4
Senility.....	154																	2	3	4
Suicide by poison.....	155																	1	1	1
Suicide by asphyxia.....	156																	1	1	1
Suicide by firearms.....	159																	1	1	1
Traumatism by fall.....	172																	1	1	1

Total deaths, 172. Death-rate, 12.81.

DEATHS IN MONTCLAIR.

Typoid fever.....	1																	2	1	2
Influenza.....	10																	2	1	2
Dysentery.....	14	1																2	1	1
Erysipelas.....	18	1																2	1	2
Purulent infection and septicæmia.....	20																	1	1	1
Tuberculosis of the lungs.....	28																	1	1	1
Tuberculous meningitis.....	30	1																17	18	27
Cancer and other malignant tumors of the stomach, liver.....	40																	1	1	1

Cancer and other malignant tumors of the peritoneum, intestines, rectum.....	41																	2	4	1
Cancer and other malignant tumors of the female genital organs.....	42																	1	1	1
Cancer and other malignant tumors of the breast.....	43																	1	1	1
Cancer and other malignant tumors of other organs of organs not specified.....	44																	2	1	1
Acute articular rheumatism.....	47	1																1	1	1
Chronic rheumatism and gout.....	48																	1	1	1
Diabetes.....	50																	1	1	1
Anæmia, chlorosis.....	51																	1	1	1
Other diseases of the spinal cord.....	53																	1	1	1
Cerebral hemorrhage, apoplexy.....	64																	4	2	5
Paralysis without specified cause.....	66																	3	8	8
General paralysis of the insane.....	67																	1	1	1
Epilepsy.....	69																	1	1	1
Acute endocarditis.....	78																	3	1	3
Organic diseases of the heart.....	79																	20	18	26
Angina pectoris.....	80																	2	1	2
Diseases of the arteries, atheroma aneu- rysm, etc.....	81																	2	1	2
Embolism and thrombosis.....	82																	7	10	10
Acute bronchitis.....	89	3																1	1	1
Chronic bronchitis.....	90																	3	2	3
Bronchopneumonia.....	91	2																1	5	6
Pneumonia.....	92	1	2															4	8	11
Asthma.....	96																	1	2	1
Diseases of the pharynx.....	100																	2	2	2
Ulcer of the stomach.....	102																	2	1	1
Other diseases of the stomach (cancer excepted).....	103	1																2	1	1
Diarrhea and enteritis (under 2 years).....	104	1	1															2	8	3
Diarrhea and enteritis (2 years and over).....	105																	1	1	1
Appendicitis and typhlitis.....	108																	1	1	1
Hernias, intestinal obstructions.....	109																	2	2	2
Biliary calculi.....	114																	1	1	1
Acute nephritis.....	119																	1	1	1
Bright's disease.....	120																	1	1	1
Diseases of the bladder.....	124																	1	1	1
Diseases of the prostate.....	126																	1	1	1
Uterine tumor (noncancerous).....	129																	2	2	2
Cysts and other tumors of the ovary.....	131																	1	1	1
Puerperal septicæmia.....	137																	1	1	1
Gangrene.....	142																	2	2	2
Congenital debility, icterus and sclerema.....	151	9	4															6	7	11
Other diseases peculiar to early infancy.....	152																	8	7	13
Suicide by asphyxia.....	156																	1	1	1
Suicide by firearms.....	159																	2	1	2

DEATHS IN NEWARK.

Table with columns: Disease, Under 1 month, Under 1 year, 1 mo., 6 10 15 20 25 30 35 40 45 50 55 60 70 80 90 and over, SEX, COLOR, NATIVITY. Rows include various diseases like general diseases, alcoholism, chronic lead poisoning, etc.

Continuation of the table from page 256, listing diseases like lymphatic system, hemorrhage, nasal fossae, larynx, thyroid body, acute bronchitis, etc., with corresponding counts across various age groups and categories.

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915-Continued.

Table with columns for Diseases (e.g., Tuberculosis, Cancer, etc.), Under 1 month, Under 1 year, 1 mo., 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31-35 years, 36-40 years, 41-45 years, 46-50 years, 51-55 years, 56-60 years, 61-65 years, 66-70 years, 71-75 years, 76-80 years, 81-85 years, 86-90 years, 91-95 years, 96-100 years, Not stated, Sex (Male/Female), Color, Nativity, Disewhere.

DEATHS IN NEW BRUNSWICK.

Table with columns for Diseases (e.g., Traumatism by cutting or piercing instruments, Diphtheria, etc.), Under 1 month, Under 1 year, 1 mo., 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31-35 years, 36-40 years, 41-45 years, 46-50 years, 51-55 years, 56-60 years, 61-65 years, 66-70 years, 71-75 years, 76-80 years, 81-85 years, 86-90 years, 91-95 years, 96-100 years, Not stated, Sex (Male/Female), Color, Nativity, Disewhere.

Total deaths, 527. Death-rate, 20.96.

DEATHS IN NORTH PLAINFIELD.

Table with columns for Diseases (e.g., Whooping cough, Diphtheria, etc.), Under 1 month, Under 1 year, 1 mo., 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21-25 years, 26-30 years, 31-35 years, 36-40 years, 41-45 years, 46-50 years, 51-55 years, 56-60 years, 61-65 years, 66-70 years, 71-75 years, 76-80 years, 81-85 years, 86-90 years, 91-95 years, 96-100 years, Not stated, Sex (Male/Female), Color, Nativity, Disewhere.

DEPARTMENT OF HEALTH.

DEATHS IN PASSAIC CITY.

	AGE PERIODS.																SEX.		COLOR.	NATIVITY.		
	AGE PERIODS.																SEX.					
	Under 1 month.	Under 1 year, "not in- cluding under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 and over.	Not stated.	Male.	Female.	Number of decedents colored by figure in this column.	United States.	Elswhere.
Other diseases of the spinal cord.....	63	1																		3	8	1
Cerebral hemorrhage, apoplexy.....	64											2	2	2	2	1				7	8	3
Paralysis without specified cause.....	66											1	1	1	1	1				2	1	10
Convulsions of infants.....	71	2									3	1								2	1	1
Chorea.....	72	1																		1	1	1
Other diseases of the nervous system.....	74	1																		1	1	1
Acute endocarditis.....	78	1		3	1	1						1	1	1	2	1				3	8	6
Organic diseases of the heart.....	79	1	2	3	2	2	1	3	2	3	7	3	6	15	12	5	34			36	1	38
Angina pectoris.....	80																			1	1	1
Diseases of the arteries, atheroma aneu- rysm, etc.....	81									1										3	9	6
Emboliem and thrombosis.....	82									1										1	1	2
Diseases of the lymphatic system (lym- phangitis, etc.).....	84	1																		2	1	1
Diseases of the larynx.....	87	5								1										5	8	1
Acute bronchitis.....	88	2																		2	2	1
Chronic bronchitis.....	89																					1
Other diseases of the respiratory system.....	90	36	12	2	1					1		1	2	2	1					30	31	60
Bronchopneumonia.....	91	10																		30	30	44
Pneumonia.....	92	4	20	11	4	3	1	2	1	2	1	2	1	2	1					2	1	16
Pleurisy.....	93																			2	1	2
Asthma.....	96																			2	1	3
Diseases of the pharynx.....	100									1										2	1	1
Diseases of the stomach.....	102																			2	1	1
Ulcer of the stomach.....	103	4	2	1																8	6	5
Other diseases of the stomach (cancer excepted).....	103	1																		5	9	5
Diarrhea and enteritis (under 2 years).....	104	10	72	12																9	37	10
Dysentery.....	105																			2	5	2
Diarrhea and enteritis (2 years and over).....	105																			12	9	6
Appendicitis and typhlitis.....	108		3	1	2	1	3	1				1								4	3	6
Hernias, intestinal obstructions.....	109					1	1													2	1	9

Other diseases of the intestines.....	110																					2
Cirrhosis of the liver.....	113																					4
Biliary calculi.....	114																					1
Other diseases of the liver.....	115																					1
Simple peritonitis (nonpuerperal).....	117	1																				1
Other diseases of the digestive system (cancer and tuberculosis excepted).....	118																					1
Acute nephritis.....	119	2																				2
Bright's disease.....	120																					2
Calculi of the urinary passages.....	123																					4
Uterine hemorrhage (nonpuerperal).....	124																					1
Cysts and other tumors of the ovary.....	131																					1
Salpingitis and other diseases of the fe- male genital organs.....	132																					1
Puerperal septicæmia.....	137																					6
Puerperal albuminuria and convulsions.....	138																					2
Furuncle.....	143																					1
Diseases of the bones (tuberculosis ex- cepted).....	146	1																				1
Diseases of the bones (tuberculosis and rheumatism excepted).....	147																					1
Congenital malformations (stillbirths not included).....	150	11																				7
Congenital debility, lacerus and sclerema.....	151	65																				4
Other diseases peculiar to early infancy.....	152	18																				10
Senility.....	154																					2
Suicide by poison.....	155																					1
Suicide by asphyxia.....	156																					2
Suicide by drowning.....	158																					1
Suicide by firearms.....	159																					1
Burns (conflagration excepted).....	167	1	8	1																		4
Accidental drowning.....	169																					6
Trammatism by fall.....	173																					9
Trammatism by other crushing (vehicles, railroad, landslides, etc.).....	175	2	1	1	1	1	1	2	1													13
Electricity (lightning excepted).....	181																					1
Homicide by cutting or piercing instru- ments.....	183																					2
Homicide by other means.....	184																					1
Fractures (cause not specified).....	185																					2
Other external violence.....	186																					5
Cause of death not specified or ill-defined	189	1	1																			1

Total deaths, 887. Death-rate, 12.89.

TABULATION OF DEATHS FROM CLASSIFIED DISEASES IN NEW JERSEY, FOR YEAR ENDING DECEMBER 31, 1915 - Continued.

	AGE PERIODS.												SEX.		COLOR. "color black" desig- nated by figure in this column.	NATIVITY. United States.	Elsewhere.	
	Under 1 month.				Under 1 year, "not in- cluding under 1 mo."				90 and over.				Male.	Female.				
	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59			60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89
	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
DEATHS IN RAILWAY.																		
Suicide by asphyxia.....										1								
Contagion.....																		
Accidental drowning.....																		
Traumatism by fall.....																		
Traumatism by other crushing (vehicles, railroad, landslides, etc.).....																		
	156									1								1
	166																	1
	169																	1
	172																	1
	175																	1

Total deaths, 177. Death-rate, 11.62.

DEATHS IN RED BANK.

Typhoid fever.....	1																	
Diphtheria and croup.....		1																2
Erysipelas.....																		1
Tuberculosis of the lungs.....			4	18					1			1	1					1
Acute miliary tuberculosis.....					28				2	1								8
Cancer and other malignant tumors of the stomach, liver.....			1	1														2
Cancer and other malignant tumors of the peritoneum, intestines, rectum.....											1							2
Cancer and other malignant tumors of the female genital organs.....																		2
Cancer and other malignant tumors of the breast.....																		1

Cancer and other malignant tumors of other organs or of organs not specified.....	45																		1
Anæmia, chlorosis.....	54																		1
Other general diseases.....	55																		1
Simple meningitis.....	61																		2
Other diseases of the spinal cord.....	63																		1
Cerebral hæmorrhage, apoplexy.....	64																		1
Paralysis without specified cause.....	66																		1
General paralysis of the insane.....	67																		1
Convulsions of infants.....	71																		1
Neuralgia and neuritis.....	73																		1
Organic diseases of the heart.....	79					1	1	1	1	1	1	1	6	4	1				11
Diseases of the arteries, atheroma aneu- rysm, etc.....	81																		1
Acute bronchitis.....	89																		1
Chronic bronchitis.....	90																		1
Bronchopneumonia.....	91									1			1	1					2
Pneumonia.....	92										3		1	1	1				7
Pleurisy.....	93																		1
Pulmonary congestion, pulmonary apoplexy.....	94																		1
Other diseases of the respiratory system (tuberculosis excepted).....	98																		1
Other diseases of the stomach (cancer excepted).....	103																		1
Diarrhœa and enteritis (under 2 years).....	104																		1
Diarrhœa and enteritis (2 years and over).....	105																		1
Hæmias, intestinal obstructions.....	109																		2
Other diseases of the intestines.....	110																		2
Cirrhosis of the liver.....	113																		1
Acute nephritis.....	119																		1
Bright's disease.....	120																		1
Other diseases of the kidneys and annexa.....	122																		1
Uterine tumor (noncancerous).....	129																		1
Other diseases of the uterus.....	130																		1
Accidents of pregnancy.....	134																		1
Puerperal hæmorrhage.....	135																		1
Other diseases of the skin and annexa.....	145																		1
Other diseases of the organs of loco- tion.....	149																		1
Congenital debility, icterus and sclerema.....	151																		6
Senility.....	154																		1
Traumatism by fall.....	172																		1
Traumatism by other crushing (vehicles, railroad, landslides, etc.).....	175																		1

Total deaths, 123. Death-rate, 14.60.

DEPARTMENT OF HEALTH.

DEATHS IN RIDGEWOOD.

Table with columns for Disease, Under 1 month, 1 to 4 years, and Age Periods (1-89+), and rows for various diseases like Whooping cough, Influenza, Tuberculosis, etc.

Table with columns for Disease, Under 1 month, 1 to 4 years, and Age Periods (1-89+), and rows for various diseases like Appendicitis and typhlitis, Cirrhosis of the liver, Acute nephritis, etc.

Total deaths, 105. Death-rate, 15.35.

DEATHS IN ROOSEVELT.

Table with columns for Disease, Under 1 month, 1 to 4 years, and Age Periods (1-89+), and rows for various diseases like Measles, Whooping cough, Diphtheria and croup, etc.

DEATHS IN ROOSEVELT.

DISEASES	AGE PERIODS.													SEX.		COLOR. Number of decedents nated by figure in this column.	NATIVITY. United States. Elsewhere.							
	Under 1 month.		Under 1 year, "not in- cluding under 1 mo."		1	5	10	15	20	25	30	35	40	45	50			55	60	70	80	90 and over.	Male.	Female.
	to	1	to	1	to	to	to	to	to	to	to	to	to	to	to			to	to	to	to	to	to	to
Diarrhea and enteritis (under 2 years).....	2	19	14																	19	16			
Hernia and obstructions.....	104	1																		1	1			
Other diseases of the intestines.....	109	1																		1	1			
Bright's disease.....	320																			1	1			
Other accidents of labor.....	136																			1	1			
Cerebral septicæmia.....	137																			1	1			
Congenital malformations (stillbirths not in- cluded).....	146	4	8																	3	3			
Other diseases peculiar to early infancy.....	151	3																		3	2			
Acute poisonings.....	162	1																		1	1			
Absorption of various gases (contagria- tion excepted).....	165																			1	1			
Traumatism by fall.....	172																			1	1			
Traumatism by other crushing (vehicles, falling, etc.).....	175	1																		1	1			
Other external injuries.....	186																			1	1			

Total deaths, 107. Death-rate, 15.97.

DEATHS IN RUTHERFORD.

Typhoid fever.....	1																			1	1		
Malaria.....	6																			1	1		
Scarlet fever.....	6																			1	1		
Influenza.....	10																			1	1		
Tuberculosis of the lungs.....	28																			1	1		
Cancer and other malignant tumors of the peritoneum, intestine, rectum.....	41																			1	1		
Cancer and other malignant tumors of the stomach, lungs, bladder, uterus, ovaries, testes, prostate, skin, etc.....	43																			1	1		
Leucæmia.....	43																			1	1		
Other diseases of the spinal cord.....	63																			1	1		
Cerebral hemorrhage, apoplexy.....	64																			1	1		
Diseases of the ears.....	76																			1	1		
Diseases of the nose of the heart.....	79																			1	1		
Diseases of the throat, larynx, trachea, bron- chus, etc.....	81																			1	1		
Embolism and thrombosis.....	82																			1	1		
Acute bronchitis.....	89																			1	1		
Acute tonsillitis.....	92																			1	1		
Pneumonia.....	92																			1	1		
Other diseases of the stomach (cancer excepted).....	103																			1	1		
Acute and chronic nephritis.....	108																			1	1		
Chronic disease of the liver.....	114																			1	1		
Biliary calculi.....	114																			1	1		
Bright's disease.....	120																			1	1		
Chyluria.....	121																			1	1		
Congenital malformations (stillbirths not in- cluded).....	121																			1	1		
Other diseases peculiar to early infancy.....	151																			1	1		
Suicide by poison.....	155																			1	1		
Suicide by asphyxia or strangulation.....	166																			1	1		
Other external injuries.....	166																			1	1		
Burns (contagria-tion excepted).....	167																			1	1		

Total deaths, 86. Death-rate, 10.22.

DEATHS IN TRENTON.

Description of disease	AGE PERIODS.																	SEX.	COLOR.	NATIVITY.			
	AGE PERIODS.																						
	Under 1 month.	Under 1 year, "not including under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69	70 to 79	80 and over.				Not stated.		
Absorption of deleterious gases (conflagration excepted).....168																			Male.	Female.	Number of decedents "color black" designated by figure in this column.	United States.	Elsewhere.
Accidental drowning.....169	1	2	2	1			1												6	3		7	2
Traumatism by fall.....170	1																		4	7	1	7	4
Traumatism by machines.....171																			1				
Traumatism by other crushing (vehicles, railroad, landslides, etc.).....172																			17	2		19	7
Injuries by animals.....173	3	1	1	2	3	1	1												1	1		1	1
Injuries by piercing instruments.....174																			1	2		1	1
Effects of heat.....175	2																		1	1		1	1
Homicide by firearms.....176																			1	1		1	1
Homicide by cutting or piercing instruments.....177																			2			2	1
Homicide by other means.....178																			1	2		1	1
Other external violence.....179																			1	7		1	1
Other external violence.....180																			1	7		1	1
Cause of death not specified or ill-defined.....181	2																		1	1		1	1

Total deaths, 1,656. Death-rate, 15.18.

DEATHS IN VINELAND.

Typhoid fever.....1																			1				
Diphtheria and croup.....2	1																		1				
Influenza.....3																			1				
Dysentery.....4	1																		1				
Erysipelas.....5																			1				
Tuberculosis of the lungs.....6	1	1	2	2	1	1													3	6	2	8	1
Tuberculous meningitis.....7	1																		1			2	1
Tuberculosis of other organs.....8																			1			1	1
Cancer and other malignant tumors of the stomach, liver.....9																			1				
Cancer and other malignant tumors of the female genital organs.....10																			3				
Cancer and other malignant tumors of other organs or of organs not specified.....11																			1				
Diabetes.....12																			1				
Encephalitis.....13																			1				
Simple meningitis.....14	1	2																	2				
Cerebral hemorrhage, apoplexy.....15																			1				
Paralysis without specified cause.....16																			1				
Epilepsy.....17																			1				
Organic diseases of the heart.....18																			1				
Angina pectoris.....19																			1				
Diseases of the arteries, atheroma aneurysm, etc.....20																			1				
Bronchopneumonia.....21	2																		2				
Pneumonia.....22	1	2																	3				
Pleurisy.....23																			1				
Asthma.....24																			1				
Diarrhea and enteritis (under 2 years).....25	1	1																	2				
Diarrhea and enteritis (2 years and over).....26																			1				
Hernias, intestinal obstructions.....27																			1				
Other diseases of the intestines.....28																			1				
Biliary calculi.....29																			1				
Other diseases of the digestive system (cancer and tuberculosis excepted).....30																			1				
Acute hepatitis.....31																			1				
Bright's disease.....32																			1				
Other diseases of the uterus.....33																			1				
Cysts and other tumors of the ovary.....34																			1				
Sarcoma and other diseases of the female genital organs.....35																			1				
Nonperipheral diseases of the breast (cancer excepted).....36																			1				
Congenital debility, icterus and sclerema.....37	1																		1				

DEATHS IN WEST HOBOKEN.

DISEASES	AGE PERIODS.											SEX.	COLOR.	NATIVITY.						
	Under 1 year, "not including under 1 mo."	1 to 5					6 to 15								Not stated.	Male.	Female.	Number of decedents colored by figure in this column.	United States.	Dissewhere.
		Under 1 year, "not including under 1 mo."	1 to 4	5	6 to 14	15	16 to 19	20 to 23	24 to 29	30 to 34	35 to 39										40 to 49	50 to 59	60 to 69	70 to 79	80 and over.
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17			
	Cancer and other malignant tumors of the internal cavity.....																			
Cancer and other malignant tumors of the breast and other malignant tumors of the peritoneum, intestines, rectum, and female genital organs.....																				
Cancer and other malignant tumors of the breast and other malignant tumors of the other organs of or organs not specified.....																				
Acute articular rheumatism.....																				
Diabetes.....																				
Other general diseases.....																				
Simple meningitis.....																				
Locomotor ataxia.....																				
Cerebral haemorrhage.....																				
Paralysis without specified cause.....																				
General paralysis of the insane.....																				
Epilepsy.....																				
Diseases of the nervous system.....																				
Acute endocarditis.....																				
Organic diseases of the heart.....																				
Angina pectoris.....																				

Diseases of the arteries, atheroma, aneurysm, etc.....	81	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diseases of the larynx.....	87	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chronic bronchitis.....	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Brachycephalus.....	91	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Pneumonia.....	92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other diseases of the respiratory system (tuberculosis excepted).....	95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Ulcer of the stomach.....	102	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diseases of the stomach (cancer excepted).....	108	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diarrhea and enteritis (under 2 years).....	104	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diarrhea and enteritis (2 years and over).....	105	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Appendicitis and typhlitis.....	108	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Obstruction.....	110	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cirrhosis of the liver.....	113	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Biliary calculus.....	114	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Acute nephritis.....	114	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Bright's disease.....	120	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other diseases of the urinary system.....	125	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Puerperal septicemia.....	137	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Furuncle.....	148	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Diseases of the bones (tuberculosis excepted).....	146	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Congenital malformations (stillbirth not included).....	150	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Congenital debility, icterus and sclerema.....	151	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Other diseases peculiar to early infancy.....	152	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Suicide by asphyxia.....	150	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Suicide by firearms.....	150	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Burns (conflagration excepted).....	157	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Absorption of deleterious gases (conflagration excepted).....	158	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accidental drowning.....	169	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Trammatism by fall.....	172	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Trammatism by other crushing (velocity, railroad, tinsmithing, etc.).....	175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Total deaths, 384. Death-rate, 9.18.

DEPARTMENT OF HEALTH.

DEATHS IN WEST NEW YORK.

AGE PERIODS.

SEX.

COLOR.

NATIVITY.

Disease	AGE PERIODS												SEX		COLOR	NATIVITY			
	Under 1 year, "not in-cluding under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69			70 to 79	80 and over	Male	Female
Typhoid fever	1							1								1			1
Measles		3															1		3
Scarlet fever		1															1		1
Whooping cough		2															2		2
Diphtheria and croup		3															3		3
Tuberculosis of the lungs		1															1		1
Tuberculous meningitis		1															1		1
Disseminated tuberculosis		2															2		2
Syphilis		37															37		37
Cancer and other malignant tumors of the stomach, liver		1															1		1
Cancer and other malignant tumors of the peritoneum, intestines, rectum		40															40		40
Cancer and other malignant tumors of the breast and other malignant tumors of other organs or of organs not specified		41															41		41
Cancer and other malignant tumors of the breast and other malignant tumors of other organs or of organs not specified		43															43		43
Acute articular rheumatism		1															1		1
Chronic rheumatism and gout		4															4		4
Diabetes		50															50		50
Leucæmia		53															53		53
Anæmia, chlorosis		54															54		54
Alcoholism (acute or chronic)		56															56		56
Simple meningitis		61															61		61
Other diseases of the spinal cord		63															63		63
Cerebral hemorrhage, apoplexy		64															64		64
Softening of the brain		65															65		65
Paralysis without specified cause		66															66		66
Epilepsy		69															69		69

Disease	AGE PERIODS												SEX		COLOR	NATIVITY			
	Under 1 year, "not in-cluding under 1 mo."	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 69			70 to 79	80 and over	Male	Female
Diseases of the ears	76																		76
Organic diseases of the heart	79																		79
Angina pectoris	80																		80
Diseases of the arteries, atheroma, aneurysm, etc.	81																		81
Embolism and thrombosis (varices, hæmorrhoids, phlebitis, etc.)	83																		83
Acute bronchitis	89																		89
Chronic bronchitis	90																		90
Bronchopneumonia	91																		91
Pneumonia	92																		92
Other diseases of the mouth and annexa	99																		99
Diseases of the pharynx	100																		100
Ulcer of the stomach	102																		102
Other diseases of the stomach (cancer excepted)	108																		108
Diarrhea and enteritis (under 2 years)	104																		104
Diarrhea and enteritis (2 years and over)	105																		105
Appendicitis and typhlitis	108																		108
Hernias, intestinal obstructions	109																		109
Cirrhosis of the liver	118																		118
Biliary calculi	117																		117
Simple peritonitis (nonpuerperal)	110																		110
Acute nephritis	120																		120
Bright's disease	129																		129
Other diseases of the kidneys and annexa	137																		137
Fuereperal septicæmia	137																		137
Fuereperal albuminuria and convulsions	138																		138
Congenital malformations (stillbirths not included)	150																		150
Congenital debility, icterus and sclerema	151																		151
Other diseases peculiar to early infancy	152																		152
Senility	154																		154
Suicide by asphyxia	156																		156
Suicide by drowning	158																		158
Absorption of deleterious gases (confagration excepted)	168																		168
Accidental drowning	169																		169
Traumatism by fall	172																		172
Traumatism by other crushing (vehicles, railroad, landslides, etc.)	175																		175
Electricity (lightning excepted)	181																		181

Total deaths, 280. Death-rate, 15.66.

DEATHS IN WEST ORANGE.

	AGE PERIODS.												SEX.		COLOR. "Color black" design- ated by figure in this column.	NATIVITY. United States. Elsewhere.													
	Under 1 month.		Under 1 year, "not in- cluding under 1 mo."		1	5	10	15	20	25	30	35	40	45			50	55	60	65	70	75	80	85	90	95	100 and over.	Male.	Female.
	to	under	to	under	to	to	to	to	to	to	to	to	to	to			to	to	to	to	to	to	to	to	to	to	to	to	to
	4	1 mo.	4	1 mo.	9	14	19	24	29	34	39	44	49	54			59	64	69	74	79	84	89	94	99	104	109	114	119
Malaria	4	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		
Scarlet fever	7	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		
Whooping cough	8	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		
Influenza	8	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		
Dysentery	10	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		
Erysipelas	10	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		
Tubercular infection and septicoemia	20	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		
Tubercular meningitis	22	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		
Tuberculosis of other organs	24	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		
Cancer and other malignant tumors of the stomach, liver	40	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		
Cancer and other malignant tumors of the peritoneum	41	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		
Cancer and other malignant tumors of the female genital organs	42	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		
Cancer and other malignant tumors of Diabetic organs or organs not specified	45	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		
Diabetes	50	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		
Encephalitis	50	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		
Locomotor ataxia	50	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		
Cerebral hemorrhage, apoplexy	62	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		
Convulsions of any form of the insane	64	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		
Organic diseases of the heart	67	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		
Diseases of the arteries, atheroma, aneurysm, etc.	70	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		
Erysipelas	81	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		
Pneumonia	91	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		
Pneumonic meningitis	92	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		
Diarrhoea and enteritis (under 2 years)	109	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		

Appendicitis and typhlitis	109	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
Cirrhosis of the liver	112	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
Biliary calculi	114	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
Other diseases of the liver	115	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
Acute diseases	120	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
Chronic diseases	144	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
Congenital malformations (stillbirths not included)	150	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
Congenital debility, icterus and sclerema	151	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
Suicide, diseases peculiar to early infancy	152	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
Suicide by asphyxia	155	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
Horns (contagion excepted)	107	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
Accidental drowning	160	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
Accidental poisoning	172	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
Trammiatim by other causes (vehicles, railroad, landslides, etc.)	175	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
Cause of death not specified or ill-defined	180	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

Total deaths, 113. Death-rate, 8.62.

List of Licensed Health Officers and Sanitary Inspectors.

Following is a list of the persons who have successfully passed the examination provided for in the act approved April 18th, 1903:

HEALTH OFFICERS.

Henry D. Abbott, M. D.....	Bayonne.	Edward Guion, M. D.....	Atlantic City.
John K. Adams, M. D.....	Orange.	Selskar M. Gunn.....	Orange.
T. Lee Adams.....	Ocean City.	James J. Hagan.....	Jersey City.
Martin E. Alpers.....	Dover.	John J. Haley, M. D.....	Gloucester City.
Henry V. Amerman.....	Kearny.	John Hall.....	Long Branch.
Fritz M. Arnolt.....	Hackensack.	Lester Hamblet.....	Asbury Park.
T. Dudley Ballinger.....	Princeton.	Alex. M. Heron, M. D.....	Lakewood.
Wm. M. Barns, M. D.....	Millburn.	F. M. Hoffman, M. D.....	New Brunswick.
Howard L. Baumgartner.....	Asbury Park.	Wm. L. Holt, M. D.....	Maplewood.
Joseph V. Bergen, M. D.....	Paterson.	J. I. Hoverder, M. D.....	Ateo.
Richard Bew, M. D.....	Atlantic City.	Robert N. Hort.....	Summit.
Duncan W. Blake, Jr., M. D.,	Gloucester City.	Edward R. Hunter, M. D.....	Delanco.
Chas. B. Bleasby, M. D.....	Garfield.	Morton W. Huttenloch.....	Montclair.
Perkins Boynton.....	Little Falls.	Ralph L. Huttenloch.....	Montclair.
Henry H. Brinkerhoff, M. D.....	Jersey City.	H. W. Ingling, M. D.....	Freehold.
Chas. S. Brady, M. D.....	Town of Union.	Wm. H. Iszard, M. D.....	Camden.
John J. Broderick, M. D.....	Jersey City.	Maximilian Jakoby, M. D.....	Chrome.
Wm. W. Brooke, M. D.....	Bayonne.	Henry C. James, M. D.....	Mays Landing.
James E. Brooks.....	Glen Ridge.	Chas. A. Keating, M. D.....	Paterson.
J. Alex. Browne, M. D.....	Paterson.	Jay E. Kilpatrick.....	Montclair.
Dundas R. Campbell, M. D.....	Newark.	I. Warner Knight, M. D.....	Penn's Grove.
Collis H. Case.....	Plainfield.	W. U. Kurtz, M. D.....	Asbury Park.
John J. Casey.....	Plainfield.	Chas. J. Larkey, M. D.....	Bayonne.
N. J. Randolph Chandler.....	Plainfield.	Geo. W. Lawrence, M. D.....	Lakewood.
T. A. Clay, M. D.....	Paterson.	Malcolm Lewis.....	Montclair.
Ralph O. Clock, M. D.....	Burlington.	J. C. Loper, M. D.....	Bridgeton.
Morris W. Clouse, M. D.....	Kearny.	John L. Lund, M. D.....	Perth Amboy.
Nathan A. Cohen, M. D.....	Wildwood.	Henry MacDonald.....	Newark.
Max J. Colton.....	New Brunswick.	J. Scott MacNutt.....	Orange.
John T. Connelly, M. D.....	Bayonne.	L. F. Maloney, M. D.....	Clifton.
Wm. C. Craig, M. D.....	Ridgewood.	Alex. Marcy, M. D.....	Riverton.
Chas. V. Craster, M. D.....	Rosebank, N. Y.	V. M. D. Marcy, M. D.....	Cape May.
Jos. J. Craven, M. D.....	Jersey City.	Elias J. Marsh, M. D.....	Paterson.
E. Irving Cronk, M. D.....	New Brunswick.	Emery Marvel, M. D.....	Atlantic City.
Grant P. Curtis, M. D.....	Town of Union.	Harriet O. Mattison.....	Plainfield.
Samuel S. DeCou.....	Trenton.	Samuel D. Mayhew, M. D.....	Bridgeton.
W. D. Dotterer.....	Princeton.	John T. McClure.....	Harrison.
Thos. J. Duffield.....	Asbury Park.	Charles McNabb.....	Bound Brook.
Wallace T. Eakins.....	New Brunswick.	Frank B. Meeker, M. D.....	Newark.
Chas. P. Eaton.....	Jersey City.	Josiah Meigh, M. D.....	Bernardsville.
Frank H. Edsall, M. D.....	Jersey City.	Chas. J. Merrell.....	Bound Brook.
Neison Elliott, M. D.....	Passaic.	Chas. S. Mills, M. D.....	Riverton.
R. Clifford Erickson.....	Long Branch.	Phillip Morris, C. E.....	Passaic.
Edward P. Esertier, M. D.....	Hackensack.	William Morris.....	Roselle Park.
James A. Exton, M. D.....	Arlington.	Alfred A. Mutter, M. D.....	Arlington.
Morris Farkas, M. D.....	West Orange.	Nels A. Nelson.....	Long Branch.
A. S. Fell, M. D.....	Trenton.	Marcus W. Newcomb, M. D.....	Burlington.
Geo. W. Finke, M. D.....	Hackensack.	Stanley H. Nichols, M. D.....	Long Branch.
Geo. W. Fithian, M. D.....	Perth Amboy.	Budd H. Obert.....	Asbury Park.
Jay G. Foose.....	Montclair.	John O'Brien, Jr.....	Montclair.
Frank A. Frederick, Jr.....	West Hoboken.	James L. O'iff.....	Plainfield.
Frank A. Frederick, Sr.....	West Hoboken.	Frank J. Osborne.....	Montclair.
A. I. Goehrig.....	Trenton.	George T. Palmer.....	Trenton.
Hyman L. Goldstein, M. D.....	Camden.	Wm. B. Palmer.....	Orange.
Wm. S. Green, M. D.....	Paterson.	R. H. Parsons, M. D.....	Mt. Holly.
Chas. A. Griffin, D. V. M.....	Orange.	H. T. Partree, M. D.....	Eatontown.
I. N. Griscom, M. D.....	Ocean City.	Joseph Payne, M. D.....	Midland Park.
		Roy G. Perham, M. D.....	Hasbrouck Heights.

Harry H. Pettit, M. D.	Redwood.	Eugene H. Sullivan.	Orange.
Cari T. Pomeroy.	Plainfield.	Eugene M. Syrett.	Montclair.
David N. Rappoport, M. D.	Philadelphia, Pa.	George H. Taylor, M. D.	Maplewood.
Talbot Reed, M. D.	Atlantic City.	John G. Taylor.	Dover.
Louis J. Richards.	Elizabeth.	Walter Taylor, M. D.	Jersey City.
W. R. Reick, M. D.	Arlington.	Lewis O. Tarpator.	Montclair.
Edward B. Rogers, M. D.	Collingswood.	Leon R. Thurlow.	Plainfield.
John N. Ryan, M. D.	Passaic.	George T. Tracy, M. D.	Beverly.
Joe C. Sallis.	Jersey City.	John A. C. Tull, M. D.	Ventnor.
Ferdinand N. Sauer.	Jersey City.	Wm. Veestra, M. D.	Paterson.
Wm. D. Sayre, M. D.	Red Bank.	Mada M. Tinton, M. D.	East Orange.
Wm. G. Schaeffer, M. D.	Lakewood.	Gordon G. Walton, M. D.	Paterson.
Wm. Schleur.	Orange.	John W. Wantoch, M. D.	Carteret.
Wm. H. Schmidt, M. D.	Atlantic City.	Alex. Weir, Jr.	West Hoboken.
Frederic Sell, M. D.	Rahway.	Chester H. Wells.	Montclair.
Lewis L. Shipp, M. D.	Palmyra.	Wm. A. Wescott, M. D.	Berlin.
Wm. H. Sharrp, M. D.	Bordentown.	John H. Whelan, M. D.	Paterson.
Ellen B. Smith, M. D.	Salem.	John H. Whiticar, M. D.	Ocean City.
W. Brand Smith.	Belleville.	Arthur G. Wigley.	New Brunswick.
Wm. R. Smith, M. D.	Roselle Park.	Hiram Williams, M. D.	Passaic.
Milton L. Somers, M. D.	Atlantic City.	Wm. J. Willsey.	New Brunswick.
Henry J. Spalding, M. D.	Union Hill.	John S. Wilson.	Bridgeton.
Gobin Stair.	Jersey City.	John H. Wislow, M. D.	Vineland.
Fred A. Stetter.	Asbury Park.	Wm. C. Woodward, M. D.	Washington, D. C.
Ellsmore Stiles, M. D.	Bridgeton.	Shirley W. Wyan, M. D.	New York City.
Fred H. Stover.	Boston, Mass.	Warren H. Young, M. D.	Little Falls.
Frank H. Streightoff.	Montclair.		

SANITARY INSPECTORS OF THE FIRST CLASS.

William H. Addis.	Plainfield.	Burdick Decker.	Paterson.
Thomas Ainge.	Lansing, Mich.	Walter B. Delaney.	Jersey City.
Wm. C. Allen.	Trenton.	Richard Dendick.	Plainfield.
Henry V. Amerman.	Kearny.	Samuel Denton.	Bayonne.
Fred J. Anderson.	Hoboken.	Edward J. Devitt.	Jersey City.
Fritz M. Arnold.	Albany, N. Y.	C. P. Deyoe, M. D.	Ramsey.
Nathan Aronson.	Newark.	Charles E. Divine.	Newark.
Samuel Bachman.	Newark.	John A. Donovan.	Newark.
Fred S. Ball, M. D.	Lakewood.	Daniel J. Donohue, M. D.	Jersey City.
Joseph E. Bartlett.	Atlantic City.	Leo G. Duffy.	Newark.
Milton E. Baxter.	Jersey City.	Fred J. Dyer.	Grantwood.
John H. Becker, M. D.	Fair Haven.	H. G. Eakin.	Union Hill.
J. Alonzo Beck, M. D.	Gloucester City.	Wallace T. Eakins.	New Brunswick.
John J. Belbey.	Morrisown.	J. J. Ebbels.	Montclair.
Charles E. Bellows.	Bridgeton.	Adolph G. Eisner.	Newark.
Alfred C. Benedict, M. D.	South Orange.	Charles W. Feener.	Paterson.
John K. Bennett, M. D.	Gloucester City.	Edward F. Flynn.	Newark.
Casper Benz.	Newark.	Jay G. Foose.	Montclair.
Henry K. Berry.	Paterson.	Helen E. Forbes, B. N.	Morrisstown.
Joseph C. Bitler.	Hammoncton.	Frank A. Frederick.	West Hoboken.
Thomas F. Boles.	Newark.	Gustavus E. Freideman.	Newark.
Henry A. Bonyne, M. D.	Ridgewood.	Charles S. Gall.	Paterson.
Fred S. Bootay, M. D.	Belleville.	John W. Garey.	Atlantic City.
Lewis E. Boutillier.	Newark.	Dennis E. Garvin.	North Plainfield.
John P. Boylan.	Bayonne.	Albert E. Gelsler.	Kearny.
Peter Brancato, M. D.	Wyckoff.	Wallace M. Gilmore.	Perth Amboy.
Peter J. Brogan.	Newark.	George W. Gilmore.	Newark.
Alonzo Brower.	Freehold.	William Glueck, Jr.	Newark.
Frank Browner, M. D.	Toms River.	A. I. Goehrig.	Trenton.
David E. Buckley.	West Orange.	Hyman I. Goldstein, M. D.	Camden.
Edwin A. Buhler.	Belmar.	John Greaves.	Jersey City.
Chauncey V. Bunnell.	Jersey City.	Louis H. Greenwald.	New Brunswick.
S. Alton Burk.	Atlantic City.	A. M. Grier.	Penn's Grove.
Andrew Carney, Jr.	North Plainfield.	Robert H. Hall.	Newark.
Thomas J. Carter.	Newark.	Lester J. Hamblet.	Asbury Park.
Collis H. Case.	Plainfield.	H. L. Harlet, M. D.	Pleasantville.
John J. Casey.	Plainfield.	John C. Harnett.	Jersey City.
Matthew P. Casey.	Jersey City.	Charles W. Harrays, M. D.	Ridgewood.
N. J. R. Chandler.	Plainfield.	Frank S. Harris.	Salem.
Edward A. Cleary.	Newark.	Fred C. Harris.	Jersey City.
Max J. Colton.	New Brunswick.	H. W. Hartman, M. D.	Keyport.
Obadiah S. Cole.	Newark.	Eugene G. Heberner, M. D.	Lakewood.
John H. Concannon.	Woodbridge.	William W. Heberton, M. D.	South Orange.
Charles F. Conrad.	Newark.	Carl Hegston.	Perth Amboy.
John D. Corrigan.	Newark.	Wm. H. Helm, Jr.	Belmar.
Irwin C. Dakin.	Newark.	Patrick J. Hennessy.	Jersey City.
Harris Day, M. D.	Chester.	Fred W. Hering.	Jersey City.
Newton DeBaum.	Hackensack.	Alex. M. Heron, M. D.	Lakewood.

Harry M. Hitchner.	Salem.	Thomas E. Reynolds.	Atlantic City.
Adolph E. Hoernig.	Newark.	James E. Rice.	Trenton.
James A. Howard.	Trenton.	Fred C. Robertson, M. D.	Jersey City.
Howard H. Huffert.	Newark.	Edward S. Rogers.	Trenton.
J. H. C. Hunter.	Dover.	John E. Rowe, D. V. S.	Summit.
Ralph L. Huttenloeh.	Montclair.	John H. Rowland.	New Brunswick.
Harry R. Ingalls.	Asbury Park.	Joseph C. Sallis.	Jersey City.
H. Wesley Jack.	Collingswood.	Garrett E. St. John.	Bloomfield.
Richard Jackson.	Newark.	Edward H. Salmon, M. D.	Newark.
William F. Kearney.	Paterson.	Richard Savage.	Orange.
Charles A. Keating, M. D.	Paterson.	George Seales.	Rahway.
Leavett F. Kelley.	Newark.	Elvis Scott.	South Orange.
John A. Kelly.	Newark.	Paul Scott.	Penn's Grove.
Robert J. Kelly.	Jersey City.	Timothy S. Seaman.	Summit.
Ray E. Kilpatrick.	Montclair.	B. F. Seaman, M. D.	Summit.
Henry F. Knieler.	Newark.	W. J. E. Seeder.	Newark.
William C. Kramer.	Linden.	Myron J. Seely.	Montclair.
Clarence A. Lamont.	Asbury Park.	George R. Sees.	Atlantic City.
John A. Larkin.	Jersey City.	Henry J. Seymour.	Roselle Park.
Sadie H. Layton.	Asbury Park.	George F. Sicker.	Hackensack.
Gilbert C. Leigh.	Asbury Park.	Ruth S. Slicker.	Salem.
John Levine.	Newark.	Percy W. Sipp.	Newark.
Hillard L. Lockwood, M. D.	Jersey City.	George N. Smith, M. D.	Roselle Park.
George C. Losey.	Washington.	Wm. R. Smith.	Roselle Park.
William H. Lowe, D. V. S.	Paterson.	F. Wm. Stauber.	Trenton.
John L. Lund, M. D.	Perth Amboy.	Thomas J. Steele.	Jersey City.
Abram A. Lydecker, M. D.	Haledon.	Louis D. Stern.	Hoboken.
John J. Magner, M. D.	Jersey City.	Frederick A. Stetter.	Asbury Park.
John A. Manson.	Dover.	Herbert A. Stine.	Plainfield.
Timothy C. Margentum.	Princeton.	John P. Stout, M. D.	Jersey City.
Charles F. Martin.	Paterson.	Dennis J. Swan, Jr.	Jersey City.
Cullen E. Maxson, M. D.	Jersey City.	J. Frank Summers.	Jersey City.
Henry S. McAuley.	Atlantic City.	Engene M. Syrett.	Salem.
John T. McClure.	Harrison.	Edwin E. Taber.	Long Branch.
Felix McGee.	Harrison.	John G. Taylor.	Dover.
Edward McGilverin, M. D.	Millertown.	Joseph Ten Broeck.	Asbury Park.
Richard J. McGrath.	Jersey City.	David R. Thompson.	Delaware City, Del.
William McKeon.	Paterson.	Edward L. Titus.	Trenton.
Charles McNabb.	Jersey City.	Wm. Tompkins, M. D.	Bridgewood.
James E. McNaair.	Bound Brook.	Thomas A. Tonge.	Paterson.
Claudius E. McNeeney, M. D.	Jersey City.	J. F. Travers.	New Brunswick.
Robert W. Meeker.	Plainfield.	Lynford E. Tuttle, M. D. V.	Bernardsville.
Chas. E. Messerschmidt.	Newark.	Sylvester Utter, M. D.	Hawthorne.
Harry P. Moffet.	Newark.	Alfred J. Van Horn.	Paterson.
Phillip Morris, C. E.	Paterson.	William Van Loo.	Paterson.
William Morris.	Roselle Park.	Lloyd M. Van Ness.	New Brunswick.
Elmer M. Mount, Jr., M. D.	Jersey City.	C. H. W. Van Selver.	Burlington.
Edward Mulvaney, M. D.	Jersey City.	Charles S. Woods.	Palmyra.
Abraham J. Newman, M. D.	Jersey City.	Thomas P. Walsh.	Newark.
Frederick W. Nichols.	Newark.	James J. Waters.	Newark.
George C. Nicol.	Jersey City.	Harry E. Watt.	New Brunswick.
A. C. Obergfell.	Atlantic City.	James Weldon.	Jersey City.
M. William O'Gorman, M. D.	Jersey City.	William A. Weber.	Orange.
Bernard F. O'Hara.	Jersey City.	George A. West.	Raritan.
James L. O'Hill.	Plainfield.	Joseph Whalley.	Passaic.
Eric Ordell.	Newark.	Thomas D. Wilhelm.	Perth Amboy.
Richard H. L. Osthoff.	Newark.	Frank V. Wilkison.	Newark.
Clarence I. Palmer.	Newark.	Stanley S. Williams.	Newark.
William B. Palmer.	Orange.	John H. Winslow, M. D.	Vineand.
William D. Pelan.	Trenton.	Frederick E. Wilson.	Bayonne.
Christian Piety.	Jersey City.	H. S. Winterhalter.	Bayonne.
Peter Pirola.	Trenton.	James A. Woods.	Atlantic City.
J. J. Reason, M. D.	Carteret.	James A. Young, Jr.	Paterson.
		John S. Young, M. D.	Rahway.

SANITARY INSPECTORS OF THE SECOND CLASS.

Robert Ballagh.	Hackensack.	Frederick J. Dyer.	Grantwood.
John M. Benschel.	Pleasantville.	George S. Everett.	Linden.
Frank Born.	Carteret.	J. C. Shlan, M. D.	Jamesburg.
John C. Clayton, M. D.	Freehold.	Franklin P. Vanlier.	Woodstown.
Joseph J. Clinkenger.	Irrington.	Charles Wildman.	Belmar.
Charles Cunningham, M. D.	Hammoncton.		

SANITARY INSPECTORS OF THE THIRD CLASS.

John J. Bennett.....	Belleville.	J. N. Fowler.....	Port Norris.
Charles Butcher, M. D.....	Heislerville.	Robert A. Hirner.....	Woodbridge.
Joseph G. Coleman, M. D.....	Hamburg.	Adrian Hommel.....	Asbury Park.
Charles Covert.....	Leesburg.	Fred D. Hurley.....	Asbury Park.
Ellis W. Crater, M. D.....	Oceanport.	David Jamieson.....	Gloucester City.
William B. Davis.....	Morris Plains.	T. Nelson Lillagore.....	Ocean Grove.
Robert Dickson.....	Fair Haven.	William B. Smith.....	Belleville.
George W. Earl.....	Mt. Tabor.		

MEAT INSPECTORS.

Willet H. Cooper, D. V. S.....	Trenton.	Richard W. Hewitt, D. V. S.....	Camden.
G. F. Harker, D. V. S.....	Trenton.	Albert T. Sellers, D. V. S.....	Camden.

MILK AND DAIRY INSPECTORS.

Herman C. Alberts.....	Jersey City.	Herman H. North.....	Jersey City.
Matthew P. Casey.....	Jersey City.	Ansel D. Parker.....	Delaware, N. J.
Richard Jackson.....	Newark.	Clarence H. Rider.....	Jersey City.
W. Wesley Hibbard.....	Jersey City.	Samuel J. Shultiss, Jr.....	New Brunswick.
Henry F. Kneller.....	Newark.	Harold E. Stearns, D. V. S.....	Kearny.
J. Wesley Maple.....	Trenton.	Thomas J. Steele.....	Jersey City.
Arthur McRoberts.....	Jersey City.	George D. White, Jr.....	Newark.

MILK AND FOOD INSPECTORS.

Harry P. Cassidy.....	Philadelphia, Pa.	Harold Mellen.....	Hoboken.
Louis J. Levy.....	Hoboken.	Abe L. Teifeld.....	Hoboken.

PLUMBING INSPECTORS.

R. C. Adamson, Jr.....	Long Branch.	Robert J. Fair.....	Gloucester City.
Vincent Ahlemeyer.....	Jersey City.	Charles W. Fenny.....	Paterson.
Gustave A. Albiez.....	Newark.	Hubbard Ferguson.....	Ridgewood.
Henry J. Babcock.....	Caldwell.	Frank H. Fitzgeorge.....	Trenton.
Richard T. Bagg.....	Vineland.	Joseph Fleming.....	West Orange.
W. E. Bangs.....	West Hoboken.	Henry B. Francis.....	Camden.
Wm. C. Banta.....	Ridgewood.	Howard Frey.....	Red Bank.
James Barnard.....	Trenton.	Napoleon Gomm.....	Englewood.
Lewis Barnett.....	Millville.	George T. Haines.....	Ventnor.
Wm. C. Beucler.....	Bergenfield.	Adam J. Hammer.....	Elizabeth.
Hugo W. Bobertz.....	Elizabeth.	James T. G. Hand.....	Ventnor.
P. W. Borrows.....	Ridgefield Park.	August Handley.....	West Hoboken.
Thos. W. Bradley.....	Edgewater.	Thomas F. Harris.....	Orange.
William F. Brode.....	Atlantic City.	Michael H. Healy.....	Lyndhurst.
Herbert A. Buzzard.....	Audubon.	Thomas P. Healy.....	Verona.
John Campbell.....	Paterson.	James F. Hefferty.....	New Brunswick.
John L. Campbell.....	Hammonton.	Wm. H. Helm, Jr.....	Belmar.
Cornelius V. Carty.....	East Rutherford.	George Helmer.....	Rutherford.
Anthony P. Ciardi.....	Nutley.	Patrick J. Hennessy.....	Jersey City.
Thomas D. Clark.....	Woodbury.	Fred Henniger.....	Jersey City.
Joseph P. Cochran.....	Ventnor.	Henry Herman.....	Passaic.
Benjamin M. Cohen.....	Newark.	Thos. V. Higgins.....	Jersey City.
George M. Crawley, Jr.....	Newark.	Conrad C. Hoffmeier.....	West Hoboken.
Sidney S. Craythorn.....	Beverly.	Joseph F. Hourigan.....	Hoboken.
Francis Cumiskey.....	Guttenberg.	Maurice Huckman.....	Newark.
Newton DeBaun.....	Hackensack.	Arthur A. Hulse.....	South Amboy.
Peter A. Degan.....	Newark.	A. E. Irwin.....	Atlantic Highlands.
Irving J. Demarest.....	Westwood.	Archibald A. Kafar, Jr.....	Bordentown.
Herbert L. de Nourie.....	East Orange.	Martin D. Karl.....	Garfield.
J. Elmer Deppe.....	Newark.	Joseph E. Keeton.....	East Orange.
Conrad Deuchler.....	Newark.	Edward J. Kelly.....	Jersey City.
Luke J. Devine.....	Elizabeth.	Leavett F. Kelly.....	Newark.
Charles J. Dignum.....	West Orange.	Wm. J. Kelton.....	Audubon.
William J. Dorney.....	Newark.	John H. Kerr.....	Perth Amboy.
Thomas J. Dowling.....	Orange.	James H. Kiernan.....	Jersey City.
Martin V. Driscoll.....	Jersey City.	Frank S. Klevitt.....	Passaic.
Edward A. Dugan.....	Gloucester City.	John F. Kilkenny.....	Morristown.
Frederick J. Dyer.....	Grantwood.	John N. Krauss.....	Leonia.
Marcus L. Eisele.....	Newark.	Jacob Kull.....	Newark.
David M. Elin.....	Newark.	Charles Kunz.....	West Orange.
Charles R. Ellis.....	Rutherford.	W. George Lambert.....	Riverside.
Alfred T. England.....	Haddonfield.	George W. Lang.....	East Orange.
David Entwistle.....	Jersey City.	W. J. Large.....	Vineland.
Robert Ewans.....	Guttenberg.	Eugene Lau.....	Newark.

Joseph P. Lee.....	Jersey City.	Anthony S. Ruddy.....	East Orange.
Joseph Lendner.....	West New York.	Patrick J. Ryan.....	Wallington.
Tunis Lool.....	Lodi.	Anthony H. Sachs.....	Carlstadt.
Joseph M. Loeffler.....	Newark.	Michael Saul.....	Newark.
Warren Mack.....	East Orange.	George J. Scheurle.....	Weehawken.
William Maloney.....	Jersey City.	Wm. A. Sehnert.....	Fallsides Park.
Louis Marengi.....	Koselle Park.	George F. Shafer.....	Hackensack.
James A. Marnell.....	Hoboken.	Michael A. Shanahan.....	Jersey City.
Herbert J. Mason.....	Vineland.	Charles F. Shaw.....	Collingswood.
Henry F. Metzger.....	Jersey City.	R LeRoy Skillman.....	Newark.
Andrew McGookin, Jr.....	Newark.	Clarence B. Slack.....	Trenton.
Robert A. McGuire.....	Perth Amboy.	Henry A. W. Smith.....	Ocean City.
George F. McIntyre.....	Hammonton.	Joseph Sonnenberg.....	Irvington.
Harry L. McIntyre.....	Hammonton.	John Specht.....	Newark.
James McTague.....	Jersey City.	William F. Specht, Jr.....	Atlantic City.
Frank Miller.....	Newark.	B. H. Sooy.....	Atlantic City.
Patrick J. Monaghan.....	Newark.	Charles Steller.....	Town of Union.
William S. Mooney.....	Jersey City.	G. H. Soult.....	Ridgewood.
Robert F. Morgan, Jr.....	Newark.	Edward A. Sullivan.....	Newark.
George M. Mortenson.....	South Amboy.	Charles Turkowsky.....	West New York.
James F. Mulhall.....	East Orange.	Thomas Vail.....	South Amboy.
Charles Munzing.....	Jersey City.	Geo. W. VanVarick.....	Clifton.
Edward F. Murphy.....	North Bergen.	Oscar J. Verhoek.....	Irvington.
Robert B. Murphy.....	Ridgewood.	Robert J. Walker, Jr.....	Atlantic City.
Frederick W. Nichols.....	Newark.	Thomas Walton.....	Camden.
John Nolan.....	Bayonne.	John J. Waters.....	Jersey City.
George H. Northam.....	Long Branch.	George S. Webb.....	Wildwood.
Joseph J. Norton.....	East Orange.	James C. Wegham.....	Wildwood.
Richard J. O'Crowley, Jr.....	Newark.	Alex. Weir, Jr.....	West Hoboken.
John O'Shea.....	West New York.	C. H. Weller.....	Hightstown.
Richard W. L. Osthoff.....	Bogota.	Charles F. West.....	Gloucester City.
Hugh F. Parle.....	Jersey City.	Joseph Whalley.....	Passaic.
Raymond W. Pettibone.....	Philadelphia, Pa.	Charles M. Whelan.....	Trenton.
Samuel Powell.....	Roselle Park.	Jason H. Wildrick.....	Washington.
Charles Reeve.....	Long Branch.	Leslie H. Williams.....	East Orange.
Arthur G. Reeves.....	Cape May City.	Charles S. Willmot.....	Haddon Heights.
John B. Reeves.....	Haddon Heights.	John Wodder.....	Perth Amboy.
Bernards B. Reley.....	New Brunswick.	Harry A. Wilkins.....	Newark.
Rudolph Riemenschneider.....	Town of Union.	Louis V. Ziegler.....	Ridgefield Park.
Edward A. Rogers.....	Trenton.	William G. Ziegler.....	West Hoboken.
Alfred B. Rooney.....	Jersey City.		

List of Sanitary Districts.

With names and addresses of Officers.

CITIES.

- Absecon**, Atlantic county. E. H. Madden, President; Samuel Johnson, Secretary.
- Asbury Park**, Monmouth county. B. H. Obert, Secretary and Health Officer; Fred. A. Stetter, Joseph A. Broeck, Inspectors.
- Atlantic City**, Atlantic county. Alfred T. Glenn, Clerk; Talbot Reed, M.D., Registrar; Harry C. Beck, Health Officer; Benj. H. Sooy, Inspector.
- Bayonne**, Hudson county. Henry Wilson, President; C. C. Sleesman, Secretary; John T. Connelly, Health Officer; H. S. Winterhalter, Inspector.
- Beverly**, Burlington county. Dallas H. Perkins, President; Harry Woolman, Secretary.
- Bordentown**, Burlington county. Joseph R. Malone, Clerk and Registrar.
- Bridgeton**, Cumberland county. William E. Glaspell, President; Sidney O. Williams, Secretary; Chas. E. Bellows, Inspector.
- Burlington**, Burlington county. John B. Cassady, President; Walter W. Marrs, Secretary; George W. Shinn, Inspector.
- Camden**, Camden county. H. H. Davis, M.D., President; Eugene B. Roberts, Secretary; John F. Leavitt, M.D., Health Officer.
- Cape May City**, Cape May county. W. R. Sheppard, President; W. M. Porter, Secretary; Arthur C. Reeves, Inspector.
- East Orange**, Essex county. Ralph H. Hunt, President; John Hall, Secretary and Health Officer; Wm. T. Bowman, Inspector.
- Egg Harbor City**, Atlantic county. Henry M. Cressman, President; Wm. Morgenweck, Secretary.
- Elizabeth**, Union county. John W. Whelan, President; John F. Kenah, Secretary; Louis J. Richards, Health Officer; Henry Toole, Inspector.
- Englewood**, Bergen county. Charles T. Watson, Secretary; Robert Jamison, Registrar.
- Gloucester City**, Camden county. Harlen S. Miner, President; A. W. Redfield, Secretary; Harry P. Johnson, Registrar; Dr. J. A. Beek, Inspector.
- Hoboken**, Hudson county. Joseph Tucker, Clerk and Registrar; John Beronio, Inspector.
- Jersey City**, Hudson county. Frank H. Edsall, Superintendent of Health; J. J. Craven, Reporting Officer; John Harnett, Inspector.
- Lambertville**, Hunterdon county. Samuel A. Finger, Clerk and Registrar.
- Long Branch**, Monmouth county. Dr. J. T. Welch, President; R. C. Errickson, Secretary and Registrar; James Milmore, Inspector.
- Margate City**, Atlantic county. William A. McArdle, Clerk and Registrar.
- Millville**, Cumberland county. Dr. F. V. Ware, President; John S. Horton, Registrar; H. L. Thomas, Secretary; F. Bullock, Health Officer.
- Newark**, Essex county. William S. Disbrow, President; William J. Buehler, Secretary; Charles V. Craster, Health Officer.
- New Brunswick**, Middlesex county. E. I. Cronk, M.D., Health Officer; J. McLaughlin, Registrar.
- Northfield City**, Atlantic county. A. R. Vickers, Secretary and Registrar.
- Orange**, Essex county. T. Dudley Ballinger, Health Officer; Richard Savage, Inspector.

Passaic, Passaic county. George N. Segar, President; Z. A. Van Houtan, Registrar; Virginea Hand, Secretary; John N. Ryan, M.D., Health Officer.

Paterson, Passaic county. Edwin C. King, President; Tunis Kivett, Secretary; Thomas A. Clay, M.D., Health Officer; James Fitzpatrick, Inspector.

Perth Amboy, Middlesex county. H. H. Petz, President; Wilbur La Roe, Secretary; William J. Willsey, Health Officer.

Plainfield, Union county. Harriet O. Mattison, Registrar; N. J. Randolph Chandler, Health Officer.

Port Republic City, Atlantic county. John W. Barton, President; D. B. Fielder, Clerk; H. E. Brand, Inspector.

Rahway, Union county. Dr. John T. Brickall, President; Chas. H. Lambert, Secretary; Dr. Fred W. Sell, Health Officer. Fred J. Mix, Inspector.

***Salem**, Salem county. George Kirk, Clerk and Registrar.

Sea Isle City, Cape May county. R. C. Scott, M.D., President; Irving Fitch, Clerk and Registrar.

Somer's Point, Atlantic county. Washington D. Read, President; Walter A. Smith, Secretary and Registrar.

South Amboy, Middlesex county. Irving Reese, President; George A. Kress, Secretary; Wm. J. Nagle, Registrar.

Summit, Union county. D. L. Haigh, President; T. J. Duffield, Secretary and Registrar.

Trenton, Mercer county. Howard H. Ely, Registrar; A. S. Fell, M.D., Health Officer; Wm. C. Allen, Inspector.

Ventnor City, Atlantic county. Dr. Thomas Youngman, President; James G. Scull, Secretary; Walter A. Rulon, Health Officer; W. B. Hankins, Inspector.

Wildwood, Cape May county. N. A. Cohen, M.D., Reporting Officer and Health Officer.

Woodbury, Gloucester county. Geo. W. Pettyjohn, President; Clinton T. Davis, Registrar; William Keat, Clerk.

BOROUGHES.

Allendale, Bergen county. G. M. Parkhurst, M.D., President; Ambrose K. Merrill, Secretary.

Allenhurst, Monmouth county. T. C. Cottwell, President; Chas. E. King, Secretary.

Allentown, Monmouth county. Dr. H. P. Johnson, President; Dr. H. M. Anderson, Secretary; Harry Disbrow, Registrar; George Wilbur, Inspector.

Alpha, Warren county. Lee C. Salisbury, President; Cleveland M. Rhen, Secretary and Registrar.

Alpine, Bergen county. Joseph M. Garvey, President; Robert H. Monroe, Secretary and Registrar.

Andover, Sussex county. Wm. E. Wilson, Clerk.

Atlantic Highlands, Monmouth county. Rev. Geo. H. Goodner, President; William T. Franklin, Secretary; John R. Snedeker, Inspector.

Audubon, Camden county. John Yardley, President; T. Jos. Williams, Secretary and Registrar; Robert E. Morrell, Inspector.

***Avalon**, Cape May county. R. W. Rosenbaum, Clerk and Registrar.

Avon, Monmouth county. John Thomson, President; John Supple, Clerk and Registrar.

Barnegat City, Ocean county. Willis Sculthrop, President; John N. Barber, Secretary and Registrar; A. D. Applegate, Health Officer.

Bay Head, Ocean county. R. H. Metcalf, President; Julius Foster, Jr., Secretary and Registrar.

***Beach Haven**, Ocean county. Herbert Willis, M.D., Clerk and Inspector; Samuel D. Andrews, Registrar.

Belmar, Monmouth county. Wallace S. Hooper, President; Chas. O. Hudnut, Clerk and Registrar.

Bergenfield, Bergen county. John W. Radford, President and Registrar; H. H. Rombaugh, Secretary.

Bloomsbury, Hunterdon county. D. M. Apgar, President; J. A. S. Stone, Clerk and Registrar.

Bogota, Bergen county. Jos. Mallen, President; John Y. Hill, Secretary and Registrar; G. L. Edward, M.D., Health Officer. R. H. L. Osthoft, Inspector.

Bound Brook, Somerset county. Dr. J. T. Robinson, President; William Schure, Secretary; Chas. McNabb, Registrar.

***Bradley Beach**, Monmouth county. James Jones, Clerk and Registrar.

***Branchville**, Sussex county. John A. McCarrick, Clerk and Registrar.

***Brigantine City**, Atlantic county. E. R. Smith, Registrar.

Butler, Morris county. E. P. Smithyman, President; Samuel K. Owens, Secretary.

***Caldwell**, Essex county. Wilson Husk, Secretary.

Cape May Point, Cape May county. John T. Huff, President; Frank Hughes, Secretary; H. H. Busse, Reporting Officer and Registrar.

Carlstadt, Bergen county. Louis Cuneo, President; Mathew Fitting, Secretary and Registrar; Anthony Sachs, Inspector.

Chatham, Morris county. Dr. Walter A. Jaquith, President; F. Scott Hallett, Secretary; J. Thomas Scott, Registrar; George L. Kelley, Inspector.

Chesilhurst, Camden county. J. T. Humphries, Clerk and Registrar.

Clayton, Gloucester county. Dr. G. C. Brown, President; C. F. Fiesler, M.D., Clerk and Registrar.

Cliffside Park, Bergen county. Robert Cadien, President; O. R. McElwain, Secretary and Registrar; Fred Dyer, Inspector.

***Clinton**, Hunterdon county. George Hall, Clerk and Registrar.

Closter, Bergen county. R. H. Folsom, President; Alfred Anderson, Secretary and Registrar.

Collingswood, Camden county. Barton S. Muir, President; C. C. Powell, Clerk and Registrar.

Cresskill, Bergen county. Henry G. Meyer, President; John Maguire, Secretary and Registrar; Dr. J. B. W. Lansing, Inspector.

Deal, Monmouth county. Robert Offenbach, President; Joseph G. Conover, Secretary.

Delford, Bergen county. J. D. Hoffmire, President; G. R. Spalding, Secretary, New Milford, N. J.; J. S. Voorhees, Registrar; Dr. S. H. Vandewater, Inspector.

Demarest, Bergen county. Watson J. Mosier, President; George V. Morton, Secretary and Registrar.

Dumont, Bergen county. Dr. A. B. Spiegelglass, President; Fred Kleppe, Secretary and Registrar.

***Dunellen**, Middlesex county. W. S. Frederick, Clerk; Chas. A. Coriell, Sr., Registrar.

***East Newark**, Hudson county. E. J. McKenna, Clerk; J. A. McDonald, Registrar.

East Paterson, Bergen county. David F. Gall, President; Raymond Hopper, Secretary.

East Rutherford, Bergen county. Frederick Taylor, President; Wm. Eigenrauch, Secretary and Registrar; C. V. Carty, Inspector.

Edgewater, Bergen county. Arthur J. Carleton, Secretary and Registrar.

Elmer, Salem county. Dr. J. Franklin Reeves, President; F. M. Stites, Secretary.

***Emerson**, Bergen county. Henry I. Marshall, Clerk and Health Officer.

Englewood Cliffs, Bergen county. Dr. Christian E. G. Porst, President; William Hamilton, Secretary and Registrar, Coytesville, N. J.

***Englishtown**, Monmouth county. S. S. Johnson, Clerk. Walter Emmons, Registrar.

Essex Fells, Essex county. Howard M. Cook, President. Earle L. Legg, Secretary and Registrar.

Fair Haven, Monmouth county. Clarence C. Smock, President; Harold S. Allen, Secretary; Wm. Cruchin, Sr., Registrar.

Fairview, Bergen county. Hugo Silsby, President; John S. Tracy, Secretary.

Fanwood, Union county. Dr. F. Westcott, President; Ronald F. Riblet, Secretary; Samuel W. McAneny, Reporting Officer.

Farmingdale, Monmouth county. John Cook, President; Harry Hulsart, Secretary; Frank P. Vannote, Registrar.

*No report received.

*No report received.

Fieldsboro, Burlington county. Frank Ferry, President; W. H. Errickson, Secretary and Registrar.

Flemington, Hunterdon county. George Webster, President; Barclay S. Fuhrmann, Secretary; William A. Abbott, Registrar.

Florham Park, Morris county. Charles H. Gessing, President; William V. Tunis, Secretary and Registrar.

Folsom, Atlantic county. Joseph Lunback, President; Louis Schulze, Secretary; Dr. Chas. Cunningham, Health Officer.

Fort Lee, Bergen county. Dr. D. E. O'Neil, President; Alfred Jung-hans, Secretary and Registrar; Dr. Max Wyler, Inspector.

Franklin, Sussex county. Dr. C. M. Denning, President; James R. Stephens, Secretary and Registrar; A. Gertrude Hines (Miss), Inspector.

Frenchtown, Hunterdon county. Hugh Taylor, President; E. J. Straker, Secretary; Oscar Broderick, Inspector.

Garfield, Bergen county. Eugene E. Schempp, President; Louis Heinzmann, Secretary; Dr. Chas. B. Bleasby, Health Officer.

Garwood, Union county. Louis M. Wenezel, President; William T. Froat, Secretary and Registrar; Andrew Carney, Jr., Inspector.

Glen Ridge, Essex county. F. D. Bell, President; James E. Brooks, Secretary and Registrar.

Glen Rock, Bergen county. C. M. Viel, President; G. H. Lane, Clerk; Dr. Albert Van Eerde, Inspector.

Haddonfield, Camden county. Allen Clymer, Clerk and Registrar.

Haddon Heights, Camden county. W. H. Carney, Clerk; E. N. C. Davis, Registrar.

Haledon, Passaic county. Max Melhorn, President; Theo. B. Kegelman, Clerk and Registrar; A. A. Lydecker, Reporting Officer and Health Officer.

Hampton, Hunterdon county. Dr. Edgar Hunt, President; Frederick G. Byerlee, Secretary; Charles Wilson, Registrar.

Harrington Park, Bergen county. Gustave Frank, President; C. H. Odell, Secretary; J. F. Hallenbeck, Registrar.

Harvey Cedars, Ocean county. Fletcher Andrews, Clerk and Registrar; Dr. Ernest Ramsdell, Reporting Officer.

Hasbrouck Heights, Bergen county. H. B. Vannote, President; Wm. J. Schweickert, Secretary and Registrar; Roy G. Perham, M.D., Health Officer; D. M. Davidson, Inspector.

Haworth, Bergen county. Charles S. Forbes, President; I. M. Clark, Secretary and Registrar; A. M. Ward, M.D., Health Officer.

Hawthorne, Passaic county. Paul A. Weiland, President; Henry V. Teetsell, Secretary; Joseph Payne, M.D., Inspector.

Helmetta, Middlesex county. Wm. Trundt, Secretary; Dr. J. C. Shinn, Inspector.

High Bridge, Hunterdon county. John Howe Hall, President; A. B. Beavers, Secretary and Registrar.

Highland Park, Middlesex county. A. P. Daire, President; Wm. H. Holman, Secretary; Dr. M. E. Nafey, Health Officer.

Highlands, Monmouth county. Wm. M. Hennessey, Secretary and Registrar.

Hightstown, Mercer county. H. T. Frick, President; C. H. Weller, Clerk and Inspector; Frank V. Jamison, Registrar.

Hohokus, Bergen county. F. H. Haviland, President; George Jackson, Secretary and Registrar.

Hopatcong, Sussex county. Richard Voorhees, President; Chas. O. Rafer, Clerk and Registrar; Chas. Lewis, Inspector.

Hopewell, Mercer county. Dr. Robt. P. Miller, President; Fred. I. Sutphen, Secretary and Registrar.

Island Heights, Ocean county. Wm. T. McKaig, Clerk and Registrar.

Jamesburg, Middlesex county. J. B. Pownall, President; J. A. Thompson, Secretary; William H. Brooks, Registrar.

Kenilworth, Union county. Sanderson Ruth, President.

Keypoint, Monmouth county. C. F. Tuthill, Clerk and Registrar.

Lavallette, Ocean county. N. Joseph Englebert, President, Clerk and Registrar.

Laurel Springs, Camden county. Frank B. Cook, M.D., President; Vanderbelt Arnold, Secretary; Philip Davey, Sr., Registrar; George W. Cline, Inspector.

*No report received.

Leonia, Bergen county. Dr. J. B. Edwards, President; H. M. Thompson, Secretary and Registrar; William Schuer, Inspector.

Linden, Union county. J. L. Neubauer, President; Clarence H. Smith, Secretary and Registrar; Dr. Fred. W. Sell, Health Officer.

Linwood, Atlantic county. Henry S. Scull, President; Daniel L. Sutton, Secretary.

Little Ferry, Bergen county. Jos. Sack, President; Emil Dannacher, Secretary; Edward Segenfried, Inspector.

Lodi, Bergen county. John W. Lane, President; G. H. Van Vorst, Secretary.

Longport, Atlantic county. William S. Gilmore, Secretary and Registrar.

Madison, Morris county. W. H. Barton, President; L. H. Dusenberry, Clerk; S. Fred Burnett, Registrar.

Magnolia, Camden county. John Howard Crossley, Secretary; Alexander Montgomery, Reporting Officer; Frederick Buckner, Inspector.

Manasquan, Monmouth county. Harry D. Newman, President; Robert M. Marks, Secretary; Alonzo Mount, Inspector.

***Mantoloking**, Ocean county. S. C. Shadinger, Secretary.

***Matawan**, Monmouth county. William Rodgers, Secretary.

Maywood, Bergen county. Henry Heck, President; G. M. Fetzer, Secretary and Registrar; R. H. L. Osthoff, Inspector.

***Mendham**, Morris county. George S. Thompson, Clerk.

***Merchantville**, Camden county. John W. Mickle, Clerk and Registrar.

Metuchen, Middlesex county. Herman Gross, President; Charles P. Hull, Secretary; R. B. Crowell, Registrar.

Middlesex, Middlesex county. Henry J. Oesterling, President; Stewart C. Crouse, Secretary and Registrar.

Midland Park, Bergen county. Robert D. Coyle, President; Jacob H. Olthius, Clerk and Registrar; Joseph Payne, M.D., Inspector.

Milford, Hunterdon county. George R. Smith, President; Frank P. Vanderbilt, Secretary; A. Arling. Hill, Inspector.

***Millstone**, Somerset county. William H. Polhemus, Clerk; E. M. Davis, Registrar.

Milltown, Middlesex county. C. W. Waddington, President; J. Milton Brinder, Secretary; R. A. Harkins, Registrar.

Monmouth Beach, Monmouth county. Chas. A. Valentine, President; Richard West, Secretary.

Montvale, Bergen county. August F. Girard, President; Edgar C. Eldridge, Secretary and Registrar.

Moonachie, Bergen county. Henry Veitbeer, President; Bernard A. Love, Secretary and Registrar.

***Mountainside**, Union county. T. J. Ketts, Secretary.

Mount Arlington, Morris county. James Levie, Clerk.

***Mount Tabor**, Morris county. R. A. Lawless, Clerk; Geo. W. Earl, Inspector.

National Park, Gloucester county. P. B. Milligan, President; Wm. E. Beers, Clerk.

Neptune City, Monmouth county. Frank Larrison, President; Sharon F. Smith, Secretary.

Netcong, Morris county. Gilbert H. Singer, President; C. D. Wolfer, Secretary.

New Providence, Union county. Charles B. Nevius, President; William Woodruff, Clerk and Registrar; Rufus E. Samson, Inspector.

North Arlington, Bergen county. John W. Whitla, President; John H. Shields, Clerk.

North Caldwell, Essex county. William Kussmane, President; Frank Francisco, Clerk.

North Haledon, Passaic county. William J. Ellis, President; Jos. Graham, Clerk and Registrar.

North Plainfield, Somerset county. Jas. L. Love, President; Dr. A. H. Dundon, Secretary and Registrar.

Northvale, Bergen county. Joseph Argenti, President; Jacob Scharer, Clerk and Registrar; Chas. De Molinari, Inspector.

***North Wildwood**, Cape May county. Edward Hewett, Secretary.

Norwood, Bergen county. William F. Harra, President; Clifton Demarest, Secretary and Registrar.

*No report received.

Oakland, Bergen county. Charles H. Sheffield, President; Christian Bannehr, Secretary; E. W. Hamilton, M.D., Reporting Officer and Inspector.

Oaklyn, Camden county. Wm. Eggert, President; Richard D. Early, Clerk and Registrar.

Ocean City, Cape May county. T. Lee Adams, Registrar and Health Officer.

Ocean Grove, Monmouth county. Dr. A. E. Ballard, President; Dr. H. B. Alday, Secretary and Registrar.

***Ogdensburg**, Sussex county. Leonard A. Sweeney, Secretary.

Old Tappan, Bergen county. Charles De Wolf, Clerk and Reporting Officer.

Palisade Park, Bergen county. Louis Quad, President; W. G. Stevens, Secretary and Registrar; George F. Shafer, Inspector.

Park Ridge, Bergen county. Dr. S. Alexander, President; T. G. Forbes, Clerk and Registrar; George F. Shafer, Inspector.

Paulsboro, Gloucester county. J. Kirk G. Williams, President; S. Walter Loucks, Clerk and Registrar.

Peapack, Somerset county. W. D. Vanderbeck, President; F. H. Ludlow, Clerk.

Pemberton, Burlington county. B. T. Crammer, President; J. J. Brandt, Clerk.

Pennington, Mercer county. Dr. I. F. P. Turner, President; Charles M. Titus, Clerk.

Penns Grove, Salem county. Edward S. Harris, President; J. Henry Smith, Secretary.

Pitman, Gloucester county. M. T. Lummis, M.D., President and Registrar; Jas. E. Broome, Secretary.

Pleasantville, Atlantic county. Thomas G. Drinkwater, President; Samuel G. Bowen, Jr., Secretary.

Point Pleasant Beach, Ocean county. Charles W. Dampman, President; H. O. Shoemaker, Secretary and Registrar; Joseph Gross, Inspector.

Pompton Lakes, Passaic county. C. C. Wickstead, President; Albert W. Van Saun, Secretary and Registrar.

Princeton, Mercer county. Joseph E. Raycroft, M.D., President; W. B. Howe, Clerk; W. D. Dotterer, Registrar and Health Officer; T. W. Margerum, Inspector.

Prospect Park, Passaic county. Martin De Ruitter, President; Lambertus Touw, Clerk; Abraham A. Lydecker, Health Officer.

Ramsey, Bergen county. Paul A. Abry, President; Henry R. Parvin, Clerk.

Red Bank, Monmouth county. Dr. W. A. Rullman, President; Myron E. Slater, Secretary and Registrar.

Ridgefield, Bergen county. Horace C. Brunner, President; Frank D. Roylance, Secretary; Geo. F. Shafer, Inspector.

Riverside, Bergen county. A. J. Scriven, President; J. D. Rowe, Secretary; Joseph Weston, Registrar; G. F. Shafer, Inspector.

Riverton, Burlington county. Edward C. Stoughton, President; Samuel W. Collin, Secretary; Fred C. Witte, Reporting Officer; Charles G. Davis, Registrar.

Rockaway, Morris county. Edward Ehlers, President; Wm. A. Parllman, Clerk and Registrar; Charles H. Hull, Inspector.

Rocky Hill, Somerset county. Wm. M. Stults, President; I. M. Nelson, Secretary.

Roosevelt, Middlesex county. Edward J. Heil, President; Frank Born, Reporting Officer; R. Joseph Murphy, Clerk.

Roseland, Essex county. H. G. Rinkie, President; E. A. Williams, Secretary and Registrar.

Roselle, Union county. C. P. Higgins, President; E. S. Waller, Secretary; Wm. Morris, Health Officer.

Roselle Park, Union county. F. J. Mountford, President; H. P. Ernst, Secretary; W. R. Smith, M.D., Health Officer.

***Rumson**, Monmouth county. V. A. Ligier, Secretary and Registrar.

Rutherford, Bergen county. Dr. Wm. C. Williams, President; H. Y. Blakiston, Clerk.

***Saddle River**, Bergen county. Charles H. Merritt, Borough Clerk.

Seabright, Monmouth county. Dr. D. H. Karp, President; M. J. Devereaux, Secretary and Registrar; L. J. Fitcher, Inspector.

*No report received.

Seaside Heights, Ocean county. George A. Jannings, President; Chas. F. Horner, Secretary and Registrar.

***Seaside Park**, Ocean county. H. P. Hoff, Clerk.

Secaucus, Hudson county. Thomas Sprouls, President; Gerson Lowenstein, Clerk.

Somerville, Somerset county. Dr. Aaron L. Stillwell, President; Wm. R. Sutphin, Secretary; George D. Fatten, Inspector.

South Bound Brook, Somerset county. George M. Baldwin, President; Peter Merlett, Clerk and Registrar.

***South Cape May**, Cape May county. E. B. Martin, Clerk.

***South River**, Middlesex county. James B. Armstrong, Clerk; James Black, Registrar.

Spottswood, Middlesex county. Joseph Hodapp, Sr., President; Louis E. Appleby, Secretary and Registrar.

Spring Lake, Monmouth county. Dr. S. R. Knight, President; D. H. Hills, Secretary; Dr. W. B. Montgomery, Inspector.

Stanhope, Sussex county. R. M. Inscho, President; J. J. Shaw, Secretary.

Stockton, Hunterdon county. H. D. Moore, President; Chas. A. Smith, Secretary; Wm. Gabriel, Health Officer.

***Stone Harbor**, Cape May county. C. O. Letzkus, Clerk.

***Surf City**, Ocean county. H. L. Lukens, Borough Clerk.

Sussex, Sussex county. Dr. H. D. Gaasbeck, President; H. E. Wells, Clerk and Registrar.

Swedesboro, Gloucester county. Dr. J. G. Halsey, President; W. H. Rieger, Secretary and Registrar; Dr. V. E. De Grafft, Reporting Officer.

***Tenafly**, Bergen county. J. M. MacKellar, M.D., Clerk; J. B. Lansing, M.D., Registrar and Inspector.

Totowa, Passaic county. John Faber, President; Frank Atkins, Clerk; Chas. A. Keating, M.D., Health Officer.

Tuckerton, Ocean county. T. Lewis Lane, President; Lewis A. Fiske, Secretary.

Upper Saddle River, Bergen county. James D. Carlough, President; August Weiss, Secretary and Inspector.

***Verona**, Essex county. Louis C. Miller, Secretary; Chas. T. Simonson, Registrar.

Vineland, Cumberland county. Louis Basso, President; Fred Koetz, Secretary.

Wallington, Bergen county. Edward Taylor, President; James J. Brennan, Secretary and Registrar; Dr. D. W. Sullivan, Health Officer.

***Washington**, Warren county. J. H. Hahn, Clerk.

Wenonah, Gloucester county. William C. Cattell, President; Jesse W. English, Clerk.

West Caldwell, Essex county. Marcus S. Crane, President; Herbert Francisco, Clerk and Registrar.

***West Cape May**, Cape May county. F. R. Hughes, M.D., Clerk.

West Long Branch, Monmouth county. Charles Stillwagon, President; Frank A. Poole, Clerk and Registrar.

West Paterson, Passaic county. George Wills, President; D. L. Hughes, Secretary and Registrar; Wm. Veestra, Health Officer.

Westville, Gloucester county. E. T. Addison, President; W. B. Atkinson, Secretary and Registrar.

Westwood, Bergen county. James Mussor, Jr., President; James E. Ackerman, Secretary and Registrar.

Wharton, Morris county. J. H. Williams, President; John R. Spargo, Clerk; J. S. Kernick, Registrar.

Wildwood Crest, Cape May county. R. Scampton, President; E. B. Fagan, Clerk and Registrar.

Woodbine, Cape May county. M. B. Marcus, Secretary.

Woodbury Heights, Gloucester county. A. Beith, Jr., President; Robert G. Diamond, Clerk.

Woodcliff Lake, Bergen county. John H. Wortendyke, President; Garret J. Wortendyke, Secretary and Registrar.

Woodlyne, Camden county. Christian Dupont, Secretary.

Wood Ridge, Bergen county. H. Neilson, President; H. J. Klein, Secretary; Jos. Beck, Reporting Officer.

Woodstown, Salem county. H. V. Foster, President; Wm. B. Foster, Clerk; F. P. Vanlier, Inspector.

*No report received.

TOWNS.

- Belleville**, Essex county. Wm. B. Watson, President; J. F. Flanagan, Secretary; W. Brand Smith, Health Officer; Hugh J. Maguire, Inspector.
- ***Belvidere**, Warren county. George H. Weaver, Clerk and Inspector.
- Bloomfield**, Essex county. Jacob S. Wolfe, M.D., President; Joseph C. Saile, Secretary and Registrar.
- Boonton**, Morris county. George Richler, President; Frank N. Banta, Secretary; J. H. Dawson, Health Officer.
- Dover**, Morris county. Emil J. Riederer, President; William H. Tonking, Secretary; John G. Taylor, Health Officer.
- Freehold**, Monmouth county. S. L. Bennett, President. Alonzo Brouwer, Clerk and Registrar.
- Guttenberg**, Hudson county. Chas. Yeager, President; Jacob Saredy, Clerk.
- Hackensack**, Bergen county. Dr. F. S. Hallett, President; E. B. Walden, Secretary; Frederick J. Thompson, Registrar; Dr. Geo. Wm. Fricke, Health Officer.
- Hackettstown**, Warren county. Claude E. Cook, President; A. G. Boettiger, Secretary; R. G. Clark, Inspector.
- Hammonton**, Atlantic county. Wayland De Puy, Secretary and Registrar.
- Harrison**, Hudson county. John T. Malone, President; Eugene A. Riordan, Secretary; John T. McClure, Health Officer.
- Irrington**, Essex county. Jos. K. Clickenger, Reporting Officer and Health Officer.
- ***Kearny**, Hudson county. Alfred B. Anderson, Clerk
- Montclair**, Essex county. Edward Winslow, President; A. Prescott Fowell, Secretary; C. H. Wells, Health Officer and Registrar.
- Morristown**, Morris county. John R. Burr, President; Robert C. Caskey, Secretary and Registrar; John J. Belbey, Inspector.
- Newton**, Sussex county. Dr. Warren H. Smith, President; A. V. B. Mackerly, Secretary and Registrar; Ross McPeck, Inspector.
- Nutley**, Essex county. W. O. Lincoln, President; George Hawksworth, Secretary.
- Phillipsburg**, Warren county. O. E. Bates, President; J. C. Perdoe, Clerk; Dr. Williston, Health Officer; Frank Kneeder, Registrar.
- ***Raritan**, Somerset county. J. J. Bourke, Clerk.
- Town of Union**, Hudson county. Fred Holtje, President; Richard Specker, Clerk; H. J. Spalding, M.D., Inspector.
- Westfield**, Union county. Dr. R. G. Savoye, President; C. N. Harden, Clerk; Andrew Carney, Reporting Officer.
- West Hoboken**, Hudson county. Louis A. Menegaux, President; Frank A. Frederick, Clerk and Health Officer.
- West New York**, Hudson county. Dr. W. A. Ryan, President; William McDowell, Clerk; Rudolph Kunze, Reporting Officer.
- West Orange**, Essex county. Henry Feindt, President; James A. Tobey, Clerk and Registrar.

VILLAGES.

- Ridgefield Park**, Bergen county. Joseph Fletcher, President; Howard B. Ficken, Secretary.
- Ridgewood**, Bergen county. Edward T. White, President; Dr. W. L. Vroom, Secretary; Dr. H. H. Pettit, Health Officer; Wilbur Morris, Registrar.
- South Orange**, Essex county. R. D. Freeman, President; J. Budd Smith, Secretary; Dr. A. C. Benedict, Registrar and Inspector.

TOWNSHIPS.

- ***Acquackanonk**, Passaic county. Edo. M. Yereance, Clerk, Clifton.
- Alexandria**, Hunterdon county. George B. Wolfe, President; William B. Wean, Clerk, R. F. D.; both of Milford.
- Allamuchy**, Warren county. Wm. Grover, President, Andover, R. F. D.; George Hartman, Secretary and Registrar, Allamuchy
- Alloway**, Salem county. John Crawley, President, Yorktown; H. M. Loveland, Secretary, Bridgeton, R. F. D. No. 8.

*No report received.

- Andover**, Sussex county. Aaron Marker, President; W. H. Fritts, Clerk, Newton.
- Atlantic**, Monmouth county. Simon J. Beers, President; Frank E. Heyer, Clerk, Colts Neck; James P. Dimond, Registrar.
- Bass River**, Burlington county. William T. Cramer, President; William S. Cramer, Secretary and Registrar; both of New Gretna.
- Bedminster**, Somerset county. H. McMurtry, Secretary and Registrar, Somerville, R. F. D. No. 8.
- Berkeley**, Ocean county. J. Frank Johnson, President; Marcus B. Allen, Secretary; both of Bayville.
- Berlin**, Camden county. Dr. Raughley, President; X. F. Ottiger, Secretary; Dr. F. O. Stern, Inspector; all of Berlin.
- Bernards**, Somerset county. James Clark, President; Joseph P. Kronenberg, Secretary; Dr. L. R. Hanbrick, Inspector; all of Bernardsville.
- Bethlehem**, Hunterdon county. Nelson Bowlby, President, West Portal; John McCrea, Secretary and Registrar, Bloomsbury.
- Beverly**, Burlington county. Jos. B. Carter, Secretary and Registrar, Delanco.
- Blairstown**, Warren county. F. P. Bunnell, President; Jos. A. Dugan, Clerk and Registrar, Vail; Dr. H. O. Carhart, Inspector.
- Boonton**, Morris county. Edmund H. Steckle, Clerk and Registrar, Boonton, R. F. D. No. 2.
- Bordentown**, Burlington county. Dr. C. D. Mendenhall, President; Samuel Johnson, Secretary, Bordentown; Dr. Hugh Le Jambre, Inspector.
- Branchburg**, Somerset county. David H. Conover, President, Neshanic Station; William H. Higgins, Secretary, North Branch.
- ***Brick**, Ocean county. J. A. Dorsett, W. Pt. Pleasant.
- Bridgewater**, Somerset county. Peter Gulick, President; John Slatery, Clerk and Registrar, Raritan; Dr. B. T. Seaman, Inspector.
- Buena Vista**, Atlantic county. Douglas Reed, Secretary, Vineland, R. D.
- Burlington**, Burlington county. Thomas P. Birkett, President; Thomas B. Gandy, Secretary, Burlington.
- Byram**, Sussex county. George P. Hart, President; William Sickles, Secretary; both of Stanhope.
- ***Caldwell**, Essex county. Thos. J. Duffee, Clerk, Caldwell.
- ***Cedar Grove**, Essex county. H. B. Whitehorne, M.D., Secretary, Verona.
- Centre**, Camden county. Alfred E. Page, President; Joseph E. Haines, Secretary and Registrar, Mt. Ephraim.
- Chatham**, Morris county. J. Herbert Bebout, Secretary and Registrar, Chatham, R. F. D. No. 2.
- Chester**, Burlington county. Edward O. Mecklin, President; Dr. F. G. Stroud, Secretary, Moorestown; George W. Heaton, Registrar, Moorestown.
- Chester**, Morris county. Henry Riley, President; J. Cecil Hoffman, Secretary and Registrar; both of Chester.
- Chesterfield**, Burlington county. C. M. Bunting, President; Wm. Wallace, Clerk and Registrar, Crosswicks.
- Cinnaminson**, Burlington county. Howard H. Taylor, President; George C. Frank, Secretary, Riverton, R. F. D.; Thomas E. Steele, Registrar; Dr. J. V. Janey, Inspector.
- Clark**, Union county. Charles H. Brewer, President; Wm. J. Thompson, Secretary, Rahway, R. F. D. No. 1.
- ***Clementon**, Camden county. George N. Evans, Clerk and Registrar, Lindenwold.
- Clinton**, Hunterdon county. Wm. Gano, President; Thomas Biggs, Secretary and Registrar, Annandale; Dr. C. G. Boyer, Inspector.
- Commercial**, Cumberland county. H. H. Hollinger, President; M. L. Sharp, Secretary and Registrar, Port Morris.
- Cranbury**, Middlesex county. C. R. Wicoff, Registrar and Health Officer, Cranbury.
- Cranford**, Union county. Alfred H. Miller, Secretary, Cranford.
- Deerfield**, Cumberland county. E. R. Parvin, President and Registrar; H. P. Webb, M.D., Secretary; all of Deerfield.
- Delaware**, Camden county. W. B. Graft, President and Registrar; W. B. Jennings, Secretary; all of Haddonfield.
- Delaware**, Hunterdon county. Isaac Crum, President; N. V. Myers, Secretary, Sergeantsville.

*No report received.

***Delran**, Burlington county. George Friday, Clerk and Registrar, R. F. D., Riverside.

Dennis, Cape May county. Rolla Hewitt, Clerk, Ocean View; James Mason, Jr., Health Officer.

Denville, Morris county. Joseph Ellsworth, Clerk and Registrar, Denville.

***Deptford**, Gloucester county. Ellison K. Turner, Registrar, Sewell.

Dover, Ocean county. Lucien B. Gravatt, President; Theodore Fischer, Clerk; Dr. Frank Brower, Inspector; all of Toms River.

Downe, Cumberland county. Harry E. Love, President; Sheppard Campbell, Clerk and Registrar, Newport.

Engleswood, Ocean county. E. P. Brown, President; Philip R. Sprague, Secretary and Registrar, West Creek.

Eastampton, Burlington county. Harry D. Willits, President; Harry Githens, Secretary; both of Smithville.

East Amwell, Hunterdon county. Ira M. Snook, President; John J. Horn, Secretary, Hopewell.

East Brunswick, Middlesex county. C. Stults, President; H. Warnsdorfer, Secretary, New Brunswick, R. F. D. No. 3.

East Greenwich, Gloucester county. Walter Owen, President; J. C. Dausen, Clerk and Registrar; all of Mickleton.

East Windsor, Mercer county. Lemuel Black, President; Wm. Kirby, Secretary and Registrar, Etra.

Eatontown, Monmouth county. Wm. E. Carlile, President; E. W. Crater, Secretary, both of Oceanport.

Egg Harbor, Atlantic county. Wm. Hauenstein, Secretary, Absecon.

Eik, Gloucester county. Edward Miller, President; Lorenzo Nelson, Clerk and Registrar, Monroeville, R. F. D. No. 3.

***Elsinboro**, Salem county. Wm. D. Griscom, Clerk, Salem.

Evesham, Burlington county. Elmer K. Read, President; Benjamin K. Brick, Secretary; both of Marlton.

***Ewing**, Mercer county. Wallace Lanning, Clerk and Registrar, Trenton.

Fairfield, Cumberland county. James B. Mulford, President and Registrar; W. Mulford Johnson, Secretary; both of Fairton.

Florence, Burlington county. Louis Gray, President; Byron Carty, Secretary, Florence.

Frankford, Sussex county. H. E. Riddel, President; J. W. Fountain, Secretary; both of Branchville.

***Franklin**, Bergen county. C. H. Bush, Crystal Lake, Clerk and Registrar.

Franklin, Gloucester county. Chas. Chalmen, President; Chas. H. Lincoln, Clerk, Vineland, R. F. D.

Franklin, Hunterdon county. Elwood Nixon, Secretary and Registrar, Flemington; Dr. M. H. Leaver, Inspector, Quakertown.

Franklin, Somerset county. L. J. Suydam, President; Cornelius Cadmus, Secretary and Registrar, Franklin Park.

Franklin, Warren county. John H. Slack, President; C. H. Hoagland, Secretary and Registrar, Asbury.

Fredon, Sussex county. Wm. Roy, President; W. N. Westbrook, Secretary; both of Newton.

Freehold, Monmouth county. C. Arthur Burke, President; Joseph I. Thompson, Clerk, Freehold.

Frelinghuysen, Warren county. H. Albertson, President; J. Vasbinder, Clerk and Registrar, Blairstown.

***Galloway**, Atlantic county. Chester Conover, Registrar, Oceanville; Dr. C. C. Allen, Absecon.

***Glassboro**, Gloucester county. Burriss T. Tomlin, Clerk and Registrar, Glassboro.

Gloucester, Camden county. Chas. H. Fell, President, Laurel Springs; Joseph R. Powell, Clerk and Registrar, Sickleville; J. Ansen Smith, M.D., Health Officer, Blackwood.

Green, Sussex county. A. Hull, President, Huntsville; I. L. LaBar, Clerk and Registrar, Tranquility.

***Greenwich**, Cumberland county. E. P. Glaspey, Clerk and Registrar, Greenwich.

*No report received.

Greenwich, Gloucester county. James Devault, President; Jacob Allen, Secretary and Registrar, Gibbstown; Dr. Ulmer, Inspector.

Greenwich, Warren county. Asher W. Dilts, President; Jesse W. Oberly, Clerk, Stewartsville.

Haddon, Camden county. J. M. Ackley, Clerk and Registrar, 99 Cooper street, Westmont; Dr. E. B. Rogers, Inspector, Collingswood.

Hamilton, Atlantic county. C. Hazelton, President; Thompson Hoover, Secretary; Harry Jenkins, Registrar; N. C. James, Health Officer; all of Mays Landing.

Hamilton, Mercer county. Dr. F. B. Zandt, President, Hamilton Square; W. C. Rockhill Hart, Clerk, 409 Johnston avenue, Trenton; Harry N. Rogers, Registrar; James N. Reed, Inspector.

Hampton, Sussex county. J. Martin Couse, President; J. W. Thompson, Clerk, Newton.

Hanover, Morris county. Judd Condit, President; Stanley H. Lyon, Secretary and Registrar, Morris Plains.

Hardwick, Warren county. Joseph Hueston, President; A. R. Mott, Clerk, Marksboro.

Hardyston, Sussex county. Thomas D. Edsall, President; Nicholas Farber, Secretary and Registrar, Hamburg.

Harmony, Warren county. Elston R. Stoop, President; Wm. S. Hoffman, Secretary, Washington, R. F. D.; Harry B. Bossard, Inspector.

***Harrison**, Gloucester county. George S. Kier, Secretary, Richwood.

Hillsboro, Somerset county. C. V. N. Conover, President; J. E. Anderson, Secretary, Neshanic.

Hillsdale, Bergen county. Jenner Fast, President; John W. Kimmouth, Secretary; John G. Hansen, Registrar; all of Hillsdale; George Schaffer, Inspector, Hackensack.

Hillsdale, Union county. Harry R. Tindall, President; John Leyser, Secretary, Lyons Farms.

***Hohokus**, Bergen county. Albert Winter, Clerk and Registrar, Mahwah.

Holland, Hunterdon county. Samuel Vanzealous, President; Frank S. Huff, Clerk, Milford.

Holmdel, Monmouth county. Jacob Wyckoff, President; Alex L. McClees, Clerk, Holmdel.

Hope, Warren county. John C. Flumerfelt, President; C. R. Westbrook, Secretary and Registrar, Hope.

Hopewell, Cumberland county. Wm. C. Hannan, President; C. E. Bowen, Clerk and Registrar, Shiloh.

Hopewell, Mercer county. T. Quick Phillips, President; Jos. R. Burroughs, Secretary and Registrar, Pennington.

Howell, Monmouth county. Charles Polhemus, President; James H. Butcher, Secretary and Registrar, Freehold.

***Hudson county**. James L. Lynch, Secretary, Jersey City.

***Independence**, Warren county. E. Y. Williams, Registrar, Vienna.

Jackson, Ocean county. Thomas Harker, President, Cassville; Atwood Horner, Clerk, Lakewood, R. D. No. 3.

Jefferson, Morris county. Ed. McCormick, President; B. W. Bright, Secretary and Registrar, Wharton.

Kingwood, Hunterdon county. Wm. J. Hoagland, President; Wm. W. Case, Clerk and Registrar, Baptistown.

Knowlton, Warren county. Kinney Transue, President, Columbia; W. B. Gilbert, Clerk, Columbia.

***Lacey**, Ocean county. B. T. Mathews, Clerk and Registrar, Forked River.

Lafayette, Sussex county. Edward Ackerson, President; William S. Vought, Clerk and Registrar; Edgar Allen, Inspector; all of Lafayette.

Lakewood, Ocean county. George H. Hulbert, Clerk; Dr. E. G. Herbener, Health Officer; both of Lakewood.

Landis, Cumberland county. Dr. L. F. Hatch, President; Earnest E. Howe, Clerk; both of Vineland, R. D. No. 3.

Lawrence, Cumberland county. George E. Diamant, President; J. Wayne Mulford, Clerk, Cedarville; Furman Sheppard, Registrar, Cedarville.

Lawrence, Mercer county. Thos. R. Stevens, President; Frank Pierson, Secretary, Lawrenceville.

*No report received.

Lebanon, Hunterdon county. E. W. Hoover, President; Irving B. Trimmer, Secretary; both of Califon.

Linden, Union county. DeWitt C. Winans, President; Albert Webber, Secretary and Registrar; both of Linden.

Little Egg Harbor, Ocean county. Eugene Cummings, President; Jay C. Parker, Clerk and Registrar, Parkertown.

Little Falls, Passaic county. John Hammill, President; James Steel, Clerk, Little Falls.

Livingston, Essex county. Wm. Rathbun, Registrar, Livingston.

Lodi, Bergen county. John Turick, Jr., President; John Clausen, Jr., Clerk and Registrar, Sub-station No. 2, Hackensack.

Logan, Gloucester county. S. B. Platt, Clerk and Registrar, Bridgeport.

***Long Beach**, Ocean county. Jos. B. Willets, Clerk, Toms River.

***Lopatcong**, Warren county. Stanley Drake, Secretary, R. D., Phillipsburg.

Lower, Cape May county. J. Russell Hoffman, President, Fishing Creek; C. C. Bohm, Clerk and Registrar, Cold Spring.

Lower Alloways Creek, Salem county. Edward Hancock, Clerk, Hancock's Bridge.

Lower Penns Neck, Salem county. David Dixon, President; Chas. Casperson, Clerk and Registrar, Pennsville.

***Lumberton**, Burlington county. E. C. Davis, Clerk and Registrar, Hainesport.

Lyndhurst, Bergen county. Abraham Levitt, President; Clarence H. Sherwood, Secretary; Michael Healy, all of Lyndhurst.

Madison, Middlesex county. Robert Dill, President; James Fountain, Clerk, Old Bridge.

Manalapan, Monmouth county. Edward Hendrickson, President; G. B. Conover, Clerk, Englishtown.

Manchester, Ocean county. Thomas Manion, President; Dr. Harold Pittis, Clerk; all of Lakehurst.

Mannington, Salem county. Joseph B. Crispin, President; Elmer Crispin, Clerk and Registrar, Salem.

Mansfield, Burlington county. J. Herbert Deacon, President; Jos. H. Armstrong, Clerk and Registrar, Columbus.

Mansfield, Warren county. Thomas Miller, President, Hackettstown; John C. Beaty, Clerk, Port Murray.

Mantua, Gloucester county. Edward Taylor, President; Richard Kincaid, Secretary, Mantua; Dr. E. Z. Hillegass, Inspector, Mantua.

***Marlboro**, Monmouth county. J. D. Ely, M.D., Clerk, Marlboro.

Matawan, Monmouth county. Daniel Martin, Clerk, Matawan.

Maurice River, Cumberland county. Henry Reeves, Jr., Clerk and Registrar, Leesburg.

Medford, Burlington county. Joshua S. Wills, President; William M. Potts, Secretary; both of Medford.

Mendham, Morris county. S. H. Nesbitt, President; Geo. W. Savadge, Registrar; Frank Dean, Clerk, Brookside.

Middle, Cape May county. V. N. Errickson, Clerk and Registrar, Dias Creek; J. M. Dix, M.D., Reporting Officer, Cape May Court House.

Middleton, Monmouth county. Ernest H. Taylor, President, Middleton; Howard W. Roberts, Secretary, New Monmouth; Dr. O. W. Budlong, Inspector, Belford.

Midland, Bergen county. John D. Bogart, Clerk, Ridgewood, R. F. D. No. 1.

Millburn, Essex county. Charles R. Reeve, Clerk and Registrar, Millburn; D. Malcolm Lewis, Health Officer.

Millstone, Monmouth county. George J. Ely, Registrar, Ely's Corner, R. F. D., Cranbury.

Monroe, Gloucester county. John H. Little, President, Sicklerville; John W. McClure, Secretary and Registrar, Williamstown.

Monroe, Middlesex county. John D. Butcher, President, Cranbury, R. F. D. No. 3; Robert R. Vandenberg, Clerk and Registrar, Prospect Plains.

Montague, Sussex county. Lewis A. Marthis, President; George McCarty, Clerk and Registrar, R. D. No. 1, Port Jervis, N. Y.

Montgomery, Somerset county. E. L. Van Zandt, President; H. A. Duryea, Secretary, Skillman, R. F. D. No. 1; C. B. Allshouse, Registrar, Skillman.

*No report received.

Montville, Morris county. Ward Witty, President; Frank H. Starky, Secretary, Montville; Fred Van Duyne, Registrar.

***Morris**, Morris county. J. Paul Jamieson, Clerk, Morristown.

Mount Laurel, Burlington county. Lewis W. Wells, President; W. Clifford Godfrey, Clerk, Moorestown.

Mount Olive, Morris county. Hez. Smith, Clerk and Registrar, Flanders.

***Mullica**, Atlantic county. George N. Cassell, Clerk, Elwood.

Neptune, Monmouth county. Fred D. Hurley, Clerk, 120 Main avenue, Ocean Grove.

***New Hanover**, Burlington county. Chas. Remine, Secretary, Wrightstown.

New Providence, Union county. Harry G. Lucas, President; David Hardy, Clerk, Scotch Plains; George Wahl, Inspector.

Northampton, Burlington county. C. C. Couperthwait, President; M. H. Girven, Secretary, Mt. Holly; Dr. E. D. Prickett, Inspector.

North Bergen, Hudson county. Charles Morris, President; James Nolan, Clerk, 940 Hackensack Plank Road, North Bergen; Thos. Dubelbeiss, Reporting Officer.

***North Brunswick**, Middlesex county. Michael Anderson, Jr., Clerk, New Brunswick.

North Hanover, Burlington county. C. F. Warner, President; Harry Borden, Secretary, Jacobstown.

North Plainfield, Somerset county. John Herrman, Clerk and Registrar, 369 Somerset street, North Plainfield.

Ocean, Monmouth county. George E. Van Note, President; H. G. Van Note, Clerk and Registrar, Oakhurst.

Ocean, Ocean county. M. E. Johnson, President; W. B. Wilkins, Clerk, Waretown.

Oldmans, Salem county. Harvey Gaventa, President; George S. Justice, Clerk and Registrar, Pedricktown.

Orvil, Bergen county. Michael Wynne, President; W. H. Shuart, Clerk, Waldwick.

Oxford, Warren county. Dr. L. B. Hoagland, President; George Docker, Jr., Clerk and Registrar, Oxford, R. D. No. 2.

Pahaquarry, Warren county. Isaac E. Wildrick, Clerk, Mill Brook.

Palisade, Bergen county. Thos. A. Yearsley, President; George Genagenagel, Clerk and Registrar, Peetzburg.

Palmyra, Burlington county. John M. Davis, President; John W. Shade, Clerk and Registrar, Palmyra; Frederick Blackburn, Reporting Officer.

Passaic, Morris county. Henry R. King, Clerk and Registrar, Stirling.

Pemberton, Burlington county. Thos. C. Shreve, President; Barclay Seeds, Secretary and Registrar, Pemberton.

***Pensauken**, Camden county. Wm. T. Sheppard, Clerk and Registrar, Merchantville.

Pequanock, Morris county. Harry Comly, President, Lincoln Park; A. Gilland, Clerk and Registrar, Pompton Plains.

Pilesgrove, Salem county. Warren C. Richman, President; M. W. Buzby, Clerk and Registrar; Woodstown.

Piscataway, Middlesex county. Geo. W. Coriell, Registrar, New Market.

***Pittsgrove**, Salem county. George Schalick, Clerk and Registrar, Centreton.

Plumsted, Ocean county. George Hartshorn, Clerk, New Egypt; J. N. Bichler, Inspector.

***Pohatcong**, Warren county. W. I. Jacoby, Clerk and Registrar, Finesville.

***Pompton**, Passaic county. J. C. Beam, Clerk and Registrar, Midvale.

Princeton, Mercer county. Dr. E. H. Bergen, President and Inspector; John H. Warren, Clerk and Registrar, 195 Harrison street, Princeton.

Quinton, Salem county. Jos. B. Finlaw, President; C. A. Miller, Secretary, Quinton.

Randolph, Morris county. Herbert Gardner, President; Ellison Coe, Secretary and Registrar, Mt. Freedom.

Raritan, Hunterdon county. Theo. H. Dilts, Secretary and Registrar, Three Bridges.

Raritan, Middlesex county. Peter S. Meeker, President; Wm. T. Woerner, Clerk and Registrar, Metuchen.

Raritan, Monmouth county. Herman Lehr, Clerk, Keansburg.

*No report received.

Readington, Hunterdon county. W. T. Hoffman, Clerk, White House.

Riverside, Burlington county. Edward Stoops, President; Charles Heiss, Clerk, Riverside.

Riverdale, Bergen county. Lucas C. Blauvelt, Clerk, R. F. D. No. 1, Westwood.

Rockaway, Morris county. William Winters, Clerk and Registrar, Hibernia.

Roxbury, Morris county. Dr. Clarence A. Plume, President; E. N. Kilpatrick, Secretary and Registrar, Succassunna.

Saddie River, Bergen county. Isaac A. Hopper, Clerk, Fair Lawn.

Sandyston, Sussex county. A. M. De Pue, President; Dr. A. A. Ranson, Secretary, Layton.

Sayreville, Middlesex county. P. F. McCutchen, Clerk and Registrar, Sayreville.

Scotch Plains, Union county. Geo. H. Johnston, Secretary, Scotch Plains.

Shamong, Burlington county. Mahlon Prickett, Clerk, Indian Mills.

Shrewsbury, Monmouth county. Harry G. Borden, President and Registrar, Shrewsbury; George H. Lippincott, Secretary, Little Silver.

***Southampton**, Burlington county. E. O. Haines, Clerk, Vincentown.

South Brunswick, Middlesex county. Wm. Oberman, President, Deans; Wm. Perkins, Clerk and Registrar, Kingston.

South Harrison, Gloucester county. D. C. Lippincott, Clerk, Harrisonville.

South Orange, Essex county. G. Herbert Taylor, President, Maplewood; Edward R. Arcularius, Clerk; Malcolm Lewis, Reporting Officer, Maplewood; Wm. L. Holt, Health Officer.

Sparta, Sussex county. Wm. Hoffman, President; Seymore Pullis, Secretary, Andover, R. F. D.

***Springfield**, Burlington county. Dr. Lyman Hollingshead, Health Officer, Pemberton.

Springfield, Union county. Charles Ruby, President; Lewis T. Terry, Secretary and Registrar, Springfield; Dr. H. P. Dengler, Inspector.

Stafford, Ocean county. C. H. Crammer, President; George F. Pharo, Clerk and Registrar, Manahawkin.

Stillwater, Sussex county. James Kithcart, President; O. Van Horn, Secretary and Registrar, Stillwater.

Stow Creek, Cumberland county. George Schaible, President; Wm. H. Davis, Secretary and Registrar, Bridgeton, P. O. Box 54.

Tabernacle, Burlington county. Eugene F. Bowker, President; Curtis M. Alloway, Clerk, Vincentown, Route 2.

Teanack, Bergen county. William H. Bodine, President; Floyd H. Farant, Secretary, Hackensack; George F. Shafer, Inspector.

Tewksbury, Hunterdon county. John Race, President; Hez. Philhower, Clerk and Registrar, Califon.

Union, Hunterdon county. Wm. Best, President; Morris Stockton, Clerk and Registrar, Pattenburg; A. J. Hahn, M.D., Inspector.

Union, Ocean county. John W. Chew, President; Michael Olonwich, Clerk and Registrar; all of Barnegat.

***Union**, Union county. Fred Stone, Clerk and Registrar, Union.

Upper, Cape May county. Jesse T. Young, Clerk, Beesley's Point, N. J.

Upper Freehold, Monmouth county. Jos. C. Johnston, President, Allentown; G. Harry Kirby, Registrar, Allentown; John Y. Sinton, M.D., Clerk, Imlaystown.

Upper Penns Neck, Salem county. Homer I. B. Wright, Clerk, Penns Grove; A. M. Grier, Inspector.

Upper Pittsgrove, Salem county. Walter Lawrence, President; R. A. Robinson, Clerk, Monroeville.

Vernon, Sussex county. Monroe Houghtaling, President; William D. Parker, Secretary, Vernon.

Voorhees, Camden county. R. B. Stafford, Secretary, Marlton.

Wall, Monmouth county. Geo. E. Rogers, Clerk, Registrar and Inspector, Belmar.

Walpack, Sussex county. Eugene Rosenkrans, President; Nathaniel Van Auken, Clerk, Flatbrookville.

Wantage, Sussex county. Wm. S. McCoy, President; S. M. Parcell, Clerk, Sussex.

*No report received.

Warren, Somerset county. Rev. George Bowers, Secretary and Registrar, Warrenville; John W. Brockway, Health Officer.

Washington, Bergen county. J. Henry Thomas, Clerk and Registrar, Westwood.

Washington, Burlington county. James M. Crowley, President; Gilbert H. Irons, Clerk, Lower Bank.

Washington, Gloucester county. Albert Dentsen, President; G. R. Hurff, Clerk, Turnerville.

Washington, Mercer county. E. B. Yard, Secretary, Robbinsville; C. Newton Hutchinson, Registrar.

Washington, Morris county. G. H. Sliker, Secretary and Registrar, Port Murray, R. F. D.

Washington, Warren county. D. M. Wyckoff, President; E. C. Snyder, Clerk and Registrar, Washington, Box 48.

Waterford, Camden county. Wm. L. Duple, Clerk and Registrar, Atco.

Wayne, Passaic county. Wm. F. Hosier, President; Thos. D. Ryerson, Secretary and Registrar, Wayne.

Weehawken, Hudson county. Emile W. Granert, President; John W. Schuster, Clerk, Weehawken; P. J. Hennessy, Reporting Officer.

***Westhampton**, Burlington county. S. Wilbur Johnson, R. F. D. No. 2, Mt. Holly.

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West Deptford, Gloucester county. Charles H. Budd, Clerk, Thorofare.

West Milford, Passaic county. John M. Weaver, Registrar, Newfoundland.

West Windsor, Mercer county. Hiram A. Cook, Clerk, Dutch Neck; Gordon C. Tindell, Health Officer.

Weymouth, Atlantic county. H. F. Madden, Clerk, Tuckahoe.

White, Warren county. Dr. L. B. Hoagland, President; D. S. Spangenberg, Clerk and Registrar, Belvidere.

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Winslow, Camden county. Frederick Priestly, President; James T. Russell, Secretary and Registrar, Cedar Brook, N. J.

Woodbridge, Middlesex county. B. J. Dunigan, President; B. C. Baldwin, Clerk, Woodbridge; J. H. Concannon, Inspector, Woodbridge.

Woodland, Burlington county. Walter Sloan, President; Jacob Dunfee, Clerk and Registrar, Chatsworth.

Woolwich, Gloucester county. A. A. Bradshaw, President; T. W. Hendrickson, Secretary and Registrar, Swedesboro.

*No report received.

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