

FIFTY-SECOND ANNUAL REPORT

OF THE

Department of Health

OF THE

STATE OF NEW JERSEY

1929



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The offices of the Department are in the State House,
Trenton

TRENTON, N. J., August 15, 1929.

To the Senate and General Assembly of the State of New Jersey:

As required by law, I have the honor of submitting herewith the Annual Report of the Department of Health, together with accompanying important documents, for the fiscal year ending June 30, 1929.

CHARLES I. LAFFERTY,
President,
State Department of Health.

TRENTON, N. J. September 18, 1929.

To the Department of Health of the State of New Jersey:

GENTLEMEN—I have the honor to submit herewith my Annual Report for the fiscal year ending June 30, 1929. Accompanying it are the reports of the Bureau Chiefs, which give comprehensive accounts of the activities of the ten Bureaus of the Department during the year.

Respectfully submitted,
D. C. BOWEN,
Director of Health.

Report of the Director

New Jersey was relatively free from serious epidemics of disease during the year which ended June 30, 1929. The outbreak of influenza which crossed the country from west to east reached this State in January, but proved much less severe than the one experienced eight years before. The prevalence of measles was far above normal, but reported cases of the other communicable diseases were either slightly above or somewhat below the expected figure. The death rate for the year 1928 was 12.04 per 1,000 population, about half a point higher than the lowest rate yet attained in the State.

If the year's work of the State Department of Health be sifted to separate the routine activities from those of outstanding importance, a number of activities will remain to mark the year as one of real accomplishment in New Jersey. Among these activities the following deserve special mention.

I

The control of physical connections between public potable water supplies and other, unapproved supplies was secured by Chapter XIII of the State Sanitary Code, adopted during the year. Outbreaks of typhoid fever traced to pollution reaching public water systems through cross connections with impure water supplies have repeatedly proved the danger of such connections. The new regulation prohibited new cross connections and required that those in use be equipped with all bronze double check valves of an approved type if they were to be retained. Such check valves are allowed only on yearly permit which must be approved by the local board of health, the local water department or company and by the State Department of Health.

II

The one extensive outbreak of typhoid fever which occurred in New Jersey during the year was promptly traced, by epidemiologists of the Department, to infected chicken salad, and a typhoid carrier was identified among the persons who helped prepare the salad. Thirty-six known cases occurred, four of which were fatal. The outbreak was the second in recent years which resulted from chicken salad served at church suppers, after being prepared by groups of women and presumably infected in the course of handling the warm chicken meat on the day before the meals were served. The opportunity for the transfer of typhoid infection from the hands of a mild case or carrier to the moist chicken meat which is partly removed from the bones by hand, is obvious. Incubation of the typhoid bacilli on the moist, warm particles of meat, which are hard to cool when packed tightly in containers, is likely to increase the dose of infection received by consumers of the salad. These two outbreaks

emphasize the necessity of exercising great care in the preparation of food served at public suppers and especially to the need of thorough hand washing before handling food and after each visit to the toilet.

III

The State wide diphtheria prevention campaign, in which the Department has taken an active part for several years, was continued and reports show that during the calendar year 1928, over 125,000 children in New Jersey were given immunizing treatments of toxin-antitoxin at public clinics. This number is almost equal to the total number of children given similar treatments in the preceding seven years, which figure was approximately 133,000. Public offers of toxin-antitoxin or toxoid treatments had been made by 290 of the 556 cities, boroughs and townships in the State up to January 1, 1929. It may be stated safely that at the end of June 275,000 children had been given toxin-antitoxin at local public clinics in New Jersey. The great impetus given this splendid work during the last year was probably due to several factors, among them being the program of education and the clinic demonstrations carried on by State and local health officials for several years, and the active participation in the campaign last year by the New Jersey Committee for the Prevention of Diphtheria.

IV

The microscopic examination of milk to detect evidence of mastitis in the herd which produced the milk or of faulty handling of the product was carried on extensively during the year. The value of this method of milk supervision is far-reaching. The testing is so rapid that valuable time is saved. By concentrating the field work of a limited staff upon those dairies which tests have already shown are distributing infected or dirty milk, effort is put where it is needed most. The veterinarian goes to the dairyman, not as one looking for something to criticize, but as an expert anxious to help him correct troubles already known to exist. Experience has shown that the dairyman will usually cooperate whole-heartedly when the visit is viewed in this way. The early detection of mastitis helps to safeguard the

public against one type of milk-borne infection and at the same time protects the dairy farmer against heavy financial loss, should the infection spread through his herd. Finally, in the process of locating and correcting the faulty conditions at the dairy, the tactful inspector finds many opportunities to give practical suggestions that will aid the dairyman in producing cleaner and safer milk.

V

Over a million clams were removed from the sewage polluted waters west of Wildwood and transplanted to safe waters, under the supervision of the Department. This practice, which was successfully tried out four years ago in another condemned area, not only conserved \$25,000 worth of shellfish, but also removed the temptation for surreptitious gathering and marketing of dangerously polluted clams, and afforded work for a considerable number of baymen. The polluted bay waters adjacent to some of New Jersey's seashore resorts, being condemned for the gathering of shellfish, furnish excellent breeding and growing areas for clams and oysters. By permitting, from time to time, and supervising the transplanting of these shellfish to uncontaminated waters, the Department is able to carry on a constructive piece of practical sanitation and education at small expense.

VI

For fifty years, the Bureau of Vital Statistics of the Department has received, tabulated, indexed and filed the records of births, marriages and deaths in New Jersey. Since 1878, when these duties, together with records for the previous thirty years, were surrendered to the Bureau by the Secretary of State, many changes have taken place, both in the State and in statistical practice. New Jersey has tripled in population, the number of certificates received annually has increased 200 per cent, tabulating machinery has replaced mental and manual calculation to a large extent and standard methods of reporting and classification have been adopted in most civilized countries. During the half century, the birth rate in New Jersey has shown a slight decline, the marriage rate an increase of approximately 14 per cent and

the death rate a decrease of 40 per cent. The number of records filed in the vaults of the bureau is approximately seven million.

VII

A marked improvement in the sanitation of restaurant and hotel kitchens has resulted from the program of inspection inaugurated five years ago. Not only are the kitchens, utensils and other equipment kept in a cleaner condition but many restaurant and hotel proprietors show an attitude of genuine interest and pride in maintaining clean establishments. The inspection service last year was performed by a small staff which worked in cooperation with local boards of health. During the summer, attention was given to seashore resorts and during the remaining months, the inland cities and towns were visited. It is realized that if a thorough physical examination of the food handlers themselves could be made and specimens secured and examined to detect carriers of certain communicable diseases, a still greater safeguard would be afforded residents and visitors to the State. To carry out such a program so that the examination would be practical and effective is far too formidable a task to be undertaken at this time on a State-wide basis. Indeed, should a local board of health wish to attempt so ambitious a program in a small community, it should consider well the obstacles in the way.

VIII

The year's progress in child hygiene and maternal welfare was shown by an increase in the number of communities which assumed the salary of a nurse, an increase in the number of expectant mothers who sought the guidance of child hygiene nurses and an extension of the courses in preventive child hygiene, given for four years at State Normal Schools, to student nurses training in New Jersey hospitals. These courses for nurses were conducted in two sections of the State last year. One hundred and twenty-six nurses carried on the child hygiene program under the supervision of the Department. Only 20 of these were paid wholly from State funds; ten were paid partly by the State and 96 were supported entirely by the communities which they served.

The education and the direction of the work of midwives, which has been carried out so successfully in New Jersey for many years, has resulted in fewer midwives, and in greatly improved standards of practice and equipment. In the last ten years, the proportion of total births attended by midwives has decreased from 42.2 per cent in 1918 to 18.1 per cent in 1928. The belief held by some persons that the practice of midwives is responsible for the high maternal mortality which obtains practically throughout the United States does not appear warranted by experience in this State. Although 18 per cent of the births were attended by midwives in 1928, only four per cent of the puerperal deaths were among mothers whom midwives attended.

IX

The increased number of specimens of feces, urine and of cultures from well persons examined in the bacteriological laboratory of the Department indicates a more general appreciation of the fact that carriers and mild unrecognized cases of typhoid fever and diphtheria cause many cases of these preventable diseases. The discharges from recovered cases of typhoid fever, submitted as "release" specimens as required by Regulation 34-A, Chapter VI of the State Sanitary Code, and specimens from dairy workers on certified milk plants composed the greater part of the 2,712 such specimens examined for typhoid bacilli last year. A part of the year's increase of nearly 600 specimens was due to an arrangement made with two associations of cattle breeders from the examination of specimens from employees and others handling milk on the premises of their members. The acceptance of this service was purely voluntary, and indicated the desire of members of the associations to surround the production of milk from accredited herds on their premises with all possible safeguards.

X

Undulant fever was recognized in New Jersey for the first time in March, 1929 and between then and the end of June, eight cases were diagnosed. These cases developed in seven counties. Although definite sources of infection were not fixed, at least four

of the cases used raw milk regularly and might have received infection from it. One case was in daily contact with swine, another possible source of infection. The fact that cases of prolonged human illness are caused by Br. abortus, and that dairy cattle affected with contagious abortion, a common disease in New Jersey, harbor these organisms, emphasizes anew the desirability of safeguarding milk by pasteurization. Blood tests for undulant fever and for tularemia were added to the list of diagnostic examinations which the Department laboratory is prepared to make. For two years past Widal tests on blood taken from cases of suspected typhoid fever have been tested routinely for agglutination with the two paratyphoid organisms. These four differential tests should help physicians make correct diagnoses in many puzzling cases of prolonged fever.

XI

The program of venereal disease control conducted by the Department rests on two principal activities. The first is the detection of sources of infection, really a case finding program, with subsequent treatment of infectious persons by physicians of their choice or at one of the clinics conducted by 25 cities and towns in the State. The second comprises instruction of the public as to the facts regarding sex and the venereal diseases. A well rounded series of talks has been arranged suitable for parents, for adolescent boys and girls and for young men and women. During the year 285 groups, composed of more than 28,000 individuals, heard these talks. The favorable reception which the public has given this instruction indicates their approval of the plan and the way the facts have been presented. Demonstration clinics at which the newer drugs and methods used in the treatment of syphilis and gonorrhoea were demonstrated to physicians were held in four counties during the year. These clinics were conducted at hospitals and were made possible by the hearty cooperation of local physicians and hospital officials. In nearly 10,000 cases reports of venereal diseases received by the Department during the year only 393 gave the source of infection as required by law.

XII

The annual courses offered jointly by Rutgers University and the State Department of Health for the professional education of persons engaged in public health work in New Jersey were attended last year by 42 health officials. At the two weeks' intensive course for sewage plant operators, held in midwinter, 19 students were given laboratory experience and lectures on sewage treatment, practice and theory. The summer courses for health officers, inspectors and nurses, which began in June, gave practical instruction to 23 employees of local boards of health or of other organizations in New Jersey. These courses require a degree of application, study and thought on the part of the student which demands real effort. As a result, there has been created during the last few years a considerable group of men and women in local health departments who not only carry out routine procedures with new interest but have a broader point of view and greater ability to think constructively of their problems. The close contact between these groups and the State Department of Health favors a State-wide cooperating health service which should become more effective each year.

XIII

The examiners appointed by the Department as required by law examined during the year 324 persons who desired to be licensed as health officers, inspectors or as operators of sewage disposal or water treatment plants. Only 98 or about 30 per cent of these candidates were able to obtain a mark of 70 or more in the written and oral tests. The examinations were comprehensive and tested the technical knowledge of the candidates but should have been passed with credit by any person qualified for the duties he wished to assume. The conclusion seems justified that were it not for this barrier, many unqualified persons might obtain positions which actually demand specialized training of a high order. Now that any person engaged in or wishing to enter public health work may secure instruction in New Jersey at very moderate cost and without serious interference with his daily work, the excuse for employing untrained persons is even less than heretofore. In

fact, the time may not be far distant when the requirements for licenses should be raised.

XIV

The newspapers during the last year have been generous in giving space to accounts of the activities and to recommendations of the Department, and also to editorials on public health problems. The increased publicity has no doubt been due in a considerable degree to the fact that the news items have been prepared in a manner acceptable to the press and were distributed through the proper channels.

HAS THE COURSE BEEN STRAIGHT?

Next to listing the signal achievements of the year, an important function of an annual survey is to sight back over a period to see if progress has been in a reasonably straight line or if the pressure of public demand or the vacuum of least resistance has bent the course to one side or the other. Looking back over several years a deflection in the work of the Department due perhaps to both causes, can be noticed.

The functions of local health departments in New Jersey were classified recently as mandatory, delegated and promotive. Mandatory functions need no clearer definition; delegated functions consist of those powers and duties which health boards may legally exercise if they see fit but are not mandatory, and promotive functions include activities not dealt with by statute but deemed expedient to promote sound public health programs. Functions of the State Department of Health are, for the most part, mandatory and promotive.

Promotive activities, such as educational campaigns, specialized programs dealing with certain age groups, selected diseases or limited aspects of State-wide sanitary problems have a dramatic appeal which arouses public interest, creates favorable press comment and secures increased appropriations. They are entirely proper and such activities have helped to create a new standard of public health service in which the goal is positive, robust health rather than mere disease prevention or nuisance statement.

However, when the healthy growth of these well supported programs is accompanied year after year by a lack of funds to carry out duties imposed by law, a Department gradually becomes immersed in a group of laudable activities but unable to carry out the duties with which it is charged.

The deflection referred to consists of a tendency to support and develop promotive activities without providing adequately for the discharge of fundamental mandatory duties imposed by law. Such development is not sound. The newer fields of public health should be tilled according to their yield, but a State Department is first of all a creature of law, charged with the enforcement of laws. In apportioning appropriations, therefore, consideration should be given first to executing the mandatory functions of the Department which have lost none of their original importance.

NEEDS

The technical staff of a health department is engaged in scientific work which must be done with extreme accuracy, painstaking care and usually without delay if the results are to be of the greatest value. The health of individuals and communities depends upon the findings of bacteriologists, chemists, engineers and their assistants. The need of comfortable working quarters, adequate room for laboratory apparatus and freedom from unnecessary distractions for scientific workers seems axiomatic. Although attention has been called, for a number of years, to the crowded and uncomfortable condition of the laboratories and some of the offices of the Department, no relief has yet been afforded. Meanwhile more and more work must be done each year, and additional employees placed in rooms which are already crowded. The need of additional room, particularly for the laboratory of the Department is a most urgent one.

Citizens who request but sometimes do not receive reasonable service might place more emphasis on the need of sufficient personnel in certain bureaus to carry out the mandatory activities of the Department. The work required of the Bureau of Engineering has increased greatly in recent years. The annual number of plans for costly public works which must be examined, checked and approved has increased seven fold in fifteen years, and in

that period the number of water and sewage plants which should be visited and supervised has nearly doubled, and the number of laws which the Department enforces through the bureau has increased from eight to sixteen. Recent appropriations have provided for six men to do all the technical work of the bureau. In 1914 there were ten. Of course, six men cannot do all that is required; so work of fundamental importance, for which the Department is responsible, has to be neglected.

Two district health officers, directed by the Bureau of Local Health Administration carry on the field work of that bureau and cooperate with local health boards in five counties. In the remaining counties, such work of this nature as the bureau can attempt is assigned to the two epidemiologists of the Department who carry on these, together with many other duties, from the Trenton office. The resulting delay in responding to reasonable requests and very often inability to respond at all, can be readily understood. Yet much of the work which this bureau should do but cannot for lack of an adequate staff is not permissive but mandatory. The enforcement of the provisions of the State Sanitary Code which the law places on the Department and which should be a function of this Bureau is a striking example of a duty which cannot be discharged for lack of men. To give the 16 counties the same service which the others now have will require four more district health officers.

Other needs exist but are less urgent than the two just described. In fairness to the Department, on which great responsibility has been placed, to the employees, many of whom give freely of their time outside of regular hours, and to the citizens of the State, these two needs should be met without delay.

PROBLEMS AND ACTIVITIES OF THE YEAR

The ten bureaus of the Department describe in their annual reports, numerous activities and problems which are of more than passing interest but are not included in the opening paragraphs of this review. The water and sewage laboratory, for example, discovered that the reason why *B. coli* were not being killed completely in certain chlorinated water supplies was an error in reading the tests which fixed the dose of chlorine. Experiments

proved that this error was due to the presence of manganese salts in these waters which caused a slight color and interfered with reading the delicate chlorine test. A method for testing waters for manganese was developed and with its aid the correct dose of chlorine can be found.

Roadside refreshment stands supply a service which travelers by automobile desire and need. At the same time each stand that is insanitary or serves contaminated food or polluted water is a menace to its patrons. A survey of 98 refreshment stands in Monmouth County indicated that most of the stands were reasonably clean and were conducted by persons who were personally clean. Provisions for keeping foods cold and free from flies were made. The water supplies at most stands were local wells. Laboratory tests of samples from 76 of these indicated that 23 were safe, 20 were of questionable purity and 33, or nearly half, were more or less contaminated. Privies were usually provided for public use and in more than half, flies could reach the excrement through holes in the vaults, uncovered seats or both. The filthy condition of some public toilets may not be due to lack of care by the stand proprietor, for persons who patronize public toilets all too frequently misuse the accommodation furnished them and also fail to close the seat cover. A few stands of superior design and construction were equipped with wash rooms, flush toilets and commodious lunch rooms. Violations of the State Sanitary Code were called to the attention of local boards of health.

Pollution by sewage plant effluents of the ocean or adjacent bays along the New Jersey coast was shown by investigation to be such that more complete purification should be provided by certain municipalities. Suitable action was taken by the Department to require nine seashore municipalities to augment their facilities for sewage disposal, either by the construction or enlargement of treatment plants or the chlorination of the effluent or both.

The effect of commercial handling and subsequent wet storage of hibernating oysters at Maurice River was studied during the winter months. This investigation was conducted jointly by the New Jersey State Department of Health, the U. S. Public Health

Service and the New Jersey Oyster Research Laboratory. Tests of oysters stored for periods of one, two and three days at Long Reach confirmed the findings made by this Department a year previous; namely, that hibernating oysters are disturbed so little by handling when the water temperature is five degrees C. or below, that very small quantities of overlying water enter the shell cavity. Calculation indicated that when oyster is biologically active in warm weather, it passes through its shell in one day 25,000 times as much water as during three days storage under winter conditions.

Th scope and nature of public health work is such that a local board of health cannot carry out an effective, sustained program unless it has qualified agents to act under its direction. A study made during the year and based on the annual reports for 1928, made by 528 local health boards to this Department, indicated that 364 or 68% of these boards did not employ a health officer or executive officer, licensed or unlicensed on either full or part time. Practically all of these boards, 359 to be exact, represented boroughs and townships having less than 10,000 population. These facts help to explain why residents of small communities in New Jersey are not given the same type of service or the same degree of protection by their health departments as city dwellers enjoy. The reason lies in the inability of a small political unit to maintain, at reasonable cost, a health department which will function effectively. Larger sanitary districts are the remedy.

During the last fiscal year from July 1, 1928 to June 30, 1929, extensions of time were granted for the storage of foods in the following cases:

14,773 Cans of frozen egg,	30 lbs. to can,	Extension 1 month
4 Cases desiccated egg,	100 lbs. to case,	" 1 "
1,729 Boxes poultry,	30 lbs. to box,	" 1 "

In each case where extensions of time were granted the articles were examined and found to be in suitable condition for the additional period of storage.

In each case the reason for the request for additional storage was the fact that the supply of food stored exceeded the demand.

Report of Bureau of Administration

For Year Ending June 30, 1929

CHARLES J. MERRELL, CHIEF

The term of Clyde Potts, C. E., of Morristown, and J. Lynn Mahaffey, M. D., of Camden, members of the Department, expired on July 1, 1929. Dr. Mahaffey was reappointed by Governor Larson last winter to serve for another term of four years, and Frank S. Tainter, C. E., of Far Hills, was appointed for a term of four years in place of Mr. Potts. At the organization meeting of the Department on July 2, 1929, the members in expressing their regret concerning the retirement of Mr. Potts adopted the following preamble and resolutions:

WHEREAS, Clyde Potts, C. E., has rendered faithful and efficient service as a member of the Department of Health of the State of New Jersey for the past fourteen years and has served with noteworthy distinction as President of the Board for the past four years; and

WHEREAS, He is now discontinuing his service as a member of the Department and it will be necessary for us to sever our close association with him as Members of the Board; therefore, be it

Resolved, That we hereby express our sincere regret that it has become necessary for him to retire as a member of the Board and that we shall lose the benefit of his good judgment and genial personality.

Be It Further Resolved, That we hereby express our high esteem for him and our great appreciation of his personal qualities of fairness and integrity, his high standing as a member of the engineer profession and the wise counsel which he has given to the members of the Board on all questions coming before it for decision, his unflinching kindness and the eminently fair and impartial manner in which he has served as President of the Board and presided as Chairman of our meetings.

Be It Further Resolved, That we extend to him our best wishes for his future happiness and success and that a copy of these resolutions be spread on the minutes of the Board.

At the meeting above mentioned Mr. Charles I. Lafferty, of Atlantic City, was elected President, and Harold J. Harder, C. E., of Paterson, Vice-President for the coming year.

At the meeting of the Department on May 7, 1929, the following named members were appointed to serve as Supervising Committees over the various Bureaus of the Department:

Bureau of Administration, Mr. Chandler.
 Bureau of Bacteriology, Dr. McDonald.
 Bureau of Chemistry, Mr. Lafferty.
 Bureau of Child Hygiene, Miss MacNaughton, Chairman,
 Mrs. Berry, Dr. Cosgrove.
 Bureau of Engineering, Mr. Harder.
 Bureau of Food and Drugs, Dr. Winter.
 Bureau of Local Health Administration, Mr. Potts.
 Bureau of Publicity, Dr. Guthrie.
 Bureau of Venereal Disease Control, Dr. Mahaffey.
 Bureau of Vital Statistics, Dr. Cosgrove.

On October 30, 1928, the resignation of Dr. Raymond S. Patterson, who served as Chief of the Bureau of Venereal Disease Control for over six years and who resigned to accept the position of Director of the Life Extension Service of the John Hancock Life Insurance Company, was accepted by the Department to take effect on October 31, 1928, and the following preamble and resolutions were adopted:

WHEREAS, Dr. R. S. Patterson, Chief of the Bureau of Venereal Disease Control of this Department, has tendered his resignation to take effect October 31, 1928, in order to accept a more lucrative position elsewhere; therefore, be it

Resolved, That the members of this Department hereby express their sincere appreciation of the faithful, efficient and highly satisfactory service rendered by Dr. Patterson as Chief of the Bureau of Venereal Disease Control, as a member of the Board of Examiners of Health Officers and Sanitary Inspectors, and also in connection with the preparation and printing of the Public Health News, the monthly bulletin of this Department, and extend to him their heartiest wishes for his future success.

Be It Further Resolved, That these resolutions be spread on the minutes of the Department and a copy of the same forwarded to Dr. Patterson.

At the meeting of the Department on May 7, 1929, Mr. William Sampson was appointed Chief of the Bureau of Venereal Disease Control, pending promotional examination by the

Civil Service Commission, and Mr. Carl W. Daines was transferred from the Bureau of Child Hygiene to the position of Acting Supervisor of Education and Publicity in the Bureau of Venereal Disease Control. At the meeting of the Department on June 4, 1929, a communication was received from the Civil Service Commission to the effect that the Commission had approved the appointment of Mr. Sampson as Chief of the Bureau of Venereal Disease Control without further examination and had also approved of the transfer of Mr. Daines as above stated.

APPROPRIATIONS

Appropriations for the work of the Department have been granted by the Legislature for the last five years as follows: For the year ending June 30, 1926, \$329,220; 1927, \$333,780; 1928, \$362,190; 1929, \$375,249; 1930, \$416,978.

While urgent requests have been made by the Department from year to year for larger appropriations to enable it to appoint additional employees to carry on an enlarged program of health work as demanded by the public, these requests have been denied, and the funds granted have merely been sufficient to meet the natural increases in the lines of work, which the Department is required by law to perform. The larger amount granted for the year ending June 30, 1930, is due to the fact that the Federal funds, amounting to \$31,284.55 heretofore granted yearly under the provisions of the Sheppard-Towner Bill, for the work of the Child Hygiene Bureau, have now been discontinued and an increased appropriation for this work was, therefore, made by the State.

ANIMAL EXPERIMENTATION

Application was received from the Princeton University, Princeton, New Jersey, for permission to conduct experiments on animals in the Laboratory of Biology of said University and a permit in the following form was granted by the Department in response to said application:

To All to Whom These Presents Come, Greeting:

The Princeton University of Princeton, New Jersey, having presented to this Department, a petition for authority to carry on within the State of New Jersey, scientific experiments or investigations as provided in Chapter 160 of the Laws of 1915, entitled "An Act to amend an Act entitled 'An Act for the prevention of cruelty to animals,' approved March 11th, one thousand eight hundred and eighty", wherein it is set forth that it is desired to conduct in the Department of Biology of said University, experiments in the fields of physiology, parasitology and bacteriology on various animals, such experiments to be conducted in the Laboratory of Biology, Princeton University and under the direction of the professors of that department.

This is to certify that the Department of Health of the State of New Jersey, by virtue of the power conferred upon it by Chapter 160 of the Laws of 1915, aforesaid, hereby authorizes the said Princeton University to carry on scientific demonstrations, experiments and investigations, as above indicated, in the Laboratory of the Department of Biology of said Princeton University at Princeton, in the County of Mercer and State of New Jersey.

Dated, Trenton, New Jersey
This eighth day of January, 1929.

The Department of Health of the State of New Jersey,

By: CLYDE POTTS, *President*
D. C. BOWEN, *Director*

BOARD OF EXAMINERS AND EXAMINATIONS

On October 30, 1928, Wallace T. Eakins of the State Department of Health was appointed a member of the Board of Examiners and Health Officers and Sanitary Inspectors to fill the vacancy caused by the resignation of Dr. R. S. Patterson, and on April 2, 1929, Andrew J. McGookin, Newark; James J. Hagan, Jersey City; A. I. Goehrig and Wallace T. Eakins of the Department, were appointed as members of the Board of Examiners for the coming year. The appointment of the fifth member of the Board was deferred until a later date. Mr. McGookin was continued as President and Mr. Goehrig as Secretary.

Examinations were held on the last Friday of July, October, January and April during the year. No special examinations were conducted. The Board cooperated with the State Civil Service Commission, however, in the holding of several joint ex-

aminations on the regular dates above referred to. Applicants were examined and licenses issued to those securing a general average of 70% or more as follows: Health Officers, examined 26, licensed 11; Sanitary Inspectors of the First Class, examined 161, licensed 24; Plumbing Inspectors, examined 62, licensed 21; Food and Drug Inspectors, examined 2, licensed 1; Dairy Inspectors, examined 1, licensed 1; Milk Inspectors, examined 1, licensed none; Meat Inspectors, examined 11, licensed 3.

TUBERCULOSIS HOSPITAL

Application was made to the Department by the Deborah Jewish Consumptive Relief Society for permission to locate a tuberculosis sanatorium in the Borough of Hopatcong, Sussex County, New Jersey. A hearing on the application was given by the Department in the Public School Building in Hopatcong on August 7, 1928, at which hearing a large number of residents of Hopatcong and vicinity appeared to protest against the granting of the application. Following the hearing, an inspection of the proposed site for the sanatorium was made by members of the Department. At a meeting of the Department on September 18, 1928, report of the hearing and inspection was submitted and the application to establish the sanatorium was denied. The Deborah Jewish Consumptive Relief Society is now seeking action through the courts to have the decision of the Department in this case reversed.

CEMETERIES AND MAUSOLEUMS

An appeal was made to the Department by citizens of East Hanover Township, Morris County, for reversal of the action taken by the local officials of Hanover Township in passing ordinances granting consent to the Oak Lawn Cemetery Association and the Pine Tree Cemetery Association to locate cemeteries in East Hanover Township, said action having been taken by Hanover Township just prior to the time when an act of the Legislature setting aside a portion of Hanover Township to be known as East Hanover Township became effective. The Department gave a very lengthy public hearing on said appeal in the State House, Trenton, on July 3, 1928, to the protestants and to

representatives of the Cemetery Associations and of Hanover Township. On October 30, 1928, the application was denied and permits were given for the establishment of the cemeteries.

On September 11, 1928, a hearing was given by the Department in the State House, Trenton, to interested persons relative to the application of Julius Scharff, of Newark, for reversal of the decision of the local officials of Bernards Township, Somerset County, in refusing to grant consent to him to establish a cemetery in said township. Report of inspection of the proposed site, together with protests from the officials of Bernards Township and others to the effect that the proposed cemetery was a commercial proposition and there was no local need for the same, were received by the Department and on January 8, 1929, the application was denied.

An application was received by the Department on behalf of Arthur Herrington and others for reversal of the decision of the local officials of Florham Park, Morris County, in refusing to grant consent for the establishment of a cemetery within the limits of said borough, and a public hearing on said application was given by the Department in the State House, Trenton, on December 4, 1928. Objections to the establishment of the cemetery, as well as statements showing a local need for the same, were submitted at this hearing and on February 4, 1929, the application for reversal of the decision of the local officials of Florham Park was granted and permission was given for the establishment of the cemetery. The authorities of the borough have begun action in the court to have the decision of the Department reversed and the case is now pending.

In response to the application of the Fairmount Cemetery Association, of Newark, a final certificate of approval for the construction of the Fairmount Mausoleum in the Fairmount Cemetery, Newark, was granted by the Department on July 3, 1928, in accordance with the provisions of Chapter 233 of the Laws of 1916 and the attention of the Department of Health of the City of Newark was called to the requirements of Paragraph 5 of said law relating to the establishment of a trust fund for the perpetuation of said mausoleum.

ANNUAL CONFERENCES

On February 15, 1929, the Nineteenth Annual Conference of State and Local Health Officials was held in the State House, Trenton. At the afternoon session papers were read by Dr. G. W. McCoy, Director, Hygienic Laboratory, U. S. Public Health Service, on the subject of Undulant Fever; Dr. Raymond S. Patterson, Director, Health Education, John Hancock Mutual Life Insurance Company on Principles of Public Health Education and I. Russell Riker and Charles M. Nichols, Engineers of the New Jersey State Department of Health, on Regulation of Physical Connections between approved Public Water Supplies and Auxiliary Supplies. Three members of the Graduating Class of the summer course in Public Health Administration, given by the State Department of Health at New Brunswick in cooperation with Rutgers University, gave very interesting short addresses telling what the summer course had meant to them and expressing their application of the opportunity afforded for the taking of such a course.

At the evening session Peter K. Olitsky, M. D., of the Rockefeller Institute for Medical Research, read a paper on Influenza and Mr. F. S. Mathewson, Superintendent of Recreation, Union County Park Commission, gave a talk on the subject of The Public Health Value of an Organized Recreation Program.

Motion pictures were shown in connection with the program and while the attendance was not large the sessions proved interesting to those present.

At the Annual Meeting of the Health Officers' Association of New Jersey held on Saturday morning, February 16th, the address of the retiring President, Mr. Frank J. Osborne, of East Orange, was given and officers for the new year were elected as follows: President, William C. Blake, Health Officer of Princeton; Vice President, F. P. Lee, M. D., Health Officer of Paterson; Secretary, Eugene H. Sullivan, Health Officer of Nutley; Treasurer, N. J. R. Chandler, Health Officer of Plainfield; Chairman of Executive Committee, S. A. Salasin, M. D., Health Officer of Atlantic City.

The Fifty-fourth Annual Meeting of the New Jersey Public Health and Sanitary Association was held at the Princeton Inn, Princeton, New Jersey, on December 7th and 8th, 1928. B. S. Pollak, M. D., Secaucus, President of the Association, presided and a number of interesting addresses and papers were given. A special committee appointed by the Association consisting of C. G. Wigley, C. E., Chairman; Frank W. Green and Edmund B. Bessaleiver, presented the following preamble and resolution, which was unanimously adopted by the Association:

WHEREAS, The discharge of increasing quantities of trade wastes are adversely affecting the water resources of the State of New Jersey, thereby injuring the citizens thereof, in their health, comfort and property; and,

WHEREAS, It is apparent that certain manufacturers have refused to locate in this State, due to anticipated difficulty in disposing of trade wastes; be it

Resolved, That the New Jersey Public Health and Sanitary Association recommends, to the Governor and Legislature of this State, the enactment of a law giving the necessary authority and providing an appropriation for the inspection and study of trade wastes, so that effective methods for the treatment of trade wastes may be developed, such work to be carried on jointly by the Department of Health of the State and the New Jersey Agricultural Experiment Station.

Mr. B. H. Obert, Health Officer of Asbury Park, was elected President of the Association for the coming year.

LEGISLATION

The following bills of interest to health officials were introduced at the last session of the Legislature:

Senate Bill No. 11, authorizing any county and one or more municipalities or school districts to enter into a joint contract for public health service for a period not exceeding three years. This bill became a law, Chapter 148.

Senate Bill No. 20, providing that circuit court judges may perform marriage ceremonies. This bill became a law, Chapter 149.

Senate Bill No. 22, amending district water supply act by eliminating provision making it unlawful for municipality within water supply district, represented by district commission, to ob-

tain new or additional water supply without consent of said district water supply commission. This bill failed to pass.

Senate Bill No. 44, governing practice of osteopathy; permitting abbreviation of word "doctor" (Dr.) by osteopaths; providing for examination of those who practice surgery. This bill failed to pass.

Senate Bill No. 74, permitting county without county hospital to assist in maintaining buildings for contagious diseases of another hospital. This bill became a law, Chapter 218.

Senate Bill No. 205, limiting to 48 hours period in which raw and natural milk and grade "A" pasteurized milk may be offered for sale after production. This bill failed to pass.

Senate Bill No. 207, permitting sterilization of certain institutional inmates. This bill failed to pass.

Senate Bill No. 237, repealing act for establishment of county boards of health, Hudson County the only county with such board. This bill passed the Senate and the Assembly, but the Governor failed to sign it and, therefore, it did not become a law.

Senate Joint Resolution No. 17, instructing the Attorney General to investigate pollution of the Delaware River and other interstate streams. This resolution was adopted, Chapter JR15.

Senate Joint Resolution No. 18, instructing the Attorney General to investigate dumping and disposal of garbage at sea. This resolution was adopted, Chapter JR16.

Assembly Bill No. 25, uniting under one control osteopaths, chiropractors and naturopaths and providing for the licensing of such persons. This bill failed to pass.

Assembly Bill No. 42, providing for the retirement on pension of public health officers or other chief officer of a local board of health in municipalities after 25 years continuous service and having reached the age of 65 years. This bill failed to pass.

Assembly Bill No. 49, vesting in the Governor the power of appointment to Mosquito Extermination Commissions and providing for control of appropriations made to such bodies. This bill failed to pass.

Assembly Bill No. 54, providing for sterilization of inmates of State Institutions in certain cases. This bill failed to pass.

Assembly Bill No. 60, prohibiting any one person from holding at the same time office of township committeeman and membership on the local or district school board. This bill failed to pass.

Assembly Bill No. 97, amending the act regulating "Undertaking and eliminating the requirement of embalming except after death from a contagious disease." This bill failed to pass.

Assembly Bill No. 103, vesting in municipalities the control of cemeteries. This bill failed to pass.

Assembly Bill No. 104, amending the act regulating the incorporation of rural cemeteries so as to permit five instead of three within specified area. This bill became a law, Chapter 20.

Assembly Bill No. 142, providing for the signing of death certificates before the burial of a deceased and permitting local registrars of vital statistics to be deputized by the State registrar to enforce birth and death registration laws. This bill failed to pass.

Assembly Bill No. 145, regulating the practice of naturopathy. This bill failed to pass.

Assembly Bill No. 161, providing for the licensing of plumbers, the inspection and supervision of plumbing, the establishment of a State Plumbing Code and providing penalties for violation. This bill failed to pass.

Assembly Bill No. 169, authorizing filing of birth certificates with State Department of Vital Statistics when there are certain omissions. This bill failed to pass.

Assembly Bill No. 172, providing for purification of water of Raritan and Sandy Hook Bays under the supervision of the Department of Health. This bill failed to pass.

Assembly Bill No. 196, regulating occupation of barbering. This bill failed to pass.

Assembly Bill No. 228, regulating the sale and exposure of ice cream and frozen products and providing for the sale of such products by avoirdupois weight. This bill failed to pass.

Assembly Bill No. 257, inserting the words "or may suspend" in Section 6 of the Act regulating midwifery and providing for the suspension of licenses under that act. This bill failed to pass.

Assembly Bill No. 292, creating a Board of Chiropractic Examiners and regulating the practice of Chiropractic. This bill failed to pass.

Assembly Bill No. 332, providing that in cities having a population of more than 50,000 and not more than 100,000, the registrar of vital statistics shall be a separate department and the registrar thereof shall not be removed from office except for cause. This bill failed to pass.

Assembly Bill No. 357, empowering local boards of health to pass ordinances requiring the land lords of business buildings to supply heat of at least 68° F. between 6 A. M. to 10 P. M. from the first of October to the first of May. This bill failed to pass.

Assembly Bill No. 380, amending the act regulating Chiropractic so that any licensed practitioner shall be authorized to use such adjuncts, substitutes or other means, without the use of drugs, as may be essential to conform to the modern methods of treatment. This bill failed to pass.

Assembly Bill No. 409, providing for the completion of the vital records of New Jersey by the filing of copies of such records dated prior to January 1, 1849. This bill failed to pass.

Assembly Bill No. 424, providing for standards and grades of milk and giving the State Department of Agriculture power to enforce the regulations. This bill failed to pass.

Assembly Bill No. 477, prohibiting bathing in fresh water streams within two miles above municipality using the stream as a source of potable water. This bill failed to pass.

Assembly Bill No. 481, permitting governing bodies of municipalities, jointly contracting for the construction of trunk sewers, to contract prior to entering upon the actual construction of such systems. This bill became a law, Chapter 48.

Assembly Bill No. 504, providing that ordinances be published in newspapers "printed" instead of "published" in municipalities. This bill failed to pass.

Assembly Joint Resolution No. 9, directing institution of court proceedings on behalf of the State to abate the nuisance caused by dumping of garbage at sea by New York City. This resolution failed to pass.

DEPARTMENT OF HEALTH

FINANCIAL STATEMENT SHOWING EXPENDITURES BY BUREAUS OF THE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY FOR THE YEAR ENDING JUNE 30th, 1929.

Bureau	Payrolls	Traveling Expense	Stationery and Printing	Office Supplies	Telephone Service	Sundries	Maintenance of Tabulating Machines	Public Health News	Laboratory Equipment	Boat Expense
Vital Statistics	25,722	28	2,902	163	54	48	844	.....	.....	.....
Administration	21,514	1,012	3,329	175	106	277	.....	1,434	.....	.....
Local Health Administration	26,759	2,182	507	231	172	203	.....	.....	.....	.....
Food and Drugs	30,440	11,478	609	.....	24	108	.....	210	.....	.....
Engineering	38,069	4,144	552	265	194	579	.....	1,457	.....	.....
Chemistry	17,562	1,026	113	.....	43	174	.....	.....	.....	2,452
Bacteriology	31,688	223	724	.....	104	478	.....	10,463	.....	.....
Public Health Education	4,500	166	.....	.....	.....	.....	.....	.....	.....	.....
Total Thus Far:	196,254	20,259	8,736	834	679	1,867	844	1,434	12,850	2,452
Child Hygiene	89,167	22,045	2,353	.....	253	464	.....	.....	.....	.....
V. D. Control	15,056	2,929	760	1,405	54	41	.....	.....	.....	.....
Total of Columns	300,477	45,233	11,849	2,239	1,004	2,372	844	1,434	12,850	2,452

BUREAU OF ADMINISTRATION

FINANCIAL STATEMENT SHOWING EXPENDITURES BY BUREAUS OF THE DEPARTMENT OF HEALTH OF THE STATE OF NEW JERSEY FOR THE YEAR ENDING JUNE 30th, 1929—Continued.

Bureau	Auto Expenses	Rabbits Guinea Pigs	Laundry	Engineering Equipment	Rentals	Welfare Station Equipment	Chinic Equipment	Expense Extra Lecturers	Total of Bureau
Vital Statistics	.....	.....	.....	.....	.....	.....	.....	.....	29,761
Administration	.....	.....	.....	.....	.....	.....	.....	.....	27,847
Local Health Administration	945	.....	.....	.....	315	.....	.....	.....	31,314
Food and Drugs	.....	.....	.....	.....	.....	.....	.....	.....	42,869
Engineering	513	.....	.....	781	.....	.....	.....	.....	46,554
Chemistry	631	.....	.....	.....	.....	.....	.....	.....	22,721
Bacteriology	.....	1,114	119	.....	.....	.....	.....	.....	44,913
Public Health Education	.....	.....	.....	.....	.....	.....	.....	.....	4,666
Total Thus Far:	2,089	1,114	119	781	315	.....	.....	.....	250,645
Child Hygiene	.....	.....	.....	.....	.....	.....	.....	.....	116,654
V. D. Control	.....	.....	.....	.....	728	1,644	9,031	181	29,457
Total of Columns	2,089	1,114	119	781	1,043	1,644	9,031	181	396,756

**Report of the Bureau of Local Health Administration
for the Year Ending June 30, 1929**

WILLIAM H. MACDONALD, ACTING CHIEF

During the latter part of the year ending June 30, 1929, there were added to activities previously assigned this Bureau, the editing of the Public Health News and the active cooperation of the Department with Rutgers University in arranging and conducting the short course for health officers and inspectors offered annually at that institution. In spite of this increase in activities and the normal increase in other lines of work, the personnel of the Bureau has not been enlarged. In the report for the year 1928 it was pointed out that owing to limited personnel, it was no longer possible to comply with all requests for service and assistance which the Department evidently anticipates shall be rendered through this Bureau, and the need for four additional district health officers was pointed out. Inasmuch as no new employee has yet been secured and the work assigned the Bureau has increased, both in amount and in scope, the activities of the Bureau are being still further curtailed. That this necessity exists is keenly regretted by employees in the Bureau.

LOCAL BOARDS OF HEALTH

At the close of the calendar year December 31, 1928, there were in the State 322 incorporated municipalities and 234 townships, in each of which it is required by law there shall be a local board of health charged with certain duties and granted broad powers to carry on locally, public health activities. Public health work has so extended in scope and is of such a nature that it is not possible for a local health board to apply an effective sustained health program unless it has qualified agents to act under its direction. By no means all local boards, particularly in small

communities employ such agents. In annual reports made to the State Department by 528 of the boards of health in the State, 364 or 68% of these boards reported they did not employ during 1928 a health officer or executive officer, licensed or unlicensed, on either full or part-time. Ninety-eight percent of these boards by which no health nor executive officer was employed were in municipalities and townships having an estimated population of less than 10,000. The law whereby each municipality and township, irrespective of its area or population, constitutes an independent unit for health administrative purposes was enacted in 1887 and has remained practically unchanged since that time in spite of the fact that public health work has developed and expanded markedly. Under present conditions, for the purpose of securing more effective local health administration throughout the State, there should be created health districts sufficient in size to maintain therein at an expense which is not prohibitive, a qualified local health officer on full-time who will act in that capacity throughout the entire district, in each municipality in which equally efficient service is not locally provided. Before this is accomplished a change in the law dealing with local health departments will be necessary.

OUTBREAKS OF COMMUNICABLE DISEASES INVESTIGATED

There occurred in the State during the year only one extensive local outbreak of typhoid fever. This outbreak occurred in the Boro of Freehold, Monmouth County, and investigation by the Bureau showed that the infection had been transmitted in chicken salad served at a local church supper. One of the persons who took part in preparing the salad was found to be eliminating typhoid bacilli. The outbreak included 36 known cases of typhoid fever in persons residing in eight municipalities in New Jersey and in three places outside the State. Four deaths occurred among these patients.

During the year employees of the Bureau also investigated 91 scattered cases of typhoid fever in 54 municipalities in eight counties. Of these cases the largest group included 5 cases which occurred in one family, the later cases apparently resulting from infection from an earlier case in this household.

An outbreak of gastro-enteritis was investigated in Hopewell Township, Mercer County. In the investigation, histories were obtained of 61 cases and the epidemiological evidence although not definitely conclusive, strongly indicated that the cases resulted from the use of raw milk distributed by a local dealer.

Other cases of communicable diseases investigated in the field by the Bureau included 17 cases of diphtheria in six municipalities, 2 cases of scarlet fever in 2 municipalities, 5 cases of chickenpox in 3 municipalities, 5 cases of epidemic cerebro-spinal meningitis, 4 cases of trench mouth, 1 case of smallpox and several other cases of illness at first suspected of being communicable diseases.

Assistance was rendered in establishing a diagnosis in 60 cases or suspected cases of communicable diseases.

During the year there came to the attention of the Department 8 cases of undulant fever in residents of the State. These cases occurred in 8 municipalities in 7 counties. Investigation was made by the Bureau at the homes of 5 of these cases.

COMMUNICABLE DISEASES ON DAIRY PREMISES

During the year reports were received of 42 cases of diphtheria, scarlet fever, typhoid fever and tuberculosis on 35 premises upon which milk was produced for sale. At 19 of these premises measures established under the supervision of the local board of health appeared adequate to prevent the spread of infection through milk produced thereon and the sale of milk was permitted to be continued. Arrangements under which the sale of milk was continued were made at 12 other premises visited by employees in the Bureau. At one farm upon which scarlet fever occurred and at one upon which diphtheria occurred the sale of milk was discontinued by action of the local board of health. At one premises upon which scarlet fever occurred the sale of milk was prohibited temporarily by the State Department. One dairyman voluntarily retired from business where a case of tuberculosis was reported in a member of his household.

DIPHThERIA PREVENTION

During the year the Bureau has continued active cooperation with local health Departments and other agencies in the prevention of diphtheria by the use of toxin-antitoxin and the Schick test. A short circular on the subject of diphtheria prevention by this means was revised and made available to local boards and other bodies for distribution. Toxin-antitoxin clinic record sheets were also furnished local boards. In addition to correspondence on the subject, many conferences were held with local officials in relation to diphtheria prevention campaigns. Thirty-two talks on the subject were given in twenty-seven communities. Two motion picture reels featuring toxin-antitoxin were circulated about the State. Actual assistance in local toxin-antitoxin and Schick test clinics was rendered during the year in 74 municipalities in 14 counties. Reports from local boards of health and from other sources show that at the end of the calendar year December 31, 1928, the number of children who had received toxin-antitoxin at clinics throughout the State up to that time was over 260,000, a very large majority of whom were of school age.

STATE INSTITUTIONS

During the year investigation was made of cases of diphtheria among inmates at the State Hospital for the Insane at Trenton and at the State Home for Boys, Jamesburg. Control measures were recommended in each instance and assistance rendered in applying these measures. Assistance was rendered in giving Schick tests to inmates at 4 institutions maintained by the State, and in administering Dick tests to determine susceptibility to scarlet fever at 3 State institutions.

CONFERENCES WITH LOCAL HEALTH OFFICIALS

In connection with the activities of the Bureau it is essential that conferences be held with local health officials throughout the State on many local problems with which these officials are confronted. On daily reports of employees in the Bureau during the

past year there were recorded 928 such conferences with local health officials. More than two-thirds of these conferences were held by the two district health officers with representatives of the local boards of health in the five counties to which these officers are assigned. Employees in the Bureau also had one thousand, two hundred and seventy-six conferences with other public officials, physicians and citizens and attended 33 meetings of local boards of health.

TALKS AND PAPERS

Although there is not maintained in this Bureau any staff for lecture work, there is being referred to the Bureau an increasing number of requests for speakers on health subjects. During the year employees in the Bureau delivered talks or read papers before 55 groups. These talks were on subjects related in some way to the activities of the Bureau, the majority pertaining to diphtheria prevention.

SHORT COURSE FOR HEALTH OFFICIALS

A short course designed for health officers and inspectors or persons interested in such fields of activity has been held at Rutgers University for several years past, the instructors being selected partly from the faculty of the University and partly from the staff of the State Department of Health. The course consists of lectures, demonstrations, field inspections and laboratory work. For convenience classes are held two days a week during the latter part of June and in July each year. The complete course extends over two summers. During the summer of 1928, employees in the Bureau gave 35 one-hour lectures in connection with this course. Upon the resignation of Dr. Patterson this Bureau was instructed to arrange for the participation of the Department in the course for the term commencing in June 1929. Such an arrangement was made and the course opened on June 25 with an enrollment of ten in the first year class and thirteen in the second year group.

SPECIAL INVESTIGATION AND INSPECTIONS

During the year among requests referred to the Bureau from local health officials for assistance and advice in local problems there were many which pertained to nuisances and to violation of the Regulations of Chapter 1 of the State Sanitary Code. A large number of complaints of alleged nuisances were also received from citizens. Necessarily most of these requests and complaints were answered by correspondence. However, 161 field investigations of matters of this character were made by employees in the Bureau usually in company with a local health official. Over 80% of these investigations were made by the two district health officers.

ROADSIDE REFRESHMENT STANDS

In recent years there has been a rapid increase in the number of refreshment stands along main highways of the State offering for sale, food and drink and catering particularly to automobilists. A majority are located in small boroughs and townships in a large proportion of which inspection work performed by local health Departments is limited. As a result few of these stands have been inspected by any public health official. During the year the two district health officers made inspections of over 100 such stands in the districts to which they are assigned. Conditions found indicate that the proprietors of a large proportion of stands are endeavoring to conduct their business in a manner in compliance with law. In some instances however, gross violations of health regulations were found. Inspection of these establishments should properly be made by local boards of health, but few boards in rural sections are performing this type of work.

SUMMER CAMPS

There has been a rapid increase in the number of summer camps for boys and girls established in this State, particularly in the northern counties. These camps are located where modern sanitary conveniences are not available, and they should be inspected periodically by a health official qualified for this work.

During the past year there were referred to the Bureau many requests for such inspections from interested citizens and from camp directors. Compliance could be made with only a very few of these requests.

LAKE RESORTS

The inland lakes in the northern part of the State are rapidly assuming importance as places of recreation in summer. Bungalows and camps on the borders of these lakes and along streams emptying into them are increasing in number. Problems in sanitation are created, but few local health departments in these sections are organized to cope with these problems. This Bureau has been able to furnish them but little assistance and advice in the field. During the summer months complaints of conditions at these lake resorts are received. There is needed a comprehensive, detailed survey of these districts and the collection of data upon which to base definite recommendations for the enactment and enforcement of local sanitary regulations.

MORBIDITY AND MORTALITY FROM REPORTABLE DISEASES
DURING THE CALENDAR YEAR 1928

During the year ending December 31, 1928, there were received from local boards of health, tabulated and filed in this Bureau a total of 79,059 reports of cases of the diseases declared reportable by regulations of the State Sanitary Code. This exceeds by nearly 29,000 the total for the year 1927. However, this increase resulted principally from the fact that measles was more prevalent during 1928 than in the preceding year. The number of reported cases of diphtheria, influenza, pneumonia, smallpox and typhoid fever also exceeded the number reported during 1927 while the number of reported cases of chickenpox, infantile paralysis, scarlet fever, tuberculosis and whooping cough was lower than in the previous year.

Diphtheria.—There were reported during the year, 6,013 cases of diphtheria, the highest yearly total since 1923. However, the morbidity rate for 1928, 162.61 per 100,000, was only slightly greater than the rate for the preceding year. The number of

deaths from diphtheria recorded during 1928 was 454 giving a mortality rate of 12.28 per 100,000. The indicated fatality rate for 1928 was 7.55, which is slightly lower than the average rate for the previous five years.

Scarlet Fever.—The number of cases reported was 7,459, about 25% less than last year's total. The morbidity rate for 1928 per 100,000 was 201.72 as compared with 276.31 in 1927. The number of deaths recorded was 63, the mortality rate, 1.70 being the lowest recorded since 1917. The indicated fatality rate was 0.84.

Typhoid Fever.—While the number of reported cases and deaths from typhoid fever was slightly higher than in 1927, the morbidity and mortality rates compare favorably with the average rates for the past five year period. The number of reported cases was 410, and the number of deaths 60. The morbidity rate per 100,000 was 11.09 and the mortality rate 1:62. The indicated fatality rate for 1928 was 14.63, which is slightly higher than the rate for the preceding year.

Smallpox.—Ninety-one cases of smallpox were reported during the year. The morbidity rate was 2.46 per 100,000. No death from this disease was recorded.

Measles.—Following the low incidence of measles in 1927, a considerable increase in this disease occurred in 1928. There were recorded 31,764 cases and 250 deaths, giving a morbidity rate of 859.03 and a mortality rate of 6.57 per 100,000. The indicated fatality rate was 0.78, the lowest on record.

Poliomyelitis.—The number of reported cases of poliomyelitis decreased from 332 in 1927 to 82 in 1928, and the number of deaths from 45 to 27. The morbidity rate was 2.21 and the mortality rate, 0.73 per 100,000. The indicated fatality rate of 32.92 was the highest recorded since 1917.

Tuberculosis.—The number of reported cases of this disease, 4983 and the morbidity rate, 134.76 per 100,000 were slightly lower than in the preceding year. The number of deaths recorded was 2862, giving a mortality rate of 77.40 per 100,000. This is the lowest annual mortality rate from this disease recorded for the State. The indicated fatality rate was 57.43, slightly higher than last year's rate.

Whooping Cough.—Both the number of reported cases of this disease, 6692, and the morbidity rate 180.99 per 100,000 were lower than for the year 1927. The number of deaths recorded, 183, and the mortality rate, 4.95 per 100,000, were about the same as in 1927.

Other Reportable Diseases.—During 1928 there were recorded 8120 cases and 5 deaths from chickenpox, 7 case of anthrax in humans with 1 death, 9 cases and 9 deaths from dysentery, malaria, 7 cases and 3 deaths, epidemic cerebro-spinal meningitis, 180 cases and 64 deaths, influenza, 2591 cases and 615 deaths, pneumonia, 6513 cases and 4136 deaths, rabies in humans 2 cases and 2 deaths, trichinosis, 23 cases and 2 deaths, german measles, 3905 cases and one death, para-typhoid fever, 15 cases and 5 deaths. There were also reported during 1928, 33 cases of ophthalmia neonatorum, 20 cases of trachoma, and 3 cases of leprosy. No death was recorded as resulting from any of these 3 diseases.

There are appended standard morbidity and mortality tables for the State for the calendar year 1928 showing the distribution of reported cases of certain diseases by months, by age periods and the distribution of cases and deaths from these diseases by age periods and sex. There are also appended tables showing the number of reported cases and deaths from certain diseases by counties, together with the computed case and death rates from these diseases for each county.

REPORTED CASES OF ANTHRAX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Under 5 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
5 to 9 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
10 to 14 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to 19 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24 years.....	1	0	1	0	0	0	0	0	0	0	0	0	0
25 to 34 years.....	3	1	1	0	0	0	0	0	0	1	0	0	0
35 to 44 years.....	1	0	1	0	0	0	0	0	0	0	0	0	0
45 to 54 years.....	1	0	0	0	1	0	0	0	0	0	0	0	0
55 to 64 years.....	1	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	7	1	3	0	1	1	0	0	0	1	0	0	0

REPORTED CASES AND DEATHS FROM ANTHRAX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0
Under 5 years.....	0	0	0	0	0	0
5 to 9 years.....	0	0	0	0	0	0
10 to 14 years.....	0	0	0	0	0	0
15 to 19 years.....	0	0	0	0	0	0
20 to 24 years.....	1	0	0	0	1	0
25 to 34 years.....	3	0	0	0	3	0
35 to 44 years.....	1	0	0	0	1	0
45 to 54 years.....	1	0	1	0	2	0
55 to 64 years.....	1	0	0	0	1	0
65 years and over.....	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0
Total.....	7	1	0	0	7	1

REPORTED CASES OF CHICKENPOX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	250	39	33	30	18	24	20	9	4	0	8	32	42
1 year.....	329	48	23	37	34	36	13	12	5	6	18	44	48
2 years.....	414	57	38	56	29	31	13	9	5	26	57	74	74
3 years.....	489	66	67	68	48	33	33	16	6	8	20	53	51
4 years.....	634	81	71	71	52	59	49	18	5	3	33	33	107
Under 5 years.....	2123	289	254	252	181	153	139	68	29	22	107	269	352
5 to 9 years.....	5148	606	567	525	331	494	420	99	16	24	330	792	954
10 to 14 years.....	580	81	66	55	35	54	59	7	1	4	13	36	114
15 to 19 years.....	37	13	5	12	9	10	8	0	0	1	1	10	27
20 to 24 years.....	51	4	4	8	7	8	4	0	0	0	2	6	8
25 to 34 years.....	69	12	13	7	4	3	2	1	0	1	2	3	19
35 to 44 years.....	27	2	2	2	1	2	1	0	2	0	1	5	9
45 to 54 years.....	4	2	0	0	0	0	1	0	0	0	0	0	1
55 to 64 years.....	3	1	0	0	0	0	1	0	0	0	0	1	0
65 years and over.....	3	2	0	0	1	0	0	0	0	0	0	0	0
Age not stated.....	13	0	2	3	2	1	2	0	0	0	1	0	2
Total.....	8120	1012	895	864	571	746	638	178	46	52	462	1172	1486

REPORTED CASES AND DEATHS FROM CHICKENPOX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	141	3	118	0	259	3
1 year.....	179	1	150	0	329	1
2 years.....	205	1	209	0	414	1
3 years.....	230	0	239	0	469	0
4 years.....	234	0	300	0	534	0
Under 5 years.....	1089	5	1036	0	2125	5
5 to 9 years.....	2504	0	2544	0	5148	0
10 to 14 years.....	274	0	306	0	580	0
15 to 19 years.....	50	0	47	0	97	0
20 to 24 years.....	23	0	28	0	51	0
25 to 34 years.....	45	0	24	0	69	0
35 to 44 years.....	19	0	8	0	27	0
45 to 54 years.....	3	0	1	0	4	0
55 to 64 years.....	3	0	0	0	3	0
65 years and over.....	2	0	1	0	3	0
Age not stated.....	7	0	6	0	13	0
Total.....	4119	5	4001	0	8120	5

REPORTED CASES OF DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	93	9	12	13	6	7	10	7	2	2	4	7	14
1 year.....	279	32	33	30	29	21	23	17	13	17	17	39	26
2 years.....	441	54	45	33	28	44	45	30	19	24	35	42	42
3 years.....	532	78	49	39	46	41	59	35	30	16	35	38	66
4 years.....	588	71	72	51	42	51	36	31	26	29	38	44	77
Under 5 years.....	1933	244	211	166	142	104	193	120	90	88	129	151	225
5 to 9 years.....	2374	304	217	219	159	241	266	131	83	96	199	233	243
10 to 14 years.....	732	102	63	62	49	79	74	34	38	36	65	87	63
15 to 19 years.....	239	22	23	28	24	23	17	13	10	11	22	18	28
20 to 24 years.....	294	23	29	23	24	23	17	13	4	6	9	16	24
25 to 34 years.....	271	32	25	40	19	27	25	17	9	7	22	17	31
35 to 44 years.....	133	18	17	16	13	13	15	12	1	3	5	11	9
45 to 54 years.....	47	9	7	2	7	3	4	4	0	1	2	1	7
55 to 64 years.....	13	0	1	3	1	2	1	2	1	0	0	2	0
65 years and over.....	3	2	0	0	0	0	0	0	0	1	1	0	0
Age not stated.....	22	4	7	1	1	1	0	2	1	0	2	1	2
Total.....	6013	760	593	562	439	576	614	348	239	249	454	568	611

REPORTED CASES AND DEATHS FROM DIPHTHERIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	49	10	44	11	93	21
1 year.....	154	32	125	31	279	63
2 years.....	261	30	180	32	441	62
3 years.....	303	29	246	25	552	54
4 years.....	292	26	288	21	588	47
Under 5 years.....	1059	127	894	120	1953	247
5 to 9 years.....	1191	178	1183	91	2374	164
10 to 14 years.....	381	8	371	16	752	24
15 to 19 years.....	87	2	132	2	219	4
20 to 24 years.....	77	1	127	3	204	4
25 to 34 years.....	70	0	201	4	271	4
35 to 44 years.....	41	0	32	3	73	3
45 to 54 years.....	11	0	11	0	22	1
55 to 64 years.....	3	1	10	1	13	2
65 years and over.....	1	1	4	0	5	1
Age not stated.....	14	0	8	0	22	0
Total.....	2935	213	3078	241	6013	451

REPORTED CASES OF DYSENTERY IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
2 years.....	2	0	0	0	0	1	0	0	0	1	0	0	0
3 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
4 years.....	1	0	0	0	0	0	0	0	0	1	0	0	0
Under 5 years.....	3	0	0	0	0	1	0	0	0	2	0	0	0
5 to 9 years.....	1	0	0	0	0	0	0	0	0	1	0	0	0
10 to 14 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to 19 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
25 to 34 years.....	2	0	0	1	0	0	0	1	0	0	0	0	0
35 to 44 years.....	1	0	0	0	0	0	0	0	0	0	0	0	0
45 to 54 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
55 to 64 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	2	0	0	1	1	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	9	0	0	2	1	2	0	1	0	3	0	0	0

REPORTED CASES AND DEATHS FROM DYSENTERY IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	0	1	0	2
1 year.....	0	1	0	0	0	1
2 years.....	1	0	1	0	2	0
3 years.....	0	0	0	0	0	0
4 years.....	0	0	1	0	1	0
Under 5 years.....	1	2	2	1	3	3
5 to 9 years.....	1	1	0	0	1	1
10 to 14 years.....	0	0	0	0	0	0
15 to 19 years.....	0	0	0	0	0	0
20 to 24 years.....	0	0	0	0	0	0
25 to 34 years.....	2	1	0	0	2	1
35 to 44 years.....	0	0	1	0	1	0
45 to 54 years.....	0	0	0	0	0	0
55 to 64 years.....	0	0	1	0	1	0
65 years and over.....	1	2	1	1	2	3
Age not stated.....	0	0	0	0	0	0
Total.....	5	6	4	3	9	9

REPORTED CASES OF EPIDEMIC CEREBROSPINAL MENINGITIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	19	2	1	1	3	2	2	2	4	1	1	0	0
1 year.....	11	1	1	0	3	2	2	0	0	0	0	0	2
2 years.....	19	0	0	1	4	0	1	1	1	0	1	1	1
3 years.....	16	0	0	0	1	2	3	1	2	2	4	1	0
4 years.....	13	2	0	0	3	4	3	0	0	0	1	0	0
Under 5 years.....	60	5	2	2	11	14	10	4	6	4	6	2	3
5 to 9 years.....	36	3	1	1	3	5	3	1	4	1	5	8	0
10 to 14 years.....	17	0	2	1	1	2	0	2	5	1	1	0	2
15 to 19 years.....	16	1	0	2	1	5	1	0	4	0	0	0	2
20 to 24 years.....	11	1	0	1	0	0	1	2	1	0	2	0	3
25 to 34 years.....	16	0	0	1	1	0	1	0	2	0	0	0	0
35 to 44 years.....	8	1	1	0	0	2	0	0	0	0	0	0	4
45 to 54 years.....	3	0	0	1	0	0	2	0	0	0	0	0	0
55 to 64 years.....	4	0	0	0	0	0	0	0	0	2	0	1	1
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	180	11	7	9	16	29	17	12	19	11	11	10	28

REPORTED CASES AND DEATHS FROM EPIDEMIC CEREBROSPINAL MENINGITIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	9	9	10	2	19	11
1 year.....	7	5	4	1	11	6
2 years.....	5	1	5	2	10	3
3 years.....	8	1	8	2	16	3
4 years.....	7	2	6	2	13	4
Under 5 years.....	36	18	33	9	69	27
5 to 9 years.....	14	8	22	4	36	12
10 to 14 years.....	12	2	5	2	17	4
15 to 19 years.....	10	3	6	2	16	5
20 to 24 years.....	8	4	3	2	11	6
25 to 34 years.....	12	3	4	0	16	3
35 to 44 years.....	5	2	3	2	8	4
45 to 54 years.....	2	1	1	1	3	2
55 to 64 years.....	3	1	1	0	4	1
65 years and over.....	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0
Total.....	102	42	78	22	180	64

REPORTED CASES OF GERMAN MEASLES IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	45	6	5	8	5	8	2	3	2	0	1	0	5
1 year.....	73	4	9	7	6	13	16	8	2	2	4	2	5
2 years.....	89	2	5	9	20	23	21	3	3	0	2	1	0
3 years.....	132	7	4	14	27	34	28	9	2	0	4	0	3
4 years.....	145	5	4	13	33	37	30	8	1	0	1	0	4
Under 5 years.....	489	24	27	51	91	115	106	31	10	2	12	3	17
5 to 9 years.....	186	77	131	236	294	598	440	50	2	2	10	8	12
10 to 14 years.....	897	18	22	129	135	358	295	17	1	1	4	3	4
15 to 19 years.....	423	7	6	88	81	182	33	6	0	0	0	0	5
20 to 24 years.....	107	2	2	19	17	37	24	4	0	1	0	0	1
25 to 34 years.....	90	2	2	13	21	25	24	0	0	0	1	0	2
35 to 44 years.....	26	0	0	6	4	9	6	1	0	0	0	0	0
45 to 54 years.....	4	0	0	0	0	2	1	0	0	0	1	0	0
55 to 64 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	4	0	0	1	2	0	1	0	0	0	0	0	0
Total.....	3905	130	190	543	645	1326	860	109	13	6	23	14	41

REPORTED CASES AND DEATHS FROM GERMAN MEASLES IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	23	0	22	0	45	0
1 year.....	36	0	42	1	78	1
2 years.....	42	0	47	0	89	0
3 years.....	73	0	59	0	132	0
4 years.....	62	0	83	0	145	0
Under 5 years.....	236	0	253	1	489	1
5 to 9 years.....	912	0	948	0	1860	0
10 to 14 years.....	422	0	475	0	897	0
15 to 19 years.....	215	0	213	0	428	0
20 to 24 years.....	46	0	61	0	107	0
25 to 34 years.....	25	0	65	0	90	0
35 to 44 years.....	11	0	15	0	26	0
45 to 54 years.....	2	0	2	0	4	0
55 to 64 years.....	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0
Age not stated.....	3	0	1	0	4	0
Total.....	1872	0	2033	1	3905	1

REPORTED CASES OF INFLUENZA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	33	2	5	3	1	3	2	0	0	0	1	1	16
1 year.....	25	1	0	3	0	0	0	0	0	1	0	1	19
2 years.....	41	0	3	2	2	0	0	0	0	0	0	1	33
3 years.....	63	3	2	1	2	1	0	0	0	0	0	2	62
4 years.....	45	2	1	4	2	1	0	0	0	0	1	0	34
Under 5 years.....	207	8	11	13	7	5	2	0	0	1	1	5	154
5 to 9 years.....	223	4	5	13	4	8	0	1	0	1	1	8	175
10 to 14 years.....	143	2	4	9	7	5	2	0	0	0	0	3	111
15 to 19 years.....	149	2	2	14	6	4	2	0	0	0	2	0	116
20 to 24 years.....	203	5	10	8	6	12	19	2	0	4	1	1	135
25 to 34 years.....	555	7	18	24	28	35	47	1	0	2	7	4	412
35 to 44 years.....	471	15	18	17	18	32	33	1	0	5	8	8	316
45 to 54 years.....	271	13	10	12	16	13	12	2	2	3	2	15	181
55 to 64 years.....	163	3	7	10	13	7	6	0	1	0	4	4	104
65 years and over.....	130	10	2	10	8	12	3	1	0	1	3	2	98
Age not stated.....	26	0	0	1	0	1	0	0	0	0	0	0	24
Total.....	2591	71	90	131	113	139	127	6	3	16	32	37	1826

REPORTED CASES AND DEATHS FROM INFLUENZA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	16	30	17	26	33	56
1 year.....	8	12	9	2	17	14
2 years.....	20	9	21	6	41	15
3 years.....	33	4	30	2	63	6
4 years.....	27	5	18	1	45	6
Under 5 years.....	104	60	103	44	207	104
5 to 9 years.....	103	9	118	6	223	15
10 to 14 years.....	71	10	72	13	143	23
15 to 19 years.....	73	9	76	7	149	16
20 to 24 years.....	101	19	102	11	203	21
25 to 34 years.....	297	22	288	30	585	52
35 to 44 years.....	250	43	221	26	471	69
45 to 54 years.....	137	34	134	29	271	63
55 to 64 years.....	71	45	92	33	163	78
65 years and over.....	14	0	10	95	150	174
Age not stated.....	14	0	12	0	26	0
Total.....	1273	321	1318	294	2591	615

REPORTED CASES OF MALARIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	1	0	0	0	0	0	1	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Under 5 years.....	1	0	0	0	0	0	1	0	0	0	0	0	0
5 to 9 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
10 to 14 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
15 to 19 years.....	1	0	0	0	0	0	0	0	0	1	0	0	0
20 to 24 years.....	1	0	0	1	0	0	0	0	0	0	0	0	0
25 to 34 years.....	2	0	1	0	0	0	0	0	0	1	0	0	0
35 to 44 years.....	2	1	0	0	0	0	0	0	0	0	0	0	1
45 to 54 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
55 to 64 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	7	1	1	1	0	0	1	0	0	1	1	0	1

REPORTED CASES AND DEATHS FROM MALARIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	0	0	0	0
1 year.....	0	0	1	0	1	0
2 years.....	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0
Under 5 years.....	0	0	1	0	1	0
5 to 9 years.....	0	0	0	0	0	0
10 to 14 years.....	0	0	0	0	0	0
15 to 19 years.....	1	0	0	0	1	0
20 to 24 years.....	1	0	0	0	1	0
25 to 34 years.....	1	0	1	1	2	1
35 to 44 years.....	2	0	0	1	2	1
45 to 54 years.....	0	0	1	0	1	0
55 to 64 years.....	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0
Total.....	5	1	2	2	7	3

REPORTED CASES OF MEASLES IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	662	26	51	98	118	160	114	41	3	5	13	11	117
1 year.....	1862	81	147	301	400	464	280	91	27	9	7	28	27
2 years.....	2372	93	184	381	510	619	354	194	25	8	10	26	27
3 years.....	2711	92	190	464	562	705	455	136	22	9	20	22	34
4 years.....	3146	90	237	512	649	856	517	162	27	6	14	81	37
Under 5 years.....	10753	538	809	1756	2239	2804	1720	564	109	36	64	117	142
5 to 9 years.....	18982	355	1890	3149	3563	5328	2848	590	49	12	114	235	247
10 to 14 years.....	1896	69	130	272	374	599	311	62	10	2	9	21	37
15 to 19 years.....	429	16	25	68	109	122	64	13	3	1	1	1	6
20 to 24 years.....	211	13	12	27	60	59	29	6	2	0	0	1	6
25 to 34 years.....	207	8	23	28	41	54	36	9	4	0	0	4	4
35 to 44 years.....	72	0	4	8	11	23	16	5	2	0	0	0	3
45 to 54 years.....	20	0	1	1	6	5	5	1	0	0	1	0	0
55 to 64 years.....	6	0	0	3	1	2	0	0	0	0	0	0	0
65 years and over.....	6	0	0	1	1	1	3	0	0	0	0	0	0
Age not stated.....	82	0	4	27	24	9	14	2	0	1	0	1	0
Total.....	31764	1034	2398	5339	6451	9006	504	1253	179	52	159	376	441

REPORTED CASES AND DEATHS FROM MEASLES IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	369	44	802	24	662	68
1 year.....	989	32	1862	47	1862	99
2 years.....	1193	10	1179	13	2372	23
3 years.....	1321	5	1390	4	2711	9
4 years.....	1645	3	1501	11	3146	14
Under 5 years.....	5490	114	5254	90	10753	213
5 to 9 years.....	9222	10	8860	24	18082	34
10 to 14 years.....	893	0	1003	0	1896	0
15 to 19 years.....	177	0	252	0	429	0
20 to 24 years.....	79	0	132	0	211	0
25 to 34 years.....	93	0	93	0	207	0
35 to 44 years.....	24	0	48	2	72	2
45 to 54 years.....	6	0	14	0	20	0
55 to 64 years.....	3	0	3	0	6	0
65 years and over.....	3	0	3	1	6	1
Age not stated.....	41	0	41	0	82	0
Total.....	10940	124	15724	126	31764	250

REPORTED CASES OF PARATYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Under 5 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
5 to 9 years.....	1	0	0	0	0	0	0	0	0	0	0	0	0
10 to 14 years.....	4	1	0	0	0	0	0	2	0	1	0	0	0
15 to 19 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
20 to 24 years.....	1	0	0	0	0	0	0	0	0	0	0	1	0
25 to 34 years.....	4	0	0	0	1	0	0	1	1	0	0	0	1
35 to 44 years.....	3	1	0	0	0	0	0	0	1	0	0	1	0
45 to 54 years.....	1	0	0	0	0	0	0	0	1	0	0	0	0
55 to 64 years.....	1	0	0	0	0	0	0	0	0	0	0	0	1
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	15	2	0	0	2	0	0	3	3	1	0	2	2

REPORTED CASES AND DEATHS FROM PARATYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0
3 years.....	0	0	0	0	0	0
4 years.....	0	0	0	0	0	0
Under 5 years.....	0	0	0	0	0	0
5 to 9 years.....	0	0	2	0	1	0
10 to 14 years.....	2	2	0	0	4	2
15 to 19 years.....	0	0	0	0	0	0
20 to 24 years.....	0	0	1	1	1	1
25 to 34 years.....	0	1	4	1	4	2
35 to 44 years.....	1	0	0	0	1	0
45 to 54 years.....	0	0	0	0	0	0
55 to 64 years.....	0	0	1	0	1	0
65 years and over.....	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0
Total.....	5	3	10	2	15	5

REPORTED CASES OF PNEUMONIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	636	52	145	104	50	58	32	23	17	24	41	71	
1 year.....	568	53	87	91	66	84	41	21	9	12	21	22	61
2 years.....	419	46	65	72	51	44	33	10	8	4	24	12	50
3 years.....	326	45	37	47	29	40	13	8	5	5	13	23	36
4 years.....	274	29	50	31	36	33	17	4	3	9	10	43	
Under 5 years.....	2223	225	404	345	232	259	142	71	43	42	91	105	261
5 to 9 years.....	800	106	119	136	100	120	51	21	12	16	34	68	107
10 to 14 years.....	394	27	55	41	36	49	10	3	7	11	13	9	43
15 to 19 years.....	214	20	23	30	31	16	22	11	8	8	11	30	
20 to 24 years.....	237	31	27	33	27	36	10	5	5	11	14	11	27
25 to 34 years.....	533	57	63	68	68	80	32	7	19	14	23	44	73
35 to 44 years.....	574	54	53	88	67	70	41	12	17	16	26	36	89
45 to 54 years.....	469	50	40	90	62	62	26	8	12	9	25	29	66
55 to 64 years.....	437	53	43	69	56	56	26	11	13	23	32	41	
65 years and over.....	604	64	78	102	75	82	24	12	15	21	32	36	93
Age not stated.....	28	0	4	9	10	2	0	1	0	0	0	0	1
Total.....	6513	692	914	1006	731	817	378	155	152	162	291	394	831

REPORTED CASES AND DEATHS FROM PNEUMONIA IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	355	462	281	373	636	835
1 year.....	308	165	265	153	568	318
2 years.....	217	61	202	55	419	116
3 years.....	162	29	164	36	323	65
4 years.....	158	17	118	18	274	35
Under 5 years.....	1193	734	1030	635	2223	1369
5 to 9 years.....	508	60	384	41	890	101
10 to 14 years.....	181	32	123	37	304	69
15 to 19 years.....	134	48	80	28	214	76
20 to 24 years.....	147	47	90	30	237	77
25 to 34 years.....	323	159	210	113	633	272
35 to 44 years.....	384	249	240	141	624	390
45 to 54 years.....	295	351	174	144	469	495
55 to 64 years.....	244	238	183	136	427	474
65 years and over.....	267	374	337	439	604	813
Age not stated.....	14	0	14	0	28	0
Total.....	3688	2342	2825	1754	6513	4136

REPORTED CASES OF POLIOMYELITIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	6	0	0	0	0	0	0	2	2	1	1	0	0
1 year.....	8	0	0	1	0	2	0	1	0	3	0	1	0
2 years.....	7	0	0	0	1	1	0	0	4	0	1	0	0
3 years.....	5	1	0	1	0	1	0	0	2	0	0	0	0
4 years.....	8	0	0	0	0	0	1	1	1	2	3	0	0
Under 5 years.....	34	1	0	2	1	4	1	4	9	6	5	1	0
5 to 9 years.....	29	1	1	0	2	0	3	1	12	5	3	0	1
10 to 14 years.....	9	0	0	0	0	0	1	1	3	3	1	0	0
15 to 19 years.....	4	0	0	0	0	1	0	1	1	0	1	0	0
20 to 24 years.....	2	1	0	0	0	0	0	0	0	1	0	0	0
25 to 34 years.....	2	0	0	0	0	0	0	0	1	0	0	0	1
35 to 44 years.....	1	0	0	0	0	0	0	0	0	0	0	0	0
45 to 54 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
55 to 64 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Age not stated.....	1	0	0	0	0	0	0	0	0	1	0	0	0
Total.....	82	3	1	3	3	5	5	7	26	16	10	1	9

REPORTED CASES AND DEATHS FROM POLIOMYELITIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	5	2	1	0	6	2
1 year.....	5	2	3	0	8	2
2 years.....	5	1	2	2	7	3
3 years.....	0	1	5	0	5	1
4 years.....	5	1	3	2	8	3
Under 5 years.....	20	7	14	4	34	11
5 to 9 years.....	13	3	11	3	20	6
10 to 14 years.....	6	1	3	1	9	2
15 to 19 years.....	4	0	2	0	6	0
20 to 24 years.....	0	0	1	1	2	1
25 to 34 years.....	1	0	1	0	2	0
35 to 44 years.....	1	1	0	0	1	1
45 to 54 years.....	0	1	0	1	0	2
55 to 64 years.....	0	0	0	0	0	0
65 years and over.....	0	1	0	0	0	1
Age not stated.....	0	0	1	0	1	0
Total.....	48	17	34	10	82	27

REPORTED CASES OF SCARLET FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	29	3	6	2	4	6	1	1	0	0	2	0	4
1 year.....	116	9	23	16	19	13	7	2	3	2	3	4	9
2 years.....	303	40	57	47	51	32	20	7	5	3	9	15	17
3 years.....	460	63	83	82	62	46	28	10	6	6	11	24	39
4 years.....	601	73	90	92	90	85	40	8	9	10	24	34	44
Under 5 years.....	1509	190	265	239	226	182	96	28	23	21	49	77	113
5 to 9 years.....	3475	513	545	592	490	453	229	80	30	53	138	180	219
10 to 14 years.....	1480	173	234	289	217	174	104	29	8	21	37	77	112
15 to 19 years.....	384	39	61	89	61	55	21	3	5	3	6	9	33
20 to 24 years.....	215	21	26	38	53	32	13	3	2	2	3	8	14
25 to 34 years.....	238	34	42	36	35	48	13	7	4	3	8	9	19
35 to 44 years.....	90	13	11	14	18	10	5	0	1	0	4	4	6
45 to 54 years.....	23	1	4	9	4	4	0	0	1	0	0	0	1
55 to 64 years.....	10	0	3	2	2	1	1	0	0	0	0	0	1
65 years and over.....	2	1	0	1	0	0	0	0	0	0	0	0	0
Age not stated.....	11	1	2	0	3	1	1	0	0	1	1	1	0
Total.....	7459	993	1196	1309	1079	960	483	131	74	106	245	365	518

REPORTED CASES AND DEATHS FROM SCARLET FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	17	2	12	0	29	2
1 year.....	63	1	53	2	116	3
2 years.....	152	4	151	1	303	5
3 years.....	229	4	231	3	460	7
4 years.....	324	7	277	2	601	9
Under 5 years.....	785	18	724	8	1509	26
5 to 9 years.....	1736	12	1739	8	3475	20
10 to 14 years.....	725	6	755	4	1480	9
15 to 19 years.....	133	0	201	2	334	2
20 to 24 years.....	83	0	132	0	215	0
25 to 34 years.....	94	2	164	1	258	3
35 to 44 years.....	38	0	52	1	90	1
45 to 54 years.....	12	1	13	1	25	2
55 to 64 years.....	6	0	6	0	12	0
65 years and over.....	2	0	0	0	2	0
Age not stated.....	5	0	6	0	11	0
Total.....	3607	33	3792	25	7459	63

REPORTED CASES OF SMALLPOX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0	0	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0	0	0	0	0	0	0	0
3 years.....	1	0	0	0	0	1	0	0	0	0	0	0	0
4 years.....	1	0	0	0	1	0	0	0	0	0	0	0	0
Under 5 years.....	2	0	0	0	1	1	0	0	0	0	0	0	0
5 to 9 years.....	7	0	0	3	4	0	0	0	0	0	0	0	0
10 to 14 years.....	22	0	0	11	11	0	0	0	0	0	0	0	0
15 to 19 years.....	14	1	0	8	5	0	0	0	0	0	0	0	0
20 to 24 years.....	11	2	0	7	0	0	0	0	0	0	0	0	0
25 to 34 years.....	10	1	0	1	6	0	0	1	0	0	0	1	0
35 to 44 years.....	7	0	0	0	6	0	0	1	0	0	0	0	0
45 to 54 years.....	14	0	1	0	10	1	1	0	0	0	1	0	0
55 to 64 years.....	2	0	0	0	2	0	0	0	0	0	0	0	0
65 years and over.....	2	0	0	0	2	0	0	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	91	4	1	24	54	3	1	2	0	0	1	1	0

REPORTED CASES AND DEATHS FROM SMALLPOX IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	0	0	0	0
1 year.....	0	0	0	0	0	0
2 years.....	0	0	0	0	0	0
3 years.....	0	0	1	0	1	0
4 years.....	1	0	0	0	1	0
Under 5 years.....	1	0	1	0	2	0
5 to 9 years.....	2	0	5	0	7	0
10 to 14 years.....	8	0	14	0	22	0
15 to 19 years.....	8	0	6	0	14	0
20 to 24 years.....	6	0	5	0	11	0
25 to 34 years.....	4	0	6	0	10	0
35 to 44 years.....	6	0	1	0	7	0
45 to 54 years.....	6	0	8	0	14	0
55 to 64 years.....	1	0	1	0	2	0
65 years and over.....	1	0	1	0	2	0
Age not stated.....	0	0	0	0	0	0
Total.....	43	0	48	0	91	0

REPORTED CASES OF TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	27	2	2	1	7	2	3	2	1	1	1	1	0
1 year.....	24	1	1	3	1	3	1	3	0	2	3	2	0
2 years.....	27	2	4	4	1	1	5	2	2	0	4	2	0
3 years.....	27	3	5	1	3	5	1	0	1	0	1	1	2
4 years.....	22	2	2	1	1	3	5	2	0	2	2	2	0
Under 5 years.....	122	10	14	10	13	12	19	10	9	6	10	7	2
5 to 9 years.....	136	19	11	21	13	14	12	8	6	4	8	11	9
10 to 14 years.....	175	24	16	19	8	24	16	12	14	11	8	13	20
15 to 19 years.....	466	33	48	47	40	38	49	46	38	36	33	38	20
20 to 24 years.....	699	48	52	62	71	82	59	64	64	54	50	46	46
25 to 34 years.....	1292	109	126	115	101	124	120	105	123	95	87	102	84
35 to 44 years.....	970	94	67	119	94	98	90	73	64	77	77	73	44
45 to 54 years.....	623	61	54	60	55	56	58	55	39	48	44	52	46
55 to 64 years.....	311	29	21	36	30	42	24	19	19	27	22	24	18
65 years and over.....	160	13	11	12	21	15	10	12	16	15	17	10	8
Age not stated.....	24	3	0	1	1	1	1	1	4	8	1	1	1
Total.....	4983	443	420	502	447	507	447	409	401	379	368	372	268

REPORTED CASES AND DEATHS FROM TUBERCULOSIS IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	11	11	11	13	22	24
1 year.....	13	9	11	14	24	23
2 years.....	8	6	8	7	17	13
3 years.....	12	9	15	8	27	17
4 years.....	8	3	14	10	22	13
Under 5 years.....	62	58	70	52	122	90
5 to 9 years.....	71	29	65	19	136	48
10 to 14 years.....	73	24	102	21	175	45
15 to 19 years.....	137	71	279	135	466	206
20 to 24 years.....	284	144	415	224	699	368
25 to 34 years.....	622	333	630	353	1292	696
35 to 44 years.....	629	333	341	183	970	516
45 to 54 years.....	451	321	177	120	628	441
55 to 64 years.....	220	212	91	78	311	290
65 years and over.....	103	98	57	59	160	157
Age not stated.....	11	0	13	0	24	0
Total.....	2743	1623	2240	1234	4983	2862

REPORTED CASES OF TYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	1	0	0	0	0	0	0	0	0	0	0	0	0
1 year.....	2	0	0	0	0	1	0	0	0	0	1	0	0
2 years.....	2	1	0	0	0	0	1	0	0	0	0	0	0
3 years.....	1	0	0	0	0	0	0	0	0	0	0	0	0
4 years.....	3	0	0	0	1	0	0	0	1	0	0	0	0
Under 5 years.....	9	1	0	0	1	2	1	0	1	1	1	1	0
5 to 9 years.....	51	4	0	3	0	4	5	6	9	7	5	6	2
10 to 14 years.....	80	4	2	3	1	7	3	9	20	18	9	3	1
15 to 19 years.....	65	4	3	2	3	1	0	2	8	11	16	8	3
20 to 24 years.....	43	2	1	0	3	1	0	5	9	10	4	3	2
25 to 34 years.....	74	1	4	6	1	1	2	6	18	13	13	6	3
35 to 44 years.....	53	7	1	3	4	2	0	2	5	13	6	6	4
45 to 54 years.....	21	3	0	1	1	0	2	1	5	5	0	3	0
55 to 64 years.....	9	0	0	0	0	0	0	0	0	0	0	0	0
65 years and over.....	5	0	1	0	0	0	1	0	0	0	0	0	0
Age not stated.....	0	0	0	0	0	0	0	0	0	0	0	0	0
Total.....	410	27	12	18	16	18	16	37	80	89	47	33	17

REPORTED CASES AND DEATHS FROM TYPHOID FEVER IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	0	0	1	0	1	0
1 year.....	0	0	0	0	0	0
2 years.....	1	0	1	0	2	0
3 years.....	0	0	1	0	1	0
4 years.....	2	0	1	1	3	1
Under 5 years.....	3	0	6	1	9	1
5 to 9 years.....	31	0	20	2	51	2
10 to 14 years.....	48	3	32	4	80	7
15 to 19 years.....	37	9	28	4	65	13
20 to 24 years.....	21	4	22	5	43	9
25 to 34 years.....	44	11	30	0	74	11
35 to 44 years.....	30	6	23	5	53	11
45 to 54 years.....	11	2	10	1	21	3
55 to 64 years.....	8	1	3	0	9	1
65 years and over.....	3	1	2	1	5	2
Age not stated.....	0	0	0	0	0	0
Total.....	234	37	176	23	410	60

REPORTED CASES OF WHOOPING COUGH IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Months

AGE GROUPS	NUMBER OF CASES												
	Total	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Under 1 year.....	532	64	68	45	37	35	42	49	61	44	41	35	28
1 year.....	635	52	65	49	39	64	55	63	59	43	50	38	48
2 years.....	746	87	74	51	67	49	85	73	54	46	53	56	56
3 years.....	838	85	70	60	66	85	71	84	62	49	54	70	75
4 years.....	884	83	82	74	68	82	57	100	82	46	50	55	75
Under 5 years.....	2675	401	350	279	261	356	304	381	351	249	236	235	283
5 to 9 years.....	2699	201	242	254	252	290	231	230	176	139	140	191	263
10 to 14 years.....	214	25	17	32	18	22	15	12	19	13	10	15	16
15 to 19 years.....	30	2	4	4	3	2	1	1	3	1	2	4	2
20 to 24 years.....	7	1	0	0	2	0	0	1	2	0	0	0	1
25 to 34 years.....	22	3	1	2	3	1	2	0	3	3	1	2	0
35 to 44 years.....	20	3	3	0	1	5	0	0	3	3	1	2	0
45 to 54 years.....	3	0	1	0	0	0	0	0	1	1	0	0	1
55 to 64 years.....	5	1	1	0	0	0	0	0	2	0	0	1	0
65 years and over.....	2	0	0	1	0	1	0	0	0	0	0	0	0
Age not stated.....	15	0	4	2	4	0	0	1	1	1	0	0	2
Total.....	6602	727	622	574	542	663	553	626	560	409	390	448	568

REPORTED CASES AND DEATHS FROM WHOOPING COUGH IN NEW JERSEY

For the Calendar Year 1928 by Age Groups and Sex

AGE GROUPS	Male		Female		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Under 1 year.....	268	51	284	52	552	103
1 year.....	303	16	352	34	655	50
2 years.....	396	5	380	9	746	14
3 years.....	387	3	451	4	838	7
4 years.....	423	1	456	2	884	3
Under 5 years.....	1732	76	1923	101	3675	177
5 to 9 years.....	1277	4	1422	1	2699	5
10 to 14 years.....	38	0	116	0	214	0
15 to 19 years.....	13	0	15	1	30	1
20 to 24 years.....	3	0	4	0	7	0
25 to 34 years.....	6	0	16	0	22	0
35 to 44 years.....	9	0	11	0	20	0
45 to 54 years.....	1	0	0	0	1	0
55 to 64 years.....	1	0	4	0	5	0
65 years and over.....	1	0	1	0	2	0
Age not stated.....	10	0	5	0	15	0
Total.....	3173	80	3519	106	6692	183

REPORTED CASES AND DEATHS FROM CHICKENPOX AND DIPHTHERIA BY COUNTIES FOR 1928

COUNTIES	CHICKENPOX			DIPHTHERIA				
	Cases	Cases per 1000 Pop.	Deaths	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Per cent. Fatality
Atlantic.....	152	1.60	0	75	0.79	15	0.15	20.00
Bergen.....	570	2.07	2	528	1.92	42	0.15	7.95
Burlington.....	294	3.09	0	124	1.80	8	0.08	6.45
Camden.....	533	1.43	2	421	1.80	23	0.10	5.46
Cape May.....	34	1.74	0	50	3.03	4	0.20	6.78
Cumberland.....	79	1.18	0	59	0.88	5	0.07	8.47
Essex.....	3226	4.17	1	1743	2.25	135	0.17	7.74
Gloucester.....	134	2.82	0	61	1.05	4	0.07	6.55
Hudson.....	382	0.54	0	1368	1.92	110	0.13	8.04
Hunterdon.....	23	0.70	0	12	0.36	1	0.05	8.33
Mercer.....	165	0.87	0	141	0.74	4	0.02	2.83
Middlesex.....	149	0.73	0	293	1.43	19	0.09	6.48
Monmouth.....	405	3.35	0	90	0.79	10	0.08	11.11
Morris.....	410	4.57	0	99	1.10	5	0.05	5.05
Ocean.....	15	0.65	0	18	0.78	4	0.17	22.22
Passaic.....	692	2.33	0	468	1.57	25	0.08	5.34
Salem.....	22	0.49	0	8	0.17	1	0.02	12.50
Somerset.....	63	1.12	0	18	0.32	3	0.05	16.66
Sussex.....	11	0.44	0	25	1.00	8	0.32	32.00
Union.....	938	3.79	0	884	1.52	26	0.10	6.77
Warren.....	3	0.06	0	19	0.40	2	0.04	10.52
State.....	8120	2.19	5	6013	1.62	454	0.12	7.55

REPORTED CASES AND DEATHS FROM DYSENTERY, LEPROSY, OPHTHALMIA NEONATORUM AND PARATYPHOID FEVER BY COUNTIES FOR 1928

COUNTIES	DYSENTERY		LEPROSY		OPHTHALMIA NEONATORUM		PARATYPHOID FEVER	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Atlantic	0	0	0	0	1	0	1	1
Bergen	0	1	0	0	5	0	1	1
Burlington	0	0	0	0	0	0	0	0
Camden	0	0	0	0	1	0	1	0
Cape May	0	0	0	0	0	0	0	0
Cumberland	2	0	0	0	2	0	0	0
Essex	2	0	2	0	18	0	6	2
Gloucester	0	1	0	0	1	0	0	0
Hudson	0	0	1	0	1	0	0	0
Hunterdon	0	0	0	0	1	0	0	0
Mercer	1	1	0	0	2	0	1	0
Middlesex	0	0	0	0	0	0	4	1
Monmouth	1	1	0	0	1	0	0	0
Morris	1	1	0	0	1	0	0	0
Ocean	0	0	0	0	0	0	0	0
Passaic	3	2	0	0	0	0	0	0
Salem	0	0	0	0	1	0	0	0
Somerset	1	0	0	0	0	0	0	0
Sussex	0	0	0	0	0	0	0	0
Union	0	0	0	0	0	0	1	0
Warren	0	1	0	0	0	0	0	0
State	9	9	3	0	33	0	15	5

REPORTED CASES AND DEATHS FROM INFLUENZA AND PNEUMONIA BY COUNTIES FOR 1928

COUNTIES	INFLUENZA			PNEUMONIA				
	Cases	Cases per 1000 Pop.	Deaths per 1000 Pop.	Cases	Cases per 1000 Pop.	Deaths per 1000 Pop.		
Atlantic	62	0.65	24	0.25	73	*	106	1.11
Bergen	150	0.84	54	0.19	491	1.79	308	1.12
Burlington	308	3.24	22	0.23	74	*	78	0.82
Camden	126	0.54	62	0.26	357	1.53	303	1.30
Cape May	52	2.67	5	0.25	11	*	26	1.33
Cumberland	18	0.27	16	0.24	69	1.03	54	0.81
Essex	1042	1.34	106	0.13	3616	4.71	873	1.12
Gloucester	29	0.34	10	0.17	64	1.11	60	1.04
Hudson	145	0.20	86	0.12	442	*	940	1.32
Hunterdon	6	0.18	5	0.15	11	*	43	1.30
Mercer	276	1.45	27	0.14	186	0.98	168	0.88
Middlesex	12	*	31	0.15	55	*	188	0.92
Monmouth	65	0.57	19	0.16	180	1.58	108	0.95
Morris	10	*	18	0.18	206	2.29	82	0.91
Ocean	37	1.61	6	0.26	7	*	23	1.00
Passaic	180	0.60	51	0.17	237	*	282	0.93
Salem	0	*	13	0.29	4	*	33	0.78
Somerset	4	*	5	0.09	48	0.88	68	1.21
Sussex	6	0.24	5	0.20	62	2.49	44	1.76
Union	72	0.28	42	0.16	288	1.14	288	1.14
Warren	0	*	10	0.21	2	*	61	1.30
State	2391	0.70	615	0.16	6513	2.76	4136	1.12

*More deaths than cases reported.

REPORTED CASES AND DEATHS FROM MALARIA AND EPIDEMIC CEREBROSPINAL MENINGITIS BY COUNTIES FOR 1928

COUNTIES	MALARIA			EPIDEMIC CEREBROSPINAL MENINGITIS				
	Cases	Cases per 1000 Pop.	Deaths	Cases	Cases per 1000 Pop.	Deaths per 1000 Pop.	Per cent. Fatality	
Atlantic	0	0	0	1	0.01	1	0.01	100.00
Bergen	1	0.003	0	21	0.07	2	0.007	9.52
Burlington	0	0	0	1	0.01	0	0	0
Camden	0	0	0	3	0.01	1	0.004	33.33
Cape May	0	0	0	0	0	0	0	0
Cumberland	0	0	0	2	0.03	0	0	0
Essex	2	0.004	0	49	0.06	14	0.02	28.57
Gloucester	0	0	0	1	0.01	0	0	0
Hudson	1	0.001	0	50	0.07	21	0.03	42.00
Hunterdon	0	0	0	1	0.03	1	0.03	100.00
Mercer	1	0.005	2	3	0.01	3	0.01	100.00
Middlesex	0	0	0	13	0.06	7	0.03	53.84
Monmouth	0	0	0	9	0.08	5	0.04	55.55
Morris	0	0	0	7	0.08	2	0.02	28.57
Ocean	0	0	0	0	0	0	0	0
Passaic	1	0.002	1	12	0.04	5	0.01	41.68
Salem	0	0	0	0	0	0	0	0
Somerset	0	0	0	3	0.05	0	0	0
Sussex	0	0	0	0	0	0	0	0
Union	0	0	0	4	0.01	2	0.008	50.00
Warren	0	0	0	0	0	0	0	0
State	7	0.002	3	180	0.05	64	0.01	35.55

REPORTED CASES AND DEATHS FROM MEASLES AND GERMAN MEASLES BY COUNTIES FOR 1928

COUNTIES	MEASLES					GERMAN MEASLES		
	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Per cent Fatality	Cases	Cases per 1000 Pop.	Deaths
Atlantic	518	5.45	5	0.05	0.96	14	0.14	0
Bergen	2428	8.85	13	0.04	0.53	400	1.45	0
Burlington	667	7.01	2	0.02	0.30	28	0.29	0
Camden	1846	6.63	21	0.09	1.36	28	0.12	0
Cape May	240	12.33	1	0.05	0.41	57	2.93	0
Cumberland	488	7.30	8	0.12	1.64	1	0.01	0
Essex	12425	16.05	79	0.10	0.61	2410	3.11	1
Gloucester	594	10.29	5	0.08	0.84	119	2.96	0
Hudson	3524	4.96	62	0.08	1.76	270	0.38	0
Hunterdon	132	4.01	0	0	0	1	0.03	0
Mercer	496	2.56	9	0.04	1.85	59	0.31	0
Middlesex	373	1.82	7	0.03	1.87	20	0.69	0
Monmouth	736	6.46	2	0.01	0.27	123	1.68	0
Morris	737	8.21	3	0.03	0.40	70	0.78	0
Ocean	150	6.55	0	0	0	3	0.13	0
Passaic	3372	11.25	13	0.04	0.38	22	0.07	0
Salem	273	6.07	2	0.04	0.73	4	0.09	0
Somerset	123	2.19	0	0	0	17	0.50	0
Sussex	145	5.82	2	0.06	1.39	5	0.20	0
Union	2632	10.41	17	0.06	0.64	264	1.00	0
Warren	175	3.75	2	0.04	1.14	0	0	0
State	31764	8.59	250	0.06	0.78	3905	1.05	1

**REPORTED CASES AND DEATHS FROM ACUTE ANTERIOR POLIOMYELITIS
AND SCARLET FEVER BY COUNTIES FOR 1928**

COUNTIES	ACUTE ANTERIOR POLIOMYELITIS				SCARLET FEVER			
	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.
Atlantic	0	0	0	0	151	1.59	4	0.04
Bergen	12	0.04	1	0.003	725	2.64	2	0.007
Burlington	0	0	0	0	132	1.39	1	0.01
Camden	0	0	2	0.008	395	1.69	4	0.01
Cape May	0	0	0	0	52	2.67	0	0
Cumberland	0	0	0	0	153	2.29	1	0.01
Essex	27	0.03	8	0.01	2459	3.17	14	0.02
Gloucester	0	0	0	0	77	1.33	3	0.05
Hudson	11	0.01	7	0.009	1418	2.00	10	0.01
Hunterdon	0	0	0	0	29	0.88	0	0
Mercer	4	0.02	2	0.01	164	0.86	1	0.005
Middlesex	1	0.005	0	0	219	1.07	3	0.01
Monmouth	8	0.07	0	0	128	1.12	2	0.01
Morris	1	0.01	0	0	234	2.83	1	0.01
Ocean	1	0.04	1	0.04	13	0.57	2	0.08
Passaic	4	0.01	3	0.01	291	0.98	4	0.01
Salem	3	0.06	0	0	62	1.38	1	0.02
Somerset	2	0.03	0	0	119	2.12	1	0.01
Sussex	0	0	0	0	33	1.32	0	0
Union	7	0.02	2	0.008	517	2.04	6	0.02
Warren	1	0.02	1	0.02	68	1.45	3	0.06
State	52	0.02	27	0.007	7459	2.01	63	0.01

**REPORTED CASES AND DEATHS FROM RABIES, TRACHOMA AND TRICHINOSIS
BY COUNTIES FOR 1928**

COUNTIES	RABIES		TRACHOMA		TRICHINOSIS	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
Atlantic	0	0	0	0	0	0
Bergen	0	0	5	0	2	0
Burlington	0	0	0	0	0	0
Camden	0	0	0	0	0	0
Cape May	0	0	0	0	0	0
Cumberland	0	0	0	0	0	0
Essex	0	0	5	0	7	0
Gloucester	1	0	0	0	0	0
Hudson	1	1	2	0	0	0
Hunterdon	0	0	0	0	0	0
Mercer	0	0	1	0	0	0
Middlesex	0	0	0	0	0	0
Monmouth	0	0	0	0	0	0
Morris	0	0	0	0	0	0
Ocean	0	0	0	0	0	0
Passaic	0	0	4	0	1	0
Salem	0	0	0	0	0	0
Somerset	0	0	2	0	0	0
Sussex	0	0	0	0	0	0
Union	1	1	1	0	13	2
Warren	0	0	0	0	0	0
State	2	2	20	0	23	2

**REPORTED CASES AND DEATHS FROM SMALLPOX AND TUBERCULOSIS
BY COUNTIES FOR 1928**

COUNTIES	SMALLPOX				TUBERCULOSIS				
	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Per cent Fatality
Atlantic	1	0.01	0	0	182	1.91	90	0.94	49.45
Bergen	1	0.003	0	0	372	1.35	218	0.79	58.60
Burlington	0	0	0	0	85	1.03	67	0.70	68.56
Camden	0	0	0	0	371	1.59	176	0.75	47.44
Cape May	0	0	0	0	28	1.44	22	1.13	78.57
Cumberland	0	0	0	0	49	0.73	37	0.55	76.51
Essex	1	0.001	0	0	1300	1.79	668	0.85	47.69
Gloucester	0	0	0	0	60	1.04	45	0.78	75.00
Hudson	0	0	0	0	831	1.17	567	0.80	68.23
Hunterdon	6	0.18	0	0	14	0.42	19	0.57	*
Mercer	3	0.01	0	0	242	1.27	137	0.82	64.87
Middlesex	0	0	0	0	222	1.08	148	0.72	66.66
Monmouth	0	0	0	0	166	1.46	81	0.71	48.79
Morris	12	0.13	0	0	190	2.12	78	0.87	41.05
Ocean	0	0	0	0	32	1.40	21	0.91	65.62
Passaic	0	0	0	0	295	0.99	181	0.61	61.35
Salem	0	0	0	0	22	0.49	20	0.44	90.90
Somerset	0	0	0	0	74	1.32	41	0.73	55.49
Sussex	0	0	0	0	23	0.92	22	0.88	95.65
Union	0	0.01	0	0	301	1.19	186	0.73	61.46
Warren	64	1.37	0	0	21	0.45	24	0.51	*
State	91	0.02	0	0	4933	1.84	2862	0.77	57.43

* More deaths than cases reported.

**REPORTED CASES AND DEATHS FROM TYPHOID FEVER AND WHOOPING COUGH
BY COUNTIES FOR 1928**

COUNTIES	TYPHOID FEVER				WHOOPING COUGH			
	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.	Cases	Cases per 1000 Pop.	Deaths	Deaths per 1000 Pop.
Atlantic	17	0.18	1	0.01	55	0.57	4	0.04
Bergen	23	0.08	4	0.01	575	2.09	11	0.04
Burlington	24	0.25	3	0.03	209	2.20	7	0.07
Camden	38	0.16	11	0.04	253	1.09	19	0.08
Cape May	11	0.56	0	0	54	2.77	0	0
Cumberland	13	0.19	1	0.01	64	0.96	1	0.01
Essex	47	0.06	5	0.006	2967	3.33	30	0.04
Gloucester	10	0.17	3	0.05	118	2.04	11	0.19
Hudson	30	0.04	7	0.009	323	0.47	34	0.04
Hunterdon	5	0.15	1	0.03	4	0.12	0	0
Mercer	27	0.14	3	0.01	102	0.53	9	0.04
Middlesex	14	0.07	1	0.005	65	0.31	11	0.05
Monmouth	80	0.70	8	0.07	205	1.80	6	0.03
Morris	4	0.04	2	0.02	281	3.13	1	0.01
Ocean	2	0.08	0	0	5	0.22	2	0.08
Passaic	16	0.05	3	0.01	389	1.31	10	0.03
Salem	8	0.17	1	0.02	9	0.20	2	0.04
Somerset	9	0.16	2	0.03	171	3.05	9	0.16
Sussex	2	0.08	1	0.04	10	0.40	3	0.12
Union	29	0.11	3	0.01	820	3.24	11	0.04
Warren	1	0.02	0	0	3	0.06	2	0.04
State	410	0.11	60	0.01	6692	1.81	183	0.05

**Report of the Bureau of Engineering
for the Year Ending June 30, 1929**

H. P. CROFT, C. E., CHIEF

The developments in the last fiscal year show the need for:

1. Four additional assistant sanitary engineers to carry out more effectively the routine duties of the Bureau, in which are included, the examination of water and sewage projects, the inspection of water and sewage treatment plants, the control of stream pollutions, and the cooperation with other state agencies. It is estimated that this will require an appropriation of \$12,860.00, in which is included an additional clerk, travelling and incidental expenses.

2. The establishment of Rules and Regulations for the construction and operation of swimming pools, and it is suggested that this be based upon the law similar to that set up in a special act of the Legislature on April 25, 1928, in Rhode Island. There the expense is shared in part by those owning and operating swimming pools. If a similar procedure is followed in this State, it is estimated that the cost will be \$5,000.00.

For some years associations interested in the conservation of the waters of the State have cooperated with the bureau in an attempt to secure additional personnel, which has been unsuccessful, the money for such work not being appropriated. Conferences held with interested parties show that for this line of work, which will include,

1. The establishment of sampling stations upon the various streams of the State for the collection and examination, chemically, physically and bacteriologically, of samples obtained therefrom;

2. The sanitary survey of the various watersheds;

3. The preparation of watershed maps and their distribution to civic and municipal organizations;

4. Studies upon the relation and control of algae in the production of odors in potable water supplies, the collection of data, in the laboratory and field, upon algae and higher green plants,

and the effect of sewage and industrial wastes, treated and untreated, upon such life in our streams;

5. The preparation of educational pamphlets upon water and sewage, and the issuance of information for the disposal of sewage from isolated dwellings.

Thirty thousand dollars will be required.

The following table No. 1 shows the number of water and sewage projects examined by the bureau for departmental action, and includes, the number of plans approved for such projects, the number of applying municipalities or companies, and the consulting engineers' estimates of costs:

TABLE NO. 1—NUMBER OF WATER AND SEWAGE PROJECTS EXAMINED FROM JULY 1, 1928 TO JUNE 30, 1929

<i>Character of Projects</i>	<i>Number</i>	<i>Number of Plans</i>	<i>Number of Applying Municipalities or Companies</i>	<i>Engineers' Estimates of Costs</i>
SEWAGE:				
Sewer extensions and pumping stations	68	267	39	\$1,241,847.75
Alterations and improvements at existing sewage treatment plants	25	156	18	1,733,600.00
Sewer systems, new	3	65	3	970,000.00
Sewage treatment works new	3	19	3	623,500.00
Sewer systems and sewage treatment works combined, new	7	129	7	3,187,200.00
Outfall lines from sewage treatment plants	1	2	1	19,000.00
WATER:				
New wells	8	19	6	231,700.00
Chlorine installations	9	11	9	11,250.00
Alterations and improvements at water purification plants	5	39	5	1,187,231.00
New water systems and supplies	5	22	5	147,570.00
Totals	134	729	96	
Total of engineers' estimates of costs fiscal year 1928-1929				\$9,352,898.75
Total of engineers' estimates of costs fiscal year 1927-1928				6,675,979.00
Increase over 1927-1928				\$2,676,919.75

There have been made during the year the following inspections relating to:

WATER:

Special water inspections, including complaints and conferences	275
Cross connections, inspection of	4
Watersheds	4

SEWAGE:

Special sewage and trade waste inspections, including construction work	364
Complaints and conferences	62
Swimming pools	2

Seventy-five certificates were prepared for the use of water upon interstate carriers; 12½ man-working days were spent in the investigation of the Hackensack sewage treatment plants; 6 man-working days on the Manasquan sewage treatment plant; 14 man-working days on the Millville sewage treatment plant; 7 man-working days on the North Brunswick Township sewage treatment plant; and 19½ man-working days on the Tenafly sewage treatment plant. Inspections were made of 14 sewage treatment plant outfalls along the Atlantic Coast. Sanitary inspections were made upon the following streams; Assunpink Creek, 36½ man-working days; Cohansey River, 1 man-working day; Hackensack River and tributaries, 10 man-working days; Newton Lake, 2 man-working days; Passaic River, 4 man-working days; Peckman River, 2 man-working days; and Pequannock River, 16 man-working days. A complete sanitary investigation, comprising 107 man-working days, was made of the Rockaway River Watershed above the junction of the Whippany River. Twenty-two man-working days were spent in attending court trials, and 31 man-working days were spent in attending water and sewage meetings and conventions.

Pollutions of streams investigated	97*
Notices issued to cease pollution	20
Reinspections of stream pollutions made	8
Cases of stream pollutions found to be abated	6
Cases referred to Attorney-General for abatement of pollutions	4
Cases referred to Attorney-General for prosecution under the laws relating to water and sewage matters	6
Investigations of violations of sanitary code	104**
Notices issued upon municipalities or water companies to make changes in operation at public potable water supplies	6
Notices issued upon municipalities or sewer companies to cease the discharge of raw sewage into the waters of the State, or to alter, enlarge or improve sewage treatment works	30***
Stipulations of agreements entered into by municipalities with the Department to alter, enlarge or improve sewage treatment works	2

* Seventy-seven of the pollutions above investigated were in one municipality where the construction of a sewerage system is contemplated, and therefore no notices were served upon the polluters.

** The above violations of the Sanitary Code were of Chapter 1 and were existing upon the Rockaway River watershed.

*** The notices issued upon the North Jersey seashore municipalities and companies operating sewage treatment plants in said municipalities are included in this item.

The following table No. 2 shows the character and quantity of analyses and examinations made in the water and sewage laboratory of the bureau during the fiscal year:

TABLE No. 2—EXAMINATION OF WATER, SEWAGE AND ALLIED SAMPLES

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Total
Public Water Supplies	203	294	229	137	129	151	113	99	215	129	133	120	1,952
Private (submitted by) Camps	12	6	4	2	1	1	1	1	1	1	1	1	40
Employees	6	6	2	5	3	2	1	1	1	2	2	2	33
Local Boards of Health	16	36	30	13	17	23	17	18	27	15	19	24	255
Pay Samples	3	12	6	4	13	1	4	9	4	3	5	8	72
Second Samples	2	1	1	1	1	3	1	1	1	1	1	2	12
State Institution Supplies	10	16	25	20	8	67	10	1	4	18	10	4	193
County Institution Supplies	1	5	3	5	10	14	3	3	6	3	1	7	61
School Supplies	9	3	9	17	156	79	156	149	41	25	16	14	728
Bottled Water Supplies	1	1	1	1	1	1	1	1	1	1	1	2	48
Dairy Samples	1	1	1	2	8	3	7	1	3	4	7	3	38
Bathing Waters	6	2	1	1	1	1	3	1	1	5	1	9	27
Roadside Stand Supplies	58	31	4	1	1	1	1	1	1	1	1	1	94
State Park Supplies	8	8	1	1	1	1	1	1	1	1	1	1	11
Sewage Samples	2	140	1	9	29	1	10	128	22	22	101	401	842
Trade Waste Samples	106	4	1	1	1	1	1	3	8	1	2	14	135
Sand Samples	2	2	1	1	1	3	1	1	1	1	2	17	17
Stream Samples	46	46	43	118	136	33	3	59	14	14	163	79	651
Surf Samples	1	1	1	1	1	1	1	1	1	1	1	1	43
Ice Samples	1	1	1	1	1	1	1	1	1	1	1	1	2
Special Investigations	1	1	1	1	1	1	1	30	1	1	1	1	30
Total	435	612	358	391	511	380	328	315	499	241	507	707	5,284

.....19.....

This is to certify that the above application is recommended for approval.

Water Company or Water Department.....

By.....

(Title)

.....19.....

This is to certify that the above application has been investigated and that the physical connections described therein.....comply with the

provisions of Chapter 13 of the Sanitary Code. Recommendation is made that a permit.....^{will or will not} granted.

^{be or be not}

Board of Health of.....

By.....

(Title)

(Seal)

Summary of procedure for obtaining a permit from the New Jersey State Department of Health to maintain or establish a physical connection between a public potable water supply and an unapproved water supply:

1. Owner of physical connection makes application to the water company or water department and to the local board of health having jurisdiction, on a form "original application" furnished by the State Department of Health.

2. State Department of Health will issue a permit in triplicate to the local board of health, if recommendations are favorable, to maintain or install a physical connection. The owner making application will be notified as to the above action. The existence of the permit will be for a period expiring on April 1, 1930, unless revoked due to the improper or inadequate operating, or the improper or inadequate construction or functioning, of the physical connection.

3. Before the expiration of the time limit contained in the permit, April 1, 1930, the owner, if he so desires, may make application for renewal of the permit to the water company or water department and local board of health on a form "renewal application" furnished by the State Department of Health on which is to be reported information on inspections and maintenance of physical connections.

The establishment of Chapter 13 of the State Sanitary Code resulted in the request by some manufacturing concerns that the Department act upon private water supplies. The official action upon the request was taken by the members of the Department on May 7, 1929 when it was "on motion voted that the private water supplies be not acted upon". Into the consideration of the matter entered the public health laws relating to public water supplies; the opinion of the Attorney-General under date of June

1, 1911; the procedure used in the examination and supervision of new and existing public potable water supplies; and, fees for supervision. The board expressed the opinion that the installation of double check valves to comply with Chapter 13 of the Code does not place an unreasonable financial burden upon the industries.

Chapter 13 of the Code also resulted in the request that the Attorney-General express an opinion upon the jurisdiction of the Department, under the provisions of Chapter 253 of the P. L. of 1909, over water supplies owned and operated by manufacturing companies and from which supplies water is served to dwellings in which employees of the companies reside, the dwellings being supplied with water from the company's supply, and for the use of which dwellings a rental is collected by the companies in which may or may not be incorporated charges for the supplying of the water. In these cases no rates are fixed by the Public Utility Commission for a charge by the companies in the supplying of water. The question was also asked as to whether the act of 1909 applies to hotels and other establishments delivering water to guests and others as an accommodation.

The Attorney-General in his opinion (May 8, 1929) advised that the provisions of the act of 1909 applies to water supplies owned and operated by manufacturing companies, and from which supplies water is served to dwellings in which employees of the company reside, and for the use of which dwellings a rental is collected by the companies in which may or may not be incorporated charges for the supplying of the water. He further advised that the act of 1909 did not apply to hotels, etc.; that these were private supplies.

Hearty cooperation in the matter of cross-connections was obtained from the New Jersey Manufacturers Association, the Associated Factory Mutual Fire Insurance Companies, and several of the local boards of health throughout the State.

Movement under this chapter of the code has resulted in the issuance by the board members of the Department of 131 permits for the installation of 177 pairs of all-bronze check valves.

THE LICENSING OF OPERATORS

In accordance with the Rules and Regulations of the Department as revised and adopted on April 6, 1926, the following classes of licenses were issued:

Water—Primary Treatment, First Class	2
“ “ Second “	2
“ “ Third “	4
Sewage—Primary Treatment, First Division	1
“ “ Second “	9
“ “ Third “	2
Primary Secondary Treatment, First Division	4
“ “ “ Second “	15
“ “ “ Third “	0
Licenses issued to men who operated sewage treatment plants prior to the adoption of Chapter 23 of the P. L. of 1918 ..	2

Sixty-two applicants for licenses to operate water purification and/or sewage treatment plants were examined during the fiscal year, 32 of whom passed at the time first examined, and seven at the time of their second examination.

SEWAGE WORKS ASSOCIATION

The New Jersey Sewage Works Association and the Bureau cooperating held on March 22 and 23, 1929, at Trenton, the annual conference of sewage plant operators. Over 300 sewage plant operators, sanitary engineers and chemists from New Jersey and other States were in attendance.

SHORT COURSE FOR OPERATORS

The Short Course for sewage plant operators for the year 1929 was held on January 14th to 26th at the Engineering Building, Rutgers University, under the direction of Professors Lendall and Rudolfs. The attendance numbered 19 and included persons from the States of New Jersey, New York, Ohio and Pennsylvania. This course has been carried on for the past several years under the joint administration of the College of Engineering of Rutgers University, the New Jersey Sewage Works Association, and the Department of Health of the State of New Jersey.

THE PREVALENCE OF MANGANESE IN THE PUBLIC POTABLE
WATER SUPPLIES IN NEW JERSEY

During the late summer of 1928, in the regular examination of all the public potable water supplies in New Jersey which the Department is required to make periodically by law, the organism *B. Coli* was found to be present in all of the five ten cubic centimeter portions of the first sample submitted from one supply and in a subsequent sample which was requested to be collected to check the analysis of the former sample. This supply is from a surface source and the method of purification is one of prolonged storage and chlorination. An investigation of the supply disclosed that manganese was influencing the test for residual chlorine by the orthotolidin reagent, and that in the operation of the chlorination device the yellow color produced by the reagent was not an honest guide. It was appreciated that such a condition was dangerous in securing a bacteriologically safe water where chlorine is relied upon as a sterilizing agent. As a result 238 of the public potable water supplies in New Jersey were tested for the presence of manganese, and it was found that the manganese in parts per million ranged from .03 to .20. This investigation was supplemented by laboratory experiments, and a complete method was developed which it is believed will easily and accurately determine .02 parts per million of manganese in public potable water supplies.

A recommendation was made to the municipalities and companies owning and operating water purification plants using chlorine as a sterilizing agent that an orthotolidin test on the raw water or on the filtered water, if filtration were used, be made at least once a day. Should any color be obtained in the raw or filtered water, it is to be compensated for when making the residual chlorine test on the final water by subtracting the amount found in the raw or filtered water from that found in the final water; the difference to represent the actual residual chlorine in the final water.

The procedure recommended to determine small amounts of manganese in water is as follows:

To 100 cubic centimeters of water in an Erlenmeyer flask add 5 to 6 drops or more if necessary, of a 1 per cent solution of sodium hydroxide; bubble oxygen (from a cylinder of the compressed gas) through the solution for 10 minutes. (If oxygen is not available, air can be used but a longer period is necessary.) Transfer the liquid containing the oxidized manganese to a 100 cubic centimeter nessler tube and add 5 cubic centimeters orthotolidin solution. Allow to stand 15 to 20 minutes for the maximum development of the color. If iron is present in amounts of 0.5 parts per million or more, 5 cubic centimeters syrupy phosphoric acid is added before the orthotolidin solution. The color produced is compared with permanent standards made with known amounts of manganese or with the permanent standards for residual chlorine. If compared with the residual chlorine standards the readings observed are multiplied by 1.25.

WATER

No new methods in the purification of water for potable purposes have been established during the year.

The Ozone (Electrozone Corporation) method of water treatment installed in the borough of Ogdensburg has been abandoned, and plans and specifications have been submitted by the municipality for the installation and operation of a rapid sand filtration unit.

Complaints have been received from consumers of many of the well supplies in South Jersey. Investigations show the complaints to be due to the high iron or carbon dioxide content of the delivered water and in one case to the iron algae (crenotrix).

In acting upon the establishment of new public potable water supplies, the iron and carbon dioxide content of the supply is not considered officially by the Department.

The emergency chlorinator was used only once during the year on a public potable water supply. At Elmer a break-down at the water plant produced a shortage of water which resulted in the mayor of the borough requesting assistance. Representatives of the Department immediately left for the municipality and set up the chlorinator in connection with the fire engine which pumped water from an adjacent pond into the distribution system. During this period of pumping (4:30 P. M. to 11:45 P. M.) residual chlorine was present in the samples of delivered water collected and the number of 37 degrees C. bacteria did not exceed 23 per cubic centimeters, and B. Coli was absent in all of the ten cubic centimeter portions examined.

A municipality using surface water was experiencing difficulty due to the rapid clogging of the filters. Upon request representatives of the Department conducted an investigation and recommended the prechlorination of the raw water. This recommendation was carried out with the result that the Department has been advised that the filter trouble complained of was overcome. The Department was further advised that before prechlorination the municipality was only able to keep its filters working from five to six hours without washing. The filters are now operating for 24 hours without washing.

NORTH JERSEY SEASHORE MUNICIPALITIES

As a result of the detailed investigations of the construction, capacity and operation of the sewage treatment plants located in the North Jersey seashore municipalities, of the bacteriological examinations of samples taken from the surf, and of the observations of the effect of the sewage plant effluents upon the receiving waters, it was concluded that the increased pollution of the surf waters is produced by:

1. The increased population contributing to the sewerage systems.
2. The construction of jetties for shore protection work; and,
3. Probably by the increasing number of people using the waters for bathing purposes;

therefore, at a meeting of the Department of Health of the State of New Jersey held on January 15, 1929, the following preamble and resolution was adopted:

WHEREAS, A certain number of the North Jersey seashore municipalities must, for good and valid reasons, discharge their domestic sewage into the waters of the Atlantic Ocean; and,

WHEREAS, Through investigations made from time to time by representatives of the Department of Health of the State of New Jersey it has been fully demonstrated and shown that the existing method of sewage disposal, which is one of sedimentation, at the aforesaid seashore municipalities, is no longer efficient and satisfactory for the protection of the health and comfort of those persons using the waters of the Atlantic Ocean for recreational purposes, including bathing, adjacent to and in the vicinity of the aforesaid municipalities; and further, that the continuation of the prosperity of the said municipalities requires that an

efficient and satisfactory method of sewage treatment be adopted and established in such municipalities; therefore,

Be it Resolved, That the Department of Health of the State of New Jersey under the authority contained in an act entitled, "An act to prevent the pollution of the waters of this State by the establishment of a State Sewerage Commission, and authorizing the creation of sewerage districts and district sewerage boards, and prescribing, defining and regulating the powers and duties of such commission and such boards," being Chapter 210 of the P. L. of 1899 as amended by Chapter 72 of the P. L. of 1900, and supplemented by Chapter 135 of the P. L. of 1907, requires that in the aforesaid municipalities the minimum degree of sewage treatment at this time, shall comprise the methods of sedimentation and chlorination, the settled and disinfected effluent to be discharged into the waters of the Atlantic Ocean through outfall pipes, one thousand feet or more in length, from mean low water mark; and,

Be it Further Resolved, That the municipalities effected by this resolution be informed of the action taken hereunder by the Department of Health of the State of New Jersey at its meeting held on the fifteenth day of January, one thousand nine hundred and twenty-nine.

The adoption of the above resolution resulted in the passage of resolutions and the issuance of notices as follows:

To cease the discharge of domestic sewage into waters used for shell-fish areas and to provide a satisfactory method for the treatment and disposal of such sewage—1.

To construct a sewage pumping station and to disinfect the sewage by the application of chlorine gas in each and every year, between May 15 to October 15, 1929—1.

To construct additional sewage sedimentation capacity and to disinfect the sewage by the application of chlorine gas in each and every year between May 15 and October 15, beginning on May 15, 1929—7.

To disinfect the sewage by the application of chlorine gas in each and every year between May 15 to October 15 beginning on May 15, 1929—8.

CONSTRUCTION OF NEW SEWAGE TREATMENT PLANTS AND ADDITIONS TO EXISTING SEWAGE TREATMENT PLANTS

The increase in population and the increased use of certain waters of the State for recreational and shellfish purposes resulted in the construction of new sewage treatment plants and the enlargement and intensifying of the treatment processes at other plants.

The following table No. 3 contains information upon new sewage treatment plants constructed and placed in operation:

TABLE No. 3
NEW SEWAGE TREATMENT PLANTS CONSTRUCTED AND PLACED IN OPERATION ON OR BEFORE JUNE 30, 1929

LOCATION	OWNER	METHOD OF TREATMENT	DESIGN CAPACITY OF PLANT	REMARKS
Atlantic Highlands	Municipality	Sedimentation, chlorination and glass covered sludge beds	600,000 gallons per day	Raw sewage formerly discharged
Brigantine City	Municipality	Fine screening and chlorination	600,000 gallons per day	New development
Camden (part)	Municipality	Sedimentation, grit chambers and glass covered sludge beds	2,500,000 gallons per day	Raw sewage formerly discharged
Mt. Ephraim	Municipality	Sedimentation, separate sludge digestion, secondary sedimentation, chlorination and covered sludge beds	500,000 gallons per day	New system
North Whitewood	Municipality	Sedimentation, chlorination and glass covered sludge bed	2,110,000 gallons per day	Raw sewage formerly discharged
Sonsie Heights	Municipality	Sedimentation and chlorination	375,000 gallons per day	New development
Tozowa	Municipality	Sedimentation, glass covered spinning filters, secondary sedimentation, chlorination and glass covered sludge beds	400,000 gallons per day	New development

Plans have been approved for the construction of new sewage treatment plants for the projects shown in the following table No. 4:

TABLE No. 4

PLANS APPROVED FOR THE CONSTRUCTION OF NEW SEWAGE TREATMENT PLANTS FROM JULY 1, 1924, TO JUNE 30, 1929

LOCATION	OWNER	METHOD OF TREATMENT	DESIGN CAPACITY OF PLANT*	REMARKS
Barrington	Municipality	Activated sludge and rapid sand filtration, separate sludge digestion and glass covered sludge beds	600,000	New development
Belmar (Camden County)	Municipality	Sedimentation, sprinkling filters, chlorination and glass covered sludge beds	225,000	New development
Brigantine City (permanent plant)	Municipality	Sedimentation, chlorination and glass covered sludge beds	650,000	New development
East Spotwood	American Salpa Corp.	Sedimentation	19,940	New industry
Everson	Municipality	Sedimentation, sprinkling filters and glass covered sludge beds	270,000	New development
Gloucester Twp. (Blackwood Section)	Municipality	Sedimentation, sprinkling filters and chlorination and sludge beds	200,000	New development
Lavallette	Municipality	Sedimentation and chlorination	900,000	New development
Lower Penn's Neck Twp.	American Gas and Electric Co. and United Gas Improvement Company	Sedimentation and sludge drying beds	20,000	New development
Rayway Valley (Preliminary Plans)	Joint Meeting	Sedimentation and chlorination (sludge to be brought to surface) nation of sewage held in abeyance)	21,025,000	Raw sewage formerly developed from Railway. New development at Hoehn. Plant to be abandoned at West-field
Red Bank	Municipality	Sedimentation and sludge drying beds	750,000	New development
Union Twp. (Clare Barton Section)	Municipality	Sedimentation, chlorination, separate sludge digestion and glass covered sludge beds	1,250,000	Enlargement and intensifying of treatment

TABLE No. 4—Continued

LOCATION	OWNER	METHOD OF TREATMENT	DESIGN CAPACITY OF PLANT*	REMARKS
Warne Twp. (Pachannack Lake Section)	Municipality	Sedimentation, sprinkling filters, chlorination and sludge drying beds	300,000	New development
West Paterson	Municipality	Sedimentation, sprinkling filters, chlorination and glass covered sludge beds	400,000	New development
Woodbridge Twp. (Kearny Heights Section)	Municipality	Sedimentation	75,000	New development

* — Gallons per day.

Plans have been approved for improving the method of sewage treatment in the following municipalities as shown in table No. 5:

TABLE No. 5
PLANS APPROVED, FOR IMPROVING THE METHOD OF SEWAGE TREATMENT IN THE FOLLOWING MUNICIPALITIES, FROM JULY 1, 1938,
TO JUNE 30, 1939

LOCATION	OWNER	PAST METHOD OF TREATMENT	APPROVED METHOD OF TREATMENT	DESIGN CAPACITY OF PLANT*	REMARKS
Altenhurst	Municipality	Sedimentation	Additional sedimentation and chlorination	850,000	
Autubon	Municipality	Sedimentation, sprinkling filters and sludge beds	Modified Imhoff sedimentation, chlorination, separate digestion and glass covered sludge beds	1,200,000	
Beach Haven	Municipality	Sedimentation	Additional sedimentation and chlorination	700,000	
Bergenfield (Joint Plant)	Municipalities of Bergenfield and Dumont	Sedimentation, sand filtration and sludge drying beds	Sedimentation, sand filtration, sprinkling filters, chlorination and glass covered sludge beds	850,000	
Bogota	Municipality	Sedimentation and sludge drying beds	Chlorination, additional sedimentation and glass covered sludge beds	1,150,000	
Bramley Beach (2 plants)	Municipality	Sedimentation	Additional sedimentation and chlorination	332,000 District No. 1 984,300 District No. 2 plant plant	
Chatham (Joint Plant)	Municipalities of Chatham and Madison	Sedimentation, contact beds, sand filtration and sludge drying	Activated sludge and sand filtration, chlorination, separate digestion and sludge drying beds	2,000,000	
Collingswood	Municipality	Sedimentation, contact beds and separate sludge digestion	Activated sludge, chlorination, separate sludge digestion and glass covered sludge beds	2,000,000	

TABLE No. 6—Continued

LOCATION	OWNER	PAST METHOD OF TREATMENT	APPROVED METHOD OF TREATMENT	DESIGN CAPACITY OF PLANT*	REMARKS
Egg Harbor	Municipality	Sedimentation, sand filtration and sludge drying beds	Sedimentation, sand filtration and sludge drying beds	.....	Reversal of sand in filter beds
Haddonfield (2 plants)	Municipality	Sedimentation, sprinkling filters and sludge drying beds	Prechlorination, sedimentation, sprinkling filters, and glass covered sludge beds	800,000 Plant No. 1 300,000 Plant No. 2	
Lakewood	Lakewood Water Co.	Sedimentation, sand filtration, separate sludge digestion and sludge drying beds	Sedimentation, sand filtration, separate sludge digestion and sludge drying beds and chlorination	2,500,000	Increased sand bed area
Moorestown Twp.	Municipality	Sedimentation, sprinkling filters and sludge drying beds	Chlorination, modified Imhoff sedimentation, sprinkling filters, separate sludge digestion and glass covered sludge beds	1,000,000	
Neptune Twp.	Municipality	Sedimentation	Sedimentation and chlorination	.....
Ocean City	Ocean City Sewer Service Company	Sedimentation, chlorination, separate sludge digestion and glass covered sludge beds	Screening, sedimentation, chlorination, separate sludge digestion and glass covered sludge beds	1,088,000	
Orndell	Municipality	Sedimentation and sludge drying beds	Sedimentation, separate sludge digestion and glass covered sludge drying beds	850,000	
Wildwood	Municipality	Fine screening	Fine screening, sedimentation, chlorination, separate sludge digestion and sludge drying beds	500,000	

* — Gallons per day.

COOPERATION WITH THE STATE DEPARTMENT OF
CONSERVATION AND DEVELOPMENT

The Bureau has continued to cooperate with the State Department of Conservation and Development during the past year in the examination of samples of water from and in the making of sanitary surveys at potable water supplies in the State parks and forests.

COOPERATION WITH THE STATE BOARD OF EDUCATION

Chemical analyses and bacteriological determinations were made during the year of 728 samples of water from sources of potable water supplies used at 643 rural schools. The following shows the conclusions found at the time the water samples were examined:

	Total Number	Safe	Doubtful	Unsafe
Driven wells	386	293 = 75.9%	72 = 18.7%	21 = 5.4%
Dug wells	164	57 = 34.8%	65 = 39.6%	42 = 25.6%
Springs	52	27 = 51.9%	2 = 3.8%	23 = 44.3%
Cisterns	26	12 = 46.2%	2 = 7.6%	12 = 46.2%
Unclassified	15	5 = 33.3%	2 = 13.4%	8 = 53.3%
Total number of samples considered safe—394 or 61.8%				
Total number of samples considered doubtful—149 or 22.2%				
Total number of samples considered unsafe—106 or 16.5%				

During the year 49 schools have changed their source of water supply and in 37 cases the quality of the water has been improved.

Additional personnel would enable the Bureau to make field inspections at these rural schools.

COOPERATION WITH THE FISH AND GAME COMMISSION

The Bureau has continued to cooperate with the Fish and Game Commission during the past year in the examination and the interpretation of the results of samples of water submitted for analyses and in consultations relative to stream pollutions.

COOPERATION WITH THE COUNTY MOSQUITO EXTERMINATION
COMMISSIONS OF NEW JERSEY

A conference with the superintendents of the County Mosquito Commissions was attended at which time the Bureau was asked to cooperate with them to the extent of testing out sewage disposal plants of various types before oil and larvicides were used and again after each of two oils and two larvicides were applied; this to determine if the use of any of the materials used for mosquito control will interfere with the normal functions and operations of the sewage disposal plant. This joint investigation is still in progress.

Report of Bureau of Food and Drugs
For the Year Ending June 30, 1929.

W. W. SCOFIELD, CHIEF.

The preparation of many foods in large industrial plants located in our large cities has brought about marked changes in the general quality and condition of foods as distributed to the consumers during recent years. In such plants the control of the quality and condition of raw materials is possible. Each operation can be regulated so that the finished article has certain characteristics which are uniform. In most cases foods are packed in small containers, or are wrapped in small packages at the plants and these foods reach the consumer in the original containers or wrappings without opportunity for contamination by dust, dirt, or insects. As a result of these improvements in the preparation and distribution of various articles of food, the necessity for the collection and examination of many foods as offered for sale at retail establishments no longer exists because it is possible to secure representative samples at the plant or because adulteration has been abandoned. Among such foods are included breads, confectionery, cereals and canned goods. One class of foods, milk and dairy products, however, are so easily contaminated by disease producing bacteria or adulterated with foreign substances that endless vigilance in the scrutiny of these foods by official agencies is necessary if wholesome, unadulterated milk and dairy products are to be available to our people.

For this reason the major effort of the Bureau of Food and Drugs during the past year has been devoted to milk regulatory work. Emphasis has been placed upon the instruction of dairymen so that they will understand the reasons for the sanitary requirements imposed upon them and will come to realize that final success in their business depends upon extreme care and attention

to detail in the production of milk. A contact between dairymen and official instructors is most important as it seems difficult, if not impossible, to give proper instruction to dairymen in any other way. Dairy inspection is now carried on by visiting premises where milk is produced for sale in a given area regardless of the place of distribution. Advice is given regarding the necessity for health cows and milkers, for cleanliness in the maintenance of cows, stables, milk houses and utensils. The necessity for healthy cows and milkers, for cleanliness in the machines is pointed out. The value of thorough straining and cooling of milk is stressed.

A large percentage of dairymen respond to this instruction by making an honest effort to put into practice the advice received and to produce milk in conformity with the laws of the State. Occasionally, however, the inspectors report that a dairyman refuses to heed the instruction and continues to produce milk under insanitary conditions. In a relatively few cases during the year local boards of health have been notified of conditions on dairy premises within their jurisdiction which were in violation of the provisions of Chapter 78 of the Laws of 1914. Under this law it becomes the duty of the local board of health receiving such notification to prohibit the distribution and sale of milk produced on these premises within the jurisdiction of the local board of health.

The names and addresses of persons maintaining herds used for the production of milk distributed in the raw condition have been secured by inspectors of this Bureau and the claims made regarding tuberculin testing of the cows have been verified by checking against the records of the Bureau of Animal Industry, New Jersey Department of Agriculture. This checking proves that raw milk distributed and sold in this State is generally produced by cows which have passed an annual tuberculin test and that the provisions of the law, enacted in 1927, which requires all milk to be pasteurized excepting that produced by cows which have passed a tuberculin test within one year of the sale of the milk, are generally complied with.

Mention should be made that the provisions of this law do not afford protection against the possibility of the transmission of

diseases other than bovine tuberculosis through raw milk. It is recognized that science has not found means of securing absolute protection of milk supplies from possible contamination with organisms causing scarlet fever, diphtheria, sore throat and certain other diseases by persons handling milk or from infected udders, other than by pasteurization. Epidemics of disease caused by consumption of unpasteurized milk continue to occur. The contamination of milk is generally caused by persons who are apparently normal in health, but who in reality continue to give off the causative germs, or by persons who are affected with disease in a light and unrecognized form.

The purchase and use of pasteurized milk and cream is recommended although it seems impracticable at this time to require the pasteurization of all milk because of the economic burdens in certain cases and also because of the insistent demand on the part of a certain proportion of the populace for unpasteurized milk and cream.

During the year a special study has been made of certain of the raw milk supplies of the State. This study included a microscopical examination of the milk as delivered by dairymen. If the milk showed no evidence of disease in the udders of cows or of faulty handling of the milk, it was assumed that the practices followed by the dairymen were generally correct. If, on the other hand, evidence indicating diseased udder conditions or inadequate cooling or faulty handling of the milk was found upon microscopical examination of the milk, a visit was made to the dairy to locate the cause of the abnormality.

The outstanding conclusion from this study is the widespread use of cows with diseased udders in the production of milk for sale, the ignorance concerning the cause and effect of mastitis and the helpless attitude of dairymen when the facts are disclosed to them.

Since it is well known that some of the organisms causing or associated with mastitis in cows are responsible for serious epidemics of disease among the consumers of milk and since there is no practical way for dairymen to determine which case of mastitis is dangerous to the consumer of milk, it appears very necessary that dairymen be informed regarding mastitis and that

consumers be protected against the consumption of milk from diseased udders of cows.

A second conclusion is drawn from this study. The milking machine as used by the ordinary dairyman is frequently a menace to the herd and to the consumers of the milk. Cows affected with mastitis, which would readily have been discovered by hand milking, were milked by machines in such a manner that the diseased condition of the udders was not detected and the abnormality of the milk was not known. After such use, the contaminated machines are carriers of the micro-organisms to other cows as well as to the milk which passes through the machines. The thorough cleaning and sterilization of milking machines between milkings has been found to be the exception rather than the rule where they are used.

Considerable improvement has been made in the building arrangement, equipment and methods employed at many pasteurizing plants during the year. A number of dealers who formerly produced and distributed raw milk from tuberculin tested cows have either reduced the quantity of raw milk sold or entirely dispensed with its sale in favor of pasteurized milk. In order to provide adequate space for pasteurizing, cooling, bottling and other equipment, it has been necessary for most of these dealers to enlarge their milk handling rooms or to erect new buildings.

Efforts are continually being made by agents of the Bureau to improve the temperature control of pasteurization, the cooling of the milk after pasteurization, storage facilities, cleansing of milk containers and equipment and the personal cleanliness of employees. In the case of a few owners of pasteurizing plants who have not appreciated their responsibilities in maintaining satisfactory plants and who have not handled the milk in a proper manner, license to operate the pasteurizing plants have been revoked or legal action has been instituted for the collection of the penalty provided by law for the operation of a pasteurizing plant without a license.

An unusual type of adulteration, the use of artificial color to give milk a rich appearance, was detected in the milk as distributed by one large firm. Samples of this milk were collected in two cities and legal action was instituted against the firm under

the provisions of Chapter 217 of the Laws of 1907. It appears that this type of adulteration was limited to the one milk supply and that this practice has been discontinued.

Sediment tests have been made of milk as delivered by dairymen to the consumers or to the milk receiving stations. The dirt contained in a pint sample of milk is collected on a cotton disc by filtering the milk through the disc. In those cases in which an undue amount of dirt appears on the disc, the dairyman is advised of the findings and of the necessity for producing clean milk. The disc with the dirt is also mailed to the dairyman. Good results have been obtained by sending the dirty discs to the dairymen, as the sight of the dirt removed from milk produced on their premises causes interest and the desire on the part of most dairymen to avoid similar humiliation in the future.

During the year reports were received from veterinarians showing that 60,723 cows were examined and 104 of these animals were suspected of being affected with tuberculosis. Information in each case was forwarded to the Department of Agriculture of this State.

Ice Cream Factory Inspection.—Inspections have been made during the year of 481 ice cream manufacturing plants. At 10% of these plants ice cream is manufactured for sale at wholesale, while at approximately 90% of the plants, the ice cream is prepared for sale at retail on the premises. In general, inspections have shown that these plants are operated in a cleanly manner. As a result of educational work during the year and past years, a supply of hot water for the cleansing of utensils and containers used in the distribution of ice cream is generally provided in the plants licensed by the Department. It is gratifying to learn from inspections that milk products used in the manufacture of ice cream are generally pasteurized. While there is no specific legal requirement in force in this State requiring the pasteurization of milk products entering into ice cream, it would appear that manufacturers have realized that the pasteurization of milk products entering into this product provides a greater protection to the consumer than any other means which may be applied.

Non-Alcoholic Beverage Plant Inspection.—During the year 605 inspections have been made of establishments where non-

alcoholic beverages are prepared. There has been a noticeable improvement in the sanitation of these places during the past two years. The law requiring an annual license for these plants has been a means of assistance in maintaining a higher standard of sanitation in these plants. During the year four penalties have been collected for the operation of bottling plants without licenses from this department. The applications for licenses in these cases were not considered favorably because of the insanitary condition of the plants. The collection of penalties for such violations of the law usually results in prompt improvement of the plants and finally in the operation of the same in compliance with the law.

Canning Factory Inspection.—Particular attention was given during the last canning season to the care exercised in preventing unsound materials entering into canned foods and to the thoroughness of washing and preparation of foods before being placed in the final container. Our inspections show that the operators of these plants in New Jersey have realized the importance of this precaution and, in general, a clean sound product has been packed. No adulterations of canned food products were found during the year.

Restaurant and Hotel Kitchen Inspection.—The inspections of restaurant and hotel kitchens during the year has been continued, under the same plan used in past years, by attempting to interest local boards of health in this work and requesting representatives of the local boards of health to accompany our inspector in this work. During the summer months the work is confined largely to the shore cities and during the winter months the inland towns have been surveyed. During the year 452 inspections of restaurants and hotel kitchens were made. Great improvement has been noted since this work was inaugurated in 1924. It has been the aim to impress the proprietors of restaurants and hotels with the idea that cleanliness and careful methods in the handling and preparation of foodstuffs are of vital importance to the health of the patrons as well as to the welfare of their business.

Physical Examination of Food Handlers.—The question of the physical examination of employees who handle food has been carefully considered and it has been deemed impracticable at this

time to undertake this work upon a State-wide scale. The physical examination of individuals by physicians without making laboratory examinations will not eliminate "carriers" of typhoid fever and diphtheria. "Carriers" are probably a greater source of danger in connection with the handling of food than persons who are actually affected with certain diseases. It is common knowledge that workers employed in hotels and restaurants are continually moving from place to place in quest of employment. The laboratory examination of specimens from the multitude of workers handling foodstuffs in these places does not seem possible with the facilities available at this time or likely to be furnished in the near future. It would be extremely difficult to enforce a regulation providing for the thorough physical examination, including laboratory examinations of specimens by physicians.

Slaughter-house Inspection.—During the year 128 inspections have been made of slaughter-houses. These establishments were found to be operated in substantial compliance with the laws of this State.

During these investigations 289 beef carcasses, 108 calf carcasses and 55 hog carcasses were inspected and passed for food; 2 beef carcasses, 1 calf carcass and 600 pounds of beef were condemned as unfit for food.

TABLE NO. 1.

No. of Samples of Milk, Food, Drugs and Cleansing Solutions Collected for Analyses and Results of Analyses

	Above Standard	Below Standard	Total
Milk and Cream	4,507	333	4,840
Foods	785	60	845
Drugs	115	55	170
Cleansing Solutions	39	4	43
Total	5,446	452	5,898

The difference between the number of samples collected and the number analyzed is due to spoilage of certain samples and breakage of containers in transit to the laboratory.

TABLE No. 2.

The Number of Sanitary Inspections Made of Establishments Where Food-stuffs are Prepared, Packed, Stored or Otherwise Handled.

Dairies	2839
Creameries and milk pasteurizing plants	671
Milk depots	160
Ice cream factories	481
Cold storage plants	105
Slaughter-houses	128
Bottling plants	605
Egg breaking plants	9
Restaurant and hotel kitchens	452
Canning factories	40
Total	5,490

TABLE 3.

TABLE SHOWING THE KINDS AND AMOUNTS OF FOOD PRODUCTS HELD IN COLD STORAGE WAREHOUSES IN NEW JERSEY ON THE LAST DAY OF EACH MONTH DURING THE YEAR ENDING JUNE 30, 1929.

ARTICLE	July 1928	Aug. 1928	Sept. 1928	Oct. 1928	Nov. 1928	Dec. 1928	Jan. 1929	Feb. 1929	Mar. 1929	Apr. 1929	May 1929	June 1929
Eggs, cases	934,745	893,988	789,310	604,381	392,903	180,053	49,964	311	31,886	257,522	555,897	641,009
Eggs, broken, lbs.	8,569,371	11,282,447	9,473,728	8,774,529	7,938,080	6,968,047	7,603,360	4,224,723	1,783,498	3,168,126	3,402,885	4,900,289
Cheese, lbs.	2,350,608	2,946,929	3,077,678	3,171,699	3,018,583	2,768,408	4,021,301	2,275,935	2,564,425	2,070,954	1,883,451	3,008,239
Butter, lbs.	6,533,171	7,945,688	7,799,071	6,582,873	3,955,767	2,096,143	903,524	414,064	300,537	242,968	727,726	4,446,056
Poultry, lbs.	4,233,974	5,395,328	5,941,933	6,388,370	8,936,207	10,763,724	6,116,705	8,035,240	6,999,354	6,137,589	4,951,576	4,609,244
Meats, fresh, lbs.	8,283,952	7,373,711	8,294,965	5,463,402	6,205,488	7,875,988	9,275,204	9,839,349	9,565,856	6,985,858	6,112,116	6,760,418
Fish, fresh, lbs.	3,489,965	3,519,050	3,447,301	3,974,789	4,382,611	4,368,737	3,063,705	1,428,487	873,983	964,938	1,955,881	2,324,672
Milk and milk products, lbs. ...	1,368,097	1,570,514	1,062,481	782,911	1,294,043	611,221	175,065	135,982	134,347	326,134	1,037,065	1,661,080
Edible fats and oils, lbs.	1,250,518	992,085	72,009	549,526	916,484	564,013	518,247	18,187	431,066	1,142,389	1,002,289	1,359,612
Game, lbs.	1,142	.....	.....	.....	2,200	2,503	283	2,568	2,853	2,853	2,693	4,976
Miscellaneous articles, pkgs.	127,632	311,950	797,819	1,111,366	1,687,643	1,249,062	906,479	495,249	331,590	160,401	282,955	176,813

Report of the Bureau of Bacteriology
For the Year Ending June 30, 1929.

J. V. MULCAHY, CHIEF.

With few exceptions the work of this Bureau during the fiscal year ending June 30, 1929, continues along the same general lines, consisting largely of the routine examination of specimens from various cases of suspected communicable diseases as shown by the following table.

TABLE I.

TOTAL NUMBER OF SPECIMENS EXAMINED DURING FISCAL YEAR
ENDING JUNE 30, 1929.

Diphtheria	11,583
Tuberculosis	6,736
Typhoid fever	2,472
Typhoid bacilli (feces and urine)	2,712
Gonorrhoea	5,227
Syphilis	27,492
Miscellaneous specimens	3,705
Total	59,927

While the miscellaneous specimens, as will be seen from Table XI show the examination of a varied assortment of interesting and time consuming specimens, the extension of the work to include the making of autogenous vaccines and other biological products that could be made here and the investigation of problems of a research nature on new methods and procedures to adapt them to our needs is now impossible in our present quarters. The present plan for the relief of the unfavorable crowded conditions of the laboratory suggested by a committee of the Appropriation Committee appointed to look into our needs, promises considerable relief from our present cramped space. This plan

provides for the assignment of office space on the third floor of the State House for the offices of the Department now located on the fourth floor. Floor space for this plan will be available on the third floor when vacated by some of the present occupants when they move to the State House Annex. This would allow the use of the rooms on the fourth floor, now occupied as offices by other bureaus of this Department, to be used for the expansion of the laboratory quarters. The adoption of such a plan would help materially to permit the performance of certain lines of work that cannot now be attempted, and would afford relief from the crowded conditions under which the laboratory staff is now obliged to work.

It has been a very busy year as will be seen from Table 1, which shows that almost 60,000 specimens have been examined and reported upon during the year. The preparation of material for the collection and transmission of these specimens, the preparation and examination of this number of various kinds of specimens, the typewritten reports sent to the physicians and the filing of duplicate copies of these reports, represents a great deal of work in our crowded quarters and with our limited staff.

During the latter part of the year a number of specimens of blood were received to be examined for undulant fever. It will be seen in Table XI that two of these specimens gave a reaction indicating infection with some variety of the *Brucella melitensis*, the causative organism of undulant fever. The laboratory is prepared to examine specimens of blood by means of the agglutination test from persons suspected of having undulant fever, when submitted in a satisfactory condition. These specimens should be collected in the same manner and amount as a specimen for the Wassermann test. The regular Wassermann containers may be used for the collection and transmission of specimens but the history slip in these containers should be marked to show that a test for undulant fever reaction is desired. Special containers consisting of a tube with a partial vacuum and containing a broth medium will be sent upon request to any physician who desires to have a blood culture examination made from persons suspected of having undulant fever.

Specimens of blood from suspected cases of tularemia may be sent to the laboratory in the same manner and amount as described for the collection of blood for undulant fever. We have examined several specimens of blood for tularemia during the year, but in no case was a positive reaction obtained for this disease.

The number of specimens of blood for the Widal test shows an increase over the number received last year. However, a large number were not from suspected cases of typhoid fever but were from dairy employees. Specimens of blood, feces and urine from employees on certified dairy premises are submitted in compliance with the regulations in the State Sanitary Code to aid in detecting typhoid carriers.

For over a year all specimens of blood for the agglutination test from suspected cases of typhoid fever have been also set up for agglutination against para-typhoid cultures "A" and "B". Two reactions occurred with the para-typhoid culture "B" and a third specimen gave a reaction with the typhoid culture and the para-typhoid cultures "A" and "B", but this person had been inoculated recently with triple typhoid vaccine. A specimen of feces sent in on this case, however, showed the presence of typhoid bacilli. One of these cases giving a para-typhoid reaction was interesting in that a very high agglutination was given by both the typhoid culture and the para-typhoid culture "B". Serial dilutions were made and it was found that para-typhoid culture "B" gave the reaction completely at 1-160, while the typhoid culture gave a complete reaction at 1-80. This information was given the physician who sent the specimen of blood stating that the reactions obtained strongly suggested that the case was one of para-typhoid fever, and requesting that he send a feces specimen from this patient. This specimen was subsequently received and the examination of this feces specimen showed para-typhoid bacillus "B" only to be present. Had this blood specimen been tested only against the typhoid culture an erroneous diagnosis of typhoid fever might have been made on this case, due to the high group reaction obtained with the typhoid culture. The second positive reaction obtained with para-typhoid culture "B" gave a negative reaction with the typhoid culture. A specimen of feces was not obtained from this case.

The increase in the number of feces and urine specimens is due in part to an arrangement made by the Department with the Holstein Friesian Cooperative Association and the New Jersey Guernsey Breeders Association, offering the service of the laboratory to provide for the submission of specimens for examination from employees and others handling milk on the premises of members of these organizations. This requirement on the part of the owners of accredited herds, who are members of these organizations is purely voluntary, it being the desire of these organizations to surround the production of milk from the premises of their members with all possible safeguards. The submission of specimens of feces and urine from all employees on certified dairies and from convalescent cases of typhoid fever before release from observation, as required by regulations in the State Sanitary Code, accounts for the greater number of the specimens received for examination for typhoid bacilli.

There is a steady yearly increase in the number of blood and spinal fluid specimens for syphilis by means of the Wassermann reaction; a total of 27,492 being examined during the year. Our experience during the year of the practice of checking all our positive Wassermann reactions by means of the Kahn reaction confirms the view expressed in last year's report, that while the reactions obtained by both of these methods agree very closely, the results obtained by means of the Wassermann reaction are more sensitive especially in treated cases of syphilis than the results obtained with the Kahn test. However, the check on the results of the Wassermann reaction by the Kahn reaction is of great value, both as a check on the results obtained by the Wassermann test and as an aid to the physician who, with the results of both tests before him is in a better position to determine the significance of the reactions obtained by two different methods, especially in obscure cases perhaps presenting no symptoms of syphilis. Our year's experience comparing the results of the Wassermann reaction with the Kahn test would not, however, justify discontinuing the Wassermann reaction in favor of the Kahn test as has been done in several states, but it is considered of great value as an additional test in conjunction with the Wassermann test.

Several laboratories have been supplied during the year with the Wassermann antigen made in this laboratory. A sufficient stock of this antigen is now on hand so that we will be able to supply it to other laboratories in the State who are now purchasing their antigen from other sources. The use of the antigen prepared here which is known to be a good antigen possessing high antigenic and low anti-complementary properties by other laboratories in the State that do the Wassermann test, would result in more uniform and comparable results in the performance of this test by the different laboratories. This antigen will be supplied upon request at a price based on the approximate cost of preparing it.

Considerable work has been done this past year in developing a simpler method of preparing an antigen for use in performing the Kahn test, than the method now generally used for the preparation of this antigen. A number of batches of antigen prepared by this new method have proven to be very satisfactory, giving comparable results when checked with the standard Kahn antigen.

At the request of the Health Officer of Lyndhurst specimens of sputum were examined to determine the presence of particles of cork. These specimens were obtained from residents of Lyndhurst in the vicinity of a factory producing cork products, and were sent to this laboratory to determine whether the dust emanating from this factory was being inhaled in sufficient amount to be detected in the sputum. Some of these specimens of sputum showed particles resembling cork and when compared with particles of cork dust obtained from the factory and from the window sills of houses near the factory showed a marked similarity.

Tests on the virulence of throat specimens from convalescent cases of diphtheria and from well persons harboring diphtheria-like organisms have been made on thirty specimens during the year. Many of these specimens have been sent in by local boards of health for the purpose of terminating quarantine on persistent carrier cases, following convalescence and from contacts showing diphtheria bacilli in cultures from the nose or throat.

Rabies shows no change for the better in the number of cases of this disease, as determined by laboratory examinations. This past year 243 animals' heads have been received for examination and evidence of rabies was found in 105 of this number. The previous year 228 were examined and 93 were found to be affected with rabies. While the number of cases is still high and shows the need of drastic regulations for the control of this situation, it shows a decided decrease in the incidence of this disease as compared with the years 1925, 1926 and 1927 when this disease amongst animals was at its peak, as will be seen from the following table showing the number of animals, mostly dogs, examined in the laboratory since 1918.

TABLE II

Yearly Totals of Animals Examined for Rabies from 1918 to 1929, Inclusive.

	*1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928	1929
Positive	27	18	16	36	46	36	125	160	202	164	93	106
Negative	17	23	37	36	41	49	79	116	145	132	116	115
Unsatisfactory	3	5	9	8	18	10	22	18	25	26	19	22
Total	47	46	62	80	105	95	226	294	372	322	228	243

Unfortunately we still receive the heads of animals sent in by express packed with little ice or none at all and when received they are so putrid that a satisfactory microscopical examination cannot be made. It is then necessary to inject this putrid brain material into guinea pigs incurring a delay of several weeks before a definite report can be made. The most satisfactory way for all concerned is to have the animal's head brought to the laboratory without delay, when a prompt report may be obtained and Pasteur treatment of persons bitten started without undue delay. When no persons have been bitten by a suspected rabid dog and an examination is desired to determine if the dog was rabid, it can then be sent by express but should be so surrounded by ice that it will arrive in a well preserved condition.

The preparation of culture media for use in the bacteriological laboratory and for supplying large amounts to other bureaus for

* 8 months.

laboratory and field use, has taxed the facilities of our present equipment to the utmost.

There has been a continued demand for toxin-antitoxin for immunization against diphtheria and for Schick test material, typhoid and triple typhoid vaccine and other biological products. These biologicals have been furnished the epidemiologists connected with the Bureau of Local Health Administration when engaged in assisting and demonstrating this procedure in various communities in the State. This material used is charged against the communities where this work is done. We have many requests for these biologicals from state institutions, physicians and local boards of health and this material is supplied to them at cost.

Altogether, the past year has been a most active one for this Bureau. The tabulations that follow show the various examinations made and the number of specimens examined in the laboratory during the year, arranged and classified under the name of the disease for which they were examined. These specimens have been received from the physicians and health authorities of the State.

Mailing cases assembled in the laboratory for the collection and transmission of these specimens are shipped to repositories located mostly in drug stores and local boards of health throughout the State, for distribution to the physicians in their locality. The number and kind of outfits prepared and supplied for this purpose is shown in Table XIV.

TABLE III

Specimens Examined for Diphtheria Bacilli, Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	25	443	24	32	342	8	874
August	22	241	15	33	179	10	500
September	24	285	12	40	246	6	613
October	45	870	181	41	895	37	1549
November	49	498	26	74	288	21	914
December	43	588	54	40	376	24	1075
January	45	421	36	67	370	21	960
February	32	434	30	32	339	20	887
March	32	696	15	22	284	17	1066
April	25	405	35	10	340	23	838
May	45	645	34	62	367	24	1167
June	20	689	31	22	359	10	1140
Total	407	6185	473	475	3872	221	11583

During the year thirty tests were made for the virulence of the diphtheria bacillus.

TABLE IV.

Specimens Examined for Tubercle Bacilli, Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	61	270	3	32	98	1	462
August	60	232	4	76	155	2	530
September	61	247	4	33	112	2	413
October	42	326	4	64	186	2	624
November	44	305	3	53	151	2	558
December	44	352	4	44	80	6	830
January	45	281	5	76	170	2	579
February	54	319	3	54	142	5	577
March	43	333	4	37	145	3	565
April	61	322	6	83	224	4	709
May	55	343	2	46	153	1	600
June	58	307	9	43	142	.....	559
Total	618	3647	44	643	1755	29	6736

TABLE V.

Specimens Examined for the Typhoid Fever Reaction, Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	9	205	8	3	11	3	239
August	23	187	9	5	24	.....	248
September	33	193	10	7	13	6	262
October	16	147	12	19	13	8	215
November	3	115	2	4	12	3	139
December	3	174	4	.....	5	.....	188
January	2	145	2	.....	9	.....	158
February	1	165	1	1	3	.....	171
March	2	185	3	1	10	1	212
April	2	136	5	1	6	6	159
May	4	184	7	1	77	2	233
June	6	190	3	.....	37	.....	226
Total	106	2006	69	42	220	29	2472

TABLE VI.

Specimens of Feces and Urine Examined for Typhoid Bacilli, Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	.....	126	4	3	43	1	177
August	3	127	5	2	54	2	193
September	6	213	7	8	52	2	288
October	6	131	9	21	133	2	302
November	2	121	8	27	82	4	239
December	.....	210	8	9	71	2	300
January	1	141	5	7	74	4	232
February	.....	74	2	2	19	1	98
March	.....	137	16	2	18	1	174
April	.....	194	7	.....	52	.....	196
May	2	129	7	2	109	.....	249
June	1	137	5	1	118	2	264
Total	21	1680	78	84	825	24	2712

TABLE VII.

Specimens Examined for Gonococci (pus smears), Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	105	230	10	15	53	4	417
August	87	213	9	11	62	4	383
September	86	199	10	11	95	2	403
October	116	228	18	16	105	2	485
November	72	230	14	15	85	6	482
December	83	215	14	6	84	5	407
January	90	251	13	9	95	3	483
February	60	239	9	11	79	1	359
March	86	244	14	9	97	2	452
April	84	245	10	8	115	9	471
May	78	256	15	9	89	3	440
June	92	218	18	16	94	4	442
Total	1039	2788	154	136	1063	47	5227

TABLE VIII.

Miscellaneous Specimens Examined, Primary and Secondary, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary			Secondary			Total
	+	-	Uns.	+	-	Uns.	
July	107	190	7	22	35	1	362
August	68	247	10	17	73	2	415
September	85	271	6	18	62	1	443
October	89	236	7	20	77	3	432
November	69	144	3	36	23	1	276
December	90	95	4	34	12	1	235
January	111	96	3	21	20	1	262
February	87	152	3	11	11	1	279
March	101	85	3	37	11	1	237
April	97	89	3	23	11	1	223
May	92	131	2	33	12	3	273
June	78	134	7	20	25	1	264
Total	1072	1867	58	322	372	14	3705

TABLE IX

Specimens of Blood and Spinal Fluid Examined for Syphilis, (Complement Fixation Test), With Alcoholic Extract Beef Heart Antigen, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary							Secondary							Total
	4+	3+	2+	+	±	-	Uns.	4+	3+	2+	+	±	-	Uns.	
July	127	11	7	16	17	1464	69	53	6	7	13	18	296	21	2127
August	70	14	3	13	13	1504	54	27	10	6	5	10	410	9	2148
September	87	12	6	11	13	1305	45	40	8	11	16	16	290	8	1863
October	119	19	12	17	16	1598	53	39	19	32	26	350	8	2327	
November	92	21	20	19	21	1591	43	41	9	10	15	20	429	8	2339
December	101	11	17	16	7	1499	35	47	10	9	11	7	233	11	1933
January	117	19	6	13	12	1605	43	69	10	11	12	12	380	18	2317
February	119	11	10	10	12	1589	53	66	10	15	13	20	334	20	2282
March	139	17	9	10	17	1788	49	98	12	14	17	23	326	16	2535
April	136	13	17	16	22	1677	43	72	14	7	12	27	290	15	2381
May	170	8	16	15	14	1940	67	112	26	25	15	31	357	13	2809
June	125	13	5	13	9	1639	86	62	9	12	18	12	378	23	2404
Total	1422	169	128	169	173	19120	640	718	143	146	179	222	4093	170	27492

TABLE X

Specimens of Blood and Spinal Fluid Examined for Syphilis (Complement Fixation Test), With Cholesterinized Antigen, During Fiscal Year Ending June 30, 1929, by Months.

MONTH	Primary							Secondary							Total
	4+	3+	2+	+	±	-	Uns.	4+	3+	2+	+	±	-	Uns.	
July	177	17	3	12	19	1414	69	104	10	7	11	16	247	21	2127
August	100	8	3	12	14	1471	54	53	9	1	20	10	375	9	2148
September	123	11	5	9	13	1271	45	82	16	12	30	16	225	8	1863
October	156	20	8	18	14	1555	53	88	33	13	16	12	321	8	2327
November	158	13	19	16	7	1531	43	78	17	12	29	24	364	8	2339
December	139	15	8	15	6	1351	35	93	14	4	21	15	190	11	1933
January	177	11	8	22	8	1549	43	113	22	7	20	18	304	18	2317
February	169	9	6	16	10	1530	53	123	12	6	15	18	284	20	2282
March	220	7	8	14	13	1738	49	171	13	9	11	8	278	16	2555
April	194	17	8	13	7	1662	43	121	15	14	12	10	250	15	2381
May	214	11	10	7	13	1968	67	133	24	22	16	15	306	13	2809
June	174	10	6	5	7	1802	86	110	15	9	14	9	334	23	2404
Total	2023	149	92	157	128	18632	640	1819	202	116	215	171	3478	170	27492

TABLE XI

Miscellaneous Specimens Examined, Positive, Negative and Unsatisfactory During Fiscal Year Ending June 30, 1929.

Specimen for	Unsatis-		
	Positive	Negative	factory
Rabies	106	115	22
Bacterial infection (bile, blood, body fluids, feces, milk, sputum, urine, etc.)	1130	187	17
B. tuberculosis (body fluids, feces, urine and pus) ..	18	116	..
B. typhosus (bile, milk and water)	1	7	..
Para-typhoid fever reaction (blood)	3	992	4
B. para-typhosus (bile, feces, milk and urine)	2	584	21
Gonococcus infection (urine)	1	2	..
Malarial parasite (blood) .....	..	75	..
Ophthalmia neonatorum (smears and cultures)	72	13	4
Pneumococci (sputum)	3	32	1
Tests on pasteurizing plants with B. prodigiosus .....	..	4	..
Treponema pallida (smears) .....	..	2	..
Tularemia (blood reaction for) .....	..	7	1
Undulant fever (blood reaction for)	2	19	..
Vincent's angina (smears for organisms)	48	71	1
Other unusual examinations	8	13	1
Total	1394	2239	72
Grand total			3,705

TABLE XII

Rabies Specimens, Species of Animals, Positive, Negative and Unsatisfactory, Examined During Fiscal Year Ending June 30, 1929.

Dogs—Positive, 105; Negative, 110; Unsatisfactory, 16.
 Cats—Negative, 4; Unsatisfactory, 5.
 Cows—Positive, 1; Unsatisfactory, 1.
 Ferrets—Negative, 1.
 Grand total—Positive, 106; Negative, 115; Unsatisfactory, 22.

TABLE XIII

Municipalities, Arranged by Counties, From Which Rabid Animals Were Received During Fiscal Year Ending June 30, 1929.

Atlantic County—Atlantic City, 7; Northfield, 1; Ventnor, 1.
 Bergen County—Dumont, 1.
 Camden County—Camden, 5; Clementon, 1; Collingswood, 1; Haddonfield, 1; Mt. Ephraim, 1.
 Cape May County—Wildwood Crest, 1.
 Cumberland County—Bridgeton, 1; Millville, 2; Newport, 1; Vineland, 1.
 Essex County—Hillside, 1.
 Gloucester County—Glassboro, 1; Pitman, 1; Thorofare, 1; Wenonah, 1; Woodbury, 1.
 Mercer County—Princeton, 3; Trenton, 4.
 Middlesex County—Highland Park, 6; Metuchen, 3; New Brunswick, 7; New Market, 2; Parlin, 1; Perth Amboy, 1; Plainsboro, 1; Sayreville, 1; Spotwood, 1; Stelton, 1.
 Monmouth County—Asbury Park, 6; Belford, 1; Freehold, 3; Keansburg, 1; Lincroft, 1; Locust, 1; Long Branch, 1; Neptune, 1; Oakhurst, 1; S. Belmar, 1.
 Morris County—Denville, 1; Millington, 1; Morristown, 2.
 Ocean County—Lakewood, 1.
 Salem County—Penns Grove, 1.
 Somerset County—Bernardsville, 1; Martinsville, 1; Neshanic, 1; Skillman, 2; Somerville, 5.
 Sussex County—Newton, 1.
 Union County—Plainfield, 6; Westfield, 4.

TABLE XIV

Mailing Cases For the Collection and Transmission of Specimens Supplied to Physicians and Repositories Throughout the State During Fiscal Year Ending June 30, 1929.

Diphtheria—Regular mailing cases	13,012
Serum tubes and swabs	1,855
Extra swabs	3,656
	18,523
Tuberculosis mailing cases	9,964
Typhoid fever mailing cases	3,037
Gonorrhoea mailing cases	7,003
Malaria mailing cases	479
Syphilis mailing cases	31,188
Feces and urine mailing cases	3,744
Ophthalmia neonatorum mailing cases	260
Total	74,198

Annual Report of the Bureau of Chemistry

for the Year Ending June 30, 1929

JOHN E. BACON, CHIEF

During the past fiscal year, ending June 30, 1929, there have been analyzed 8,017 samples of food and drugs, and the following summary is a tabulation of the number and character of samples analyzed:

TABLE I

TABLE SHOWING THE NUMBER AND CHARACTER OF SAMPLES ANALYZED IN THE
FOOD AND DRUG LABORATORY DURING THE FISCAL YEAR ENDING
JUNE 30, 1929

<i>Character of sample</i>	<i>Above Standard</i>	<i>Below Standard</i>	<i>Total</i>
Milk, chemical	4,041	331	4,372
Milk, bacteriological	624	...	624
Cream, chemical	602	9	611
Cream, bacteriological	46	...	46
Butter	105	5	110
Cheese	36	12	48
Ice Cream	47	2	49
Human milk	14	...	14
Non-alcoholic beverages	413	5	418
Alcoholic beverages	160	29	189
Tomato products	49	...	49
Canned goods	11	...	11
Meat products	106	17	123
Sprayed fruits	16	...	16
Olive oil	23	1	24
Jams and jellies	6	...	6
Shellfish	432	...	432
Creamery wash waters	58	...	58
Special waters	447	...	447
Mayonnaise	10	7	17
Miscellaneous	167	5	172
Total	7,413	423	7,836

<i>Drugs</i>	<i>Above Standard</i>	<i>Below Standard</i>	<i>Total</i>
Tinc. ferric chloride	15	2	17
Witch hazel	17	26	43
Citrate magnesia	10	28	38
Lime water	37	3	40
Camphorated oil	19	...	19
Anti-fat drugs	21	...	21
Miscellaneous drugs	1	2	3
<hr/>	<hr/>	<hr/>	<hr/>
Total drugs	120	61	181
Total food and drugs	7,533	484	8,017

Six and three hundredths per cent of the samples analyzed were below the legal requirements.

As in the past, the facilities of the laboratory have been extended to local boards of health, the State Purchasing Agent, New Jersey State Police and the State Department of Institutions and Agencies for the examination of various samples of foods, supplies purchased under specifications, alcoholic beverages to assist in the enforcement of the Hobart Act, and other miscellaneous samples.

Following the death of large numbers of fish at the State Fish Hatchery, at Hackettstown, from a condition known as "popeye", the Department received request for assistance, and a representative of this Bureau spent four days there making chemical studies. Based on the data obtained from the field investigations and analyses, certain recommendations were made and later carried out by the officials in charge of the hatchery. A vexing problem thereby was solved, and those marine conditions terminated which had formerly caused the death of large numbers of trout.

A milk survey conducted by the Bureau of Food and Drugs, Bureau of Chemistry and the American Child Health Association was successfully completed, and over 600 samples of milk examined chemically and bacteriologically in addition to the regular samples collected by inspectors of the Department.

It was anticipated that the chemical work for the State Board of Pharmacy would be done in this laboratory, but due to existing laws it was found that the Department could not receive any compensation direct from said Board of Pharmacy, and our appropriation did not permit performing the considerable amount of work required gratis.

Field investigations have shown that some dairymen were adding water, cream and condensed skimmed milk to milk, and some headway has been made toward perfecting a laboratory procedure for the detection of added condensed milk and milk powders. This problem is being studied experimentally, as a large amount of additional work must be done along this line.

Among some of the chemical problems solved in the past year has been the development of a method for determining the preservative hydrogen peroxide in chocolate soft drinks. Utilizing methods and data developed by the United States Bureau of Animal Industry, small quantities of added water in meat products, particularly pork sausage, can now be detected, and one more fraud on the public pocketbook eliminated. Some work has also been done on bakery products, as artificial colors are often added to simulate eggs, likewise dyes are sometimes added to pot or cottage cheese made from skimmed milk to give the impression that same contain cream.

As required by law, the Bureau of Chemistry still examines large numbers of samples of alcoholic beverages which have been seized by county officials, and arranges for distribution of those found suitable for medicinal purposes to State institutions and free hospitals.

In the past year 16 persons were apprehended removing clams from polluted condemned waters; twelve of whom were fined \$100.00 each, and four received jail sentences, as provided by law for second offenses. Valuable assistance in patrolling condemned areas has been rendered by the cities of Atlantic City and Wildwood, and some of these arrests were made by special officers of these two cities.

The condemned inland waterways west of Wildwood were thrown open for the gathering of clams for a period of six weeks beginning May 6, 1929. The system under which these clams were harvested and transplanted to approved waters was similar to that worked out in the past and found successful. It consisted essentially in having the work closely supervised by an inspector of this Department, assisted by members of the local police department.

All newspapers in Cape May County received a copy of the rules and regulations under which the gathering and transplanting of clams would be permitted by this Department, and considerable publicity resulted therefrom.

Class A permits were issued in the field, without charge, to all persons desiring to clam; the regulations provided that all clams gathered must be sold to holders of class B permits, which were issued to any reputable person provided bond in the sum of \$5,000.00 was filed with this Department. The bond guarantees carrying out all the regulations promulgated.

During May and the early part of June, the weather was characterized by unusually heavy precipitation and considerable wind storms, so as to prevent clamming in Delaware Bay and other large bodies of water, yet only two days during the time this area was open was the weather so inclement as to prevent clamming. Fifty to sixty men, therefore, had an opportunity to follow their vocation who otherwise would have been idle. Experienced clammers made between \$10.00 and \$15.00 per day working this area, and the average wage per man per day was \$6.50. The average wage was lowered by reason of the large number of inexperienced clammers working with insufficient rigging.

At slight expense to the Department large numbers of dangerously polluted clams have been transplanted to waters where they will purify themselves and be a wholesome article of food. The plan, therefore, has conserved over \$25,000.00 worth of shellfish, removed the incentive for the surreptitious gathering of shellfish from these polluted waters and the attendant health menace involved, and provided work for a considerable number of baymen.

Improvement in sanitary conditions in shellfish producing areas is constantly being made. Additional chemical sanitary toilets have been installed at Bivalve and Maurice River to provide toilet facilities for the rapidly expanding shucking industry. Sanitary chemical toilets have also been installed at Manahawken and Barnegat.

The recommendations drawn up by the Mayor's Committee of Tuckerton, with the assistance of representatives of this Bureau

and the United States Public Health Service, for the sanitary cleanup of Tuckerton Creek, have now been carried out. Sanitary chemical toilets have been installed at all the oyster shipping wharves, shipbuilding yards, public docks and other places where persons are apt to congregate. An approved ordinance has been passed by the local board of health and frequent inspections are made of party fishing boats to see that that part of the code providing that all boat toilets be locked when in Tuckerton Creek is being complied with.

Weather conditions in that portion of Maurice River known as Greenbank Reach, used for wet storage of shellfish during the fall months, are such that it is not practical to use this area during the winter months, and it has been the practice of the industry to return to that section of the river located north approximately two and one-half miles, known as Long Reach, when the water is below five degrees C., the critical temperature below which oysters hibernate.

The Department received information during the late fall of 1928 that the United States Public Health Service would no longer approve shellfish shipping certificates if this area were used during the ensuing winter months. Experiments conducted by this Bureau during the preceding winter had shown "that when temperature and other conditions are such as to be favorable to hibernation, oysters may be transferred to storage areas in Maurice River and held therein for periods of at least up to four days, even though the waters at times have greatly reduced salinities, without changes taking place which would result in any material increase in bacteriological scores or in the incorporation of appreciable amounts of 'added water'."

At a conference of interested parties, the Director of Health took the position that the sanitary measures in existence at Maurice River and Bivalve in the vicinity of the storage area were such that only a slight potential danger due to pollution existed, and when the practical cessation of biologic activities took place, due to the phenomena of hibernation, this potential danger then assumed such negligible proportions as to be without significance. Therefore, the wet storage of oysters in Long Reach, Maurice River, during that portion of the year when the

temperature of the water was consistently below five degrees C. afforded no hazard to the public health. It was finally decided that the United States Public Health Service and the Bureau of Chemistry of the New Jersey State Department of Health conduct an intensive investigation of the effect of storage in the waters of the Maurice River at Long Reach upon hibernating Delaware Bay oysters in order to see if the results and conclusions obtained in a previous investigation conducted by this Bureau would be substantiated. Pending the conclusion of these studies, approval of shipping certificates was to continue. This work was conducted during January and February, and report on same will be published.

From the data obtained, the conclusions previously deduced from past investigations conducted by this Bureau have been confirmed in that there is very little increase in the bacterial scores of hibernating shellfish when stored in waters of Maurice River at Long Reach when water temperatures below five degrees C. consistently prevail. Furthermore, the most delicate indicator for the addition of added water, i. e. the determination of the percent salt in shell liquor before and after storage, further confirms the bacterial findings in that only very small quantities of environmental water gains entrance to the shell cavities during such storage, further proving that the state of hibernation has not been disturbed during dredging and handling prior to storage.

The following table summarizes the water and oyster scores and shell liquor salinities obtained during this investigation, while the report to be published will also include bacterial studies of the waters of the upper Maurice River:

TABLE II—RESULTS OF INVESTIGATIONS OF OYSTERS MADE BEFORE AND AFTER STORAGE IN LONG REACH, MAURICE RIVER, WHEN WATER TEMPERATURE BELOW FIVE DEGREES C. CONSISTENTLY PREVAILS IN COOPERATION WITH THE UNITED STATES PUBLIC HEALTH SERVICE (January and February, 1929)

Salt Oysters		Water Beside Float		Oysters on Float 20 Hours		Water Beside Float		Oysters on Float 2 Days		Water Beside Float		Oysters on Float 3 Days		Water Beside Float	
Score	% NaCl in Shell Liquor	Score	% NaCl	Score	% NaCl in Shell Liquor	Score	% NaCl	Score	% NaCl in Shell Liquor	Score	% NaCl	Score	% NaCl in Shell Liquor	Score	% NaCl
41	2.08	23	.32	0	2.03	..	..	0	1.73	..	..	..	..	..	..
2	2.00	..	..	0	2.07	1	1.51	0	1.84	0	1.41	..	..	..	..
..	..	..	..	0	2.10	..	..	1	1.82	..	..	..	..	..	..
..	..	..	..	2	1.98	..	..	1	1.88	..	..	..	..	..	..
4	2.30	5	.19	0	2.10	0	1.41	0	2.25	1	1.21	..	..	..	..
5	2.38	..	..	0	2.06	2	..	0	2.20	..	..	..	..	..	..
..	..	..	..	0	2.30	..	..	1	2.08	..	..	..	..	..	..
..	..	..	..	0	2.19	..	..	0	2.15	..	..	..	..	..	..
..	..	..	..	0	2.27	..	..	1	2.32	..	..	..	..	..	..
..	2.33	4	.19	0	2.18	3	1.48	1	2.10	3	1.21	..	..	..	..
82	2.37	..	..	0	2.26	0	..	1	2.12	..	..	..	..	..	..
..	..	..	..	0	2.28	..	..	0	2.22	..	..	..	..	..	..
..	..	..	..	0	2.18	..	..	0	2.08	4	1.10	1	2.98	..	..
41	2.00	4	.84	0	2.10	4	.60	4	2.10	41	.23	3	2.10	14	.83
14	2.10	..	..	0	2.12	..	..	2	2.14	..	..	0	1.98	..	..
..	..	..	..	1	2.08	..	..	2	1.96	..	..	1	2.02	..	..
..	..	..	..	4	2.38	..	..	41	2.13	..	..	..	..	23	.80
5	2.30	5	.70	50	2.30	3	.68	14	2.32	23	.23	..	..	..	..
1	2.28	..	..	1	2.36	..	..	500	2.20	..	..	..	..	..	..
..	..	..	..	2	2.30	..	..	41	2.20	..	..	..	..	..	..
..	..	..	..	0	2.02	..	..	..	2.20	..	..	..	..	..	..
4	2.10	5	.73	0	1.94	5	.71	4	2.08	..	..	4	1.99	..	..
1	2.20	..	..	1	1.96	..	..	0	2.16	5	.26	4	1.89	14	.28
..	..	..	..	0	1.94	..	..	1	2.14	..	..	1	1.98	..	..
..	..	..	..	0	1.60	..	..	2	1.83	..	..	1	1.66	..	..
1	2.02	5	.51	1	1.75	0	.60	0	1.89	2	1.34	0	1.75	0	1.45
0	2.08	..	..	1	1.87	..	..	0	1.92	..	..	0	1.75	..	..
..	..	..	..	4	1.40	..	..	0	1.83	..	..	0	1.84	..	..
..	..	..	..	0	2.12	..	..	0	1.87	..	..	..	..	..	..
2	2.26	3	.58	2	1.96	0	.62	1	2.06	2	1.35	..	..	0	1.88
1	2.26	..	..	1	1.68	..	..	1	2.02	..	..	..	..	..	..
..	..	..	..	1	2.15	..	..	2	1.82	..	..	..	..	..	..
..	..	..	..	1	1.67	..	..	0	2.10	..	..	1	1.82	..	..
1	2.03	..	.56	0	1.60	3	.58	0	1.79	3	1.31	0	1.92	1	1.49
0	2.18	..	..	0	1.90	..	..	1	1.90	..	..	0	2.10	..	..
..	..	..	..	1	1.73	..	..	2	2.04	..	..	0	1.80	..	..
..	..	..	..	0	2.06	..	..	2	2.02	..	..	0	2.00	..	..
0	2.07	2	.69	0	2.02	3	.18	0	2.18	1	.64	0	2.04	4	.58
0	2.15	..	..	0	1.94	..	..	1	1.84	..	..	0	2.04	..	..
..	..	..	..	0	2.18	..	..	0	2.06	..	..	0	2.01	..	..
..	..	..	..	0	2.02	..	..	..	..	..	..	..	..	..	..
1	2.04	3	.68	0	1.98	4	.20	..	..	3	.70	..	..	..	..
0	2.16	..	..	0	1.88	..	..	..	..	..	..	..	..	..	..
..	..	..	..	0	1.98	..	..	..	..	..	..	..	..	..	..
0	2.26	3	.46	1	2.34	1	.21	2	2.10	14	.65	1	2.05	..	..
0	2.28	..	..	1	2.02	..	..	1	2.10	..	..	0	2.10	4	.55
0	..	..	..	0	2.23	..	..	0	2.24	..	..	1	1.95	..	..
..	..	..	..	0	2.44	..	..	0	2.40	..	..	0	2.34	..	..
0	2.50	2	.76	0	2.28	0	.97	0	2.38	2	1.31	0	2.30	2	1.78
0	2.38	..	..	0	2.28	..	..	0	2.28	..	..	0	2.09	..	..
..	..	..	..	0	2.40	..	..	0	2.33	..	..	0	2.27	..	..
..	..	..	..	0	2.36	..	..	0	2.49	..	..	0	2.46	..	..
0	2.46	1	.92	0	2.42	0	.93	0	2.27	1	1.31	0	2.24	0	1.72
0	2.50	..	..	0	2.27	..	..	0	2.43	..	..	0	2.22	..	..
..	..	..	..	0	2.35	..	..	0	2.35	..	..	0	2.24	..	..
..	..	..	..	0	2.32	..	..	0	2.31	..	..	2	2.31	..	..
0	2.32	1	.95	0	2.32	..	..	0	2.32	0	1.32	0	2.37	2	1.73
0	2.35	..	..	0	2.37	..	..	0	2.40	..	..	0	2.13	..	..
..	..	..	..	0	2.30	..	..	0	2.33	..	..	0	2.34	..	..
Avg. 5.2	2.226	4.4	.61	1.3	2.097	1.9	.78	11.2	2.144	6.7	.98	.61	2.064	5.8	1.05
								(2.1)							

On December 8, 1927, the Director of Health received a communication from the United States Public Health Service stating "— it is not believed that any part of Sandy Hook can be regarded as safe for the taking of oysters or hard clams for market purposes. It is therefore recommended that the Sandy Hook Bay area now open for the taking of hard clams be closed."

All of Raritan and Sandy Hook Bays were previously investigated independently by this Bureau and also in cooperation with the United States Public Health Service, and as a result of these studies all of these waters were condemned except the area lying east and south of a line beginning one-quarter mile off shore from Mills Creek, or Pews Creek, and extending in a northerly direction in range with West Bank Light to the intersection of a line in range from Sandy Hook Point Beacon to Point Comfort, and north of a line drawn in an easterly direction from the Water Witch bulkhead and intersecting the northern end of Plum Island, excluding, however, all fore shores one-quarter mile from the main land between Mills Creek and Highlands, New Jersey, also excluding the area bounded by a half circle having a radius of one mile from the Atlantic Highlands steamboat pier.

On the one hand the United States Public Health Service recommended the condemnation of the bay in its entirety, while a delegation of the local clambers requested that a further study be made of the waters for the purpose of extending the approved area. A comprehensive investigation, therefore, was planned during the months of June and July, 1928, in order to ascertain the condition of the present approved waters before and after the influx of the summer visitors. For convenience in collecting samples the bay was divided into three areas.

Outer Area, being a portion of the condemned waters desired reopened by the baymen, a parallelogram having its northwest corner at red channel buoy N6 and its southeast corner at black channel buoy C13.

Number of samples collected from Outer Area	240
Number showing B. coli in 1 cc.	222=93%
Number showing B. coli in 0.1 cc.	163=68%

This portion of the bay receives the major portion of its contamination from the sewage from New York City, and would,

therefore, be little affected by an increased summer population along the shores of Sandy Hook Bay. Results obtained confirm previous investigations in that these waters are grossly polluted, and it would be dangerous to eat shellfish taken therefrom. Field investigations disclosed that during the entire study the flood tide brought in from the New York side an astonishing amount of flottage, the very nature of which showed it came from sewage outlets.

Inner Area, an irregular triangle off Mill Creek, Port Monmouth, to Sandy Hook Point Beacon.

Number samples collected before July 1, 1928	270
Number showing B. coli in 1 cc.	166=61%
Number showing B. coli in 0.1 cc.	32=11%
Number samples collected July 6 to 31, 1928	180
Number showing B. coli in 1 cc.	154=85%
Number showing B. coli in 0.1 cc.	88=49%

These results show greater pollution of the waters in this area after July 6, and it is believed that this increased contamination is due to the greater amount of sewage entering these waters due to the influx of summer visitors.

Section 2 of the Approved Area (Highlands area, from which soft clams principally are harvested) embraces the extreme south-east portion of Sandy Hook Bay.

Number samples collected June 11 to July 1, 1928	245
Number showing B. coli in 1 cc.	107=43%
Number showing B. coli in 0.1 cc.	42=17%
Number samples collected July 6 to 31, 1928	280
Number showing B. coli in 1 cc.	190=68%
Number showing B. coli in 0.1 cc.	50=18%

Some increased pollution of these waters is noted after July 6, but not nearly so much as in the section of the approved waters off Port Monmouth.

Results of the various investigations which have been made by this Department and the United States Public Health Service show that the waters of Sandy Hook Bay have progressively become of worse sanitary quality and the opinion expressed by the Public Health Service that the present approved area cannot be regarded as safe for the taking of oysters or hard clams for

market purposes must be concurred in. Since this investigation was made, however, Sandy Hook Bay no longer receives pollution from the government reservation of Fort Hancock, as the sewage from same now is pumped into the Atlantic Ocean. Atlantic Highlands has completed a sewage treatment plant, which should result in a marked improvement in sanitary quality of the sewage effluent, emptying into these waters, from this borough. The borough of Highlands is constructing a sewage works, the effluent from which will empty into the Atlantic Ocean, and when completed and in operation this system will practically do away with pollution of the waters of lower Sandy Hook Bay now gaining access thereto from the borough of Highlands.

Following are tabulations of bacteriological results obtained on water and oyster samples taken from the various shellfish areas of the State.

WATER SAMPLES

Delaware Bay Section

Delaware Bay—Number samples collected	109
Number showing B. coli in 10 cc.	33=30%
Number showing B. coli in 1 cc.	10=9%

Cape May Section

Jarvis Sound—Number samples collected	20
Number showing B. coli in 10 cc.	15=75%
Number showing B. coli in 1 cc.	2=10%
Great Channel—Number samples collected	20
Number showing B. coli in 10 cc.	12=60%
Number showing B. coli in 1 cc.	6=30%
Richardson Sound—Number samples collected	20
Number showing B. coli in 10 cc. ..	13=65%
Number showing B. coli in 1 cc. ..	3=15%
Great Sound—Number samples collected	40
Number showing B. coli in 10 cc.	11=27%
Number showing B. coli in 1 cc.	1=2.5%
Main Channel—Number samples collected	30
Number showing B. coli in 10 cc.	14=46%
Number showing B. coli in 1 cc.	4=13%
Ludlams Bay—Number samples collected	40
Number showing B. coli in 10 cc.	19=47%
Number showing B. coli in 1 cc.	4=10%
Pecks Bay—Number samples collected	30
Number showing B. coli in 10 cc.	20=67%
Number showing B. coli 1 cc.	20=67%
Number showing B. coli in 0.1 cc.	3=10%

Atlantic City Section

Grassy Bay—Number samples collected	30
Number showing B. coli in 10 cc.	14=47%
Number showing B. coli in 1 cc.	2=6%
Little Bay—Number samples collected	25
Number showing B. coli in 10 cc.	6=24%
Number showing B. coli in 1 cc.	0
Great Bay—Number samples collected	65
Number showing B. coli in 10 cc.	20=31%
Number showing B. coli in 1 cc.	2=3%
Sculls Bay—Number samples collected	20
Number showing B. coli in 10 cc.	7=35%
Number showing B. coli in 1 cc.	0
Lakes Bay—Number samples collected	120
Number showing B. coli in 1 cc.	48=40%
Number showing B. coli in 0.1 cc.	12=10%
Great Egg Harbor Bay—Number samples collected ...	120
Number showing B. coli in 1 cc.	79=66%
Number showing B. coli in	
0.1 cc.	15=12%
Rainbow Channel—Number samples collected	20
Number showing B. coli in 1 cc. ..	20=100%
Number showing B. coli in 0.1 cc.	12=60%

Tuckerton Section

Little Egg Harbor Bay—Number samples collected	50
Number showing B. coli in 10 cc.	8=16%
Number showing B. coli in 1 cc.	0
West Creek—Number samples collected	20
Number showing B. coli in 1 cc.	6=30%
Number showing B. coli 0.1 cc.	2=10%
Tuckerton Creek—Number samples Collected	70
Number showing B. coli in 1 cc.	50=71%
Number showing B. coli in 0.1 cc. ..	21=30%
Scores of oysters from West Creek	1, 1, 1, 0
Scores of oysters from Tuckerton Creek—.....	2, 1, 2, 2

Barnegat Bay Section

Barnegat Bay—Number samples collected	20
Number showing B. coli in 10 cc.	10=50%
Number showing B. coli in 1 cc.	0

Cohansey River Section

Cohansey River—Number samples collected	90
Number showing B. coli in 1 cc.	86=95%
Number showing B. coli in 0.1 cc. ...	58=64%

Maurice River Section

Greenbank Reach—Number samples collected	440
Number showing B. coli in 1 cc.	303=69%
Number showing B. coli in 0.1 cc. ..	117=26%

TABULATION SHOWING BACTERIAL QUALITY OF WATER IN THE MAURICE RIVER
FROM HEADWATERS TO APPROVED STORAGE AREA WHEN WATER
TEMPERATURES OF FIVE DEGREES C. OR BELOW PREVAIL

Millville Lake and tributaries—

Number samples collected	30
Number showing B. coli in 10 cc.	2=6%
Number showing B. coli in 1 cc.	1=3%
Number showing B. coli in 0.1 cc.	0

Spillway at Lake to bridge at Millville—

Number samples collected	28
Number showing B. coli in 1 cc.	28=100%
Number showing B. coli in 0.1 cc.	17=61%
Number showing B. coli in 0.01 cc.	6=21%
Number showing B. coli in 0.001 cc.	0

Bridge at Millville to Sand Wash Wharf—

Number samples collected	120
Number showing B. coli in 1 cc.	107=89%
Number showing B. coli in 0.1 cc.	46=38%
Number showing B. coli in 0.01 cc.	15=12%
Number showing B. coli in 0.001 cc.	7=6%

Sand Wash Wharf to a point one mile above Manumuskin Creek—

Number samples collected	60
Number showing B. coli in 1 cc.	54=90%
Number showing B. coli in 0.1 cc.	17=28%
Number showing B. coli in 0.01 cc.	6=10%

One mile above Manumuskin Creek to Leesburg—

Number samples collected	60
Number showing B. coli in 1 cc.	31=52%
Number showing B. coli in 0.1 cc.	8=13%
Number showing B. coli in 0.01 cc.	2=3%

Leesburg to upper end of Long Reach—

Number samples collected	60
Number showing B. coli in 1 cc.	22=37%
Number showing B. coli in 0.1 cc.	5=8%
Number showing B. coli in 0.01 cc.	0

FOLLOWING ARE SCORES OF WATER SAMPLES TAKEN ALONG STORAGE
FLOATS IN MAURICE RIVER WHEN WATER TEMPERATURES
WERE FIVE DEGREES C. OR BELOW

Number of samples collected	145
Number scoring 0	22=15%
Number scoring 1	22=15%
Number scoring 2	29=20%
Number scoring 3	30=20%
Number scoring 4	19=13%
Number scoring 5	12=8%
Number scoring 14	6=4%
Number scoring 23	5=3%

SCORES OF DELAWARE BAY SALT OYSTERS

Forty-five Samples Collected When Water Temperature was Above Five
Degrees C. (non-hibernating temperatures)

Thirty Samples Collected When Water Temperature was Below Five
Degrees C. (hibernating temperatures)

<i>Water Temperature Above 5° C.</i>		<i>Water Temperature Below 5° C.</i>	
<i>Number Samples</i>	<i>Scored</i>	<i>Number Samples</i>	<i>Scored</i>
17=37.8%	0	13=43.3%	
7=15.5%	1	8=26.6%	
10=22.2%	2	2= 6.6%	
3= 6.6%	3	1= 3.3%	
3= 6.6%	4	3=10.0%	
1= 2.2%	5	2= 6.6%	
0	14	0	
3= 6.6%	23	1= 3.3%	
1= 2.2%	41	0	
Total 45		Total 30	

DEPARTMENT OF HEALTH

SCORES OF STORED OYSTERS TAKEN FROM MAURICE RIVER

One Hundred Eight Samples Collected When Water Temperature was Above Five Degrees C. (non-hibernating temperatures)

One Hundred Sixty-six Samples Collected When Water Temperature was Below Five Degrees C. (hibernating temperatures)

Water Temperature Above 5° C.		Water Temperature Below 5° C.	
Number Samples	Scored	Number Samples	Scored
6= 5.6%	0	101=60.8%	
10= 9.2%	1	41=24.7%	
9= 8.3%	2	13= 7.8%	
16=14.8%	3	3= 1.7%	
16=14.8%	4	5= 3.0%	
15=13.9%	5	0	
10= 9.1%	14	0	
10= 9.1%	23	2= 1.2%	
9= 8.6%	32	0	
1= .91%	41	0	
3= 2.8%	50	0	
3= 2.8%	230	0	
0	320	1= .6%	
Total 108		Total 166	

SCORES OF MAURICE RIVER SHUCKED OYSTERS

Number samples collected 19

1= 5.3%	Scored 3
2=10.5%	Scored 5
3=15.8%	Scored 14
3=15.8%	Scored 23
4=21.0%	Scored 32
1= 5.3%	Scored 41
2=10.5%	Scored 50
2=10.5%	Scored 140
1= 5.3%	Scored 230

Report of the Bureau of Child Hygiene
For the Calendar Year 1928

JULIUS LEVY, M. D., CONSULTANT

STATISTICAL SUMMARY

Births and deaths under one year, under one month, stillbirths and maternal deaths per 1,000 live births for the State.

Deaths under one year per 1,000 live births	65.6
Deaths under one month per 1,000 live births	35.4
Stillbirths per 1,000 live births	40.8
Puerperal deaths per 1,000 live births	5.7
126 nurses supervised 5,034 expectant mothers, 18,764 babies, 21,090 preschool children and 109,988 school children.	
20 nurses were paid entirely by the State Department of Health.	
96 nurses were paid entirely by the local community.	
10 nurses were paid partly by the State and partly by the community.	
400 communities carried on the State Child Hygiene Program under State supervision.	
138 baby keep-well stations were conducted where mothers could bring their babies and preschool children.	
13 nurses supervised 402 midwives who delivered 18 per cent of the births of the State.	
During the past year ten communities assumed the salary of the nurse and requested the State Department of Health, Bureau of Child Hygiene, to continue supervision.	
80% of the babies supervised by the bureau were breast fed the first month of life.	

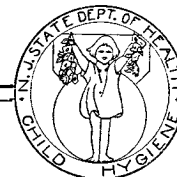
ANNUAL REPORT OF NURSES' ACTIVITIES

Visits made by nurses	261,424
To expectant mothers	22,183
To babies	119,009
To preschool children	75,261
To school children	44,971
Visits to to Baby Keep-Well Stations	86,144
Baby visits to the stations	66,628
Preschool visits to the station	19,516
Prenatal Care (Expectant Mothers)—	
Supervised prenatal cases	5,034
New cases under supervision	3,984

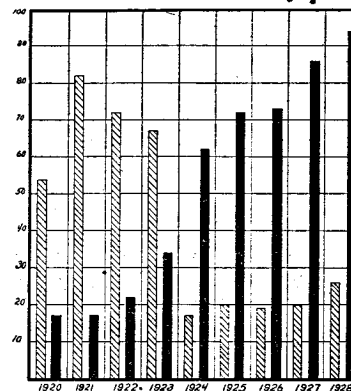
* Pregnancies ended	3,479
Miscarriages	49
Live Births	3,408
** Deaths of babies under one month	53
Deaths of babies under one week	9
Deaths of babies under one day	17
Maternal deaths	8
Stillbirths	71
Expectant mothers supervised, address changed before delivery	395
<i>Attendants at Birth—</i>	
<i>Midwife</i>	606
<i>Doctor or Hospital</i>	2,373
<i>Infant Care—</i>	
Babies supervised during 1928	18,764
New cases placed under supervision	10,857
Infant deaths	238
<i>Preschool Care—</i>	
Children supervised	21,090
New cases placed under supervision	11,485
<i>Illnesses and Defects—</i>	
Detected (not including school child)	7,969
Corrected (not including school child)	4,669
<i>Contagious Diseases—</i>	
Suspected cases discovered	1,266
<i>Unreported Births Discovered</i>	112
<i>Unsanitary conditions discovered</i>	463
<i>Eye Smears Taken</i>	83
<i>Tuberculosis Cases Discovered and Referred</i>	574
<i>Toxin Antitoxin Given (not school child)</i>	7,244
<i>Attendance at Little Mothers Leagues</i>	1,528
<i>Vaccinations</i>	1,903
<i>School Hygiene—</i>	
School children supervised	109,988
Inspections (general, classroom, annual, etc., assisting doctor or nurses working alone)	837,029
Defects detected	95,716
Defects corrected	32,500
Illnesses detected	3,361
Illnesses corrected	2,300
Pupils excluded	7,754
Pupils readmitted	6,565
Nose and throat cultures for diphtheria	1,300
Toxin antitoxin given	19,484

* Excluding miscarriages.

** Includes under one week.



A decade of Child Hygiene



▨ NURSES PAID BY STATE
 ■ NURSES PAID BY COMMUNITIES

Supervised Child Hygiene Nurses

INFANT MORTALITY

The infant mortality rate of 1928 was 65.6, which is 4.3 higher than it was in 1927. This increase was largely due to an increase in neonatal mortality, which had increased from 33.8 to 35.4.

In 1928, only one county had a rate over 80; seven counties had a rate lower than 60, and one county had a rate lower than 50.

Among the cities with a population over 100,000 the highest rate was for Jersey City with a rate of 87.7. Paterson was lowest with a rate of 54.2.

Among the cities with a population between 50,000 and 100,000 the lowest rate was for East Orange with a rate of 43.4, followed by Passaic with a rate of 65.4.

Among the cities with a population between 25,000 and 50,000 the lowest rate was for Irvington with a rate of 33.9, and the highest rate was Perth Amboy with a rate of 60.2.

Among the cities with a population between 10,000 and 25,000 the lowest rate is reported for Summit with a rate of 35.7, and the highest Gloucester City with a rate of 116.9.

MATERNAL MORTALITY

The maternal mortality rate, which was 5.7 per 1,000 live births, shows a slight decrease from 1927 when it was 6.1. Still, as we have had occasion to point out for many years, the maternal mortality rate and the neonatal mortality rate have remained practically the same.

The stillbirth rate has continued at about the same position it has held for many years 40.8, although this is 1.4 lower than it was in 1927.

NEONATAL MORTALITY

Attention has been called in previous reports to the persistent high mortality among infants under one month of age. It has been pointed out that an improvement in this condition can only be expected through more effective prenatal care, better obstetrics and more thorough and competent attention to newborn infants.

While the mortality for the entire State for infants under one month of age was 35.4, that for infants who received prenatal supervision was 15.5. I think it is desirable to point out at once that we have no reason to believe that this is entirely the result of prenatal care, as it is probable that a particular class of mother comes into this group. Further reduction in the general infant mortality will have to come from additional saving of the lives of newborn infants.

There has been an increase in the number of expectant mothers who have received supervision through the child hygiene nurses. 4,675 were registered in 1927, while 5,034 were registered in 1928.

While there has been an increase in the number of mothers who received prenatal advice and care, it is very clear that both mothers and their professional attendants must still be urged to apply this care more intensively and generally.

DEVELOPMENT OF CHILD HYGIENE WORK

The basis of the work of the Child Hygiene Bureau is education. It is to be measured, therefore, by the number of teachers of child hygiene and the number of child hygiene teaching centers that have developed in New Jersey.

January 1, 1929, there were 126 child hygiene nurses under the supervision of the State Department of Health. Of this number only 20 were paid entirely by the State, ten partly paid by the State and community. This means that we have succeeded in having 96 nurses not only work in the communities but to have them entirely paid for by these local communities.

We would secondly emphasize that all these child hygiene nurses are carrying out a uniform piece of work under expert supervision, that is, the nurses after being employed by the local communities remain under the supervision of the State Department of Health. The local communities, excluding the large cities that have been carrying on child hygiene work before the Bureau of Child Hygiene was established by the State Department of Health, are appropriating \$190,000 per year.

The work has been extended to 400 communities, many of them grouped in townships. Child hygiene instruction has been

made available for entire counties. We do not mean by this that a single nurse moves about the whole county, but that as many nurses have been employed in the county as are necessary to supply adequate health supervision for the child from the prenatal period to adolescence.

The appended chart clearly indicates the progress that has been made in the placing of child hygiene nurses and their employment by local communities and in the maintenance of general supervision. While in 1918, 18 nurses were paid by local communities and 55 by the State, in 1928, 20 are paid by the State and over 100 by local communities.

METHOD

It seems desirable to make clear again and to emphasize that the child hygiene nurse assists the community in maintaining the health of the entire child from the prenatal period to adolescence, including the school child. It was this method, we believe, that permitted the rapid extension of child hygiene nurses. School nurses have been converted into child hygiene nurses; that is, where a community formerly had a nurse who was only assisting in the detection of defects in school children and doing some follow-up work to have these defects corrected, that community now has a nurse who extends prenatal supervision to the mother, instruction in the care of the infant and of the preschool child together with the usual school work.

The placing of school nurses in small communities postpones and possibly prevents the obtaining of proper supervision for the prenatal, infant and preschool child. Any plan for the protection of the health of the child that makes it difficult to obtain supervision for the preschool child is, by its very nature, the incorrect approach to the child health problem. We are very glad to report that this view is now held by county superintendents of schools and supervising principals who have had an opportunity to contrast the effectiveness of continuous child hygiene work with merely school nursing.

ECONOMY AND EFFICIENCY

From the standpoint of economy and efficiency it is simple to demonstrate the greater value of having one nurse in a small community who will do all the preventative hygiene work related to children, rather than to have two or three specialized nurses, each confining herself to a certain age period of the child's life. This method also permits greater economy and efficiency in the administration of supervision over the nurses themselves.

Child hygiene is a highly specialized piece of public health work in which we are practically trying to apply preventive pediatrics to large groups rather than to individuals through specialists. In order to have this work carried on in accordance with the latest developments of pediatrics and scientific knowledge, the nurses in the field must have an opportunity to come in touch with this knowledge through lectures, conferences and visits of specially instructed supervisors.

Separate school nurses, particularly, would require duplicate supervision which would naturally, besides causing confusion, place a much greater burden upon the State in the way of administration.

NURSES' ACTIVITIES

The 126 child hygiene nurses have supervised during the past year 5,034 expectant mothers, 18,764 babies, 21,090 preschool children and 109,988 school children. They made 22,183 visits to expectant mothers, 119,009 visits in the interest of infants, 75,261 for preschool children and 44,971 to school children.

This enormous number of visits to mothers forms the basis of the educational work of the bureau. That is why we have always felt that the value of this work should be judged not by any slight reductions in death rates, but rather by the increased knowledge and healthful living that must come from this continuous advice and instruction.

The mothers made 86,144 visits to the baby keep-well stations where they received advice in general hygiene and care, and had their attention called to any defects that should be brought to the

attention of their physicians. We would like to emphasize that sick children are not treated at these baby keep-well stations and no prescriptions are to be given out.

The child hygiene nurses are associated with some 350 schools. They were instrumental and assisted in the administration of 19,484 immunizations against diphtheria to school children.

The great value of placing child hygiene nurses throughout the State can also be judged by some of their special activities. The campaign to prevent diphtheria is emphasizing the importance of immunizing children before they come to school.

No matter how many school children are immunized by school nurses we would still have the larger number of children contracting diphtheria before they come to school. Broadly speaking 30 per cent of the cases of diphtheria occur in children under five years of age.

Our report shows that the child hygiene nurses were helpful in obtaining immunization in 7,244 preschool children. If they can succeed in preventing diphtheria among young children, they will not only prevent deaths from diphtheria but many of the after effects such as paralysis and heart disease which is such a serious condition for a school child.

There are in New Jersey a large number of parochial school children. To my mind no health program for the children of the State can be considered competent that does not provide for the proper health supervision of the parochial school children as well as the public school children.

No child is safe unless all children are safe. Scarlet fever or diphtheria in a parochial school child is as much a source of an epidemic as in the public school child. That is one of the very obvious reasons why health work should be arranged and directed by health departments as they are required and empowered by law to protect the health of the whole community, while the educational departments are restricted to the children under their jurisdiction which are the school children in public schools.

The child hygiene nurses in connection with their school work made some 1,300 special nose and throat cultures to detect carriers of the diphtheria germ. Through their visits in the home in relation to infants and preschool children, they naturally were

in possession of information that would not so readily be in the hands of any other type of worker.

BOARDING HOMES

Number of homes licensed by the State Department of Health	201
Number of homes rejected by the State Department of Health	27
Number of homes recommended for licensing to local boards of health ..	17
Number of homes recommended for rejection to local boards of health ..	2
Of 218 licensed homes, 61 were licensed for one child.	
94 were licensed for two children.	
35 were licensed for three children.	
25 were licensed for four children.	
2 were licensed for five children.	
1 for more than five.	

130 bonds have been furnished since the amendment was added to the Sanitary Code; 125 homes were discontinued during 1928.

During 1928 the following communities assumed the entire responsibility of the boarding home work:

<i>County</i>	<i>Community</i>
Union County—	Roselle Kenilworth
Bergen County—	Teaneck
Camden County—	Haddonfield
Essex County—	Bloomfield Caldwell East Orange Nutley West Orange
Middlesex County—	New Brunswick
Monmouth County—	Asbury Park

The following communities will take care of the boarding homes in their districts after the initial investigation has been made by this bureau:

Monmouth County—	Eatontown Atlantic Highlands Keyport
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The bureau has continued in its efforts to eliminate unlicensed boarding homes from the State, in making it increasingly difficult for out of State children to be boarded in New Jersey and to have local communities assume responsibility for the proper licens-

ing and supervision of boarding homes under their jurisdiction.

There are certain types of homes that board children but have a way of classifying themselves that places them outside of the jurisdiction of the boarding home ordinance, and apparently outside of the jurisdiction of the State Department of Public Instruction or the State Department of Institutions and Agencies. It is recommended that through a conference of these three departments, regulations or legislation be so drawn that no person can make a business of caring for infants and children without inspection and a permit from one of the State Departments. This is the method of prevention. Acting upon complaints of neglect and cruelty is the method of curative medicine.

MIDWIFERY

This phase of the work of the Child Hygiene Bureau has received so much attention from public health workers that it would seem necessary to emphasize that this is merely part of the work for the protection of the health and lives of mothers and infants and that it is coordinated with all the other general activities, and carried on by the same workers.

The outstanding piece of work in 1928 is the further development of a special course for licensed midwives at the Jersey City Hospital under the direction of Dr. O'Hanlon, Superintendent, and Dr. Cosgrove, Chief Obstetrician. During the year some 40 midwives took the course. A special teacher was assigned from the bureau to assist in the instruction of midwives. It was particularly gratifying and interesting to find a class of four midwives who have been in practice from 25 to 40 years.

Cooperation of the State Board of Medical Examiners has continued as in the past years and six unlicensed midwives were referred to them for prosecution. Of these, one was found guilty and paid her penalty, two were dismissed and three are at present before the courts.

There are now 405 active licensed midwives. There has been a further decrease in the number of women attended by midwives in the State of New Jersey. In 1918 they attended 30,000 births which was 42.2 of the total births of the State and in 1928 they

attended 12,718 births which was 18.1 of the total births of the State.

It is natural to consider the question of maternal mortality while discussing midwives as it is held by many physicians that they are the basis of the high mortality that obtains practically throughout the United States. There is a growing feeling, however, that this is not warranted by the facts. There were 400 puerperal deaths during the year. Midwives were in attendance in 17 instances or four per cent of the total. The midwives attended, however, 18 per cent of the total births.

LECTURES TO STUDENT NURSES AND TEACHERS

There still seems to be the necessity of making clear to certain groups who are interested in child health work, and more particularly to educational departments who are very much aware of the importance of health work for school children, that an effective program for the protection of the health of the school child should be incorporated and be part of a continuous child hygiene program.

There still is a disposition on the part of persons less familiar with the development of disease, defects and deformities to obtain a nurse for school children only without regard to the importance of the prenatal and infant periods.

At the request of the State Board of Nurses Examiners and the State League of Nursing Education, a series of talks has been given to the student nurses in various hospitals. It was felt by the above named boards that the nurse in training has no knowledge of the normal child or preventative pediatrics.

One of the supervisors of the bureau has conducted these classes to each group of nurses for a period of five weeks. The concluding lecture has been a demonstration of the normal child, its proper growth and development in contradistinction to the child whom the nurses so often see in the hospital and with whom they are much better acquainted.

These lectures and demonstrations have also been conducted before other groups in the State including Parent-Teacher Associations, League of Women Voters, the Women's Auxiliary

of the State Medical Association, the Federation of Women's Clubs and interested educational groups.

Demonstrations and lectures have been given to student teachers for the past four years. The Trenton Normal School installed its own nurse this year to carry on similar work. This is in accordance with the plans of the bureau to demonstrate the type of work necessary and then have it assumed by those to whom it properly belongs.

The Glassboro Normal School has also taken over this branch of the work; the nurse being instructed by a supervisor of the bureau and the State giving supervision of her activities in the Normal School as requested by those in authority.

CLINTON REFORMATORY FOR WOMEN

At the request of the matron of this institution, the bureau has given now for the sixth year a special course of 12 lessons, mostly demonstrations in personal and child hygiene. At the end of each course a certificate is given to the women indicating that they have been attentive and benefitted from the instruction. As a result of this, some of them have been in a position to obtain positions as child attendants.

DEMONSTRATION DISTRICT

The demonstration district in Lawrence Township, Mercer County, has become a very valuable part of the child hygiene work. In this district the nurse is prepared for home visits by actually making them with the demonstration teacher. Each type of visit included in the activities of a child hygiene nurse is taught in this way. The theory of the child hygiene work is taught by the supervisor and the practical work is demonstrated in the district which makes for a better understanding of the nurse entering upon her work.

While the State maintains this district at its own expense, the success of the work has been made possible by the cooperation of the supervising principal of schools, local boards of health and education and interested people in the community.

As this was felt to be of such benefit to the new nurses, a plan of carrying similar work to the older nurses in the bureau was inaugurated. A Child Hygiene Institute covering one day each week for a period of three weeks, and giving demonstrations as well as theory, has been given to groups of nurses throughout the State by the supervisor of nurses and her assistants.

CONFERENCES

During the year each district supervisor has met with her own group of nurses to give a course of talks outlined in the central office. This makes a uniform instruction each month to the groups of nurses under State supervision.

Staff conferences with the chief of the bureau are also held at monthly intervals. This gives the district supervisor an opportunity to take up the problems in her district which results in bringing out questions of advantage to all district supervisors. This is done in addition to the supervisory visits into the field by the supervisor of nurses, and the assistants in charge of midwifery and boarding homes respectively.

Report of the Bureau of Venereal Disease Control

For the Year Ending June 30, 1929

WILLIAM SAMPSON, CHIEF

The steady progress in the work of the Bureau of Venereal Disease Control for the 12 months ending June 30, 1929, has been along the lines marked out and followed for the past few years. The thought is always held in mind that the bureau is for venereal disease *control* rather than a mere division of venereal diseases, and the preventive side receives more attention than the purely remedial.

Nevertheless, the obligation to those who have been infected is not overlooked. Physicians and clinics are kept posted as to the latest and most approved methods of treatment.

Demonstration clinics were held in Salem, Elizabeth, Englewood, and Jersey City, to which physicians living in the vicinity were invited. These gatherings were held under the auspices of and by the directors of clinics who with their assistants gave talks on modern methods of diagnosis and treatment of gonorrhoea and syphilis. The medical consultant of the bureau participated in all the programs, bringing microscopes for darkfield and other microscopical demonstrations, showing various old and new remedies, and appearing as a speaker on the program. Patients from the clinics were presented for demonstration purposes. The attendance ranged from 15 in the rural meeting, to more than 100 at a city meeting. Questions were asked and developed points of discussion. The interest of the physicians throughout was a testimony to the success of the assemblies, and they will be continued the coming season. Many nurses were also in the audiences.

The clinics in operation last year are in the following cities:

Atlantic City, Bayonne, Camden, Dover, Elizabeth, Englewood, Hackensack, Irvington, Jersey City, Long Branch, Montclair, Morris Plains, Morristown, Mount Holly, Newark, New Bruns-

wick, the Oranges, Passaic, Paterson, Plainfield, Salem, Somerville, Spring Lake, Trenton and Weehawken.

The relationship existing between the Bureau of Venereal Disease Control and the clinics is a more or less elastic one. It is not founded upon legal obligation but based on interest in the treatment of venereal disease patients. Reports to the State are not compulsory so are not rendered by all clinics. However, some clinics do report their activities monthly with the following results:

New patients—	
Syphilis	2,536
Gonorrhea	1,772
Total	4,308
Treatments given—	
Syphilis	65,301
Gonorrhea	21,067
Total	86,368

The proper handling of venereal disease clinics calls for abundance of tact. Those who can pay something should do so, and those who can afford to pay private physicians should not be allowed to attend. Ordinarily, one who is able to pay a private physician has intelligence enough to follow the instructions given. The one who goes to the clinic, having little or no money, and usually having less intelligence, is not so amenable to reason. He is the one who is apt to discontinue treatment and be a potential focus of infection. We want clinics to grow, but there must be an even balance maintained. The clinic should not grow at the expense of the private physician, and the clinic is a most important link in the chain making up the venereal control measures.

When the bureau was the recipient of large sums of money from the Federal Treasury, much was spent in equipping and supplying clinics. Naturally, this was an expenditure which could not be continued indefinitely, so as the funds decreased, the clinics were gradually made to realize that the treatment of venereal disease patients was a local responsibility.

Larger cities have accepted this view, but many, in fact most of the smaller communities, cannot afford clinic facilities, although a resident must be treated, even at the expense of the community, if the patient is infectious, and cannot pay. This is in accordance with Section 9, Chapter 253, P. L. 1918, which reads:

"Any person who is suffering from a venereal disease in the infectious stage and who is unable to pay for treatment may make application for care and treatment to the local board of health of the municipality in which said person resides. If said board, after investigation, finds that said person is in fact unable to pay for such treatment, said treatment shall be provided for such person without cost."

Some of the larger clinics enter into agreement with nearby communities for the care of their patients, but there are many of the latter slow to assume their responsibilities. That no one may be refused treatment at a clinic on the ground of non-residence, the bureau has furnished drugs in the amount of \$5.00 for each patient, based on a compromise standard of ten or more visits in each six months' period in each case of syphilis and gonorrhea, if the community in which he resides gives no support to a local hospital.

During the 12 months ending June 30, 1929, reports have been received from physicians in the State of the following:

Gonorrhea	4,148
Syphilis	5,607
Chancroid	85
Total	9,840

It is to be regretted that so few physicians made an effort to discover the names and addresses of the sources of infection, for one of the values of the bureau lies in its having these reputed sources examined and placed under treatment when found to be infectious. It is true that the information thus obtained is frequently unreliable, or indefinite, but it is reliable often enough to justify every effort possible being made to secure it and to follow it up. Out of all these cases reported, names and addresses of sources of infection were given as follows:

Professional prostitutes and brothels	98
Clandestine prostitutes	125
Husband or wife	119
Congenital	39
Miscellaneous	12
Total	393

One hundred and fifteen sources of infection were referred to local health authorities for investigation, with the following results:

Under supervised medical treatment	36
Unable to locate the person named	31
Examined but found presumably non-infectious	18
Satisfactory disposition (agreed to take treatment, etc.) ..	4
Disposition unknown, or unsatisfactory (evaded supervision by moving, etc.)	19
Referred to health officials in other states	7
Total	115

Along the educational line, as for several years past, the great demand has been for addresses on sex education. These may be regarded as indirect venereal disease talks as they are followed by distribution of social hygiene pamphlets furnished free, which contain the salient features about the diseases.

There is now a well-rounded out continuous program of sex education:

Fundamental to the whole series is a lecture dealing with the need for the early sex training of the children by the parent. This is followed by a lecture for mothers telling how they may talk to their children about birth and reproduction; one for boys of 12 to 14, and for girls of the same age; then one for boys and girls of senior high school age, separately; one for fathers about the sex knowledge the growing boy should have, and an equivalent one for mothers about their daughters; then there are those for young men and young women. It is a common occurrence to receive letters praising the efforts of the bureau to promote sex education. Its speakers have certainly touched a responsive chord in the people of the State of New Jersey.

The foregoing addresses are in addition to those given to men and women in industries, to fraternal organizations, civic clubs, business colleges, etc. A speaker on any phase of social hygiene is supplied anywhere in the State when a minimum audience of 25 is assured and without expense to the gathering.

During the 12 months ending June 30, 1929 lectures were given as follows:

Name of Group	No. of Meetings	Attendance
Parent-Teacher Associations	104	5,320
High schools	77	16,425
Men's clubs	21	719
Women's groups	18	953
Industries	14	698
Jewish women	11	700
Y. M. C. A.; Y. M. H. A.	7	420
Y. W. C. A.; Y. W. H. A.	7	304
Business colleges	6	900
Physicians	5	241
Men's groups	5	216
Normal schools	4	705
Boy's camps	3	310
Mothers and daughters	2	180
Fathers and sons	1	60
	285	28,151

In the table below is given the distribution of lectures by months and the sex of the audience, although high school groups in this table are not differentiated by sex. However, a man always addresses the boys and a woman the girls.

1928	Men		Women Only		Men & Women Together		Students		Totals	
	No. Meet.	Attend-ance	No. Meet.	Attend-ance	No. Meet.	Attend-ance	No. Meet.	Attend-ance	No. Meet.	Attend-ance
July .....	..	...	...	...	...	...	2	105	2	105
August .....	..	...	3	115	...	...	1	90	4	205
September	2	50	6	211	...	...	..	..	8	261
October	15	1,090	2	83	...	...	6	1,895	23	3,048
November	15	630	1	15	4	137	17	3,385	37	4,187
December	8	280	2	88	2	75	11	3,029	23	4,222
1929										
January	21	1,135	2	100	2	115	22	3,585	47	4,935
February	13	905	3	185	...	...	12	1,535	28	2,625
March	16	840	5	280	7	351	11	2,175	39	3,646
April	13	555	16	351	9	535	12	2,202	50	4,153
May	6	234	4	145	2	55	4	660	16	1,144
June	1	65	4	105	...	...	3	270	8	440
	110	5,844	48	2,108	26	1,268	101	18,931	285	28,151

The pamphlets, distributed free, being publications of the Federal Government, are sent out under the frank of the medical consultant who is an acting assistant surgeon of the U. S. Public Health Service, and are Sex Education in the Home; Keeping Fit; Healthy Happy Womanhood; and Manpower. In all 30,589 copies were distributed. Official instructions to patients are also supplied to doctors to give to their venereal patients in accordance with the State law.

Report of the Bureau of Public Health Education

For the Year Ending June 30, 1929

EDWIN C. LANIGAN, CHIEF

Activities of the State Department of Health and its bureaus were brought to the attention of the public during the fiscal year ending June 30, 1929, through the medium of newspaper articles and bulletins issued from the State House. The acceptance of informative material by the press throughout the State, and also in the metropolitan areas of New York and Philadelphia, has been most gratifying, and resulted in the public becoming better informed as to the aims, objects and accomplishments of the Department.

Creation of the Bureau of Public Health Education in November, 1927, was influenced by the idea to bring about a wider dissemination of information for the benefit of the people of the State. Assuming to be correct the belief that three out of four readers obtain their information from the daily newspapers, it is estimated that the reading public of the State can best be reached through utilization of the press for distribution of certain public health education material. Editorial comment of influential newspapers of the State approving of the Department's publicity program has been favorable and an incentive to supplement the work.

With the approval of the director, the bureau has issued periodical bulletins on health subjects and others of general interest and also interested special writers in the activities of the Department. Among them was a display article in the Trenton Sunday Times-Advertiser explaining the cooperation of the Department with the New Jersey Committee for the Prevention of Diphtheria.

The policy of giving the Department entire credit for accomplishments, rather than any individual of bureau, has been

generally followed in the interest of concentrating attention on the Department instead of its various sub-divisions.

Progress in the campaign to eradicate diphtheria through immunization has been brought to public attention in several articles. Inoculations against typhoid fever was another subject given special emphasis on several occasions. Yearly medical examinations to detect diseases in their early and probably corrective stages were advocated. The bureau's object has been to arouse the public to the importance of preventive medicine rather than to await the onset of disease before seeking medical advice.

Among the variety of subjects which have been the subject of informative bulletins from the bureau during the year were:

Rules for avoidance of influenza, recommending adoption of smoke ordinances by municipalities under the home rule laws, urging a survey of the potable waters of the State, use of single service containers for milk, urging care by workmen in handling of explosives to prevent accidents, sanitation for road-side refreshment stands, prompt care of dog-bites by cauterization and Pasteur treatment, discovery of adulteration of milk by compounds, cooperation between State and municipal authorities in detection of canned onions unfit for consumption.

Advice to harvest homes and church supper promoters as to sanitary regulations, warning of misbranding in connection with so-called health foods, vital statistics as to death-rates and prevalence of disease, and necessity of departmental needs and programs.

Cooperation of the director, bureau chiefs and others in the Department in preparation of technical and statistical facts has been most helpful.

Report of the Bureau of Vital Statistics

For the Calendar Year 1928

DAVID S. SOUTH, STATE REGISTRAR

The statistics for 1928 which appear in this report complete a period of 50 years the Bureau of Vital Statistics has been serving the public in this manner and by the recording of certificates of vital events and issuing copies thereof. This is a record exceeded by no other bureau of the Department of Health and by only a few State Departments. The annual number of births, marriages and deaths by districts, is available for 50 years as are rates of the larger districts and the State. The number of certificates received annually has increased 200 per cent during the 50 years, while the population of the State has tripled. The birth rate shows a slight decline, the marriage rate an increase of approximately 14 per cent, and the death rate a decrease of 40 per cent.

The records filed total approximately seven million, the exact number not being known due to the receipt of 30 years of entries from the Secretary of State which have never been tabulated due to their incompleteness. These records, which date from 1848 to 1878, have been invaluable for genealogical purposes and for proof in pension cases of veterans of the Civil War.

The original reports in the custody of the bureau are almost completely indexed and are easy to search. They are referred to daily by the searching force and other persons authorized to consult them for legal and genealogical purposes. During 1928 a total of 17,470 searches were made by employees of the bureau, for which service \$9,177 was collected and paid to the State Treasurer. Over 7,000 of the searches were for pension, employment, school and enlistment purposes for which the law allows no fee.

There is considerable clerical work incident to the receipt, classification, permanent arrangement and indexing of more than 150,000 certificates annually. While only 146,615 records for 1928 events were received, the number of belated certificates and correction forms made the total number exceed 150,000 records.

A check of the completeness of registration is regularly maintained and one flagrant violator of the birth reporting act was fined during the year.

Special statistical compilations were made for a number of individuals and organizations interested or working on disease preventive measures.

Very few additions have been made to the charts and tables of this report as it is the policy of the bureau to only publish data for which there is active demand.

GENERAL SUMMARY

	1920	1927	1928
Births registered, indexed and tabulated	76,431	72,799	70,076
Marriages registered, indexed and tabulated ...	31,327	28,316	29,120
Deaths registered, indexed and tabulated	40,820	41,562	44,555
Stillbirths registered, indexed and tabulated ...	3,221	3,074	2,864
Total records registered, tabulated and permanently preserved	151,799	145,751	146,615
Certified copies issued and searches made for which fees were received	4,664	10,180	10,461
Certified copies issued and searches made in pension and other cases for which no fees were received	4,232	7,565	7,009
Fees returned to State Treasurer for certified copies and searches	\$4,051	\$9,141	\$9,177

CHARTS AND TABLES, 1928

- Table 1. Births, marriages and deaths reported, with rates, 1879-1928.
 Table 2. Deaths by age periods, with percentage of each period of total deaths.
 Chart 1. Total deaths per 1,000 population for 50 years.
 Table 3. Deaths of infants under five years of age and percentage of total deaths, 1904-1928.
 Chart 2. Deaths under five years of age per 10,000 population for 50 years.
 Table 4. Deaths under one year, infant mortality rates, maternal deaths and maternal mortality rates, 1906-1928.

- Table 5. Infant mortality, deaths under one month, stillbirths and maternal mortality by counties, 1928.
 Table 6. Infant mortality, deaths under one month, stillbirths and maternal mortality for the ten largest cities of New Jersey, 1928.
 Table 7. Infant mortality rates, total births and deaths under one year, by counties and cities having 5,000 or more population, 1928.
 Chart 3. Deaths from typhoid fever per 10,000 population for 50 years.
 Table 8. Comparison between typhoid fever rates in New Jersey and United States Registration Area, 1916-1927.
 Table 9. Typhoid fever in urban and rural districts, 1928.
 Table 10. Typhoid fever rates in the counties of New Jersey, 1918-1928.
 Chart 4. Deaths from scarlet fever per 10,000 population for 50 years.
 Chart 5. Deaths from diphtheria per 10,000 population for 50 years.
 Table 11. Average annual rates for counties for deaths from all causes and tuberculosis for 50 years, with rates for 1928.
 Chart 6. Deaths from tuberculosis of lungs per 10,000 population for 50 years.
 Table 12. Cancer and other malignant tumors by age periods and organ affected, 1928.
 Chart 7. Deaths from cancer per 10,000 population for 50 years.
 Table 13. Suicide by age periods and means employed, 1928.
 Table 14. Percentage of deaths of each cause of total deaths and of sex of total.
 Table 15. Death rate of total population and of white and colored inhabitants by causes.
 Table 16. Deaths by months by causes.
 Table 17. Deaths by causes, by days, weeks and months of the first year of life.
 Table 18. Deaths under one year of age by months and causes.
 Table 19. Births, marriages and deaths and infant deaths by counties, cities, boroughs and townships.
 Table 20. Deaths by counties and cities according to the Detailed International Classification.
 Table 21. Deaths by occupation, age groups and certain selected causes.
 Table 22. Deaths by causes, sex, color and age periods, New Jersey, each county and the following municipalities (county figures include cities which follow):

Atlantic County—	Camden County—	Essex County—(Con.)—
Atlantic City	Camden City	Bloomfield
Hammonton	Gloucester	East Orange
Bergen County—	Cape May County—	Irvington
Englewood		Montclair
Garfield	Cumberland County—	Newark
Hackensack	Bridgeton	Nutley
Ridgewood	Millville	Orange
Rutherford	Vineland	South Orange
Burlington County—	Essex County—	West Orange
Burlington City	Belleville	

Gloucester County—	Middlesex County—	Salem County—
	Carteret	Salem City
Hudson County—	New Brunswick	
Bayonne	Perth Amboy	Somerset County—
Guttenberg	South Amboy	North Plainfield
Harrison		Somerville
Hoboken	Momouth County—	
Jersey City	Asbury Park	Sussex County—
Kearny	Long Branch	
Union City	Red Bank	Union County—
Weehawken		Elizabeth
West New York	Morris County—	Plainfield
	Dover	Rahway
	Morristown	Summit
Hunterdon County—	Ocean County—	Westfield
Mercer County—	Passaic County—	Warren County—
Princeton	Clifton	Phillipsburg
Trenton	Passaic City	
	Paterson	

Population—The estimated mid-year population of the State for 1928 is 3,697,623. This is arrived at by the arithmetical method, using the United States census figures of 1910 and 1920. The estimated population of the counties and certain cities of the State having 5,000 or more inhabitants appears at the foot of the mortality tables for those places. It has been customary in the past to use population estimates furnished by the United States Bureau of the Census. It is necessary to discontinue this practice upon request that the population figures be not attributed to the Bureau of the Census.

Births—The number of births for 1928 is 70,076 which is equivalent to a rate of 18.95 per 1,000 inhabitants. Total births reported decreased 2,723 from the number for the previous year and the rate declined more than a point. The 1928 rate is the lowest since 1905. It is likely that a higher rate would have prevailed around 1905 had all births been reported. The low figure for 1928 is merely a continuance of the decline in evidence since 1917 when the rate was 24.98.

Marriages—The number of persons married during 1928, per 1,000 population, was 15.75, which rate is slightly higher than that for the previous year. The ease and rapidity with which marriage licenses can be secured in certain adjacent States materi-

ally affects the New Jersey rate. Economic conditions are also a considerable factor and are undoubtedly partly responsible for the gradual decline which has been occurring in the marriage rate during the past ten years.

Deaths—The death rate for 1928 is 12.04. This rate is approximately half a point higher than the rate for 1927 which was the lowest yet attained. Two other years beside 1927 show a slightly lower rate than the 1928 figure.

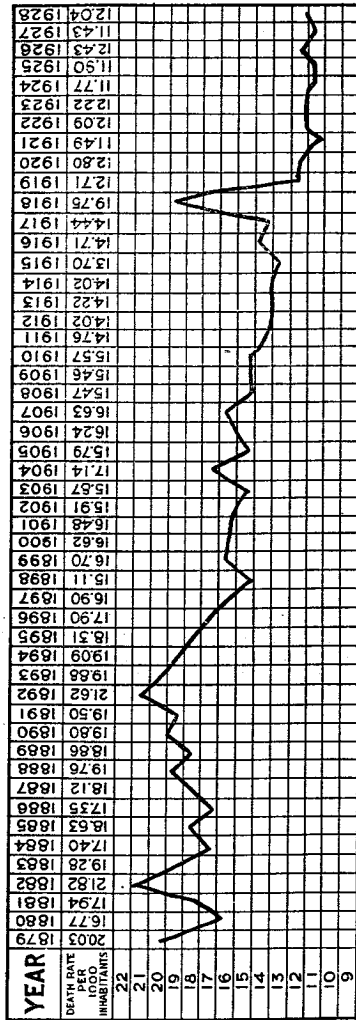
TABLE 1—POPULATION: BIRTHS, MARRIAGES AND DEATHS REPORTED WITH RATES PER 1,000 POPULATION

YEAR	Estimated Population	BIRTHS		MARRIAGES		DEATHS	
		Number of births reported	Birth rate per 1,000 population	Number of marriages	Persons married per 1,000 population	Number of deaths	Death rate per 1,000 population
1879	1,020,584	23,116	22.65	7,098	13.91	20,440	20.03
1880	1,130,892	23,680	20.94	7,563	14.08	18,987	16.77
1881	1,160,273	23,484	20.24	8,109	13.98	20,812	17.94
1882	1,189,658	23,108	19.42	8,537	14.86	25,959	21.82
1883	1,209,048	24,430	20.21	9,169	15.16	23,310	19.28
1884	1,248,224	25,263	20.20	8,908	14.37	21,716	17.40
1885	1,278,033	24,077	18.84	8,959	14.07	22,807	18.63
1886	1,310,431	25,407	19.46	12,351	18.85	22,734	17.35
1887	1,342,829	27,340	20.36	15,416	22.96	24,331	18.12
1888	1,375,227	28,074	20.41	16,025	23.31	27,173	19.76
1889	1,407,625	29,069	20.67	16,736	22.94	26,543	18.86
1890	1,441,017	30,193	20.89	15,864	21.60	28,330	19.63
1891	1,478,784	28,882	19.83	15,305	20.70	28,840	19.50
1892	1,511,653	30,627	20.26	16,082	21.28	32,685	21.62
1893	1,538,799	32,285	20.98	17,178	22.33	30,596	19.88
1894	1,578,378	33,662	21.33	18,245	20.56	30,004	19.09
1895	1,622,942	31,742	19.57	18,873	18.98	30,634	18.31
1896	1,718,543	31,207	18.16	18,370	21.88	30,767	17.90
1897	1,764,144	31,595	17.91	18,171	20.60	29,822	16.90
1898	1,810,008	32,515	17.98	18,213	14.59	27,387	15.11
1899	1,855,872	29,419	15.84	18,336	14.37	30,909	16.70
1900	1,888,689	32,270	17.13	14,611	15.51	31,474	16.62
1901	1,925,781	34,812	18.08	16,539	17.18	31,789	16.48
1902	1,967,893	35,116	17.84	18,150	18.45	31,319	15.91
1903	2,016,797	37,242	18.47	19,512	19.55	31,620	15.67
1904	2,068,909	38,767	18.82	19,919	18.88	35,298	17.14
1905	2,144,143	39,689	18.51	20,572	19.19	38,894	18.17
1906	2,196,238	42,677	19.43	21,580	19.85	35,670	16.24
1907	2,248,331	44,651	19.86	23,649	21.04	37,408	16.63
1908	2,309,427	47,498	20.61	23,155	22.14	38,897	16.87
1909	2,382,922	47,508	20.19	20,724	25.27	36,359	15.46
1910	2,537,167	53,942	21.26	27,612	22.00	39,494	15.57
1911	2,615,772	58,133	22.22	25,014	19.13	38,912	14.76
1912	2,694,877	60,073	22.30	26,821	19.91	37,772	14.02
1913	2,772,083	61,492	22.15	27,697	19.66	39,426	14.22
1914	2,851,686	65,403	22.94	28,528	20.01	39,667	14.02
1915	2,877,532	66,476	23.10	27,694	19.25	39,435	13.70
1916	2,948,016	70,211	23.82	31,169	21.15	43,376	14.71
1917	3,014,193	75,309	24.98	30,060	19.64	45,532	14.44
1918	3,080,371	74,640	24.20	29,669	18.88	40,823	13.26
1919	3,146,547	76,936	22.54	29,281	18.61	39,679	12.71
1920	3,187,767	76,481	23.97	31,327	19.65	40,820	12.80
1921	3,251,494	78,172	24.04	27,813	17.10	37,362	11.49
1922	3,315,223	74,479	22.46	27,114	16.35	41,068	12.09
1923	3,378,963	74,611	22.08	28,730	17.00	41,294	12.22
1924	3,442,695	76,530	22.22	27,601	16.03	40,531	11.77
1925	3,508,427	74,193	21.15	27,672	15.78	41,749	11.90
1926	3,570,159	72,886	20.27	25,424	15.92	44,396	12.43
1927	3,633,891	72,790	20.03	28,318	15.88	41,892	11.43
1928	3,697,623	70,078	18.95	29,120	15.75	44,555	12.04

TABLE 2—TOTAL DEATHS BY AGE PERIODS SHOWING PERCENTAGE OF TOTAL DEATHS—1928

AGE PERIODS	Percentage of total	
	Number	Percentage
Under 1 year	4,690	10.3
1 year	948	1.9
2 years	417	0.9
3 years	321	0.7
4 years	297	0.6
Under 5 years	6,488	14.4
5 to 9	1,001	2.3
10 to 19	1,562	3.6
20 to 29	2,486	5.6
30 to 39	3,200	7.4
40 to 49	4,800	10.8
50 to 59	6,000	14.7
60 to 69	7,618	17.1
70 to 79	6,916	15.5
80 to 89	8,447	17.7
90 and over	494	1.1
Unknown	3	.0
Total	44,855	100.0

CHART 1.—TOTAL DEATHS PER 10,000 POPULATION FOR 50 YEARS



Infant Mortality—The infant mortality rate for 1928 is 65.6 per 1,000 babies born alive. This compares with 61.3 for 1927 and 70.3 the preceding year. Reference to Table 4 will show the rapid decrease in the infant death rate in New Jersey since more extensive baby welfare work was undertaken. *Colored Races*—The infant mortality rate among the colored people of New Jersey during 1928 was 125.4 compared with a rate of 111.0 for the previous year. The colored races have shown high mortality rates as long as vital statistics have been collected and analyzed.

Maternal Mortality—This rate for 1928 is 5.7, which compares with 6.1 for the previous year. It is regrettable that a decrease comparable to the infant mortality decline is not shown in deaths due to maternity. The colored maternal mortality rate is 9.0.

Stillbirths—The number of stillbirths reported during 1928 is 2,864, which compares with 3,074 for the previous year. The 1928 figure is equivalent to a rate of 40.8 per 1,000 living births, with the rate for the colored population 67.2.

TABLE 3—NUMBER OF DEATHS AT ALL AGES, UNDER ONE YEAR OF AGE AND UNDER FIVE YEARS OF AGE, AND THEIR PERCENTAGE OF THE TOTAL

CALENDAR YEAR	DEATHS IN NEW JERSEY				
	All Ages	Under one year		Under five years	
		Number	Percentage of Total	Number	Percentage of Total
1904	35,298	7,472	21.2	10,927	31.0
1905	33,864	6,951	20.5	9,864	29.1
1906	35,670	7,773	21.8	11,246	31.5
1907	37,408	7,732	20.7	10,867	29.0
1908	35,597	7,823	22.0	10,869	30.5
1909	36,359	7,658	21.1	11,137	30.6
1910	39,494	8,352	21.1	11,648	29.5
1911	38,612	7,642	19.8	10,740	27.8
1912	37,772	7,457	19.7	10,309	27.3
1913	39,425	7,542	19.1	10,686	27.1
1914	39,967	7,431	18.6	10,278	25.7
1915	39,435	7,077	17.9	9,828	24.9
1916	43,376	7,348	16.9	11,188	25.8
1917	43,532	7,582	17.4	10,267	23.6
1918	60,852	8,372	13.8	13,709	22.5
1919	39,979	6,111	15.3	8,661	21.7
1920	40,820	6,672	16.3	9,569	23.4
1921	37,362	5,773	15.4	8,047	21.5
1922	40,086	5,864	14.6	8,371	20.9
1923	41,294	5,368	13.0	7,727	18.7
1924	40,531	5,359	15.5	7,344	21.3
1925	41,749	5,109	12.3	6,997	16.8
1926	44,396	5,090	11.5	7,442	16.8
1927	41,562	4,464	10.7	6,045	14.5
1928	44,555	4,600	10.3	6,438	14.4

CHART 2—DEATHS UNDER 5 YEARS OF AGE PER 10,000 POPULATION FOR 50 YEARS

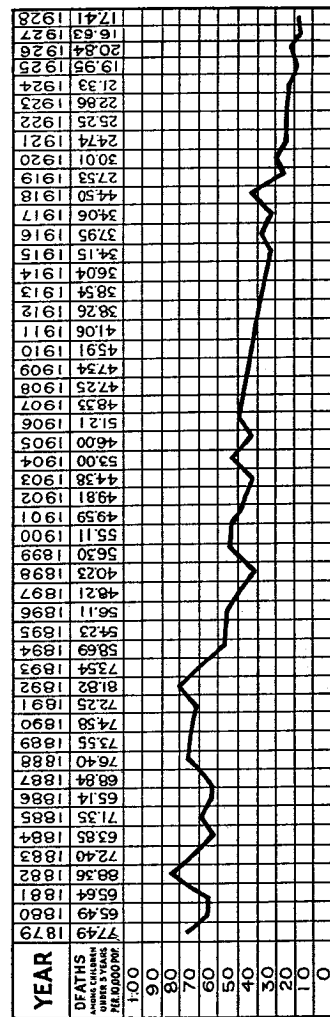


TABLE 4—NUMBER OF BIRTHS, DEATHS UNDER ONE YEAR AND MATERNAL DEATHS WITH RATES PER 1,000 LIVING BIRTHS

YEAR	Births reported	Deaths under 1 year of age	Infant mortality rates	Maternal deaths	Maternal mortality rates
1906	42,677	7,773	182.1	322	7.5
1907	44,651	7,732	173.2	289	6.5
1908	47,405	7,823	165.2	329	6.9
1909	47,508	7,658	161.2	311	6.5
1910	53,942	8,352	154.8	377	6.9
1911	58,133	7,642	131.4	427	7.3
1912	60,073	7,457	124.1	415	6.9
1913	61,432	7,542	122.7	460	7.4
1914	65,403	7,431	113.6	416	6.3
1915	66,476	7,077	106.4	390	5.8
1916	70,211	7,348	104.7	383	5.4
1917	75,309	7,582	100.7	411	5.4
1918	74,549	8,372	112.3	417	5.5
1919	70,935	6,111	86.1	366	5.1
1920	76,431	6,672	87.2	472	6.1
1921	78,172	5,773	73.8	464	5.9
1922	74,479	5,864	78.7	466	6.2
1923	74,611	5,368	71.9	424	5.4
1924	76,530	5,359	70.0	466	6.0
1925	74,193	5,109	68.8	461	6.2
1926	72,386	5,090	70.3	394	5.4
1927	72,799	4,464	61.3	450	6.1
1928	70,076	4,600	65.6	406	5.7

TABLE 5—INFANT MORTALITY, DEATHS UNDER ONE MONTH, STILLBIRTHS AND MATERNAL MORTALITY PER THOUSAND BIRTHS (EXCLUSIVE OF STILLBIRTHS)—1928

	*Deaths Under One Year	*Deaths Under One Month	Stillbirths	*Puerperal Deaths
New Jersey	65.6	35.4	40.8	5.7
Atlantic	75.6	43.1	43.1	8.7
Bergen	54.4	31.8	33.9	4.6
Burlington	76.6	36.0	44.9	6.3
Camden	76.3	34.4	36.9	6.4
Cape May	82.1	33.8	26.5	12.0
Cumberland	75.5	42.4	29.7	9.3
Essex	59.7	33.9	36.5	5.2
Gloucester	73.0	41.0	32.0	9.0
Hudson	75.6	36.2	48.6	5.3
Hunterdon	55.1	34.2	47.5	3.8
Mercer	79.5	43.8	47.2	6.0
Middlesex	61.5	34.1	36.5	6.9
Monmouth	64.6	34.3	42.9	6.3
Morris	62.1	41.2	45.8	4.6
Ocean	67.2	36.6	48.8	16.2
Passaic	56.0	33.0	44.7	5.6
Salem	59.3	38.9	35.5	11.8
Somerset	48.2	25.0	44.5	5.5
Sussex	70.5	33.3	45.0	1.9
Union	57.2	33.0	39.6	4.0
Warren	77.3	48.8	39.3	5.4

TABLE 6—INFANT MORTALITY, DEATHS UNDER ONE MONTH, STILLBIRTHS AND MATERNAL MORTALITY PER THOUSAND BIRTHS IN NEW JERSEY AND TEN LARGEST CITIES, 1928

	*Deaths Under One Year	*Deaths Under One Month	Stillbirths	*Puerperal Deaths
New Jersey	65.6	35.4	40.8	5.7
Newark	68.4	37.3	39.7	5.7
Jersey City	87.7	39.3	53.6	5.6
Paterson	54.2	31.5	46.2	4.3
Trenton	80.0	43.4	55.6	6.5
Camden	85.8	35.9	46.4	7.4
Elizabeth	69.2	35.2	39.4	5.9
Bayonne	79.6	45.1	35.0	3.3
Hoboken	72.4	32.4	36.2	1.9
Passaic	65.4	43.3	36.2	9.7
Perth Amboy	60.2	31.9	36.6	3.5

* Rates are per thousand births, exclusive of stillbirths.

* Rates are per thousand births, exclusive of stillbirths.

TABLE 7—BIRTHS, BIRTH RATES, DEATHS UNDER ONE YEAR AND INFANT MORTALITY RATES (EXCLUSIVE OF STILLBIRTHS)—1928

	<i>Births (exclusive of still- births)</i>	<i>Birthrates Per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>*Infant Mortality Rates</i>	<i>Births (exclusive of still- births)</i>	<i>Birthrates Per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>*Infant Mortality Rates</i>	
New Jersey	70,076	18.95	4,600	65.6	Hudson County	12,618	17.7	955	75.6
Atlantic County	2,062	21.8	156	75.6	Bayonne	1,770	18.5	141	79.6
Atlantic City	1,060	19.3	90	84.9	Guttenberg	96	12.5	7	72.9
Hammonton	137	18.0	8	58.3	Harrison	305	18.1	30	98.3
Bergen County	5,748	20.9	313	54.4	Hoboken	1,049	15.3	76	72.4
Englewood	322	24.5	18	55.9	Jersey City	6,018	18.5	528	87.7
Garfield	608	22.1	26	42.7	Kearny	645	19.0	29	44.9
Hackensack	476	22.8	22	46.2	Union City	971	15.0	46	47.3
Ridgewood Village	119	12.5	12	100.8	Weehawken	192	11.0	9	46.8
Rutherford Borough	156	13.4	10	64.1	West New York	744	16.8	38	51.0
Burlington County	1,579	16.6	121	76.6	Hunterdon County	526	15.9	29	55.1
Burlington	204	21.0	11	53.9	Mercer County	3,493	18.3	278	79.5
Camden County	4,494	19.2	343	76.3	Princeton	134	20.3	8	59.7
Camden City	2,284	16.8	196	85.8	Trenton	2,299	16.5	184	80.0
Gloucester City	265	18.2	31	116.9	Middlesex County	3,866	18.9	238	61.5
Cape May County	414	21.2	34	82.1	Carteret	267	17.0	16	59.9
Cumberland County	1,178	17.6	89	75.5	New Brunswick	662	16.1	30	45.3
Bridgeton	281	19.4	27	96.0	Perth Amboy	846	16.8	51	60.2
Millville	263	15.7	16	60.8	South Amboy	140	16.1	7	50.0
Vineland	180	22.1	9	50.0	Monmouth County	2,211	19.4	143	64.6
Essex County	14,843	19.1	887	59.7	Asbury Park	215	14.9	18	83.7
Belleville Town	506	24.4	26	51.3	Long Branch	309	22.5	17	55.0
Bloomfield	634	22.5	28	44.1	Red Bank	207	19.0	12	57.9
East Orange	943	14.5	41	43.4	Morris County	1,722	19.1	107	62.1
Irvington	853	22.8	29	33.9	Dover	166	14.0	7	42.1
Montclair	625	17.7	31	49.6	Morristown	268	21.3	21	78.3
Newark	8,899	18.8	609	68.4	Ocean County	491	21.4	33	67.2
Nutley	351	28.2	14	39.8	Passaic County	5,320	17.9	298	56.0
Orange	707	19.3	36	50.9	Clifton	814	20.7	36	44.2
South Orange	168	20.0	7	41.6	Passaic	1,131	15.7	74	65.4
West Orange	383	19.5	26	67.8	Paterson	2,506	17.2	136	54.2
Gloucester County	1,218	21.0	89	73.0	Salem County	590	13.1	35	59.3
					Salem City	140	17.1	3	21.4
					Somerset County	1,078	19.2	52	48.2
					North Plainfield	163	21.4	6	36.8
					Somerville	127	15.5	5	39.3

	<i>Births (exclusive of still- births)</i>	<i>Birthrates Per 1,000 Population</i>	<i>Deaths Under One Year</i>	<i>*Infant Mortality Rates</i>
Sussex County	510	20.4	36	70.5
Union County	5,378	21.2	308	57.2
Elizabeth	2,182	18.9	151	69.2
Plainfield City	663	19.5	35	52.7
Rahway	263	20.9	13	49.4
Summit	224	17.9	8	35.7
Westfield	243	21.3	10	41.1
Warren County	737	15.7	57	77.3
Phillipsburg	314	16.0	23	73.2

* Rates are per thousand births, exclusive of stillbirths.

Typhoid Fever—The death rate of this disease (including para-typhoid) for 1928 is only 0.17 per 10,000 population, which compares with 0.14 for 1927, which was the lowest rate ever attained in New Jersey. That the rates are indeed low is proven by the 1926 and 1927 rates for the United States Registration Area of 0.65 and 0.55, respectively. The number of deaths from this disease and others of the international list of classified causes can be obtained by counties and cities by referring to Table 20. Table 22 shows the more important causes by sex, color and age periods.

TABLE 8—COMPARATIVE DEATH RATES FROM TYPHOID FEVER, PER 10,000 INHABITANTS, IN THE REGISTRATION AREA OF U. S. AND IN N. J. FOR 10 YEARS

	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Registration area of the United States.....	1.25	0.92	0.78	0.90	0.75	0.68	0.67	0.80	0.65	0.55	
New Jersey	0.52	0.29	0.31	0.44	0.38	0.31	0.26	0.31	0.27	0.14	

TABLE 9—DEATHS FROM TYPHOID FEVER IN URBAN AND RURAL DISTRICTS FOR 1928

1928	Estimated population	Deaths from typhoid fever	Rate per 10,000 population
State	3,697,628	65	0.17
Incorporated municipalities of 5,000 population and above	2,803,494	38	0.13
Remainder of State	894,129	27	0.30

CHART 3—DEATHS FROM TYPHOID FEVER PER 10,000 POPULATION FOR 50 YEARS

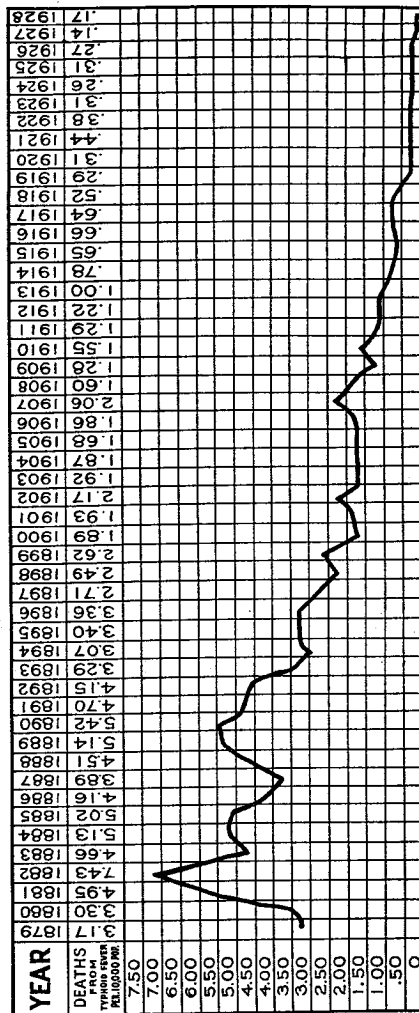


TABLE 10—DEATHS FROM TYPHOID FEVER, BY COUNTIES, PER 10,000 POPULATION, FOR 10 YEARS

COUNTIES	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
Atlantic County	0.42	0.11	0.69	0.57	0.34	...	0.44	0.97	0.53	0.21
Bergen County	0.16	0.18	0.40	0.17	0.12	0.28	0.23	0.26	0.07	0.18
Burlington County	0.94	1.82	2.37	1.16	0.45	0.56	0.44	0.54	0.32	0.31
Camden County	0.52	0.40	0.40	0.49	0.19	0.42	0.36	0.85	0.08	0.47
Cape May County .....	...	0.51	...	...	...	0.51	...	0.51	1.64	...
Cumberland County	0.51	0.32	1.92	0.31	0.31	0.31	1.07	0.15	...	0.14
Essex County	0.20	0.18	0.17	0.21	0.22	0.26	0.13	0.16	0.15	0.09
Gloucester County	0.47	0.20	0.80	0.58	0.85	0.37	0.91	0.90	...	0.51
Hudson County	0.16	0.86	0.34	0.15	0.22	0.19	0.32	0.18	0.09	0.09
Hunterdon County .....	...	0.30	0.30	0.30	...	0.31	0.30	...	0.30	0.30
Mercer County	0.65	0.43	0.60	0.77	0.87	0.23	0.39	0.46	0.10	0.15
Middlesex County	0.07	0.24	0.35	0.11	0.55	0.27	0.31	0.41	0.10	0.09
Monmouth County	1.81	0.28	0.75	1.11	0.55	0.36	0.36	0.26	0.23	0.70
Morris County	0.36	0.36	0.35	0.11	0.93	...	0.34	...	0.11	0.22
Ocean County	0.44	0.45	0.89	...	...	0.44	...	0.88	...	...
Passaic County	0.18	0.11	0.30	0.25	0.14	0.21	0.24	0.06	0.03	0.10
Salem County .....	...	0.80	1.05	1.53	...	0.24	0.47	0.23	0.45	0.22
Somerset County .....	...	0.41	1.01	...	...	0.95	0.94	0.18	0.36	0.35
Sussex County .....	...	0.40	...	7.87	1.20	...	0.40	...	0.40	...
Union County	0.17	0.44	0.14	0.46	0.31	0.21	0.34	0.41	0.12	0.11
Warren County	0.41	...	0.44	...	...	...	...	...	...	...
The State	0.29	0.31	0.44	0.38	0.31	0.26	0.31	0.27	0.14	0.17

Malaria—As the following figures show, deaths during recent years from this affection are practically negligible in this State:

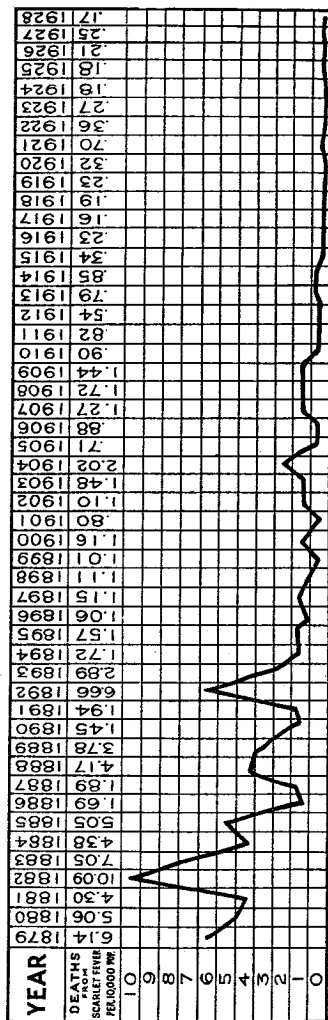
1879	268	1891	180	1903	40	1916	10
1880	293	1892	198	1904	47	1917	5
1881	431	1893	148	1905	21	1918	13
1882	379	1894	162	1906	33	1919	2
1883	290	1895	144	1907	29	1920	5
1884	230	1896	119	1908	30	1921	10
1885	209	1897	132	1909	25	1922	3
1886	243	1898	82	1910	25	1923	2
1887	217	1899	96	1911	25	1924	6
1888	264	1900	84	1912	29	1925	3
1889	203	1901	50	1913	11	1926	2
1890	195	1902	36	1914	10	1927	2
				1915	17	1928	3

Smallpox—During 1926, 1927 and 1928 no deaths from smallpox occurred in New Jersey. During the preceding two years deaths occurred as the disease was prevalent in epidemic form in certain sections of the State.

Measles—This disease was responsible for 250 deaths during 1928. During the preceding year only 21 deaths occurred; however, in 1926 the figure reached 410. Deaths by age periods follow: Under one year, 68; one year, 99; two years, 23; three years, 9; four years, 14; five to nine, 34; thirty to thirty-nine, 1; forty to forty-nine, 1; sixty to sixty-nine, 1.

Scarlet Fever—Very little variation is noted in the death rate from this disease during the past ten years, the average rate for this period being about half of that which prevailed during the previous decade.

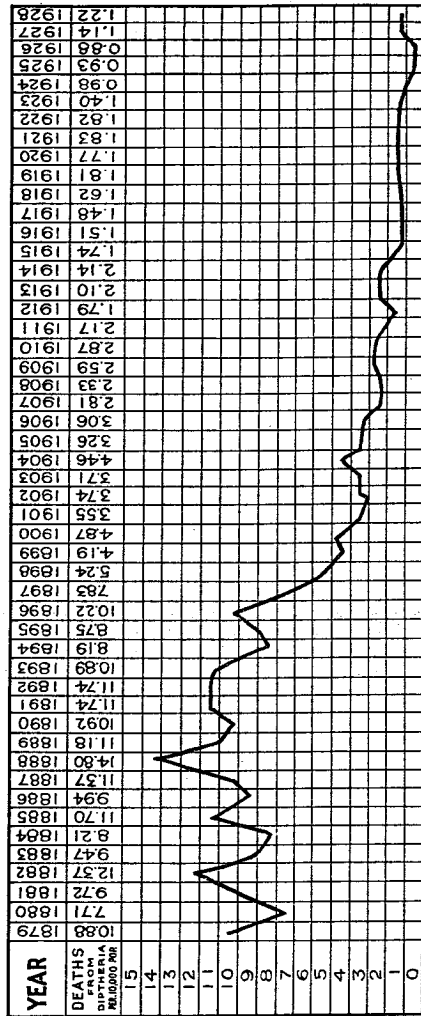
CHART 4—DEATHS FROM SCARLET FEVER PER 10,000 POPULATION FOR 50 YEARS



Whooping Cough—This disease caused 183 deaths during 1928, for 1927 the figure was 176, and for 1926, 175.

Diphtheria—During 1928, 454 persons died from diphtheria and laryngeal croup, which is equivalent to a rate of 1.22 per 10,000 population, compared with 1.14 for the previous year. The 1926 rate of 0.88 established a new low for the disease, the mortality from which is now one-tenth of what it was when records were first kept in 1879.

CHART 5.—DEATHS FROM DIPHTHERIA PER 10,000 POPULATION FOR 50 YEARS



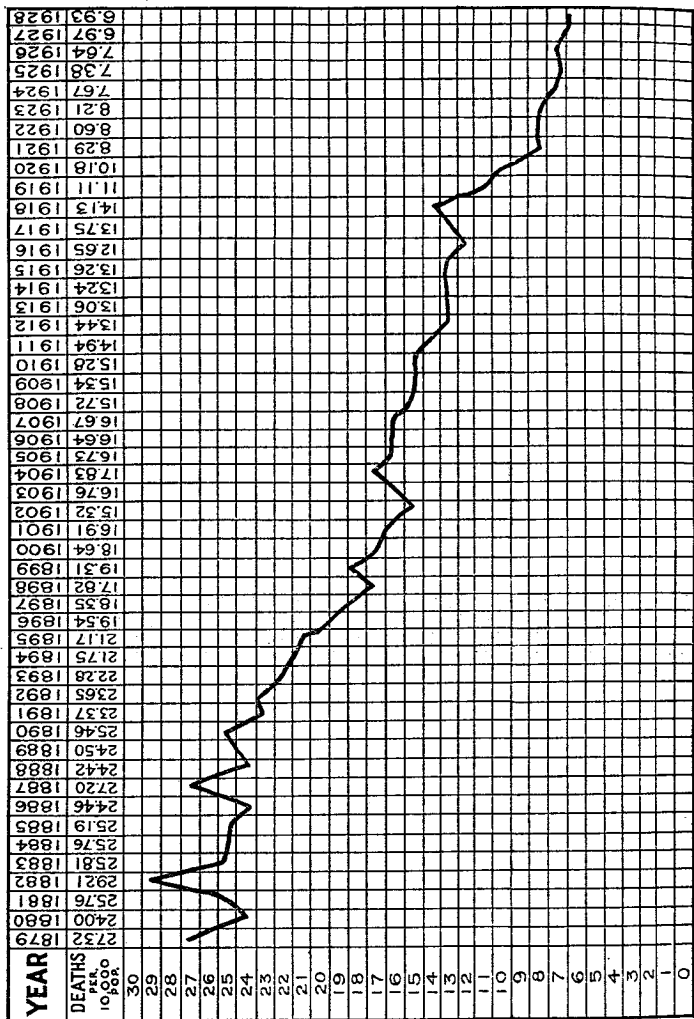
Tuberculosis—The number of deaths during 1928 from all forms of tuberculosis was 2,862 and from tuberculosis of the lungs 2,563, which is equal to rates per 10,000 population of 7.74 and 6.93. These are the lowest tuberculosis rates ever recorded in New Jersey.

TABLE 11.—AVERAGE ANNUAL DEATH RATES PER 10,000 POPULATION FROM ALL CAUSES AND FROM TUBERCULOSIS OF LUNGS FOR 50 YEARS, COMPARED WITH RATES FOR 1928

COUNTIES	Average annual death rate from all causes	Death rate from all causes, 1928	*Average annual death rate from tuberculosis of lungs	*Death rate from tuberculosis of lungs, 1928
Atlantic County	159.1	164.4	12.90	8.04
Bergen County	130.8	118.7	12.06	7.18
Burlington County	150.5	114.9	14.11	6.52
Camden County	165.5	124.0	16.36	6.91
Cape May County	143.5	213.2	10.75	10.27
Cumberland County	107.4	133.2	15.09	4.79
Essex County	156.5	118.8	17.94	7.76
Gloucester County	144.3	140.4	13.29	6.75
Hudson County	168.2	114.1	18.11	7.22
Hunterdon County	142.3	143.2	12.39	5.16
Mercer County	156.8	115.6	17.30	7.58
Middlesex County	144.4	98.6	12.51	6.55
Monmouth County	153.9	169.7	13.25	6.32
Morris County	122.4	134.7	15.13	7.80
Ocean County	146.0	183.9	15.57	8.30
Passaic County	148.6	103.3	14.57	5.28
Salem County	139.1	95.8	13.88	3.78
Somerset County	136.8	120.8	11.77	6.06
Sussex County	126.3	158.2	11.76	8.03
Union County	130.4	114.3	12.59	6.13
Warren County	141.9	136.6	11.62	4.92
The State	152.4	120.4	15.40	6.93

*It should be noted that these rates are for tuberculosis of the respiratory system. Rates of all forms of tuberculosis appear among the tables of the Bureau of Local Health Administration.

CHART 6—DEATHS FROM TUBERCULOSIS OF LUNGS PER 10,000 POPULATION FOR 50 YEARS

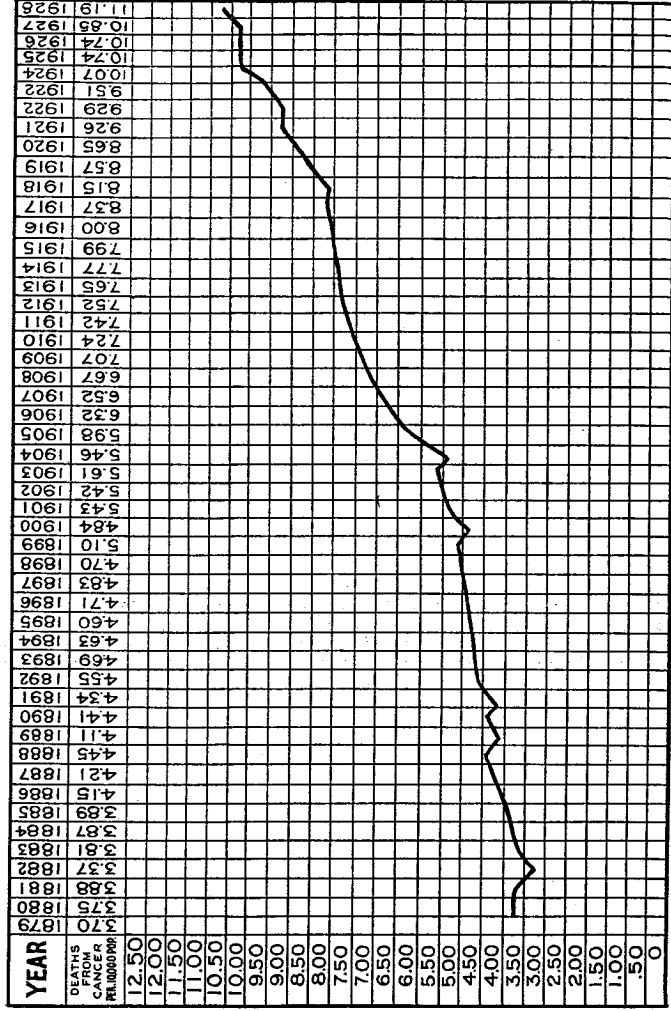


Cancer—The rate for 1928 is 11.19 per 10,000 population, compared with 10.85 for the previous year. The disease has been steadily increasing during the fifty years of which there is record in New Jersey. Nineteen twenty-six is the only year of the past ten which does not show an increase over the previous year.

TABLE 12—DEATHS IN NEW JERSEY FROM CANCER AND OTHER MALIGNANT TUMORS BY ORGAN AFFECTED—1928

CANCER AND OTHER MALIGNANT TUMORS	AGE PERIODS												Total						
	Under 1 month	Under 1 year	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
Buccal cavity—																			
Male																			
Female																			
Total																			
Stomach, liver—																			
Male																			
Female																			
Total																			
Peritoneum, intestines, rectum—																			
Male																			
Female																			
Total																			
Female genital organs																			
Breast—																			
Male																			
Female																			
Total																			
Skin—																			
Male																			
Female																			
Total																			
Other organs and organs not specified—																			
Male																			
Female																			
Total																			
Total Male																			
Total Female																			
Total Male and Female																			

CHART 7—DEATHS FROM CANCER PER 10,000 POPULATION FOR 50 YEARS



Encephalitis Lethargica or Sleeping Sickness—Fifty-four deaths are directly attributed to this affection during the year 1928. In 1922, which was the first year that the disease was separately classified, there were forty-five deaths, while for 1927, 62 were recorded.

Bright's Disease—Total deaths due to acute and chronic nephritis totaled 4,033, which compares with 3,670 during the previous year.

Suicide—Deaths by this means increased considerably over the number for the previous year. Poisonous gas was responsible for the most deaths, with hanging and firearms in second and third places. Below is listed the number of deaths by suicide for the past five years:

1924, 420; 1925, 398; 1926, 472; 1927, 505; 1928, 565.

TABLE 13—DEATHS IN NEW JERSEY BY SUICIDE—1928

MODE OF DEATH	AGE PERIODS													Total		
	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
Solid or liquid poisons	1	4	2	2	1	1	1	1	2	2	2	2	2	2	1	14
Corrosive substances	2	8	4	5	6	6	6	6	3	3	7	7	7	7	1	50
Poisonous gas	2	4	12	13	23	23	14	27	30	10	1	1	1	1	173	
Hanging or strangulation	1	1	4	1	7	20	9	16	21	11	25	11	1	1	128	
Drowning	1	7	1	2	3	1	4	4	3	3	5	5	1	1	31	
Firearms	1	7	8	8	9	14	11	9	15	9	1	1	1	1	108	
Cutting or piercing instruments	1	1	2	2	7	6	5	2	5	2	3	3	3	3	33	
Jumping from high places	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21	
Crushing	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
Others	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	
Total	2	11	28	29	42	55	64	60	62	61	92	35	4	4	665	

AUTOMOBILE FATALITIES

During 1928 there occurred in New Jersey 1,075 deaths due to accidents in which moving automobiles were involved. The above figure does not include 14 deaths due to motorcycle accidents and 21 fatalities due to the inhalation of motor exhaust. The total of 1,075 deaths compares with 1,027 during the preceding year, which period showed a twenty per cent increase over the year 1926, when 861 deaths occurred. While the number of

deaths has been increasing annually, the death rate per 100,000 registered motor vehicles has declined from 2.04 in 1923 to 1.53 for last year.

Analyzed, the motor fatality figures show the death of 638 pedestrians, which number is equivalent to 60 per cent of the total. Approximately one-third of the pedestrians who died were children under fifteen years of age. Eighteen per cent of the drivers and occupants of automobiles who were killed were under twenty years of age.

Collision of motor vehicles with railroad trains was responsible for 61 deaths. The highest number of deaths from this class of accident was 76 in 1924 and the lowest was 57 in both 1925 and 1927. Collision with other vehicles was the cause of 37 fatalities and overturning and running into stationary objects was responsible for 320 deaths.

The following table shows deaths, in New Jersey, of both residents and nonresidents of the State, arranged by age periods:

Age Periods	Pedestrians		All Other Motor Accidents		Totals	
	Residents	Non-Residents	Residents	Non-Residents	Residents	Non-Residents
Under 5 years ..	58	..	6	2	64	2
5 to 9	107	4	11	3	118	7
10 to 14	42	14	2	2	56	6
15 to 19	20	1	31	10	51	11
20 to 24	25	2	57	16	82	18
25 to 29	14	..	56	10	70	10
30 to 34	20	4	31	8	51	12
35 to 39	22	2	31	8	53	10
40 to 44	34	3	33	4	67	7
45 to 49	29	..	20	3	49	3
50 to 54	48	3	31	5	79	8
55 to 59	33	5	16	6	49	11
60 to 64	43	3	9	1	52	4
65 to 69	43	2	11	..	54	2
70 and over	61	6	15	1	76	7
Totals	599	39	372	79	971	118

TABLE 14—PERCENTAGE OF DEATHS BY CAUSES TO TOTAL DEATHS AND BY SEX TO TOTAL—1928

Abridged International List Number	CAUSE OF DEATH	Percentage of Total		
		Percentage of Total	Males—Percentage of Total	Females—Percentage of Total
1	Typhoid fever	.1	61.5	38.5
2	Typhus fever			
3	Malaria		33.3	66.7
4	Smallpox			
5	Measles	.6	49.6	50.4
6	Scarlet fever	.1	60.3	39.7
7	Whooping cough	.4	48.7	51.3
8	Diphtheria and croup	1.0	46.9	53.1
9	Influenza	1.4	52.1	47.9
10	Asiatic cholera			
11	Cholera nostras		33.8	66.7
12	Other epidemic diseases	.6	56.0	44.0
13	Tuberculosis of the lungs	5.8	57.2	42.8
14	Tuberculosis meningitis	.2	52.5	47.5
15	Other forms of tuberculosis	.4	53.9	46.1
16	Cancer and other malignant tumors	9.2	45.2	54.8
17	Simple meningitis	.3	56.3	43.7
18	Cerebral hemorrhage and softening	7.4	47.7	52.3
19	Organic diseases of the heart	20.6	51.8	48.2
20	Bronchitis	.5	50.4	49.6
21	Pneumonia	5.8	59.0	41.0
22	Other diseases of the respiratory system (tuberculosis excepted)	4.2	53.0	47.0
23	Diseases of the stomach (cancer excepted)	.8	72.1	27.9
24	Diarrhoea and enteritis (under 2 years)	1.3	59.0	41.0
25	Appendicitis and typhlitis	1.3	57.3	42.4
26	Hernia, intestinal obstruction	.8	46.5	53.5
27	Cirrhosis of the liver	.8	67.6	32.4
28	Acute nephritis and Bright's disease	9.1	49.2	50.8
29	Noncancerous tumors and other diseases of the female genital organs	.5		100.0
30	Puerperal septicæmia (puerperal fever, peritonitis)	.4		100.0
31	Other puerperal accidents of pregnancy and labor	.5		100.0
32	Congenital debility and malformations	5.0	57.5	42.5
33	Senility	.4	37.3	62.7
34	Violent deaths (suicide excepted)	6.8	72.7	27.3
35	Suicide	1.3	73.0	27.0
36	Other diseases	12.3	51.9	48.1
37	Unknown or ill-defined diseases	.1	57.4	42.6
	Total	100.0	53.0	47.0

TABLE 15—DEATHS IN NEW JERSEY PER 100,000 POPULATION, TOTAL, AND BY WHITE AND COLORED INHABITANTS—1928

Abridged International List Number	CAUSE OF DEATH	Total Deaths per 100,000 Population		
		Total Deaths per 100,000 Population	White Deaths per 100,000 White Population	Colored Deaths per 100,000 Colored Population
1	Typhoid fever	1.7	1.6	5.5
2	Typhus fever			
3	Malaria			
4	Smallpox			
5	Measles	6.7	6.3	17.4
6	Scarlet fever	1.7	1.7	1.3
7	Whooping cough	4.9	4.3	20.9
8	Diphtheria and croup	13.2	11.9	20.9
9	Influenza	16.6	16.0	31.4
10	Asiatic cholera			
11	Cholera nostras			
12	Other epidemic diseases	7.3	7.1	11.8
13	Tuberculosis of the lungs	69.3	61.8	255.3
14	Tuberculosis meningitis	2.6	2.1	13.2
15	Other forms of tuberculosis	5.4	4.4	30.0
16	Cancer and other malignant tumors	111.9	112.1	107.7
17	Simple meningitis	3.7	3.4	10.4
18	Cerebral hemorrhage and softening	88.9	87.0	134.3
19	Organic diseases of the heart	248.1	241.5	412.8
20	Bronchitis	5.7	5.2	18.1
21	Pneumonia	69.6	63.8	223.2
22	Other diseases of the respiratory system (tuberculosis excepted)	50.6	46.3	158.8
23	Diseases of the stomach (cancer excepted)	9.8	9.4	19.5
24	Diarrhoea and enteritis (under 2 years)	15.4	14.3	43.3
25	Appendicitis and typhlitis	13.4	15.1	22.3
26	Hernia, intestinal obstruction	9.4	8.8	22.3
27	Cirrhosis of the liver	9.5	9.4	11.1
28	Acute nephritis and Bright's disease	109.0	106.0	184.7
29	Noncancerous tumors and other diseases of the female genital organs	5.4	4.5	28.6
30	Puerperal septicæmia (puerperal fever, peritonitis)	4.4	4.0	12.5
31	Other puerperal accidents of pregnancy and labor	6.5	6.1	18.1
32	Congenital debility and malformations	60.1	55.3	173.4
33	Senility	4.5	4.4	8.3
34	Violent deaths (suicide excepted)	81.7	78.5	160.2
35	Suicide	15.2	15.4	11.8
36	Other diseases	148.4	141.4	323.2
37	Unknown or ill-defined diseases	1.4	1.3	4.1
	Total	1204.9	1151.9	2523.7

TABLE 16.—TOTAL DEATHS IN NEW JERSEY BY MONTH AND CAUSES OF DEATH, 1928

Abridged International List Number	CAUSE OF DEATH	MONTH OF DEATH												
		January	February	March	April	May	June	July	August	September	October	November	December	
1	Typhoid fever	66	7	1	2	3	4	2	6	12	8	8	0	8
2	Typhus fever	8	1	1	1	1	1	1	1	1	1	1	0	1
3	Malaria	250	8	20	24	67	68	34	14	7	1	1	3	6
4	Smallpox	183	15	22	13	6	8	1	1	5	2	2	3	3
5	Measles	454	40	42	37	41	42	43	42	24	15	12	38	16
6	Scarlet fever	615	43	51	79	90	78	28	11	11	15	21	38	45
7	Whooping cough	9	1	1	1	1	1	1	1	1	1	1	1	1
8	Influenza	271	22	17	24	31	32	15	2	2	14	25	10	17
9	Asiatic cholera	2659	200	205	219	237	233	213	15	222	184	109	105	177
10	Other epidemic diseases	97	5	10	12	7	10	13	8	7	19	20	15	5
11	Tuberculosis of the lungs	4140	355	318	318	27	28	7	19	300	338	367	335	302
12	Other forms of tuberculosis	139	8	12	12	12	12	12	12	347	317	290	8	16
13	Cancer and other malignant tumors	3388	208	216	310	314	317	256	269	227	230	214	241	262
14	Simple meningitis	2178	849	779	882	890	829	704	630	617	632	714	741	583
15	Organic diseases	2588	273	330	371	385	374	4	7	7	8	12	17	28
16	Bronchitis	325	37	30	33	33	30	24	7	68	89	118	177	327
17	Other diseases of the respiratory system (tuberculosis excluded)	1648	182	164	221	210	157	85	52	68	73	98	90	188
18	Diseases of the stomach (cancer excepted)	523	31	33	33	29	29	31	22	30	33	27	30	36
19	Diarrhoea and enteritis (under 2 years)	572	32	35	42	43	35	31	63	69	78	52	42	39
20	Appendicitis and typhitis	348	21	35	54	56	43	33	69	54	40	28	50	26
21	Chronic intestinal obstruction	382	34	30	29	23	38	18	35	27	24	30	32	32
22	Acute nephritis and Bright's disease	4033	369	304	412	334	394	369	303	233	274	305	310	383
23	Noncancerous tumors and other diseases of the female genital organs	202	25	20	20	10	18	10	15	19	12	10	17	16
24	Transient septicaemia (puerperal fever, peritonitis)	163	13	16	18	10	13	11	10	10	10	10	10	8
25	Diarrhoea and enteritis (under 2 years)	243	16	22	22	29	15	10	10	21	20	27	19	8
26	Other diseases of pregnancy and labor	4760	292	259	211	166	169	170	175	172	168	163	164	177
27	Conjugal debility and malformations	3022	201	213	241	244	244	244	244	244	244	244	244	244
28	Sexual diseases	565	40	48	43	44	34	35	36	36	36	36	36	36
29	Violent deaths (suicide excepted)	6480	400	453	404	618	542	454	412	431	423	418	441	443
30	Other violent deaths (suicide included)	54	5	7	7	4	4	3	3	3	3	3	3	3
31	Unknown or ill-defined diseases	44355	8590	8801	4340	4231	4310	3476	3237	3269	3006	3394	3400	4072
	Total													

TABLE 17.—DEATHS IN NEW JERSEY ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATHS BY SUBDIVISION OF DAYS, WEEKS AND MONTHS OF THE FIRST YEAR OF LIFE (STILLBORN EXCLUDED), 1928

Abridged International List Number	CAUSE OF DEATH	AGE UNDER 1 YEAR, IN COMPLETED DAYS, WEEKS AND MONTHS															
		DAYS			WEEKS			MONTHS									
		Under 1 Year	One	Two	3 to 6	Under 1	One	Two	Three	Under 1	One	Two	Three	Under 1	One	Two	Three
1	Typhoid fever	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
2	Typhus fever	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
3	Malaria	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
4	Smallpox	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
5	Measles	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
6	Scarlet fever	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
7	Whooping cough	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
8	Influenza	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
9	Asiatic cholera	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
10	Other epidemic diseases	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
11	Tuberculosis of the lungs	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
12	Other forms of tuberculosis	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
13	Cancer and other malignant tumors	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
14	Simple meningitis	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
15	Organic diseases	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
16	Bronchitis	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
17	Other diseases of the respiratory system (tuberculosis excluded)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
18	Diseases of the stomach (cancer excepted)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
19	Diarrhoea and enteritis (under 2 years)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
20	Appendicitis and typhitis	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
21	Chronic intestinal obstruction	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
22	Acute nephritis and Bright's disease	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
23	Noncancerous tumors and other diseases of the female genital organs	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
24	Transient septicaemia (puerperal fever, peritonitis)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
25	Diarrhoea and enteritis (under 2 years)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
26	Other diseases of pregnancy and labor	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
27	Conjugal debility	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
28	Sexual diseases	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
29	Violent deaths (suicide excepted)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
30	Other violent deaths (suicide included)	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
31	Unknown or ill-defined diseases	Under 1 Year	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1	Under 1
	Total	4000	1020	200	219	847	1855	282	200	148	2485	950	233	650	468	304	304

BERGEN COUNTY—Continued

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Northvale Borough	15	13	7	1
Norwood Borough	31	7	19	1
Oakland Borough	12	7	13	3
Old Tappan Borough	6	3	9	..
Oradell Borough	37	22	17	..
Palisade Park Borough	94	52	49	7
Paramus Borough	22	6	29	2
Park Ridge Borough	36	21	34	1
Ramsey Borough	38	19	49	2
Ridgefield Borough	69	20	41	5
Ridgefield Park Borough	123	84	113	3
Ridgewood Village	119	111	121	12
Riverside Borough	36	10	29	2
Rivervale Township	11	..	8	..
Rockleigh Borough	1	..	1	..
Rutherford Borough	156	75	168	10
Saddle River Borough	8	5	8	1
Saddle River Township	22	10	14	1
Teaneck Township	232	39	126	7
Tenafly Borough	87	33	46	5
Teterboro Borough	2	..	..	..
Upper Saddle River Borough	2	5	3	..
Fairview Borough	24	2	16	..
Wallington Borough	221	3	32	6
Washington Township	11	1	3	..
Westwood Borough	71	48	56	6
Woodcliff Lake Borough	6	..	11	..
Woodridge Borough	53	12	28	3
Wyckoff Township	47	11	15	..
Total	5748	2301	3257	313

BURLINGTON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bass River Township	9	6	9	..
Beverly City	59	19	44	2
Bordentown City	93	29	70	9
Bordentown Township	3	..	7	..
Burlington City	204	89	120	11
Burlington Township	27	..	27	3
Chester Township	103	8	48	7
Chesterfield Township	15	1	27	4
Cinnaminson Township	30	13	19	1
Delanco Township	37	6	18	..
Delran Township	46	7	17	2
Easthampton Township	11	2	7	2
Edgewater Park Township	10	..	10	..
Evesham Township	31	6	15	1
Glence Township	9	2	5	2
Hainesport Township	152	24	75	14
Lumberton Township	9	1	9	2
Mansfield Township	21	4	12	1
Medford Township	28	7	21	4
Medford Township	38	5	39	4
Moorestown Township	103	37	82	9
Mt. Laurel Township	39	4	17	3
New Hanover Township	13	1	9	..
Northampton Township	97	51	102	8
North Hanover Township	5	..	19	4
Palmyra Borough	88	19	50	4
Pemberton Borough	12	9	18	1
Pemberton Township	29	..	33	1
Riverside Township	137	55	59	8
Riverton Borough	32	23	39	1
Shamong Township	6	..	10	..
Southampton Township	26	11	19	1
Springfield Township	19	1	11	1
Tabernaacle Township	8	3	4	..
Washington Township	8	3	10	1
Washington Township	7	2	7	1
Willingboro Township	10	..	10	5
Woodland Township	15	2	7	2
Wrightstown Borough	3	..	2	..
Total	1579	459	1093	121

CAMDEN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Audubon Borough	105	26	95	9
Barrington Borough	45	7	20	4
Bellmawr Borough	23	3	11	1
Berlin Borough	54	21	28	3
Berlin Township	33	11	19	4
Brooklawn Borough	36	..	14	3
Camden City	2284	838	1453	196
Chesilhurst Borough	2	1	5	..
Clementon Borough	49	3	27	4
Clementon Township	90	17	44	4
Collingswood Borough	169	59	138	7
Delaware Township	98	4	34	6
Gibbsboro Borough	15	2	9	..
Gloucester City	263	71	189	31
Gloucester Township	86	22	62	6
Haddonfield Borough	135	30	113	7
Haddon Heights Borough	69	46	59	7
Haddon Township	101	20	77	3
Laurel Springs Borough	7	20	8	1
Lawnside Borough	31	6	23	3
Magnolia Borough	26	3	21	2
Merchantville Borough	134	42	72	5
Mt. Ephraim Borough	59	10	12	2
Oaklyn Borough	71	12	32	1
Pensauken Township	239	32	124	12
Runnemede Borough	42	11	30	4
Stratford Borough	15	2	10	1
Tavistock Borough	..	..	..	..
Voorhees Township	24	6	13	1
Waterford Township	58	11	38	7
Winslow Township	92	4	59	8
Woodlyne Borough	42	11	30	..
Total	4494	1339	2889	343

CAPE MAY COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Avalon Borough	3	2	6	1
Cape May City	26	21	49	1
Cape May Point Borough	1	1	1	4
Dennis Township	22	7	40	6
Lower Township	14	5	9	1
Middle Township	52	27	52	2
North Wildwood City	32	12	46	2
Ocean City	95	37	56	6
Sea Isle City	17	9	9	..
South Cape May Borough	..	..	..	..
Stone Harbor Borough	4	2	7	..
Upper Township	17	16	29	2
West Cape May Borough	11	2	17	1
West Wildwood City	2	..	..	..
Wildwood City	76	39	74	5
Wildwood Crest Borough	10	8	8	..
Woodbine Borough	32	8	13	4
Total	414	194	415	34

CUMBERLAND COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bridgeton City	281	127	252	27
Commercial Township	88	18	86	4
Deerfield Township	31	15	14	..
Dawne Township	32	4	24	2
Fairfield Township	49	11	22	4
Greenwich Township	20	6	15	5
Hopewell Township	27	6	25	1
Landis Township	125	7	129	9
Lawrence Township	30	15	21	1
Maurice River Township	32	..	35	..
Millville City	263	101	195	16
Swan Creek Township	17	2	9	3
Upper Deerfield Township	58	7	21	7
Vineland Borough	150	47	92	6
Total	1178	436	890	88

ESSEX COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Belleville Town	506	247	247	26
Bloomfield Town	634	217	325	23
Caldwell Borough	86	45	73	8
Caldwell Township	8	7	6	..
Cedar Grove Township	23	2	24	2
East Orange City	943	370	703	41
Essex Falls Borough	8	3	6	1
Glen Ridge Borough	64	22	65	2
Irrington Town	483	288	483	26
Livingston Township	37	14	32	2
Maplewood Township	266	74	130	11
Millburn Township	112	23	54	9
Montclair Town	625	271	423	31
Newark City	8890	4718	5583	609
North Caldwell Borough	15	3	9	1
Nutley Town	111	111	187	14
Orange City	707	313	415	36
Roseland Borough	11	3	8	..
South Orange Village	168	86	108	7
Verona Borough	117	30	74	7
West Caldwell Borough	28	3	22	1
West Orange Town	883	105	225	26
Total	14843	6850	9202	887

GLOUCESTER COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Clayton Borough	33	16	42	3
Deptford Township	61	18	28	6
East Greenwich Township	35	8	29	2
Elk Township	13	8	16	2
Franklin Township	63	6	32	4
Glassboro Township	83	30	63	9
Greenwich Township	67	..	27	8
Harrison Township	33	13	22	2
Logan Township	22	4	10	2
Mantua Township	60	4	43	2
Monroe Township	72	19	53	7
National Park Borough	36	4	25	1
Newfield Borough	16	5	18	2
Paulsboro Borough	145	33	49	12
Pitman Borough	68	27	89	7
South Harrison Township	11	2	7	1
Swedesboro Borough	55	16	40	2
Washington Township	30	11	21	2
Washington Borough	14	9	1	1
Wenonah Borough	71	11	34	2
West Deptford Township	71	11	27	3
Westville Borough	56	26	36	3
Woodbury City	140	88	91	9
Woodbury Heights Borough	15	3	10	..
Woolwich Township	14	2	9	2
Total	1218	306	811	89

HUDSON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bayonne City	1770	518	869	141
East Newark Borough	53	3	20	2
Guttenberg Town	96	49	78	7
Harrison Town	305	120	170	30
Hoboken City	1049	1285	815	76
Jersey City	6018	2691	4207	528
Keansburg	645	222	337	29
North Bergen Township	683	167	842	87
Secaucus Borough	92	39	66	12
Union City	971	812	712	46
Weehawken Township	192	115	176	9
West New York Town	744	486	308	38
Total	12618	6507	8100	955

HUNTERDON COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Alexandria Township	13	4	16	2
Bethlehem Township	19	..	8	..
Bloomsbury Borough	10	6	8	1
Califon Borough	13	9	10	..
Clinton	8	14	16	1
Clinton Township	26	4	21	5
Delaware Township	21	8	28	1
East Amwell Township	14	7	21	..
Flemington Borough	25	48	14	5
Franklin Township	15	5	17	..
Frenchtown Borough	21	9	18	1
Glen Gardner Borough	5	5	9	..
Hampton Borough	12	8	18	1
High Bridge Borough	20	9	25	..
Holland Township	22	..	11	1
Kingwood Township	14	2	8	..
Lambertville City	78	20	65	7
Lebanon Borough	8	6	5	..
Lebanon Township	13	..	17	..
Milford Borough	19	5	22	..
Raritan Township	20	2	14	..
Readington Township	42	12	28	1
Stockton Borough	9	2	7	..
Tewksbury Township	11	8	20	..
Union Township	20	1	11	..
West Amwell Township	21	..	8	..
Total	526	161	471	29

MERCER COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
East Windsor Township	9	25	10	15
Ewing Township	188	88	88	41
Hamilton Township	519	88	287	5
Hightstown Borough	67	86	50	8
Hopewell Borough	22	17	30	38
Hopewell Township	46	8	38	11
Lawrence Township	99	19	72	8
Pennington Borough	28	12	21	8
Princeton Borough	134	61	89	22
Princeton Township	50	4	22	184
Trenton City	2299	790	1450	1
Washington Township	17	1	21	2
West Windsor Township	17	2	18	2
Total	3493	1053	2196	278

MIDDLESEX COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Carteret Borough	267	91	90	16
Cranbury Township	16	9	16	2
Bunellen Borough	112	35	60	5
East Brunswick Township	45	5	32	...
Helmetta Borough	12	11	7	14
Highland Park Borough	135	34	72	4
Jamesburg Borough	46	20	26	21
Madison Township	31	45	21	8
Metuchen Borough	88	4	90	1
Middlesex Borough	43	8	26	4
Milltown Borough	63	16	30	1
Monroe Township	24	1	22	3
New Brunswick City	662	324	408	30
North Brunswick Township	60	10	25	2
Perth Amboy City	846	404	427	51
Piscataway Township	88	16	51	6
Plainsboro Township	15	5	11	10
Raritan Township	164	11	59	15
Sayreville Borough	171	50	82	7
South Amboy City	140	3	27	1
South Brunswick Township	43	3	27	8
South Plainfield Borough	93	31	40	12
South River Borough	194	77	87	17
Spotswood Borough	21	8	17	2
Woodbridge Township	457	94	228	41
Total	3866	1403	2016	238

MONMOUTH COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Allenhurst Borough	7	1	15	...
Allentown Borough	9	13	21	2
Asbury Park City	215	251	217	18
Atlantic Township	11	3	8	1
Atlantic Highlands Borough	43	20	29	1
Avon Borough	23	8	23	2
Belmar Borough	72	26	44	5
Bradley Beach Borough	44	25	42	4
Brielle Borough	4	1	6	...
Deal Borough	2	9	14	1
Eatontown Borough	36	13	81	1
Englishtown Borough	10	4	8	...
Fair Haven Borough	32	6	29	4
Farmingdale Borough	18	5	14	2
Freehold Borough	116	46	103	9
Freehold Township	23	8	80	3
Highlands Borough	27	14	29	1
Holmdel Township	16	5	11	1
Howell Township	26	16	33	1
Interlaken Borough	9	...	8	1
Keansburg Borough	44	33	33	3
Keypoint Borough	76	86	61	4
Little Silver Borough	14	4	11	1
Long Branch City	309	124	213	17
Manasquan Township	22	6	11	1
Manasquan Borough	41	33	27	...
Marlboro Township	16	2	19	1
Matawan Borough	37	10	39	2
Matawan Township	45	5	25	8
Middletown Township	100	49	123	10
Millstone Township	12	3	14	2
Monmouth Beach Borough	6	4	8	3
Neptune Township	153	41	159	6
Neptune City Borough	38	14	21	4
Ocean Township	23	17	41	...
Oceanport Borough	13	8	19	...
Raritan Township	22	2	12	1
Red Bank Borough	207	92	165	12
Ramson Borough	29	19	33	1
Sea Bright Borough	16	8	12	...
Sea Girt Borough	3	6	4	...
Shrewsbury Borough	15	11	10	2
Shrewsbury Township	26	4	10	1
South Belmar Borough	11	2	8	1
Spring Lake Borough	32	23	25	2
Spring Lake Heights Borough	13	7	7	...
Union Beach Borough	24	3	23	1
Upper Freehold Township	41	6	31	4
Wall Township	51	13	33	...
West Long Branch Borough	10	5	20	4
Total	2211	1082	1933	143

MORRIS COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bonnton Town	118	37	95	10
Bonnton Township	10	4	4	4
Butler Borough	55	27	28	6
Chatham Borough	58	20	38	2
Chatham Township	4	..	4	2
Chester Township	21	5	16	1
Denville Township	37	8	35	1
lover Town	166	81	123	7
East Hanover Township	3	1	1	..
Florham Park Borough	5	1	16	1
Hammer Township	79	23	68	8
Harding Township	4	4	12	..
Jefferson Township	30	13	23	1
Kinnelon Borough	1	..	3	..
Lincola Park Borough	26	6	15	1
Madison Borough	162	62	78	3
Mendham Borough	23	11	11	..
Mendham Township	8	1	8	..
Mine Hill Township	23	4	15	1
Montville Township	48	12	29	4
Morris Plains Borough	46	8	30	1
Morristown Town	268	122	226	21
Morris Township	36	15	40	2
Mountain Lakes Borough	20	10	15	..
Mount Arlington Borough	8	..	5	..
Mount Olive Township	15	5	16	4
Netcong Borough	13	13	21	3
Parsippany-Troy Hills Township	13	5	20	4
Passaic Township	42	10	18	4
Pequanock Township	23	7	25	1
Randolph Township	22	2	18	1
Riverdale Borough	22	1	31	2
Rockaway Borough	59	43	31	4
Rockaway Township	39	8	37	6
Roxbury Township	71	18	36	6
Washington Township	25	8	32	2
Wharton Borough	37	..	35	1
Total	1722	629	1200	107

OCEAN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Barnegat City Borough	1	..	4	..
Bay Head Borough	7	5	5	1
Beach Haven Borough	8	3	5	..
Beachwood Borough	6	..	6	1
Berkeley Township	4	6	14	..
Brick Township	15	8	13	2
Dover Township	56	31	60	4
Eaglewood Township	10	1	11	..
Harvey Cedars Borough .....	..	..	..	..
Island Heights Borough	4	5	5	..
Jackson Township	23	7	15	5
Lacey Township	12	2	11	1
Lakehurst Borough	21	2	11	1
Lakewood Township	122	63	97	2
Lavalette Borough	4	..	8	..
Little Egg Harbor Township	3	..	4	..
Long Beach Township	2	..	6	1
Manchester Township	17	..	2	..
Mantoloking Borough	1	..	1	..
Ocean Township	5	6	6	..
Ocean Gate Borough	2	2	4	..
Pine Beach Borough .....	..	..	..	..
Plumstead Township	13	8	8	2
Point Pleasant Borough	13	4	24	3
Point Pleasant Beach Borough	9	15	13	..
Seaside Heights Borough	11	1	4	..
Seaside Park Borough	1	3	4	..
Ship Bottom-Beach Arlington Borough	7	..	2	..
South Toms River Borough	11	1	4	..
Stafford Township	10	5	10	1
Surf City Borough	1	..	..	..
Tuckerton Borough	29	16	13	2
Union Township	17	7	24	..
Total	491	201	421	33

PASSAIC COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bloomingsdale Borough	60	19	30	4
Clifton City	314	159	370	36
Haledon Borough	67	40	49	3
Hawthorne Borough	199	51	98	8
Little Falls Borough	76	31	48	4
North Haledon Borough	1	3	19	2
Passaic City	1131	727	596	74
Paterson City	2506	1263	1621	136
Pompton Lakes Borough	58	21	33	6
Prospect Park Borough	91	57	37	7
Ringwood Borough	23	2	13	2
Totowa Borough	51	16	32	4
Wanaque Borough	47	25	28	6
Wayne Township	65	27	41	2
West Milford Township	31	7	23	2
West Paterson Borough	56	8	31	2
Total	5320	2451	3069	298

SALEM COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Alloway Township	28	13	14	1
Elmer Borough	1	..	22	..
Elsinboro Township	9	..	6	1
Lower Alloways Creek Township	16	6	10	..
Lower Penns Neck Township	47	5	31	5
Manlinton Township	31	1	23	7
Oldmans Township	22	7	18	1
Penngrove Borough	111	41	56	7
Philsgrove Township	27	4	28	1
Pittsgrove Township	26	4	20	2
Quinton Township	22	4	17	2
Salem City	140	47	101	3
Upper Penns Neck Township	55	7	24	..
Upper Pittsgrove Township	15	10	22	..
Woodstown Borough	27	9	39	..
Total	590	166	431	85

SOMERSET COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Bedminster Township	14	7	11	..
Bernards Township	21	15	23	..
Bernardsville Borough	60	22	87	8
Bound Brook Borough	167	97	87	6
Branchburg Township	5	5	15	2
Bridgewater Township	46	5	42	..
Far Hills Borough	2	..	3	..
Franklin Township	117	23	54	6
Hillsborough Township	150	50	84	11
Millstone Borough	8	3	4	1
Montgomery Township	22	9	23	..
North Plainfield Borough	163	4	97	6
North Plainfield Township	1	1	4	..
Peapack-Gladstone Borough	16	11	19	4
Raritan Borough	85	23	24	1
Rocky Hill Borough	17	5	11	..
Somersville Borough	13	1	5	2
South Bound Brook Borough	127	24	114	5
Warren Township	13	9	21	2
Witchung Borough	9	9	2	..
Total	1078	423	677	82

SUSSEX COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Andover Borough	7	4	10	1
Andover Township	5	...	7	1
Branchville Borough	7	3	14	...
Bram Township	6	2	4	...
Frankford Township	18	2	19	2
Franklin Borough	112	22	61	7
Fredon Township	2	8	4	2
Green Township	7	1	6	...
Hanburg Borough	18	16	12	...
Hampton Township	5	9	1	...
H. rdyston Township	18	...	18	1
Hopateong Borough	6	2	6	...
Lafayette Township	21	2	14	2
Montague Township	4	...	5	...
Newton Township	94	29	72	4
Ogdenburg Borough	21	2	12	2
Sandsrton Township	11	4	5	1
Sparta Township	19	9	23	4
Stanhope Borough	18	9	23	4
Stillwater Township	11	3	12	...
Sussex Borough	27	20	30	1
Vernon Township	34	7	11	...
Wallpack Township	2	1	3	...
Wantage Township	37	3	22	4
Total	510	188	384	36

WARREN COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Allamuchy Township	9	...	4	...
Alpha Borough	57	15	30	...
Belvidere Town	19	9	25	1
Blairstown Township	18	4	23	1
Franklin Township	32	2	14	3
Frelinghuysen Township	11	2	9	3
Greenwich Township	21	10	7	...
Hackettstown Town	35	12	59	1
Hardwick Township	5	...	3	...
Harmony Township	19	6	18	3
Hope Township	5	2	11	...
Independence Township	17	13	11	...
Knowlton Township	15	13	18	1
Liberty Township	6	...	6	1
Lopatcong Township	19	5	15	2
Mansfield Township	15	4	17	3
Oxford Township	27	8	25	1
Pahaquarry Township	1	1	1	...
Phillipsburg Town	34	90	208	23
Pohatcong Township	28	6	30	6
Washington Borough	43	39	72	4
Washington Township	9	...	15	...
White Township	12	4	17	...
Total	737	245	638	57
State Total	70076	29120	44555	4600

UNION COUNTY

NAME OF PLACE	Births	Marriages	Deaths	Deaths under one year
Clark Township	18	4	18	...
Cranford Township	173	43	96	11
Elizabeth City	2182	899	1235	181
Fanwood Borough	18	1	19	1
Garwood Borough	79	13	25	3
Hillside Township	231	59	131	17
Keelworth Borough	34	4	15	3
Linden City	415	89	145	18
Mountainside Borough	15	2	11	...
New Providence Borough	35	10	12	1
New Providence Township	26	4	13	...
Plainfield City	683	283	421	35
Rahway City	263	125	142	13
Roselle Borough	218	69	104	8
Roselle Park Borough	189	86	76	8
Scotch Plains Township	54	29	44	9
Springfield Township	70	28	36	1
Summit City	224	88	115	8
Union Township	249	26	96	11
Westfield Town	243	78	144	10
Total	6378	1898	2390	308

TABLE 20.—DEATHS IN COUNTIES AND CERTAIN SELECTED MUNICIPALITIES, FROM EACH WHICH FOLLOW:

Table with columns: Disease Name, State Total, Atlantic County, Atlantic City, Hammonton, Bergen County, Englewood, Garfield, Hackensack, Ridgewood, Rutherford, Burlington County, Burlington City, Camden County.

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST. (COUNTY FIGURES INCLUDE DISTRICTS 1928.—Continued.

Table with columns: Cause of Death, Camden City, Gloucester City, Cape May County, Cumberland County, Bridgeton, Millville, Vineland, Essex County, Bellville, Bloomfield, East Orange, Irvington, Montclair, Newark, Nutley, Orange, South Orange, West Orange, Gloucester County, Hudson County, Bayonne, Guttenberg, Harrison, Hoboken, Jersey City.

TABLE 20.—DEATHS IN COUNTIES AND CERTAIN SELECTED MUNICIPALITIES, FROM EACH WHICH FOLLOW:

Table with 14 columns for municipalities (Kearny, Union City, Weehawken, West New York, Hudson County, Mercer County, Princeton, Trenton, Middlesex County, Carteret, New Brunswick, Perth Amboy, South Amboy, Monmouth County) and rows for various diseases and conditions (109-167).

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST. (COUNTY FIGURES INCLUDE DISTRICTS 1928—Continued.

Table with 17 columns for municipalities (Albany Park, Long Branch, Red Bank, Morris County, Dover, Morristown, Ocean County, Passaic County, Clifton, Passaic City, Paterson, Salem County, Salem City, Somerset County, North Plainfield, Somerville, Sussex County, Union County, Elizabeth, Plainfield, Rahway, Summit, Westfield, Warren County, Phillipsburg) and rows for various causes of death.

TABLE 20.—DEATHS IN COUNTIES AND CERTAIN SELECTED MUNICIPALITIES, FROM EACH WHICH FOLLOW:

Table with columns for State Total, Atlantic County, Atlantic City, Hammon, Bergen County, Englewood, Garfield, Hackensack, Ridgewood, Rutherford, Burlington County, Burlington City, and Camden County. Rows list various causes of death such as 'Other diseases of the organs of locomotion', 'Congenital malformation', 'Suicide by cutting or piercing instruments', etc.

CAUSE OF DEATH, DETAILED INTERNATIONAL LIST. (COUNTY FIGURES INCLUDE DISTRICTS 1923—Continued.

Table with columns for various municipalities including Camden City, Gloucester City, Cape May County, Cumberland County, Bridgeton, Millville, Vineland, Essex County, Belleville, Bloomfield, East Orange, Irvington, Montclair, Newark, Nutley, Orange, South Orange, West Orange, Gloucester County, Hudson County, Rayonne, Guttenberg, Harrison, Hoboken, and Jersey City. Rows list causes of death such as 'Diseases of the heart', 'Injuries by fire', 'Suicide', etc.

TABLE 21.—DEATHS BY OCCUPATIONS

	AGRICULTURE, FORESTRY AND ANIMAL HUSBANDRY	Farmers	Farm laborers	Fishermen and oystermen	Gardeners, florists, fruit growers and nurserymen	Other agricultural and animal husbandry pursuits	EXTRACTION OF MINERALS	Foremen, overseers and inspectors	Miners	Quarry operatives	MANUFACTURING AND MECHANICAL INDUSTRIES	Bakers
Tuberculosis of the respiratory system	10 to 19	1										1
	20 to 29	1	1									1
	30 to 39	1	1									1
	40 to 49	2	1									3
	50 to 59	2	1									1
	60 to 69	2	1									1
	70 to 79	2	1									1
80 and over	1											1
Totals	26	9	1	6	5				6			7
Cancer and other malignant tumors	10 to 19											1
	20 to 29	1							1			1
	30 to 39				1				1			1
	40 to 49	11	2		2				1	2		5
	50 to 59	2	1		1				1			6
	60 to 69	2	1		1				1			2
	70 to 79	2	1		1				1			2
80 and over	12	3	4	1				1			1	
Totals	76	7	8	31	9			5	2			15
Diseases of the nervous system and of the special sense	10 to 19		1									1
	20 to 29				2				1			
	30 to 39	1	1									1
	40 to 49	1	1									1
	50 to 59	12	3		1				1			2
	60 to 69	20	2		1				1			4
	70 to 79	42	4		2				1			1
80 and over	22	4		2								
Totals	97	17	8	19	4			4				9
Diseases of the circulatory system	10 to 19	1										1
	20 to 29	1										2
	30 to 39	1										2
	40 to 49	12	3						1	1		6
	50 to 59	17	1		1				1			6
	60 to 69	51	2		1				1			9
	70 to 79	44	1		1				1			4
80 and over	5	1		1				1			3	
Totals	231	32	9	63	9			2	6	1		27

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	Rickshaws, forgoes and hammermen	Polishers	Block and stone masons	Builders and building contractors	Carpenters, coopers and cabinetmakers	Compositors, linotypers and typesetters	Dressmakers and seamstresses (not in factory)	Dyers	Electricians and electrical engineers	Engineers (stationary)	Enginemen	Filers, grinders, buffers and polishers (metal)	Firemen (except locomotive and fire department)	Glassblowers	Jewelers, watchmakers, goldsmiths and silver-smiths	Laborers (general and not specified)	Building and hand trades	Chemical industries	Clay and stone industries (except potteries)	
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	6	5	16	7	52	5	10	2	13	13		3	18	2	6	231	4	5	6	
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	11	2	26	20	80	2	12	4	13	25	1	8	9	2	11	183	2	4	2	
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	13	5	28	22	89	3	10	3	6	31	5	2	8	1	7	256	6		6	

TABLE 21.—DEATHS BY OCCUPATIONS

	Potteries	Rubber Industries	Textile Industries	Other Industries	Shoemakers and cobblers (not in factory)	Stonecutters	Tailors and tailresses	Thimble and coppermiths	Upholsterers	Other manufacturing and mechanical industries	TRANSPORTATION	Water
Tuberculosis of the respiratory system	10 to 19	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1
Totals	13	2	37	30	4	3	11	3	13	13		
Cancer and other malignant tumors	10 to 19	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1
Totals	5	4	51	41	9	2	16	5	4	12		
Diseases of the nervous system and of the organs of special sense	10 to 19	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1
Totals	3	6	40	31	19	4	15	2	3	3		
Diseases of the circulatory system	10 to 19	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1
Totals	9	8	71	98	25	6	46	13	5	29		

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Boatmen, canal men, sailors and deck hands	Longshoremen and stevedores	Other pursuits	Road and street	Carrriage and hack drivers, draymen, teamsters and expressmen	Chauffeurs	Contractors and foremen (road building)	Garage keepers and managers	Laborers (road building) and street cleaners	Livery stable keepers and managers, hostlers and stable hands	Other pursuits	Railroad	Baggage men and freight agents	Brakemen	Conductors	Foremen, overseers and inspectors	Laborers	Locomotive engineers	Locomotive firemen
Tuberculosis of the respiratory system	10 to 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	8	7	3	24	41	6	4	1	2	5	3	1	5	3	4	5	1	2	
Cancer and other malignant tumors	10 to 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	10	2	9	17	5	1	4	10	5	3	1	1	6	3	4	7			
Diseases of the nervous system and of the organs of special sense	10 to 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	6	4	7	10	11	1	8	13	4	3	2	6	7	7	3	7			
Diseases of the circulatory system	10 to 19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20 to 29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
30 to 39	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
40 to 49	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
50 to 59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
60 to 69	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
70 to 79	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80 and over	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Totals	15	12	18	45	30	3	8	15	9	6	3	10	13	9	10	13			

TABLE 21.—DEATHS BY OCCUPATIONS

	PROFESSIONAL SERVICE	Architects	Authors, editors and reporters	Chemists, assayers, etc.	Civil and mining engineers and surveyors	Clergymen	Dentists	Designers, draftsmen and inventors	Lawyers, judges and justices	Musicians and teachers of music	Photographers	Physicians and surgeons	Teachers and other educators
Tuberculosis and other respiratory system													
10 to 19	1												
20 to 29	1												
30 to 39	1												
40 to 49	1												
50 to 59	1												
60 to 69	1												
70 to 79	1												
80 and over	1												
Totals	1	5	2	1	4	1	7	1	9	2	15		
Cancer and other malignant tumors													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
Totals	3	1	6	5	6	2	2	6	8	8	11	28	
Diseases of the nervous system and of the organs of special sense													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
Totals	4	5	2	7	17		2	9	9		4	26	
Diseases of the circulatory system													
10 to 19													
20 to 29													
30 to 39													
40 to 49													
50 to 59													
60 to 69													
70 to 79													
80 and over													
Totals	7	9	11	10	38	7	9	23	17		25	89	

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Other professional and semi-professional pursuits	DOMESTIC AND PERSONAL SERVICE	Barbers, hairdressers and manicurists	Bartenders	Hotel keepers and managers	Housekeepers and stewards	Janitors and sextons	Laundresses and laundresses	Porters (except in stores)	Restaurant, cafe and lunch room keepers	Saboonkeepers	Servants	Waiters	Other Parents	CLERICAL OCCUPATIONS	Agents, canvassers and collectors	Bookkeepers, cashiers and accountants	Clerks (except clerks in stores)	Other clerical pursuits	Grand Total	
10 to 19	1																				
20 to 29	1																				
30 to 39	1																				
40 to 49	1																				
50 to 59	1																				
60 to 69	1																				
70 to 79	1																				
80 and over	1																				
Totals	29	8	4	8	608	4	10	7	4			62	15	21		4	28	118	29	2187	
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	24	7	1	1474	18	7	10	9	1	48	9	15		3	26	60	15	3260			
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	22	14	2	6	1285	18	10	13	7	2	42	12	8		3	20	48	9	3097		
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	23	17	2838	29	16	22	14	8		112	23	48		14	51	178	28	7212			

TABLE 21.—DEATHS BY OCCUPATIONS

	AGRICULTURE, FORESTRY AND ANIMAL HUSBANDRY	Farmers	Extra laborers	Fishermen and oystermen	Gardeners, florists, fruit growers and nurserymen	Other agricultural and animal husbandry pursuits	EXTRACTION OF MINERALS	Foremen, overseers and inspectors	Miners	Quarry operatives	MANUFACTURING AND MECHANICAL INDUSTRIES	Bakers
Pneumonia												
10 to 19					1							1
20 to 29					1							
30 to 39												
40 to 49												
50 to 59												
60 to 69												
70 to 79		11	3		4				1		1	1
80 and over	6	3			4							
Totals		82	10		19	6		1	3	1		3
Diseases of the respiratory system (pneumonia and tuberculosis excepted)												
10 to 19		1										
20 to 29		1										
30 to 39												
40 to 49		1		1		1						
50 to 59		1		1								
60 to 69		4		1								
70 to 79		10		1				1				
80 and over		15	1	1								
Totals		37	2	4	4	1		1				4
Diseases of the digestive system												
10 to 19												1
20 to 29												
30 to 39					1							
40 to 49												
50 to 59				1								
60 to 69				4								
70 to 79		1		1								
80 and over		1		3								
Totals		3		5	1							1
Nonvenereal diseases of the genito-urinary system and annexa												
10 to 19												
20 to 29												
30 to 39		1										
40 to 49		11										
50 to 59		3										
60 to 69		5										
70 to 79		2										
80 and over		4										
Totals		30	5	1	11	1						12
Totals		88	16	5	24	5		5		2		12

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Blacksmiths, foggemen and hammermen	Boilermakers	Brick and stone masons	Builders and building contractors	Carpenters, coopers and cabinetmakers	Compositors, linotypers and typesetters	Dressmakers and seamstresses (not in factory)	Dyers	Electricians and electrical engineers	Engineers (stationary)	Engravers	Filets, grinders, buffers and polishers (metal)	Firemen (except locomotive and fire department)	Glassblowers	Jewelers, watchmakers, goldsmiths and silversmiths	Laborers (general and not specified)	Building and hand trades	Chemical industries	Clay and stone industries (excepting potteries)
10 to 19	1								1										
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79	2	2	4	4	15	1	1	1	1	1									
80 and over	2	2	4	4	9	1	1	1	1	1									
Totals	5	3	17	8	33	3	2	6	15				7	3	234	4	5	4	
Diseases of the respiratory system (pneumonia and tuberculosis excepted)																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79	1	1	2	3	6	1	1	1	1	1									
80 and over	3	2	5	2	2	2	1	1	1	1									
Totals	1	2	9	3	20	1	1	1	9				1	6	78	1	2		
Diseases of the digestive system																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79	3	1	1	2	10	1	1	1	2	3									
80 and over	1	1	1	1	5	1	1	1	2	2									
Totals	3	2	2	3	20	1	1	1	9				1	6	78	1	2		
Nonvenereal diseases of the genito-urinary system and annexa																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79	1	1	1	2	5	1	1	1	2	3									
80 and over	1	1	1	1	4	1	1	1	2	2									
Totals	3	2	2	3	20	1	1	1	9				1	6	78	1	2		
Totals	10	2	9	10	37	2	11	2	7	8	1	9	3	12	222	2	2	2	

TABLE 21.—DEATHS BY OCCUPATIONS

	Glass industries	Iron, steel and other metal industries	Leather industries	Lumber and furniture industries	Potteries	Rubber industries	Textile industries	Other industries	Machinists, millwrights and toolmakers	Managers, superintendents and foremen (manufacturing)	Manufacturers and officials	Mechanics (gunsmiths, locksmiths, wheelwrights, etc.)
Pneumonia	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69											
	70 to 79											
80 and over												
Totals	7	1			4	4	10	23	16	5	4	
Diseases of the respiratory system (pneumonia and influenza excepted)	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69	1										
	70 to 79											
80 and over												
Totals	1	3	1				7	11	7	2	5	
Diseases of the circulatory system	10 to 19											
	20 to 29	1										
	30 to 39	1										
	40 to 49											
	50 to 59	1										
	60 to 69	1										
	70 to 79	1										
80 and over												
Totals	1	4	1			1	8	23	18	12	10	
Nonvenereal diseases of the primary genital system and syphilis	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69	1	1	1								
	70 to 79	1										
80 and over												
Totals	1	7	1			1	11	33	19	10	14	

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Millers (grain, flour, feed, etc.)	Milliners and millinery dealers	Monitors, founders and casters	Painters, glaziers, varnishers, enamellers, etc.	Paperhangers	Plasterers	Plumbers and gas and steam fitters	Pressmen (printing)	Roofers and slaters	Semi-skilled operatives (industry not stated)	Chemical industries	Cigar and tobacco factories	Clay and stone industries (excepting potteries)	Clothing industries	Food industries	Glass industries	Iron, steel and other metal industries	Leather industries	Lumber and furniture industries	
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	2	1	9	27	1	1	12	7	1	7	4	5	4	4	1	1	24	3	2	
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	3	16	1	18	1	1	12	1	1	2	1	3	1	1		11	2	2		
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	1	10	20	1	4	9	7	1	4	1	3	4	6	1	1	14	4	1		
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	2	4	6	56	2	1	17	12	5	10	7	8	6	10	6	31	10	6		

TABLE 21.—DEATHS BY OCCUPATIONS

	Potteries	Rubber industries	Textile industries	Other industries	Shoemakers and cobblers (not in factory)	Stonecutters	Tailors and tailoresses	Tinsmiths and coppermiths	Upholsters	Other manufacturing and mechanical industries	TRANSPORTATION	Water
Pneumonia												
10 to 19	1		2	1			1			1		
20 to 29	1		1	1						1		
30 to 39	1		1	1						1		
40 to 49	1		3	10	4		1			1		
50 to 59		1	4	7	3					1		
60 to 69			4	2	3					1		
70 to 79	1		1	2	3	1				1		
80 and over	1		1	1	1		1			1		
Totals	6	1	22	29	7	2	6	2		6		
Diseases of the respiratory system (infectious and tuberculous excepted)												
10 to 19	1		1	1			1			1		
20 to 29			1	1						1		
30 to 39			1	1						1		
40 to 49			1	1						1		
50 to 59			1	1						1		
60 to 69	2		1	1		1	1			1		
70 to 79			1	1		1	1			1		
80 and over			1	1		1	1			1		
Totals	3	1	8	16	5	3	3	2		1		
Diseases of the digestive system												
10 to 19			1	1						1		
20 to 29		2	1	2						4		
30 to 39			1	1								
40 to 49			1	1								
50 to 59		2	5	4						1		
60 to 69	3		5	4		1				1		
70 to 79			1	2						1		
80 and over			1	1						1		
Totals	4	4	23	27	6	3	10	2		1		
Nonvenereal diseases of the genitourinary system and annexa												
10 to 19		1	1	1								
20 to 29			1	1								
30 to 39			1	1								
40 to 49			1	1								
50 to 59			1	1								
60 to 69	1		1	1						1		
70 to 79	1		1	1						1		
80 and over			1	1						1		
Totals	3	1	7	7			3			3		

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Boatmen, canal men, sailors and deck hands	Longshoremen and stevedores	Other puruits	Road and street	Carriage and hack drivers, draymen, teamsters and expressmen	Chauffeurs	Contractors and foremen (road building)	Garage keepers and managers	Laborers (road building) and street cleaners	Livery stable keepers and mnagers, hostlers and stable hands	Other puruits	Railroad	Baggagemen and freight agents	Brakemen	Conductors	Foremen, overseers and inspectors	Laborers	Locomotive engineers	Locomotive firemen	
Pneumonia																				
10 to 19							1													
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	4	7	7		12	17	1	1	3	2	2				5		4	6	1	1
Diseases of the respiratory system (infectious and tuberculous excepted)																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	1	4	2		6	7			1	1							2	2	4	
Diseases of the digestive system																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	2	6	2		12	18	1	4	2	3							2	1	5	1
Nonvenereal diseases of the genitourinary system and annexa																				
10 to 19																				
20 to 29																				
30 to 39																				
40 to 49																				
50 to 59																				
60 to 69																				
70 to 79																				
80 and over																				
Totals	3	4	11		17	9	1	3	5	4							2	1	1	1

TABLE 21.—DEATHS BY OCCUPATIONS

	Motormen	Officials and superintendents	Switchmen, firemen and yardmen	Ticket and station agents	Other parents	Express, Post, Telegraph and Telephone	Express messengers and railway mail clerks	Linenen	Mail carriers	Telegraph operators	Telephone operators	Other parents
Pneumonia												
10 to 19												
20 to 29												
30 to 39												
40 to 49												
50 to 59		1	1									
60 to 69												
70 to 79				1								
80 and over												
Totals		1	1	1	9	2	2	2	2	1		
Diseases of the respiratory system (pneumonia and tuberculosis excepted)												
10 to 19												
20 to 29												
30 to 39	2											
40 to 49												
50 to 59												
60 to 69												
70 to 79	1											
80 and over												
Totals	2	2			2					1		
Diseases of the digestive system												
10 to 19												
20 to 29												
30 to 39												
40 to 49												
50 to 59												
60 to 69	1											
70 to 79												
80 and over												
Totals	2	1	6		4			2		2		4
Nonvenereal diseases of the genito-urinary system												
10 to 19												
20 to 29												
30 to 39												
40 to 49												
50 to 59												
60 to 69												
70 to 79												
80 and over												
Totals	4		6		14		1	2	2	4		2

AND AGE GROUPS, NEW JERSEY, 1928—Continued

TRADE	Bankers, brokers and moneylenders	Clerks in stores	Deliverymen	Laborers	Real estate and insurance agents and officials	Salesmen and saleswomen	Undertakers	Wholesale and retail dealers	Other parents	PUBLIC SERVICE (NOT ELSEWHERE CLASSIFIED)	Firemen (fire department)	Laborers (public service)	Marshals, sheriffs, detectives, etc.	Officials and inspectors (city, county, state, U. S.)	Policemen	Soldiers, sailors and marines	Other parents
10 to 19	1	2	1	1	1	2		3									
20 to 29	1	1	1	1	1	1		4									
30 to 39	1	2	1	1	2	2		7									
40 to 49	1	1	1	1	2	2		15									
50 to 59	2	2	1	1	4	5		18									
60 to 69	2	2	1	1	4	4		13									
70 to 79	1	1	1	1	1	1		8									
80 and over	1	1	1	1	1	1		2									
Totals	7	4	4	1	12	26	1	63	6		2	3	1	4	4	1	11
10 to 19		1						1									
20 to 29								2									
30 to 39	1							1									
40 to 49	1							3									
50 to 59	1							8									
60 to 69	1							1									
70 to 79	1							4									
80 and over	1							4									
Totals	4	1		1	3	6	1	28	2		2	2	1	1	1		8
10 to 19								1									
20 to 29								5									
30 to 39	1	3	2					10									
40 to 49	1	1	1					9									
50 to 59	3	1	1					4									
60 to 69	3	1	1					5									
70 to 79	3	1	1					4									
80 and over	3	1	1					2									
Totals	9	5	3		18	38		80	10		1	1	1	8	9		18
10 to 19								8									
20 to 29								11									
30 to 39	1	1						8									
40 to 49	1							11									
50 to 59	2							10									
60 to 69	2							9									
70 to 79	2							7									
80 and over	2							9									
Totals	7	1	4	1	36	33	2	123	5		5	5	2	12	21	2	29

TABLE 21.—DEATHS BY OCCUPATIONS

Disease	PROFESSIONAL SERVICE											
	Architects	Authors, editors and reporters	Chemists, assayers, etc.	Civil and mining engineers and surveyors	Clergymen	Dentists	Designers, draftsmen and inventors	Lawyers, judges and justices	Musicians and teachers of music	Photographers	Physicians and surgeons	Teachers and other educators
Pneumonia	10 to 19											1
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69											
	70 to 79											
	80 and over											
Totals		2	4	2	5	1	1	4	1	2	3	6
Diseases of the respiratory tract (pneumonia and tuberculosis excepted)	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69											
	70 to 79											
	80 and over											
Totals		2	2	3	1			2	1	2		7
Diseases of the digestive system	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69											
	70 to 79											
	80 and over											
Totals		5	1	3	11	1	1	6	1	3		6
Nonvenereal diseases of the genito-urinary system and amebiasis	10 to 19											
	20 to 29											
	30 to 39											
	40 to 49											
	50 to 59											
	60 to 69											
	70 to 79											
	80 and over											
Totals		4	3	2	5	5	5	7	5	10		20

AND AGE GROUPS, NEW JERSEY, 1922—Continued

Age Group	Other professional and semi-professional pursuits											Grand Total							
	DOMESTIC AND PERSONAL SERVICE																		
Age Group	Barbers, hairdressers and manicurists	Barbers	Bartenders	Hotel keepers and managers	Housekeepers and stewards	Janitors and sextons	Laundresses and laundresses	Porters (except in stores)	Restaurant, cafe and lunch room keepers	Saunoonkeepers	Servants	Waiters	Other Pursuits	CLERICAL OCCUPATIONS	Agents, canvassers and collectors	Bookkeepers, cashiers and accountants	Clerks (except clerks in stores)	Other clerical pursuits	
	10 to 19	1																	
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79																			
80 and over																			
Totals	14	8	2	1	611	18	2	11	2	2	26	11	3	4	10	51	13	1662	
Diseases of the respiratory tract (pneumonia and tuberculosis excepted)																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79																			
80 and over																			
Totals	4	6	4	293	1	2	2	1	1	16	2	6	2	5	16	2	2	795	
Diseases of the digestive system																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79																			
80 and over																			
Totals	15	8	4	6	642	5	6	6	4	34	7	10	1	16	50	10	1720		
Nonvenereal diseases of the genito-urinary system and amebiasis																			
10 to 19																			
20 to 29																			
30 to 39																			
40 to 49																			
50 to 59																			
60 to 69																			
70 to 79																			
80 and over																			
Totals	32	15	1	13	1476	16	12	6	6	64	11	16	5	20	66	12	3348		

TABLE 21.—DEATHS BY OCCUPATIONS

	AGRICULTURE, FORESTRY AND ANIMAL HUSBANDRY											
	Farmers	Farm laborers	Fishermen and oystermen	Gardeners, florists, fruit growers and nurserymen	Other agricultural and animal husbandry pursuits	EXTRACTION OF MINERALS			Miners	Quarry operatives	MANUFACTURING AND MECHANICAL INDUSTRIES	
	Bakers											
10 to 19		2						1				
20 to 29		1										3
30 to 39		1										
40 to 49	1	1										
50 to 59	4			2	2							
60 to 69	4	1										
70 to 79	2	2			1							
80 and over	2	2										
Totals	11	7		2	3			1				3
Violent deaths (causally excepted)												
10 to 19		3			1							4
20 to 29		2							2			1
30 to 39	4	3										
40 to 49	8	3			1							
50 to 59	6	3			6				1			
60 to 69	7	4		4	4							
70 to 79	11	7		4	4							
80 and over	7	7										1
Totals	53	15	8	14	9			9	3			11
All other diseases and causes of death												
10 to 19	1											1
20 to 29	1	2										1
30 to 39	2											3
40 to 49	1	1										1
50 to 59	3											2
60 to 69	19	3										2
70 to 79	1	2										1
80 and over	14	1										1
Totals	67	7	6	20	6							8
Summary												
10 to 19	7	6		1	1			1				3
20 to 29	15	10		3	2			2				7
30 to 39	47	15		3	3			5				14
40 to 49	47	27		7	6			6				14
50 to 59	94	47		29	10			10				18
60 to 69	165	24		48	7			1				33
70 to 79	249	25		15	49			4				15
80 and over	166	12		7	29			3				5
Totals	758	127	50	213	58		8	35	9			111

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Blaeksmiths, forgemen and hammermen											
	Bollemakers	Brick and stone masons	Builders and building contractors	Carpenters, coopers and cabinetmakers	Compositors, linotypers and typesetters	Dressmakers and seamstresses (not in factory)	Dyers	Electricians and electrical engineers	Engineers (stationary)	Engravers	Filers, grinders, buffers and polishers (metal)	Firemen (except locomotive and fire department)
	Glassblowers											
10 to 19												1
20 to 29												6
30 to 39												9
40 to 49												9
50 to 59												12
60 to 69												21
70 to 79												10
80 and over												2
Totals	2	2	2	6	1	1	1	2	2	1	1	2
Violent deaths (causally excepted)												
10 to 19												1
20 to 29												6
30 to 39												10
40 to 49												12
50 to 59												21
60 to 69												12
70 to 79												10
80 and over												2
Totals	2	2	2	6	1	1	1	2	2	1	1	2
All other diseases and causes of death												
10 to 19												1
20 to 29												10
30 to 39												12
40 to 49												21
50 to 59												12
60 to 69												10
70 to 79												2
80 and over												1
Totals	9	5	31	7	74	1	3	2	15	12	1	2
Violent deaths (causally excepted)												
10 to 19												1
20 to 29												6
30 to 39												14
40 to 49												37
50 to 59												56
60 to 69												49
70 to 79												29
80 and over												14
Totals	9	5	31	7	74	1	3	2	15	12	1	2
All other diseases and causes of death												
10 to 19												1
20 to 29												6
30 to 39												14
40 to 49												37
50 to 59												56
60 to 69												49
70 to 79												29
80 and over												14
Totals	9	5	31	7	74	1	3	2	15	12	1	2
Summary												
10 to 19	6	2	10	9	45	1	4	5	6	9	2	3
20 to 29	1	1	1	1	1		2	4	1	1	1	3
30 to 39	1	4	12	2	30	2	3	22	8	1	2	3
40 to 49	8	5	14	12	56	1	7	6	24	12	2	16
50 to 59	10	9	43	17	85	3	11	4	22	33	6	31
60 to 69	18	5	48	22	146	4	16	6	18	42	7	12
70 to 79	31	7	30	43	186	4	18	4	10	64	3	31
80 and over	28	2	43	34	172	7	17	6	9	36	4	16
Totals	108	35	211	154	748	20	78	31	109	210	17	35
Violent deaths (causally excepted)												
10 to 19												1
20 to 29												6
30 to 39												10
40 to 49												21
50 to 59												12
60 to 69												10
70 to 79												2
80 and over												1
Totals	108	35	211	154	748	20	78	31	109	210	17	35
All other diseases and causes of death												
10 to 19												1
20 to 29												6
30 to 39												10
40 to 49												21
50 to 59												12
60 to 69												10
70 to 79												2
80 and over												1
Totals	108	35	211	154	748	20	78	31	109	210	17	35

TABLE 21.—DEATHS BY OCCUPATIONS

	Occupations												
	Class industries	Iron, steel and other metal industries	Leather industries	Lumber and furniture industries	Potteries	Rubber industries	Textile industries	Other industries	Mechanics, millwrights and toolmakers	Managers, superintendents and foremen (manufacturing)	Manufacturers and officials	Mechanics (gunsmiths, locksmiths, wheelwrights, etc.)	
Violent deaths (excepted)													
10 to 19								1					1
20 to 29								1					1
30 to 39								1					1
40 to 49		1						1					1
50 to 59						1		1					1
60 to 69								1					1
70 to 79								1					1
80 and over								1					1
Totals	1	1				1	1	7	15	8	2	2	2
All other causes of death													
10 to 19		1						1	1				4
20 to 29		1						2	4				2
30 to 39	1	6						4	10				7
40 to 49		4						9	6				5
50 to 59	2	5						3	3				2
60 to 69		1						2	3				1
70 to 79		1						1	2				1
80 and over								1	3				1
Totals	3	18	1	2		2	22	32	18	9	23	23	23
Summary													
10 to 19		1						1	5				5
20 to 29		4						1	11				22
30 to 39	1	18						27	44				27
40 to 49		24						35	52				32
50 to 59	5	21						19	38				27
60 to 69	4	14						27	34				17
70 to 79	1	6						8	25				15
80 and over	3	1						1	21				5
Totals	16	94	18	5	5	20	21	137	407	265	127	159	159

AND AGE GROUPS, NEW JERSEY, 1928—Continued

	Occupations																				
	Millers (grain, flour, feed, etc.)	Milliners and millinery dealers	Monitors, founders and casters	Painters, glaziers, varnishers, enamellers, etc.	Paperhangers	Printers	Plumbers and gas and steam fitters	Pressmen (printing)	Roadsters and skaters	Semi-skilled operatives (industry not stated)	Chemical industries	Cigar and tobacco factories	Clay and stone industries (excepting potteries)	Clothing industries	Food industries	Glass industries	Iron, steel and other metal industries	Leather industries	Lumber and furniture industries		
Violent deaths (excepted)																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	1	1	1	11		1	3		1	3	2	3		4			6	2	2	2	2
All other causes of death																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	4	38	3	4	31	6	4	14	8	3	6	4	3	3	38	4	3	38	4	3	3
Summary																					
10 to 19																					
20 to 29																					
30 to 39																					
40 to 49																					
50 to 59																					
60 to 69																					
70 to 79																					
80 and over																					
Totals	11	14	82	379	20	26	178	98	22	132	44	51	45	98	27	24	289	86	53	53	53

TABLE 21.—DEATHS BY OCCUPATIONS

	Motormen	Officials and superintendents	Switchmen, flagmen and yardmen	Ticket and station agents	Other pursuits	Express, Post, Telegraph and Telephone	Express messengers and railway mail clerks	Lithographers	Mail carriers	Telegraph operators	Telephone operators	Other pursuits
Suicide												
10 to 19												
20 to 29	1											
30 to 39												
40 to 49												
50 to 59					1							
60 to 69												
70 to 79												
80 and over												
Totals	1				2							
Violent deaths (excepted)												
10 to 19												
20 to 29												
30 to 39					3		1	8		1		4
40 to 49					2			2				2
50 to 59	1		1	1	5			2		1		
60 to 69			4	2	1							
70 to 79	1											
80 and over	1											1
Totals	4		9	2	11		1	16	2	2	6	6
All other diseases and of death												
10 to 19												1
20 to 29												1
30 to 39	1	1										1
40 to 49			1									
50 to 59	1	2	3		3					1		1
60 to 69	1	1	1		1							1
70 to 79	1		1		1							1
80 and over	1											1
Totals	2	4	6		5		1			2	2	4
Summary of death												
10 to 19												4
20 to 29	2				2							4
30 to 39	4	1			11		1	9		1	7	4
40 to 49	1		10		1			10		1	7	5
50 to 59	5	5	14		21		16	23		3	3	5
60 to 69	5	3	12		13		12	13		2	4	5
70 to 79	1	1	16		15		1	1		5	1	7
80 and over	1		3		4			2		1	2	2
Totals	24	11	62		85		9	84		30	22	38

AND AGE GROUPS, NEW JERSEY, 1928—Continued

TRADE	Bankers, brokers and moneylenders	Clerks in stores	Deliverymen	Laborers	Real estate and insurance agents and officials	Sailors and seamen	Undertakers	Wholesale and retail dealers	Other pursuits	PUBLIC SERVICE (NOT ELSEWHERE CLASSIFIED)	Firemen (fire department)	Laborers (public service)	Marshals, sheriffs, detectives, etc.	Officials and inspectors (city, county, state, U. S.)	Policemen	Soldiers, sailors and marines	Other pursuits
10 to 19					1												
20 to 29					1												
30 to 39					5												
40 to 49					2												
50 to 59					5												
60 to 69					3												
70 to 79					3												
80 and over					2												
Totals	3			1	9		11		27	2		1			2	1	10
10 to 19																	
20 to 29																	
30 to 39	1				3		3		1								
40 to 49					2		2		1								
50 to 59					1		3		5								
60 to 69					1		5		1								
70 to 79					3		3		1								
80 and over					1		1		1								
Totals	4			3	14		25		4	74		7			4	12	6
10 to 19																	
20 to 29																	
30 to 39	1				3		10		5	1							
40 to 49					1		3		11	1							
50 to 59					1		4		13	1							
60 to 69					1		5		1								
70 to 79					6		8		1								
80 and over					4		4		2								
Totals	1				1		1		4	4							
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59																	
60 to 69																	
70 to 79																	
80 and over																	
Totals	7	8	7	4	19		41		2	78		2			2	4	17
10 to 19																	
20 to 29																	
30 to 39																	
40 to 49																	
50 to 59																	
60 to 69																	
70 to 79																	
80 and over																	
Totals	105	56	82	23	271		419		32	1069		72			43	46	16

TABLE 22—TABULATION OF DEATHS IN NEW JERSEY FOR 1923 ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List No.	CAUSE OF DEATH		AGE PERIODS												Total	Estimated population, 5,897,622.	Rate per 1,000 population, 44,895.			
	Male	Female	Total	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49				50 to 59	60 to 69	70 to 79	80 to 89	90 and over
1	65	40	25	8	1	1	1	1	1	1	2	17	14	4	2	2	1		Unknown	
2	3	1	2																	
3	1	1	2																	
4	210	124	285	25	68	98	23	6	14	213	34	1	1	1	1	1	1	1	1	
5	185	108	293	23	3	5	7	9	29	54	1	1	1	1	1	1	1	1	1	
6	424	213	637	30	21	29	16	27	177	105	1	1	1	1	1	1	1	1	1	
7	615	323	938	50	21	35	6	10	104	15	30	41	60	77	63	91	69	48	8	
8	271	152	423	17	8	11	6	9	1	1	1	1	1	1	1	1	1	1	1	
9	2562	1488	4050	10	9	8	5	7	89	29	21	29	13	24	21	28	10	1	1	
10	97	51	148	6	10	17	6	10	5	5	23	663	510	488	302	192	64	9	2	
11	202	109	311	4	3	4	3	3	4	18	14	20	4	3	11	18	16	5	2	
12	1539	772	2311	9	1	2	8	16	9	16	9	50	531	1015	1169	835	204	6	6	
13	3258	1718	4976	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
14	9175	4753	13928	6	6	7	4	6	62	88	210	232	420	259	588	880	689	465	71	
15	214	108	322	28	58	10	3	1	1	1	1	1	1	1	1	1	1	1	1	
16	2588	1329	4917	310	197	99	30	22	521	65	110	165	24	378	383	370	200	116	11	
17	1873	933	2806	227	582	193	64	81	19	889	47	42	33	77	127	173	179	127	27	
18	203	202	405	10	6	4	1	1	1	1	1	1	1	1	1	1	1	1	1	
19	571	337	908	62	501	70	6	15	8	32	63	97	77	94	63	67	41	17	1	
20	912	370	1282	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
21	322	232	554	31	6	2	2	4	1	6	17	22	46	61	72	46	36	33	8	
22	3352	114	4466	254	13	8	6	1	56	21	48	81	141	412	745	808	1037	487	67	
23	4033	1988	6021	204	41	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
24	262	202	464	168	18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
25	148	108	256	243	26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
26	2223	1840	4063	215	2201	7	5	3	22318	4	1	1	1	1	1	1	1	1	1	
27	169	64	233	105	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
28	3022	2107	5129	222	448	62	60	61	30	100	45	224	211	368	384	432	377	271	218	
29	5185	2058	7243	462	488	62	60	61	30	100	45	224	211	368	384	432	377	271	218	
30	54	31	85	23	6	2	2	2	1	1	1	1	1	1	1	1	1	1	1	
Total	44551	22655	67206	3907	4900	843	417	321	237	6458	1001	1532	2430	3290	4840	6500	7615	6810	3447	404

Estimated population, 5,897,622.

Total resident deaths, 44,895.

Rate per 1,000 population, 44.04.

TABULATION OF DEATHS IN ATLANTIC COUNTY FOR 1923 ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List No.	CAUSE OF DEATH		AGE PERIODS												Total	Estimated population, 94,430.	Rate per 1,000 population, 1363.			
	Male	Female	Total	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49				50 to 59	60 to 69	70 to 79	80 to 89	90 and over
1	2	2	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2																				
3																				
4																				
5																				
6	4	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	4	1	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	15	5	20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	21	12	33	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10																				
11																				
12	6	4	10	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	76	45	121	30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	6	1	7	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	6	1	7	4	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	188	99	287	31	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	3	2	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	100	41	141	20	20	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
19	312	162	474	189	172	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
20	74	47	121	27	27	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
21																				
22																				
23	47	26	73	19	19	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
24	18	13	31	7	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
25	18	10	28	12	12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
26	15	6	21	9	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
27	34	17	51	20	20	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
28	108	70	178	29	29	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1
29	21	109	130	111	65	21	4	3	3	3	2	8	13	18	30	40	33	26	11	3
30	31	2	33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total	1333	806	2139	747	383	156	23	6	10	202	34	50	60	119	220	247	261	210	121	18

Estimated population, 94,430.

Total resident deaths, 1,363.

Rate per 1,000 population, 16.44.

TABULATION OF DEATHS IN ATLANTIC CITY FOR 1926, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH		AGE PERIODS										Total	Color, if other than white	Female	Male	Total					
	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59						60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
Total	902	463	439	314	90	12	4	2	7	115	10	21	40	93	160	150	168	91	90	9		

Estimated population, 54,694.

Total resident deaths, 902.

Rate per 1,000 population, 16.49.

TABULATION OF DEATHS IN HAMMONTON FOR 1926, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH		AGE PERIODS										Total	Color, if other than white	Female	Male	Total					
	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59						60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
33	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
35	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
37	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
38	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
Total	72	30	42	1	8	5	1	8	5	3	6	5	3	6	9	8	14	8	1	1		

Estimated population, 7,574.

Total resident deaths, 72.

Rate per 1,000 population, 9.50.

TABULATION OF DEATHS IN RIDGEWOOD FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List No.	CAUSE OF DEATH	AGE PERIODS											Total	Male	Female	Color, if other than white						
		Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49					50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	Typhoid fever																					
2	Typhus fever																					
3	Malaria																					
4	Smallpox																					
5	Measles																					
6	Diphtheria																					
7	Whooping cough																					
8	Diphtheria and croup																					
9	Influenza																					
10	Asiatic cholera																					
11	Other cholera																					
12	Other cholera																					
13	Other cholera																					
14	Tuberculosis meningitis																					
15	Other forms of tuberculosis																					
16	Simple meningitis																					
17	Simple meningitis																					
18	Cerebral hemorrhage and softening																					
19	Organic diseases of the heart																					
20	Coronary sclerosis																					
21	Other diseases of the heart																					
22	Other diseases of the respiratory system																					
23	(tuberculosis excepted)																					
24	Diseases of the stomach (cancer excepted)																					
25	Diseases of the stomach																					
26	Amebic dysentery																					
27	Hepatic, intestinal obstruction																					
28	Obstruction of the liver																					
29	Acute nephritis and Bright's disease																					
30	Nephritis and other diseases of the renal system																					
31	Puerperal septicæmia (puerperal fever, peritonitis)																					
32	Other puerperal accidents of pregnancy & labor																					
33	Other puerperal accidents																					
34	Sexual debility and malformations																					
35	Senility																					
36	Suicide																					
37	Violent deaths (suicide excepted)																					
38	Other unknown or ill-defined diseases																					
	Total	121	105	66	7	12	1	2	1	1	1	2	6	8	12	12	21	20	21	2	2	

Estimated population, 9,408.

Total resident deaths, 121.

Rate per 1,000 population, 12.77.

TABULATION OF DEATHS IN RUTHERFORD FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged International List No.	CAUSE OF DEATH	AGE PERIODS											Total	Male	Female	Total	Color, if other than white						
		Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49						50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	Typhoid fever																						
2	Typhus fever																						
3	Malaria																						
4	Smallpox																						
5	Measles																						
6	Diphtheria																						
7	Whooping cough																						
8	Diphtheria and croup																						
9	Influenza																						
10	Asiatic cholera																						
11	Other cholera																						
12	Other cholera																						
13	Tuberculosis of the lungs																						
14	Tuberculosis meningitis																						
15	Other forms of tuberculosis																						
16	Simple meningitis																						
17	Simple meningitis																						
18	Cerebral hemorrhage and softening																						
19	Organic diseases of the heart																						
20	Coronary sclerosis																						
21	Other diseases of the heart																						
22	Other diseases of the respiratory system																						
23	(tuberculosis excepted)																						
24	Diseases of the stomach (cancer excepted)																						
25	Diseases of the stomach																						
26	Amebic dysentery																						
27	Hepatic, intestinal obstruction																						
28	Obstruction of the liver																						
29	Acute nephritis and Bright's disease																						
30	Nephritis and other diseases of the renal system																						
31	Puerperal septicæmia (puerperal fever, peritonitis)																						
32	Other puerperal accidents of pregnancy & labor																						
33	Other puerperal accidents																						
34	Sexual debility and malformations																						
35	Senility																						
36	Suicide																						
37	Violent deaths (suicide excepted)																						
38	Other unknown or ill-defined diseases																						
	Total	168	80	88	8	10	4	1	1	1	1	1	1	1	1	1	1	2	3	1	3		

Estimated population, 11,040.

Total resident deaths, 168.

Rate per 1,000 population, 14.43.

TABULATION OF DEATHS IN GLOUCESTER CITY FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATHS

Abridged Interna-tional List No.	CAUSE OF DEATH	Total	Color, If other than white		AGE PERIODS										Total													
			Male	Female	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39		40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown						
1	Typhoid fever	1																										
2	Typhus fever																											
3	Salmonella	6																										
4	Schick's test																											
5	Smallpox																											
6	Scarlet fever	1																										
7	Whooping cough	1																										
8	Diphtheria and croup																											
9	Asiatic cholera	9																										
10	Cholera nostras																											
11	Other epidemic diseases	2																										
12	Tuberculosis of the lungs	13																										
13	Other forms of tuberculosis	1																										
14	Other forms of tuberculosis	1																										
15	Cancer and other malignant tumors	2																										
16	Brain and other malignant tumors	2																										
17	Simple meningitis	4																										
18	Cerebral meningitis and softening	3																										
19	Cerebral diseases of the heart	3																										
20	Brain aneurysm	2																										
21	Bronchitis	18																										
22	Pneumonia	8																										
23	Other diseases of the respiratory system	6																										
24	Diseases of the stomach (cancer excepted)	15																										
25	Diarrhea and enteritis (under 2 years)	2																										
26	Appendicitis and typhlitis	1																										
27	Gastric, intestinal obstruction	2																										
28	Acute nephritis and Bright's disease	2																										
29	Noncancerous tumors and other diseases of the female genital organs	13																										
30	Other diseases of the female genital organs (puerperal fever, peritonitis, etc.)	1																										
31	Puerperal septicemia (puerperal fever, peritonitis, etc.)	1																										
32	Other diseases of pregnancy & labor	1																										
33	Other diseases of pregnancy & labor	1																										
34	Congenital debility and malformations	12																										
35	Senility	1																										
36	Suicide	1																										
37	Other deaths (suicide excepted)	19																										
38	Unknown or ill-defined diseases	6																										
Total		180	86	101	81	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Estimated population, 14,592.

Total resident deaths, 189.

Rate per 1,000 population, 13.01.

TABULATION OF DEATHS IN CAPE MAY COUNTY IN 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATHS

Abridged Interna-tional List No.	CAUSE OF DEATH	Total	Color, If other than white		AGE PERIODS										Total														
			Male	Female	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39		40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown							
1	Typhoid fever																												
2	Typhus fever																												
3	Salmonella																												
4	Smallpox																												
5	Scarlet fever	1																											
6	Whooping cough																												
7	Diphtheria and croup																												
8	Asiatic cholera																												
9	Cholera nostras																												
10	Other epidemic diseases	1																											
11	Tuberculosis of the lungs	26																											
12	Other forms of tuberculosis	1																											
13	Other forms of tuberculosis	1																											
14	Cancer and other malignant tumors	46	20	26	4																								
15	Brain and other malignant tumors	1																											
16	Simple meningitis	1																											
17	Cerebral meningitis and softening	1																											
18	Cerebral diseases of the heart	84	60	24	6																								
19	Bronchitis	21	15	7	8																								
20	Pneumonia	15	7	8	1																								
21	Other diseases of the respiratory system	4																											
22	Diseases of the stomach (cancer excepted)	17	6	11	6																								
23	Diarrhea and enteritis (under 2 years)	12	8	4	1																								
24	Appendicitis and typhlitis	13	8	5	1																								
25	Gastric, intestinal obstruction	1																											
26	Acute nephritis and Bright's disease	1																											
27	Noncancerous tumors and other diseases of the female genital organs	67	34	33	8																								
28	Other diseases of the female genital organs (puerperal fever, peritonitis, etc.)	9	2	7	2																								
29	Puerperal septicemia (puerperal fever, peritonitis, etc.)	2																											
30	Other diseases of pregnancy & labor	23	12	11	2																								
31	Congenital debility and malformations	2																											
32	Senility	4	3	1																									
33	Suicide	4	3	1																									
34	Other deaths (suicide excepted)	15	13	2																									
35	Unknown or ill-defined diseases	61	33	28	18																								
Total		415	245	170	44	34	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	

Estimated population, 10,400.

Total resident deaths, 415.

Rate per 1,000 population, 21.32.

TABULATION OF DEATHS IN CUMBERLAND COUNTY FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns for Cause of Death, Sex (Male, Female, Total), Age Periods (Under 1 year to 90 and over), and Unknown. Rows list various causes like Typhoid fever, Tuberculosis, Cancer, etc.

Total resident deaths, 890. Rate per 1,000 population, 32.82. Estimated population, 66,778.

TABULATION OF DEATHS IN BRIDGETON FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns for Cause of Death, Sex (Male, Female, Total), Age Periods (Under 1 year to 90 and over), and Unknown. Rows list various causes like Typhoid fever, Typhus fever, Malaria, etc.

Total resident deaths, 252. Rate per 1,000 population, 17.47. Estimated population, 14,423.

TABULATION OF DEATHS IN NEWARK FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns: Abridged Interna-tional List No., Cause of Death, Total, Male, Female, Color, If other than white, Under 1 year, 1 year, 2 years, 3 years, 4 years, Under 5 years, 5 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, Unknown.

Total resident deaths, 475,254.

Total resident deaths, 5,683.

Rate per 1,000 population, 11.70.

TABULATION OF DEATHS IN NUTLEY FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns: Abridged Interna-tional List No., Cause of Death, Total, Male, Female, Color, If other than white, Under 1 year, 1 year, 2 years, 3 years, 4 years, Under 5 years, 5 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, Unknown.

Estimated population, 12,405.

Total resident deaths, 187.

Rate per 1,000 population, 15.07.

TABULATION OF DEATHS IN GUTENBERG FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns: Abridged Internat'l List No., Cause of Death, Total, Male, Female, Color, If other than white, Under 1 year, 1 year, 2 years, 3 years, 4 years, Under 5 years, 5 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, Unknown.

Estimated population, 7,669. Total resident deaths, 78. Rate per 1,000 population, 10.17.

TABULATION OF DEATHS IN HARBOR FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns: Abridged Internat'l List No., Cause of Death, Total, Male, Female, Color, If other than white, Under 1 year, 1 year, 2 years, 3 years, 4 years, Under 5 years, 5 to 9, 10 to 19, 20 to 29, 30 to 39, 40 to 49, 50 to 59, 60 to 69, 70 to 79, 80 to 89, 90 and over, Unknown.

Estimated population, 16,792. Total resident deaths, 170. Rate per 1,000 population, 10.12.

TABULATION OF DEATHS IN WEEHAWKEN FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns for Abridged Internat. List No., Cause of Death, Total, Male, Female, Color, and Age Periods (Under 1 year to 70 and over). Includes a Total row at the bottom.

Estimated population, 17,264.

Total resident deaths, 176.

Rate per 1,000 population, 10.15.

TABULATION OF DEATHS IN WEST NEW YORK FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table with columns for Abridged Internat. List No., Cause of Death, Total, Male, Female, Color, and Age Periods (Under 1 year to 70 and over). Includes a Total row at the bottom.

Estimated population, 44,255.

Total resident deaths, 908.

Rate per 1,000 population, 6.90.

TABULATION OF DEATHS IN MIDDLESEX COUNTY FOR 1988, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Interna- tional List No.	CAUSE OF DEATH	Total	Color, If other than white		AGE PERIODS																	
			Male	Female	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown	
1	Typhoid fever	2	1	1																		
2	Typhus fever																					
3	Dysentery																					
4	Shigellosis																					
5	Measles	6	6																			
6	Scarlet fever	11	7	4																		
7	Whooping cough	10	11	8																		
8	Influenza and grip	18	15	16																		
9	Polio	3	3																			
10	Asiatic cholera																					
11	Cholera nostras	17	9	8																		
12	Other epidemic disease	134	71	63																		
13	Tuberculosis of the lungs	17	10	7																		
14	Tuberculosis of other organs	13	5	8																		
15	Other forms of tuberculosis	16	11	5																		
16	Cancer and other malignant tumors	178	74	104																		
17	Simple meningitis	3	2	1																		
18	Cerebral hemorrhage and softening	394	27	367																		
19	Cerebral disease of the heart	35	19	16																		
20	Stroke	35	19	16																		
21	Bronchitis	124	80	44																		
22	Pneumonia	73	37	36																		
23	Other diseases of the respiratory system	21	17	14																		
24	Tuberculosis (excepted)	21	17	14																		
25	Dysentery and enteritis (under 2 years)	28	16	12																		
26	Diarrhea and enteritis (under 2 years)	28	16	12																		
27	Appendicitis and typhitis	11	3	8																		
28	Hernia, intestinal obstruction	13	6	7																		
29	Acute hemorrhage and Bright's disease	130	14	116																		
30	Noncancerous tumors and other diseases of the female genital organs	434	71	363																		
31	Puerperal metritis (puerperal fever, puerperal fever, puerperal sepsis)	5		5																		
32	Other puerperal conditions of pregnancy & labor	9	2	7																		
33	Congenital debility and malformations	118	62	56																		
34	Senility	6	4	2																		
35	Alcoholism	30	26	4																		
36	Suicide (suicide excepted)	157	149	8																		
37	Other diseases (suicide excepted)	102	1	101																		
38	Unknown or ill-defined diseases	26	16	10																		
	Total	2010	1129	881	87	238	38	10	16	14	215	65	78	135	190	243	314	300	245	118	17	

Estimated population, 304,290.

Total resident deaths, 2,016.

Rate per 1,000 population, 6.62.

TABULATION OF DEATHS IN CANTERBURY FOR 1988, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Interna- tional List No.	CAUSE OF DEATH	Total	Color, If other than white		AGE PERIODS																	
			Male	Female	Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown	
1	Typhoid fever	1	1																			
2	Typhus fever																					
3	Dysentery																					
4	Shigellosis																					
5	Measles	1	1																			
6	Scarlet fever	1	1																			
7	Whooping cough																					
8	Influenza and grip	2	1	1																		
9	Polio																					
10	Asiatic cholera																					
11	Cholera nostras	1	1																			
12	Other epidemic disease	1	1																			
13	Tuberculosis of the lungs	1	1																			
14	Tuberculosis of other organs	1	1																			
15	Other forms of tuberculosis	1	1																			
16	Cancer and other malignant tumors	3	3																			
17	Simple meningitis	1	1																			
18	Cerebral hemorrhage and softening	1	1																			
19	Cerebral disease of the heart	10	8	2																		
20	Stroke	10	8	2																		
21	Bronchitis	5	4	1																		
22	Pneumonia	6	5	1																		
23	Other diseases of the respiratory system	1	1																			
24	Tuberculosis (excepted)	1	1																			
25	Dysentery and enteritis (under 2 years)	1	1																			
26	Diarrhea and enteritis (under 2 years)	1	1																			
27	Appendicitis and typhitis	1	1																			
28	Hernia, intestinal obstruction	1	1																			
29	Acute hemorrhage and Bright's disease	2	1	1																		
30	Noncancerous tumors and other diseases of the female genital organs	1	1																			
31	Puerperal metritis (puerperal fever, puerperal fever, puerperal sepsis)	1	1																			
32	Other puerperal conditions of pregnancy & labor	1	1																			
33	Congenital debility and malformations	5	4	1																		
34	Senility	1	1																			
35	Alcoholism	1	1																			
36	Suicide (suicide excepted)	1	1																			
37	Other diseases (suicide excepted)	14	10	4																		
38	Unknown or ill-defined diseases	7	7																			
	Total	90	61	29	6	10	8	2	1	2	24	1	1	1	1	1	1	1	1	1	1	1

Estimated population, 16,983.

Total resident deaths, 90.

Rate per 1,000 population, 5.74.

TABULATION OF DEATHS IN ASBURY PARK FOR 1923, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Interna- tional List No.	CAUSE OF DEATH	AGE PERIODS										Color, if other than white	Female	Male	Total												
		Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39					40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown					
1	Typhoid fever									1																	
2	Typhus fever																										
3	Malaria	2																									
4	Smallpox																										
5	Measles																										
6	Scarlet fever																										
7	Whooping cough																										
8	Diphtheria and croup	1	1																								
9	Adicolic cholera																										
10	Adicolic cholera																										
11	Cholera nostras																										
12	Other epidemic diseases	1	2																								
13	Tuberculosis of the lungs	9	7																								
14	Other forms of tuberculosis	2	2																								
15	Other tuberculosis																										
16	Cancer and other malignant tumors	14	7																								
17	Simple meningitis																										
18	Cerebral hemorrhage and softening	3	6																								
19	Organic diseases of the heart	32	50	16																							
20	Bronchitis	11	7	4	5	5																					
21	Pneumonia																										
22	Other diseases of the respiratory system	9	3	3	2	2																					
23	(Tuberculosis excepted)	1	1																								
24	Diarrhea and enteritis (under 2 years excepted)																										
25	Diarrhea and enteritis (under 2 years)																										
26	Appendicitis and typhlitis																										
27	Hepatitis, intestinal obstruction																										
28	Other intestinal diseases																										
29	Acute nephritis and Bright's disease	24	31	10	12																						
30	Noncancerous tumors and other diseases of the female genital organs	1																									
31	(Toxic syphilis)																										
32	Other poepreral accidents of pregnancy & labor																										
33	Congenital debility and malformations	7	5	2	2	2																					
34	Stillborn																										
35	Violent deaths (accidents excepted)	42	55	5	5	1																					
36	Other diseases	38	20	18	10	10	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
37	Unknown or ill-defined diseases	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
38	Unknown or ill-defined diseases																										
	Total	217	326	92	84	18	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

Estimated population, 14,870.

Total resident deaths, 217.

Rate per 1,000 population, 15.10.

TABULATION OF DEATHS IN LONG BRANCH FOR 1923, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Interna- tional List No.	CAUSE OF DEATH	AGE PERIODS										Color, if other than white	Female	Male	Total															
		Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39					40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown								
1	Typhoid fever																													
2	Typhus fever																													
3	Malaria																													
4	Smallpox																													
5	Measles																													
6	Scarlet fever																													
7	Whooping cough																													
8	Diphtheria and croup																													
9	Adicolic cholera																													
10	Adicolic cholera																													
11	Cholera nostras																													
12	Other epidemic diseases																													
13	Tuberculosis of the lungs	18	7	6	5																									
14	Other forms of tuberculosis																													
15	Other tuberculosis																													
16	Cancer and other malignant tumors	21	11	10	8																									
17	Simple meningitis																													
18	Cerebral hemorrhage and softening	17	9	8	1																									
19	Organic diseases of the heart	53	54	29	11																									
20	Bronchitis	7	8	4																										
21	Pneumonia																													
22	Other diseases of the respiratory system	9	6	4																										
23	(Tuberculosis excepted)																													
24	Diseases of the stomach (cancer excepted)																													
25	Diarrhea and enteritis (under 2 years excepted)																													
26	Diarrhea and enteritis (under 2 years)																													
27	Appendicitis and typhlitis																													
28	Hepatitis, intestinal obstruction																													
29	Cerebra of the liver																													
30	Acute nephritis and Bright's disease	10	11	6	2																									
31	Noncancerous tumors and other diseases of the female genital organs																													
32	(Toxic syphilis)																													
33	Other poepreral accidents of pregnancy & labor																													
34	Congenital debility and malformations																													
35	Stillborn																													
36	Violent deaths (accidents excepted)	32	6	8	3																									
37	Other diseases	41	28	18	8	5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
38	Unknown or ill-defined diseases																													
	Total	213	317	98	96	17	1	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	

Estimated population, 13,716.

Total resident deaths, 213.

Rate per 1,000 population, 15.63.

TABULATION OF DEATHS IN DOVER FOR 1892, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH	Total	AGE PERIODS		Color, If other than white	Female	Male	AGE PERIODS												Total								
			Under 1 year	1 year				2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79		80 to 89	90 and over	Unknown					
1	Typhoid fever	1	1																									
2	Typhus fever	1																										
3	Malaria	2																										
4	Smallpox	4																										
5	Measles	4																										
6	Scarlet fever	1																										
7	Whooping cough	1																										
8	Diphtheria and croup	2																										
9	Influenza	12																										
10	Asiatic cholera	1																										
11	Cholera nostras	2																										
12	Other epidemic diseases of the bowels	9																										
13	Other epidemic diseases of the lungs	8																										
14	Tuberculous meningitis	2																										
15	Other forms of tuberculosis	8																										
16	Other forms of tuberculosis	14																										
17	Cancer and other malignant tumors	4																										
18	Simple meningitis	10																										
19	Cerebral hemorrhage and softening	10																										
20	Organic diseases of the heart	18																										
21	Bronchitis	3																										
22	Pneumonia	7																										
23	Acute inflammation of the respiratory system (tuberculosis excepted)	5																										
24	Diseases of the stomach (cancer excepted)	2																										
25	Diarrhoea and enteritis (under 2 years)	3																										
26	Typhoid and typhitis	1																										
27	Other diseases of the liver	1																										
28	Cholera of the liver	1																										
29	Acute nephritis and Bright's disease	10																										
30	Noncancerous tumors and other diseases of the female genital organs	4																										
31	Peritonitis, septicaemia (puerperal fever, per- itonitis) and other diseases of the peritoneum	1																										
32	Other puerperal accidents of pregnancy & labor	1																										
33	Consen.al debility and malformations	4																										
34	Senility	1																										
35	Suicide	2																										
36	Violent deaths (suicide excepted)	1																										
37	Other suicides	24																										
38	Unknown or ill-defined diseases	13																										
39	Total	123	63	60	4	7	2	1	1	1	2	1	2	1	10	0	16	9	13	16	24	21	8	1				

Estimated population, 11,843.

Total resident deaths, 123.

Rate per 1,000 population, 10.38.

TABULATION OF DEATHS IN MORRISTOWN FOR 1892, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH	Total	AGE PERIODS		Color, If other than white	Female	Male	AGE PERIODS												Total										
			Under 1 year	1 year				2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79		80 to 89	90 and over	Unknown							
1	Typhoid fever	1																												
2	Typhus fever	2																												
3	Malaria	2																												
4	Smallpox	1																												
5	Measles	1																												
6	Scarlet fever	2																												
7	Whooping cough	1																												
8	Diphtheria and croup	2																												
9	Influenza	10																												
10	Asiatic cholera	1																												
11	Cholera nostras	1																												
12	Other epidemic diseases of the bowels	14																												
13	Other epidemic diseases of the lungs	1																												
14	Tuberculous meningitis	1																												
15	Other forms of tuberculosis	2																												
16	Cancer and other malignant tumors	20																												
17	Simple meningitis	13																												
18	Cerebral hemorrhage and softening	13																												
19	Organic diseases of the heart	42																												
20	Bronchitis	21																												
21	Pneumonia	11																												
22	Acute inflammation of the respiratory system (tuberculosis excepted)	11																												
23	Diseases of the stomach (cancer excepted)	6																												
24	Diarrhoea and enteritis (under 2 years)	1																												
25	Typhoid and typhitis	1																												
26	Appendicitis and typhlitis	6																												
27	Hepatic, intestinal obstruction	1																												
28	Cirrhosis of the liver	1																												
29	Acute nephritis and Bright's disease	80																												
30	Noncancerous tumors and other diseases of the female genital organs	12																												
31	Peritonitis, septicaemia (puerperal fever, per- itonitis) and other diseases of the peritoneum	2																												
32	Other puerperal accidents of pregnancy & labor	1																												
33	Consen.al debility and malformations	10																												
34	Senility	1																												
35	Suicide	4																												
36	Violent deaths (suicide excepted)	30																												
37	Other suicides	18																												
38	Unknown or ill-defined diseases	12																												
39	Total	226	115	111	20	21	4	1	1	2	2	1	2	27	2	4	10	16	20	31	46	47	21	2						

Estimated population, 12,482.

Total resident deaths, 226.

Rate per 1,000 population, 15.96.

TABULATION OF DEATHS IN RAILWAY FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS														
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	Typhoid fever	1	1																	
2	Typhus fever																			
3	Malaria																			
4	Smallpox																			
5	Scarlet fever																			
6	Diphtheria			1																
7	Whooping cough																			
8	Diphtheria and croup																			
9	Infuenza																			
10	Acute cholera																			
11	Bacillary dysentery																			
12	Other epidemic diseases																			
13	Tuberculosis of the lungs																			
14	Tuberculosis meningitis																			
15	Other forms of tuberculosis																			
16	Cancer and other malignant tumors	17	8	9	1															
17	Simple meningitis	14	10	12	1															
18	Cerebral hemorrhage and softening	28	16	12	1															
19	Cerebral diseases of the heart	14	7	7																
20	Stroke	6	2	3																
21	Other diseases of the respiratory system (infectious excepted)	4	1	3	2	1														
22	Diseases of the stomach (cancer excepted)																			
23	Diseases of the intestines (under 2 years)																			
24	Amebiasis																			
25	Hernia, intestinal obstruction			1																
26	Ascites																			
27	Cardioma of the liver																			
28	Acute nephritis and Bright's disease	16	7	9	1															
29	Chronic nephritis and other diseases of the renal system																			
30	Other diseases of the renal system (nephritis excepted)																			
31	Puerperal septicaemia (puerperal fever, peri-tonitis)	1		1																
32	Other puerperal accidents of pregnancy & labor																			
33	Septicemia (not at death and malformations)	10	5	5	1	10														
34	Scalds			2																
35	Subole	10	9	1																
36	Violent deaths (suicide excepted)	14	7	7	8															
37	Violent deaths (suicide excepted)																			
38	Unknown or ill-defined diseases																			
	Total	142	74	68	10	13	2	1	1	2	1	1	1	1	1	1	1	1	1	1

Estimated population, 12,690.

Total resident deaths, 142.

Rate per 1,000 population, 11.33.

TABULATION OF DEATHS IN SUMMIT FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Internat- ional List No.	CAUSE OF DEATH	Total	Male	Female	Color, If other than white	AGE PERIODS														
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 and over	Unknown
1	Typhoid fever																			
2	Typhus fever																			
3	Malaria																			
4	Smallpox																			
5	Scarlet fever																			
6	Diphtheria																			
7	Whooping cough																			
8	Diphtheria and croup																			
9	Infuenza																			
10	Acute cholera																			
11	Bacillary dysentery																			
12	Other epidemic diseases																			
13	Tuberculosis of the lungs																			
14	Tuberculosis meningitis																			
15	Other forms of tuberculosis																			
16	Cancer and other malignant tumors	15	5	10	1															
17	Simple meningitis	5	3	2																
18	Cerebral hemorrhage and softening	22	13	9	1															
19	Cerebral diseases of the heart	33	14	19	1															
20	Stroke	14	7	7																
21	Other diseases of the respiratory system (infectious excepted)	6	2	4	1															
22	Diseases of the stomach (cancer excepted)																			
23	Diseases of the intestines (under 2 years)																			
24	Amebiasis																			
25	Hernia and enteritis (under 2 years)																			
26	Ascites																			
27	Hernia, intestinal obstruction																			
28	Ascites of the liver, Bright's disease																			
29	Non-cancerous tumors and other diseases of the female genital organs																			
30	Puerperal septicaemia (puerperal fever, peri-tonitis)																			
31	Other puerperal accidents of pregnancy & labor																			
32	Septicemia (not at death and malformations)	4	2	2	1															
33	Scalds			2																
34	Subole	1	1																	
35	Violent deaths (suicide excepted)	18	7	11	1															
36	Violent deaths (suicide excepted)																			
37	Other diseases (suicide excepted)																			
38	Unknown or ill-defined diseases																			
	Total	115	45	70	13	8	1	1	1	2	1	1	1	1	1	1	1	1	1	1

Estimated population, 12,512.

Total resident deaths, 115.

Rate per 1,000 population, 9.19.

TABULATION OF DEATHS IN WESTFIELD FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table showing causes of death for Westfield in 1928, categorized by age periods (1 year to 80 and over) and sex (Male, Female, Total). Includes a list of 38 causes of death such as Typhoid fever, Smallpox, and Cancer.

Estimated population, 11,376.

Total resident deaths, 144.

Rate per 1,000 population, 12.66.

TABULATION OF DEATHS IN WARREN COUNTY FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Table showing causes of death for Warren County in 1928, categorized by age periods (1 year to 80 and over) and sex (Male, Female, Total). Includes a list of 38 causes of death such as Typhoid fever, Smallpox, and Cancer.

Estimated population, 46,686.

Total resident deaths, 638.

Rate per 1,000 population, 13.66.

TABULATION OF DEATHS IN PHILADELPHIA FOR 1928, ACCORDING TO THE ABRIDGED INTERNATIONAL LIST OF CAUSES OF DEATH

Abridged Interna- tional List No.	CAUSE OF DEATH	Total	Male	Female	Color, if other than white	AGE PERIODS										50 and over	70 to 79	80 to 89	Unknown
						Under 1 year	1 year	2 years	3 years	4 years	Under 5 years	5 to 9	10 to 19	20 to 29	30 to 39					40 to 49	50 to 59	60 to 69
1	Typhoid fever	1																	
2	Typhus fever	2																	
3	Malaria	2																	
4	Smallpox	4																	
5	Measles	1																	
6	Scarlet fever	1																	
7	Diphtheria and croup	1																	
8	Diphtheria	4																	
9	Whooping cough	1																	
10	Acute cholera	1																	
11	Cholera nostris	1																	
12	Cholera infantum	3																	
13	Typhoid disease	9																	
14	Tuberculosis meningitis	1																	
15	Other forms of tuberculosis	1																	
16	Cancer and other malignant tumors	18	5	13															
17	Cerebral hemorrhage and softening	12	11	1															
18	Cerebral diseases of the heart	41	25	16															
19	Bronchitis	21	12	9															
20	Pneumonia	15	9	6															
21	Influenza	1																	
22	Diseases of the respiratory system (tuberculosis excepted)	9	6	3															
23	Diseases of the stomach (cancer excepted)	3	2	1															
24	Dysentery and enteritis (under 2 years)	1																	
25	Diarrhea and enteritis (under 2 years)	3	2	1															
26	Enteritis (under 2 years)	1																	
27	Hepatitis	1																	
28	Hepatic cirrhosis	1																	
29	Cirrhosis of the liver	1																	
30	Acute nephritis and Bright's disease	19	9	10															
31	Chronic nephritis and other diseases of the kidneys	1																	
32	Acute glomerulonephritis (nephritic fever, post- tonthia)	1																	
33	Other interrenal accidents of pregnancy & labor	1																	
34	Other interrenal accidents of pregnancy & labor (other than interrenal accidents)	1																	
35	Other interrenal accidents of pregnancy & labor (other than interrenal accidents)	15	9	6															
36	Sandfly	3																	
37	Sulfide	3																	
38	Violent death (suicide excepted)	18	13	5															
39	Other diseases	21	9	12															
40	Unknown or ill-defined diseases	1																	
	Total	398	177	221	81	23	4	1	2	80	6	7	3	15	27	29	36	20	2

Estimated population, 10,500.

Total resident deaths, 208.

Rate per 1,000 population, 10.01.

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